National Park Service
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Channel slands National Park
Kelp Forest Monitoring Program

Annual Report 2007

Natural Resource Data Series NPS/MEDN/NRDS—2013/547






ON THE COVER
From upper left to bottom right: *Stylaster californica*, *Sebastes carnatus*, *Sebastes atrovirens* and *Haliotis rufescens*.
Photographs taken by KFM staff and volunteers.

Channel slands National Park
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List of Acronyms

ARM	Artificial Recruitment Module
CDFG	California Department of Fish and Game
CINP	Channel Islands National Park
CINMS	Channel Islands National Marine Sanctuary
KFM	Kelp Forest Monitoring
KFMP	Kelp Forest Monitoring Program
KGB	Kelp/Gopher/Copper/Black & Yellow rockfish young of the year complex
MPA	Marine Protected Area
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRPP	Natural Resources Preservation Program
PISCO	Partnership for Interdisciplinary Studies of Coastal Oceans
RPC	Random Point Contacts
UCSB	University of California, Santa Barbara

Executive Summary

The Channel Islands National Park (CINP) has conducted long-term ecological monitoring of the kelp forests around Santa Barbara, Anacapa, Santa Cruz, Santa Rosa and San Miguel Islands since 1982. The Kelp Forest Monitoring Program (KFMP) established 16 permanent transects between 1981 and 1986 with the first sampling beginning in 1982. An additional site, Miracle Mile, was established at San Miguel Island in 2001 by a commercial fisherman with assistance from the park and has been intermittently monitored since. In 2003, four sites were established and sampled at San Clemente Island, Naval Auxiliary Landing Field, under a contract with the U.S. Navy. These sites were monitored in 2003 and 2004, but have not been monitored since due to insufficient funding. In 2005, an additional 16 additional permanent sites were established to collect base line data from inside and adjacent to the newly established Marine Protected Areas (MPAs) for later evaluation. These new sites were initially established with three years (2005-2007) of funding from the NPS National Resource Preservation Program (NRPP).

Observations and results of the 2007 CINP's KFMP are described in this report. Population dynamics of 70 taxa or categories, of algae, fish and invertebrates were measured at all 33 permanent sites in 2006. These 33 sites consisted of the original 16 kelp forest monitoring sites at the five park islands, one additional site on San Miguel Island added in 2001, and the 16 new sites that were established in 2005 at Santa Barbara, Anacapa, Santa Cruz and Santa Rosa Islands. Survey techniques follow the Channel Islands National Park's Kelp Forest Monitoring Protocol Handbook Vol. 1 (Davis et al. 1997). The techniques utilize SCUBA and surface-supplied air to perform 1 m quadrats, 5 m quadrats, band transects, random point contacts, fish transects, roving diver fish counts, video transects, size frequency measurements and artificial recruitment modules. Temperature data were collected using remote temperature loggers at 32 sites, the exception being Miracle Mile where there is no logger installed. In addition to the Kelp Forest Monitoring (KFM) protocol, the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) fish abundance and size monitoring protocol was conducted at 24 of the monitoring sites involved in the fine scale Marine Protected Area (MPA) evaluation designed by the park. PISCO conducted this monitoring for the park under a Cooperative Agreement with the University of California at Santa Barbara (UCSB) and the funding was from NRPP funded project mentioned above.

To conduct the 2007 monitoring efforts, 61 days of vessel time were utilized and 1026 dives totaling 979 hours, or 41 days of bottom time, were logged by park divers, interns and volunteers. This dive effort includes the dives KFM divers conducted to do the California Department of Fish and Game (CDFG) benthic Cooperative Research and Assessment of Near shore Ecosystems (CRANE) surveys at 12 sites. All of the proposed monitoring was completed in 2007. This annual report contains a summary of the methods used to conduct the monitoring in 2007 and a brief description of the sites along with the results. All of the data collected during 2007 can be found summarized in the Appendices A-L in this report.

In 2007, 13 sites were mature *Macrocystis pyrifera* (giant kelp) forests, two sites were developing kelp forests, one site was in a state of transition, 16 sites were dominated by echinoderms and one site was half mature kelp forest and half dominated by *Strongylocentrotus* spp. Of the 16 sites dominated by echinoderms, three were dominated by *Strongylocentrotus purpuratus*, one by *Ophiothrix spiculata*, one by *O. spiculata* and *S. franciscanus*, one by *O. spiculata* and *S. purpuratus*, two by *S. purpuratus* and *S. franciscanus* and *O. spiculata* and eight were dominated by *S. purpuratus* and *S. franciscanus*. This information is summarized in Table 4 and compares it to the 2006 site status.

At Santa Barbara Island, there was an absence of kelp forests at our six monitoring sites and this is representative of the rest of the island. There seemed to be no continued recovery of the kelp forests that was observed early last year. All six of the sites were mostly dominated by echinoderms. Five of the sites were dominated by *S. purpuratus* and *S. franciscanus*. Southeast Sea Lion and Graveyard Canyon also had an abundance of *Ophiothrix spiculata*. One site, Southeast Reef had a mature kelp forest present along 40 meters of the transect, but the remainder was dominated by *Strongylocentrotus* spp., similar to the other sites. This island remains relatively barren with little algae and similar high echinoderm density and distribution as observed in recent years. There is little indication that kelp forests will return to much of this island in the near future.

At Anacapa Island, the seven KFM sites changed little from last year. Mature kelp forests were present at two sites within the original Anacapa Island Ecological Reserve, one site was in a state of transition presumably towards a kelp forest and the remaining four sites were dominated by echinoderms. Of these four sites, one was dominated by *Ophiothrix spiculata* , two by *O. spiculata*, *S. franciscanus* and *S. purpuratus*, and one site by *Strongylocentrotus purpuratus* and *S. franciscanus*. In general, we feel that these seven kelp forest monitoring sites well reflect the state of rocky reefs surrounding Anacapa Island.

At Santa Cruz Island, the states of the ten sites were all similar to last year. Three had mature kelp forests, while one was in a state of transition to what we presume to become a kelp forest. The remaining seven sites were dominated by echinoderms. Of these, three were dominated by *Strongylocentrotus purpuratus*, and four by *S. purpuratus* and *S. franciscanus*. Though Pelican Bay remained dominated by *S. purpuratus*, there was the development of a kelp forest at the far southern end of the transect. In addition, Fry's Harbor is now what we call in a state of transition and we believe may become a kelp forest soon. We believe the KFM monitoring sites well represent the rocky reef conditions on the eastern two thirds of the island, but do not represent the areas west of Gull Island as well.

At Santa Rosa Island, kelp forests continued to be dense and abundant and were present at all seven sites. Mature kelp forests were present at six sites and one, Cluster Point, was a developing kelp forest. Rodes Reef, which was in a state of transition last year, had developed into a mature kelp forest. *Strongylocentrotus* spp. densities remained similar to last year at all Santa Rosa Island sites with notably larger individuals than on the more eastern islands.

At San Miguel Island, kelp forests were also similar to recent years, with healthy and mature plants forming dense canopies at all three of the KFM monitoring sites.

Acknowledgements

This ecological monitoring program was supported by the U.S. National Park Service in cooperation with CDFG and the U.S. Department of Commerce, National Oceanographic and Atmospheric Administration (NOAA), Marine Sanctuary Program. Supplemental funding was provided by the Montrose Settlements Restoration Program to continue monitoring the sites associated with the marine reserve evaluation. Funding was also provided by the California Coastal Conservancy to conduct CRANE benthic surveys at select sites.

We are deeply indebted to the many divers who have participated in this project in 2007 (Table 5). All of our volunteer divers are trained and/or certified with other agencies such as NOAA, CDFG, Aquariums, and Universities. Without this volunteer base of expert divers it would be impossible to conduct this program at its current funding level. We greatly appreciate the efforts of our captains Keith Duran, Diane Brooks, Brent Bixler, Terrance Shiff, Lou Moody, Mark Kibby and Ray Michalski for supporting us on the boats and our Diving Safety Officer, Dave Stoltz, for ensuring that all our operations run safely and successfully. We also like to thank the many well qualified PISCO divers from UCSB who conducted additional fish monitoring at the newly established sites.

Information Requests

The kelp forest monitoring handbooks and annual reports are available in digital format from Mediterranean Coast Inventory and Monitoring Network site (http://science.nature.nps.gov/im/units/medn/index.cfm) and the Natural Resource Publications Management website (http://www.nature.nps.gov/publications/nrpm/).

To obtain raw data collected by this program, please write to the address below:

Superintendent
Channel Islands National Park
1901 Spinnaker Drive
Ventura, CA 93001

Introduction

The waters of the CINP and Channel Islands National Marine Sanctuary (CINMS) contain one-third of southern California's kelp forests (Davies, 1968). *Macrocystis pyrifera*, giant kelp, is the primary constituent of a southern California kelp forest, and over 1,000 species of macro flora and fauna live in this community (Woodhouse 1981, Engle pers. comm.). The kelp forest serves as food, shelter, substrate and a nursery to resident as well as migratory species. Many species, while not residents of the kelp forest, are dependent upon the existence and productivity of kelp forests; detrital flux from kelp forests provides an important source of nutrients to nearby rocky shore, sandy beach, and estuary communities. The kelp forests are essential to California's commercial and sport fisheries as well as the recreation and tourism industries.

CINP consists of five of the eight California Channel Islands (San Miguel, Santa Rosa, Santa Cruz, Anacapa, and Santa Barbara) and the submerged lands and waters within one nautical mile of each of the islands. The CINMS overlaps the subtidal portions of the park, and its boundary extends six miles seaward from the islands. CINP also bears the designation of International Biosphere Reserve and State of California Area of Special Biological Significance. The State of California maintains jurisdiction over the resources within the park and manages them through CDFG

San Clemente Island is the southernmost of the eight California Channel Islands. The waters surrounding the island out to 300 meters have been under exclusive management by the U.S. Navy since the 1920s. The State of California owns and manages the living marine resources extending three miles offshore. Management of these marine resources is the responsibility of CDFG.

The KFMP is part of a long-term ecological monitoring program designed to monitor the health of the park's marine ecosystem. By determining the limits of normal variation and identifying abnormal conditions, the KFMP assists management with prescribing remedial action to help preserve the park's marine resources.

Following a five year design study that began in 1982, the KFMP was implemented in 1987 by the park's resource management division, employing the protocols established during the design phase (Davis and Halvorson, 1988). Preliminary results and specific design considerations can be found in reports written by Davis (1985, 1986). Richards et al. (1997), describe monitoring efforts and results for 1982-1989. Richards et al. (1993a), Richards et al. (1993b), Richards and Kushner (1994), Kushner et al. al. (1995a), Kushner et al., (1995b), Kushner et al. (1997a), Kushner et al. (1997b), Kushner et al. (1998), Kushner et al. (2000), Kushner et al. (2001), Kushner et al. (2002a), Kushner et al. (2003b), Kushner et al. (2004c), Moss et al. (2005) and Kushner et al. (2006) – both in progress - describe the 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005 and 2006 monitoring efforts and results, respectively. A review of the KFMP was conducted in 1995 (Davis et al., 1996).

In 2005, the park was awarded three years of funding from the NPS's NRPP to Establish Baseline Ecological Conditions of Newly Established Marine Reserves at the Channel Islands. This project began this year with the addition and monitoring of 16 new sites. These sites were located inside or adjacent to the following four newly established marine protected areas (MPAs): Santa Barbara Island, Anacapa Island, Scorpion Anchorage MPA at Santa Cruz Island, and the South Point MPA at Santa Rosa Island. Only four of the 11 newly established MPAs were selected because of limited funding and the logistical constraints conducting this type of monitoring. These four MPAs were chosen for all or some of the following reasons: accessibility, to make the best use of the KFMP's existing base line data, and fishing impact. New sites were established to complement existing sites so that at least three sites were inside and three adjacent to each of the four MPAs.

This report summarizes the monitoring efforts and results from 2007, our 26th year of monitoring. The goal of these reports is to provide some insight into kelp forest dynamics and stimulate further research into the long-term trends and variations in this near-shore ecosystem. This report highlights some of the most significant observations and tries to provide a characterization for each site. Most organisms are referred to by genus and species; however, non-indicator species are described using both scientific and common names. Common names are cross-referenced to their scientific names in Table 1. Since the original design of the kelp forest monitoring program, several genera and species names have been changed. The new names are cross-referenced in Table 1.

Methods

Abundances, and in some cases size structure, of 70 taxa or categories of algae, fish, and invertebrates (Table 1) were measured at 33 permanent sites (Table 2) around the five park islands (Figure 1). Site and species selection criteria, and sampling protocol are described in the Kelp Forest Monitoring Handbook Volume I (Davis et al., 1997). Sites were monitored between May 16th and October 12th 2007, using the CINP's vessel "Pacific Ranger", the CDF&G vessel "Garibaldi" and the NOAA vessel "Shearwater". Data management and entry procedures are described in the Kelp Forest Monitoring Handbook Volume II (Kushner et al. 1997).

Each site is marked by a 100 m long transect affixed to the rocky substrate. The sampling techniques employed to gather density and distribution data are summarized in Table 3. At each monitoring site, 24 paired 1 m x 1 m quadrats, 40 continuous and adjacent 1 m x 5 m quadrats and 24 paired 3 m x 10 m band transects are systematically arranged along the transect with a randomly selected starting point. Additionally, 600 non-adjacent points termed random point contacts (RPCs) are conducted to determine percent cover of encrusting invertebrates, algae, and substrate composition; four 2 m x 3 m x 50 m fixed transects are used to determine fish abundance; fish size frequencies with a time component, count, and size estimate are used to determine an index of diversity, abundance and size; roving diver fish counts with a time component and count are used to determine an index of abundance and diversity; videotaped transects provide a record of the site appearance; size frequency measurements are collected to determine age structure and recruitment cohorts. All animals measured for the natural habitat size frequency distributions are located using a band transect search method. A general species list is established for each site, noting presence/absence and relative abundance for all recognizable species. Artificial recruitment modules (ARMs) were in place at eleven of the sites to measure recruitment and population structure of indicator species within the ARMs. A complete description of the monitoring protocols can be found in Davis et. al, 1997.

Remote temperature loggers, TIDBIT®, made by Onset Computer Corporation were deployed at each site. Loggers were encased in underwater housings and attached to stainless steel thread rods cemented to the bedrock at each site. At most sites, two temperature loggers were placed in the underwater housing. At these sites, a comparison of several temperatures from both loggers was made to see if the loggers were recording within their specifications (+- 0.2 ^{o}C). The results are included in the Results section of this report.

In past years, sampling at the kelp forest monitoring sites typically occurred over at least two separate dates, ranging from two weeks to several months apart during the sampling season. Separate sampling dates enabled us to conduct fish transects and roving diver fish counts two times at each site at least two weeks apart. Due to the addition of 16 new monitoring sites, effectively doubling the size of the KFMP, logistical constraints enabled us to only conduct fish transects and roving diver fish counts twice at 12 sites this year. However, in addition to the Kelp Forest Monitoring Program fish protocol, PISCO continued to perform their fish transect protocol that was performed at 24 sites from 2005 to 2007 as part of the three year Marine Reserve baseline study funded by NRPP under a

cooperative agreement with the park and UCSB. The methods for this protocol can be located at: http://www.piscoweb.org/research/science-by-discipline/ecosystem-monitoring/kelp-forest-monitoring and all data collected by PISCO are available by contacting them directly through their website.

In past years, and this year, we attempt to complete all abundance estimate techniques (1 m quadrats, 5 m quadrats, band transects, random point contacts, fish transects, fish size frequencies and roving diver fish count). During the second and subsequent visits, a second set of fish transects and roving diver fish counts are conducted, as well as any remaining size frequencies, ARMs, line repair or other unfinished work. Occasionally, abundance techniques are not completed during the first visit, and this is noted in the Results section below. If drastic changes in density and abundance are observed between visits, a second sampling event may be scheduled to collect further data on these observations. Such events are also noted in the below Results and Discussion sections. In the text, we report numbers to two significant digits.



Site	Name	Site	Name
1	Wyckoff Ledge	21	Miracle Mile
2	Hare Rock	22	Cluster point
3	Johnson's Lee North	23	Trancion Canyon
4	Johnson's Lee South	24	Chickasaw
5	Rodes Reef	25	South Point
6	Gull Island	26	Devil's Peak Member
7	Fry's Harbor	27	Potato Pasture
8	Pelican Bay	28	Cavern Point
9	Scorpion Anchorage	29	Little Scorpion
10	Yellow Banks	30	Pedro Reef
11	Admiral's Reef	31	Keyhole
12	Cathedral Cove	32	East Fish Camp
13	Landing Cove	33	Black Seabass Reef
14	SouthEast Sea Lion	34	Lighthouse
15	Arch Point	35	Webster's Arch
16	Cat Canyon	36	Graveyard Canyon
		37	SouthEast Reef

Figure 1. Kelp Forest Monitoring Locations at the Channel Islands National Park.

Results

Sampling was completed at all 33 monitoring sites and a summary of the 2007 status of each site is presented in **Table 4**. Twenty-one divers (**Table 5**) collected data on seven five-day cruises, two four-day cruises, one three day cruise, seven two-day cruises and one day trip between May and October. A total of 1026 dives totaling 941 hours of bottom time were spent to conduct this year's monitoring. Not included in those totals are the dives or bottom time that PISCO divers incurred to conduct the fish monitoring. All prescribed monitoring data were collected in 2007 except the species list was completed at only six sites. Furthermore, due to logistical constraints, fish transects and roving diver fish counts were performed only once at 21 sites this year.

A brief description of each site is included with the station results below. Complete data summaries from the sampling protocol are listed in the appendices. Means for 1 m quadrats (Appendix A) represent average counts obtained from 24 paired 1 m x 1 m quadrats systematically arranged along the transect with a random starting point. Means for 5 m quadrats (Appendix B) represent average counts obtained from 40 continuous and adjacent 1 m x 5 m quadrats. Note that when adult, subadult and juvenile densities for *Macrocystis pyrifera* are listed in the station descriptions, the adult and subadult densities are derived from the 5 m quadrats and the juvenile densities from the 1 m quadrat data, unless otherwise noted. Means for band transects (Appendix C) represent average counts obtained from 24 paired 3 m x 10 m transects systematically arranged along the transect with a random starting point. Means for random point contacts (Appendix D) represent average percent cover for a given organism, group of taxa, or substrate at 15 quadrats systematically arranged along the transect with a random starting point. Forty points from each quadrat (600 points total) are used to determine percent cover of selected organisms and substrate within one meter of the bottom. Percent cover may total more than 100% due to layering (Davis et al., 1997).

Mean densities for fish transects (Appendix E) represent the average of four adjacent and continuous 2 m x 3 m x 50 m transects along the line. It should be noted that this is different from previous years when fish transects were 2 m x 3 m x 100 m. Cases listed refer to the total number of passes over the transect made during sampling.

The roving diver fish count data presented in Appendix F contains the number of observers that sampled and the total number of species observed for each sampling date and site. The following pages contain the average timed Score, the average Abundance score and an average Count for each sampling date and site. The score field is the average score of all observers. Score fields range between 5 and 10 for all observed fish species, but non-present indicator species will receive a score of zero. As a result, it is possible for indicator species to have an average score of less than 5, but not possible for write-in species. The Abundance field is the number assigned to the abundance categories: single (1 fish), few (2-10 fish), common (11-100 fish), or many (>100 fish). The Abundance field is summarized numerically where 1 = single, 2 = few, 3 = common and 4 = many. The Count field is the actual whole number of fish counted by an observer during the 30 minute roving diver fish count and is presented as the average count for all observers for each species listed.

Although divers will observe different numbers of the same species of fish at a site, we have chosen to use the highest value in the Count field to describe fish abundances and/or densities at each site location. All counts were conducted between 0900 and 1500, hours unless otherwise noted.

For each site, it will be noted if and when the PISCO fish sampling method was conducted. The notation will follow the fish summary section. **Table 7** lists all 24 sites where PISCO conducted fish transects. For all PISCO data requests, visit their website at **www.piscoweb.org/data**.

Fish size frequency data and distributions are not included in this report. Raw data is available from the Channel Islands National Park by request.

Natural habitat size frequency distributions for invertebrates other than gorgonians and *Stylaster (Allopora) californica* are in Appendix H. *Macrocystis pyrifera* size frequency distributions are in Appendix I. Gorgonian and *Stylaster (Allopora) californica* size frequency distributions are in Appendix J. Size frequency measurements taken from the ARMs were kept separate from the natural habitat measurements and their distributions are in Appendix K. Species lists for sampled locations are in Appendix L. Video transects were completed for all locations and the video archives are stored at the park's headquarters in Ventura, California.

Temperature data was collected at all sites using TIDBIT^{TM} temperature loggers with the one exception being Miracle Mile on San Miguel Island where no logger is installed. Temperature data is recorded by the loggers every hour throughout the year. There were two loggers deployed at each site and a comparison of the two temperature loggers was made to determine if the loggers were recording within factory specifications (± 0.2 ^{o}C). To expedite report writing, we will present 12 months of temperature data from June 1st 2006 to May 31st 2007. See Appendix M for the temperature graphs for each site.

All of the Kelp Forest Monitoring temperature data through the 2006 sampling season is now available on the following webpage: http://las.pfeg.noaa.gov/PaCOOS.

Location: Wyckoff Ledge, San Miguel Island
Site #1 SMWL
2007 sampling dates: 7/11.
2007 status: Mature kelp forest.

This site was similar to last year and continued to be a mature, healthy kelp forest with an abundance of algae, moderate abundance of encrusting invertebrates on rocky outcrops and with some of the low lying areas appearing scoured. A thick canopy of *Macrocystis pyrifera* covered 100% of the transect. Though the *M. pyrifera* appeared relatively healthy, there were a moderate amount of epiphytic invertebrates on the blades. Adult *M. pyrifera* density was relatively high at0.55/m², while subadult and juvenile densities were relatively low at 0.02/m² and 0.08/m², respectively and cover was 17%. *Macrocystis pyrifera* stipe density was high at 10/m². No *Eisenia arborea* were observed on 1 m quadrats or RPCs, but were observed at the site. *Pterygophora californica* were common with adult density at 0.42/m², juveniles at 0.17/m² and an overall cover of 7.2% and most appeared unhealthy. No *Laminaria farlowii* were observed, similar to past years. Miscellaneous brown algae cover was 7.5%. *Dictyoneuropsis reticulata* was relatively abundant and counted on 1 m quadrats at 3.6/m². Although *D. reticulata* is not one of our regular indicator species, it is moderately abundant to this site and we have recorded it 2004. *Desmarestia* spp. was common but its cover was lower than recent years at 0.17%. No *Cystoseira* spp. were observed at the site, which is very unusual. Green algae cover was 0.33%. Miscellaneous red algae cover was similar to last year at 25%. Articulated and encrusting coralline algae covers were 11% and 34% respectively, similar to recent years. Bare substrate increased from last year to 18%. Sand increased to 22% cover, although was similar to past years.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 15% and consisted mostly of hydroids. No *Phragmatopoma californica* was observed on RPCs for the third consecutive year. Tunicate cover was 1.3%. *Styela montereyensis* density was 0.08/m², similar to past years. Sponge cover was 2.3%. *Tethya aurantia* was common at 0.22/m² and many clusters of small individuals were observed. Miscellaneous bryozoans were abundant at a cover of 22%. *Urticina lofotensis* density was 0.4/m², the highest recorded since we first began monitoring this species at this site. *Balanophyllia elegans* and *Astrangia lajollaensis* covers were 1.5% and 0.5%, respectively. *Corynactis californica* cover was 0.33%. *Diopatra ornata* were abundant in the low-lying sandy areas at a cover of 14.0%.

Pisaster giganteus were recorded on both on 1 m quadrats and 5 m quadrats at densities of 0.04/m² and 0.1/m², respectively. *Pisaster giganteus* were observed on the tops of the reef, but were rare directly along the transect similar to past years. *Patiria miniata* density was 2.1/m². Small and large *Pycnopodia helianthoides* were common at 0.02/m², similar to past years. *Parastichopus parvimensis* density was 0.04/m², similar to past years. No sea star wasting disease was observed this year.

Strongylocentrotus spp. abundances were similar to recent years. *Strongylocentrotus franciscanus* were common in the cracks and crevices and *S. purpuratus* were rare. The density of *S. franciscanus* was 0.21/m² similar to recent years and all sizes observed. The *S. franciscanus* may be competing for

space *Haliotis rufescens* as they are often abundant in the same crevices. The density of *S. purpuratus* was 0.54/m², similar to past years. No sea urchin wasting disease was observed.

Haliotis rufescens were relatively abundant at this site, similar to recent years, with a density of 0.10/m². A total of 113 *H. rufescens* were located for size frequency measurements and a mean size of 171 mm was recorded. Similar to past years we conducted an extensive search along the entire transect and out ten meters and think this total is a good proxy for abundance at this site, in addition to the band transects. *Megathura crenulata* were rare at 0.003/m². *Crassedoma giganteus* density was 0.01/m². *Kelletia kelletii* were abundant at this site, similar to recent years, and were counted on both 1 m quadrats and band transects with densities of 0.67/m² and 0.55/m², respectively. Several meters of area were covered in *K. kelletii* eggs mats, a common observation for this site. *Lithopoma gibberosa* were common at 0.42/m². *Cancer productus* and *Cancer antennarius* were common at this site. *Cryptochiton stelleri*, gumboot chiton, continued to be relatively common at this site and we counted them on band transects with four observed (0.0055/m²) and five observed at the site.

Fish were moderately abundant and diverse at this site. *Coryphopterus nicholsii* density was 0.08/m² and up to 42 were observed on the roving diver fish count. *Oxylebius pictus* were common with up to 59 observed. Nine female, no juvenile and three male *Semicossyphus pulcher* were observed. A small school of up to 23 *Oxyjulis californica* was observed. Up to four adult and no juvenile *Embiotoca jacksoni* were observed. *Embiotoca lateralis* were moderately abundant with up to 31 adults and 11 juveniles observed. Up to five adult *Rhacochilus vacca* were observed. *Sebastes mystinus* were common with up to 26 adults and five juveniles recorded. Up to 40 adults and three juvenile *Sebastes atrovirens* were observed. Up to two adult and six juvenile *Sebastes serranoides* were observed. Up to two adult and one juvenile *Sebastes serriceps* were observed. Up to seven adult *Sebastes caurinus,* copper rockfish, were observed. *Sebastes chrysomelas,* black and yellow rockfish, were common with up to 19 observed. One adult and one juvenile *Sebastes carnatus,* gopher rockfish were observed. Two adult and one juvenile *Sebastes miniatus,* vermillion rockfish, were observed. Up to 62 kelp/gopher/black and yellow/copper rockfish young of the year complex (KGB) were observed. Two *Ophiodon elongatus,* lingcod, were observed. One *Scorpaenichthys marmoratus,* cabezon, was observed. *Brachyistius frenatus,* kelp surfperch, were in the kelp canopy with up to 11 observed. A school of up to 350 *Aulorhynchus flavidus,* tubesnout, was observed. Roving diver fish counts were conducted on July 11th by seven divers observing 28 species.

The temperature loggers were retrieved and deployed and all data were successfully downloaded. Both loggers were recording within factory specifications of each other.

Location: Hare Rock, San Miguel Island
Site #2 SMHR
2007 sampling dates: 7/10.
2007 status: Mature kelp forest.

This site was similar to last year with a dense kelp forest of mature *Macrocystis pyrifera* and many patches of *Strongylocentrotus franciscanus* forming localized urchin barrens. The *M. pyrifera* were healthy looking and canopy cover was estimated at 100% over the transect. Adult, subadult and juvenile *M. pyrifera* were moderately abundant with densities of 0.22/m², 0.5/m² and 1.9/m² respectively. *Macrocystis pyrifera* cover was 13%, similar to last year. *Macrocystis pyrifera* stipe density was 7.7/m². Adult *Eisenia arborea* were common on top of the reef towards the east end of the transect, none were observed on RPCs, and adult and juvenile density were 0.08/m² and 0.0/m², respectively. *Pterygophora californica* was not present, similar to past years. No *Laminaria farlowii* was present, but several *Laminaria setchellii* were observed. *Desmarestia* spp. were common near the western edge of the transect with a 6.7% cover, a decrease from last year, but similar to recent years. *Cystoseira* spp. cover was 0.5%. Miscellaneous brown algae cover was 2.5%, similar to last year. Green algae were common with a cover of 7.5%. Miscellaneous red algae remained relatively abundant with a cover of 18%. *Gelidium* spp. were not observed on RPCs this year. *Gigartina* spp. were present at 7.5%. This category consisted of *Gigartina corymbifera* which was abundant in patches. Articulated coralline algae were not observed on RPCs and this year, however, encrusting coralline algae was cover was 46.8%. Bare substrate cover was 14%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 5.2%, and consisted mostly of hydroids and *Dodecaceria fewkesi*, a colonial tube worm. Miscellaneous bryozoans cover was 5.8% with no *Diaperoecia californica* observed on RPCs. Sponge cover was 0.17% and *Tethya aurantia* density was 0.09/m². Tunicates were also rare with 0.67% cover and no *Styela montereyensis* were observed. *Corynactis californica* cover was 4.2% and *Urticina lofotensis* was 0.022/m², similar to last year. *Balanophyllia elegans and Astrangia lajollaensis* covers was 3.0/m² and 1.7/m², respectively. *Diopatra ornata* cover was 2.8%. No gorgonians were observed, similar to past years as they are rare at this site.

Strongylocentrotus franciscanus density remained high with high density patches scattered throughout the site. Their density was 10.3/m², similar to recent years. *Strongylocentrotus purpuratus* were rare with a density of 1.3/m² and were mostly under larger *S. franciscanus* or in the shallowest areas of the transect. Mean size of *S. franciscanus* was 55 mm, relatively small compared to other places on San Miguel Island, but similar to past years With the high density patches of *S. franciscanus* at this site, it is difficult to imagine that this site will remain a kelp forest. No sea urchin wasting disease was observed.

Pisaster giganteus density decreased during both 1 m quadrats and 5 m quadrats to 0.25/m² and 0.03/m², respectively. Similar to past years, most were small with a mean size of 61 mm. *Patiria miniata* remained abundant at 5.3/m^2. *Pycnopodia helianthoides* were common with a density of

0.19/m², similar to last year. No *Parastichopus parvimensis* were observed on 1 m quadrats third consecutive year, and were rare at the site. No sea star wasting disease was observed.

One small *Haliotis rufescens* was found under the spine canopy of a *Strongylocentrotus franciscanus* measuring about 13 mm. Two *H. rufescens* were observed during band transects for a density of 0.0028/m². *Lithopoma gibberosa* were moderately abundant at 1.2/m². *Kelletia kelletii* density was 0.02/m². *Crassedoma giganteus* density remained low at 0.004/m². *Megathura crenulata* were rare at 0.001/m² with only one observed during band transects. *Aplysia californica* density was 0.01/m². *Cypraea spadicea* density was the highest recorded since 1983 at 1.1/m².

Fish at this site were abundant and diverse with juvenile fish very common this year. *Coryphopterus nicholsii* density was 0.08/m² and up to 28 were observed during the roving diver fish count. There were several small (2-3 cm) *C. nicholsii* observed at the site. *Oxylebius pictus* density was 0.25/m² with up to 13 observed. A few very small *O. pictus* were observed. *Chromis punctipinnis* were relatively abundant for this site with up to 62 adults observed. *Oxylebius californica* were common with 17 observed. Up to three female, no juvenile and one male *Semicossyphus pulcher* were observed. Up to six adult but no juvenile *Embiotoca jacksoni* were observed. *Embiotoca lateralis* were abundant with up to 51 adults and 11 juveniles observed. There were several *Sebastes* spp. recorded at this site. *Sebastes mystinus* were moderately abundant with up to 32 adults and 10 juveniles observed. Adult *Sebastes atrovirens* were common with up to nine observed. Six adult *Sebastes serranoides* were observed. Seven adult *Sebastes chrysomelas,* black and yellow rockfish, were observed. One adult *Sebastes auriculatus,* brown rockfish, was observed. Up to five *Sebastes caurinus,* copper rockfish, one *Sebastes rastrelliger,* grass rockfish, and one juvenile *Sebastes miniatus,* vermillion rockfish, were observed. Two *Ophiodon elongates,* lingcod, were observed. Three *Scorpaenichthys marmoratus,* cabezon, were observed. Up to six adult *Rhacochilus vacca* and two adult *Rhacochilus toxotes,* rubberlip surfperch, were observed. One *Hypsurus caryi,* rainbow surfperch, was observed. *Brachyistius frenatus,* kelp surfperch, were common with up to 25 observed. One *Rathbunella hypoplecta,* stripedfin ronquil, was observed. Several small groups of *Aulorhynchus flavidus,* tubesnout, were observed. Roving diver fish counts were conducted on July 10th by six divers observing 28 species.

The temperature loggers were retrieved and deployed and data were successfully downloaded. Both loggers were recording within factory specifications of each other.

Location: Johnsons Lee North, Santa Rosa Island
Site #3 SRJLNO
2007 sampling dates: 9/26.
2007 status: Mature kelp forest.

Overall, this site was similar to last year. The *Macrocystis pyrifera* canopy cover was thicker than usual with a cover estimated at 80%. There appeared to be some scouring at the site, similar to previous years.

Adult, subadult and juvenile densities of *M. pyrifera* were all similar to recent years at 0.67/m², 0.34/m² and 3.7/m², respectively, and cover was 27%. *Macrocystis pyrifera* stipe density was high at 7.5/m². Adult *Eisenia arborea* were common on the upper edge of the shelf just inshore of the transect line, but were absent along the transect with no adults or juveniles observed on 1 m quadrats or RPCs, similar to past years. *Pterygophora californica* were common with adult and juvenile densities at 0.29/m² and 0.0/ m², respectively and a cover of 7.2%, all similar to recent years. Adult *Laminaria farlowii* were uncommon and adult and juvenile densities were 0.25/m² and 0.08/m², respectively and a cover of 0.83%, similar to recent years. *Cystoseira* spp. cover was similar to last year at 3.3%, and most were small. *Desmarestia* spp. cover was 0.5%. Miscellaneous red algae cover was 34%, similar to past years. *Gigartina* spp. were moderately abundant with a cover of 5.8%. Articulated and encrusting coralline algae cover were 2.5% and 7.3% respectively, similar to past years. Bare substrate cover increased to 12%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* increased from last year to 29% and consisted mostly of hydroids, but included some *Spirorbis* spp., *Pista* spp. and amphipod tube mats. *Styela montereyensis* were abundant with a increase in density to 6.3/m². Tunicates cover remained relatively high at 9.0%, similar to recent years. Sponge cover also remained relatively high at 4.2%. *Tethya aurantia* remained abundant at 0.13/m^2. *Phragmatopoma californica* were abundant in the *Macrocystis pyrifera* holdfasts, but rare elsewhere with a cover of 9.2%. Miscellaneous bryozoans cover was 22%, similar to past years. The most abundant bryozoan species were *Membranipora* spp. and *Thalamoporella* spp. *Diaperoecia californica* cover was 1.7%. *Corynactis californica* cover was 1.8%. *Balanophyllia elegans* and *Astrangia lajollaensis* covers were 0.5% and 1.0%, respectively, similar to previous years.

Strongylocentrotus spp. remained at low densities along the transect. *Strongylocentrotus franciscanus* and *S. purpuratus* densities were 0.96/m² and 0.08/m², respectively, and both similar to recent years. *Strongylocentrotus* spp. were mostly found in cracks and crevices and very few juveniles *were* observed. No *Lytechinus anamesus* or *Centrostephanus coronatus* were observed. No sea urchin wasting disease was observed.

Pycnopodia helianthoides density remained high at 0.08/m. Medium-sized *P. helianthoides* were common and large-sized individuals were rare at this site. *Patiria miniata* were relatively abundant and large with a density of 0.79/m². *Pisaster giganteus* were abundant with densities on 1 m quadrats

and 5 m quadrats at 0.08/m² and 0.13/m², respectively. *Parastichopus parvimensis* density was 0.25/m², similar to previous years. No sea star wasting disease was observed.

Twenty-five *Haliotis rufescens* were found along the transect during size frequencies with a search effort covering the entire transect. Their density on band transects was similar to last year at 0.015/m². *Haliotis rufescens* covered a large size distribution and most individuals were found in the same cracks and crevices as previous years. *Cypraea spadicea* density was 0.5/m². No *Megastraea undosa* or *L. gibberosa* were observed. *Kelletia kelletii* were rare with a density of 0.0014/m², similar to recent years. *Megathura crenulata* were also rare with a density of 0.0042/m². *Crassedoma giganteum* density was 0.02/m². No *Aplysia californica* were observed.
Fish were moderately diverse and abundant, similar to past years. *Coryphopterus nicholsii* density was 0.17/m² with up to 35 observed on the roving diver fish counts. *Oxylebius pictus* were common with a density of 0.29/m² and up to 13 observed. Several juvenile *O. pictus* were noted. Adult *Chromis punctipinnis* were common with up to 48 adults and six juveniles observed. *Oxyjulis californica* were common with up to 52 adults and 22 juveniles observed. Up to nine female, three male and two juvenile *Semicossyphus pulcher* were observed. No *Halichoeres semicinctus* were observed. Six adult *Hypsypops rubicundus* were observed which is relatively high for this site and included the male on a nest near the 72 meter mark that has been present since at least 1990. Up to three adult and one juvenile *Paralabrax clathratus* were observed. Two adult *Girella nigricans* were observed. Up to 14 adult and nine juvenile *Embiotoca jacksoni* were observed. Up to eight adult and five juvenile *Embiotoca lateralis* were observed. Five adult and three juvenile *Rhacochilus vacca* were observed. One *Rhacochilus toxotes*, rubberlip surfperch, was observed. No *Sebastes mystinus* were observed. *Sebastes atrovirens* were moderately abundant with up to 26 adults and 15 juveniles observed. One juvenile *Sebastes serriceps* was observed. Three adult *Sebastes serranoides* were observed. Up to seven adult *Sebastes chrysomelas,* black and yellow rockfish, were observed. Three juvenile *Sebastes paucispinis,* bocaccio, were observed. One *Hypsurus caryi*, rainbow surfperch, was observed. One *Hermosilla azurea,* zebra surfperch, was observed. Up to 160 *Brachyistius frenatus,* kelp surfperch, were observed. Two adult and one juvenile *Heterostichus rostratus*, giant kelpfish, were observed. A school of 71 *Cymatogaster aggregata*, shiner surfperch, was observed. Roving diver fish counts were conducted on September 26th by three divers observing 25 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was employed on September 26th.

No *Haliotis rufescens* were found in the ARMs this year, the second year in a row and only the second time since 1999 that none were observed. *Cypraea spadicea* remained moderately abundant at 8.3/ARM. Two of the *C. spadicea* had juvenile morphology. This has been observed at several of our monitoring sites throughout the islands this year in the ARMs. *Crassedoma giganteum* density was 1.3/ARM. *Patiria miniata* density remained high at 3.8/ARM, similar to recent years. *Pisaster giganteus* density was low for this site at 1.1/ARM, but similar to last year. *Pycnopodia helianthoides* density was 1.6/ARM. *Strongylocentrotus franciscanus* density remained high at 27.9/ARM. *Strongylocentrotus purpuratus* density increased to 19.9/ARM, relatively high compared

to the past five years. *Parastichopus parvimensis* less than ten centimeters were absent from the ARMs and individuals greater than ten centimeters density was 0.2/ARM. Three *Octopus rubescens* were observed, two of which had eggs, and there was one clutch of octopus eggs without an octopus present.

The temperature loggers were retrieved and deployed and data were successfully downloaded. Both loggers were recording within factory specifications of each other.

Location: Johnson's Lee South, Santa Rosa Island
Site #4 SRJLSO
2007 sampling dates: 7/25.
2007 status: Mature kelp forest.

There were some notable changes from last year. Most notable was the increase in *Macrocystis pyrifera*. *Macrocystis pyrifera* canopy cover increased to 100% from our estimate last year of 10% The *M. pyrifera* appeared healthy with large, widely-spaced mature plants and interspersed patches of smaller plants. The bottom was scoured with an increase in bare substrate from recent years. *Macrocystis pyrifera* cover was recorded at 7.7%, a decrease from last year and likely due to the decrease in juvenile density. Adult *M. pyrifera* density increased this year to 0.47/m², while subadult and juvenile densities decreased to 0.075/m² and 0.21/m², respectively. *Macrocystis pyrifera* stipe density was relatively high at 5.0/m². *Eisenia arborea* were common on the tops of rocks. None were observed on 1 m quadrats, and cover was 0.5%. *Pterygophora californica* adults and juveniles were both common with densities of 0.04/m² and 0.42/m², respectively, and a cover of 0.17%.. *Laminaria farlowii* were common, but less abundant than last year with adult and juvenile densities at 0.17/m² and 0.0/ m², respectively and a cover of 1.5%, all lower than last year. Miscellaneous red algae cover decreased dramatically from last year to 15%. Similarly, there were notably less *Gigartina* spp. (specifically *G. corymbifera*) on the northern end of the transect with a cover of 3.7%. *Gelidium* spp. were not observed. Green algae were not observed on RPCs this year. These observed decreases in understory algae abundance may be due in part to the dense kelp canopy cover that low light conditions below. Miscellaneous brown algae cover was 1.5%. Neither *Desmarestia* spp. nor *Cystoseira* spp. were recorded on RPCs, though *Cystoseira* spp. was common. Articulated coralline and encrusting coralline algae covers were 3.3% and 14%, respectively, similar to recent years. Bare substrate cover increased to 30%.

Overall, invertebrate density was relatively low along the transect. Miscellaneous invertebrates excluding *Ophiothrix spiculata* decreased from last year to 5.0%. This category consisted mainly of hydroids, specifically *Aglaophenia struthionides.* There were no *Ophiothrix spiculata* observed on RPCs for the third consecutive year. Miscellaneous bryozoan cover remained high at 23% and *Diaperoecia californica* cover was 1.3%. Miscellaneous bryozoans that were most abundant were *Heteropora pacifica, Hippodiplosia insculpta* and *Membranipora* spp. Tunicates were moderately abundant with a cover of 3.5%. *Styela montereyensis* density was 0.63/m². Sponge cover was 1.8% and *Tethya aurantia* density was similar to last year at 0.42/m². *Astrangia lajollaensis* and *Balanophyllia elegans* covers were 1.3% and 1.5%, respectively. *Corynactis californica* cover was 1.5%. *Urticina lofotensis* density remained similar to last year at 0.18/m². There was a notable increase in *Diopatra ornata* cover this year to 16%. *Phragmatopoma californica* was rare with a cover of 0.17%. *Lophogorgia chilensis* were common at 0.05/m^2, similar to last year, but the lowest density recorded since 1984.

Strongylocentrotus spp. were similar to last year. *Strongylocentrotus* spp. remained rare with *S. franciscanus* and *S. purpuratus* densities at 0.58/m² and 0.25/m², respectively. Similar to recent years, all *Strongylocentrotus* spp. were confined to the cracks and crevices. There were no

Centrostephanus coronatus or *Lytechinus anamesus* observed. No sea urchin wasting disease was observed.

Pisaster giganteus were rare on 1 m quadrats and 5 m quadrats with densities of 0.04/m² and 0.02/m², respectively. *Patiria miniata* densities was similar to recent years at 3.8/m². *Parastichopus parvimensis* densities was 0.13/m². No sea star wasting disease was observed.

Haliotis rufescens density remained low at 0.0042/m² and five were found for size frequencies with a mean size of 151 mm. Two fresh *H. rufescens* shells were found and measured at 69 mm and 157 mm. *Cypraea spadicea* density was 0.08/m² and *Kelletia kelletii* was 0.035/m². *Crassedoma giganteum* density was similar to last year at 0.013/m². *Megathura crenulata* were rare with a density of 0.0010/m².

As observed in recent years, *Phyllolithodes papillosus*, heart crabs, were observed at this site in the ARMs. *Phyllolithodes papillosus* are typically found in the cooler northern waters, and we suspect the population here at Johnson's Lee is a range extension. See notes below for more detail.

Overall, observations of the fish at this site were similar to last year with fish remaining abundant and divers at this site. *Coryphopterus nicholsii* density was relatively high at 1.3/m² and up to 45 observed on the roving diver fish counts. *Oxylebius pictus* density was 0.25/m² and up to 29 were observed. The most abundant fish at this site was *Oxyjulis californica* with up to 274 adults and no juveniles observed. *Chromis punctipinnis* were rare this year with up to five adults and no juveniles observed. Five female, no juvenile and two male *Semicossyphus pulcher* were observed. There were no *Halichoeres semicinctus* observed, same as last year. There were up to eight adult and three juvenile *Embiotoca jacksoni* observed. Up to 22 adult and one juvenile *Embiotoca lateralis* were observed. Up to 23 *Rhacochilus vacca* adults and 19 *R. toxotes*, rubberlip surfperch, adults were observed. There were up to seven adult *Girella nigricans* observed. *Paralabrax clathratus* were relatively common for this site with up to 12 adults observed. Eight adult and nine juvenile *Sebastes mystinus* were counted. *Sebastes serranoides* were present with six adults and five juveniles observed. Up to 26 adult and no juvenile *Sebastes atrovirens* were observed. Up to five adult and seven juvenile *Sebastes serriceps* were observed. One adult *Sebastes carnatus*, gopher rockfish, and one adult *Sebastes caurinus*, copper rockfish, were observed. Up to eight adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. One juvenile *Sebastes miniatus*, vermillion rockfish, and one juvenile *Sebastes paucispinis*, bocaccio, were observed. There were up to 17 KGB observed. Eight adult *Hypsurus caryi*, rainbow surfperch, were counted. *Brachyistius frenatus*, kelp surfperch, were present with up to 32 adults observed. *Medialuna californiensis*, halfmoon, were less common than previous years with up to three observed. One *Caulolatilus princeps*, ocean whitefish, was observed. There were schools of both *Atherinops affinis*, topsmelt, and *Trachurus symmetricus*, jack mackerel, present of up to 30 and 25 observed, respectively. Up to two *Myliobatis californica*, bat ray, were observed. Roving diver fish counts were performed on July 25th with four divers observing 30 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was employed on September 19th.

All seven ARMs were monitored for all indicator species. Since 1997 we have observed *Phyllolithodes papillosus*, heart crabs, in the ARMs at this site. This year, four were observed during sampling. Two small *Brosmophycis marginata*, red brotula, were also observed. One medium sized *Octopus* spp. was observed. One *Haliotis rufescens* was observed in the ARMs for a density of 0.14/ARM and measured at 35 mm. *Cypraea spadicea* density was 6.43/ARM, similar to last year. Two of the *C. spadicea* were juveniles. Four *Megathura crenulata* were observed for a density of 0.57/ARM and average size of 34 mm. *Crassedoma giganteum* density was 1.1/ARM, relatively high for this site for the second consecutive year. No *Kelletia kelletii* were observed. *Patiria miniata* density and mean size were observed at 9.0/ARM and 33.9 mm, respectively. *Pisaster giganteus* density was 3.7/ARM with a mean size of 34 mm, similar to past years. *Pycnopodia helianthoides* density was 5.3/ARM, the highest recorded in the ARMs here since we began monitoring the ARMs in 1993. Their mean size was 61 mm, smaller than last year. *Strongylocentrotus franciscanus* density was 40/ARM with a mean size of 52 mm, similar to last year. *Strongylocentrotus purpuratus* density was 11/ARM with a mean size of 28 mm, also similar to last year. No *Centrostephanus coronatus* or *Lytechinus anamesus* were observed. No *Parastichopus parvimensis* less than ten centimeters were observed in the ARMs, same as last year. *Parastichopus parvimensis* greater than ten centimeters were rare at 0.17/ARM.

The temperature loggers were retrieved and deployed and all data was successfully downloaded from the logger at the north end of the transect The temperature logger at this site was originally placed at the south end of the transect and we are in the process of trying to move it to the north end. Currently, we have temperature loggers at either ends to test whether or not both ends of the transect are similar in temperature, and if they are, we plan to permanently move the logger to the north end to stay consistent with the other monitoring sites. In 2007, the temperature logger retrieved from the south end was not operational, thus there will be no comparison made between the north and south ends this year. We have chosen to continue deploying both north end and south end loggers again for another year.

Location: Rodes Reef, Santa Rosa Island
Site #5 SRRR
2007 sampling dates: 7/9, 7/10.
2007 status: Mature kelp forest.

This site changed dramatically from being nearly devoid of *Macrocystis pyrifera* to a maturing kelp forest with widely spaced large adult plants. In addition juvenile and subadult *M. pyrifera* were common. Canopy cover of *M. pyrifera* was estimated at 40%. Adult, subadult, and juvenile densities were0.12/m², 0.08/m² and 0.21/m², respectively, and cover was 2.8%, all increases from last year. *Macrocystis pyrifera* stipe density was 2.9/m². No *Eisenia arborea, Pterygophora californica, Laminaria farlowii, Cystoseira* spp. *or Desmarestia* spp. were observed, similar to last year. Miscellaneous brown algae cover was 0.17%. Miscellaneous red algae were common with a cover of 26% and some were often growing epiphytically on *Diopatra ornata*. *Gigartina corymbifera* were rare this year and *Gigartina* spp. cover decreased to 0.5%. Similar to last year, no miscellaneous plants were observed on RPCs. Articulated coralline algae were rare with a cover of 0.17%. Encrusting coralline algae cover was low for this site at 21%. Bare substrate increased to 9.7%. Sand also increased to 7.8% while cobble and rock cover remained similar to last year at 15% and 77%, respectively.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 21%, similar to recent years. The most common miscellaneous invertebrates were hydroids and amphipod tube mats. *Diopatra ornata* were moderately abundant at the east end with a cover of 10%. *Balanophyllia elegans* cover was1.2%, lower than last year but similar to previous years. *Corynactis californica* were common but none were observed during RPCs. *Astrangia lajollaensis* cover was 7.2%, similar to past years. *Balanophyllia elegans* and *A. lajollaensis* were most abundant from 50-100 meters along the transect. Miscellaneous bryozoan cover remained high with a cover of 15%. The bryozoans were abundant and diverse and included large patches of *Costanzia costazi*, *Membranipora* spp., and *Hippodiplosia insculpta*, the fluted bryozoan. *Diaperoecia californica* was common on the sides of large rocks off the main transect and had a cover of 1.3%. *Urticina lofotensis* density was 0.07/m², similar to past years. *Telia coriacea* and *Telia colombiana* were also common, as is typical for this site. *Lophogorgia chilensis* were rare with several observed along the transect but none on band transects. Sponge cover was 1.0%. *Leucosolenia eleanor*, were notably abundant and large. *Tethya aurantia* were abundant at 0.25/m^2, similar to past years. *Craniella arb*, the gray puffball sponge, was common. *Styela montereyensis* were common with a density of 0.25/m². Tunicate cover was high at 7.5%.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* densities were 1.9/m² and 0.08/m², respectively; both low for this site. *Strongylocentrotus* spp. were notably large and confined to the crevice habitat. Juvenile *Strongylocentrotus* spp. were rare. *Lytechinus anamesus* were rare 0.004/m², the first time they have been observed on band transects since 2000. No sea urchin wasting disease was observed.

No *Ophiothrix spiculata* were observed on RPCs. *Patiria miniata* density remained high at 4.9/m^2. *Pisaster giganteus* were counted on both 1 m quadrats and 5 m quadrats, with densities of 0.38/m^2 and 0.16/m^2, respectively. *Pycnopodia helianthoides* density was 0.08/m^2, similar to past years. Large *Parastichopus parvimensis* were present in low abundance on the rocky western half of the transect, but none were observed during 1 m quadrats this year. These continue to be some of the largest *P. parvimensis* we have observe anywhere at the Channel Islands. No sea star wasting disease was observed this year.

No live *Haliotis* spp. were observed this year. Three small fresh *H. rufescens* shells were found measuring 33 mm, 35 mm and 58 mm. One old *H. assimilis* was found and measured at 116 mm. This shell may be the remains of the live *H. assimilis* observed several years ago at this site. *Kelletia kelletii* density was 0.075/m^2, similar to past years. Most were large, but several small (less than 50 mm) individuals were observed. No *Megastraea undosa* were observed at the site and *Lithopoma gibberosa* were rare at 0.04/m^2. *Megathura crenulata* density increased to 0.02/m^2, but was similar to past years, and most *M. crenulata* were present on the rocky western end of the transect. *Aplysia californica* density was 0.0056/m^2.

With the return of a kelp forest, there was an increase in fish diversity and abundance at this site. *Coryphopterus nicholsii* continued to decrease with none observed on 1 m quadrats and seven counted on the roving diver fish counts. *Oxylebius pictus* density was 0.17/m^2, and up to 35 were observed. Up to five adult *Chromis punctipinnis* were observed, similar to last year. Up to 35 *Oxyjulis californica* were observed. Five female, two male, and no juvenile *Semicossyphus pulcher* were observed. Up to nine adult and one juvenile *Paralabrax clathratus* were observed. There were noticeably more *Embiotoca* spp. and *Sebastes* spp. than last year. Five adult and four juvenile *Embiotoca jacksoni* were observed. *Embiotoca lateralis* were abundant with up to 25 adults and 20 juveniles observed. Up to 12 adult *Rhacochilus vacca* were observed. *Sebastes mystinus* were common with up to 33 adults observed, most notably large. *Sebastes atrovirens* were abundant with up to 44 adults and one juvenile observed. *Sebastes caurinus,* copper rockfish, adults were common with up to 10 observed; several juveniles were noted after the fish count. *Sebastes melanops,* black rockfish, were common and large with up to 10 adults observed, notably more of this species than we usually observe. *Sebastes chrysomelas,* black and yellow rockfish, were common with up to eight adults observed. Two juvenile *Sebastes miniatus*, vermillion rockfish, were observed, similar to other sites this year. Up to seven KGB were observed. Two *Ophiodon elongatus,* lingcod, were observed. Up to five adult *Hypsurus caryi,* rainbow surfperch, and 10 adult *Rhacochilus* toxotes, rubberlip surfperch, were observed. *Aulorhynchus flavidus,* tubesnouts, were very abundant with up to 1700 observed. Two ronquils believed to be *Ronquilus jordani,* northern ronquils, were observed. Roving diver fish counts were conducted on July 9th by five divers observing 29 species of fish.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Gull Island, Santa Cruz Island
Site #6 SCGI
2007 sampling dates: 7/23, 7/24.
2007 status: Mature kelp forest.

This site continued to be a mature kelp forests and canopy cover was estimated at 50% and was relatively thin with a moderate amount of understory algae. . Most of the *Macrocystis pyrifera* were healthy, although some appeared tattered and had a moderate amount of *Membranipora* spp. growing on blades. Most adult *M. pyrifera* were small and there were fewer large widely spaced kelp plants than last year. *Macrocystis pyrifera* cover was 25.0% and adult, subadult and juvenile densities were similar to recent years at 0.30/m², 0.25/m² and 0.42/m², respectively. *Macrocystis pyrifera* stipe density was 5.0/m². *Eisenia arborea* cover was 0.67% with adult and juvenile densities at0.0/ m², and 0.25/m², respectively. *Pterygophora californica* were common in the low lying areas with a cover of 0.5%, but none were observed on 1 m quadrats, similar to past years. *Laminaria farlowii* were common, but none were observed on 1 m quadrats or RPCs. *Agarum fimbriatum* was common. Several small *Cystoseira* spp. were observed within the transect area and had a cover of 0.5%. Miscellaneous red algae continued to increase to 58%, the highest recorded at this site since we began monitoring in 1982. This category consisted mostly of *Rhodymenia* spp. Green algae and miscellaneous brown algae covers were 0.5% and 0.17%, respectively. Articulated coralline algae and encrusting coralline algae covers were 4.2% and 23%, respectively. Bare substrate cover remained low at 1.3%.

Similar to last year, the most common Miscellaneous Invertebrates excl. *Ophiothrix spiculata*, were hydroids, and had a cover of 12.0%. Overall, encrusting invertebrates were notably more abundant and diverse than in recent years. Tunicate cover was similar to last year at 3.8%. *Styela montereyensis* density was 0.04/m². *Tethya aurantia* were common with a density of 0.2/m². Other sponges were common with a cover of 3.3%. Several species were observed including *Hymenamphiastra cyanocrypta*, the cobalt sponge. *Corynactis californica* cover was 2.5%, similar to recent years. The cup corals, *Balanophyllia elegans* and *Astrangia lajollaensis*, covers were 2.7% and 1.5%, respectively. *Diopatra ornata* cover was 2.7%. Bryozoans were relatively abundant this year. *Diaperoecia californica* cover was 7.3%. Miscellaneous bryozoans increased in abundance to 30% cover and included *Costanzia* spp. and *Heteropora* spp. *Diaperoecia californic*a. Small and large colonies of *Stylaster californica* were relatively abundant for this site and their density notably increased to 0.13/m², the highest recorded density for this species since we began monitoring it in 1983. *Lophogorgia chilensis* density remained low at 0.026/m², and many appeared unhealthy.

Strongylocentrotus spp. continued to have relatively low densities. *Strongylocentrotus franciscanus* and *S. purpuratus* densities increased slightly from last year but remain low at 1.3/m² and 2.1/m², respectively. Most of the *S. franciscanus* were notably large, and both small and large *S. purpuratus* were present. No *Centrostephanus coronatus* or *Lytechinus anamesus* were observed during sampling. No sea urchin wasting disease was observed. Similar to last year, there were several small clusters of *S. purpuratus* tests found throughout the site that appeared to be a result of predation by *Pycnopodia helianthoides*.

Pisaster giganteus were counted on both 1 m quadrats and 5 m quadrats with densities of 0.46/m² and 0.22/m², respectively. *Patiria miniata* remained relatively abundant with a density of 2.6/m². *Pycnopodia helianthoides* were common at 0.017/m². Most *P. helianthoides* were medium-sized, though a few small and large individuals were also observed. *Mediaster aequalis* and *Henricia aspersa* were both common at this site. *Parastichopus parvimensis* density was 0.21/m². No *Pachythyone rubra* were observed on RPCs. No sea star wasting disease was observed.

One *Haliotis assimilis* measuring 70 mm was observed and was located about two meters offshore of the transect at meter 17 along the transect line. *Cypraea spadicea* density was 0.54/m². Neither *Lithopoma undosa* nor *L. gibberosa* were observed during 1 m quadrats, however, there were a few *L. undosa* observed during size frequencies. *Tegula regina* were not observed at this site, which is a very dissimilar observation to last year when *T. regina* were the most abundant large snail present at this site. *Megathura crenulata* were not observed for the third consecutive year, and this is the seventh year of a steady decline in *M. crenulata* abundance. *Aplysia californica* were not observed this year. *Kelletia kelletii* density was 0.01/m² and most individuals were large. *Crassedoma giganteum* density also remained low at 0.01/m².

Fish at this site were moderately diverse and abundant. *Coryphopterus nicholsii* density was 0.54/m², similar to past years, and up to 27 were observed during the fish count. *Oxylebius pictus* were abundant with up to 50 observed and a density of 0.38/m². *Chromis punctipinnis* were the most abundant fish with up to 176 adults and no juveniles observed. *Oxyjulis californica* were moderately abundant with up to 116 adults observed. Up to 18 female, 10 juvenile and 10 male *Semicossyphus pulcher* were observed, similar to recent years. No *Halichoeres semicinctus* were observed. Three adult *Hypsypops rubicundus* were recorded during the fish count. Up to seven adult *Paralabrax clathratus* were observed, but no juveniles. *Embiotoca jacksoni* were common with up to nine adults and four juveniles observed. Up to four adult and five juvenile *Embiotoca lateralis* were observed. There were up to two adult and three juvenile *Rhacochilus vacca* observed. Three adult *Girella nigricans* were observed. *Sebastes mystinus* were present with up to five adults and 46 juveniles observed. *Sebastes atrovirens* were moderately abundant with up to 14 adults and three juveniles observed. Up to four adult and 11 juvenile *Sebastes serranoides* were observed. One adult and one juvenile *Sebastes serriceps* were observed. One *Sebastes carnatus*, gopher rockfish, and up to four *Sebastes chrysomelas*, black and yellow rockfish, were observed. Juvenile rockfish were common at the site this year. There were up to 18 KGB observed. One *Sebastes rosaceous*, rosy rockfish, was observed during the fish count, an unusual observation for this deeper water species. A juvenile *Sebastes pinniger*, canary rockfish, was present at the site, but not observed during the fish count. The large adult *Sebastes caurinus*, copper rockfish, which had been observed the past two years, was not observed. *Brachyistius frenatus*, kelp surfperch, were common in the kelp canopy with up to 15 observed. A small school of 15 *Atherinops affinis*, topsmelt, was present. Several *Ophiodon elongatus*, lingcod, were noted throughout the day while sampling, but only one adult was observed during the fish count. One *Myliobatis californica*, bat ray, and one *Cephaloscyllium ventriosum*,

swell shark, were observed.. Roving diver fish counts were conducted on July 23rd with five divers observing 29 species.

All 14 ARMs were monitored for all indicator species. Unfortunately the animals in ARM# 2391 were lost during replacement after performing size frequency measurements topside. The diver in charge of replacing these animals dropped the mesh bag containing them and the bag was never found. On the north end of the transect, two of the cages had their bottom layer of bricks covered by sand and one ARM cage was observed with the bottom brick layered by tube worms, presumably *Chaetopterous* spp. There were no *Haliotis* spp. observed for the third consecutive year. Thirteen of the 14 ARMs housed juvenile *Cypraea spadicea*. The density of *C. spadicea* remained high and was 12.2/ARM, similar to recent years. One *Kelletia kelletii* was for a density of 0.07/ARM. No *Lithopoma undosa* or *Lithopoma gibberosa* were observed. *Megathura crenulata* density was 0.5/ARM and all were less than 40 mm. *Crassedoma giganteum* density was 1.9/ARM with an average size of 36 mm. *Tegula regina* density was low at 0.14/ARM. *Patiria miniata* density was similar to last year at 6.2/ARM. The mean *P. miniata* size was relatively small at 20 mm, indicative of recent recruitment. *Pisaster giganteus* density was higher than last year at 3.4/ARM and mean size was relatively small at 40 mm. *Pycnopodia helianthoides* density was the same as the last two years at 0.21/ARM with a mean size of 170 mm. *Strongylocentrotus franciscanus* density was 52/ARM, higher than recent years, but with a similar mean size of 28 mm. This density is the second highest recorded since ARM sampling began at this site and is almost double the number observed last year. *Strongylocentrotus purpuratus* also increased in density to 12.6/ARM, but had a similar mean size of 19 mm. No *Centrostephanus coronatus* were observed. *Parastichopus parvimensis* density less than ten centimeters was low compared to recent years at 0.14/ARM and remained low for individuals greater than ten centimeters at 0.21/ARM. . One *Octopus* spp. was observed. There was an abundance of *Hymenamphiastra cyanocrypta* covering several of the ARM bricks.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Fry's Harbor, Santa Cruz Island
Site #7 SCFH
2007 sampling dates: 7/27, 8/16, 9/11.
2007 status: Developing kelp forest.

This site continues to change and more macroalgae was present than in about the past 20 years. Several canopy forming *Macrocystis pyrifera* adults were observed, but most were subadults, and juveniles were rare. Their densities were 0.005/m², 0.045/m² and 0.0/m² respectively, and had a cover of 1.7%, all some of the highest ever recorded at this site. *Macrocystis pyrifera* stipe density was 0.58/m². There were 52 *M. pyrifera* plants found within the transect area for size frequencies, in 2006 there were only three plants. *Eisenia arborea* was the most abundant large macroalgae at the site. *Eisenia arborea* adults and juveniles were very abundant with densities of 0.96/m² and 1.1/m², respectively and the highest recorded at this site since we began monitoring them in 1996. *Eisenia arborea* cover continued to increase for the fourth consecutive year and was 21%, the highest cover recorded at this site. No *Pterygophora californica* was observed at the site. Several small *Laminaria farlowii* were observed, but none on 1 m quadrats or RPCs. Several small *Cystoseira* spp. were observed but none on RPCs. *Gigartina* spp. cover was 2.0%, and consisted of *G. corymbifera*. Miscellaneous red algae remained moderately abundant with a cover of 26%. Miscellaneous green algae cover was 1.7% and consisted mostly of *Codium* spp. and filamentous green algae. Miscellaneous brown algae cover was 0.2%. Miscellaneous plants, consisting of filamentous diatoms, were recorded at 3.0%. Encrusting coralline algae cover remained similar to previous years at 34%. Articulated coralline algae were rare for a cover of 0.3%. Bare substrate cover was 9.0%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* were abundant with a cover of 27%, an increase from last year. The most common miscellaneous invertebrates in this category were *Clavularia* spp. and hydroids. Tubeworms such as *Spirobranchus spinosus* and *Spirorbis* spp. were also moderately abundant. *Diopatra ornata* cover was 0.17%, similar to past years. *Balanophyllia elegans* were not observed on RPCs. *Astrangia lajollaensis* cover remained low at 5.5%. *Corynactis californica* cover was 0.83%, similar to past years. Bryozoans were noticeably abundant, similar to last year. Miscellaneous bryozoans continued to increase to 22% cover, the highest recorded at this site since the monitoring of this category began in 1985. The most notable bryozoans were *Bugula californica* and *Membranipora* spp. *Diaperoecia californica* were abundant on the sides of large boulders and cover was 1.5%. *Lophogorgia chilensis* were abundant on the offshore side of the transect and had a density of 0.24/m², similar to recent years. *Tethya aurantia* density was relatively high at 0.05/m², with many small individuals present. Miscellaneous sponges cover was 0.33%, similar to past years. Tunicate cover increased to 2.2%, the highest ever recorded at this site.

Strongylocentrotus purpuratus and *S. franciscanus* densities remained low for the fourth consecutive year at 0.21/m² and 0.13/m², respectively. With a moderate amount of effort, only 59 *S. franciscanus* and 19 *S. purpuratus* were located for size frequency measurements, indicating low abundances over the entire transect. *Lytechinus anamesus* continued to be rare. One *Lytechinus anamesus* was recorded on band transects for a density of 0.0014/m², and only one was found for size frequencies.

Centrostephanus coronatus density remained low with none observed during sampling for the fourth consecutive year. No sea urchin wasting disease was observed.

Pisaster giganteus density on 1 m quadrats and 5 m quadrats were 0.25/m² and 0.27/m², respectively, similar to last year. *Patiria miniata* density remained high for this site and increased to 2.3/m², the highest recorded since monitoring began here. *Parastichopus parvimensis* density remained relatively low at 0.08/m². *Pycnopodia helianthoides* continued to be relatively abundant for this site at a density of 0.031/m². *Ophiothrix spiculata* were rare along the transect with a cover of 0.17%, similar to last year. *Pachythyone rubra* continued to be rare with none recorded on RPCs. Only one small patch and one larger patch estimated at 3 x 3 m were observed this year. The larger patch was inshore of the site on the north end of the transect. No sea star wasting disease was observed during the June sampling event, but one diseased *Pisaster giganteus* was observed during on September 11th.

Cypraea spadicea were common with a density of 0.38/m². *Megastraea undosa* continued to be rare with a density of 0.13/m², similar to recent years. Only seven were found for size frequencies with a moderate search effort and most were medium-sized individuals. *Lithopoma gibberosa* were rare at 0.08/m², with only several small ones observed at the site. No *Aplysia californica* were observed on band transects. *Megathura crenulata* density remained similar to recent years and was 0.078/m². *Crassedoma giganteum* density remained similar to past years at 0.035/m². *Kelletia kelletii* were rare and recorded at 0.0042/m². No *Panulirus interruptus* were observed along the transect, similar to past years.

We were able to conduct roving diver fish counts at this site twice this year. The counts are reported with the highest number recorded. If there was a large discrepancy between counts we stated it accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Similar to past years, fish diversity and abundance were high at this site. *Coryphopterus nicholsii* were relatively abundant at 3.8/m². Up to 568 *C. nicholsii* were observed and we observed notably more during the September 11th fish count. *Alloclinus holderi* density was 0.29/m², and up to 17 were observed. *Lythrypnus dalli* were abundant with a density of 0.5/m² and up to 235 counted. Very small juvenile *L. dalli* were common. *Oxylebius pictus* were common with a density of 0.08/m² and up to 30 observed. *Chromis punctipinnis* were the most abundant fish at this site with up to 583 adults and 42 juveniles observed. Up to 51 adult and 88 juvenile *Oxyjulis californica* were observed. Six female, three male and six juvenile *Halichoeres semicinctus* were observed. Up to five female, two male and four juvenile *Semicossyphus pulcher* were observed. *Hypsypops rubicundus* were common with up to six adults observed. *Paralabrax clathratus* were common with up to 17 adult and eight juveniles observed. Up to 31 adult and 17 juvenile *Embiotoca jacksoni* were observed. *Rhacochilus vacca* were abundant with up to 10 adults and 31 juveniles observed. No *Embiotoca lateralis* were observed at this site. Up to seven *Girella nigricans* were observed. Similar to last year, *Sebastes* spp. were abundant at this site. *Sebastes mystinus* young of the year were common with up to nine

juveniles observed and no adults. Two adult and five juvenile *Sebastes serranoides* were observed. *Sebastes atrovirens* juveniles were very abundant with up to 306 observed and up to three adults observed. This is a notable recruitment event for this species. *Sebastes serriceps* were abundant with up to 13 adults and eight juveniles observed. *Sebastes carnatus*, gopher rockfish, were common with up to seven adults and one juvenile observed. Six adult *Sebastes caurinus*, copper rockfish, were observed. Seven adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. Up to five *Medialuna californiensis*, halfmoon, were observed. Twelve adult *Rhacochilus toxotes*, rubberlip surfperch, were observed. One *Caulolatilus princeps*, ocean whitefish, was observed. One *Scorpaenichthys marmoratus*, cabezon, was observed. Up to five *Lythrypnus zebra*, zebra goby, were observed. *Orthonopias triacis*, snubnose sculpin, were observed. Two *Gymnothorax mordax*, California moray eel, were observed. One *Ophiodon elongatus*, lingcod, was observed. One *Myliobatis californica*, bat ray, was observed. Roving diver fish counts were performed on July 27th by five divers observing 32 species and on September 11th with six divers observing 25 species.

All five ARMs were intact and monitored for all indicator species, though #2434 rolled down the slope to a depth of 54 ft. This one was moved back into shallower water and two cages (ARM #2433 and #2434) were replaced. No *Haliotis* spp. were found in the ARMs. *Cypraea spadicea* were abundant at 11.2/ARM, two of which had juvenile morphology. *Megathura crenulata* were common with a density of 1.2/ARM. *Crassedoma giganteum* density was higher than recent years at 4.4/ARM. *Patiria miniata* density was similar to recent years at 8.6/ARM and mean size 43 mm. *Pisaster giganteus* density was 1.0/ARM. One *Megastraea undosa* density was 0.2/ARM. *Strongylocentrotus franciscanus* density was 14.0/ARM, similar to last year. *Strongylocentrotus purpuratus* density increased from last year to 5.0/ARM. *Parastichopus parvimensis* density less than ten centimeters was 1.2/ARM and density greater than ten centimeters was also 1.2/ARM, similar to recent years.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Pelican Bay, Santa Cruz Island

Site #8 SCPB

2007 sampling dates: 6/18, 6/19, 8/16, 9/5.

2007 status: Dominated by Strongylocentrotus purpuratus.

This site continues to be dominated by *Strongylocentrotus purpuratus* though densities have declined in recent years. The site is mostly devoid of macroalgae, however a kelp forest is developing at the southern end of the bay. There were more algae present than in recent years. Two adult Macrocystis pyrifera were within the transect for size frequency measurements, though none were observed on 1 m quadrats, 5 m quadrats or RPCs. These plants were located at the southern end of the transect and were part of the developing kelp forest there. This is the first time since 1995 we have observed plants along the transect. *Pterygophora californica, Cystoseira* spp., *Desmarestia* spp. and *Gigartina* spp. were not observed during sampling. Several small *Eisenia arborea* juveniles were observed, as well as one juvenile and one large adult *Laminaria farlowii*, but none were observed during sampling. The most abundant algae at the site were *Dictyota/Pachydictyon* spp. on the tops of rocks. Some adult *Sargassum muticum* was present as usual at this site. Miscellaneous brown algae cover increased to 1.2%. Miscellaneous red algae cover also increased to 4.8%. Miscellaneous plants, consisting of filamentous brown diatoms, cover was 21%. Articulated coralline algae were rare with a cover of 0.17%, similar to recent years. Articulated coralline algae were rare at 0.17%. Encrusting coralline algae cover was 44%. Bare substrate cover was 40%, similar to past years.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 5.5%, with hydroids being the most commonly observed species in this category. *Diaperoecia californica* were relatively rare directly along the transect with a cover of 0.33%. Other bryozoans were common and cover increased to 4.8%. *Tethya aurantia* continued to be relatively common for this site with a density of 0.02/m². *Balanophyllia elegans* were rare with a 0.17% cover. *Astrangia lajollaensis* were common with a cover of 7.7%, similar to past years. *Corynactis californica* cover was 0.67%. *Muricea californica* were rare with a density of 0.0014/m². *Lophogorgia chilensis* remained abundant with a density of 0.14/m².

Strongylocentrotus purpuratus density continued to decrease for the sixth consecutive year and was 9.2/m², the lowest recorded since 1993. *Strongylocentrotus franciscanus* density increased slightly from its record low last year to 2.0/m². Juvenile *S. franciscanus* and *S. purpuratus* were rare. *Lytechinus anamesus* were counted on both 1 m quadrats and band transects with densities of 2.7/m² and 1.3/m², respectively, similar to recent years. Most of the *L. anamesus* were large in size. *Centrostephanus coronatus* density was 0.04/m². One *S. purpuratus* was observed with wasting disease during the June sampling event.

Patiria miniata density remained similar to recent years at 0.29/m². *Pisaster giganteus* were counted on both 1 m quadrats and 5 m quadrats with densities of 0.0/m² and 0.05/m², respectively. No *Pycnopodia helianthoides* were during sampling. No *Ophiothrix spiculata* were observed. *Parastichopus parvimensis* density was relatively high at 0.5/m². There were noticeably more *Pachythyone rubra* this year, with a cover of 2.7%, the highest recorded since monitoring began at

this site in 1982. One *Patiria miniata* with wasting disease was observed during the August sampling event.

Crassedoma giganteum density was 0.061/m², similar to recent years. *Aplysia californica* density was 0.014/m². *Lithopoma undosa* density continued to be very low for this site with none recorded on 1 m quadrats and only twelve found at the entire site for size frequency measurements. *Kelletia kelletii* density was 0.0042/m², similar to past years.

We were able to conduct roving diver fish counts two times at this site. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

For a site dominated by *Strongylocentrotus purpuratus*, fish continue to be moderately abundant and diverse. *Coryphopterus nicholsii* were the most abundant fish at this site, although their density decreased to 2.5/m² and up to 570 observed. *Lythrypnus dalli* density was 0.5/m² and up to 132 were observed.. This is the first time this species was observed on 1 m quadrats since 2001. One very small juvenile *L. dalli* was observed on August 16th, indicating some recent recruitment. *Alloclinus holderi* density continued to be low at 0.0/m² with up to four observed. *Oxylebius pictus* were rare with four observed. Up to 60 adult and seven juvenile *Chromis punctipinnis* were observed. *Oxyjulis californica* were uncommon with 13 adults observed. Three female, one juvenile and no male *Semicossyphus pulcher* were observed. Up to six female, six juvenile and four male *Halichoeres semicinctus* were observed. *Paralabrax clathratus* were moderately abundant with up to 17 adults and three juveniles, but less abundant than usual for this site. Up to 14 adult *Hypsypops rubicundus* were observed. *Embiotoca jacksoni* counts were similar to past years with up to 19 adults and four juveniles observed. Similar to past years, no *Embiotoca lateralis* were observed. *Rhacochilus vacca* were abundant with up to 31 adults observed. This site had very few *Sebastes* spp. present. Four adult *Sebastes atrovirens* were observed. Up to two adult and two juvenile *S. serriceps* were observed. Eighteen adult *Rhacochilus toxotes*, rubberlip surfperch, were observed. Three *Medialuna californiensis*, halfmoon, were observed. Two adult *Caulolatilus princeps*, ocean whitefish, were observed. One *Balistes polylepis*, finescale triggerfish, was observed, this being the first sighting of this rare fish since 2001. Three *Lythrypnus zebra*, zebra goby, were observed. Two *Myliobatis californica*, bat ray, were observed. Fringeheads are commonly observed at this site. Ten *Neoclinus stephensae*, yellowfin fringehead, and one *N. uninotatus*, onespot fringehead, were observed. These are very cryptic fish and often missed by fish counters. A school of approximately 3,000 *Sardinops sagax*, pacific sardine, was observed. Roving diver fish counts were conducted on June 18th with four divers observing 24 species and on August 16th with five divers observing 21 species.

All six ARMs were intact and sampled for all indicator species. One ARM (#2316) was found on its side and two ARMs cages (#2315 and #2318) were replaced. One *Octopus* spp. was found with eggs in the ARMs. No *Haliotis* spp. have been found in the ARMs at this site since 1999. *Cypraea spadicea* density decreased this year to 3.5/ARM, relatively low for this site. *Megastraea undosa* density was 0.67/ARM. *Megathura crenulata* were relatively common in the ARMs at 1.2/ARM, an

increase from past years. *Crassedoma giganteum* density was 3.2/ARM. *Patiria miniata* were relatively abundant in the ARMs at 13.5/ARM, the highest density since we began monitoring ARMs here in 1994. *Pisaster giganteus* were not present in the ARMs. No *Lytechinus anamesus* were observed. *Strongylocentrotus franciscanus* density nearly doubled since last year to 17.8/ARM and mean size remained similar at 33.9 mm. *Strongylocentrotus purpuratus* density also increased from last year's record low to 14.7/ARM with a mean size of 30.9 mm. No *Centrostephanus coronatus* have been observed in ARMs at this site since 2000. The density of *Parastichopus parvimensis* individuals less than 10 centimeters was 1.5/ARM and individuals greater than ten centimeters was 2.3/ARM.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Scorpion Anchorage, Santa Cruz Island
Site #9 SCSA
2007 sampling dates: 9/5, 9/13.
2007 status: Dominated by Strongylocentrotus purpuratus.

This site continued to be dominated by *Strongylocentrotus purpuratus*, but there was a noticeable increase in macroalgae, especially *Macrocystis pyrifera*, at the west end of the transect. *Macrocystis pyrifera* was abundant on top of a large rock at meter 65 along the transect and at the western most end. The *M. pyrifera* consisted mostly of subadult *M. pyrifera*, with scattered adults, and a kelp canopy beginning to form. Although there was a notable increase at these locations, the rest of the site remained mostly devoid of macroalgae. One fresh fishing lure and one pole spear were found at this site, a designated no-take Marine Reserve and these devices indicate potential illegal fishing activity. Adult *M. pyrifera* density was 0.02/m², the first record of adult plants since 1995. Subadult *M. pyrifera* density was recorded at 0.22/m², the highest recorded for this category since at least 1985 and no juveniles were observed though they were present off the western end of the transect. *Macrocystis pyrifera* cover was 3.5%, the highest cover recorded since 1994. *Macrocystis pyrifera* stipe density was 0.5/m². No *Eisenia arborea* or *Pterygophora californica* were observed, similar to recent years. One *Laminaria farlowii* juvenile was recorded for a density of 0.042/m². *Cystoseira* spp. was present for a cover of 0.3%, the first observation of this species since 1984. Miscellaneous brown algae increased to 6.8%, the highest recorded since 1985. The brown algae *Colpomenia sp.* was common. Green algae decreased to a cover of 1.8%, but still similar to past years. Miscellaneous red algae cover was 4.3%. Miscellaneous plants consisting of filamentous brown diatoms had a cover of 13%. These diatoms were in several large patches mostly in low lying, soft bottom areas. Articulated coralline algae were rare with a cover of 0.17%. Encrusting coralline algae cover was 54%, similar to recent years. Bare substrate cover was 27%.

Similar to past years, the most common miscellaneous invertebrate on RPCs was *Spirobranchus spinosus*, Christmas tree worm. Miscellaneous invertebrates *Ophiothrix spiculata* had a cover of 9.7%. *Diopatra ornata* cover was recorded at 0.17%, similar to past years. Miscellaneous bryozoans cover was 1.5%. *Corynactis californica* cover was 0.33%. *Balanophyllia elegans* and *Astrangia lajollaensis* covers were 0.50% and 0.33% respectively, similar to past years. *Lophogorgia chilensis* continue to be rare with several observed and a density of 0.0014/m^2. Sponges were rare and none were observed on RPCs. *Tethya aurantia* density was 0.031/m², similar to past years. Tunicates cover was 0.17%.

Overall, *Strongylocentrotus* spp. appeared bigger this year, especially at the west end of the transect. *Strongylocentrotus franciscanus* density was 4.0/m², similar to the past several years. No small *S. franciscanus* were observed. *Strongylocentrotus purpuratus* continued to dominate this site with a density of 38.5/m², similar to recent years. Several juvenile *S. purpuratus* were found near the west end. No *Centrostephanus coronatus* were observed on 1 m quadrats, but they were present at the site, similar to recent years. *Lytechinus anamesus* were rare with only one observed along the transect. One *S. purpuratus* was observed with sea urchin wasting disease on September 13th.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.04/m² and 0.06/m² respectively, similar to recent years. *Patiria miniata* density remained similar to past years at 0.25/m². No *Pycnopodia helianthoides* were observed at the site. *Parastichopus parvimensis* density was 0.33/m², similar to recent years. Three *Patiria miniata* were observed with sea star wasting disease on September 13th.

Aplysia californica density was 0.015/m², similar to past years. *Megastraea undosa* density remained low for the fifth consecutive year at 0.50/m², with all sizes present. *Megathura crenulata* density was 0.12/m², similar to past years. *Cypraea spadicea* density was 0.54/m², similar to past years. *Crassedoma giganteum* density was relatively low at 0.015/m². *Panulirus interruptus* density was 0.007/m², a decrease from last year, but still relatively high compared to past years. No *Kelletia kelletii* were observed on band transects and were rare at the site. *Tegula regina* were rare with only five found for size frequencies and none observed on 1 m quadrats.

We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Similar to recent years, fish were moderately diverse but present in low abundance. *Coryphopterus nicholsii* were the most common fish observed at this site with up to 397 observed . *Coryphopterus nicholsii* remained relatively abundant along the main transect with an increase in density to 2.7/m². *Alloclinus holderi* density was 0.25/m² and up to nine were observed during the fish count, similar to recent years. Four *Lythrypnus dalli* were observed, but none were recorded during 1 m quadrats. *Oxylebius pictus* were moderately abundant with up to 15 observed and none observed on 1 m quadrats. *Chromis punctipinnis* were abundant with up to 205 adults and seven juveniles observed. *Oxyjulis californica* were also abundant with up to 204 adults and 176 juveniles observed, an increase from last year. Up to three female *Semicossyphus pulcher* were observed but no juveniles or males were recorded. Eight female, no juvenile and three male *Halichoeres semicinctus* were observed. Up to seven adult and one juvenile *Hypsypops rubicundus* were observed. *Paralabrax clathratus* were abundant with up to 38 adults and no juveniles observed. Up to 73 adult *Girella nigricans* were observed. *Embiotoca jacksoni* were common with up to 27 adults and seven juveniles observed. Two *Rhacochilus vacca* adults and four juveniles were observed. Up to four adult and 37 juvenile *Sebastes atrovirens* were observed. This is the highest number of juvenile *S. atrovirens* recorded at this site. They were all located at the west end in the *Macrocystis pyrifera* plants. Two adult *Sebastes serranoides* and three adult *Sebastes serriceps* were observed. Up to four *Sebastes chrysomelas*, black and yellow rockfish, were observed. Four juvenile *Sebastes paucispinis*, bocaccio, were observed. Three KGB were observed. One *Myliobatis californica*, bat ray, was observed. One *Rhacochilus toxotes*, rubberlip surfperch, was observed. Up to 10 of *Brachyistius frenatus*, kelp surfperch, were observed. One adult *Medialuna californiensis*, halfmoon, was observed. Two *Lythrypnus zebra*, zebra goby, were observed. One juvenile and one adult *Heterostichus rostratus*, giant kelpfish, were observed. One *Artedius corallinus*, coralline sculpin,

was observed. One *Leiocottus hirundo*, lavender sculpin, was observed. One adult *Heterodontus francisci*, horn shark, was observed. One *Paralabrax nebulifer,* barred sandbass, was recorded; the second time that this species has been recorded at this site since we began roving diver fish counts. Roving diver fish counts were conducted on September 5th and October 4th by four divers observing 25 species and six divers observing 25 species, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was employed on September 18th.

All seven ARMs were monitored for all indicator species. Three of the ARMs had two layers of bricks buried in sediment and several other ARMs had ½ to 1½ layers buried, similar to past years. No *Octopus* spp. were observed in the ARMs this year. One 61 mm *Haliotis corrugata* was observed for a density of 0.14/ARM, the first observation of this species in the ARMs since 1994. No other *Haliotis* spp. were observed. *Cypraea spadicea* density remained high at 20.9/ARM. About 15% of the *C. spadicea* observed had juvenile morphology. No *Megastraea undosa* or *Megathura crenulata* were present in the ARMs. *Crassedoma giganteum* density was 3.7/ARM. One *Patiria miniata* was present at 0.14/ARM, similar to last year. *Pisaster giganteus* density was 0.71/ARM. *Strongylocentrotus franciscanus* density was 14.4/ARM, relatively high for this site, with an average size of 49 mm. *Strongylocentrotus purpuratus* density was higher than the last several years at 79.0/ARM, the highest density recorded since 1994. Mean size for *S. purpuratus* was larger than recent years averaging 41 mm. *Parastichopus parvimensis* less than ten centimeters were abundant with 4.9/ARM and those greater than ten centimeters were 4.0/ARM, both increases from recent years and indicative of recent recruitment.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Yellow Banks, Santa Cruz Island
Site #10 SCYB
2007 sampling dates: 6/2, 6/22, 8/15.
2007 status: Mature kelp forest.

This site changed little from last year, although there were more *Macrocystis pyrifera*. Overall, the kelp appeared healthy and the site was a mature forest with large, widely spaced *M. pyrifera*. Sea urchin density continued to decline, with fewer patches of *Strongylocentrotus franciscanus* and *Strongylocentrotus purpuratus* observed at the site. Adult and subadult *Macrocystis pyrifera* densities increased to 0.26/m² and 0.38/m², respectively, while juvenile density declined to 0.29/m². Cover was 9.8% and stipe density was 3.8/ m². No *Eisenia arborea*, *Pterygophora californica* or *Laminaria farlowii* were observed on 1 m quadrats or RPCs. However, two *P. californica* were present off the transect. A few small *Cystoseira* spp. were present and had a cover of 0.83% . Red algae cover was 7.5%, lower than last year, but still relatively high for this site. Green algae were not observed on RPCs. Miscellaneous brown algae were present at 0.17%. Miscellaneous plants, consisting of filamentous diatoms, decreased to 1.8Encrusting coralline algae cover was 42%, similar to past years. Articulated coralline algae cover decreased from last year to 3.0%, but was similar to previous years. %. Bare substrate cover increased from a record low to 24%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* decreased to 6.2%. Similar to last year, the most dominant miscellaneous invertebrates were hydroids. Miscellaneous bryozoans remained relatively abundant and increased to 16%. *Diaperoecia californica* cover was 0.83%. Sponges cover was 0.5%. *Tethya aurantia* were moderately abundant with a density of 0.09/m². *Lophogorgia chilensis* were abundant on the offshore side of the transect with a density of 0.069/m², similar to past years. Very small *L. chilensis* were common. *Muricea fruticosa* density was 0.006/m², similar to last year, but relatively low for this site. *Muricea californica* were common at 0.019/m². Tunicate cover was 3.2%, the highest recorded at this site. *Corynactis californica* cover was 0.17%. *Balanophyllia elegans* and *Astrangia lajollaensis* cover were 0.0% and 0.67%, respectively. One *Urticina lofotensis* was observed at 0.0014/m².

Strongylocentrotus spp. densities remained low and there were only a few noticeable patches of sea urchins that were mainly in crevices. *Strongylocentrotus franciscanus* were relatively uncommon with a density was 0.21/m², similar to recent years. We could only find 57 *S. franciscanus* for size frequency measurements this year with a moderate amount of search effort. *Strongylocentrotus purpuratus* density declined to 2.1/m², but was similar to recent years. *Lytechinus anamesus* were relatively rare and mostly small, heavily covered with debris and difficult to see. Their density was 0.12/m². No *Centrostephanus coronatus* were observed on 1 m quadrats for the fifth consecutive year. Sea urchin wasting disease was not observed.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.08/m² and 0.02/m², respectively, similar to past years. None were measured for size frequencies this year, but most appeared small. *Patiria miniata* density was the highest recorded at this site since monitoring began in 1986 at 2.2/m², and has been gradually increasing since 1999. *Pycnopodia helianthoides*

were less abundant than last year, but still common at 0.0083/m². A total of 24 *P. helianthoides* were found for size frequencies and almost all were greater than 200 mm. Several *Dermasterias leviuscula* were observed. *Ophiothrix spiculata* were not observed on RPCs. *Parastichopus parvimensis* and *Parastichopus californica* juveniles (less than six cm) were common, see section on ARMs below. No *Parastichopus parvimensis* were observed on 1 m quadrats.

No *Haliotis* spp. were found along the transect this year. *Megastraea undosa* density remained low at 0.04/m², consisted mainly of larger individuals. One *Lithopoma gibberosa* was observed on size frequencies, but none were observed on 1 m quadrats. Three *Tegula regina* were found during size frequencies and a density of 0.04/m² was recorded. *Cypraea spadicea* density was 0.08/m². *Kelletia kelletii* density was 0.05/m². *Megathura crenulata* remained relatively rare at a density of 0.004/m². *Crassedoma giganteum* density was 0.003/m², similar to recent years. No *Aplysia californica* were observed.

We were able to conduct roving diver fish counts at this site twice this season. The counts are reported with the highest number recorded from the two visits. If there is a large discrepancy in the range, it is stated as such. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Fish were slightly more abundant and diverse than last year. *Coryphopterus nicholsii* were common with up to 165 observed and a density of 0.88/m². *Alloclinus holderi* were rare with only two observed at the site, but none during sampling. *Oxylebius pictus* adults and juveniles were relatively abundant with up to 17 observed and a density of 0.17/m². Twelve adult *Chromis punctipinnis* were observed. *Oxyjulis californica* were abundant during the June fish count with up to 240 adults and 3000 juveniles observed. There were at least five female, three juvenile and no male *Semicossyphus pulcher* observed. Up to two female, no juvenile and one male *Halichoeres semicinctus* were observed. *Paralabrax clathratus* were less common than last year with up to 10 adults observed. Five *Girella nigricans* were observed. Up to three adult and two juvenile *Embiotoca jacksoni* were observed. One *Hypsurus caryi*, rainbow surfperch, was observed. There were four adult and two juvenile *Rhacochilus vacca* observed. *Sebastes* spp. recruitment was higher than usual at this site. Up to two juvenile *Sebastes mystinus* were observed. Up to four adult and 37 juvenile *Sebastes atrovirens* were observed. One *Sebastes serranoides* juvenile was observed. Two adult and one juvenile *Sebastes serriceps* were observed. Up to four young of the year *Sebastes miniatus*, vermillion rockfish, were observed. Four adult and three juvenile *Sebastes caurinus*, copper rockfish, were observed. One adult *Sebastes chrysomelas*, black and yellow rockfish, was observed. One adult *Sebastes carnatus*, gopher rockfish, was observed. Two small adult and five juvenile *Sebastes paucispinis*, bocaccio, were observed. Up to 23 kelp/gopher/black and yellow/copper rockfish young of the year complex (KGB) were observed. Up to 113 *Brachyistius frenatus*, kelp surfperch, were located in the kelp canopy. A school of up to 60 *Trachurus symmetricus*, jack mackerel, was observed. A school of up to 100 *Atherinops affinis*, topsmelt, was also observed. Fish counts were conducted on June 21st by three divers and August 15th by four divers observing 27 and 22 species, respectively.

Over the last several years this site has become a mature kelp forest and a decline in *Strongylocentrotus* spp. densities has been observed as well as a shift in their habitat preference from being out in the open to the use of crevice habitat. The ARMs function as excellent crevice habitat and as expected, we are observing much higher densities of sea urchins inside the ARMs. Due to the high number of *Strongylocentrotus* spp. in the ARMs and the bottom time required to sample at this relatively deeper site, we did not sample all ARMs for *Strongylocentrotus* spp. this year. A total of seven ARMs were monitored for all indicator species and the remaining eight ARMs were sampled for all indicator species excluding *Strongylocentrotus* spp. The presence of *Octopus* spp. was similar to last year with a total of four observed. Note that due to an observer error, all indicator species, excluding *Strongylocentrotus* spp., were not returned to ARM# 2364 after sampling was completed aboard the vessel. The collection bag was lost during replacement.

One *Haliotis corrugata* was observed in the ARMs at 29 mm. No other *Haliotis* spp. were observed. No *Tegula regina* were observed. *Cypraea spadicea* density was 8.7/ARM, similar to recent years. Two of the *C. spadicea* had egg clutches and three had juvenile morphology. Two *Kelletia kelletii* were observed in the ARMs for a density of 0.13/ARM. No *Megastraea undosa* were observed in the ARMs. *Megathura crenulata* density was to 0.67/ARM, the highest observed since we began monitoring the ARMs in 1995. *Crassedoma giganteum* density was 2.5/ARM. *Patiria miniata* density was 7.5/ARM with a mean size of 26 mm, similar to recent years. *Pisaster giganteus* decreased in abundance to 2.8/ARM with a mean size of 19 mm. Two *Pycnopodia helianthoides* were found in the ARMs for a density of 0.13/ARM. S*trongylocentrotus* spp. densities were monitored in seven of the 15 ARMs. *Strongylocentrotus franciscanus* density remained high and increased to 149/ARM, the highest density recorded since we began monitoring the ARMs in 1992. Their mean size was 26 mm, similar to last year. *Strongylocentrotus purpuratus* density remained high as well at 217/ARM, the highest recorded since 1999. Their mean size decreased slightly to 29 mm. Three *Lytechinus anamesus* were observed in the ARMs with a density of 0.2/ARM. One small (8 mm) *Centrostephanus coronatus* was observed at a density of 0.07/ARM, indicating some recruitment. *Parastichopus parvimensis* less than ten centimeters and greater than ten centimeters were observed at 1.2/ARM and 1.1/ARM, respectively, this was an increase in juveniles. Small *Parastichopus californicus* were present with three less than ten centimeters observed in the ARMs this year. *Parastichopus californicus* is not one of our indicator species, but the current staff has been keeping notes on their abundance over the past few years.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Admiral's Reef, Anacapa Island

Site #11 ANAR

2007 sampling dates: 7/13, 8/8.

2007 status: Dominated by Ophiothrix spiculata and in some areas Strongylocentrotus purpuratus and S. franciscanus.

Overall, this site changed little from last year. Most of the transect was devoid of macroalgae, however, there were some *Macrocystis pyrifera* and *Eisenia arborea* present at the westernmost 35 meters of the transect. Overall, *M. pyrifera* was rare over much of the transect except for the western portion. Adult, subadult, and juvenile densities were 0.0/m², 0.0/m² and 0.005/m², respectively and none were observed on RPCs. A total of 52 adult or subadult *M. pyrifera* plants were found within the transect area for size frequency measurements and this was all of the plants within that area (100 x 20 m). *Eisenia arborea* were present on the tops of rocks, but neither juveniles nor adults were observed during sampling. No *Pterygophora californica*, *Laminaria farlowii* or *Cystoseira* spp. were observed at the site, similar to recent years. Miscellaneous red algae cover decreased to 13% and mostly consisted of *Laurencia pacifica* and filamentous red algae. *Gigartina* spp. were not observed. Green algae cover was 0.5%. Encrusting coralline algae cover was 54%, relatively high for this site. Bare substrate cover was 18%, an increase from last year, but similar to recent years.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 19%, similar to recent years. Most of this category consisted of hydroids and gorgonians. *Lophogorgia chilensis* density was 0.068/m², similar to recent years. *Muricea fruticosa* and *Muricea californica* densities were also similar to recent years at 0.0030/m^2 and 0.018/m^2, respectively. *Corynactis californica* were common with a cover of 1.3%, a decrease from last year, but similar to recent years. *Astrangia lajollaensis* cover remained low at 1.0%. Similarly, *Balanophyllia elegans* remained rare with none observed within the transect area, but several were observed in the ARMs. Sponges cover was 0.5%. *Tethya aurantia* density was 0.085/m², an increase from last year and the highest density recorded since 1984. Miscellaneous bryozoans cover was 2.0%. *Diaperoecia californica* were present on the steep slopes of large rocks or reef at the west end of the transect and cover directly along the transect was 0.83%, similar to recent years. Tunicates remained relatively rare at 0.83% cover.

Sea urchin densities remained similar to last year, are still moderately high and this site would likely be dominated by them if *Ophiothrix spiculata* were not present.. *Strongylocentrotus franciscanus* density was 9.2/m² and *S. purpuratus* density was 7.5/m², similar to recent years. No *Lytechinus anamesus* were observed at the site. *Centrostephanus coronatus* density remained relatively high at 0.5/m^2. At most sites where *C. coronatus* recruitment was high during the 1997/1998 El Nino years, we have observed recent declines; however, at this site the density has remained stable over the last several years. Several *S. franciscanus* were observed with wasting disease on July 13th.

Ophiothrix spiculata density remained high were present over most of the transect area with a cover of 46%, similar to recent years. *Pisaster giganteus* were counted on 1 m quadrats and 5 m quadrats with densities of 0.0/m² and 0.02/m², respectively. They were large with a mean size of 143 mm. *Patiria miniata* remained relatively abundant for this site with a density of 2.0/m². No *Pycnopodia helianthoides* were observed. Similar to the previous six years, *Parastichopus parvimensis* density remained low at 0.54/m^2. No sea star wasting disease was observed.

No *Haliotis corrugata* or *H. rufescens* were observed at the site. No *Megastraea undosa* were observed on 1 m quadrats and only 10 were found along the transect during size frequencies with

moderate search effort, indicating they are rare. *Tegula regina* were common with a density of 0.042/m. *Crassedoma giganteum* density was 0.065/m². *Megathura crenulata* were common at a density of 0.06/m², with many juveniles observed in crevices. *Aplysia californica* density was 0.0097/m². *Kelletia kelletii* density was 0.056/m², similar to last year. No *Panulirus interruptus* were observed.

We were able to conduct roving diver fish counts twice at this site this season. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Fish were moderately abundant and diverse at this site, similar to last year. *Coryphopterus nicholsii* were abundant at 2.8/m² and up to 610 were observed on the roving diver fish count. *Alloclinus holderi* density was 0.25/m² with up to 17 observed. Up to five *Lythrypnus dalli* were observed but none were observed on 1 m quadrats. *Oxylebius pictus* were abundant with up to 50 counted and a density of 0.17/m^2. Up to 24 female, 12 juvenile and no male *Semicossyphus pulcher* were observed; this is an increase in juveniles for this site. Most of the fish counters only observed three to seven female sheephead and only one observed 24 and this observer would be considered to have intermediate experience. Adult and juvenile *Chromis punctipinnis* were the most abundant fish at this site with up to 1130 and 64 observed, respectively. These were the first juvenile/young-of-the-year *C. punctipinnis* observed this season, appearing in two different size classes (2-3 cm and 3-5 cm). A few of the adult *C. punctipinnis* individuals appeared to have signs of *Vibiro damsella* bacterial infection. This is an observation that has been previously noted on *C. punctipinnis* at this site in the past. Adult *Oxyjulis californica* were common with up to 99 observed. Five female, one juvenile and four male *Halichoeres semicinctus* were observed. Up to four adult *Paralabrax clathratus* were observed. *Girella nigricans* were common with up to 22 observed. *Hypsypops rubicundus* were present with up to 10 adults observed, similar to last year. *Embiotoca jacksoni* were common with up to 13 adults and no juvenile observed. Up to six adults and no juvenile *Rhacochilus vacca* were observed. No *Embiotoca lateralis* were observed. One adult and four juvenile *Sebastes mystinus* were observed. Up to five adult and 12 juvenile *Sebastes atrovirens* were observed. One *Sebastes serranoides* was observed. *Sebastes serriceps* were common with up to 10 adults and five juveniles observed. Up to three *Sebastes chrysomelas*, black and yellow rockfish, were observed. One *Sebastes carnatus*, gopher rockfish, was observed. Up to 11 KGB were observed. One *Scorpaena guttata*, California scorpionfish, was observed. Up to three *Rhacochilus toxotes*, rubberlip surfperch, were observed. A single adult *Phanerodon furcatus*, white surfperch, was observed. Up to three *Hyperprosopon argenteum*, walleye surfperch, were observed. *Medialuna californiensis*, halfmoon, were present in the midwater with up to six observed. One *Caulolatilus princeps*, ocean whitefish, was observed. Up to four *Lythrypnus zebra*, zebra goby, were observed. A school of up to approximately 7,000 *Engraulis mordax*, northern anchovy, was observed. Roving diver fish counts were conducted on July 13th by five divers and on August 8th by seven divers observing 28 and 24 species, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was employed on September 13th.

All six ARMs at this site were monitored for all indicator species and three cages were replaced. One 24 mm *Haliotis corrugata* was observed in the ARMs for a density of 0.17/ARM. *Cypraea spadicea* density was 0.33/ARM, similar to recent years. *Megathura crenulata* density was 2.0/ARM, the highest density recorded here since we began monitoring in 1993. Their mean size was similar to recent years at 30 mm and indicative of a recruitment event. *Crassedoma giganteum* density was 0.5/ARM, similar to recent years, but remained low compared to densities observed in the 1990's. *Tegula regina* density was 3.0/ARM. *Patiria miniata* remained abundant but density decreased from last year to 14.5/ARM. No *Pisaster giganteus* were observed in the ARMs this year. *Lytechinus anamesus* were not observed in the ARMs. *Strongylocentrotus franciscanus* density was 13/ARM, a decrease from last year. *Strongylocentrotus purpuratus* density also decreased to 13/ARM. *Parastichopus parvimensis* density greater than ten cm and less than ten cm were 0.3/ARM and 0.5/ARM, respectively, and similar to last year. The *P. parvimensis* greater than 10 cm were relatively small and we think were around two to three years old. One *Octopus* spp. was observed.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

The original zero end eyebolt was found this year on top of a large rock about 2.5 meters inshore of the existing zero end bolt that has been there for at least 20 years. In addition several of the other original thread rods (no eyebolts left on them) at meters 40, 50, and 60 were located about 2-3 meters inshore of where the current lead line is and has been for 20 years (David Kushner) Five new eyebolts were installed this year at meters 20, 30, 40, 50, and 60 to replace missing ones.

Location: Cathedral Cove, Anacapa Island
Site #12 ANCC
2007 sampling dates: 05/17, 7/17, 9/4.
2007 status: Mature kelp forest.

Overall, this site was similar to last year, but an increase in macroalgae was observed along the transect. *Macrocystis pyrifera* canopy cover was estimated at 100%, an increase from last year. *Macrocystis pyrifera* were abundant along the entire transect and adult densities increased to 0.33/m² while subadult and juvenile densities decreased to 0.07/m² and 5.3/m², respectively and cover decreased to 33%. *Macrocystis pyrifera* stipes density was high at 6.0/m². Adult *Eisenia arborea* density decreased to 0.04/m² with no juveniles observed and a cover of 1.2%. *Laminaria farlowii* was notably more abundant. Adult and juvenile *L. farlowii* densities increased to 2.1/m² and 23.0/m² respectively, and cover increased to 45%. These are the highest abundances recorded at this site for this species since monitoring began in 1982. *Cystoseira* spp. were also common with a cover of 33%. Miscellaneous brown algae cover was 7.3%, similar to recent years, and consisted mostly of *Dictyota* spp. Miscellaneous red algae cover was 23%, the highest cover recorded for this category since monitoring of this site began. Green algae cover was 0.83%, similar to recent years. Miscellaneous plants cover was 1.7%. Articulated coralline algae cover was 31%. Encrusting coralline algae cover was 29%, similar to past years. Bare substrate cover was 8.3%, low for this site.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 13%, similar to last year. This category consisted mostly of the Christmas tree worm, *Spirobranchus spinosus*, and hydroids. No gorgonians were observed during band transects. Miscellaneous bryozoan cover remained high at 23%. *Diaperoecia californica* cover was 1.2%. Sponge cover was 0.33%. One *Tethya aurantia* was recorded on band transects for a density of 0.0014/m². Tunicate cover was high at 9.5% and consisted mostly of *Pycnoclavella stanleyi* and *Metandrocarpa taylori*. *Serpulorbis squamigerus* cover was 0.83%. *Diopatra ornata* cover was similar to last year at 3.3%. *Phragmatopoma californica* were not observed on RPCs. *Corynactis californica* cover was 0.33%. *Astrangia lajollaensis* and *Balanophyllia elegans* were not observed on RPCs.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* density were similar to the last several years at 3.7/m² and 1.3/m², respectively. Individuals at this site and Landing Cove are typically larger than other sites on Anacapa Island. This year, the average size of *S. franciscanus* and *S. purpuratus* were 64 mm and 36 mm, respectively. *Centrostephanus coronatus* were not observed on 1 m quadrats. No sea urchin wasting disease was observed; however, black spot disease was observed on several *S. franciscanus* and *S. purpuratus* tests.

No *Pisaster giganteus* or *Patiria miniata* were observed on either 1 m quadrats or 5 m quadrats and were rare at the site overall, similar to previous years. They are so rare that no *P. giganteus* or *A. miniata* were located for size frequencies. *Parastichopus parvimensis* density was relatively low at 0.79/m²No sea star wasting disease was observed at the site.

Megastraea undosa were moderately abundant at 2.6/m², similar to recent years. *Crassedoma giganteum* remained common at 0.05/m². No *Aplysia californica* were observed. *Panulirus interruptus* were moderately abundant with a density of 0.03/m^2. There were some notably large *P. interruptus* observed at this site, which is located in a no-take marine reserve. *Megathura crenulata* density remained relatively high and was similar to recent years at 0.03/m². *Cypraea spadicea* density was 0.08/m². *Kelletia kelletii* density was 0.02/m². *Tegula regina* were rare and none were observed during sampling.

Similar to past years, fish were abundant and diverse at this site. *Coryphopterus nicholsii* were uncommon with a density was 0.25/m² and up to nine observed. *Alloclinus holderi* density was 0.58/m² with up to seven observed. *Lythrypnus dalli* were rare with two observed, and none were observed on 1 m quadrats. *Oxylebius pictus* was also rare with only one observed on the fish count. *Chromis punctipinnis* were abundant with up to 257 adults and no juveniles observed. *Oxyjulis californica* were common with up to 19 adults and 42 juveniles observed. Up to eight female, one juvenile and one male *Semicossyphus pulcher* were observed. Up to six female, no juvenile and one male *Halichoeres semicinctus* were observed. Up to eight adult *Hypsypops rubicundus* were observed. *Paralabrax clathratus* were abundant with up to 37 adults and nine juveniles observed. *Embiotoca jacksoni* were common with up to 15 adults and nine juveniles observed. One adult and seven juvenile *Rhacochilus vacca* were observed. Up to 16 adult *Girella nigricans* were observed. Up to three adult and 138 juvenile *Sebastes atrovirens* were observed. This is a relatively high abundance for juvenile *S. atrovirens.* Thirteen adult *Sebastes serranoides* were observed. One adult *Sebastes serriceps* was observed. Up to 26 *Sebastes paucispinis,* bocaccio, juveniles were observed. Up to seven KGB were counted. One *Rhacochilus toxotes,* rubberlip surfperch, was observed. Two adult *Medialuna californiensis,* halfmoon, were observed. *Brachyistius frenatus,* kelp surfperch, were abundant and 98 were observed. Up to six juvenile and one adult *Heterostichus rostratus,* giant kelpfish, were observed. Roving diver fish counts were conducted on September 4th by four divers observing 24 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 4th.

All seven ARMs were monitored for all indicator species. One *Octopus* spp. was found in the ARMs this year. Four *Haliotis corrugata* were observed for a density of 0.57/ARM, an increase from recent years. Their sizes ranged from 16 mm to 44 mm. No other *Haliotis* spp were observed. *Cypraea spadicea* density remained high at 18.6/ARM. *Megastraea undosa* density was 1.3/ARM, similar to past years. *Crassedoma giganteum* density was 4.1/ARM. *Kelletia kelletii* density was 0.86/ARM. *Megathura crenulata* density was 0.29/ARM. One *Tegula regina* was found for a density of 0.14/ARM. *Patiria miniata* density remained high at 9.9/ARM. *Pisaster giganteus* density was 3.6/ARM. *Strongylocentrotus franciscanus* density decreased to 65.7/ARM and *S. purpuratus* density also decreased to 96.0/ARM. We estimated that less than 2 % of the *S. purpuratus* were observed with black spot disease in the ARMs. *Centrostephanus coronatus* were observed at 0.43/ARM, similar to last year, and were small indicating recent recruitment. *Parastichopus*

parvimensis density notably increased in the ARMs this year, similar to observations made at other sites this year. Individuals less than ten centimeters and greater than ten centimeters were observed with densities of 7.0/ARM and 1.1/ARM, respectively. This high number of small *P. parvimensis* indicates a recent recruitment event.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Landing Cove, Anacapa Island

Site #13 ANLC
2007 sampling dates: 6/20, 8/6.
2007 status: Mature kelp forest.

This site continues to be a very lush, diverse kelp forest with large fish and invertebrate species who find refuge within the boundaries of the marine reserve. It is important to note that this site was sampled much earlier in the season than usual and upon the second visit, there was noticeably less macroalgae present, which is often common later in the season. All density data was collected during the June visit. Canopy cover of Macrocystis pyrifera was estimated at 50%, similar to past years. The canopy was thickest at the northern end of the transect, above the shallow reef, where large, mature plants were common. Along the southern portion of the transect, the cobble floor had juvenile and subadult plants present. However, adult M. pyrifera plants rarely mature here as the cobble is too small to keep the plants from floating away as they mature. In addition to the unsuitable habitat, the southern end is subject to heavy boat traffic and high amounts of propeller wash may also be a factor for the larger M. pyrifera individuals to survive.

Adult, subadult and juvenile Macrocystis pyrifera densities were 0.07/m², 0.21/m², and 10.5/m², respectively, and cover was 26%, all somewhat similar to past years. Macrocystis pyrifera stipe density was 2.1/m². Juvenile Eisenia arborea, Pterygophora californica and Laminaria farlowii were all abundant at this site. Adult and juvenile E. arborea densities were 1.4/m² and 2.4/m², respectively, the highest densities recorded for this species since they were added to 1 m quadrats in 1996. Cover of E. arborea was similar to past years at 30%. Pterygophora californica remained relatively abundant with adult and juvenile densities of 0.67/m² and 1.8/m², respectively. Cover for P. californica was 17%, the highest on record for this site. Laminaria farlowii remained at high densities with adults and juveniles at 5.6/m² and 42/m², respectively, also the highest juvenile density recorded since they were added to 1 m quadrats in 1996. Laminaria farlowii cover was the highest recorded at this site at 52%. Cystoseira spp. was common with a cover of 6.5%, also high for this site. Miscellaneous brown algae were common at a cover of 6.5%. Similar to previous years, there was a high abundance of red algae cover along the shallow reef and Plocamium spp. was noticeably more abundant than usual. Miscellaneous red algae cover increased to 45%, the highest recorded since monitoring began in 1982. Gelidium spp. cover was 23% and was only present along the shallow reef. Gigartina spp. cover was 0.67%, similar to past years. Green algae cover was 2.2%. Miscellaneous plant cover, consisting mostly of filamentous diatoms, was 0.33% similar to past years. Articulated coralline algae cover was 19%, similar to previous years. Encrusting coralline algae cover was 25%, the lowest recorded since monitoring began in 1982. Bare substrate cover was 5.7%, relatively low for this site.

Miscellaneous Invertebrates excl. Ophiothrix spiculata, decreased to 8.2%, relatively low for this site. The most common invertebrates in this category were amphipod tube mats. Sponge cover was 2.8%, similar to past years. Tethya aurantia were rare at 0.0097/m². Miscellaneous bryozoans were common at 17%, a decrease from last year's record high but similar to previous years. Diaperoecia californica cover was 3.3%, similar to past years. Diopatra ornata cover was 0.33%. No Phragmatopoma californica were observed on RPCs. Tunicate cover was 4.0%, similar to past years. Overall, gorgonians were

rare or absent, similar to past years. Lophogorgia chilensis was the only species present, with a density of 0.0097/m². Corynactis californica cover was 1.8%, similar to past years. Astrangia lajollaensis cover was notably low at 0.0%, the lowest recorded since 1982. Balanophyllia elegans were also not observed on RPCs, similar to past years.

Strongylocentrotus franciscanus and Strongylocentrotus purpuratus densities were similar to recent years at 3.5/m² and 2.1/m², respectively. Juvenile S. franciscanus and S. purpuratus were common under the spine canopy of large S. franciscanus. This site is one of the original reserves on the island (the other being Cathedral Cove) and these sites tend to have larger S. franciscanus and S. purpuratus than sites outside the marine reserve. Their average test diameters were 77 mm and 36 mm, respectively. Centrostephanus coronatus were common, though none were observed on 1 m quadrats. No Lytechinus anamesus were observed at the site, similar to past years. Large, dead S. franciscanus were common, similar to what has been observed in recent years. No sea urchin wasting disease was observed.

Patiria miniata were rare as usual at this site with a density of 0.0 m², similar to past years though they are common in the ARMs. Pisaster giganteus were common along the steep walls, but none were observed in 1 m quadrats. Lancair columbia, the fragile star, were relatively common. Parastichopus parvimensis density was 0.67/m², similar to past years. No sea stars were observed with wasting disease.

Haliotis corrugata remained rare with none were observed on band transects. Two adult H. corrugata were found at the site measuring 158 mm and 178 mm. These two are possibly the same individuals that have been recorded over the past several years. The abalone that has been observed for at least the last seven years on the small rock at about meter 36 along the transect and inshore between the transect and the ARMs was not observed this year.

Fish were abundant and diverse at this site, similar to past years. Coryphopterus nicholsii continued to decline and were rare with none were observed during 1 m quadrats for the second consecutive year; however, they were still present with up to 10 observed. Alloclinus holderi density was relatively low at 0.17/m², and up to 14 observed. Lythrypnus dalli were not observed on 1 m quadrats but up to 18 were observed during the fish count. Up to six Oxylebius pictus were observed and a density of 0.08/m² was recorded. Up to 410 adult Chromis punctipinnis were observed, the most abundant fish at this site. Up to 204 adult Oxyjulis californica were observed. Semicossyphus pulcher were common with up to seven females, three juvenile and two males observed. Halichoeres semicinctus were common with up to six females, four juveniles and three males observed. Paralabrax clathratus were common with up to 14 adults observed. Hypsypops rubicundus were moderately abundant with up to 15 adults observed. Up to 22 adult Girella nigricans were observed. Up to 28 adults and one juvenile Embiotoca jacksoni were observed. Two Embiotoca lateralis were observed. One Rhacochilus vacca was observed. Up to four adult Sebastes atrovirens were observed. Up to eight adult and one juvenile Sebastes serriceps were observed. One Sebastes chrysomelas, black and yellow rockfish, was observed. One Scorpaena guttata, California scorpion fish, was

observed. One Leiocottus hirundo, lavender sculpin, was recorded. One Scorpaenichthys marmoratus, cabezon, was observed. Up to three Lythrypnus zebra, zebra goby, were observed. One Gymnothorax mordax, California moray, was observed. Roving diver fish counts were conducted on June 20th by three divers observing 23 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 19th.

All seven ARMs were sampled for all indicator species. One ARMs (#2372) cage was replaced. Two Haliotis corrugata were observed in the ARMs, the same as last year, for a density of 0.29/ARM and they measured 50 mm and 72 mm. Cypraea spadicea were less abundant this year and many with juvenile morphology were observed. Their density was 5.6/ARM, similar to past years. Megastraea undosa density was 1.7/ARM, higher than last year. Tegula regina density was 0.14/ARM. Kelletia kelletii density decreased from last year's record high to 0.14/ARM. Megathura crenulata density was relatively high at 0.71/ARM. Crassedoma giganteum density was 4.3/ARM, similar to last year. Patiria miniata density increased to 5.6/ARM with a mean size of 17 mm, similar to last year. Pisaster giganteus density was 0.71/ARM, and mean size of 23 mm was recorded, a decrease from last year. No Pycnopodia helianthoides were observed in the ARMs. Strongylocentrotus franciscanus density remained high at 80.6/ARM and mean size was 38 mm. Strongylocentrotus purpuratus density also remained high but decreased to 176.6/ARM with an increase in mean size to 26 mm. Five S. purpuratus in the ARMs appeared to have wasting disease, but these observations were not confirmed. One 6 mm Centrostephanus coronatus was observed in the ARMs for a density of 0.14/ARM. Parastichopus parvimensis less than ten centimeters decreased in density from last year's record high to 2.4/ARM and P. parvimensis greater than ten centimeters decreased to 1.3/ARM. One Octopus spp. was observed. In addition, several pychnogonids (sea spiders) were found in the ARMs along with a brachiopod and a Humboldt squid beak. These later two observations are rare.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: South East Sea Lion, Santa Barbara Island
Site #14 SBSESL
2007 sampling dates: 5/23.
2007 status: Dominated by Ophiothrix spiculata and Strongylocentrotus franciscanus.

This site was similar to recent years and continues to be nearly devoid of macroalgae and dominated by *Ophiothrix spiculata* and *Strongylocentrotus franciscanus*. One subadult *Macrocystis pyrifera* was observed attached to a *Muricea californica* (a common observation at this site) and another on the top of a rock. No macroalgae were observed on 1 m quadrats, similar to the last several years. No *Eisenia arborea*, *Pterygophora californica*, *Laminaria farlowii*, *Cystoseira spp.* or *Desmarestia spp.* were present. Green algae cover was 0.83%, similar to last year. Miscellaneous brown algae were not observed on RPCs. Miscellaneous red algae cover was l1.7%, similar to past year. Miscellaneous plants, mostly consisting of filamentous diatoms, were common at 5.8% cover and were present mostly on the southwest end of the transect line. Articulated coralline algae remained rare with none observed on RPCs. Encrusting coralline algae dominated the rocky substrate with a cover of 78%, the highest on record at this site. Bare substrate cover remained the same at 15%.

The most common Miscellaneous Invertebrates excl. *Ophiothrix spiculata*, were hydroids and *Chaetopterus* spp., this category cover was 5.0%, similar to recent years. *Corynactis californica* cover was 1.5%. *Astrangia lajollaensis* and *Balanophyllia elegans* continued to have low cover at 0.5% and 0.0%, respectively. Miscellaneous bryozoan cover increased slightly to 2.5%. *Diaperoecia californica* was not observed on RPCs. Sponge cover was 0.5%. *Tethya aurantia* remain abundant with a density of 0.11/m². Tunicate cover was 0.33%. *Lophogorgia chilensis* remained moderately abundant with a density of 0.15/m^2. *Muricea californica* were common with a density of 0.05/m^2. *Muricea fruticosa* were rare with a density of 0.0042/m^2.

Strongylocentrotus purpuratus density remained low for the third year at 3.2/m². *Strongylocentrotus franciscanus* remained abundant for this site for the fourth year 10.9/m². *Lytechinus anamesus* were common in the sandy areas and recorded on both 1 m quadrats and band transects with densities of 0.08/m² and 0.02/m², respectively. Most *L. anamesus* were small in size (10-14 mm), similar to those observed at other sites around the island this year. *Centrostephanus coronatus* were common with a density of 0.38/m². There was no sign of urchin wasting disease during the May sampling.

Ophiothrix spiculata continue to dominate this site with a cover of 51.2%, the highest cover recorded since we began monitoring this species separately in 2003. *Patiria miniata* density was 0.29/m^2, a decrease from last year. Most *A. miniata* were notably large. *Pisaster giganteus* abundance was similar to last year and was counted on 1 m quadrats and 5 m quadrats with densities of 0.17/m² and 0.04/m², respectively. No *Pycnopodia helianthoides* were observed. *Parastichopus parvimensis* density was low at 0.25/m², similar to recent years. No sea star wasting disease was observed.

Megastraea undosa continued its gradual decline in abundance and was 0.13/m², the lowest recorded since 1983. However, they were still common at the site with all sizes present, but their mean size has gradually increased to 60 mm, the highest since 1989 indicating. *Tegula regina* were abundant

and mostly large with a density of 0.33/m². Small and medium *L. undosa* were common on the northern end of the reef where *Tegula regina* were rare. *Megathura crenulata* density was 0.02/m², and all sizes were present. Several *Bursa californica* were observed while sampling. This species was once common the Santa Barbara Island until the late 1990's, but since that time, their presence has been rare and they have recently been more common. No *Kelletia kelletii* were observed. *Aplysia californica* density increased slightly to 0.05/m². *Crassedoma giganteum* remain rare with a density of 0.0097/m². *Cypraea spadicea* density was 0.042/m².

Overall, fish diversity and abundance were low at this site similar to past years and the other Santa Barbara Island sites. *Coryphopterus nicholsii* were the most abundant fish with up to 54 observed and a density of 0.38/m². Up to five *Oxylebius pictus* were observed, but none on 1 m quadrats. *Alloclinus holderi* continued to be rare with none observed on quadrats for the second consecutive year. Only one was observed during the fish count, but two small ones were observed afterwards. Up to 15 adult and no *Chromis punctipinnis* were observed. No *Oxyjulis californicus* were observed. One female, no male and up to three juvenile *Semicossyphus pulcher* were observed. No *Halichoeres semicinctus* were observed. Up to four adult *Hypsypops rubicundus* were observed, similar to last year. Up to seven juvenile *Sebastes miniatus*, vermillion rockfish, were observed. Five *Sebastes chrysomelas*, black and yellow rockfish, were observed. One adult *Scorpaena guttata*, California scorpionfish, were observed. One *Artedius corallinus*, coralline sculpin, was observed. Up to two *Caulolatilus princeps*, ocean whitefish, were observed. Roving diver fish counts were conducted on May 23rd with four divers observing 11 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on June 12th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Arch Point, Santa Barbara Island
Site #15 SBAP
2007 sampling dates: 5/22.
2007 status: Site dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

Similar to last year, this site was mostly devoid of macroalgae. No *Macrocystis pyrifera, Laminaria farlowii, Pterygophora californica, Eisenia arborea Desmarestia* spp. and *Cystoseira* spp. were present at the site. *Sargassum muticum* was noted near the southwest end of the transect near the 90 m mark, similar to recent years. Miscellaneous brown algae cover was 0.17%, similar to past years. Miscellaneous red algae cover increased to 24% cover, the highest recorded since 2001. *Laurencia pacifica* was less abundant than recent years. Green algae cover was0.83%. Miscellaneous plants cover, consisting mostly of filamentous diatoms, was 7.7%. Articulated coralline algae cover was similar to last year at 0.5%. Encrusting coralline algae cover increased to 77% and bare substrate cover decreased to 13%.

The most common Miscellaneous invertebrates excluding *Ophiothrix spiculata* were *Spirobranchus spinosus,* hydroids and *Balanus* spp. and this category cover was 14.5%. *Corynactis californica* cover was 2.3%, similar to recent years. *Astrangia lajollaensis* cover was 1.2%, also similar to recent years. Tunicates cover remained low with none observed on RPCs. Miscellaneous bryozoans cover was 0.67%. *Diaperoecia californica* were not observed on RPCs. *Lophogorgia chilensis* and *Muricea californica* densities were 0.0040/m² and 0.0014/m², respectively and similar to past years.

Strongylocentrotus purpuratus and *Strongylocentrotus franciscanus* densities remained high. *Strongylocentrotus franciscanus* density continued its gradual decline for the third consecutive year to 14/m². *Strongylocentrotus purpuratus* density was similar to last year at 82/m². There was a notable increase in *S. purpuratus* juveniles, while juvenile *S. franciscanus* recruits were rare. Very small *Lytechinus anamesus* were common and their density was 0.036/m². *Centrostephanus coronatus* density was 0.08/m². Wasting disease was present, and estimated in at less than 1% of both *S. purpuratus and S. franciscanus* during the May 22nd visit.

Pisaster giganteus density on 1 m quadrats and 5 m quadrats was 0.042/m² and 0.035/m², respectively. *Patiria miniata* density decreased to 0.29/m². No *Pycnopodia helianthoides* were observed. No *Ophiothrix spiculata* were observed on RPCs, similar to past years. *Parastichopus parvimensis* density remained low at 0.13/m². No sea star wasting disease was observed.

Cypraea spadicea were rare at 0.04/m², similar to past years. *Megastraea undosa* density was 0.08/m², the lowest on record. Large *Megastraea undosa* were relatively rare along the transect and small individuals were present in patches. Several large *Lithopoma gibberosa* were observed, but none on 1 m quadrats. *Tegula regina* were abundant with a density of 0.21/m², similar to last year. *Aplysia californica* were common with a density of 0.089/m², similar to recent years. *Crassedoma giganteum* density was low at 0.097/m². One small fresh *Haliotis cracherodii* shell was observed. No *Megathura crenulata* were observed on band transects. At least five *Panulirus interruptus* were

observed on the site and several were at least legal size, their density was 0.056/m², similar to recent years. Three *Loxorhynchus grandis* were observed along the transect.

Fish abundance and diversity declined from recent years. *Coryphopterus nicholsii* density was 0.083/m² and up to 52 were observed. No *Alloclinus holderi* were observed during the fish count, but were present with a density of 0.083/m². Recent *A. holderi* recruits were observed after the fish counts were conducted. *Oxylebius pictus* were rare with up to four observed but none on 1 m quadrats. The most abundant fish was *Chromis punctipinnis* with up to 154 adults and no juveniles observed. *Oxyjulis californica* were rare with up to nine adults observed. Up to six female *Semicossyphus pulcher* were observed but no males or juveniles. No *Halichoeres semicinctus* were observed. Adult *Hypsypops rubicundus* were abundant with up to 47 observed. Two tagged *H. rubicundus* were observed along the transect. *Paralabrax clathratus* were rare with up to two adults observed. Up to eight adult *Girella nigricans* were observed. No *Embiotoca* spp. were observed, similar to recent years. No *Sebastes serriceps* were observed this year. Up to three *Sebastes rastrelliger*, grass rockfish, were observed. Up to two adult *Sebastes chrysomelas,* black and yellow rockfish, were observed. Two *Scorpaenichthys marmoratus*, cabezon, were observed. One *Artedius corallinus*, coralline sculpin, and two *Orthonopias triacis,* snubnose sculpin, were observed. One school of 18 *Medialuna californiensis,* halfmoon, were observed in the midwater. One *Gymnothorax mordax,* California moray, was observed. Roving diver fish counts were conducted on May 22nd with four divers observing 15 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on June 11th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within specifications of each other.

Location: Cat Canyon, Santa Barbara Island
Site #16 SBCAT
2007 sampling dates: 5/25, 6/5.
2007 status: Site dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

This site is similar to nearby sites on Santa Barbara Island and has not changed significantly over the past several years. It continues to have low diversity with very little macroalgae and is dominated by *Strongylocentrotus spp.* No macroalgae were observed on 1 m quadrats or 5 m quadrats, similar to last year. *Macrocystis pyrifera*, *Eisenia arborea*, *Pterygophora californica*, *Laminaria farlowii*, *Cystoseira* spp. and *Desmarestia* spp. were not observed along the transect. Miscellaneous brown algae were not observed on RPCs. Green algae cover was 0.5%. Miscellaneous red algae cover was 1.8% and mainly consisted of *Laurencia pacifica* and filamentous red algae. Miscellaneous plants, consisting filamentous diatoms, cover was 4.7%. Encrusting coralline algae remained abundant with a cover of 67%, similar to the other urchin dominated sites. Articulated coralline algae were not observed on RPCs. Bare substrate cover was 21%.

The most common Miscellaneous invertebrates excluding *Ophiothrix spiculata* were *Spirobranchus spinosus*, the Christmas tree worm, and hydroids and this category cover was 6.7%. Tunicate abundance remained low at 0.67% and sponges cover was 0.17%. Miscellaneous bryozoan cover was 0.83%. Similar to past years, *Diaperoecia californica* were rare and none were observed on RPCs. No *Tethya aurantia* were observed on band transects. *Astrangia lajollaensis* cover was 0.83%. *Balanophyllia elegans* were rare with a cover of 0.17%. *Corynactis californica* were also rare at 0.17% cover.

Strongylocentrotus spp. continued to dominate this site as they have for several years. *Strongylocentrotus purpuratus* density remained similar to the past three years at 40/m² with a mean size of 24 mm. *Strongylocentrotus franciscanus* density was similar to last year at 10/m² and mean size was 30 mm. Juveniles of both were both common. *Lytechinus anamesus* density was 0.029/m². *Centrostephanus coronatus* density remained low at 0.042/m², similar to past years. There were at least three *L. anamesus* and two *S. franciscanus* observed with urchin wasting disease on May 25th.

Pisaster giganteus were counted on both 1 m quadrats and 5 m quadrats with densities of 0.083/m² and 0.06/m², respectively, similar to previous years. *Patiria miniata* density was 0.083/m². *Parastichopus parvimensis* density was 0.46/m², similar to recent years. No *Ophiothrix spiculata* were observed on RPCs. No sea star wasting disease was observed.

No *Haliotis* spp. were observed at the site. *Megastraea undosa* density increased and there were noticeably more small individuals on the transect. *Megastraea undosa* density was 0.79/m², the highest since 2001. *Tegula regina* were not observed on 1 m quadrats but were moderately abundant at the site with 56 found for size frequencies. *Cypraea spadicea* were rare at 0.042/m². *Megathura crenulata* were rare at 0.0042/m², and only one was found for size frequencies. *Aplysia californica* density increased to 0.15/m² with smaller individuals being abundant. *Crassedoma giganteum*

density remained low at 0.0097/m². Two *Panulirus interruptus* were observed on band transects for a density of 0.0028/m².

Similar to past years, fish abundance and diversity were low at this site. *Coryphopterus nicholsii* density was 0.21/m² and up to 51 were recorded during the fish count. *Alloclinus holderi* were rare at a density of 0.042/m² and up to three observed. No *Lythrypnus dalli* were observed this year. *Oxylebius pictus* were rare with up to three observed on the fish count and none on 1 m quadrats. *Chromis punctipinnis* were the most abundant fish again this year with up to 108 adults and no juveniles observed. *Oxyjulis californica* were not observed during the fish count. Two female and two juvenile *Semicossyphus pulcher* were observed, but no males. No *Halichoeres semicinctus* were observed. Up to 12 adult and no juvenile *Hypsypops rubicundus* were observed. One adult *Paralabrax clathratus* was observed. Up to seven adult *Girella nigricans* were observed. One juvenile *Sebastes mystinus* was observed. No *Embiotoca jacksoni* were observed. No *Sebastes serriceps* or *Sebastes atrovirens* were observed. One adult *Sebastes rastrelliger,* grass rockfish, was observed, similar to past years. *Medialuna californiensis*, halfmoon, were common with up to 27 observed. One *Orthonopias triacis,* snubnose sculpin, and one *Artedius corallinus,* coralline sculpin, were observed. One *Gymnothorax mordax,* California moray eel, was observed. Two *Neoclinus stephensae,* yellowfin fringehead, were also observed. Roving diver fish counts were conducted on May 25th by five divers observing 17 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on June 12th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Miracle Mile, San Miguel Island
Site #21 SMMM
2007 sampling dates: 7/12, 10/12.
2007 status: Mature kelp forest.

Miracle Mile is not one of the original kelp forest monitoring sites. This site was set up by Jim Marshall, a commercial abalone and sea urchin fisherman, in conjunction with the County of Santa Barbara, and with the assistance of CINP. The monitoring site was chosen specifically to look at a *Haliotis rufescens* population. The site was specifically selected for its high density of *H. rufescens*. Miracle Mile is now monitored in accordance with the kelp forest monitoring program protocols for all indicator species if time and weather permits.

This site appeared similar to last year and continued to be a healthy, mature *Macrocystis pyrifera* forest with a dense and diverse understory of algae. The kelp canopy cover over the transect was estimated at 90%, and the *M. pyrifera* was healthy. Adult, subadult and juvenile *M. pyrifera* densities were similar to last year at 0.16/m², 0.16/m² and 1.1/m², respectively and cover was 16%. Stipe density was 3.0/m². *Eisenia arborea* were abundant on the tops of rocks and in the deeper areas of the transect with densities of 0.71/m² for adults, 0.63/m² for juveniles, and a cover of 28%. Adult and juvenile *Pterygophora californica* were common with densities of 0.46/m² and 1.5/m², respectively, and a cover of 14%. *Cystoseira* spp. were common at the site but not directly along the transect with cover of 0.0%. No Laminaria farlowii was observed at the site. No *Desmarestia* spp. was observed on RPCs. Miscellaneous brown algae cover was 2.2%, similar to recent years. No green algae were observed on RPCs. *Gelidium* spp. cover was 0.67/m². *Gigartina* spp. cover was 3.3%, similar to past years. Miscellaneous red algae were abundant all along the transect with a cover of 71% and consisted mostly of *Callophyllis* spp. and *Cryptopleura* spp. Articulated coralline was abundant with a cover of 33%. Encrusting g coralline algae cover was 41%. Bare substrate cover was 8.3%, similar to past years.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 18%. This category consisted mostly of hydroids and barnacles, *Balanus* spp. *Phragmatopoma californica* was not observed on RPCs this year. *Serpulorbis squamigerus* cover was 0.33%. Miscellaneous bryozoan cover was high and increased to 23%. Sponge cover remained high and was 8.8%. *Tethya aurantia* remained abundant with a density of 0.20/m². Tunicate cover also remained high at 17%. *Styela montereyensis* were not observed on 1 m quadrats this year. *Urticina lofotensis* remain abundant with a density of 0.21/m². *Corynactis californica* cover was 0.33%, same as last year. *Balanophyllia elegans* cover was 1.2%. *Astrangia lajollaensis* were not observed on RPCs. *Diopatra ornata* cover was 1.3%.

Strongylocentrotus spp. densities were similar to past years. *Strongylocentrotus franciscanus* density was 4.0/m² and all sizes were observed during size frequencies. *Strongylocentrotus purpuratus* remain relatively rare at 0.25/m². With a moderate amount of search effort, we could only find 40 *S. purpuratus* for size frequencies. No sea urchin wasting disease was observed.

Pisaster giganteus were abundant and counted on 1 m quadrats and 5 m quadrats with densities of 0.67/m² and 0.24/m², respectively. *Patiria miniata* density was similar to last year at 2.6/m². *Pycnopodia helianthoides* density was 0.039/m², the same as last year. We did not have time to measure these for size frequencies, but all sizes were present. *Parastichopus parvimensis* density was 0.083/m². No sea star wasting disease was observed.

Haliotis rufescens were most abundant offshore of the eastern end of the transect where it is deeper. Due to the high density of *H. rufescens* we counted them on band transects and 1 m quadrats with densities of 0.67/m² and 0.38/m², respectively. There were several smaller sized (~60 mm) *H. rufescens* in crevices, but most observed were larger emergent adults. Fresh *H. rufescens* shells that appeared to be predated on by *Cancer* spp. were common A total of 125 *H. rufescens* were measured for size frequencies with a mean size of 175 mm, the same mean size as last year. There were 31 fresh *H. rufescens* shells found at the site, indicating some recent mortality. One adult *H. rufescens* with an estimated size of ~180 mm was observed with withering foot disease and was collected and sent to the California Department of Fish and Game.

Kelletia kelletii density remained relatively high for this site similar to recent years at 0.038/m². The density of *Megathura crenulata* was the same as last year at 0.029/m², and notably low compared to the first four years we monitored this site. *Crassedoma crenulata* were rare with a density of 0.0083/m². *Lithopoma gibberosa* density was 0.21/m², similar to last year and no *L. undosa* were observed. *Cancer productus* and *C. antennarius* were common and 12 were observed during band transects. *Cryptochiton stelleri,* gumboot chiton, were common and four were observed during band transects for a density of 0.0055/m².

Roving diver fish counts were not conducted at this site this year due to time constraints. However indicator fish species were recorded on 1 m quadrats. *Coryphopterus nicholsii* density was 0.04/m² and *Oxylebius pictus* density was also 0.04/m².

All seven ARMs were monitored for all indicator species. The cages were in good condition and a few ARMs (#2473 and #2474) had sand covering the bottom layer of bricks. There were no *Phragmatopoma californica* observed on the cages this year, they were present in past years. A total of 10 *Haliotis rufescens* were observed in the ARMs for a density of 1.4/ARM, similar to last year. The mean size continued to increase from last year to 108 mm. *Crassedoma giganteum* density was 0.3/ARM. *Kelletia kelletii* density was also 0.3/ARM. *Lithopoma gibberosa* density was 0.14/ARM. *Patiria miniata* density was 10.0/ARM, similar to last year, with a mean size of 35 mm. *Pisaster giganteus* was observed at a density of 0.9/ARM with a mean size of 62 mm. *Pycnopodia helianthoides* density was 0.9/ARM, higher than past years and most were small with a mean size of 72 mm. *Strongylocentrotus franciscanus* density was similar to last year at 4.7/ARM and mean size increased to 78 mm. *Strongylocentrotus purpuratus* density remained low and was 0.6/ARM with a mean of 31 mm. There was one *Parastichopus parvimensis* greater than ten centimeters observed for a density of 0.14/ARM.

There is no temperature unit installed at this site.

Location: Cluster Point, Santa Rosa Island
Site #22 SRCP
2007 sampling dates: 8/23, 9/27.
2007 status: Developing kelp forest.

This site continues to be a mature kelp forest with a thick canopy of *Macrocystis pyrifera*. Juvenile macroalgae were abundant. During the August sampling event, an estimated 40% of the *Macrocystis pyrifera* plants appeared to have been cut about 25 cm above the holdfast. The holdfasts were relatively intact and those that had at least one stipe greater than one meter high were measured for size frequencies, otherwise they were considered dead though the large holdfasts still seemed potentially viable. The cause of this observation is unclear.

Macrocystis pyrifera cover on the bottom was 7.5%, lower than last year but similar to the year before. Adult, subadult and juvenile densities were 0.29/m², 0.03/m² and 20/m², respectively. Stipe density was 1.7/m². *Eisenia arborea* adults were not observed on 1 m quadrats, juvenile density was 0.04/m² and cover was 0.5%. *Pterygophora californica* adults and juvenile densities were 1.4/m² and 4.6/m², respectively and had a cover of 9.7%, all similar to last year. No adult *Laminaria farlowii* adults were observed, and juvenile density remained low at 0.21/m². Green algae cover was 0.17%, the same as last year. Miscellaneous red algae were abundant again this year at 53% cover and included *Microcladia* spp., *Cryptopleura* spp., *Chondracanthus* spp. and *Rhodymenia* spp. Miscellaneous brown algae cover was 0.83%. *Desmarestia* spp. cover was 2.2%. *Gigartina* spp. cover was similar to last year at 1.8%. Articulated and encrusting coralline algae covers were2.5% and 16%, respectively. Bare substrate cover was 14%, similar to last year.

Miscellaneous invertebrate excluding *Ophiothrix spiculata* cover increased to 22%. The most common species in this category were hydroids including *Aglaophenia* spp. and *Obelia* spp., but others were also common. Tunicate cover remained high at 8.5%. *Styela montereyensis* density was 0.46/m². Sponges were moderately abundant with a cover of 4.8% and included a moderate amount of *Hymenamphiastra cyanocrypta,* similar to last year. *Tethya aurantia* remained abundant with a density of 0.35/m² and most were large. Bryozoans cover was 6.2% and no *Diaperoecia californica* was observed on RPCs. *Diopatra ornata* were present in the sand channels that run through the site with 1.8% cover. *Phragmatopoma californica* cover was 3.7%. Sea anemones were common with *Corynactis californicus* cover at 0.83% and *Urticina lofotensis* density at 0.096/m². *Balanophyllia elegans* and *Astrangia lajollaensis* covers were 1.8% and 0.67%, respectively. *Lophogorgia chilensis*, *Muricea californica* and *Muricea fruticosa* were not observed at this site, same as last year.

Sea urchin densities remained low though they have gradually increased since we began monitoring the site in 2005. They were mostly confined to the cracks and crevices and not out in the open. *Strongylocentrotus franciscanus* density was 2.3/m² and mean size of 70 mm with very few juveniles observed. *Strongylocentrotus purpuratus* density was 1.3/m². With a moderate search effort only 73 could be found for size frequencies with a mean size of 35 mm.. No sea urchin wasting disease was observed.

Sea stars were moderately abundant throughout the site, similar to previous years. *Pisaster giganteus* densities on 1 m quadrats and 5 m quadrats were 0.11/m² and 0.21/m², respectively. *Patiria miniata* were observed at all sizes with a density of 2.6/m². *Pycnopodia helianthoides* were rare at 0.03/m². *Parastichopus parvimensis* density was 0.17/m². No sea star wasting disease was observed.

Haliotis rufescens were rare at a density of 0.003/m² with only one measured at 83 mm and a few others noted (but not measured) on the tops of rocks. One fresh *H. rufescens* shell was found and measured at 68 mm. *Cypraea spadicea* density was similar to last year at 0.21/m². No *Megastraea undosa* was observed. *Lithopoma gibberosa* density was 0.04/m². *Megathura crenulata* density was 0.029/m², similar to recent years. *Kelletia kelletii* density was relatively low at 0.017/m². *Crassedoma giganteum* were common with a density of 0.043/m²,and most were large. No *Aplysia californica* were observed on band transects. One large *Panulirus interruptus* with a carapace length of 92 mm was observed, but was not present on band transects.
Fish at this site were moderately diverse, similar to last year, but less abundant. *Coryphopterus nicholsii* were rare with up to eight observed during the roving diver fish count and none on 1 m quadrats, similar to last year. No *Alloclinus holderi* were observed. *Oxylebius pictus* density was 0.21/m² and up to eight were observed. *Chromis punctipinnis* were uncommon with eight adults and no juveniles observed. *Oxyjulis californicus* were one of the more abundant fish at this site with up to 24 adults observed. No *Halichoeres semicinctus* were observed. *Semicossyphus pulcher* were common with up to four females, no juveniles and six males observed. No *Paralabrax clathratus* were observed. One *Girella nigricans* was observed. Up to five adult and one juvenile *Embiotoca jacksoni* were observed. Up to five adult and no juvenile *Embiotoca lateralis* were observed. Up to three *Rhacochilus vacca* adults were observed. The most abundant fish at this site was *Sebastes mystinus* with up to 29 adults and no juveniles observed. Up to eight adult and no juvenile *Sebastes atrovirens* were observed. Up to three *Sebastes serranoides* were observed. No *Sebastes serriceps* were observed. One *Sebastes melanops,* black rockfish, was observed in the midwater. Three large adult *Sebastes miniatus,* vermillion rockfish, were observed. One KGB was observed. One *Rhacochilus toxotes,* rubberlip surfperch, and one *Brachyistius frenatus,* kelp surfperch, were observed. Roving diver fish counts were conducted on August 23rd by two divers observing 18 species.

During the August visit to this site, an estimated 40% of the *Macrocystis pyrifera* plants appeared to have been cut about 25 cm above the holdfast. Similar observations were made in September during our visit to Bee Rock on Santa Rosa Island (not a KFM site) where a very large area (many thousands of square meters) had evidence of this phenomenon. The holdfasts were relatively healthy looking indicating the “cuts” had occurred somewhat recently. Inquiries were made with local fisherman who all agreed that similar observations had been made in previous years. Due to the large area that was affected, we think this was most likely a result of a physical or biological perturbation and not due to any human activity such as active cutting by a diver. However, the cause of these observations is still unclear.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 27th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Trancion Canyon, Santa Rosa Island
Site #23 SRTC
2007 sampling dates: 8/21.
2007 status: Mature kelp forest.

This site was similar to last year and remained a mature kelp forest. *Macrocystis pyrifera* canopy cover was estimated at 55%, and appeared thinner than past years. There was an abundance of understory algae, similar to most of our sites on this island. *Macrocystis pyrifera* adults, subadult and juvenile densities were 0.31/m², 0.21/m² and 3.7/m², respectively, and cover was 18%, all similar or higher than last year. Stipe density was 4.5/ m². *Pterygophora californica* cover increased 7.5% and adult and juvenile densities were 0.38/m² and 0.79/m², respectively; and again all similar or higher than recent years. *Laminaria farlowii* were present at the site, but none were observed during sampling. *Eisenia arborea* were moderately abundant off the transect with an adult density of 0.042/m², no juveniles, and a cover of 0.33%. Miscellaneous red algae were abundant at 47%. Miscellaneous brown algae were rare with a cover of 0.17%. *Gigartina* spp. were moderately abundant at a 4.7% cover. Articulated coralline algae were common at 7.8% and encrusting coralline algae cover was 15%. Bare substrate was 16%, similar to recent years.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* were abundant with a cover of 23% and this category consisted mostly of hydroids. Tunicates were abundant with a 12% cover. *Styela montereyensis* density was 0.71/m², similar to past years. *Tethya aurantia* were abundant at 0.22/m² and were mostly large. Sponges were common with a cover of 3.7%. *Corynactis californica, Balanophyllia elegans,* and *Astrangia lajollaensis* covers were 0.83%, 0.67%, and 0.50%, respectively. *Urticina lofotensis* density was 0.067/m². *Diaperoecia californica* cover was 1.0%. *Diopatra ornata* were present in patches and were most abundant on the west end of the transect with a cover of 9.0%. *Phragmatopoma californica* cover was 3.0%, similar to past years.

Sea urchins were relatively abundant and mostly large at this site with very few juveniles observed. *Strongylocentrotus franciscanus* density was 5.8/m², similar to the past two years. *Strongylocentrotus purpuratus* density was 4.2/m², higher than the past two years. No *Lytechinus anamesus* or *Centrostephanus coronatus* were observed. No sea urchin wasting disease was observed.

Pisaster giganteus were counted on both 1 m quadrats and 5 m quadrats with densities of 0.25/m² and 0.24/m², respectively. Both large and small *Patiria miniata* were common with a density of 2.1/m². *Pycnopodia helianthoides* density decreased to 0.008/m². *Parastichopus parvimensis* density was 0.17/m². No sea star wasting disease was observed..

Haliotis rufescens density was 0.0014/m², and a total of two adult and two juveniles were found at the site, but only two were measured for size frequencies. *Cypraea spadicea* density was 0.33/m². No *Lithopoma gibberosa* was observed on 1 m quadrats and *L. undosa* were rare at 0.04/m². *Kelletia kelletii* were rare with a density of 0.007/m². *Megathura crenulata* were common on the large rocks and boulders with a density of 0.04/m². *Crassedoma giganteum* density was relatively high at

0.05/m², but only one was measured for size frequencies due to lack of time. One *Cryptochiton stelleri*, gumboot chiton, was observed at the site.

Fish continue to be abundant and diverse at this site, similar to most of our sites on this island. *Coryphopterus nicholsii* were common at 0.25/m² and up to 18 were observed on the roving diver fish count. Both adult and juvenile *Oxylebius pictus* were observed with a density of 0.08/m² and up to 16 observed. Juvenile *O. pictus* were notably abundant this year along the transect. The most commonly observed species was *Chromis punctipinnis* with up to 77 adults and no juveniles. *Oxyjulis californicus* were not observed this year. Up to seven female, three male and no juvenile *Semicossyphus pulcher* were observed. Similar to last year, the *S. pulcher* males were notably large. No *Halichoeres semicinctus* were observed. There were up to 10 adult and one juvenile *Embiotoca jacksoni observed*. Up to eight adult and one juvenile *Rhacochilus vacca* were observed. *Embiotoca lateralis* were moderately abundant with up to 21 adults and five juveniles observed. One adult *Paralabrax clathratus* was observed. *Sebastes mystinus* were very abundant with up to 57 adults and two juveniles observed. *Sebastes atrovirens* were also abundant with up to 22 adults and three juveniles observed. Up to seven adult *Sebastes serranoides* were observed. One adult and one juvenile *Sebastes serriceps* were observed. Up to six adult *Sebastes chrysomelas,* black and yellow rockfish, were observed. Thirteen adult *Sebastes melanops,* black rockfish, were observed. Up to four KGB were observed. One adult *Scorpaenichthys marmoratus,* cabezon, was observed. Six *Rhacochilus toxotes*, rubberlip surfperch, were observed. Eight *Brachyistius frenatus,* kelp surfperch, were observed. A school of about 70 *Atherinops affinis,* topsmelt, was observed. The roving diver fish count was conducted on August 21st with four divers observing 24 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 24th and October 9th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Chickasaw, Santa Rosa Island
Site #24 SRCSAW
2007 sampling dates: 8/22.
2007 status: Mature kelp forest.

Similar to previous years, this site remains a healthy mature kelp forest. The kelp canopy cover was estimated at 50% and was thinner than last year allowing for better light conditions to support a dense understory of algae. *Macrocystis pyrifera* adults, subadults and juvenile densities were 0.53/m², 0.35/m², and 2.8/m²,respectively, and cover was high at 43%. All of these abundances are relatively high or the high or the highest recorded for this site since we began monitoring in 2005. *Eisenia arborea*, density was 0.0/m², and cover was 0.83%. *Pterygophora californica* adult and juvenile densities were 0.08/m² and 0.79/m², respectively, and had a cover of 0.5%. Juvenile *Laminaria farlowii* density was 1.1/m², but no adults were observed on 1 meter quadrats and none were observed on RPCs, similar to past years. *Cystoseira* spp. cover was 0.5%. No *Desmarestia* spp. was observed on RPCs. Green and miscellaneous brown algae covers were 0.17% and 1.8%, respectively. Red algae cover remained high at 67%, respectively. The most common red algae was *Rhodymenia* spp. *Gigartina* spp. cover was 2.7%. Both articulated coralline algae and encrusting coralline algae cover increased this year to 14% and 28%, respectively. Bare substrate cover decreased to 5.8%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* were less abundant at this site than last year with a cover of 7.3%. The most commonly observed invertebrates in this category were hydroids. Bryozoan cover increased to 38%. No *Diaperoecia californica* was observed on RPCs. *Diopatra ornata* was abundant along the transect in the sand channels with a cover of 17%. *Serpulorbis squamigerus* cover was 0.33%. Tunicate cover remained relatively abundant at 12% and included a diverse group of species including *Cystodytes lobatus, Polyclinum planum* and *Didemnum carnulentum. Styela montereyensis* density was 0.21/m², with both large and small ones observed. Sponge cover was 2.3%. *Tethya aurantia* were mostly large at this site with a density of 0.11/m². *Corynactis californica* cover was similar to last year at 0.33%. *Urticina lofotensis* density was 0.07/m². *Balanophyllia elegans* and *Astrangia lajollaensis* cover were 1.7% and 0.5%, respectively. Gorgonians were rare, similar to most of our sites on the south side of Santa Rosa, with no *Lophogorgia chilensis, Muricea californica* or *Muricea fruticosa* observed.

Sea urchins remained at low densities and were mostly observed in the crevices of large rocks and boulders. *Strongylocentrotus franciscanus* density was low at 1.3/m², but higher than the past two years. Most of the *S. franciscanus* were large with a mean size of 85 mm, but juveniles were common under their spine canopy. *Strongylocentrotus purpuratus* were rare with a density of 0.17/m², and only 111 could be found for size frequency measurements with a moderate amount of search effort. This is more than that were found the past two years. Most of these were packed tightly into cracks or under the spine canopy of large *S. franciscanus* individuals. No sea urchin wasting disease was observed.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.17/m² and 0.29/m², respectively. *Patiria miniata* were common with a density of 1.6/m². *Pycnopodia helianthoides* were rare and mostly small in size with a density of 0.006/m² and mean size of 117 mm. We were only able to find 15 for size frequency measurements, notably less than the past two years. *Parastichopus parvimensis* remained rare this year with a density of 0.04/m²,and were large.

Haliotis rufescens density was 0.017/m², similar to last year. There were 37 *H. rufescens* found for size frequencies with a mean of 188 mm and most individuals were greater than 195 mm. *Megastraea undosa* and *Lithopoma gibberosa* were not observed. *Cypraea spadicea* density was 0.42/m². *Megathura crenulata* were rare with a density of 0.003/m², and only four found for size frequencies. *Crassedoma giganteum* density was 0.014/m².

Similar to last year, fish at this site were diverse and moderately abundant. *Coryphopterus nicholsii* density was 0.25/m² and up to 10 were observed on the roving diver fish count. *Oxylebius pictus* were abundant at 0.5/m² and up to 26 observed during the fish count. Adult *Chromis punctipinnis* were rare with only two adults observed. No *Oxyjulis californica* were present during the fish count, unlike last year. Three female, three male and no juvenile *Semicossyphus pulcher* were observed. Up to seven adults and two juvenile *Embiotoca jacksoni* were observed. Five adult *Rhacochilus vacca* were observed, but no juveniles. *Embiotoca lateralis* were common with up to nine adults and four juveniles observed. Up to 26 adults and three juvenile *Sebastes mystinus* were observed. Up to 18 adult and 12 juvenile *Sebastes atrovirens* were observed. *Sebastes serranoides* were relatively common with up to 14 adults and one juvenile observed. No *Sebastes serriceps* were observed. Up to six *Sebastes chrysomelas*, black and yellow rockfish, were observed. One adult and one juvenile *Sebastes carnatus,* gopher rockfish, were observed. Up to four kelp/gopher/black and yellow/copper rockfish young of the year complex (KGB) were observed in the canopy. One *Ophiodon elongatus,* lingcod, and one *Hexagrammus decagrammus,* kelp greenling, were observed. This is one of the few sites where we often observe kelp greenlings. *Brachyistius frenatus*, kelp surfperch, were in the canopy with up to nine observed. Two adult *Rhacochilus toxotes,* rubberlip surfperch, were observed. A school of up to 100 *Atherinops affinis*, topsmelt, were observed. One adult *Scorpaenichthys marmoratus,* cabezon, was observed. One juvenile *Cebidichthys violaceus,* monkeyface prickleback, was observed after the fish count and was thus not recorded in the database. Roving diver fish count was conducted on August 22nd by three divers observing 26 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 20th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: South Point, Santa Rosa Island
Site #25 SRSP
2007 sampling dates: 7/26.
2007 status: Mature kelp forest.

This site was similar to last year with slightly more *Macrocystis pyrifera* canopy cover. The canopy cover appeared thicker and was estimated at 75-80%. *Macrocystis pyrifera* adult and juvenile densities were both similar to last year at 0.34/m² and 2.1/m², respectively. Subadult density and cover declined and were 0.03/m² and 17%, respectively. *Eisenia arborea* were present at the site, but none were observed on 1 m quadrats. *Eisenia arborea* cover was 0.5%, similar to last year. *Pterygophora californica* adults and juveniles were moderately abundant with densities of 0.92/m² and 0.38/m², respectively, and a cover of 9.7%. *Laminaria farlowii* was common were adult and juvenile densities of 0.29/m² and 0.17/m², respectively, and a cover of 3.7%, all similar to recent years. No *Desmarestia* spp. were observed on RPCs. *Cystoseira* spp. cover was 3.3%. Miscellaneous red algae were abundant throughout the site with a cover of 42% and included *Polyneura* spp., *Microcladia* spp. and *Rhodymenia* spp. Miscellaneous brown algae were present in low abundance at 0.17%. *Gigartina* spp. cover was 1.8%. Articulated and encrusting coralline algae were less abundant this year with covers of 15% and 5.7%, respectively. Bare substrate cover was 12.0%.

Overall, invertebrate abundance was low relative to recent years. Miscellaneous invertebrates excluding *Ophiothrix spiculata* decreased dramatically from last year to 5.5%. This category consisted mainly of the hydroid *Aglaophenia struthionides*. Sponge cover decreased as well to 4.3%. *Tethya aurantia* density was 0.11/m², similar to last year. Tunicate cover remained high at 11.8%. *Styela montereyensis* was with a density of 0.83/m², similar to last year. Miscellaneous bryozoan cover was high at 17% and no *Diaperoecia californica* were observed on RPCs. *Diopatra ornata* cover was much higher than previous years at 17%. *Phragmatopoma californica* was common in the *Macrocystis pyrifera* holdfasts and cover was 4.3%. *Dodecaceria fewkesi* was relatively common along the transect. *Urticina lofotensis* density was 0.025/m². No *Corynactis californica*, *Astrangia lajollaensis* or *Balanophyllia elegans* were observed on RPCs. Similar to recent years, no *Lophogorgia chilensis*, *Muricea californica* and *Muricea fruticosa* were observed.

Strongylocentrotus franciscanus density remained low at 0.083/m². There were noticeably more *S. purpuratus* and density increased to 1.4/m². No *Lytechinus anamesus* or *Centrostephanus coronatus* were observed. All urchins were confined to the crevice habitat, which is limited directly along the transect line at this site. Both large and small *S. franciscanus* were present with a mean size of 73 mm. *Strongylocentrotus purpuratus* were mostly small with a mean size of 29 mm and found under the spine canopy of *S. franciscanus*. No sea urchin wasting disease was observed.

Pisaster giganteus counted on 1 m quadrats and 5 m quadrats with a densities of 0.0/m² and 0.055/m², respectively. *Patiria miniata* were relatively common along the transect with a density of2.8/m², and mean size of 62 mm, similar to recent years. *Pycnopodia helianthoides* were rare at a density of 0.0028/m² and four were found for size frequencies with a mean size of 121 mm. No sea star wasting disease was observed.

Haliotis rufescens were common at the site with a density of 0.05/m², similar to last year and 90 measured were measured with a mean size of 177 mm. We measured abalone while conducting band transects and look between those transect to cover the entire site. This year we found the same number of abalone as last year, and we think this is a good proxy of abundance at the site. *Cypraea spadicea* density was 0.13/m². *Lithopoma gibberosa* and *Megastraea undosa* were not observed on 1 m quadrats this year. However, five large L. undosum were found along the transect for size frequencies with a mean size of 125 mm. *Megathura crenulata* were rare at 0.0042/m². *Crassedoma giganteum* were not observed on band transects, but we found eight for size frequency measurements. *Kelletia kelletii* density was 0.0056/m².

Fish at this site increased in abundance and diversity from last year, with several more species recorded during the roving diver fish count. *Coryphopterus nicholsii* were more common this year at 0.13/m² and up to 34 were observed on the fish count. *Oxylebius pictus* were also common with a density of 0.38/m² and up to 26 observed. *Alloclinus holderi* were not observed. *Chromis punctipinnis* were relatively abundant for this site with 43 adults and no juveniles observed. *Oxyjulis californica* were also abundant with up to 57 adults and no juveniles recorded. Nine female, one juvenile and four male *Semicossyphus pulcher* were observed. No *Halichoeres semicinctus* were observed. No *Hypsypops rubicundus* were observed. *Paralabrax clathratus* were rare with up to four adults and no juveniles counted. *Girella nigricans* were present with up to three adults observed. *Embiotoca jacksoni* were moderately abundant with up to 17 adults and five juveniles observed. *Embiotoca lateralis* were common with up to nine adults and four juveniles recorded. Up to three adult *Rhacochilus vacca* were observed. Ten adult and one juvenile *Sebastes mystinus* were observed. Thirty-nine adult and five juvenile *Sebastes atrovirens* were observed, many more than recorded last year. Twelve adult and one juvenile *Sebastes serranoides* were observed, same as last year. Two juvenile *Sebastes serriceps* were observed. Three adult, *Sebastes carnatus*, gopher rockfish, were observed. Up to 10 *Sebastes chrysomelas*, black and yellow rockfish, were counted. There were up to eight KGB young of year complex observed. One *Scorpaenichthys marmoratus*, cabezon, was observed. There were a few sculpins observed including one *Artedius corallinus*, coralline sculpin, two *Orthonopias triacis*, snubnose sculpin and one *Leiocottus hirundo*, lavender sculpin. Up to two adult *Rhacochilus toxotes*, rubberlip surfperch, were observed. *Brachyistius frenatus*, kelp surfperch, were present in the kelp canopy with up to two observed. Two adult and one juvenile *Hypsurus caryi*, rainbow surfperch, were observed. There were up to 21 juvenile *Heterostichus rostratus*, giant kelpfish, observed. Two *Citharichthys stigmaeus*, speckled sanddab, were observed. Smalls schools of *Atherinops affinis*, topsmelt, and *Aulorhynchus flavidus*, tubesnout, were observed with up to 50 and 36 recorded, respectively. One *Myliobatis californica*, bat ray, was observed. Roving diver fish count was conducted on July 26th by six divers observing 31 species of fish.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 20th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Devil's Peak Member, Santa Cruz Island
Site #26 SCDPM
2007 sampling dates: 8/24, 9/10.
2007 status: Dominated by Strongylocentrotus purpuratus.

The site continued to be dominated by *Strongylocentrotus purpuratus* and had very little macroalgae. Most macroalgae present at the site were located on the tops of large boulders. No *Macrocystis pyrifera* was observed within the transect area, although there were some located southwest of the transect area. Adult and juvenile *Eisenia arborea* were present on top of rocks but none were observed on 1 m quadrats or RPCs. No *Pterygophora californica*, *Laminaria farlowii*, or *Desmarestia* spp. were observed. One Cystoseira spp. was observed at the site, but not on RPCs. No brown algae were recorded on RPCs, but there were patches of *Dictyota/Pachydictyon* spp. present near the sand channels on the offshore side. Miscellaneous red algae were common at 21% cover, an increase from last year, and consisted mostly of *Rhodymenia* spp. Green algae cover was 0.17%. Miscellaneous plant cover was higher than last year at 26% and consisted of filamentous diatoms. It is common to observe large fluctuations of this category. Encrusting coralline algae cover was 52%, similar to past years. Articulate coralline algae were rare with a 0.33% cover. Bare substrate cover was 6.7%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover increased to 26%. The most common miscellaneous invertebrates on RPCs were *Spirobranchus spinosus* and hydroids. *Diopatra ornata* were common in the low lying areas with sand, but were rare along the main transect with a cover of 0.17%. Sponge cover was 0.5%. *Tethya aurantia* density was 0.021/m². Tunicates cover was relatively high for this site at 4.8%. *Pycnoclavella stanleyi* and *Aplidium productum* were the most common in this category. *Corynactis californica* cover was 0.5%. *Astrangia lajollaensis* and *Balanophyllia elegans* covers were 3.5% and 0.17%, respectively. *Lophogorgia chilensis* was abundant with a density of 0.23/m², an increase from last year. Large *Muricea californica* were common and several *M. fruticosa* were observed with densities of 0.0056/m² and 0.0014/m², respectively. Miscellaneous bryozoans cover was 8.0%. The parchment tube worm, *Chaetopterus variopedatus* were abundant on top of rocks on the eastern half of the transect and were observed simultaneously spawning. The spawning event noticeably decreased visibility in the water column.

Strongylocentrotus purpuratus dominated this site with a density of 21/m², similar to last year. *Strongylocentrotus franciscanus* were common with a density of 3.2/m², similar to last year but continued to gradually increase since we began monitoring in 2005. *Centrostephanus coronatus* were moderately abundant in the crevice habitat, but had a relatively low density on 1 m quadrats at 0.13/m², similar to last year. *Lytechinus anamesus* were common with a density of 0.04/m^2 on band transects. We were able to find 88 for size frequency measurements. An estimated 10% of *L. anamesus* had wasting disease and this disease was observed in any other urchin species.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.33/m² and 0.15/m², respectively. Most *P. giganteus* were medium-sized with a mean of 99 mm. *Patiria miniata* were common with a density of 0.58/m², and some juveniles were observed. *Pycnopodia*

helianthoides density was 0.0069/m², and we observed one actively feeding on *Pachythyone rubra*. *Pachythyone rubra* cover was relatively abundant and similar to last year at 14%. *Parastichopus parvimensis* density was 0.25/m². No sea star wasting disease was observed.

Megathura crenulata were abundant with a density of 0.35/m², an increase from last year. *Kelletia kelletii* were rare at a density of 0.0028/m², and only three found at the site. *Megastraea undosa* were relatively abundant compared to other nearby sites this year and large with a density of 0.17/m^2. *Tegula regina* were present at the site, but not observed on 1 m quadrats. *Crassedoma giganteum* were abundant common at 0.11/m², with all sizes present. Some large *C. giganteum* appeared to have been harvested from the site by divers, due to the top half of the shell being removed. *Aplysia californica* density was 0.025/m² and some were observed mating.

We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Similar to last year, this site had high diversity and abundance of fish. *Coryphopterus nicholsii* were abundant with a density of 1.4/m² and up to 236 observed on the roving diver fish count. *Alloclinus holderi* were also more abundant than last year with a density of 0.63/m² and up to 42 observed. *Lythrypnus dalli* density was 0.13/m^2 and up to 19 observed. Up to 21 *Oxylebius pictus* were observed, but none on 1 m quadrats. Up to 173 *Oxyjulis californica* adults and four juveniles were observed. *Chromis punctipinnis* was the most abundant fish with up to 409 adults and 30 juveniles observed. Five female, two juvenile and one male *Semicossyphus pulcher* were observed. Nine female, five juvenile and seven male *Halichoeres semicinctus* were observed. *Hypsypops rubicundus* were abundant with up to 23 adults observed. Up to 24 adult and one juvenile *Paralabrax clathratus* were observed. Up to five adult *Girella nigricans* were observed. *Embiotoca jacksoni* were moderately abundant with up to 23 adults and one juvenile observed. Two adult *Embiotoca lateralis* were observed. Up to six adult and one juvenile *Rhacochilus vacca* were observed. *Sebastes* spp. were present, but fewer species were observed as last year. Two adult *Sebastes mystinus* were observed. Eight adult *Sebastes atrovirens* were observed. One adult *Sebastes serranoides* was observed. Up to four adult and three juvenile *Sebastes serriceps* was observed. One KGB young of the year complex was counted. Five *Sebastes carnatus*, gopher rockfish, and one *Sebastes caurinus*, copper rockfish, were observed. One *Ornothopias triacis*, snubnose sculpin, was observed. One *Artedius corallinus*, coralline sculpin, was observed. One adult *Rhacochilus toxotes*, rubberlip surfperch, were observed. Up to six adult *Medialuna californiensis*, halfmoon, were observed. One *Gymnothorax mordax*, California moray eel, was observed. Four *Lythrypnus zebra*, zebra goby, were observed. Roving diver fish counts were conducted on August 24th and September 10th with five divers each count observing 21 and 23 species of fish, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on August 27th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Potato Pasture, Santa Cruz Island

Site #27 SCPP

2007 sampling dates: 8/9, 9/18, 9/28.

2007 status: Site dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

Overall, there was little noticeable change since last year. This site remained dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus* and was almost entirely devoid of macroalgae except on tops of rocks at this high relief site. No *Macrocystis pyrifera*, *Eisenia arborea*, *Pterygophora californica*, *Laminaria farlowii*, *Cystoseira* spp. or *Desmarestia* spp. were observed at the site. Miscellaneous brown algae were rare and none were observed on RPCs. Most notable in this category was the *Colpomenia* spp. on tops of rocks. Miscellaneous red algae cover was 11%, a decrease from recent years. No green algae was observed on RPCs. Miscellaneous plants comprised of filamentous diatoms cover was 2.2%. Encrusting coralline algae cover was 42%, similar to last year. Articulated coralline algae were rare with a cover of 0.30%. Bare substrate cover was 18%, similar to last year.

Encrusting invertebrates were abundant in the high relief areas. Miscellaneous invertebrate excluding *Ophiothrix spiculata* was lower than last year at 14%. The most dominant miscellaneous invertebrate was *Clavularia* spp., which has also been common at other sites nearby. Sponges were present but were not observed on RPCs. *Tethya aurantia* were common at a density of 0.065/m². Miscellaneous bryozoans cover was 2.0%, similar to other nearby sites. *Diaperoecia californica* was common on the sides of rocks mostly off the main transect where RPCs are conducted with a cover of 0.5%. Tunicates were rare with a cover of 0.33%, similar to last year. *Corynactis californica* were common with a cover of 2.8%. *Astrangia lajollaensis* were common with a cover of 2.3%. *Balanophyllia elegans* cover was 0.33%, and mostly in the low lying areas. *Lophogorgia chilensis* was abundant in the low lying areas in small patches at a density of 0.17/m² and all sizes were common, similar to last year. *Muricea californica* and *M. fruticosa* were not observed on band transects.

Strongylocentrotus spp. continued to dominate the site and densities were similar to last year. *Strongylocentrotus purpuratus* density was 26/m². *Strongylocentrotus franciscanus* were moderately abundant at 7.3/m². *Lytechinus anamesus* were also moderately abundant in the low lying areas and were recorded at a density of 0.71/m². *Lytechinus anamesus* were present mostly at the east end of the transect within the first 20 m. This part of the transect is low lying compared to the rest of the transect. Some juvenile *Strongylocentrotus* spp. were noted. *Centrostephanus coronatus* adults were present out in the open, but not recorded during sampling. We estimated 1-3% of *Strongylocentrotus* spp. and *L. anamesus* had wasting disease during this August visit.

Pisaster giganteus density on 1 m quadrats and 5 m quadrats were 0.042/m² and 0.055/m², respectively. *Patiria miniata* were common at a density of 0.38/m², similar to last year. *Pachythyone rubra* were abundant along the first 30 meters of the transect covering more area than last year at 4.3%. *Parastichopus parvimensis* were moderately abundant at a density of 0.67/m², similar to last year. One *Pycnopodia helianthoides* was observed for a density of 0.0014/m^2, and this was the only

one observed at the site. *Henricia* spp. and *Pisaster ochraceus* were observed at the site. No sea star wasting disease was observed.

No *Haliotis* spp. were observed at the site. *Crassedoma giganteum* were abundant at 0.15/m² and large ones were notably common, similar to last year. *Megathura crenulata* were abundant with a density of 0.10/m². *Megastraea undosa* increased in density to 0.29/m². A total of 62 were measured and most were small with a mean size of 32 mm. *Tegula regina* decreased in density to 0.04/m² and only 28 were found for size frequencies with a mean size of 50 mm. *Kelletia kelletii* density was 0.025/m², similar to last year. *Aplysia californica* density was 0.013/m², similar to last year. *Panulirus interruptus* density was 0.0028/m^2.

We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Fish were moderately abundant and diverse at this site. Similar to last year, *Coryphopterus nicholsii* were very abundant in their preferred rock/sand habitat at a density of 1.8/m² and up to 560 were observed during the roving diver fish count. *Alloclinus holderi* density was 0.25/m² with up to 18 observed. Up to 53 *Lythrypnus dalli* were observed, but none were observed on 1 m quadrats. *Oxylebius pictus* density was 0.04/m^2 and up to 24 individuals observed. *Chromis punctipinnis* was the most abundant fish with up to 500 adults and 30 juveniles observed. Up to 75 adult, but no juvenile *Oxyjulis californica* were observed. Eight female, one juvenile and one male *Semicossyphus pulcher* were observed. *Halichoeres semicinctus* were common with up to 18 females, one juvenile and four males observed. *Hypsypops rubicundus* were abundant with up to 22 adults observed, similar to last year. *Paralabrax clathratus* were also abundant with 29 adults observed. Five adult *Girella nigricans* were observed. Up to 12 adult, but no juvenile *Embiotoca jacksoni* were observed. *Rhacochilus vacca* were common with up to 14 adults and no juveniles observed. Three adult, but no juvenile *Sebastes mystinus* were observed. No *Sebastes atrovirens* were observed. Four adult *Sebastes serranoides* were observed. Four adult and four juvenile *Sebastes serriceps* were observed. Two adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. Five *Sebastes carnatus*, gopher rockfish, were observed. Up to three *Sebastes caurinus*, copper rockfish, were observed. One *Sebastes auriculatus*, brown rockfish, was observed. Up to three KGB complex were observed. Two *Scorpaenichthys marmoratus*, cabezon, were observed. One *Scorpaena guttata*, California scorpion fish, was observed. One *Ornothopias triacis*, snubnose sculpin, was observed. *Rhacochilus toxotes*, rubberlip surfperch, were common with up seven adults observed. Two *Phanerodon furcatus*, white surfperch, were observed. Eleven *Medialuna californiensis*, halfmoon, were observed. Two *Caulolatilus princeps*, ocean whitefish, were observed. Up to three *Lythrypnus zebra*, zebra goby, were observed. One *Myliobatis californicus*, bat ray, was observed. Roving diver fish counts were conducted on September 18th and 28th by five divers each observing 27 and 29 species, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on October 10th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Cavern Point, Santa Cruz Island

Site #28 SCCVP

2007 sampling dates: 6/19, 9/19.

2007 status: Dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

Similar to last year, algae were low in abundance and diversity. No adult and only several juvenile Macrocystis pyrifera was but none on 1 m quadrats or RPCs. No adult and some juvenile *Eisenia arborea* observed, but none on RPCs and only one juvenile on 1 m quadrats for a density of 0.042/m². No *Laminaria farlowii, Pterygophora californica* or *Cystoseira* spp. were observed. Some *Desmarestia* spp. were observed, but none on RPCs. *Codium setchellii* was common on top of rocks, and green algae cover was 0.017%, similar to last year. Red algae at the site consisted mostly of *Laurencia pacifica* and *Rhodymenia* spp. which were both common. Miscellaneous red algae cover was 7.8%, a large decrease from last year. Miscellaneous plants, consisting of filamentous diatoms, cover was 7.3%, similar to other nearby sites. Encrusting coralline algae were the most abundant algae with a cover of 45%, similar to last year. Articulate coralline algae were present on the tops of rocks with a cover of 0.67%, also similar to last year. Bare substrate cover was 11%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover remained relatively high at25%. The most dominant miscellaneous invertebrates in this category were *Spirobranchus spinosus,* christmas tree worm, and hydroids. *Diaperoecia californica* were common at this site with a cover of 1.3%. Miscellaneous bryozoan cover, which consisted mostly of *Bugula* spp., was 5.5%. Tunicates and sponges were common and changed little in cover from last year to 3.5% and 0.5%, respectively. The most common tunicates were *Cystodytes lobatus,* an unidentified brown tunicate with white spots, and *Pycnoclavella stanleyi*. No *Styela montereyensis* was observed. *Tethya aurantia* density was 0.074/m². *Corynactis californica* cover was 0.83%. *Balanophyllia elegans* and *Astrangia lajollaensis* covers were 0.17% and 3.5%, similar to recent years. *Lophogorgia chilensis* were abundant on the offshore side of the transect at a density of 0.23/m², similar to last year. Several *Muricea californica* were observed with a density of 0.0028/m². No *Muricea fruticosa* were observed on band transects.

Strongylocentrotus spp. remained high, and densities were similar to the past two years *Strongylocentrotus purpuratus* was the most abundant echinoderm with a density of 28/m². *Strongylocentrotus franciscanus* density was 2.7/m². *Centrostephanus coronatus* were common and density was 0.17/m², similar to last year. *Lytechinus anamesus* were rare with a density of 0.043/m², and only 56 were found for size frequencies. No urchin wasting disease was observed.

No *Ophiothrix spiculata* were observed. *Pisaster giganteus* were counted on 1 m quadrats and 5 m quadrats with densities of 0.083/m² and 0.06/m², respectively. Thirty-eight *P. giganteus* were found for size frequencies and were large with a mean of 140 mm, similar to past years. *Patiria miniata* were common with a density of 0.21/m². *Parastichopus parvimensis* were abundant at a density of 1.2/m², similar to last year. No *Pycnopodia helianthoides* were observed. No sea star wasting disease was observed.

Megastraea undosa density remained low at 0.04/m², and only 43 were found for size frequencies. Several juveniles were observed. *Crassedoma giganteum* remained abundant at a density of 0.25/m². Many large ones continue to be observed and their mean size was 90 mm. *Kelletia kelletii* were rare with one observed for a density of 0.0014/m². *Megathura crenulata* were abundant with a density of 0.18/m². *Tegula regina* density was 0.083/m². No *Panulirus interruptus* were observed during band transects. *Aplysia californica* density was 0.083/m², and many large individuals were common.

We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Similar to last year, fish were abundant and diverse at this site. *Coryphopterus nicholsii* density changed little at 0.46/m², but higher numbers were observed on the roving diver fish count with up to 320 observed. *Alloclinus holderi* density was similar to last year at 0.13/m² and up to 31 observed. *Lythrypnus dalli* density was 0.08/m² and up to 15 observed. Up to 13 *Oxylebius pictus* were observed, but there were none on 1 m quadrats. *Chromis punctipinnis* were the most abundant fish with up to 1048 adults and 13 juveniles observed. *Oxyjulis californica* were abundant with up to 270 adults and 18 juveniles observed. Twelve female, two juvenile and two male *Semicossyphus pulcher* were observed, similar to last year. *Halichoeres semicinctus* were common with up to 10 females and three males observed. Up to 15 adult *Hypsypops rubicundus* were observed. *Paralabrax clathratus* were abundant with up to 36 adults observed. Up to five adult *Girella nigricans* were observed. Up to 15 adult and two juvenile *Embiotoca jacksoni* were observed, similar to last year. *Rhacochilus vacca* were abundant with up to 48 adults and no juveniles observed. One adult *Sebastes atrovirens* was observed. One adult *Sebastes serranoides* was observed. Six adults and one juvenile *Sebastes serriceps* were observed. One *Sebastes chrysomelas*, black and yellow rockfish, was observed. One *Sebastes auriculatus*, brown rockfish, was observed. Seven adult *Sebastes carnatus*, gopher rockfish, were observed, similar to last year. Two KGBs were observed. One *Scorpaena guttata*, California scorpion fish, was observed. Two *Ornothopias triacis*, snubnose sculpin, were observed. One *Scorpaenichthys marmoratus*, cabezon, was observed. One *Cephaloscyllium ventriosum*, swell shark, was observed. One *Neoclinus* spp., fringehead spp., was observed. *Rhacochilus toxotes*, rubberlip surfperch, were abundant with up 55 adults observed. *Caulolatilus princeps*, ocean whitefish, were abundant with up to 18 observed. Up to six *Medialuna californiensis*, halfmoon, were observed. One *Lythrypnus zebra*, zebra goby, was observed and some very small individuals were noted. A small school of *Atherinops affinis*, topsmelt, was observed with up to 17 fish. Roving diver fish counts were conducted on June 19th by three divers and on September 19th by five divers observing 26 and 28 species, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on October 1st.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Little Scorpion, Santa Cruz Island

Site #29 SCLS

2007 sampling dates: 6/27, 6/28, 9/19.

2007 status: Dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

This site continues to be dominated by *Strongylocentrotus* spp. and was almost entirely devoid of macroalgae except on the tops of the taller rocks. Similar to last year there was no *Macrocystis pyrifera*, *Pterygophora californica*, *Laminaria farlowii*, *Desmarestia* spp. or *Cystoseira* spp. present at this site. One juvenile *Eisenia arborea* was observed on top of a large rock, but was not present in our sampling methods. Miscellaneous brown algae cover was 0.17%, similar to past years and mainly consisting of *Dictyota/Pachydictyon* spp. Green algae cover was 0.33%. Miscellaneous red algae, consisting mostly of *Laurencia pacifica*, cover was 12%, similar to last year. Miscellaneous plants cover was 17% and consisted entirely of filamentous diatoms. Encrusting coralline algae cover was 29%, similar to last year. Articulated coralline algae were rare and none were observed on RPCs. Bare substrate cover increased to 21%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* were abundant with a cover of 21%, similar to last year. The most dominant miscellaneous invertebrates were hydroids which were notably abundant on the tops of rocks. Sponge cover was 0.5%. *Tethya aurantia* density was 0.017/m² and only 22 were found for size frequencies, similar to last year. Tunicate category cover was 1.7%.Miscellaneous bryozoan cover increased to 9.0%. *Diaperoecia californica* was common in small patches off the main transect and cover was similar to last year at 1.2%. *Corynactis californica*, *Astrangia lajollaensis*, and *Balanophyllia elegans* cover remained similar to last year at 0.5%, 4.0%, and 0.0%, respectively. *Lophogorgia chilensis* were abundant on the offshore/deeper side with a density of 0.13/m², similar to last year. One *Muricea californica* was observed at the entire site and but was not observed on band transects. No *Muricea fruticosa* were observed on band transects.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* remain moderately abundant with densities similar to the past two years at 5.9/m² and 11/m², respectively. Most the *S. purpuratus* and *S. franciscanus* were notably large in size relative to other sites nearby that are dominated by sea urchins. *Lytechinus anamesus* were common in the low lying sandy areas with a density of 0.058/m². *Centrostephanus coronatus* were moderately abundant at the site but not along the main transect. Sea urchin wasting disease was observed and we estimated less than 1% of the *S. franciscanus* and *S. purpuratus* were observed with the disease on June 28th, but none were observed on September 19th.

Patiria miniata were moderately abundant for this area with a density of 1.0/m². *Pisaster giganteus* were recorded on 1 m quadrats and 5 m quadrats with densities of 0.21/m² and 0.09/m², respectively. No *Pycnopodia helianthoides* were observed on band transects and only one was found at the site for size frequencies. *Linkia columbiae* were relatively abundant. *Parastichopus parvimensis* density was 0.42/m². No sea star wasting disease was observed.

One small *Haliotis corrugata* measuring 41 mm was found under a small rock. *Crassedoma giganteum* were common with a density of 0.058/m², with some notably large individuals. *Megathura crenulata* remained abundant and increased in density to 0.49/m², the highest density of all of the KFM sites. *Cypraea spadicea* density was 0.080/m². Adult and juvenile *Megastraea undosa* were common but patchy, with a density of 0.13/m², similar to last year. *Kelletia kelletii* density was 0.057/m² with many small individuals noted. *Tegula regina* density was 0.083/m². *Aplysia californica* were common with a density of 0.028/m². *Panulirus interruptus* density was 0.0014/m², and eight were observed within the transect area during the roving diver fish count.

We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

This site continued to have a high fish abundance and diversity. *Coryphopterus nicholsii* were the most abundant fish with a density of 3.8/m² and up to 447 observed on a roving diver fish count. *Alloclinus holderi* density was 0.21/m² and up to nine were observed. *Lythrypnus dalli* were more abundant than last year with a density of 0.08/m² and up to 31 observed. In 2006, we visited this site twice and noted more *L. dalli* during the second visit possibly due to the warm water recruitment event between visits. *Oxylebius pictus* were common at 0.04/m² and up to 27 observed. *Chromis punctipinnis* were abundant with up to 410 adults and two juveniles observed, similar to past year. *Oxyjulis californica* were common with up to 45 adults and 80 juveniles observed. Two female, three juvenile and one male *Semicossyphus pulcher* were observed Up to five female, two juvenile and three male *Halichoeres semicinctus* were observed. *Hypsypops rubicundus* were abundant with up to 18 adults observed. *Paralabrax clathratus* were common with up to 20 observed on September 19th and eight observed on June 27th. *Embiotoca jacksoni* were common with up to 14 adults observed. Ten adult *Rhacochilus vacca* were observed. Most of the adult *Sebastes* spp. were in the 15-20 cm category with few large fish present. Up to six adult and no juvenile *Sebastes mystinus* were observed. Fourteen adult *Sebastes atrovirens* were observed. Nine adult and two juvenile *Sebastes serriceps* were observed, similar to last year. One adult *Sebastes carnatus,* gopher rockfish, were observed. Six adult *Sebastes chrysomelas,* black and yellow rockfish, were observed. One *Scorpaena guttata*, California scorpionfish, was observed. Four adult *Rhacochilus toxotes*, rubberlip surfperch, were observed. Seventeen *Phanerodon furcatus*, white surfperch, were observed. One adult *Caulolatilus princeps,* ocean whitefish, was observed. Three adult *Medialuna californiensis,* halfmoon, were observed. Eight *Lythrypnus zebra*, zebra goby, were observed. One *Gymnothorax mordax,* California moray eel, was observed. Roving diver fish counts were conducted on June 27th by four divers and on September 19th by five divers observing 22 and 29 species, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on August 29th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Pedro Reef, Santa Cruz Island

Site #30 SCPR

2007 sampling dates: 6/27, 8/9.

2007 status: Dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

This site continued to be devoid of macroalgae and dominated by *Strongylocentrotus* spp. No *Macrocystis pyrifera, Eisenia arborea, Pterygophora californica, Laminaria farlowii, Cystoseira* spp. or *Desmarestia* spp. were observed, similar to past years. The most abundant algae were filamentous red algae, small red algae turf and *Laurencia pacifica,* all mostly located on the shallower parts of the reef. These algae are all under the miscellaneous red algae category on RPCs which had a cover of 9.2%, similar to recent years. Miscellaneous green algae were not observed on RPCs this year. Miscellaneous plants, consisting of filamentous diatoms cover was9.7%. Articulated coralline algae cover was 2.3%. Encrusting coralline algae cover was 43%, an increase from last year. Bare substrate cover remained high at 28%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 17%, similar to last year. The most dominant miscellaneous invertebrates were the *Spirobranchus spinosus,* Christmas tree worm, and *Balanus* sp. barnacles. Sponges were rare with a cover of 0.33%. *Tethya aurantia* were common with a density of 0.086/m², similar to last year. *Corynactis californica* were moderately abundant with a cover of 8.2%, similar to last year. *Astrangia lajollaensis* were common with a cover of 2.8%. *Balanophyllia elegans* were common with a cover of 0.33%. Miscellaneous bryozoans cover was 0.33%, similar to last year. *Diaperoecia californica* were not observed on RPCs. *Lophogorgia chilensis* were abundant in some areas with a density of 0.28/m², similar to last year. *Muricea californica* were common and had a density of 0.0056/m². No *Muricea fruticosa* were observed on band transects, but several were present at the site. One large *Pteria sterna* was observed on a *Lophogorgia chilensis*. No tunicates were observed on RPCs. *Diopatra ornata* were common to the low lying areas with 0.83% cover.

Strongylocentrotus purpuratus continued to be abundant and dominated the site with a density of 49/m². Most were small with a mean size of 20 mm. *Strongylocentrotus franciscanus* were moderately abundant with a density of 7.5/m² and were also small with a mean size of 29 mm. *Centrostephanus coronatus* were common and had a density of 0.08/m², similar to last year. *Lytechinus anamesus* were common in areas on the offshore side of the transect and density increased to 0.86/m² on band transects and 1.4/m² on 1 m quadrats. We estimated that 1% of *S. purpuratus* and *S. franciscanus* and 1-3% of *Lytechinus anamesus* had signs of wasting disease on August 9th.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.083/m² and 0.045/m², respectively. *Patiria miniata* were common with a density of 0.13/m², the same as last year. No *Pycnopodia helianthoides* were observed on band transects. *Pachythyone rubra* were cover was 1.8%, similar to last year and were mostly on the western end of the transect. *Parastichopus parvimensis* density was 0.083/m², and were notably small.

No live *Haliotis* spp. were observed. However, one fresh *Haliotis corrugata* shell was found and measured at 39 mm. *Megastraea undosa* were common and small individuals were relatively abundant over most of the transect with a density of 1.0/m². *Tegula regina* were present at the site, but not observed on 1 m quadrats. *Crassedoma giganteum* were notably large at this site with a density of 0.04/m². *Kelletia kelletii* density was 0.0042/m². *Megathura crenulata* were observed on the high relief areas with a density of 0.065/m², similar to recent years. *Cypraea spadicea* density was 0.042/m². *Bursa californica* were common at this site, similar to last year.
We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Fish were moderately diverse and abundant for a barren area, but less so than last year. *Coryphopterus nicholsii* were the most abundant fish species with up to 359 observed on the roving diver fish count and a density of 3.7/m². *Alloclinus holderi* were rare with only two observed during the fish count and none on 1 m quadrats, similar to last year. Up to nine *Lythrypnus dalli* were observed but none on 1 m quadrats. *Oxylebius pictus* were moderately abundant with up to 14 observed and a density of 0.042/m^2. *Chromis punctipinnis* were abundant with up to 232 adults and no juveniles observed. *Oxyjulis californica* were moderately abundant with up to 72 adults and 65 juveniles observed. Up to six female, one juvenile and one male *Semicossyphus pulcher* were observed. Seven female, five juvenile and four male *Halichoeres semicinctus* were observed. *Hypsypops rubicundus* were common with up to seven adults observed. Fifteen adult and no juvenile *Paralabrax clathratus* were observed. *Girella nigricans* were present with up to six adults observed. One adult *Embiotoca jacksoni* and no juveniles were observed. Two adult *Rhacochilus vacca* was observed. Two adult *Sebastes mystinus* were observed. No *Sebastes atrovirens* or *Sebastes serriceps* were observed. Three adult *Medialuna californiensis,* halfmoon, were observed. Two *Caulolatilus princeps,* ocean whitefish, were observed. Two *Lythrypnus zebra,* zebra goby, were observed. One *Myliobatis californica,* bat ray, was observed. One *Gymnothorax mordax,* California moray eel, was observed. One *Citharichthys stigmaeus,* speckled sanddab, was observed. Roving diver fish counts were conducted on June 27th by four divers and on August 9th by seven divers observing 18 and 17 species, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 5th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Keyhole, Anacapa Island
Site #31 ANKH
2007 sampling dates: 05/16, 5/17, 6/27.
2007 status: State of transition.

Overall, this site was similar to last year though there was slightly more macroalgae. *Macrocystis pyrifera* cover remained low at 0.33% and only juveniles were present at the site with a density of 0.17/m². Adult and juvenile *Eisenia arborea* densities were 0.13/m² and 0.33/m², respectively and cover was 0.0%, similar to last year. Juvenile *Egregia menziesii* were observed at this site. Miscellaneous brown algae cover was similar to last year at 15%. Because of the abundance of *Sargassum muticum*, we recorded it separately from other brown algae during RPCs, but then added back to this category during data entry. As a result, this may have slightly increased the total cover due to layering effect as we would not normally call off a category such as brown algae twice if the point landed on two species. Separated out, Sargassum muticum covered 7.1% while other brown algae (mostly *Dictyota* sp./*Pachydictyon* sp.) cover was 7.5%. *Cystoseira* spp. cover was 0.17%.Green algae cover was 1.2%. *Codium setchellii* was common. Miscellaneous red algae continued to decrease for the second year with a cover of15%. Miscellaneous plants consisting of mainly of filamentous diatoms cover remained relatively high at 22% but was a large decline from last year. Articulated coralline algae remained rare with a cover of 0.5% and encrusting coralline algae cover changed little at 42%. Miscellaneous plants consisting of mainly of filamentous diatoms cover remained relatively high at 22% but was a large decline from last year Bare substrate was higher than last year but similar to the year before at 16%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover remained high at 25%. The most common invertebrates in this category were gorgonians and mostly *Eugorgia rubens.* Miscellaneous bryozoan cover was 9.5%, similar to last year. *Diaperoecia californica* cover was 0.17% . No sponge were observed on RPCs. *Tethya aurantia* were not observed during band transects, and none were found for size frequencies. Tunicate cover was 0.83%. *Aplysia californica* density was 0.032/m². *Corynactis californica* was not observed on RPCs. *Astrangia lajollaensis* cover was 0.67%. All three gorgonian species were present at similar densities to recent years with *Lophogorgia chilensis* at 0.32/m², *Muricea fruticosa* at 0.0083/m² and *Muricea californica* at 0.040/m².

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* were common and mainly utilizing crevice habitat. Their densities were similar to last year at3.3/m² and 5.5/m², respectively. *Centrostephanus coronatus* was common at 0.38/m², with mostly large individuals present. *Lytechinus anamesus* abundance increased to 0.011/m². We estimated less than 1% of the *S. purpuratus* and *S. franciscanus* were observed with wasting disease during sampling in May.

Patiria miniata density was high for this site and sites close by with an increase to 2.5/m². *Pisaster giganteus* were counted on 1 m quadrats and 5 m quadrats with densities of 0.042/m² and 0.035/m², respectively and both higher than last year. *Pycnopodia helianthoides* were not observed on band transects. *Parastichopus parvimensis* density was 1.3/m² with several juveniles observed. No sea star wasting disease was observed.

Kelletia kelletii abundance was similar to past years at 0.0056/m² with several juveniles observed. *Megathura crenulata* were rare at 0.0097/m² and juveniles were also observed. *Crassedoma giganteum* density declined to 0.038/m². Three *Panulirus interruptus* were observed at the site and one was on band transects for a density of 0.0014/m². *Cypraea spadicea* density was 0.25/m². *Megastraea undosa* density was 1.8/m², similar to last year and adults were common and juveniles moderately abundant.. *Tegula regina* density was 0.042/m². *Octopus* spp. were common at this site.

Fish abundance was less than in previous years and diversity was similar to nearby sites. This site is within the boundaries of a conservation area where reef fish are protected but select species fish are not. *Coryphopterus nicholsii* density was 0.50/m² and up to 145 were observed on the roving diver fish count. *Alloclinus holderi* remained abundant at this site, but density declined to 0.63/m² and up to 50 were observed. *Lythrypnus dalli* density was 0.083/m² and up to 35 observed. *Oxylebius pictus* density was 0.042/m² with up to nine observed. *Chromis punctipinnis* were the most abundant fish with up to 435 adults observed and no juveniles. *Oxyjulis californica* were less common than in previous years with up to 36 adults and no juveniles observed. Up to five female, seven juvenile and one male *Semicossyphus pulcher* were observed. Up to 14 female, 12 juvenile and three male *Halichoeres semicinctus* were observed. Up to six adult *Hypsypops rubicundus* were observed. No *Girella nigricans* were observed. Up to six adult and no juvenile *Paralabrax clathratus* were observed. Nine adult and no juvenile *Embiotoca jacksoni* were observed. No *Rhacochilus vacca* were observed. No *Sebastes mystinus* or *Sebastes atrovirens* were observed. Up to three adults and on juvenile *Sebastes serriceps* were observed. Up to two adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. Up to two adult *Medialuna californiensis*, halfmoon, were observed. Fourteen *Lythrypnus zebra*, zebra goby, were observed. One *Myliobatis californica*, bat ray, was observed. Roving diver fish counts were conducted on June 27th by four divers observing 15 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 5th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: East Fish Camp, Anacapa Island
Site #32 ANEFC
2007 sampling dates: 8/7, 9/14.
2007 status: Dominated by Ophiothrix spiculata, Strongylocentrotus franciscanus and Strongylocentrotus purpuratus.

Similar to last year, this site was dominated by echinoderms and mostly devoid of macroalgae. No *Macrocystis pyrifera, Eisenia arborea, Pterygophora californica* or *Laminaria farlowii* were observed, same as last year. We neglected to take specific notes, but we are nearly positive that *Desmarestia* spp., *Cystoseira* spp., *Gelidium* spp., and *Gigartina* spp. were also absent from this site. Miscellaneous red algae cover remained similar to last year at 5.7%. In this category, *Laurencia pacifica* was most common algae and was found predominately on the tops of rocks and ridges. Green algae and miscellaneous brown algae were rare with none observed during RPCs. Miscellaneous plants consisting of filamentous diatoms cover was 0.17%. No articulated coralline algae were observed on RPCs and it was rare overall. Encrusting coralline algae cover was 50%, similar to last year. Bare substrate cover was 31%, also similar to last year.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 5.7%, similar to past years. The most common invertebrate in this category was *Spirobranchus spinosus,* Christmas tree worms. No tunicates or sponges were observed on RPCs and were relatively rare at the site. *Tethya aurantia* density was 0.044/m², similar to last year. Miscellaneous bryozoans were also rare with a cover of 0.17%. *Diaperoecia californica* were present in small patches on the steep sides of large rocks, but none were observed on RPCs. *Corynactis californica* was moderately abundant at 7.0%, similar to last year. *Balanophyllia elegans* and *Astrangia lajollaensis* were rare with covers of 0.0% and 0.3% respectively, similar to last year. All three species of gorgonians were present with densities of *Lophogorgia chilensis* at 0.017/m², *Muricea fruticosa* at 0.0028/m², and *Muricea californica* at 0.011/m².

Strongylocentrotus purpuratus were abundant with a density of 49/m², a decrease from last year. Juvenile *S. purpuratus* were present. *Strongylocentrotus franciscanus* were also abundant at 12/m², similar to last year. *Centrostephanus coronatus* remained relatively abundant with a density of 0.88/m². At least two juvenile *C. coronatus* were observed. *Lytechinus anamesus* were present in the low lying sandy areas at 0.76/m², an increase from last year. On August 7th and on September 14th, we estimated prevalence of sea urchin wasting disease at 1-3% of both *Strongylocentrotus franciscanus* and *S. purpuratus*.

Pisaster giganteus were rare and notably large with a mean size of 188 mm, but only three were found on the site for size frequencies. They were counted on 1 m quadrats and 5 m quadrats with densities of 0.042/m² and 0.010/m², respectively. *Patiria miniata* were common with a density of 1.0/m², similar to last year. No *Pycnopodia helianthoides* were observed at the site. *Parastichopus parvimensis* density was 0.29/m², similar to past years. *Ophiothrix spiculata* were abundant on the northern end of the transect with a cover of 11%, similar to last year. On August 7th, two *Patiria miniata* were observed with wasting disease.

No live *Haliotis* spp. were found at the site. *Megastraea undosa* were moderately abundant at 0.63/m², similar to last year. *Kelletia kelletii* were common with a density of 0.15/m². Small and large *Megathura crenulata* were common at 0.19/m². *Crassedoma giganteum* were common on the large boulders with a density of 0.043/m². *Aplysia californica* were moderately abundant at 0.17/m².

We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Overall, fish diversity and abundance increased at this site. *Coryphopterus nicholsii* density was 3.2/m² and up to 852 were observed during the roving diver fish count, an increase from last year. Large aggregations of 15-25 *C. nicholsii* were commonly observed in small sand patches. The density of *Alloclinus holderi* was 0.38/m² with up to 22 observed. Up to five *Lythrypnus dalli* were observed with a density of 0.0/m². *Oxylebius pictus* were common with up to 33 observed and none observed during 1 m quadrats. *Chromis punctipinnis* were common with up to 284 adults and 20 juveniles observed. There were up to 16 adult and two juvenile *Oxyjulis californica* observed. Up to 16 female, no juvenile and four male *Halichoeres semicinctus* were observed. Up to four female, three juvenile and no male *Semicossyphus pulcher* were observed. Up to 24 *Hypsypops rubicundus* were observed. Adult *Paralabrax clathratus* were common with up to nine observed, but no juveniles. Up to eight adult *Girella nigricans* were observed. One adult *Embiotoca jacksoni* was observed. Eight adult *Rhacochilus vacca* were observed. Five adult and one juvenile *Sebastes serriceps* were observed. Up to five juvenile *S. atrovirens* were observed with no adults recorded. Six adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. Up to six KGB were observed. One *Scorpaena guttata*, California scorpionfish, was observed. One *Artedius corallines*, coralline sculpin, was observed. One *Rhacochilus toxotes*, rubberlip surfperch, was observed. Up to four *Medialuna californiensis*, halfmoon, were observed. *Caulolatilus princeps*, ocean whitefish, were present with up to three adults observed. *Lythrypnus zebra*, zebra goby, were common with up to 14 observed. Two *Pleuronichthys coenosus*, CO turbot, were observed. Roving diver fish counts were conducted on August 7th by seven divers observing 23 species and on September 14th by seven divers observing 21 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 11th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Black Sea Bass Reef, Anacapa Island
Site #33 ANBSBR
2007 sampling dates: 8/20.
2007 status: Dominated by Ophiothrix spiculata.

This site continues to be dominated by *Ophiothrix spiculata* with most of the site being devoid of macroalgae, though there was a small increase this year. Most algae and invertebrates were observed on the tops of large rocks and under ledges on the eastern part of the transect. There were only two unhealthy subadult and several juvenile *Macrocystis pyrifera* present at the site. Subadult and juvenile densities were 0.005/m² and 0.042/m², respectively and cover was 1.0%. There were no *Eisenia arborea, Pterygophora californica, Laminaria farlowii, Desmarestia* spp. *or Cystoseira* spp. observed. Miscellaneous red algae cover increased to 23% with filamentous and red algae (mostly *Laurencia pacifica*) common under the dense *O. spiculata* cover. Several *Gigartina corymbifera* were observed, more than previous years at a cover of 0.33%. Miscellaneous brown algae cover was 1.3%. Green algae cover increased to 4.8% and included *Codium fragile* and *Codium setchellii.* Miscellaneous plants cover consisting of filamentous diatoms was 6.2%. Encrusting coralline algae cover was 82%. Articulated coralline algae cover was 0.33%. Bare substrate cover was 5.0%, similar to last year.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 4.5% and mostly consisted of *Spirobranchus spinosus*, the christmas tree worm. Sponges were common at 0.50% cover. *Tethya aurantia* were density was 0.0069/m², and most were large. Tunicate cover was 0.17%, same as last year. Miscellaneous bryozoans were common at 3.7%. *Diaperoecia californica* was not observed on RPCs this year. *Corynactis californica* were common at 2.3%. *Lophogorgia chilensis* density was 0.014/m². *Muricea fruticosa* and *Muricea californica* were both rare with densities of 0.0028/m² and 0.0014/m², respectively.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* densities were 1.9/m² and 2.2/m², respectively. *Centrostephanus coronatus* were moderately abundant at 0.17/m². *Lytechinus anamesus* were rare with only one observed and none on band transects. Sea urchin wasting disease was not observed at this site.

Similar to last year, *Ophiothrix spiculata* were extremely abundant with a cover of 76%. *Patiria miniata* density was 0.21/m². *Pisaster giganteus* counted on 1 m quadrats and 5 m quadrats with densities of 0.042/m² and 0.045/m², respectively. No *Pycnopodia helianth*oides were observed. *Parastichopus parvimensis* density was higher than the past two years at 1.1/m², and small ones were commonly observed. No sea star wasting disease was observed.

No *Haliotis spp.* were observed at the site. *Megastraea undosa* were moderately abundant with a density of 0.17/m². *Tegula regina* were not observed on 1 m quadrats, but several were measured for size frequencies. *Kelletia kelletii* were rare and none were observed on band transects. *Megathura crenulata* were abundant with a density of 0.16/m². *Crassedoma giganteum* density was 0.0056/m²,

similar to last year. *Panulirus interruptus* were abundant this year at 0.047/m², and most were large being over legal size.

This site had a low diversity of fish and less abundance than years past. *Coryphopterus nicholsii* were the most abundant fish with a density of 1.0/m² and up to 430 counted. *Alloclinus holderi* were relatively abundant at 0.83/m² and up to 37 counted with small and some were notably large. There were up to 138 *Lythrypnus dalli* observed, a noticeable increase from last year, and had a density of 0.21/m². Three *Oxylebius pictus* were observed, but none on 1 m quadrats. *Chromis punctipinnis* were moderately abundant throughout the water column with up to 405 adults and 49 juveniles observed. No *Oxyjulis californicus* were observed. Six females, no juveniles and one male *Semicossyphus pulcher were* observed. One tagged *S. pulcher* was observed, most likely the same tagged female observed last year. One female, one juvenile and no male *Halichoeres semicinctus* were observed. Up to five adult *Hypsypops rubicundus* were observed. Two *Girella nigricans* were observed. Only one adult *Embiotoca jacksoni* was observed. Three juvenile *Sebastes atrovirens* were observed and no adults. *Sebastes serriceps* were common with up to two adults and six juveniles observed. One *Scorpaena guttata*, California scorpionfish, was observed. There were up to four *Caulolatilus princes*, ocean whitefish, observed. *Medialuna californiensis*, halfmoon, were common with up to 11 observed in the midwater. A school of up to 35 *Sphyraena argentea*, Pacific barracuda, was observed swimming through the transect. No *Stereolepis gigas*, black sea bass were observed this year. Roving diver fish counts were conducted on August 20th by four divers observing 17 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 4th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Lighthouse, Anacapa Island

Site #34 ANLH

2007 sampling dates: 8/29, 8/30, 9/14.

2007 status: Dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

This site was similar to last year with very little algae present and continues to be dominated by *Strongylocentrotus* spp. Most of the macroalgae were either growing epiphytically on gorgonians or on the tops of large rocks. Several adult and juvenile *Macrocystis pyrifera* and *Eisenia arborea* were present. There was a small kelp forest present just inshore of the sampling area. Fishing pressure appears to be high in this area as sport fishing boats are frequently seen here, and several strands of monofilament line and a fishing pole were found.

Overall, macroalgae were rare at this site. No *Macrocystis pyrifera, Eisenia arborea, Laminaria farlowii, Pterygophora californica*, *Cystoseira* spp. or *Desmarestia* spp were recorded on 1 m quadrats, 5 m quadrats or RPCs. Four mature adult *M. pyrifera* were found within the transect area for size frequencies. No green algae were observed on RPCs. Miscellaneous brown algae cover was rare at 0.17%. Miscellaneous red algae cover was 2.5% and consisted mostly of filamentous red algae. Miscellaneous plants, consisting of filamentous diatoms cover was 3.7%. Articulated coralline algae were rare with a cover of 0.17%. Encrusting coralline algae cover was 34%, similar to last year. Bare substrate cover increased substantially to 41%.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* cover was 13%, same as the last two years. The most common miscellaneous invertebrates in this category were hydroids followed by *Spirobranchus spinosus,* christmas tree worm. Tunicate cover continued to decline for the second year with none observed RPCs. Miscellaneous bryozoans also continued to decline for the second year to a cover of 0.5%. *Diaperoecia californica* were common on the steep sides of large boulders but none were observed on RPCs. Sponges were not observed on RPCs. *Tethya aurantia* density was 0.068/m², similar to previous years. *Phragmatopoma californica* cover declined to 0.33% and was mostly present from 0-20 m along the transect. *Diopatra ornata* were common with a cover of 7.2%, similar to previous years. *Corynactis californica* cover was 0.83%. *Astrangia lajollaensis* cover was 0.5%. *Balanophyllia elegans* were not observed on RPCs. All the gorgonian species were notably abundant with *Muricea californica* being the most abundant at 0.32/m², *Muricea fruticosa* density at 0.047/m² and *Lophogorgia chilensis* at 0.13/m², all similar to past years.

Strongylocentrotus spp. continued to dominate the site, similar to last year. *Strongylocentrotus franciscanus* continued to be abundant at a density of 9.6/m². *Strongylocentrotus purpuratus* density remained high but decreased to 35/m². *Centrostephanus coronatus* density remained high at 0.46/m², similar to the past two years. *Lytechinus anamesus* density was similar to past years and they were counted on both band transects and 1 m quadrats with densities of 0.018/m² and 0.13/m², respectively. Sea urchin wasting disease was observed on August 29th with an estimated prevalence of less than 1% for both *S. franciscanus* and *S. purpuratus*. On September 14th, we estimated

prevalence of 5% for *S. purpuratus*. Disease was notable cause of mortality as *Strongylocentrotus purpuratus* tests were common and some of the diseased sea urchins appeared near death.

Patiria miniata density was 0.67/m², similar to last year. *Pisaster giganteus* were counted on both 1 m quadrats and 5 m quadrats with densities of 0.083/m² and 0.040/m², respectively, an increase from last year. Several small, emergent *P. giganteus* were observed in crevices. There were also many small emergent *Parastichopus parvimensis*, presumably from last year's recruitment event that has been observed at several other sites. *Parastichopus parvimensis* density was 0.38/m², similar to last year but a gradual increase since we began monitoring in 2005. Several *Pisaster ochraceus* and one *Orthasterias koehleri* were observed at the site. On August 29th, sea star wasting disease prevalence was estimated in 1% of *Patiria miniata*, but only two were observed with the disease on September 14th.

Megathura crenulata density was 0.044/m², lower than the past two years. *Crassedoma giganteum* were moderately abundant on the larger rocks with a density were not as abundant as the past two years at 0.011/m², a gradual decline since we began monitoring in 2005. *Kelletia kelletii* were abundant with a density of 0.24/m² and most were large. *Tegula regina* density was 0.042/m². *Megastraea undosa* density remained low at 0.17/m², and most were large with a mean size of 85 mm. *Lithopoma gibberosa* were rare with a density of 0.083/m². *Cypraea spadicea* were common at 0.083/m². *Aplysia californica* were rare on band transects at 0.0083/m². Several *Panulirus interruptus* were observed and had a density of 0.0042/m². One live large *Pteria sterna*, pearl oyster was found on a gorgonian.

We were able to conduct roving diver fish counts at this site two times this year. The counts are reported with the highest number observed. If there is a large discrepancy in the range it is stated accordingly. The roving diver fish counts are reported in the Appendices and all results can be viewed there.

Fish diversity was low, but overall abundance was relatively high at this site this year. Very few rockfish were present. *Coryphopterus nicholsii* were abundant with a density of 3.0/m² and up to 411 observed. *Alloclinus holderi* were common, with a density of 0.21/m² and up to eight were observed, also an increase from last year. No *Lythrypnus dalli* were observed. *Oxylebius pictus* were abundant with up to 33 observed, and none on 1 m quadrats. *Chromis punctipinnis* were the most abundant fish with up to 589 adults and 25 juveniles observed. *Oxyjulis californica* were common with up to 265 adults and two juveniles observed. Up to five female, six juvenile and no male *Semicossyphus pulcher* were observed. Nine female, six male, and six juvenile *Halichoeres semicinctus* were observed. These juveniles appeared to be from last year. *Hypsypops rubicundus* were common with up to 16 adults observed. Up to 11 adult and no juvenile *Paralabrax clathratus* were observed. Up to nine adult *Girella nigricans* were observed. There were up to three adult *Embiotoca jacksoni* observed. No *Embiotoca lateralis* were observed. Seven *Rhacochilus vacca* were observed. No *Sebastes mystinus*, *Sebastes atrovirens*, or *Sebastes serranoides* were observed. There was one adult and one juvenile *Sebastes serriceps* observed. Two *Sebastes chrysomelas*, black and yellow rockfish,

were observed. One *Scorpaena guttata*, California scorpionfish, was observed. Two *Caulolatilus princeps*, ocean whitefish, were observed. Up to 15 adult *Medialuna californiensis*, halfmoon, were observed. One *Lythrypnus zebra*, zebra goby, was observed. Two *Pleuronichthys coenosus*, CO turbot, were observed. One *Myliobatis californica*, bat ray, was observed and are a common observation at this site. Roving diver fish counts were conducted on August 30th by three divers and September 14th by five divers observing 18 and 19 species, respectively.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 12th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Webster's Arch, Santa Barbara Island

Site #35 SBWA

2007 sampling dates: 6/4.

2007 status: Site dominated by Strongylocentrotus purpuratus and Strongylocentrotus franciscanus.

This site was similar to last year being dominated by *Strongylocentrotus purpuratus* and nearly devoid of macroalgae. There were several juvenile *Macrocystis pyrifera* observed along the transect, but none were observed during 1 m quadrats or 5 m quadrats. Adult *Eisenia arborea* were observed on the top of larger rocks where there were no sea urchins, but there appeared to be fewer individuals than last year. No *Macrocystis pyrifera*, *Laminaria farlowii*, *Eisenia arborea Pterygophora californica*, *Desmarestia spp,* or *Cystoseira spp.* were recorded. Green algae cover was 3.0%, similar to past years. Miscellaneous red algae cover was 10.0% similar to past years and consisted mostly of *Laurencia pacifica* and other filamentous red algae. Miscellaneous plant cover, consisting of filamentous diatoms cover was 2.3%. Articulate coralline algae was common on the tops of rocks with a cover of 1.3%. Encrusting coralline algae cover was56%. Bare substrate cover was 9.5%, lower than the past two years.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* increased to 18% with *Spirobranchus spinosus* and hydroids being the most dominant invertebrates in this category. There were also a moderate amount of amphipod tube mats noted along the transect. Tunicate cover was 1.8%. Sponge cover was of 0.67%. *Tethya aurantia* were rare at 0.0014/m². Miscellaneous bryozoan cover was 2.0%. *Corynactis californica* were common over most of the transect with a cover of 7.5%, similar to last year. *Balanophyllia elegans* and *Astrangia lajollaensis* covers were 1.3% and 0.17%, respectively. *Lophogorgia chilensis* and *Muricea californica* were also both rare with densities of 0.0069/m² and 0.0069/m², respectively. No *Muricea fruticosa* were observed on band transects.

This site continues to be dominated by S*trongylocentrotus franciscanus* and *Strongylocentrotus purpuratus* with a fairly uniform distribution throughout the site, similar to past years. *Strongylocentrotus franciscanus* and *S. purpuratus* were abundant with densities of 10/m²and 80/m², respectively. *Strongylocentrotus franciscanus* and *S. purpuratus* were both mostly small in size with means of 29 mm and 16 mm, respectively. *Centrostephanus coronatus* were common at a density of 0.29/m². *Lytechinus anamesus* were uncommon with a density of 0.0056/m², and only three found for size frequencies. Sea urchin wasting disease was prevalent and we estimated that less than 5% of the *S. franciscanus* and *S. purpuratus* showed signs of the disease.

Ophiothrix spiculata were only present on the first 15 m of the transect and off that east end. Their cover was 6.5%, similar to recent years. *Patiria miniata* were relatively abundant for this Island at a density of 1.4/m², similar to past years. *Pisaster giganteus* were moderately abundant as well and were counted on both 1 m and 5 m quadrats with densities of 0.083/m² and 0.050/m², respectively. *Pycnopodia helianthoides* density was 0.0069/m² and they were more common than last year with ten large individuals found for size frequencies. *Parastichopus parvimensis* density was 0.29/m². No sea star wasting disease was observed.

Cypraea spadicea density was low at 0.083/m². *Lithopoma undosa* were abundant at a density of 0.50/m² and most were medium-sized (50-59 mm). *Lithopoma gibberosa* were rare with a density of 0.042/m², same as last year, and only two found for size frequencies. *Tegula regina* were relatively abundant and mostly present on the tops of rocks with a density of 0.083/m². *Kelletia kelletii* were rare at 0.0028/m². *Megathura crenulata* density continued to increase for the second year and were abundant at a density of 0.15/m². *Crassedoma giganteum* density was 0.028/m². *Aplysia californica* were abundant and small over the entire transect with a density of 0.26/m², higher than last year. Several *Panulirus interruptus* were observed along the transect at 0.0056/m². Near the KFM transect we found one small (20 mm) fresh *Haliotis corrugata* shell.

The fish at this site were low in abundance and diversity, similar last year. *Coryphopterus nicholsii* density was 0.042/m² and up to 31 individuals were observed during the roving diver fish count. *Alloclinus holderi* were rare and not observed on the 1 m quadrats, and only two were observed during the fish count. No *Lythrypnus dalli* were observed. *Oxylebius pictus* were common with a density of 0.042/m² and up to 23 observed. *Chromis punctipinnis* were the most abundant fish at this site with up to 228 adults observed. No *Oxyjulis californica* were observed. Seven female, no juvenile and up to two male *Semicossyphus pulcher* were observed. One juvenile *Halichoeres semicinctus* was observed. *Hypsypops rubicundus* adults were common with up to ten adults observed. No *Girella nigricans* were observed. One juvenile *Sebastes serriceps* was observed. No *Embiotocidae* spp. were observed. Up to three adult *Sebastes chrysomelas*, black and yellow rockfish, were observed, similar to last year. One *Scorpaenichthys marmoratus*, cabezon, was observed. Three *Ornothopias triacis*, snubnose sculpin, were observed. Up to two large *Gymnothorax mordax*, California moray eel, were observed. Roving diver fish counts were conducted on June 4th by three divers observing 14 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on June 13th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. The loggers were not within factory specifications of 0.2ºC of each other. There was a larger than average difference between the two loggers (0.24ºC) and we used the data from the newer of the loggers.

Location: Graveyard Canyon, Santa Barbara Island
Site #36 SBGC
2007 sampling dates: 6/6.
2007 status: Dominated by Ophiothrix spiculata, Strongylocentrotus purpuratus, and Strongylocentrotus franciscanus.

This site appeared similar to last year and remained dominated by echinoderms. The first half of the transect was dominated by Ophiothrix spiculata and Strongylocentrotus spp. were moderately abundant on all of the rocky substrate. There were no significant changes in macroalgae. Several juvenile Macrocystis pyrifera plants were observed along the transect, but no adults. No other brown algae indicator species were observed at the site and other algae was rare. Green algae cover was 0.17%. Miscellaneous red algae cover was 1.2% and consisted mostly of Laurencia pacifica and filamentous red algae. Dictyota/Pachydictyota spp. were observed along the transect, similar to last year. Miscellaneous plants consisting of filamentous diatoms cover remain low at 0.17%. Encrusting coralline algae were abundant with a cover of 52% and no articulated coralline algae were observed on RPCs. Bare substrate cover remained high at 42%.This site appears to have the potential for a lot of sand movement.

Miscellaneous invertebrate excluding Ophiothrix spiculata cover was 4.0% with hydroids being the most dominant invertebrate in this category. No sponges were observed during RPCs. Tethya aurantia were common with a density of 0.076/m². Corynactis californica cover remained similar to last year at 2.3%. Balanophyllia elegans were not observed on RPCs. Astrangia lajollaensis cover was 0.67%. Lophogorgia chilensis, Muricea fruticosa and Muricea californica were all present at this site, similar to most Santa Barbara Island sites, with densities of 0.060/m², 0.0028/m² and 0.025/m², respectively.

Strongylocentrotus franciscanus and Strongylocentrotus purpuratus were present in similar densities as last year at 4.5/m² and 14.7/m², respectively. Centrostephanus coronatus was present at a density of 0.042/m², same as last year. Lytechinus anamesus were also abundant at 0.43/m². Several S. franciscanus with sea urchin wasting disease were observed.

Ophiothrix spiculata continued to increase for the second year and continued to be the most dominant invertebrate with a cover of 33%. Pisaster giganteus were not observed on 1 m quadrats this year and were rare on 5 m quadrats at 0.0050/m². Only 22 were found along the transect for size frequencies. Patiria miniata density was low at 0.042/m², but we were common at the site. No Pycnopodia helianthoides were observed. Parastichopus parvimensis density was 0.083/m², similar to past years. No sea star wasting disease was observed.

Megathura crenulata density was 0.015/m², and only 14 could be found for size frequencies. Megastraea undosa density remained low at 0.083/m². Cypraea spadicea density was 0.42/m². Aplysia californica were more abundant than previous years, at 0.16/m². Kelletia kelletii were rare with a density of 0.0014/m². Crassedoma giganteum were also rare with a density of 0.0028/m². One small (~30 mm) live Haliotis fulgens was found inshore of the transect under a cobble stone.

Fish diversity and abundance remained low at this site. Coryphopterus nicholsii density remained low at 0.33/m² and up to 144 were observed during roving diver fish count. No Lythrypnus dalli were observed at the site this year. Alloclinus holderi and Oxylebius pictus were rare with none observed during 1 m quadrats and only three O. pictus and four A. holderi observed during roving diver fish count. Chromis punctipinnis were rare with up to seven adults and no juveniles observed. No Oxyjulis californicus were observed. One female, two juvenile and one male Semicossyphus pulcher were observed. One female, but no male or juvenile Halichoeres semicinctus were observed. No Hypsypops rubicundus were observed. No Paralabrax clathratus were observed. No Girella nigricans were observed. One Sebastes miniatus, vermillion rockfish juvenile, and one KGB was observed. Three Orthonopias triacis, snubnose sculpin, and one Artedius corallinus, coralline sculpin, were observed. One Scorpaenichthys marmoratus, cabezon, and one Myliobatis californica, bat ray, were also observed. Up to four Citharichthys stigmaeus, speckled sanddab, were observed in the sandy areas. Roving diver fish count was conducted on June 6th with four divers observing 13 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on September 19th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Location: Southeast Reef, Santa Barbara Island
Site #37 SBSER
2007 sampling dates: 5/24.
2007 status: Half dominated by a mature kelp forest and half dominated by Strongylocentrotus spp.

This site continued to be a mature and diverse kelp forest on the eastern half of the transect and was dominated by *Strongylocentrotus purpuratus and S. franciscanus* on the western half. On the eastern end of the transect (0 m – 40 m), *Macrocystis pyrifera* adult, subadult and juvenile plants were healthy and abundant with densities of 0.17/m², 0.09/m² and 0.17/m², respectively and a cover of 5.3%. The *M. pyrifera* was notably healthier than last year and their overall densities have increased. *Laminaria farlowii* were rare and were not observed during sampling. *Cystoseira* spp. cover was 0.33% cover, same as last year. *Eisenia arborea* adult and juvenile densities increased slightly to 0.29/m² and 0.083/m², respectively and cover was 2.0%. No *Pterygophora californica* was observed. Green algae cover was 0.5%. Miscellaneous red and brown algae covers were 16% and 2.0% respectively. *Desmarestia* spp. was rare at 0.67% cover. *Gelidium* spp. was observed for the first time on RPCs, with a cover of0.33%. Miscellaneous plants, consisting mostly of filamentous diatoms, cover was 6.3%. Encrusting coralline algae cover was 44%. Articulated coralline algae cover was 4.0%. Bare substrate cover was 9.3%, lower than the past two years.

Miscellaneous invertebrates excluding *Ophiothrix spiculata* were abundant with a cover of 22%. The most abundant invertebrates in this category were amphipod tube mats, anemones (*Sagartia* sp./*Cactosoma* sp.) and hydroids. Other bryozoans were relatively abundant at 8.0% cover, similar to last year. Tunicates were abundant at 9.7% and were mostly present in the kelp forest. The most prevalent tunicates were *Aplidium* spp. and other encrusting tunicates. Sponge cover was 0.17%. *Tethya aurantia* density remained low at 0.0028/m², and only one was found for size frequencies. *Corynactis californica*, *Balanophyllia elegans* and *Astrangia lajollaensis* covers remained low at0.0% 0.0% and 0.33%, respectively. *Lophogorgia chilensis*, *Muricea californica*, and M. fruticosa were relatively rare with densities of 0.017/m², 0.0097/m² and 0.0/m², respectively. *Diopatra ornata* were present in the low lying areas with a cover of 0.83%.

Both *Strongylocentrotus franciscanus* and *S. purpuratus* were common along the transect but were most abundant along the western half of the transect. Their densities were 14.1/m² and 10.6/m², respectively, similar to last year. *Centrostephanus coronatus* were common with a density of 0.25/m². *Lytechinus anamesus* were not observed on band transects and were rare with only one observed for size frequencies. Sea urchin wasting disease was rare and was only observed in one *S. purpuratus* and one *S. franciscanus*.

Pisaster giganteus noticeably declined in density were recorded on 1 m quadrats and 5 m quadrats at 0.083/m² and 0.045/m², respectively. *Patiria miniata* were rare with a density of 0.042/m², and only one was found for size frequencies. No *Pycnopodia helianthoides* were observed. *Parastichopus parvimensis* were common at 1.5/m², with several small recruits observed along the transect.

Megastraea undosa density was 0.13/m², same as last year, and both small and large individuals observed. *Tegula regina* remained relatively abundant at a density of 0.67/m². *Cypraea spadicea* density was 0.21/m². *Crassedoma giganteum* density was 0.033/m². *Megathura crenulata* and *Aplysia californica* were rare with densities of 0.0069/m² and 0.12/m², respectively. *Panulirus interruptus* density was 0.0028/m². One fresh 26 mm *Haliotis corrugata* shell was observed.

Fish diversity and abundance were relatively high compared to the other sites at this island, similar to last year. *Coryphopterus nicholsii* were relatively uncommon with a density of 0.04/m² and up to 33 individuals observed during the roving diver fish count. *Oxylebius pictus* density was 0.04/m² and up to 16 were observed. No *Alloclinus holderi* were observed on 1 m quadrats, but up to 11 were recorded during the fish count. Similar to other Santa Barbara Island sites, *Chromis punctipinnis* were the most abundant species with up to 400 adults observed. Up to seven adult *Oxyjulis californica* were observed. Up to 15 female, six male and five juvenile *Semicossyphus pulcher* were observed. There were no males or juveniles recorded last year at this site. One male *Halichoeres semicinctus* was observed, but no juveniles or females. *Hypsypops rubicundus* were abundant with up to 43 adults recorded. Two juvenile *H. rubicundus* were observed after sampling. Two adult *Paralabrax clathratus* were observed. Up to nine *Girella nigricans* were observed along the transect. *Rhacochilus vacca* were rare with one adult observed. Two juvenile *Sebastes miniatus* were observed. Up to three adult *Sebastes atrovirens* were observed. Three adult *Sebastes serriceps* were observed. Up to two *Sebastes chrysomelas,* black and yellow rockfish, and one *Sebastes rastrelliger,* grass rockfish, were observed. Two *Gymnothorax mordax,* California moray eel, and two *Scorpaena guttata,* California scorpionfish, were observed. One *Orthonopias triacis,* snubnose sculpin, was also observed. Up to 26 *Medialuna californiensis,* halfmoon, and two *Brachyistius frenatus,* kelp surfperch, were observed. Roving diver fish counts were performed on May 24th with four divers observing 22 species.

This is one of the sites where UCSB/PISCO conducted fish counts in 2007. The PISCO fish sampling protocol was conducted on June 13th.

The temperature loggers were retrieved and deployed and all temperature data were downloaded successfully. Both loggers were recording within factory specifications of each other.

Discussion

General trends and observations are described in this section. We would like to emphasize that these are only general trends and observations. A statistical trend analysis for each of the indicator species is required to look at actual trends, but is beyond the scope of this annual report.

All proposed data collection was completed this year except for the annual species lists, which were conducted at only six sites due to limitations on time. The roving diver fish counts and fish transects were performed twice at 12 sites. This was the third and last year of the cooperative agreement between NPS and the UCSB/PISCO divers to conduct their fish transects methodology at 24 of the kelp forest monitoring sites. All PISCO data requests should be made through their webpage at www.piscoweb.org/data.

Biological Notes

In 2007, 13 sites were mature *Macrocystis pyrifera* (giant kelp) forests, two sites were developing kelp forests, one site was in a state of transition, 16 sites were dominated by echinoderms and one site was half mature kelp forest and half dominated by *Strongylocentrotus* spp. Of the 16 sites dominated by echinoderms, three were dominated by *Strongylocentrotus purpuratus*, one by *Ophiothrix spiculata*, one by *O. spiculata* and *S. franciscanus*, one by *O. spiculata* and *S. purpuratus*, two by *S. purpuratus* and *S. franciscanus* and *O. spiculata* and eight were dominated by *S. purpuratus* and *S. franciscanus.* This information is summarized in **Table 4** and compares it to the 2006 site status.

At Santa Barbara Island, there was an absence of kelp forests at our six monitoring sites and this is representative of the rest of the island. There seemed to be no continued recovery of the kelp forests that was observed early last year. All six of the sites were mostly dominated by echinoderms. Five of the sites were dominated by *S. purpuratus* and *S. franciscanus*. Southeast Sea Lion and Graveyard Canyon also had an abundance of *Ophiothrix spiculata*. One site, Southeast Reef had a mature kelp forest present along 40 meters of the transect, but the remainder was dominated by *Strongylocentrotus* spp., similar to the other sites. This island remains relatively barren with little algae and similar high echinoderm density and distribution as observed in recent years. There is little indication that kelp forests will return to much of this island in the near future.

At Anacapa Island, the seven KFM sites changed little from last year. Mature kelp forests were present at two sites within the original Anacapa Island Ecological Reserve, one site was in a state of transition presumably towards a kelp forest and the remaining four sites were dominated by echinoderms. Of these four sites, one was dominated by *Ophiothrix spiculata* , two by *O. spiculata*, *S. franciscanus* and *S. purpuratus*, and one site by *Strongylocentrotus purpuratus* and *S. franciscanus*. In general, we feel that these seven kelp forest monitoring sites well reflect the state of rocky reefs surrounding Anacapa Island.

At Santa Cruz Island, the state of the ten sites were all similar to last year. Three had mature kelp forests, while one was in a state of transition to what we presume to become a kelp forest. The remaining seven sites were dominated by echinoderms. Of these, three were dominated by *Strongylocentrotus purpuratus*, and four by *S. purpuratus* and *S. franciscanus.* Though Pelican Bay remained dominated by *S. purpuratus*, there was the development of a kelp forest at the far southern end of the transect. In addition, Fry's Harbor is now what we call in a state of transition and we believe may become a kelp foest soon. We believe the KFM sites well represent the rocky reef conditions on the eastern two thirds of the island, but do not represent the areas west of Gull Island as well.

At Santa Rosa Island, kelp forests continued to be dense and abundant and were present at all seven sites. Mature kelp forests were present at six sites and one, Cluster Point, was a developing kelp forest. Rodes Reef, which was in a state of transition last year, had developed into a mature kelp forest. *Strongylocentrotus* spp. densities remained similar to last year at all Santa Rosa Island sites with notably larger individuals than on the more eastern islands.
At San Miguel Island, kelp forests were also similar to recent years, with healthy and mature plants forming dense canopies at all three of the KFM sites.

Overall, there were few changes in sea urchin abundance at the KFM sites this year. *Strongylocentrotus* spp. densities remained similar to recent years at most sites. *Strongylocentrotus franciscanus* densities decreased at one site and changed little at the remaining 32 sites. *Strongylocentrotus purpuratus* densities decreased at two sites and changed little at the remaining 31 sites. *Strongylocentrotus franciscanus* and *S. purpuratus* recruitment remained low again this year. We observed moderate recruitment of *S. franciscanus* and *S. purpuratus* at two sites. *Lytechinus anamesus* densities remained low at all sites this year and there was little change at the sites where they are typically present. *Centrostephanus coronatus* abundance changed little at all sites, similar to last year.

The presence of sea urchin wasting disease in 2007 (Lafferty and Kushner, 1999, and Richards and Kushner, 1992) was similar to the observations made in recent years. Of the 15 sites where sea urchin wasting disease was observed, six sites were on Santa Cruz Island, four sites were on Anacapa Island and five sites were on Santa Barbara Island (Table 6). This was similar to our observations in 2006. Diseased *Strongylocentrotus franciscanus* and *S. purpuratus* were observed on all three islands, but diseased *Lytechinus anamesus* were observed only on Santa Cruz Island. Sea urchin wasting disease was not observed on Santa Rosa or San Miguel Islands. At most of the sites where wasting disease was present, prevelance was low ranging from less than 1% to 3%. There were two sites where prevalence was estimated at 5%. Black spot disease was also observed on both *S. franciscanus* and *S. purpuratus* at Cathedral Cove, Anacapa Island.

In 2006, we observed *Patiria minata* with wasting disease that appeared to be triggered by a brief but very warm water event that lasted for about one month (approximately from July 19 – August 21). Though we did observe mortality of *Patiria miniata* in 2006, densities changed little in 2007, so we

presume that mortality was relatively low. The last significant warm water event occurred during the 1997/1998 El Niño and did result in declines in sea star abundances, but this warm water event was significantly longer in duration. The duration and magnitude of warm water events both appear to be important in determining the amount of mortality sea stars incur as a result.

Pycnopodia helianthoides abundance remained relatively high at the monitoring sites, but were slightly lower than last year. *Pycnopodia helianthoides* densities increased at one site, decreased at four sites and changed little at the remaining 28 sites. *Pycnopodia helianthoides* continues to appear as a important predator controlling echinoderm populations at the northern Channel Islands.

Patiria miniata density changed little this year. We observed increases at two sites, decreases at one site and little or no change at the remaining 30 sites. *Pisaster giganteus* density also changed little with increases observed at one site, decreases at two sites and little changed observed at the remaining 30 sites. *Ophiothrix spiculata* abundance remained about the same as last year. At the six sites where it is relatively abundanct, it increased at one and changed little at the remaining five sites. Similar to last year, *Pachythyone rubra* were common at four sites and their abundance at these site has changed little. Sea star wasting disease was much less common this year and was observed at seven sites compared to 13 in 2006. On Santa Cruz Island, there were four sites where diseased *Patiria miniata* were observed and one site where diseased *Pisaster giganteus* were observed. On Anacapa Island, diseased *A. miniata* were observed at two sites. At the sites where wasting disease was observed, prevalence was low and estimated to range from 1-3%.

Overall, miscellaneous bryozoans and *Diaperoecia californica* cover change little with no noticeable trends this year.

Overall, there was little change in *Panulirus interruptus* densites this year. Densites remain low at most of our sites. A large increase was recorded at one site, decreases were observed at two sites, and the remaining 30 sites had densities that were similar to recent years. However, from our general observations diving inside the newly established marine researves in and around our regular monitoring sites, we are observing more and larger *P. interruptus* than in past years.

Similar to recent years, *Megastraea undosa* densities remain relatively low and changed little at the islands with all sites having similar abundances as last year. However, we observed some recruitment of this species at Cat Canyon, Arch point, and Pedro Reef. Recruitment has been rare in recent years and we wonder if this recruitment was in part due to the 2006 warm water event. *Lithopoma gibberosa* densities were similar to last year. Overall, *Megathura crenulata* densities also remained similar to last year.

Haliotis rufescens were common at six sites, two on San Miguel Island and four on Santa Rosa Island. At two of these six sites densities increased, while at the other four they remained about the same. In general, we are observing a gradual slow increase in abundance of this species at San Miguel and Santa Rosa Islands. We are observing this at the KFM sites, but also at nearby sites

during survey dives. One adult *H. rufescens* was observed with withering foot disease at Miracle Mile. It was collected and sent to CDFG.

Similar to recent years, *Haliotis corrugata* continue to be rare at the islands and were absent on band transects at all sites. Not including what was observed in the ARMs (see below), only three were found at all the sites for size frequencies, two large adults at Landing Cove and one juvenile at Little Scorpion. *Haliotis fulgens* also continue to be rare at the park islands and none were observed this year. Similar to past years, no *Haliotis sorenseni* were observed at the KFM sites or during survey dives. *Haliotis assimilis* were rare again this year with only one observed at Gull Island.

Sponges cover was similar to last year with the high densities recorded at our Santa Rosa Island sites and Miracle Mile on San Miguel. *Tethya aurantia* continue to increase in abundance with density increasing at seven sites, decreasing at one site and remained similar at 25 sites. Overall, tunicate density remained similar to last year. There was little to no change in abundance of *Styela montereyensis* density at all sites.

Most of the comments below and in the site descriptions are based on observations made during the roving diver fish counts. Density observations are based on data collected from 1 m quadrats. On average, *Coryphopterus nicholsii* densities and counts were higher than las year. Similary but more noticeable was an increase in density and counts of *Lythrypnus dalli* at sites where we would expect to see this species. In 2007 we observed *L. dalli* at 16 sites, compared with 12 sites in 2006. There was little change in average density or counts observed for *Alloclinus holderi* this year. In 2006 we predicted that thiswarm water species may increase due to the warm water event that was experienced. Though we did not see an overall increase, we did observed A. *holderi* juveniles at three Santa Barbara Island sites. This year was a trial year for sampling *Oxylebius pictus* in 1 m quadrats to determine if this technique would be an effective way to observe changes in abundance of this species over time. After one year of sampling *O. pictus* during 1 m quadrats, we concluded that density levels were too low to detect any measureable changes and we will discontinue counting this species using that protocol.

Chromis punctipinnis were observed at 31 sites, similar to recent years, and recruitment of *C. punctipinnis* was less prevalent than last year. As observed in the past, *C. punctipinnis* at Admiral's Reef were observed with lesions probably a result of *Vibiro damsella* bacterial infection (Love et al. 1981). *Semicossyphus pulcher* juveniles were significantly more abundant this year and were observed at 21 sites compared with seven in 2006. Their average counts at the sites also increased to 1.25/site compared to 0.05/site in 2006. Many of the juveniles that were observed in early spring had morphed into small females by the fall. On average, male and femail *S. putcher* abundance was similar to last year. Similarly, male and female *Halichoeres semicinctus* abundances were similar to last year. While juvenile rock wrasse were observed at more sites this year than in 2006, their average abundance per site where they were observed decreased from 5.57/site to 1.61/site. Many *H. semicinctus* were slightly greater than ten centimeters but still maintained the juvenile morphology, so they were included in the female category as per the KFM protocol. Overall *Oxyjulis californica*,

Hypsypops rubicundus, and *Paralabrax clathratus* abundance was similar to recent years.. There was one *Paralabrax nebulifer,* barred sand bass, observed at Scorpion Anchorage, these are rarely observed at the islands. We made fewer observations of *Stereolepis gigas,* black sea bass, than last year with none observed during the roving diver fish counts while we made observations at three sites in 2006. However, we made several observations at the sites not during the fish counts. Overall, *Embiotoca* spp. and *Rhacochilus vacca* abundance remained similar to recent years. Adult *Sebastes atrovirens* abundance was similar to last year, but there was a notable recruitement event with an increase in abundance and prevalence of juveniles. We observed juveniles at 14 sites compared with 10 in 2006 and at the sites where they were observed, their abundance increased to 14.54/site compared to 1.38/site in 2006. A juvenule *Sebastes pinniger,* canary rockfish, was observed at Gull Island, which is further south than normal for this species. One *Sebastes rosaceus,* rosy rockfish, was also observed at Gull Island which is a unusual observation for this deeper water species. This season, we observed an abundance of recruitment in juvenile rockfish. Beginning in early spring, many juvenile *Sebastes mystinus* were observed, while later in the season juvenile *S. paucispinis, S. serranoides* and KGB were common to several sites. Many of last year's KGBs appeared to have morphed into subadult *S. atrovirens*. Juvenile *Sebastes paucispinis,* bocaccio, were more abundant this year with observations at five sites, none were observed in 2006 during the roving dive fish counts. Adult *Sebastes mystinus* abundance was similar to last year, but juvenile abundance was notably higher. Avarage juvenile density increased and they were observed at 11 sites, compared with six in 2006. Juvenile *Sebastes miniatus* were also more abundant this year with observations at nine sites compared with two sites last year. *Ophiodon elongatus,* lingcod, were observed at six sites this year versus eleven in 2006. *Scorpaenichthys marmoratus,* cabezon, were observed at thirteen sites, similar to last year. *Scorpaena guttata,* California scorpionfish, were observed at only nine sites this season versus 16 in 2006. There was one *Balistes polylepis,* finscale triggerfish, observed at Pelican Bay which is a highly unusual observation at the islands, but we have made similar observations at this site and it is likely the same fish. One *Hexagrammos decagrammus,* kelp greenling, was observed at Chickasaw. This species has been observed only twice before at the islands during the fish count.

Unusual Species / Non-Indicator Species

We continue to observe *Bursa californica* at many of our sites and these have become notably more common since about 2000. This species used to be rare at the Channel Islands, now it is common at many of them.

We observed one large live *Pteria Sterna,* pearl oyster, growing on a gorgonian at Lighthouse, Anacapa Island. The last large recruitment event we observed for this species was during the 1997/1998 El Niño and it is possible that this oyster is from that event. Since that El Niño, sitings live *P. sterna* have become more and more rare.

Artificial Recruitment Modules (ARMs)

ARMs were present and monitored at 11 sites in 2007, including the ARMs installed at Miracle Mile. The below observations refer to all 11 kelp forest monitoring sites with ARMs.

Haliotis spp. continue to be in low abundance in the ARMs. For the purpose of this report, we consider juvenile abalone less than 51 mm and adults > 50 mm. Juvenile *Haliotis rufescens* were noticeably less abundant in the ARMs with only one observed compared to nine in 2006. Adults were similar in abundance with nine observed, same as last year. Similar to last year, all but one of the *H. rufescens* found in the ARMs were from Miracle Mile and the other one was from Johnson's Lee South. *Haliotis corrugata* recruitment remained low, but was notably higher than last year with seven juniles found compared with two in 2006. We observed *H. corrugata* in the ARMs at five sites compared with only two in 2006. No *H. fulgens, H. sorenseni* or *H. assimilis* were observed in the ARMs this season, similar to recent years.

Fewer *Kelletia kelletii* were observed this year with only 12 found. Nine of these were less than 51 mm compared with 18 found in this size range last year. In 2006 most of the small *K. kelletia* were observed in the ARMs at Landing cover, while this year they were rare there and most were observed at Cathedral Cove. *Cypraea spadicea* abundance remained similar to lat year, and we observed ones with juvenile morphology at many sites.. *Crassedoma giganteum* density changed little with most sites on average being similar to last year.

Both *Patiria miniata* and *Pisaster giganteus* abundance and sizes in the ARMs were similar to last year. *Patiria miniata* density in the ARMs decreased at two sites and remained similar to last year at nine sites. *Pisaster giganteus* increased at one site and remained similar at the remaining 10 sites. There was little change observed in *Pycnopodia helianthoides* density in the ARMs this year. *Strongylocentrotus franciscanus* density increased at one site, decreased at two and little or no change was observed at the remaining eight sites. Similarly, densities of *Strongylocentrotus purpuratus* in the ARMs increased at three sites, decreased at one site and remained similar to last year at the remaining seven sites. *Centrostephanus coronatus* density remained low with five observed in the ARMs this year, three were under 10 mm, indicating some recent recruitment.*Parastichopus parvimensis* densities were similar to last year at nine sites and decreased at two sites. Densities were anomoulously high at these two sites in 2007.

New/Other Projects

There were no new projects to report on this year. 2007 marks the first year of a two-year agreement to conduct benthic CRANE surveys at select sites at the Channel Islands. This project was supported by CDFG and funded by the California Coastal Conservancy. This project is jointly conducted with UCSB/PISCO. In 2007, the KFM staff conducted benthic CRANE surveys at 11 sites. A summary of these sites sampled can be found in Table 8. The data from these surveys was provided to CDFG and they are responsible for the reporting and archiving of this information.

Temperature

In 2007 two Tidbit loggers were deployed at all sites. In previous years, a combination of StowAway^{TM} and Tidbit temperature loggers were deployed, and the data were cross-referenced. We

experienced several failures with the StowAway loggers, while the Tidbit™ loggers have proven to be more reliable and we have since converted solely to their usage.

Temperature data were successfully downloaded from all sites in 2007, however, there was one failed logger recovered from the south end unit at Johnson's Lee South which did prevent us from making comparisons between loggers at this site. At Websters Arch, the two loggers were recording more difference between the two than we typically observe, the average difference between these was 0.24 ºC.

Protocol Changes

Beginning in 2005, additional fish sampling methods were conducted at all sites through a cooperative agreement with the UCSB/PISCO subtidal survey program. This cooperative agreement is for three years of conducting this protocol at the 24 KFM sites that are associated with our fine scale study of marine researves. PISCO monitored all 24 sites this year and this is the last year of this cooperative agreement. For all PISCO data requests, visit their website at **www.piscoweb.org/data**.

In 2007, we began incorporating permanent observer numbers to our monitoroing program and incorporated them into the Access database. A permanent observer number is a unique number associated with each diver who collects data during a sampling event. This number will be utilized during data entry for some of the sampling techniques (e.g. roving diver fish counts and natural habitat size frequencies). The permanent observer numbers are obtained from the Access database table KF_PermanentObserver Numbers and protocol on how to assign new numbers will included in our revised edition of the KFM Handbook Volume 1 (sitation). By having permanent numbers this will facilitate looking at observer variability which could be important in analysis, especially for fish observations.

There were two new "species" added to the 1 m quadrat protocolthis year. *Macrocystis pyrifera* stipes and *Oxylebius pictus* were added. The *Macrocystis pyrifera* stipe counts were added to aquire densityof stipe as most other monitoring programs measure this metric. *Oxylebius pictus* was added as a trial species to see if we thought that this was a viable species to count on 1 m quadrats. We decided that densities are unlikely to be high enough to aquire significant densities and will discontinue this species after this year. The data collected from these two additions are included in this report and are available in Appendices A and N.

A new fish size frequency method was added to the KFM protocol in 2007. This new protocol is called the roving diver fish size frequency protocol. The fish sizing technique was implemented to incorporate fish size characteristics into the KFM database. A description of the sampling protocol can be found in Appendix O and the training procedure in Appendix P.

Changes to the Database

In 1985, at Anacapa Island Admiral's Reef it appears that the density for *Muricea fruticosa* may be both *M. fruticosa* and *M. californica* combined. There is typically more *M. californica* than *M.*

fruticosa at this site. Also at the above site, one *Stylaster* (*Allopora*) *californica* was removed from the database as we are nearly 100% confident that this was an error on the datasheet because it is unlikely this species was observed at this site.

The year 2007 marks the first year we successfully completed the KFM fish size frequency protocol at all of our monitoring sites. All data collected by observers was entered into a new Access form labeled Fish Size Frequency. These results are not included in this report, but raw data is available by request.

The year 2007 also marks the first year we successfully added *Macrocystis pyrifera* stipe counts to our 1 m quadrat protocol. Stipe counts have been added to the 1 m quadrat form as species #2002.99 in the Access database.

This year was a trial year for sampling *Oxylebius pictus* in 1 m quadrats to determine if this technique would be an effective way to observe changes in abundance of this species over time. After one year of sampling *O. pictus* during 1 m quadrats, we concluded that density levels were too low to detect any measureable changes and we will discontinue counting this species using that protocol. Therefore this species, which was #14030 in the database, will be removed from the 1 m quadrat Access form. The data collected this year are available in Appendix N.

Data Requests

In 2007, the KFMP received nine data requests and all were fulfilled as follows:

1. *Kelletia kelletii* density and size frequency data was sent to Dr. Crow White at the University of California Santa Barbara. The data will be used to assist Dr. White's research on individual dispersal and patterns of population connectivity in *K. kelletia*.
2. Temperature data for San Miguel Island was sent to Laura Rodgers Bennett at California Department of Fish and Game. This data is being used in association with research on *Haliotis rufescens* and withering foot syndrome.
3. Kelp Forest Monitoring density data was sent to John Lynham at the University of California at Santa Barbara. The data is being used to help assess the effects of marine protected areas (MPAs).
4. Temperature data from the original 16 Kelp Forest Monitoring sites was sent to Ralph Larson.
5. The KFM data was discussed during a 2007 PISCO/NCEAS workshop.
6. *Parastichopus* spp. density data was sent to David Ono at the California Department of Fish and Game. This data will assist with updating the fishery report from the year 2000 to present.
7. *Haliotis rufescens* density data was sent to Marco Hatch at the University of California San Diego.

8. All Kelp Forest Monitoring data was sent to Ed Parnell at Scripps Research Institute of Oceanography. Dr. Parnell will be using the data to do long-term trend analysis.

9. All 2007 CRANE data was sent to Jen Casselle at UCSB's PISCO monitoring group. Our data will be combined with data collected by PISCO's divers and the dataset will be sent to CDFG to assist with resource management.

Presentations

Jarrett Byrnes presented "Combining Long Term Surveys with Structural Equation Modeling to Examine Kelp Forest Food Webs" at North American Benthological Society 55 Annual Meeting.

Publications

Halpern, B.S. and K. Cottenie, 2007. Little evidence for climate effects on local-scale structure and dynamics of California kelp forest communities. *Global Change Biology*, 13, 236–251.

Eckert, G. L. 2007.Spatial patchiness in the sea cucumber Pachythyone rubra in the California Channel Islands, *Journal of Experimental Marine Biology and Ecology*, 348 (2007) 121 – 132.

Tables

Table 1. Regularly monitored species by taxonomic grouping, common name, scientific name and associated monitoring technique.

Taxa/Common Name	Scientific Name	Technique
ALGAE		
Miscellaneous green algae		R
Miscellaneous red algae		R
Articulated coralline algae		R
Encrusting coralline algae		R
Agar weed	*Gelidium* spp.	R
Sea tongue	*Gigartina* spp.	R
Miscellaneous brown algae		R
Acid weed	*Desmarestia* spp.	R
Oar weed	*Laminaria farlowii*	R, Q
Bladder chain kelp	*Cystoseira* spp.	R
Giant kelp	*Macrocystis pyrifera*	R, Q, M
California sea palm	*Pterygophora californica*	R, Q
Southern sea palm	*Eisenia arborea*	R, Q
Miscellaneous plants		R
INVERTEBRATES		
Miscellaneous sponges		R
Orange puffball sponge	*Tethya aurantia*	B, S
Southern staghorn bryozoan	*Diaperoecia californica*	R
Miscellaneous bryozoans		R
California hydrocoral	*Stylaster californica*	B, S
White-spotted rose anemone	*Tealia lofotensis*	B
Red gorgonian	*Lophogorgia chilensis*	B, S
Brown gorgonian	*Muricea fruticosa*	B, S
Californian golden gorgonian	*Muricea californica*	B, S
Orange cup coral	*Balanophyllia elegans*	R
Strawberry anemone	*Corynactis californica*	R

Table 2. Regularly monitored species by taxonomic grouping, common name, scientific name and associated monitoring technique (continued).

Taxa/Common Name	Scientific Name	Technique
INVERTEBRATES (continued)		
Cup coral	*Astrangia lajollaensis*	R
Ornate tube worm	*Diopatra ornata*	R
Colonial sand-tube worm	*Phragmatopoma californica*	R
Scaled-tube snail	*Serpulorbis squamigerus*	R
Chestnut cowrie	*Cypraea spadicea*	Q
Wavy turban snail	*Megastraea undosa*	Q, S
Red turban snail	*Megastraea undosa*	Q, S
Bat star	*Patiria miniata*	Q, S
Giant-spined sea star	*Pisaster giganteus*	Q, S, M
Sunflower star	*Pycnopodia helianthoides*	B, S
White sea urchin	*Lytechinus anamesus*	B, S
Red sea urchin	*Strongylocentrotus franciscanus*	Q, S
Purple sea urchin	*Strongylocentrotus purpuratus*	Q, S
Warty sea cucumber	*Parastichopus parvimensis*	Q
Aggregated red sea cucumber	*Pachythyone rubra*	R
Red abalone	*Haliotis rufescens*	B, S
Pink abalone	*Haliotis corrugata*	B, S
Green abalone	*Haliotis fulgens*	B, S
Kellet's whelk	*Kelletia kelletii*	B, S
Giant keyhole limpet	*Megathura crenulata*	B, S
California brown sea hare	*Aplysia californica*	B
Rock scallop	*Crassedoma giganteum*	B, S
California spiny lobster	*Panulirus interruptus*	B
Tunicates		R
Stalked tunicate	*Styela montereyensis*	Q
FISH		
Bluebanded goby	*Lythrypnus dalli*	Q, F
Blackeye goby	*Coryphopterus nicholsii*	Q, F
Island kelpfish	*Alloclinus holderi*	Q, F

Table 2. Regularly monitored species by taxonomic grouping, common name, scientific name and associated monitoring technique (continued).

Taxa/Common Name	Scientific Name	Technique
FISH (continued)		
Blacksmith	*Chromis punctipinnis*	V, F
Señorita	*Oxyjulis californica*	V, F
Blue rockfish	*Sebastes mystinus*	V, F
Olive rockfish	*Sebastes serranoides*	V, F
Kelp rockfish	*Sebastes atrovirens*	V, F
Kelp bass	*Paralabrax clathratus*	V, F
California sheephead	*Semicossyphus pulcher*	V, F
Black surfperch	*Embiotoca jacksoni*	V, F
Striped surfperch	*Embiotoca lateralis*	V, F
Pile perch	*Damalichthys vacca*	V, F
Garibaldi	*Hypsypops rubicundus*	V, F
Opaleye	*Girella nigricans*	V, F
Painted greenling*	*Oxylebius pictus*	F
Rock Wrasse	*Halichoeres semicinctus*	V, F
Tree Rockfish	*Sebastes serriceps*	F
SUBSTRATE		
Bare substrate		R
Substrate types: Rock		R
Cobble		R
Sand		R

*not an indicator species, but observed so frequently that we include this species on our datasheets

Technique Codes

Q = 1 m Quadrats
M = 5 m Quadrats
B = Band Transects
R = Random Point Contacts
S = Size Frequency Measurements
F = Roving Diver Fish Count
V = Visual Fish Transect

Changes in Scientific Nomenclature

Current Name		Former Name
Patiria miniata	=	*Asterina miniata*
Megastraea undosa	=	*Lithopoma undosum/Astraea undosa*
Lithopoma gibberosa	=	*Astraea gibberosa*
Crassadoma giganteum	=	*Hinnites giganteum*
Stylaster californica	=	*Allopora californica*
Tealia lofotensis	=	*Urticina lofotensis*
Coryphopterus nicholsii	=	*Rhinogobiops nicholsii*

Table 3. Station Information.

Island	Location	Site Abbreviation	Depth Meters	Year Established
San Miguel	Wyckoff Ledge	SMWL	13-15	1981
San Miguel	Hare Rock	SMHR	6-9	1981
San Miguel	Miracle Mile	SMMM	7-10	2001
Santa Rosa	Johnson's Lee North	SRJLNO	11-Sep	1981
Santa Rosa	Johnson's Lee South	SRJLSO	14-16	1981
Santa Rosa	Rodes Reef	SRRR	13-15	1983
Santa Rosa	Cluster Point	SRCP	15-Dec	2005
Santa Rosa	Trancion Canyon	SRTC	15-Sep	2005
Santa Rosa	Chickasaw	SRCSAW	13-Oct	2005
Santa Rosa	South Point	SRSP	13-Nov	2005
Santa Cruz	Gull Island South	SCGI	14-16	1981
Santa Cruz	Fry's Harbor	SCFH	13-Dec	1981
Santa Cruz	Pelican Bay	SCPB	8-Jun	1981
Santa Cruz	Scorpion Anchorage	SCSA	6-May	1981
Santa Cruz	Yellowbanks	SCYB	14-15	1986
Santa Cruz	Devil's Peak Member	SCDPM	13-Oct	2005
Santa Cruz	Potato Pasture	SCPP	12-Sep	2005
Santa Cruz	Cavern Point	SCCVP	13-Dec	2005

Table 4. Station Information (continued).

Island	Location	Site Abbreviation	Depth Meters	Year Established
Santa Cruz	Little Scorpion	SCLS	14-Sep	2005
Santa Cruz	Pedro Reef	SCPRF	10-Jul	2005
Anacapa	Admiral's Reef	ANAR	13-15	1981
Anacapa	Cathedral Cove	ANCC	11-Jun	1981
Anacapa	Landing Cove	ANLC	12-May	1981
Anacapa	Keyhole	ANKH	10-Jul	2005
Anacapa	East Fish Camp	ANEFC	14-Sep	2005
Anacapa	Black Sea Bass Reef	ANBSBR	15-16	2005
Anacapa	Lighthouse	ANLH	9-Jul	2005
Santa Barbara	Southeast Sea Lion Rookery	SBSESL	14-Dec	1981
Santa Barbara	Arch Point	SBAR	8-Jul	1981
Santa Barbara	Cat Canyon	SBCAT	9-Jul	1986
Santa Barbara	Webster's Arch	SBWA	14-16	2005
Santa Barbara	Graveyard Canyon	SBGC	12-Oct	2005
Santa Barbara	Southeast Reef	SBSER	15-Oct	2005

Table 5a. Summary of sampling techniques.

Technique	Sample Number of Size Replicates
Quadrat count	1 m X 1 m 24X / site
Band Transect count	3 m X 10 m 24X / site
5m2 Quadrat	1 m X 5m 40X/ site
Random Point Contact	40 points 15X / site (0.5 x 3 m)
Visual Fish transects	2 m(w) X 3 m(h) X 50 m(l) 8X / sites
Fish Size Frequencies	30 minute count of 2000 m2 area around transect
Roving Diver Fish Count	30 minute count of 2000 m2 area around transect
Video transects	5 minutes / 100 m; 2X / site, and also a 360° pan at 0, 50 and 100m along transect.
Size frequency measurements	30 to 200 / species: 1X / site (see size frequency measurement dimensions below)
Species Checklist	30 - 90 minutes, 1X / site
Artificial Recruitment Modules	6 - 15 modules / site

Table 3b. Size Frequency measurement dimensions

Scientific Name	Sample Size	Measurement
Macrocystis pyrifera	100	Stipe count (1 m above bottom), maximum holdfast diameter, mm
Tethya aurantia	60	Max. diameter, mm
Stylaster (Allopora) californica	60	Max. height and width, mm
Lophogorgia chilensis	60	Max. height and width, mm
Muricea californica	60	Max. height and width, mm
Megathura crenulata	60	Max. shell length, mm
Haliotis spp.	60	Max. shell length, mm
Lithopoma (Megastraea) spp.	60	Max. shell diameter, mm
Kelletia kelletia	60	Max. shell length, mm
Crassedoma (Hinnites) giganteum	60	Max. shell length, mm
Tegula regina	60	Max. shell length, mm
Strongylocentrotus spp.	200	Max. shell diameter, mm
Lytechinus anamesus	200	Max. shell diameter, mm
Pycnopodia helianthoides	60	Length of longest ray, mm
Patiria miniata	60	Length of longest ray, mm
Pisaster giganteus	60	Length of longest ray, mm

Table 6. 2007 Kelp forest monitoring site status, with 2006 status for comparison.

Island/Site	2007 Status	2006 Status
San Miguel Island		
Wyckoff Ledge	Mature kelp forest	Mature kelp forest
Hare Rock	Mature kelp forest	Mature kelp forest
Miracle Mile	Mature kelp forest	Mature kelp forest
Santa Rosa Island		
Johnson's Lee North	Mature kelp forest	Mature kelp forest
Johnson's Lee South	Mature kelp forest	Mature kelp forest
Rodes Reef	Mature kelp forest	State of transition
Cluster Point	Developing Kelp Forest	Developing Kelp Forest

Table 7. 2007 Kelp forest monitoring site status, with 2006 status for comparison (continued).

Island/Site	2007 Status	2006 Status
Trancion Canyon	Mature kelp forest	Mature kelp forest
Chickasaw	Mature kelp forest	Mature kelp forest
South Point	Mature kelp forest	Mature kelp forest
Santa Cruz Island		
Gull Island South	Mature Kelp Forest	Mature kelp forest
Fry's Harbor	Developing kelp forest	State of transition
Pelican Bay	Dominated by Strongylocentrotus purpuratus	Dominated by Strongylocentrotus purpuratus
Scorpion Anchorage	Dominated by S. purpuratus	Dominated by S. purpuratus
Yellow banks	Mature Kelp Forest	Mature kelp forest
Devil's Peak Member	Dominated by S. purpuratus	Dominated by S. purpuratus
Potato Pasture	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus and S. franciscanus
Cavern Point	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus
Little Scorpion	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus and S. franciscanus
Pedro Reef	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus and S. franciscanus
Anacapa Island		
Admiral's Reef	Dominated by Ophiothrix spiculata and in some areas S. purpuratus and S. franciscanus	Dominated by Ophiothrix spiculata and in some areas S. purpuratus.
Cathedral Cove	Mature Kelp Forest	Mature kelp forest
Landing Cove	Mature Kelp Forest	Mature kelp forest
Keyhole Reef	State of transition	State of transition
East Fish Camp	Dominated by O. spiculata, S. purpuratus and S. franciscanus	Dominated by O. spiculata, S. purpuratus and S. franciscanus
Black Sea Bass Reef	Dominated by O. spiculata	Dominated by O. spiculata
Lighthouse	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus and S. franciscanus
Santa Barbara Island		
Southeast Sea Lion Rookery	Dominated by O. spiculata and S. franciscanus	Dominated by O. spiculata, S. purpuratus and S. franciscanus

Table 7. 2007 Kelp forest monitoring site status, with 2006 status for comparison (continued).

Island/Site	2007 Status	2006 Status
Arch Point	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus and S. franciscanus
Cat Canyon	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus and S. franciscanus
Webster's Arch	Dominated by S. purpuratus and S. franciscanus	Dominated by S. purpuratus and S. franciscanus
Graveyard Canyon	Dominated by O. spiculata, S. purpuratus and S. franciscanus	Dominated by O. spiculata, S. purpuratus and S. franciscanus
Southeast Reef	Mature kelp forest from 0-40m and dominated by Strongylocentrotus spp. from about 45-100m.	Mature kelp forest from 0-40m and dominated by S. purpuratus from about 45-100m.

Table 8. 2007 Kelp Forest Monitoring Program participant list.

Participants	Affiliation	Cruises Participated
Byrnes, Jarrett	UCD	14
Craig, Alexandra	SCA	4,6,7,8,9,10,11,12,13,14,15,16,17
Gliniak, Heather	CDFG	9
Griffiths, Ali	SCA Alumni	6
Halpern, Ben	UCSB	15
Hamm, David	U Washington	10
Hoobler, Sean	CDFG	2,3
Hurd, Frances	SCA	4,5,6,7,9,13,14,15,16,17
Jarvis, Erica	CDFG	9
Kushner, David	CHIS Staff	All cruises
Lucas, Scott	CDFG	6
Martin, Dan	CHIS VIP	16
Moore, Kelly	CHIS Staff	All cruises
Moss, Michael	CHIS Staff	All cruises
Parnell, Ed	SCRIPPS	11
Richards, Dan	CHIS Staff	9
Sprague, Joshua	CHIS Staff	All cruises
Stein, Derek	CDFG	5

Table 9. 2007 Kelp Forest Monitoring Program participant list (continued).

Participants	Affiliation	Cruises Participated
Taniguchi, Ian	CDFG	1,5,8,17
Tharratt, Susie	CHIS Staff	1,5
Witting, Dave	NOAA	8,17

Table 10. 2007 Kelp Forest Monitoring Program cruise list.

Cruise #	Cruise Dates	KFM Sites Visited	CRANE Sites Visited
1	5/16 - 5/17	ANKH, ANCC	
2	5/22 - 5/25	SBAP, SBSESL, SER, ANCC	SBAP, SBSESL, SER
3	6/4 - 6/7	SBWA, SBCAT, SBGC	SBWA, SBGC
	6/11-6/14	N/A	SBAP, SBGC, SBSESL, SBCAT
4	6/18 - 6/22	SCPB, SCCVP, ANLC, SCYB	
5	6/27 - 6/28	ANKH, SCPRF, SCLS	
6	7/9 - 7/13	SRRR, SMHR, SMWL	
7	7/17	ANCC	
8	7/23 - 7/27	SCGI, SRJLSO, SRJLNO, SRSP, SCFH	
9	8/6 - 8/10	ANLC, ANEFC, ANAR, SCPRF, SCPP	
10	8/15 - 8/16	SCYB, SCFH, SCPB	
11	8/20 - 8/24	ANBSBR, SRTC, SRCSAW, SRCP, SCDPM	
12	8/29 - 8/30	ANLH	
13	9/4 - 9/5	ANCC, SCPB, SCSA	
14	9/10 - 9/14	SCDPM, SCFH, SCSA, ANLH, ANEFC	
15	9/18 - 9/19	SCPP, SCCVP, SCLS	
16	9/24 - 9/28	SRRR, SRJLNO, SRCP, SCPP	SR-Beacon Reef, SR-Rodes Reef, SR-Bee Rock
17	10/4 - 10/5	SCSA, SCYB	
18	10/10 - 10/12	SRMM	SR-Monocos, SR-LaJollaVieja

Table 11. 2007 Echinoderm wasting disease observations.

	Sea Star Wasting Disease		Sea Urchin Wasting Disease	
Island/Site	**Species Observed**	**Date(s) of Observation**	**Species Observed**	**Date(s) of Observation**
San Miguel Island				
Wyckoff Ledge	None		None	
Hare Rock	None		None	
Miracle Mile	None		None	
Santa Rosa Island				
Johnson's Lee North	None		None	
Johnson's Lee South	None		None	
Rodes Reef	None		None	
Cluster Point	None		None	
Trancion Canyon	None		None	
Chickasaw	None		None	
South Point	None		None	
Santa Cruz Island				
Gull Island South	None		None	
Fry's Harbor	4	9/11	None	
Pelican Bay	1	8/16	2	6/18
Scorpion Anchorage	1	9/5, 9/13	2	9/13
Yellow banks	None		None	
Devil's Peak Member	None		3	9/10
Potato Pasture	1	8/9	2,3,6	9/18
Cavern Point	None		None	
Little Scorpion	None		2,6	6/28
Pedro Reef	1	8/9	2,3,6	8/9
Anacapa Island				
Admiral's Reef	None		6	7/13
Cathedral Cove	None		None	

Table 12. 2007 Echinoderm wasting disease observations (continued).

Island/Site	Sea Star Wasting Disease		Sea Urchin Wasting Disease	
	Species Observed	Date(s) of Observation	Species Observed	Date(s) of Observation
Landing Cove	None		None	
Keyhole	None		2,6	5/16
East Fish Camp	1	8/7	2,6	8/7, 9/14
Black Sea Bass Reef	None		None	
Lighthouse	1	8/29, 9/14	2,6	8/29, 9/14
Santa Barbara Island				
SE Sea Lion Rookery	None		None	
Arch Point	None		2,6	5/22
Cat Canyon	None		6	6/5
Webster's Arch	None		2,6	6/4
Graveyard Canyon	None		6	6/6
Southeast Reef	None		6	5/24

None = not observed at this site during our visits in 2005

Date = date(s) disease/syndrome was observed

Note: urchins appearing to have black spot disease were not included in table. See site write-up for these observations.

Species Lengend	
1 = *Patiria (Asterina) miniata*	7 = *Parastichopus parvimensis*
2 = *Strongylocentrotus purpuratus*	8 = *Dermasterias imbricata*
3 = *Lytechinus anamesus*	9 = *Mediaster aequalis*
4 = *Pisaster giganteus*	10 = *Pycnopodia helianthoides*
5 = *Astrometis sertulifera*	11 = *Pisaster ochraceus*
6 = *Strongylocentrotus franciscanus*	

Table 13. 2007 KFM sites where PISCO fish transects were conducted.

Island	Site Location
Anacapa Island	Admiral's Reef
	East Fish Camp
	Landing Cove
	Lighthouse
	Black Sea Bass Reef
	Cathedral Cove
Santa Barbara Island	Arch Point
	Cat Canyon
	Graveyard Canyon
	Southeast Sea Lion
	Southeast Reef
	Webster's Arch
Santa Cruz Island	Chickasaw
	Cluster Point
	Johnson's Lee North
	Johnson's Lee South
	South Point
	Trancion Canyon

Table 9. 2007 KFM sites where CRANE benthic transects were conducted.

Island	Site Location
Santa Barbara Island	Arch Point
	Cat Canyon
	Graveyard Canyon
	Southeast Sea Lion
	Southeast Reef
	Webster's Arch
Santa Rosa Island	Beacon Reef
	Rodes Reef
	Bee Rock
	Monocos
	La Jolla Vieja

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Appendices

Appendix A. 1 Meter Quadrat Data.

2007 QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge			
Macrocystis pyrifera Ad.*(>1m)*	0.7083	0.6557	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0833	0.1946	12
Macrocystis pyrifera Stipes for	10.0417	9.5762	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.4167	0.6337	12
Pterygophora californica juvenile	0.1667	0.3892	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Agarum fimbriatum adult	3.5833	7.3850	12
Cypraea spadicea	0.0000	0.0000	12
Kelletia kelletii	0.6667	0.6155	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.4167	0.6686	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	2.1250	0.8292	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	0.2083	0.4502	12
Strongylocentrotus purpuratus	0.5417	0.9160	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0833	0.1946	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0833	0.1946	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.1250	0.2261	12
San Miguel Island - Hare Rock			
Macrocystis pyrifera Ad.*(>1m)*	0.9167	2.1933	12
Macrocystis pyrifera Juvenile *(<1m)*	1.8750	3.9262	12
Macrocystis pyrifera Stipes for	7.7083	19.3079	12
Eisenia arborea adult	0.0833	0.2887	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	1.0833	2.0094	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	1.1667	1.7233	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	5.2500	2.4541	12
Pisaster giganteus	0.2500	0.4523	12
Strongylocentrotus franciscanus	10.2500	11.8235	12
Strongylocentrotus purpuratus	1.3333	3.1358	12
Parastichopus parvimensis	0.0000	0.0000	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0833	0.1946	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.2500	0.3371	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Rosa Island - Johnson's Lee North			
Macrocystis pyrifera Ad.*(>1m)*	1.1667	0.6853	12
Macrocystis pyrifera Juvenile *(<1m)*	3.7083	3.4671	12
Macrocystis pyrifera Stipes for	7.4583	4.8451	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.2917	0.5823	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.2500	0.3371	12
Laminaria farlowii juvenile	0.0833	0.1946	12
Cypraea spadicea	0.5000	0.9293	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.7917	0.7525	12
Pisaster giganteus	0.0833	0.1946	12
Strongylocentrotus franciscanus	0.9583	2.4814	12
Strongylocentrotus purpuratus	0.0833	0.1946	12
Parastichopus parvimensis	0.2500	0.5839	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	6.2917	3.7384	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.1667	0.2462	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.2917	0.3965	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Rosa Island - Johnson's Lee South			
Macrocystis pyrifera Ad.*(>1m)*	0.5833	0.7930	12
Macrocystis pyrifera Juvenile *(<1m)*	0.2083	0.5823	12
Macrocystis pyrifera Stipes for	4.9583	6.8339	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0417	0.1443	12
Pterygophora californica juvenile	0.4167	0.5967	12
Laminaria farlowii adult	0.1667	0.4438	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0833	0.1946	12
Megastraea undosa	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	3.7500	1.7901	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	0.5833	2.0207	12
Strongylocentrotus purpuratus	0.2500	0.8660	12
Parastichopus parvimensis	0.1250	0.3108	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.6250	0.5276	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	1.2500	1.0766	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.2500	0.4523	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Rosa Island - Rodes Reef			
Macrocystis pyrifera Ad.*(>1m)*	0.2083	0.4502	12
Macrocystis pyrifera Juvenile *(<1m)*	0.2083	0.5823	12
Macrocystis pyrifera Stipes for	2.9167	6.7347	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0000	0.0000	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	4.9167	3.6546	12
Pisaster giganteus	0.3750	0.8823	12
Strongylocentrotus franciscanus	1.8750	2.4227	12
Strongylocentrotus purpuratus	0.0833	0.2887	12
Parastichopus parvimensis	0.0000	0.0000	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.2500	0.2611	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.1667	0.2462	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Gull Island South			
Macrocystis pyrifera Ad.*(>1m)*	0.7083	0.6557	12
Macrocystis pyrifera Juvenile *(<1m)*	0.4167	0.5573	12
Macrocystis pyrifera Stipes for	4.9583	4.4592	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.2500	0.3989	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.5417	0.8649	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	2.6250	2.1227	12
Pisaster giganteus	0.4583	0.7525	12
Strongylocentrotus franciscanus	1.3333	2.1142	12
Strongylocentrotus purpuratus	2.0833	3.2110	12
Parastichopus parvimensis	0.2083	0.3343	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0417	0.1443	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.5417	0.7821	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.3750	0.3769	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Fry's Harbor			
Macrocystis pyrifera Ad.*(>1m)*	0.0417	0.1443	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.5833	2.0207	12
Eisenia arborea adult	0.9583	1.1766	12
Eisenia arborea juvenile	1.1250	0.9564	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.3750	0.7111	12
Megastraea undosa	0.1250	0.2261	12
Lithopoma gibberosa	0.0833	0.1946	12
Tegula regina	0.1250	0.3108	12
Patiria miniata	2.2500	1.3899	12
Pisaster giganteus	0.2500	0.3371	12
Strongylocentrotus franciscanus	0.1250	0.2261	12
Strongylocentrotus purpuratus	0.2083	0.4502	12
Parastichopus parvimensis	0.0833	0.1946	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.5000	0.5641	12
Coryphopterus nicholsii	3.8333	1.3540	12
Alloclinus holderi	0.2917	0.3965	12
Oxylebius pictus	0.0833	0.1946	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Pelican Bay			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0000	0.0000	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.2917	0.3343	12
Pisaster giganteus	0.0000	0.0000	12
Lytechinus anamesus	2.6667	1.9345	12
Strongylocentrotus franciscanus	2.0000	2.0780	12
Strongylocentrotus purpuratus	9.2083	5.3405	12
Parastichopus parvimensis	0.5000	0.6030	12
Centrostephanus coronatus	0.0417	0.1443	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.5000	0.6396	12
Coryphopterus nicholsii	2.4583	1.2695	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Scorpion Anchorage			
Macrocystis pyrifera Ad.*(>1m)*	0.0417	0.1443	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.5000	1.7321	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0417	0.1443	12
Cypraea spadicea	0.5417	0.7217	12
Megastraea undosa	0.5000	0.6030	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.2500	0.2611	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	4.0000	3.7659	12
Strongylocentrotus purpuratus	38.4583	28.3681	12
Parastichopus parvimensis	0.3333	0.3257	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	2.7083	1.4687	12
Alloclinus holderi	0.2500	0.2611	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Yellow Banks			
Macrocystis pyrifera Ad.*(>1m)*	0.4167	0.4174	12
Macrocystis pyrifera Juvenile *(<1m)*	0.2917	0.3965	12
Macrocystis pyrifera Stipes for	3.8333	4.2444	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0833	0.1946	12
Megastraea undosa	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	2.1667	1.2492	12
Pisaster giganteus	0.0833	0.1946	12
Strongylocentrotus franciscanus	0.2083	0.3343	12
Strongylocentrotus purpuratus	2.0833	2.9835	12
Parastichopus parvimensis	0.0000	0.0000	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.8750	0.7724	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.1667	0.2462	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Anacapa Island - Admiral's Reef			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	2.0000	1.3817	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	9.2083	5.6827	12
Strongylocentrotus purpuratus	7.4583	5.6827	12
Parastichopus parvimensis	0.5417	0.8649	12
Centrostephanus coronatus	0.5000	0.7385	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	2.7917	1.3728	12
Alloclinus holderi	0.2500	0.4523	12
Oxylebius pictus	0.1667	0.2462	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Macrocystis pyrifera Ad.*(>1m)*	0.5417	0.5823	12
Macrocystis pyrifera Juvenile *(<1m)*	5.2500	5.9257	12
Macrocystis pyrifera Stipes for	6.0417	6.0807	12
Eisenia arborea adult	0.0417	0.1443	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	2.1250	1.8723	12
Laminaria farlowii juvenile	23.0000	21.9245	12
Cypraea spadicea	0.0833	0.2887	12
Megastraea undosa	2.5833	2.9835	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.0000	0.0000	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	3.7083	4.5048	12
Strongylocentrotus purpuratus	1.2917	2.1155	12
Parastichopus parvimensis	0.7917	0.7525	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.2500	0.3989	12
Alloclinus holderi	0.5833	0.4687	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Anacapa Island - Landing Cove			
Macrocystis pyrifera Ad.*(>1m)*	0.2500	0.4523	12
Macrocystis pyrifera Juvenile *(<1m)*	10.5000	8.8292	12
Macrocystis pyrifera Stipes for	2.1250	3.8854	12
Eisenia arborea adult	1.3750	1.9321	12
Eisenia arborea juvenile	2.3750	3.5683	12
Pterygophora californica adult	0.6667	1.0731	12
Pterygophora californica juvenile	1.8333	3.2146	12
Laminaria farlowii adult	5.5833	6.2262	12
Laminaria farlowii juvenile	42.2083	39.3177	12
Cypraea spadicea	0.2917	0.5823	12
Megastraea undosa	0.2917	0.6895	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.0000	0.0000	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	3.5000	4.2104	12
Strongylocentrotus purpuratus	2.0833	2.4572	12
Parastichopus parvimensis	0.6667	0.7177	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.1667	0.2462	12
Oxylebius pictus	0.0833	0.2887	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - SE Sea Lion Rookery			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	0.1250	0.3108	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.3333	0.6155	12
Patiria miniata	0.2917	0.3343	12
Pisaster giganteus	0.1667	0.4438	12
Lytechinus anamesus	0.0833	0.1946	12
Strongylocentrotus franciscanus	10.8750	8.3152	12
Strongylocentrotus purpuratus	3.2083	3.3538	12
Parastichopus parvimensis	0.2500	0.4523	12
Centrostephanus coronatus	0.3750	0.5691	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.3750	0.4827	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - Arch Point			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	0.0833	0.1946	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.2083	0.4502	12
Patiria miniata	0.2917	0.4981	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.0417	0.1443	12
Strongylocentrotus franciscanus	14.3750	8.5230	12
Strongylocentrotus purpuratus	82.6667	48.0891	12
Parastichopus parvimensis	0.1250	0.2261	12
Centrostephanus coronatus	0.0833	0.1946	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0833	0.2887	12
Alloclinus holderi	0.0833	0.2887	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	0.7917	1.3561	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.0833	0.2887	12
Pisaster giganteus	0.0833	0.2887	12
Strongylocentrotus franciscanus	10.8750	5.7727	12
Strongylocentrotus purpuratus	40.0833	15.7015	12
Parastichopus parvimensis	0.4583	0.4981	12
Centrostephanus coronatus	0.0417	0.1443	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.2083	0.3343	12
Alloclinus holderi	0.0417	0.1443	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
San Miguel Island - Miracle Mile			
Macrocystis pyrifera Ad.*(>1m)*	0.4167	0.7930	12
Macrocystis pyrifera Juvenile *(<1m)*	1.0833	1.1839	12
Macrocystis pyrifera Stipes for	3.0000	5.1213	12
Eisenia arborea adult	0.7083	1.1373	12
Eisenia arborea juvenile	0.6250	1.4162	12
Pterygophora californica adult	0.4583	0.7821	12
Pterygophora californica juvenile	1.5000	4.2693	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Haliotis rufescens	0.3750	0.6440	12
Cypraea spadicea	0.0000	0.0000	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.2083	0.3343	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	2.5833	1.6214	12
Pisaster giganteus	0.6667	0.8348	12
Strongylocentrotus franciscanus	3.9583	4.5250	12
Strongylocentrotus purpuratus	0.2500	0.5000	12
Parastichopus parvimensis	0.0833	0.1946	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0417	0.1443	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0417	0.1443	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Rosa Island - Cluster Point			
Macrocystis pyrifera Ad.*(>1m)*	0.2500	0.3371	12
Macrocystis pyrifera Juvenile *(<1m)*	19.9583	33.2083	12
Macrocystis pyrifera Stipes for	1.7083	2.5268	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0417	0.1443	12
Pterygophora californica adult	1.3750	1.9084	12
Pterygophora californica juvenile	4.5833	5.8108	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.2083	0.4981	12
Cypraea spadicea	0.2083	0.3343	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	2.6250	2.5772	12
Pisaster giganteus	0.2083	0.3343	12
Strongylocentrotus franciscanus	2.3333	2.8471	12
Strongylocentrotus purpuratus	1.2500	1.6583	12
Parastichopus parvimensis	0.1667	0.2462	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.4583	0.6201	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.2083	0.3343	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Rosa Island - Trancion Canyon			
Macrocystis pyrifera Ad.*(>1m)*	0.4583	0.7525	12
Macrocystis pyrifera Juvenile *(<1m)*	3.7083	4.6586	12
Macrocystis pyrifera Stipes for	4.5000	10.1175	12
Eisenia arborea adult	0.0417	0.1443	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.3750	0.6077	12
Pterygophora californica juvenile	0.7917	1.0326	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.3333	0.3892	12
Megastraea undosa	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	2.0833	1.3790	12
Pisaster giganteus	0.2500	0.4523	12
Strongylocentrotus franciscanus	5.7500	9.5928	12
Strongylocentrotus purpuratus	4.2083	4.9057	12
Parastichopus parvimensis	0.1667	0.3892	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.7083	1.0967	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.2500	0.4523	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0833	0.1946	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Macrocystis pyrifera Ad.*(>1m)*	0.4167	0.4174	12
Macrocystis pyrifera Juvenile *(<1m)*	2.8333	5.9518	12
Macrocystis pyrifera Stipes for	3.5417	4.3404	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0833	0.1946	12
Pterygophora californica juvenile	0.7917	2.7424	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	1.1250	3.7424	12
Cypraea spadicea	0.4167	0.7930	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	1.6250	1.6394	12
Pisaster giganteus	0.1667	0.3257	12
Strongylocentrotus franciscanus	1.2500	1.9829	12
Strongylocentrotus purpuratus	0.1667	0.3257	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.2083	0.3965	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.2500	0.4523	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.5000	0.6030	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Rosa Island - South Point			
Macrocystis pyrifera Ad.*(>1m)*	0.5833	0.6337	12
Macrocystis pyrifera Juvenile *(<1m)*	2.1250	5.5232	12
Macrocystis pyrifera Stipes for	6.1250	6.3858	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.9167	0.8747	12
Pterygophora californica juvenile	0.3750	0.4827	12
Laminaria farlowii adult	0.2917	0.4981	12
Laminaria farlowii juvenile	0.1667	0.3257	12
Cypraea spadicea	0.1250	0.3108	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	2.7917	1.1766	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	0.0833	0.1946	12
Strongylocentrotus purpuratus	1.3750	2.0127	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.8333	0.8072	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.1250	0.3108	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.3750	0.4330	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0000	0.0000	12
Megastraea undosa	0.1667	0.3257	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.5833	0.6337	12
Pisaster giganteus	0.3333	0.3892	12
Lytechinus anamesus	0.2500	0.4523	12
Strongylocentrotus franciscanus	3.2083	3.0485	12
Strongylocentrotus purpuratus	21.1250	8.1801	12
Parastichopus parvimensis	0.2500	0.3371	12
Centrostephanus coronatus	0.1250	0.2261	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.1250	0.4330	12
Coryphopterus nicholsii	1.3750	1.3505	12
Alloclinus holderi	0.6250	0.5691	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Potato Pasture			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0000	0.0000	12
Megastraea undosa	0.2917	0.4981	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	0.3750	1.0028	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.5000	1.1078	12
Strongylocentrotus franciscanus	7.3333	3.8218	12
Strongylocentrotus purpuratus	25.5833	17.3832	12
Parastichopus parvimensis	0.6667	0.7177	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	1.7500	1.1774	12
Alloclinus holderi	0.2500	0.2611	12
Oxylebius pictus	0.0417	0.1443	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Cavern Point			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0417	0.1443	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.1667	0.3257	12
Megastraea undosa	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0833	0.2887	12
Patiria miniata	0.2083	0.3343	12
Pisaster giganteus	0.0833	0.1946	12
Strongylocentrotus franciscanus	2.7083	1.6440	12
Strongylocentrotus purpuratus	28.1667	7.2593	12
Parastichopus parvimensis	1.2083	0.8908	12
Centrostephanus coronatus	0.1667	0.3257	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0833	0.2887	12
Coryphopterus nicholsii	0.4583	0.4502	12
Alloclinus holderi	0.1250	0.2261	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Little Scorpion			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0833	0.2887	12
Megastraea undosa	0.1250	0.3108	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0833	0.1946	12
Patiria miniata	1.0417	0.8107	12
Pisaster giganteus	0.2083	0.2575	12
Strongylocentrotus franciscanus	5.8750	2.3944	12
Strongylocentrotus purpuratus	10.8333	8.0406	12
Parastichopus parvimensis	0.4167	0.5149	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0833	0.2887	12
Coryphopterus nicholsii	3.7500	2.6756	12
Alloclinus holderi	0.2083	0.2575	12
Oxylebius pictus	0.0417	0.1443	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Pedro Reef			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	1.0000	1.1481	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.1250	0.2261	12
Pisaster giganteus	0.0833	0.1946	12
Lytechinus anamesus	1.3750	1.6114	12
Strongylocentrotus franciscanus	7.4583	3.5577	12
Strongylocentrotus purpuratus	49.1667	24.9083	12
Parastichopus parvimensis	0.0833	0.1946	12
Centrostephanus coronatus	0.0833	0.2887	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	3.6667	2.6141	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0417	0.1443	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Anacapa Island - Keyhole			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.1667	0.3892	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.1250	0.3108	12
Eisenia arborea juvenile	0.3333	0.8616	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.2500	0.5839	12
Megastraea undosa	1.7917	1.4532	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	2.5417	1.5877	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	3.2500	2.2813	12
Strongylocentrotus purpuratus	5.5417	3.3606	12
Parastichopus parvimensis	1.2500	1.0766	12
Centrostephanus coronatus	0.3750	0.5276	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0833	0.2887	12
Coryphopterus nicholsii	0.5000	0.4264	12
Alloclinus holderi	0.6250	0.5691	12
Oxylebius pictus	0.0417	0.1443	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Anacapa Island - East Fish Camp			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.2917	0.5418	12
Megastraea undosa	0.6250	0.8013	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	1.0000	0.7687	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	1.4583	2.5357	12
Strongylocentrotus franciscanus	12.3333	4.5793	12
Strongylocentrotus purpuratus	48.5417	19.1507	12
Parastichopus parvimensis	0.2917	0.4502	12
Centrostephanus coronatus	0.8750	0.8561	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	3.1667	1.8749	12
Alloclinus holderi	0.3750	0.4827	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Anacapa Island - Black Sea Bass Reef			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0417	0.1443	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	0.1667	0.3257	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.2083	0.4502	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	1.9167	1.7430	12
Strongylocentrotus purpuratus	2.2083	1.8764	12
Parastichopus parvimensis	1.0833	0.9731	12
Centrostephanus coronatus	0.1667	0.2462	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.2083	0.3343	12
Coryphopterus nicholsii	1.0000	0.7687	12
Alloclinus holderi	0.8333	0.8072	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Anacapa Island - Lighthouse			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0833	0.1946	12
Megastraea undosa	0.1667	0.2462	12
Lithopoma gibberosa	0.0833	0.1946	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	0.6667	1.0299	12
Pisaster giganteus	0.0833	0.1946	12
Lytechinus anamesus	0.1250	0.2261	12
Strongylocentrotus franciscanus	9.6250	6.7154	12
Strongylocentrotus purpuratus	34.6250	14.7327	12
Parastichopus parvimensis	0.3750	0.6077	12
Centrostephanus coronatus	0.4583	0.4981	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	2.9583	1.3728	12
Alloclinus holderi	0.2083	0.3343	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - Webster's Arch			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0833	0.2887	12
Megastraea undosa	0.5000	0.5222	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.0833	0.1946	12
Patiria miniata	1.4167	1.0624	12
Pisaster giganteus	0.0833	0.1946	12
Lytechinus anamesus	0.1250	0.2261	12
Strongylocentrotus franciscanus	10.1250	3.7180	12
Strongylocentrotus purpuratus	79.5417	26.6897	12
Parastichopus parvimensis	0.2917	0.2575	12
Centrostephanus coronatus	0.2917	0.3965	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0417	0.1443	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0417	0.1443	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - Graveyard Canyon			
Macrocystis pyrifera Ad.*(>1m)*	0.0000	0.0000	12
Macrocystis pyrifera Juvenile *(<1m)*	0.0000	0.0000	12
Macrocystis pyrifera Stipes for	0.0000	0.0000	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	0.0833	0.1946	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.0417	0.1443	12
Pisaster giganteus	0.0000	0.0000	12
Lytechinus anamesus	0.9167	1.4434	12
Strongylocentrotus franciscanus	4.5417	3.1942	12
Strongylocentrotus purpuratus	14.6667	15.2306	12
Parastichopus parvimensis	0.0833	0.1946	12
Centrostephanus coronatus	0.0417	0.1443	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.3333	0.5774	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0000	0.0000	12

2007 QUADRAT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - Southeast Reef			
Macrocystis pyrifera Ad.*(>1m)*	0.3750	0.5691	12
Macrocystis pyrifera Juvenile *(<1m)*	0.1667	0.4438	12
Macrocystis pyrifera Stipes for	4.8750	9.7657	12
Eisenia arborea adult	0.2917	0.5823	12
Eisenia arborea juvenile	0.0833	0.2887	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.2083	0.5823	12
Megastraea undosa	0.1250	0.2261	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.6667	1.5859	12
Patiria miniata	0.0417	0.1443	12
Pisaster giganteus	0.0833	0.1946	12
Lytechinus anamesus	0.0417	0.1443	12
Strongylocentrotus franciscanus	14.1250	9.9181	12
Strongylocentrotus purpuratus	10.6250	9.4679	12
Parastichopus parvimensis	1.5417	1.0757	12
Centrostephanus coronatus	0.2500	0.5839	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0417	0.1443	12
Alloclinus holderi	0.0000	0.0000	12
Oxylebius pictus	0.0417	0.1443	12

Appendix B. 5 Meter Quadrat Data.

2007 5 METER QUADRAT DATA: MEAN NUMBER PER M²

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dichotomy

***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary**

Species	Mean	Std.	n
San Miguel Island - Wyckoff Ledge			
***Macrocystis pyrifera* Adult**	0.5450	0.4101	40
***Macrocystis pyrifera* Subadult**	0.0200	0.0758	40
Pisaster giganteus	0.1000	0.1812	40
San Miguel Island - Hare Rock			
***Macrocystis pyrifera* Adult**	0.2200	0.3702	40
***Macrocystis pyrifera* Subadult**	0.4950	0.9881	40
Pisaster giganteus	0.0300	0.1159	40
Santa Rosa Island - Johnson's Lee North			
***Macrocystis pyrifera* Adult**	0.6700	0.4310	40
***Macrocystis pyrifera* Subadult**	0.3400	0.3543	40
Pisaster giganteus	0.1250	0.2204	40
Santa Rosa Island - Johnson's Lee South			
***Macrocystis pyrifera* Adult**	0.4650	0.3800	40
***Macrocystis pyrifera* Subadult**	0.0750	0.1676	40
Pisaster giganteus	0.0150	0.0533	40
Santa Rosa Island - Rodes Reef			
***Macrocystis pyrifera* Adult**	0.1200	0.2514	40
***Macrocystis pyrifera* Subadult**	0.0800	0.1620	40
Pisaster giganteus	0.1600	0.2836	40
Santa Cruz Island - Gull Island South			
***Macrocystis pyrifera* Adult**	0.2950	0.3358	40

2007 5 METER QUADRAT DATA: MEAN NUMBER PER M² (continued)

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dichotomy

***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary**

Species	Mean	Std.	n
***Macrocystis pyrifera* Subadult**	0.2500	0.4145	40
Pisaster giganteus	0.2150	0.3150	40
Santa Cruz Island - Fry's Harbor			
***Macrocystis pyrifera* Adult**	0.0050	0.0316	40
***Macrocystis pyrifera* Subadult**	0.0450	0.1061	40
Pisaster giganteus	0.2650	0.2878	40
Santa Cruz Island - Pelican Bay			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0450	0.0846	40
Santa Cruz Island - Scorpion Anchorage			
***Macrocystis pyrifera* Adult**	0.0200	0.0883	40
***Macrocystis pyrifera* Subadult**	0.2200	0.8543	40
Pisaster giganteus	0.0550	0.1358	40
Santa Cruz Island - Yellow Banks			
***Macrocystis pyrifera* Adult**	0.2600	0.2228	40
***Macrocystis pyrifera* Subadult**	0.3750	0.5148	40
Pisaster giganteus	0.0150	0.0700	40

2007 5 METER QUADRAT DATA: MEAN NUMBER PER M² (continued)

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dichotomy

***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary**

Species	Mean	Std.	n
Anacapa Island - Admiral's Reef			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0050	0.0316	40
Pisaster giganteus	0.0200	0.0608	40
Anacapa Island - Cathedral Cove			
***Macrocystis pyrifera* Adult**	0.3250	0.3225	40
***Macrocystis pyrifera* Subadult**	0.0700	0.1897	40
Pisaster giganteus	0.0000	0.0000	40
Anacapa Island - Landing Cove			
***Macrocystis pyrifera* Adult**	0.0700	0.1244	40
***Macrocystis pyrifera* Subadult**	0.2100	0.2437	40
Pisaster giganteus	0.0000	0.0000	40
Santa Barbara Island - SE Sea Lion Rookery			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0350	0.0893	40
Santa Barbara Island - Arch Point			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0350	0.0770	40
Santa Barbara Island - Cat Canyon			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0600	0.1128	40

2007 5 METER QUADRAT DATA: MEAN NUMBER PER M² (continued)

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dichotomy

***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary**

Species	Mean	Std.	n
San Miguel Island - Miracle Mile			
***Macrocystis pyrifera* Adult**	0.1550	0.2241	40
***Macrocystis pyrifera* Subadult**	0.1600	0.3629	40
Pisaster giganteus	0.2400	0.3455	40
Santa Rosa Island - Cluster Point			
***Macrocystis pyrifera* Adult**	0.2900	0.3507	40
***Macrocystis pyrifera* Subadult**	0.0300	0.0723	40
Pisaster giganteus	0.1100	0.2216	40
Santa Rosa Island - Trancion Canyon			
***Macrocystis pyrifera* Adult**	0.3050	0.3389	40
***Macrocystis pyrifera* Subadult**	0.2050	0.4332	40
Pisaster giganteus	0.2400	0.3365	40
Santa Rosa Island - Chickasaw			
***Macrocystis pyrifera* Adult**	0.5300	0.3722	40
***Macrocystis pyrifera* Subadult**	0.3500	0.3382	40
Pisaster giganteus	0.2900	0.2790	40

2007 5 METER QUADRAT DATA: MEAN NUMBER PER M² (continued)

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dichotomy

***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary**

Species	Mean	Std.	n
Santa Rosa Island - South Point			
***Macrocystis pyrifera* Adult**	0.3350	0.2656	40
***Macrocystis pyrifera* Subadult**	0.0300	0.0853	40
Pisaster giganteus	0.0550	0.1011	40
Santa Cruz Island - Devil's Peak Member			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.1450	0.2025	40
Santa Cruz Island - Potato Pasture			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0550	0.1108	40
Santa Cruz Island - Cavern Point			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0600	0.1033	40
Santa Cruz Island - Little Scorpion			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0900	0.1355	40
Santa Cruz Island - Pedro Reef			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0450	0.0846	40

2007 5 METER QUADRAT DATA: MEAN NUMBER PER M² (continued)

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dichotomy

***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary**

Species	Mean	Std.	n
Anacapa Island - Keyhole			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0350	0.0770	40
Anacapa Island - East Fish Camp			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0100	0.0441	40
Anacapa Island - Black Sea Bass Reef			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0050	0.0316	40
Pisaster giganteus	0.0450	0.0959	40
Anacapa Island - Lighthouse			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0400	0.0928	40

2007 5 METER QUADRAT DATA: MEAN NUMBER PER M² (continued)

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dichotomy

***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary**

Species	Mean	Std.	n
Santa Barbara Island - Webster's Arch			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0500	0.0877	40
Santa Barbara Island - Graveyard Canyon			
***Macrocystis pyrifera* Adult**	0.0000	0.0000	40
***Macrocystis pyrifera* Subadult**	0.0000	0.0000	40
Pisaster giganteus	0.0050	0.0316	40
Santa Barbara Island - Southeast Reef			
***Macrocystis pyrifera* Adult**	0.1650	0.2517	40
***Macrocystis pyrifera* Subadult**	0.0900	0.1865	40
Pisaster giganteus	0.0450	0.1154	40

Appendix C. Band Transect Data.

2007 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge			
Tethya aurantia	0.2181	0.1753	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.3986	0.2389	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0958	0.0954	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.5528	0.1297	12
Megathura crenulata	0.0028	0.0096	12
Crassedoma giganteum	0.0111	0.0164	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0222	0.0148	12
Lytechinus anamesus	0.0000	0.0000	12
San Miguel Island - Hare Rock			
Tethya aurantia	0.0931	0.0851	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0194	0.0199	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0028	0.0065	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0181	0.0261	12
Megathura crenulata	0.0014	0.0048	12
Crassedoma giganteum	0.0042	0.0075	12
Aplysia californica	0.0111	0.0148	12
Pycnopodia helianthoides	0.1889	0.0701	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Johnson's Lee North			
Tethya aurantia	0.1278	0.0533	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0125	0.0161	12
Lophogorgia chilensis	0.0014	0.0048	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0153	0.0297	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0014	0.0048	12
Megathura crenulata	0.0042	0.0075	12
Crassedoma giganteum	0.0167	0.0123	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0819	0.0571	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Johnson's Lee South			
Tethya aurantia	0.4181	0.1038	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.1819	0.1372	12
Lophogorgia chilensis	0.0514	0.0279	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0042	0.0104	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0347	0.0359	12
Megathura crenulata	0.0014	0.0048	12
Crassedoma giganteum	0.0125	0.0203	12
Aplysia californica	0.0014	0.0048	12
Pycnopodia helianthoides	0.1681	0.1528	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Rodes Reef			
Tethya aurantia	0.2528	0.1032	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0694	0.0340	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0750	0.0747	12
Megathura crenulata	0.0222	0.0351	12
Crassedoma giganteum	0.0056	0.0082	12
Aplysia californica	0.0056	0.0109	12
Pycnopodia helianthoides	0.0847	0.0321	12
Lytechinus anamesus	0.0042	0.0104	12
Santa Cruz Island - Gull Island South			
Tethya aurantia	0.1986	0.0869	12
Stylaster californica	0.1319	0.1846	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0264	0.0166	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0111	0.0148	12
Megathura crenulata	0.0000	0.0000	12
Crassedoma giganteum	0.0111	0.0109	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0167	0.0142	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Lytechinus anamesus	0.0000	0.0000	12
Santa Cruz Island - Fry's Harbor			
Tethya aurantia	0.0514	0.0392	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.2417	0.2664	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0042	0.0104	12
Megathura crenulata	0.0778	0.0736	12
Crassedoma giganteum	0.0347	0.0219	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0306	0.0368	12
Lytechinus anamesus	0.0014	0.0048	12
Santa Cruz Island - Pelican Bay			
Tethya aurantia	0.0181	0.0241	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1403	0.1113	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0014	0.0048	12
Panulirus interruptus	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0042	0.0075	12
Megathura crenulata	0.0042	0.0075	12
Crassedoma giganteum	0.0611	0.0538	12
Aplysia californica	0.0139	0.0211	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	1.2611	0.5157	12
Santa Cruz Island - Scorpion Anchorage			
Tethya aurantia	0.0306	0.0332	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0014	0.0048	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0069	0.0111	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.1181	0.0613	12
Crassedoma giganteum	0.0153	0.0181	12
Aplysia californica	0.0153	0.0166	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Yellow Banks			
Tethya aurantia	0.0903	0.0305	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0014	0.0048	12
Lophogorgia chilensis	0.0694	0.0324	12
Muricea fruticosa	0.0056	0.0109	12
Muricea californica	0.0194	0.0156	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0500	0.0333	12
Megathura crenulata	0.0042	0.0104	12
Crassedoma giganteum	0.0028	0.0065	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0083	0.0151	12
Lytechinus anamesus	0.1181	0.0976	12
Anacapa Island - Admiral's Reef			
Tethya aurantia	0.0847	0.0645	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0681	0.0313	12
Muricea fruticosa	0.0028	0.0065	12
Muricea californica	0.0181	0.0207	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0556	0.0557	12
Megathura crenulata	0.0625	0.0215	12
Crassedoma giganteum	0.0653	0.0495	12
Aplysia californica	0.0097	0.0111	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12
Anacapa Island - Cathedral Cove			
Tethya aurantia	0.0014	0.0048	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0306	0.0395	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0181	0.0441	12
Megathura crenulata	0.0278	0.0320	12
Crassedoma giganteum	0.0542	0.0921	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Anacapa Island - Landing Cove			
Tethya aurantia	0.0097	0.0166	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0014	0.0048	12
Lophogorgia chilensis	0.0097	0.0241	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0167	0.0225	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0139	0.0255	12
Megathura crenulata	0.0458	0.0582	12
Crassedoma giganteum	0.1861	0.0971	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Barbara Island - SE Sea Lion Rookery			
Tethya aurantia	0.1125	0.0648	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1514	0.0500	12
Muricea fruticosa	0.0042	0.0104	12
Muricea californica	0.0500	0.0376	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.0181	0.0251	12
Crassedoma giganteum	0.0097	0.0086	12
Aplysia californica	0.0458	0.0488	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0181	0.0288	12
Santa Barbara Island - Arch Point			
Tethya aurantia	0.0000	0.0000	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0042	0.0144	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0014	0.0048	12
Panulirus interruptus	0.0056	0.0109	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.0000	0.0000	12
Crassedoma giganteum	0.0097	0.0150	12
Aplysia californica	0.0889	0.0524	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0361	0.0368	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - Cat Canyon			
Tethya aurantia	0.0000	0.0000	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0028	0.0065	12
Panulirus interruptus	0.0028	0.0096	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.0042	0.0075	12
Crassedoma giganteum	0.0097	0.0150	12
Aplysia californica	0.1514	0.0694	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0292	0.0409	12
San Miguel Island - Miracle Mile			
Tethya aurantia	0.1972	0.0834	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.2069	0.1209	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.6681	0.5482	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0375	0.0624	12
Megathura crenulata	0.0292	0.0257	12
Crassedoma giganteum	0.0083	0.0112	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0389	0.0278	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Cluster Point			
Tethya aurantia	0.3500	0.1645	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0958	0.0697	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0028	0.0065	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0167	0.0201	12
Megathura crenulata	0.0292	0.0311	12
Crassedoma giganteum	0.0431	0.0392	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0333	0.0174	12
Lytechinus anamesus	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Rosa Island - Trancion Canyon			
Tethya aurantia	0.2167	0.1275	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0667	0.0449	12
Lophogorgia chilensis	0.0014	0.0048	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0014	0.0048	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0069	0.0132	12
Megathura crenulata	0.0403	0.0446	12
Crassedoma giganteum	0.0514	0.0446	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0083	0.0112	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Chickasaw			
Tethya aurantia	0.1056	0.0629	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0681	0.0359	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0167	0.0236	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.0028	0.0065	12
Crassedoma giganteum	0.0139	0.0264	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0056	0.0082	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - South Point			
Tethya aurantia	0.1042	0.0472	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0250	0.0251	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0500	0.0426	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0056	0.0109	12
Megathura crenulata	0.0042	0.0075	12
Crassedoma giganteum	0.0000	0.0000	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0028	0.0065	12
Lytechinus anamesus	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Devil's Peak Member			
Tethya aurantia	0.0208	0.0203	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.2347	0.4448	12
Muricea fruticosa	0.0014	0.0048	12
Muricea californica	0.0056	0.0082	12
Panulirus interruptus	0.0014	0.0048	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0028	0.0096	12
Megathura crenulata	0.3542	0.1131	12
Crassedoma giganteum	0.1056	0.1095	12
Aplysia californica	0.0250	0.0219	12
Pycnopodia helianthoides	0.0069	0.0111	12
Lytechinus anamesus	0.0361	0.0619	12
Santa Cruz Island - Potato Pasture			
Tethya aurantia	0.0653	0.0543	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1681	0.1485	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0028	0.0065	12
Haliotis rufescens	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0250	0.0490	12
Megathura crenulata	0.1042	0.1113	12
Crassedoma giganteum	0.1542	0.2013	12
Aplysia californica	0.0125	0.0144	12
Pycnopodia helianthoides	0.0014	0.0048	12
Lytechinus anamesus	0.7069	1.4348	12
Santa Cruz Island - Cavern Point			
Tethya aurantia	0.0736	0.0757	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.2292	0.1387	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0028	0.0065	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0014	0.0048	12
Megathura crenulata	0.1819	0.0897	12
Crassedoma giganteum	0.2528	0.1300	12
Aplysia californica	0.0833	0.0318	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0431	0.0435	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Little Scorpion			
Tethya aurantia	0.0167	0.0201	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1306	0.1600	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0014	0.0048	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0569	0.0313	12
Megathura crenulata	0.4875	0.2196	12
Crassedoma giganteum	0.0583	0.0345	12
Aplysia californica	0.0278	0.0378	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0583	0.0544	12
Santa Cruz Island - Pedro Reef			
Tethya aurantia	0.0861	0.0688	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.2792	0.1633	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0056	0.0109	12
Panulirus interruptus	0.0014	0.0048	12
Haliotis rufescens	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0042	0.0104	12
Megathura crenulata	0.0653	0.0446	12
Crassedoma giganteum	0.0444	0.0533	12
Aplysia californica	0.0264	0.0305	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.8569	0.7962	12
Anacapa Island - Keyhole			
Tethya aurantia	0.0000	0.0000	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.3181	0.1069	12
Muricea fruticosa	0.0083	0.0133	12
Muricea californica	0.0403	0.0429	12
Panulirus interruptus	0.0014	0.0048	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0056	0.0082	12
Megathura crenulata	0.0097	0.0132	12
Crassedoma giganteum	0.0375	0.0303	12
Aplysia californica	0.0319	0.0150	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0111	0.0148	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Anacapa Island - East Fish Camp			
Tethya aurantia	0.0444	0.0365	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0167	0.0284	12
Muricea fruticosa	0.0028	0.0065	12
Muricea californica	0.0111	0.0109	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.1472	0.1051	12
Megathura crenulata	0.1944	0.0944	12
Crassedoma giganteum	0.0431	0.0270	12
Aplysia californica	0.1653	0.1734	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.7611	0.5569	12
Anacapa Island - Black Sea Bass Reef			
Tethya aurantia	0.0069	0.0111	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0139	0.0199	12
Muricea fruticosa	0.0028	0.0065	12
Muricea californica	0.0014	0.0048	12
Panulirus interruptus	0.0472	0.0662	12
Haliotis rufescens	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.1639	0.0507	12
Crassedoma giganteum	0.0056	0.0082	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12
Anacapa Island - Lighthouse			
Tethya aurantia	0.0681	0.0520	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1333	0.0759	12
Muricea fruticosa	0.0472	0.0929	12
Muricea californica	0.3194	0.1689	12
Panulirus interruptus	0.0042	0.0104	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.2444	0.2954	12
Megathura crenulata	0.0444	0.0205	12
Crassedoma giganteum	0.0111	0.0164	12
Aplysia californica	0.0083	0.0133	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0181	0.0230	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M² (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - Webster's Arch			
Tethya aurantia	0.0014	0.0048	12
Stylaster californica	0.0014	0.0048	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0069	0.0111	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0069	0.0111	12
Panulirus interruptus	0.0056	0.0109	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0028	0.0065	12
Megathura crenulata	0.1500	0.1032	12
Crassedoma giganteum	0.0278	0.0228	12
Aplysia californica	0.2625	0.1360	12
Pycnopodia helianthoides	0.0069	0.0111	12
Lytechinus anamesus	0.0056	0.0082	12
Santa Barbara Island - Graveyard Canyon			
Tethya aurantia	0.0764	0.0641	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0597	0.0505	12
Muricea fruticosa	0.0028	0.0065	12
Muricea californica	0.0250	0.0207	12
Panulirus interruptus	0.0000	0.0000	12
Haliotis rufescens	0.0000	0.0000	12

2007 BAND TRANSECT DATA: MEAN NUMBER PER M^2 (continued)

Species	Mean	Std. Dev.	n
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0014	0.0048	12
Megathura crenulata	0.0153	0.0150	12
Crassedoma giganteum	0.0028	0.0096	12
Aplysia californica	0.1569	0.1260	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.4250	0.5206	12
Santa Barbara Island - Southeast Reef			
Tethya aurantia	0.0028	0.0065	12
Stylaster californica	0.0000	0.0000	12
Urticina lofotensis	0.0014	0.0048	12
Lophogorgia chilensis	0.0167	0.0201	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0097	0.0132	12
Panulirus interruptus	0.0028	0.0065	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.0069	0.0086	12
Crassedoma giganteum	0.0333	0.0402	12
Aplysia californica	0.1222	0.1605	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12

Appendix D. Random Point Contact Data.

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge			
Green Algae	0.333	0.8797	15
Miscellaneous Brown Algae	7.500	7.7344	15
Desmarestia spp.	0.167	0.6455	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	17.333	12.5167	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	7.167	9.2999	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	25.333	9.0073	15
Articulated Coralline Algae	11.000	10.5136	15
Encrusting Coralline Algae	33.667	14.7560	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	2.333	2.9073	15
Corynactis californica	0.333	1.2910	15
Balanophyllia elegans	1.500	2.2756	15
Astrangia lajollaensis	0.500	1.0351	15
Diopatra ornata	14.000	9.6732	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	21.667	8.7966	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Tunicates	1.333	2.0845	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	14.500	8.1941	15
Bare Substrate	17.667	21.8654	15
Rock	74.500	23.1686	15
Cobble	3.667	5.5795	15
Sand	21.833	20.2764	15
San Miguel Island - Hare Rock			
Green Algae	7.500	11.6879	15
Miscellaneous Brown Algae	2.500	6.4087	15
Desmarestia spp.	6.667	16.1374	15
Cystoseira spp.	0.500	1.4015	15
Macrocystis pyrifera All	12.833	20.0416	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	18.167	14.0619	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	46.833	15.7397	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	7.500	9.8652	15
Miscellaneous Plants (ie: Diatoms)	8.500	13.2220	15
Sponges	0.167	0.6455	15
Corynactis californica	4.167	4.7871	15
Balanophyllia elegans	3.000	4.3507	15
Astrangia lajollaensis	1.667	3.6187	15
Diopatra ornata	2.833	3.1149	15
Phragmatopoma californica	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	5.833	11.2467	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.667	1.1443	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	5.167	6.4411	15
Bare Substrate	13.667	17.5221	15
Rock	87.333	18.3582	15
Cobble	10.667	16.1595	15
Sand	2.000	2.7058	15
Santa Rosa Island - Johnson's Lee North			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.500	1.4015	15
Cystoseira spp.	3.333	6.4550	15
Macrocystis pyrifera All	27.167	13.8830	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	7.167	11.8347	15
Laminaria farlowii All	0.833	2.6163	15
Miscellaneous Red Algae	33.667	12.6726	15
Articulated Coralline Algae	2.500	2.6726	15
Encrusting Coralline Algae	7.333	5.7061	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	5.833	6.1721	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	4.167	3.9716	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Corynactis californica	1.833	3.4675	15
Balanophyllia elegans	0.500	1.0351	15
Astrangia lajollaensis	1.000	2.0702	15
Diopatra ornata	1.333	2.8137	15
Phragmatopoma californica	9.167	8.7457	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	22.333	9.8410	15
Diaperoecia californica	1.667	2.7817	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.333	0.8797	15
Tunicates	9.000	5.0709	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	28.667	9.4428	15
Bare Substrate	11.833	9.3287	15
Rock	94.667	6.6726	15
Cobble	3.167	4.6739	15
Sand	2.167	2.8137	15
Santa Rosa Island - Johnson's Lee South			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	1.500	2.9580	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	7.667	9.7498	15
Eisenia arborea All	0.500	1.9365	15
Pterygophora californica All	0.167	0.6455	15
Laminaria farlowii All	1.500	5.1582	15
Miscellaneous Red Algae	15.000	16.5831	15
Articulated Coralline Algae	3.333	4.7871	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Encrusting Coralline Algae	13.667	6.3293	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	3.667	8.0104	15
Miscellaneous Plants (ie: Diatoms)	1.833	6.4411	15
Sponges	1.833	3.0570	15
Corynactis californica	1.500	3.1053	15
Balanophyllia elegans	1.500	2.0702	15
Astrangia lajollaensis	1.333	1.5999	15
Diopatra ornata	16.167	15.7794	15
Phragmatopoma californica	0.167	0.6455	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	22.667	15.4535	15
Diaperoecia californica	1.333	2.8137	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	3.500	3.8730	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	5.000	5.2610	15
Bare Substrate	29.833	17.0206	15
Rock	72.833	26.5058	15
Cobble	1.000	2.6390	15
Sand	26.167	26.8572	15

Santa Rosa Island - Rodes Reef

Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	2.833	6.2583	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	25.667	17.6136	15
Articulated Coralline Algae	0.167	0.6455	15
Encrusting Coralline Algae	20.833	14.3821	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.500	1.4015	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	1.000	2.0702	15
Corynactis californica	0.000	0.0000	15
Balanophyllia elegans	1.167	2.2887	15
Astrangia lajollaensis	7.167	7.4921	15
Diopatra ornata	10.167	8.7355	15
Phragmatopoma californica	0.167	0.6455	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	14.500	9.2678	15
Diaperoecia californica	1.333	2.2887	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
*Tu*nicates	7.500	6.5465	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	20.833	10.4654	15
Bare Substrate	9.667	10.1272	15
Rock	77.000	24.6258	15
Cobble	15.167	15.7397	15
Sand	7.833	11.1750	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Santa Cruz Island - Gull Island South			
Green Algae	0.500	1.4015	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.500	1.0351	15
Macrocystis pyrifera All	25.000	16.3663	15
Eisenia arborea All	0.667	1.4840	15
Pterygophora californica All	0.500	1.9365	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	57.500	21.1289	15
Articulated Coralline Algae	4.167	4.9701	15
Encrusting Coralline Algae	23.000	15.0060	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	2.500	3.4069	15
Miscellaneous Plants (ie: Diatoms)	1.000	1.5811	15
Sponges	3.333	4.4987	15
Corynactis californica	2.500	2.3146	15
Balanophyllia elegans	2.667	1.9970	15
Astrangia lajollaensis	1.500	1.8420	15
Diopatra ornata	2.667	5.5474	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	30.000	14.3925	15
Diaperoecia californica	7.333	6.1577	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	3.833	3.9940	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	12.000	5.6061	15
Bare Substrate	1.333	2.2887	15
Rock	98.333	2.2493	15
Cobble	0.667	1.4840	15
Sand	1.000	2.0702	15
Santa Cruz Island - Fry's Harbor			
Green Algae	1.667	2.0412	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	1.667	6.4550	15
Eisenia arborea All	20.833	15.8584	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	25.833	9.6671	15
Articulated Coralline Algae	0.333	1.2910	15
Encrusting Coralline Algae	34.667	13.1566	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	2.000	2.8661	15
Miscellaneous Plants (ie: Diatoms)	3.000	2.8661	15
Sponges	0.333	0.8797	15
Corynactis californica	0.833	1.5430	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	5.500	3.3004	15
Diopatra ornata	0.167	0.6455	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Bryozoans	22.500	9.9553	15
Diaperoecia californica	1.500	2.8031	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.167	0.6455	15
Tunicates	2.167	2.2887	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	26.833	11.2388	15
Bare Substrate	9.000	9.3446	15
Rock	87.333	16.7563	15
Cobble	9.500	12.4714	15
Sand	3.167	5.6273	15

Santa Cruz Island - Pelican Bay

Green Algae	0.333	0.8797	15
Miscellaneous Brown Algae	1.167	2.2887	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	4.833	4.8612	15
Articulated Coralline Algae	0.167	0.6455	15
Encrusting Coralline Algae	44.167	12.7359	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	21.333	7.3111	15
Sponges	0.333	0.8797	15
Corynactis californica	0.667	1.4840	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	7.667	4.3780	15
Diopatra ornata	0.167	0.6455	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	4.833	2.4029	15
Diaperoecia californica	0.333	0.8797	15
Pachythyone rubra	2.667	5.6273	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	5.500	5.6061	15
Bare Substrate	39.667	15.5226	15
Rock	58.000	20.4022	15
Cobble	27.167	11.7969	15
Sand	14.833	16.3791	15
Santa Cruz Island - Scorpion Anchorage			
Green Algae	1.833	2.2093	15
Miscellaneous Brown Algae	6.833	8.0438	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.333	1.2910	15
Macrocystis pyrifera All	3.500	9.5338	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	4.333	6.5783	15
Articulated Coralline Algae	0.167	0.6455	15
Encrusting Coralline Algae	53.667	14.9065	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	13.333	8.5912	15
Sponges	0.000	0.0000	15
Corynactis californica	0.333	0.8797	15
Balanophyllia elegans	0.500	1.0351	15
Astrangia lajollaensis	0.333	0.8797	15
Diopatra ornata	0.167	0.6455	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	1.500	4.6098	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.167	0.6455	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	9.667	9.7223	15
Bare Substrate	27.333	12.1914	15
Rock	76.333	17.9997	15
Cobble	1.833	2.2093	15
Sand	21.833	18.9328	15

Santa Cruz Island - Yellow Banks

Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.833	1.5430	15
Macrocystis pyrifera All	9.833	8.5287	15
Eisenia arborea All	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	7.500	5.9761	15
Articulated Coralline Algae	3.000	2.8661	15
Encrusting Coralline Algae	41.667	12.8058	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	1.833	3.3363	15
Sponges	0.500	1.0351	15
Corynactis californica	0.167	0.6455	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.667	1.1443	15
Diopatra ornata	1.167	3.2550	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	15.833	8.5391	15
Diaperoecia californica	0.833	2.2493	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	3.167	3.3363	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	6.167	5.4989	15
Bare Substrate	23.833	13.8186	15
Rock	79.500	27.2423	15
Cobble	16.500	19.7032	15
Sand	4.000	11.4876	15
Anacapa Island - Admiral's Reef			
Green Algae	0.500	1.0351	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	13.167	15.4535	15
Articulated Coralline Algae	0.333	0.8797	15
Encrusting Coralline Algae	54.333	20.7551	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	3.667	5.8146	15
Sponges	0.500	1.0351	15
Corynactis californica	1.333	1.8581	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	1.000	1.2677	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	2.000	2.8661	15
Diaperoecia californica	0.833	2.0412	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	45.500	38.6745	15
Tunicates	0.833	1.8094	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	19.000	14.0725	15
Bare Substrate	17.833	14.3261	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Rock	81.000	22.4165	15
Cobble	8.333	10.5079	15
Sand	10.667	15.4535	15
Anacapa Island - Cathedral Cove			
Green Algae	0.833	1.2199	15
Miscellaneous Brown Algae	7.333	7.4682	15
Desmarestia spp.	0.667	2.5820	15
Cystoseira spp.	33.333	18.1430	15
Macrocystis pyrifera All	33.167	15.2206	15
Eisenia arborea All	1.167	2.8137	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	45.333	23.1429	15
Miscellaneous Red Algae	22.500	10.2644	15
Articulated Coralline Algae	30.500	13.8293	15
Encrusting Coralline Algae	29.000	11.1323	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	1.167	2.8137	15
Sponges	0.333	0.8797	15
Corynactis californica	0.333	0.8797	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	3.333	5.4006	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.833	1.5430	15
Miscellaneous Bryozoans	23.167	11.7438	15
Diaperoecia californica	1.167	1.5999	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	9.500	6.8920	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	13.333	8.5912	15
Bare Substrate	8.333	8.3274	15
Rock	79.667	19.3849	15
Cobble	11.000	10.1682	15
Sand	9.167	11.5984	15

Anacapa Island - Landing Cove

Green Algae	2.167	3.1149	15
Miscellaneous Brown Algae	6.500	8.7014	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	6.500	10.7238	15
Macrocystis pyrifera All	26.000	20.3277	15
Eisenia arborea All	29.833	27.0328	15
Pterygophora californica All	17.333	26.1429	15
Laminaria farlowii All	51.500	39.2201	15
Miscellaneous Red Algae	45.333	23.8647	15
Articulated Coralline Algae	19.167	9.0960	15
Encrusting Coralline Algae	25.167	21.1598	15
Gelidium spp.	23.167	34.5955	15
Gigartina spp.	0.667	2.5820	15
Miscellaneous Plants (ie: Diatoms)	0.333	1.2910	15
Sponges	2.833	4.2117	15
Corynactis californica	1.833	3.5940	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Diopatra ornata	0.333	0.8797	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	16.500	10.1682	15
Diaperoecia californica	3.333	5.9512	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	4.000	3.1053	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	8.167	9.3764	15
Bare Substrate	5.667	20.5823	15
Rock	89.167	22.0929	15
Cobble	5.500	8.1941	15
Sand	5.333	20.6559	15
Santa Barbara Island - SE Sea Lion Rookery			
Green Algae	0.833	1.5430	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	1.667	2.4398	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	78.167	13.8379	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Plants (ie: Diatoms)	5.833	5.3173	15
Sponges	0.500	1.0351	15
Corynactis californica	1.500	1.8420	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.500	1.0351	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	2.500	2.9881	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	51.167	31.1515	15
Tunicates	0.333	0.8797	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	5.000	4.7246	15
Bare Substrate	15.000	14.4234	15
Rock	89.833	14.9543	15
Cobble	3.333	3.4932	15
Sand	6.833	13.6102	15
Santa Barbara Island - Arch Point			
Green Algae	0.833	1.5430	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Red Algae	24.167	9.1450	15
Articulated Coralline Algae	0.500	1.4015	15
Encrusting Coralline Algae	76.667	8.8976	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	7.667	7.7613	15
Sponges	0.000	0.0000	15
Corynactis californica	2.333	2.5820	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	1.167	1.8581	15
Diopatra ornata	0.333	0.8797	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	0.667	1.9970	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	14.500	6.3527	15
Bare Substrate	13.167	7.2251	15
Rock	92.833	8.2303	15
Cobble	6.333	8.0104	15
Sand	0.833	3.2275	15
Santa Barbara Island - Cat Canyon			
Green Algae	0.500	1.0351	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	1.833	2.2093	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	67.167	11.6061	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	4.667	4.6162	15
Sponges	0.167	0.6455	15
Corynactis californica	0.167	0.6455	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	0.833	1.2199	15
Diopatra ornata	0.333	1.2910	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	0.833	2.6163	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.667	1.1443	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	6.667	5.6432	15
Bare Substrate	21.000	9.6732	15
Rock	91.167	6.6054	15
Cobble	6.500	6.6682	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Sand	2.333	3.4675	15
San Miguel Island - Miracle Mile			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	2.167	2.4761	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	15.833	15.4014	15
Eisenia arborea All	27.667	31.8824	15
Pterygophora californica All	13.500	23.1802	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	70.500	13.2692	15
Articulated Coralline Algae	33.333	16.0820	15
Encrusting Coralline Algae	41.000	10.4283	15
Gelidium spp.	0.667	1.1443	15
Gigartina spp.	3.333	5.0592	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	8.833	5.1640	15
Corynactis californica	0.333	0.8797	15
Balanophyllia elegans	1.167	1.5999	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	1.333	2.6502	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.333	0.8797	15
Miscellaneous Bryozoans	22.500	10.5221	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Tunicates	16.500	9.1026	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	18.333	11.8648	15
Bare Substrate	8.333	10.9245	15
Rock	91.833	11.1990	15
Cobble	3.333	6.0257	15
Sand	4.833	8.1540	15

Santa Rosa Island - Cluster Point

Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	0.833	1.2199	15
Desmarestia spp.	2.167	8.3915	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	7.500	9.0633	15
Eisenia arborea All	0.500	1.4015	15
Pterygophora californica All	9.667	12.3876	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	52.500	16.9031	15
Articulated Coralline Algae	2.500	3.1339	15
Encrusting Coralline Algae	15.833	7.4801	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	1.833	3.9491	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	4.833	8.8372	15
Corynactis californica	0.833	1.5430	15
Balanophyllia elegans	1.833	1.9970	15
Astrangia lajollaensis	0.667	1.9970	15
Diopatra ornata	1.833	3.4675	15
Phragmatopoma californica	3.667	3.7639	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	6.167	5.1640	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	8.500	5.6537	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	22.167	11.5289	15
Bare Substrate	13.500	18.2199	15
Rock	85.000	22.5990	15
Cobble	11.333	18.3193	15
Sand	3.667	5.7373	15
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.667	1.1443	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	17.500	15.1186	15
Eisenia arborea All	0.333	1.2910	15
Pterygophora californica All	7.500	10.9381	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	47.167	14.5119	15
Articulated Coralline Algae	7.833	7.8982	15
Encrusting Coralline Algae	15.167	13.1430	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	4.667	4.1043	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	3.667	3.5187	15
Corynactis californica	0.833	2.0412	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Balanophyllia elegans	0.667	1.1443	15
Astrangia lajollaensis	0.500	1.0351	15
Diopatra ornata	9.000	9.4397	15
Phragmatopoma californica	3.000	3.3004	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	15.000	8.4515	15
Diaperoecia californica	1.000	2.6390	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	11.833	6.9093	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	22.500	12.0268	15
Bare Substrate	15.500	17.8336	15
Rock	78.333	22.2339	15
Cobble	0.667	1.9970	15
Sand	21.000	22.8113	15
Santa Rosa Island - Chickasaw			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	1.833	2.7495	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.500	1.0351	15
Macrocystis pyrifera All	42.833	28.5805	15
Eisenia arborea All	0.833	3.2275	15
Pterygophora californica All	0.500	1.9365	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	66.667	18.1183	15
Articulated Coralline Algae	14.167	10.7598	15
Encrusting Coralline Algae	28.333	7.4202	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	2.667	5.1293	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	2.333	2.5820	15
Corynactis californica	0.333	1.2910	15
Balanophyllia elegans	1.667	1.8094	15
Astrangia lajollaensis	0.500	1.0351	15
Diopatra ornata	17.000	11.8849	15
Phragmatopoma californica	1.167	2.0845	15
Serpulorbis squamigerus	0.333	0.8797	15
Miscellaneous Bryozoans	38.333	17.5170	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	11.500	7.5475	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	7.333	6.6458	15
Bare Substrate	5.833	9.8953	15
Rock	79.667	17.7499	15
Cobble	0.667	1.4840	15
Sand	19.667	16.8466	15

Santa Rosa Island - South Point

Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	3.333	3.9716	15
Macrocystis pyrifera All	16.667	15.0792	15
Eisenia arborea All	0.500	1.9365	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Pterygophora californica All	9.667	15.0851	15
Laminaria farlowii All	3.667	5.8909	15
Miscellaneous Red Algae	41.500	18.4633	15
Articulated Coralline Algae	14.500	11.3074	15
Encrusting Coralline Algae	5.667	7.1631	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	1.833	3.4675	15
Miscellaneous Plants (ie: Diatoms)	0.333	0.8797	15
Sponges	4.333	4.6739	15
Corynactis californica	0.000	0.0000	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	17.167	21.4823	15
Phragmatopoma californica	4.333	5.1293	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	16.500	6.4642	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	11.833	6.5101	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	5.500	4.1404	15
Bare Substrate	12.000	15.1540	15
Rock	78.667	27.7725	15
Cobble	0.667	1.9970	15
Sand	20.667	27.0493	15
Santa Cruz Island - Devil's Peak Member			
Green Algae	0.167	0.6455	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	21.000	11.9448	15
Articulated Coralline Algae	0.333	0.8797	15
Encrusting Coralline Algae	51.833	11.1189	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	26.167	9.3954	15
Sponges	0.500	1.0351	15
Corynactis californica	0.500	1.0351	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	3.500	3.3806	15
Diopatra ornata	0.167	0.6455	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	8.000	7.6298	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	14.167	16.0542	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	4.833	5.3005	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	26.167	10.3020	15
Bare Substrate	6.667	5.1467	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Rock	95.167	6.4411	15
Cobble	0.667	1.1443	15
Sand	4.167	6.2440	15
Santa Cruz Island - Potato Pasture			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	11.333	8.9576	15
Articulated Coralline Algae	0.333	0.8797	15
Encrusting Coralline Algae	42.333	17.3325	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	2.167	2.8137	15
Sponges	0.000	0.0000	15
Corynactis californica	2.833	3.9940	15
Balanophyllia elegans	0.333	0.8797	15
Astrangia lajollaensis	2.333	2.9073	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	2.000	2.3528	15
Diaperoecia californica	0.500	1.9365	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Pachythyone rubra	4.333	13.2107	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.333	0.8797	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	14.333	10.9572	15
Bare Substrate	17.833	16.0598	15
Rock	80.333	19.9075	15
Cobble	17.000	19.2075	15
Sand	2.667	3.1997	15
Santa Cruz Island - Cavern Point			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	7.833	5.4171	15
Articulated Coralline Algae	0.667	1.9970	15
Encrusting Coralline Algae	45.000	8.6603	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	7.333	6.1577	15
Sponges	0.500	1.0351	15
Corynactis californica	0.833	1.8094	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	3.500	2.9580	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Diopatra ornata	0.333	0.8797	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	5.500	5.5259	15
Diaperoecia californica	1.333	1.5999	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	3.500	2.9580	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	25.333	8.0659	15
Bare Substrate	11.167	10.3883	15
Rock	86.333	12.3153	15
Cobble	10.667	10.6682	15
Sand	3.000	4.4521	15

Santa Cruz Island - Little Scorpion

Green Algae	0.333	0.8797	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	11.667	7.7152	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	28.500	13.2894	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Plants (ie: Diatoms)	16.667	10.9245	15
Sponges	0.500	1.0351	15
Corynactis californica	0.500	1.4015	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	4.000	3.8730	15
Diopatra ornata	0.167	0.6455	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	9.000	7.5475	15
Diaperoecia californica	1.167	2.2887	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	1.667	2.2493	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	20.833	9.8501	15
Bare Substrate	21.000	14.6933	15
Rock	76.500	22.8309	15
Cobble	21.167	20.8923	15
Sand	2.333	3.4675	15

Santa Cruz Island - Pedro Reef

Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Red Algae	9.167	7.6571	15
Articulated Coralline Algae	2.333	2.9073	15
Encrusting Coralline Algae	42.500	12.4642	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	9.667	9.1548	15
Sponges	0.333	0.8797	15
Corynactis californica	8.167	7.7613	15
Balanophyllia elegans	0.333	0.8797	15
Astrangia lajollaensis	2.833	2.8137	15
Diopatra ornata	0.833	1.2199	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.333	0.8797	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	1.833	4.5774	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	17.000	9.1222	15
Bare Substrate	27.667	12.7639	15
Rock	92.500	11.3782	15
Cobble	1.500	2.2756	15
Sand	6.000	9.8561	15
Anacapa Island - Keyhole			
Green Algae	1.167	1.8581	15
Miscellaneous Brown Algae	14.667	13.6233	15
Desmarestia spp.	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Cystoseira spp.	0.167	0.6455	15
Macrocystis pyrifera All	0.333	1.2910	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	15.333	11.9099	15
Articulated Coralline Algae	0.500	1.4015	15
Encrusting Coralline Algae	41.833	11.9323	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	22.167	10.7681	15
Sponges	0.000	0.0000	15
Corynactis californica	0.000	0.0000	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.667	1.1443	15
Diopatra ornata	5.500	5.9911	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	9.500	5.5259	15
Diaperoecia californica	0.167	0.6455	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.833	1.5430	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	25.000	7.5593	15
Bare Substrate	15.833	11.9398	15
Rock	74.167	20.5215	15
Cobble	11.500	11.9448	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Sand	14.333	15.5686	15
Anacapa Island - East Fish Camp			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	5.667	6.9093	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	50.333	13.2916	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	0.167	0.6455	15
Sponges	0.000	0.0000	15
Corynactis californica	7.000	6.5602	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.333	0.8797	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.167	0.6455	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	10.500	16.4534	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	5.667	3.0570	15
Bare Substrate	30.500	11.5418	15
Rock	89.500	8.2484	15
Cobble	4.667	3.3894	15
Sand	5.833	8.1101	15
Anacapa Island - Black Sea Bass Reef			
Green Algae	4.833	6.0847	15
Miscellaneous Brown Algae	1.333	2.8137	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	1.000	2.2756	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	22.667	14.9841	15
Articulated Coralline Algae	0.333	0.8797	15
Encrusting Coralline Algae	82.000	9.4112	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.333	0.8797	15
Miscellaneous Plants (ie: Diatoms)	6.167	3.6433	15
Sponges	0.500	1.0351	15
Corynactis californica	2.333	2.2093	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	3.667	5.6590	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	76.000	27.7392	15
Tunicates	0.167	0.6455	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	4.500	6.2821	15
Bare Substrate	5.000	7.2580	15
Rock	89.833	11.6292	15
Cobble	6.333	6.1140	15
Sand	3.833	7.5514	15
Anacapa Island - Lighthouse			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.167	0.6455	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	2.500	2.3146	15
Articulated Coralline Algae	0.167	0.6455	15
Encrusting Coralline Algae	33.667	14.6344	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	3.667	3.8807	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Sponges	0.000	0.0000	15
Corynactis californica	0.833	1.2199	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.500	1.0351	15
Diopatra ornata	7.167	4.6162	15
Phragmatopoma californica	0.333	0.8797	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.500	1.4015	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	12.833	8.1759	15
Bare Substrate	40.833	11.5984	15
Rock	65.833	13.9728	15
Cobble	13.500	8.5461	15
Sand	20.667	10.4994	15

Santa Barbara Island - Webster's Arch

Green Algae	3.000	2.8661	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	10.000	8.9143	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Articulated Coralline Algae	1.333	2.8137	15
Encrusting Coralline Algae	55.667	15.4245	15
Gelidium spp.	0.000	0.0000	15
*Gi*gartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	2.333	3.4675	15
Sponges	0.667	1.1443	15
Corynactis californica	7.500	7.0076	15
Balanophyllia elegans	1.333	2.0845	15
Astrangia lajollaensis	0.167	0.6455	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	2.000	2.3528	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	6.500	16.9769	15
Tunicates	1.833	3.4675	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	18.333	7.4801	15
Bare Substrate	9.500	4.6483	15
Rock	97.500	3.1339	15
Cobble	2.333	2.7495	15
Sand	0.167	0.6455	15

Santa Barbara Island - Graveyard Canyon

Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Macrocystis pyrifera All	0.000	0.0000	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	1.167	2.2887	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	52.000	31.5266	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	0.167	0.6455	15
Sponges	0.000	0.0000	15
Corynactis californica	2.333	2.5820	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.667	1.1443	15
Diopatra ornata	0.500	1.0351	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	1.667	2.4398	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	32.500	37.6900	15
Tunicates	0.500	1.4015	15
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	4.000	6.1091	15
Bare Substrate	41.833	34.2192	15
Rock	65.167	38.6775	15
Cobble	2.333	3.7161	15
Sand	32.500	40.2781	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Santa Barbara Island - Southeast Reef			
Green Algae	0.500	1.0351	15
Miscellaneous Brown Algae	2.000	2.1547	15
Desmarestia spp.	0.667	1.9970	15
Cystoseira spp.	0.333	1.2910	15
Macrocystis pyrifera All	5.333	8.3381	15
Eisenia arborea All	2.000	4.1404	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	16.167	14.1695	15
Articulated Coralline Algae	4.000	5.7321	15
Encrusting Coralline Algae	43.833	22.9492	15
Gelidium spp.	0.333	1.2910	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	6.333	8.1211	15
Sponges	0.167	0.6455	15
Corynactis californica	0.000	0.0000	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.333	0.8797	15
Diopatra ornata	0.833	2.6163	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	8.000	7.5711	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	9.667	12.7078	15

2007 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER (continued)

Species	Mean	Std. Dev.	n
Miscellaneous Invertebrates excl. *Ophiothrix spiculata*	22.000	16.3172	15
Bare Substrate	9.333	9.2324	15
Rock	92.333	14.2824	15
Cobble	5.667	10.8754	15
Sand	2.000	5.6061	15

Appendix E. Fish Transect Data.

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3)

Species	Date	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge				
Chromis punctipinnis Adult	7/11/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	7/11/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/11/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	7/11/2007	0.0000	0.0000	4
Sebastes mystinus Adult	7/11/2007	0.2500	0.5000	4
Sebastes mystinus Juvenile	7/11/2007	0.0000	0.0000	4
Sebastes serranoides Adult	7/11/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/11/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	7/11/2007	0.7500	1.5000	4
Sebastes atrovirens Juvenile	7/11/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	7/11/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/11/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/11/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	7/11/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	7/11/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/11/2007	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	7/11/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	7/11/2007	4.7500	3.7749	4
Embiotoca lateralis Juvenile	7/11/2007	0.0000	0.0000	4
Damalichthys vacca Adult	7/11/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	7/11/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/11/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/11/2007	0.0000	0.0000	4
Girella nigricans Adult	7/11/2007	0.0000	0.0000	4
Girella nigricans Juvenile	7/11/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Halichoeres semicinctus Male	7/11/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	7/11/2007	0.0000	0.0000	4
San Miguel Island - Hare Rock				
Chromis punctipinnis Adult	7/10/2007	0.5000	1.0000	4
Chromis punctipinnis Juvenile	7/10/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/10/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	7/10/2007	0.0000	0.0000	4
Sebastes mystinus Adult	7/10/2007	0.5000	0.5774	4
Sebastes mystinus Juvenile	7/10/2007	0.0000	0.0000	4
Sebastes serranoides Adult	7/10/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/10/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	7/10/2007	0.2500	0.5000	4
Sebastes atrovirens Juvenile	7/10/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	7/10/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/10/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/10/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	7/10/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	7/10/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/10/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	7/10/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	7/10/2007	2.0000	0.8165	4
Embiotoca lateralis Juvenile	7/10/2007	0.5000	1.0000	4
Damalichthys vacca Adult	7/10/2007	2.2500	2.6300	4
Damalichthys vacca Juvenile	7/10/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/10/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/10/2007	0.0000	0.0000	4
Girella nigricans Adult	7/10/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Girella nigricans Juvenile	7/10/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	7/10/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	7/10/2007	0.0000	0.0000	4
Santa Rosa Island - Johnson's Lee North				
Chromis punctipinnis Adult	9/26/2007	0.2500	0.5000	4
Chromis punctipinnis Juvenile	9/26/2007	0.0000	0.0000	4
Oxyjulis californica Adult	9/26/2007	3.2500	5.2520	4
Oxyjulis californica Juvenile	9/26/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/26/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/26/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/26/2007	0.5000	1.0000	4
Sebastes serranoides Juvenile	9/26/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/26/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/26/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	9/26/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/26/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/26/2007	0.2500	0.5000	4
Semicossyphus pulcher Female	9/26/2007	1.2500	1.8930	4
Semicossyphus pulcher Juvenile	9/26/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/26/2007	1.7500	0.9574	4
Embiotoca jacksoni Juvenile	9/26/2007	0.2500	0.5000	4
Embiotoca lateralis Adult	9/26/2007	0.2500	0.5000	4
Embiotoca lateralis Juvenile	9/26/2007	0.5000	1.0000	4
Damalichthys vacca Adult	9/26/2007	1.2500	0.5000	4
Damalichthys vacca Juvenile	9/26/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	9/26/2007	0.2500	0.5000	4
Hypsypops rubicundus Juvenile	9/26/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Girella nigricans Adult	9/26/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/26/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/26/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	9/26/2007	0.0000	0.0000	4
Santa Rosa Island - Johnson's Lee South				
Chromis punctipinnis Adult	7/25/2007	1.2500	1.5000	4
Chromis punctipinnis Juvenile	7/25/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/25/2007	2.2500	1.7078	4
Oxyjulis californica Juvenile	7/25/2007	0.0000	0.0000	4
Sebastes mystinus Adult	7/25/2007	0.5000	0.5774	4
Sebastes mystinus Juvenile	7/25/2007	1.2500	1.5000	4
Sebastes serranoides Adult	7/25/2007	0.2500	0.5000	4
Sebastes serranoides Juvenile	7/25/2007	0.2500	0.5000	4
Sebastes atrovirens Adult	7/25/2007	0.7500	0.5000	4
Sebastes atrovirens Juvenile	7/25/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	7/25/2007	0.2500	0.5000	4
Paralabrax clathratus Juvenile	7/25/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/25/2007	0.2500	0.5000	4
Semicossyphus pulcher Female	7/25/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	7/25/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/25/2007	0.5000	0.5774	4
Embiotoca jacksoni Juvenile	7/25/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	7/25/2007	0.2500	0.5000	4
Embiotoca lateralis Juvenile	7/25/2007	0.0000	0.0000	4
Damalichthys vacca Adult	7/25/2007	1.2500	1.8930	4
Damalichthys vacca Juvenile	7/25/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/25/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Hypsypops rubicundus Juvenile	7/25/2007	0.0000	0.0000	4
Girella nigricans Adult	7/25/2007	0.7500	0.9574	4
Girella nigricans Juvenile	7/25/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	7/25/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	7/25/2007	0.0000	0.0000	4
Santa Rosa Island - Rodes Reef				
Chromis punctipinnis Adult	7/9/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	7/9/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/9/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	7/9/2007	0.0000	0.0000	4
Sebastes mystinus Adult	7/9/2007	0.5000	1.0000	4
Sebastes mystinus Juvenile	7/9/2007	0.0000	0.0000	4
Sebastes serranoides Adult	7/9/2007	0.2500	0.5000	4
Sebastes serranoides Juvenile	7/9/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	7/9/2007	0.5000	1.0000	4
Sebastes atrovirens Juvenile	7/9/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	7/9/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/9/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/9/2007	0.2500	0.5000	4
Semicossyphus pulcher Female	7/9/2007	0.7500	0.9574	4
Semicossyphus pulcher Juvenile	7/9/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/9/2007	0.5000	1.0000	4
Embiotoca jacksoni Juvenile	7/9/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	7/9/2007	1.0000	2.0000	4
Embiotoca lateralis Juvenile	7/9/2007	0.0000	0.0000	4
Damalichthys vacca Adult	7/9/2007	0.7500	0.5000	4
Damalichthys vacca Juvenile	7/9/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Hypsypops rubicundus Adult	7/9/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/9/2007	0.0000	0.0000	4
Girella nigricans Adult	7/9/2007	0.0000	0.0000	4
Girella nigricans Juvenile	7/9/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	7/9/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	7/9/2007	0.0000	0.0000	4
Santa Cruz Island - Gull Island South				
Chromis punctipinnis Adult	7/23/2007	5.0000	4.1633	4
Chromis punctipinnis Juvenile	7/23/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/23/2007	2.0000	1.8257	4
Oxyjulis californica Juvenile	7/23/2007	0.0000	0.0000	4
Sebastes mystinus Adult	7/23/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	7/23/2007	2.5000	2.3805	4
Sebastes serranoides Adult	7/23/2007	0.2500	0.5000	4
Sebastes serranoides Juvenile	7/23/2007	1.0000	0.8165	4
Sebastes atrovirens Adult	7/23/2007	2.0000	2.1602	4
Sebastes atrovirens Juvenile	7/23/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	7/23/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/23/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/23/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	7/23/2007	0.5000	0.5774	4
Semicossyphus pulcher Juvenile	7/23/2007	0.7500	0.5000	4
Embiotoca jacksoni Adult	7/23/2007	2.0000	1.6330	4
Embiotoca jacksoni Juvenile	7/23/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	7/23/2007	0.2500	0.5000	4
Embiotoca lateralis Juvenile	7/23/2007	0.0000	0.0000	4
Damalichthys vacca Adult	7/23/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Damalichthys vacca Juvenile	7/23/2007	0.2500	0.5000	4
Hypsypops rubicundus Adult	7/23/2007	0.5000	0.5774	4
Hypsypops rubicundus Juvenile	7/23/2007	0.0000	0.0000	4
Girella nigricans Adult	7/23/2007	0.0000	0.0000	4
Girella nigricans Juvenile	7/23/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	7/23/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	7/23/2007	0.0000	0.0000	4
Santa Cruz Island - Fry's Harbor				
Chromis punctipinnis Adult	7/27/2007	43.5000	34.9333	4
Chromis punctipinnis Adult	9/11/2007	37.0000	16.9902	4
Chromis punctipinnis Juvenile	7/27/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/11/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/27/2007	2.7500	2.2174	4
Oxyjulis californica Adult	9/11/2007	0.7500	1.5000	4
Oxyjulis californica Juvenile	7/27/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/11/2007	4.5000	7.7244	4
Sebastes mystinus Adult	7/27/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/11/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	7/27/2007	0.2500	0.5000	4
Sebastes mystinus Juvenile	9/11/2007	0.0000	0.0000	4
Sebastes serranoides Adult	7/27/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/11/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/27/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/11/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	7/27/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/11/2007	0.5000	1.0000	4
Sebastes atrovirens Juvenile	7/27/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Sebastes atrovirens Juvenile	9/11/2007	19.2500	11.7863	4
Paralabrax clathratus Adult	7/27/2007	0.7500	0.5000	4
Paralabrax clathratus Adult	9/11/2007	2.2500	1.7078	4
Paralabrax clathratus Juvenile	7/27/2007	0.7500	1.5000	4
Paralabrax clathratus Juvenile	9/11/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/11/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	7/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	9/11/2007	0.5000	1.0000	4
Semicossyphus pulcher Juvenile	7/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/11/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/27/2007	1.0000	0.0000	4
Embiotoca jacksoni Adult	9/11/2007	2.0000	4.0000	4
Embiotoca jacksoni Juvenile	7/27/2007	1.5000	1.2910	4
Embiotoca jacksoni Juvenile	9/11/2007	0.5000	0.5774	4
Embiotoca lateralis Adult	7/27/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/11/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/27/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/11/2007	0.0000	0.0000	4
Damalichthys vacca Adult	7/27/2007	0.7500	0.9574	4
Damalichthys vacca Adult	9/11/2007	1.5000	1.2910	4
Damalichthys vacca Juvenile	7/27/2007	1.5000	1.0000	4
Damalichthys vacca Juvenile	9/11/2007	1.2500	1.2583	4
Hypsypops rubicundus Adult	7/27/2007	0.2500	0.5000	4
Hypsypops rubicundus Adult	9/11/2007	0.5000	0.5774	4
Hypsypops rubicundus Juvenile	7/27/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/11/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Girella nigricans Adult	7/27/2007	0.0000	0.0000	4
Girella nigricans Adult	9/11/2007	0.0000	0.0000	4
Girella nigricans Juvenile	7/27/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/11/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	7/27/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/11/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	7/27/2007	0.5000	0.5774	4
Halichoeres semicinctus Female	9/11/2007	0.5000	0.5774	4
Santa Cruz Island - Pelican Bay				
Chromis punctipinnis Adult	6/18/2007	1.0000	2.0000	4
Chromis punctipinnis Adult	8/16/2007	2.5000	3.7859	4
Chromis punctipinnis Juvenile	6/18/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	8/16/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/18/2007	1.0000	0.8165	4
Oxyjulis californica Adult	8/16/2007	1.0000	1.4142	4
Oxyjulis californica Juvenile	6/18/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/16/2007	0.0000	0.0000	4
Sebastes mystinus Adult	6/18/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/16/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/18/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/16/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/18/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/16/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/18/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/16/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/18/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/16/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Sebastes atrovirens Juvenile	6/18/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/16/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	6/18/2007	1.2500	0.9574	4
Paralabrax clathratus Adult	8/16/2007	0.5000	0.5774	4
Paralabrax clathratus Juvenile	6/18/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/16/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/18/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/16/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	6/18/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	8/16/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	6/18/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	8/16/2007	0.2500	0.5000	4
Embiotoca jacksoni Adult	6/18/2007	0.2500	0.5000	4
Embiotoca jacksoni Adult	8/16/2007	1.2500	0.9574	4
Embiotoca jacksoni Juvenile	6/18/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/16/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/18/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/16/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/18/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/16/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/18/2007	0.2500	0.5000	4
Damalichthys vacca Adult	8/16/2007	0.5000	0.5774	4
Damalichthys vacca Juvenile	6/18/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/16/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/18/2007	0.2500	0.5000	4
Hypsypops rubicundus Adult	8/16/2007	1.0000	0.8165	4
Hypsypops rubicundus Juvenile	6/18/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Hypsypops rubicundus Juvenile	8/16/2007	0.0000	0.0000	4
Girella nigricans Adult	6/18/2007	0.0000	0.0000	4
Girella nigricans Adult	8/16/2007	0.0000	0.0000	4
Girella nigricans Juvenile	6/18/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/16/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/18/2007	0.7500	0.5000	4
Halichoeres semicinctus Male	8/16/2007	0.7500	0.9574	4
Halichoeres semicinctus Female	6/18/2007	0.5000	1.0000	4
Halichoeres semicinctus Female	8/16/2007	0.0000	0.0000	4
Santa Cruz Island - Scorpion Anchorage				
Chromis punctipinnis Adult	9/5/2007	0.2500	0.5000	4
Chromis punctipinnis Adult	10/4/2007	3.7500	3.3040	4
Chromis punctipinnis Juvenile	9/5/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	10/4/2007	0.0000	0.0000	4
Oxyjulis californica Adult	9/5/2007	0.5000	0.5774	4
Oxyjulis californica Adult	10/4/2007	6.7500	5.6789	4
Oxyjulis californica Juvenile	9/5/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	10/4/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/5/2007	0.0000	0.0000	4
Sebastes mystinus Adult	10/4/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/5/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	10/4/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/5/2007	0.5000	0.5774	4
Sebastes serranoides Adult	10/4/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/5/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	10/4/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/5/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Sebastes atrovirens Adult	10/4/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/5/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	10/4/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	9/5/2007	0.5000	1.0000	4
Paralabrax clathratus Adult	10/4/2007	1.2500	1.2583	4
Paralabrax clathratus Juvenile	9/5/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	10/4/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/5/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	10/4/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	9/5/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	10/4/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/5/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	10/4/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/5/2007	1.5000	0.5774	4
Embiotoca jacksoni Adult	10/4/2007	2.0000	1.4142	4
Embiotoca jacksoni Juvenile	9/5/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	10/4/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/5/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	10/4/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/5/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	10/4/2007	0.0000	0.0000	4
Damalichthys vacca Adult	9/5/2007	0.5000	1.0000	4
Damalichthys vacca Adult	10/4/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/5/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	10/4/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	9/5/2007	0.2500	0.5000	4
Hypsypops rubicundus Adult	10/4/2007	0.2500	0.5000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Hypsypops rubicundus Juvenile	9/5/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	10/4/2007	0.0000	0.0000	4
Girella nigricans Adult	9/5/2007	0.7500	0.9574	4
Girella nigricans Adult	10/4/2007	3.7500	6.8496	4
Girella nigricans Juvenile	9/5/2007	0.0000	0.0000	4
Girella nigricans Juvenile	10/4/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/5/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	10/4/2007	0.2500	0.5000	4
Halichoeres semicinctus Female	9/5/2007	0.5000	0.5774	4
Halichoeres semicinctus Female	10/4/2007	1.2500	1.2583	4
Santa Cruz Island - Yellow Banks				
Chromis punctipinnis Adult	6/21/2007	0.0000	0.0000	4
Chromis punctipinnis Adult	8/15/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	6/21/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	8/15/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/21/2007	0.0000	0.0000	4
Oxyjulis californica Adult	8/15/2007	1.0000	1.4142	4
Oxyjulis californica Juvenile	6/21/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/15/2007	0.0000	0.0000	4
Sebastes mystinus Adult	6/21/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/15/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/21/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/15/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/21/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/15/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/21/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/15/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Sebastes atrovirens Adult	6/21/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/15/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/21/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/15/2007	0.5000	1.0000	4
Paralabrax clathratus Adult	6/21/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/15/2007	0.5000	1.0000	4
Paralabrax clathratus Juvenile	6/21/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/15/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/21/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/15/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	6/21/2007	0.7500	0.9574	4
Semicossyphus pulcher Female	8/15/2007	0.5000	1.0000	4
Semicossyphus pulcher Juvenile	6/21/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	8/15/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/21/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/15/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	6/21/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/15/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/21/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/15/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/21/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/15/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/21/2007	0.5000	1.0000	4
Damalichthys vacca Adult	8/15/2007	0.5000	1.0000	4
Damalichthys vacca Juvenile	6/21/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/15/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/21/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Hypsypops rubicundus Adult	8/15/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	6/21/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/15/2007	0.0000	0.0000	4
Girella nigricans Adult	6/21/2007	0.0000	0.0000	4
Girella nigricans Adult	8/15/2007	0.0000	0.0000	4
Girella nigricans Juvenile	6/21/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/15/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/21/2007	0.2500	0.5000	4
Halichoeres semicinctus Male	8/15/2007	0.2500	0.5000	4
Halichoeres semicinctus Female	6/21/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	8/15/2007	0.0000	0.0000	4
Anacapa Island - Admiral's Reef				
Chromis punctipinnis Adult	7/13/2007	7.2500	2.6300	4
Chromis punctipinnis Adult	8/8/2007	4.0000	6.7330	4
Chromis punctipinnis Juvenile	7/13/2007	1.2500	2.5000	4
Chromis punctipinnis Juvenile	8/8/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/13/2007	0.2500	0.5000	4
Oxyjulis californica Adult	8/8/2007	2.0000	2.3094	4
Oxyjulis californica Juvenile	7/13/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/8/2007	0.0000	0.0000	4
Sebastes mystinus Adult	7/13/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/8/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	7/13/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/8/2007	0.7500	0.9574	4
Sebastes serranoides Adult	7/13/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/8/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/13/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Sebastes serranoides Juvenile	8/8/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	7/13/2007	0.2500	0.5000	4
Sebastes atrovirens Adult	8/8/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	7/13/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/8/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	7/13/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/8/2007	0.5000	1.0000	4
Paralabrax clathratus Juvenile	7/13/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/8/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/13/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/8/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	7/13/2007	1.0000	0.8165	4
Semicossyphus pulcher Female	8/8/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	7/13/2007	0.7500	0.9574	4
Semicossyphus pulcher Juvenile	8/8/2007	1.2500	1.5000	4
Embiotoca jacksoni Adult	7/13/2007	0.2500	0.5000	4
Embiotoca jacksoni Adult	8/8/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	7/13/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/8/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	7/13/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/8/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/13/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/8/2007	0.0000	0.0000	4
Damalichthys vacca Adult	7/13/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/8/2007	2.0000	4.0000	4
Damalichthys vacca Juvenile	7/13/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/8/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Hypsypops rubicundus Adult	7/13/2007	0.7500	0.5000	4
Hypsypops rubicundus Adult	8/8/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/13/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/8/2007	0.0000	0.0000	4
Girella nigricans Adult	7/13/2007	0.0000	0.0000	4
Girella nigricans Adult	8/8/2007	0.2500	0.5000	4
Girella nigricans Juvenile	7/13/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/8/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	7/13/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/8/2007	0.2500	0.5000	4
Halichoeres semicinctus Female	7/13/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	8/8/2007	1.5000	1.0000	4
Chromis punctipinnis Adult	9/4/2007	1.0000	1.1547	4
Chromis punctipinnis Juvenile	9/4/2007	5.5000	6.3509	4
Oxyjulis californica Adult	9/4/2007	0.2500	0.5000	4
Oxyjulis californica Juvenile	9/4/2007	0.5000	1.0000	4
Sebastes mystinus Adult	9/4/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/4/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/4/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/4/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/4/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/4/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	9/4/2007	0.5000	0.5774	4
Paralabrax clathratus Juvenile	9/4/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/4/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	9/4/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	9/4/2007	0.0000	0.0000	4

Embiotoca jacksoni Adult	9/4/2007	4.7500	8.8459	4
Embiotoca jacksoni Juvenile	9/4/2007	0.2500	0.5000	4
Embiotoca lateralis Adult	9/4/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/4/2007	0.0000	0.0000	4
Damalichthys vacca Adult	9/4/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/4/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	9/4/2007	1.2500	0.9574	4
Hypsypops rubicundus Juvenile	9/4/2007	0.0000	0.0000	4
Girella nigricans Adult	9/4/2007	0.5000	1.0000	4
Girella nigricans Juvenile	9/4/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/4/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	9/4/2007	0.0000	0.0000	4

Anacapa Island - Landing Cove

Chromis punctipinnis Adult	6/20/2007	52.0000	12.8841	4
Chromis punctipinnis Juvenile	6/20/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/20/2007	7.0000	4.0825	4
Oxyjulis californica Juvenile	6/20/2007	0.7500	1.5000	4
Sebastes mystinus Adult	6/20/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/20/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/20/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/20/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/20/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/20/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	6/20/2007	1.0000	1.4142	4
Paralabrax clathratus Juvenile	6/20/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/20/2007	0.2500	0.5000	4
Semicossyphus pulcher Female	6/20/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	6/20/2007	0.2500	0.5000	4
Embiotoca jacksoni Adult	6/20/2007	0.5000	0.5774	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Embiotoca jacksoni Juvenile	6/20/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/20/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/20/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/20/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/20/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/20/2007	1.0000	0.8165	4
Hypsypops rubicundus Juvenile	6/20/2007	0.0000	0.0000	4
Girella nigricans Adult	6/20/2007	1.5000	1.7321	4
Girella nigricans Juvenile	6/20/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/20/2007	0.2500	0.5000	4
Halichoeres semicinctus Female	6/20/2007	0.5000	0.5774	4
Santa Barbara Island - SE Sea Lion Rookery				
Chromis punctipinnis Adult	5/23/2007	1.7500	2.8723	4
Chromis punctipinnis Juvenile	5/23/2007	0.0000	0.0000	4
Oxyjulis californica Adult	5/23/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	5/23/2007	0.0000	0.0000	4
Sebastes mystinus Adult	5/23/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	5/23/2007	0.0000	0.0000	4
Sebastes serranoides Adult	5/23/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	5/23/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	5/23/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	5/23/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	5/23/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	5/23/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	5/23/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	5/23/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	5/23/2007	0.2500	0.5000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Embiotoca jacksoni Adult	5/23/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	5/23/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	5/23/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	5/23/2007	0.0000	0.0000	4
Damalichthys vacca Adult	5/23/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	5/23/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	5/23/2007	0.2500	0.5000	4
Hypsypops rubicundus Juvenile	5/23/2007	0.0000	0.0000	4
Girella nigricans Adult	5/23/2007	0.0000	0.0000	4
Girella nigricans Juvenile	5/23/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	5/23/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	5/23/2007	0.0000	0.0000	4
Santa Barbara Island - Arch Point				
Chromis punctipinnis Adult	5/22/2007	11.7500	13.5739	4
Chromis punctipinnis Juvenile	5/22/2007	0.0000	0.0000	4
Oxyjulis californica Adult	5/22/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	5/22/2007	0.0000	0.0000	4
Sebastes mystinus Adult	5/22/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	5/22/2007	0.0000	0.0000	4
Sebastes serranoides Adult	5/22/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	5/22/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	5/22/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	5/22/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	5/22/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	5/22/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	5/22/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	5/22/2007	0.7500	0.9574	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Semicossyphus pulcher Juvenile	5/22/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	5/22/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	5/22/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	5/22/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	5/22/2007	0.0000	0.0000	4
Damalichthys vacca Adult	5/22/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	5/22/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	5/22/2007	2.5000	1.2910	4
Hypsypops rubicundus Juvenile	5/22/2007	0.0000	0.0000	4
Girella nigricans Adult	5/22/2007	0.2500	0.5000	4
Girella nigricans Juvenile	5/22/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	5/22/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	5/22/2007	0.0000	0.0000	4
Santa Barbara Island - Cat Canyon				
Chromis punctipinnis Adult	5/25/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	5/25/2007	0.0000	0.0000	4
Oxyjulis californica Adult	5/25/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	5/25/2007	0.0000	0.0000	4
Sebastes mystinus Adult	5/25/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	5/25/2007	0.0000	0.0000	4
Sebastes serranoides Adult	5/25/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	5/25/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	5/25/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	5/25/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	5/25/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	5/25/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	5/25/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Semicossyphus pulcher Female	5/25/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	5/25/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	5/25/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	5/25/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	5/25/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	5/25/2007	0.0000	0.0000	4
Damalichthys vacca Adult	5/25/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	5/25/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	5/25/2007	0.7500	0.9574	4
Hypsypops rubicundus Juvenile	5/25/2007	0.0000	0.0000	4
Girella nigricans Adult	5/25/2007	0.0000	0.0000	4
Girella nigricans Juvenile	5/25/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	5/25/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	5/25/2007	0.0000	0.0000	4
Santa Rosa Island - Cluster Point				
Chromis punctipinnis Adult	8/23/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	8/23/2007	0.0000	0.0000	4
Oxyjulis californica Adult	8/23/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/23/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/23/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/23/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/23/2007	0.2500	0.5000	4
Sebastes serranoides Juvenile	8/23/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/23/2007	2.0000	0.8165	4
Sebastes atrovirens Juvenile	8/23/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/23/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/23/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Semicossyphus pulcher Male	8/23/2007	0.7500	0.5000	4
Semicossyphus pulcher Female	8/23/2007	0.7500	0.5000	4
Semicossyphus pulcher Juvenile	8/23/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/23/2007	1.2500	1.2583	4
Embiotoca jacksoni Juvenile	8/23/2007	0.2500	0.5000	4
Embiotoca lateralis Adult	8/23/2007	0.5000	1.0000	4
Embiotoca lateralis Juvenile	8/23/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/23/2007	0.2500	0.5000	4
Damalichthys vacca Juvenile	8/23/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/23/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/23/2007	0.0000	0.0000	4
Girella nigricans Adult	8/23/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/23/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/23/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	8/23/2007	0.0000	0.0000	4
Santa Rosa Island - Trancion Canyon				
Chromis punctipinnis Adult	8/21/2007	0.2500	0.5000	4
Chromis punctipinnis Juvenile	8/21/2007	0.0000	0.0000	4
Oxyjulis californica Adult	8/21/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/21/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/21/2007	0.2500	0.5000	4
Sebastes mystinus Juvenile	8/21/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/21/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/21/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/21/2007	1.2500	1.2583	4
Sebastes atrovirens Juvenile	8/21/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/21/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Paralabrax clathratus Juvenile	8/21/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/21/2007	0.7500	0.5000	4
Semicossyphus pulcher Female	8/21/2007	2.2500	0.9574	4
Semicossyphus pulcher Juvenile	8/21/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/21/2007	3.2500	1.5000	4
Embiotoca jacksoni Juvenile	8/21/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/21/2007	2.0000	2.1602	4
Embiotoca lateralis Juvenile	8/21/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/21/2007	0.7500	0.9574	4
Damalichthys vacca Juvenile	8/21/2007	0.2500	0.5000	4
Hypsypops rubicundus Adult	8/21/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/21/2007	0.0000	0.0000	4
Girella nigricans Adult	8/21/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/21/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/21/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	8/21/2007	0.0000	0.0000	4
Santa Rosa Island - Chickasaw				
Chromis punctipinnis Adult	8/22/2007	1.5000	2.3805	4
Chromis punctipinnis Juvenile	8/22/2007	0.0000	0.0000	4
Oxyjulis californica Adult	8/22/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/22/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/22/2007	0.2500	0.5000	4
Sebastes mystinus Juvenile	8/22/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/22/2007	0.7500	0.5000	4
Sebastes serranoides Juvenile	8/22/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/22/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/22/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Paralabrax clathratus Adult	8/22/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/22/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/22/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	8/22/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	8/22/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/22/2007	1.7500	0.9574	4
Embiotoca jacksoni Juvenile	8/22/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/22/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/22/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/22/2007	0.5000	0.5774	4
Damalichthys vacca Juvenile	8/22/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/22/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/22/2007	0.0000	0.0000	4
Girella nigricans Adult	8/22/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/22/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/22/2007	0.0000	0.0000	4
Santa Rosa Island - South Point				
Chromis punctipinnis Adult	7/26/2007	2.0000	3.3665	4
Chromis punctipinnis Juvenile	7/26/2007	0.0000	0.0000	4
Oxyjulis californica Adult	7/26/2007	1.0000	1.4142	4
Oxyjulis californica Juvenile	7/26/2007	0.0000	0.0000	4
Sebastes mystinus Adult	7/26/2007	1.7500	3.5000	4
Sebastes mystinus Juvenile	7/26/2007	0.0000	0.0000	4
Sebastes serranoides Adult	7/26/2007	1.0000	2.0000	4
Sebastes serranoides Juvenile	7/26/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	7/26/2007	1.2500	1.5000	4
Sebastes atrovirens Juvenile	7/26/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Paralabrax clathratus Adult	7/26/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/26/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	7/26/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	7/26/2007	0.5000	1.0000	4
Semicossyphus pulcher Juvenile	7/26/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/26/2007	1.7500	2.0616	4
Embiotoca jacksoni Juvenile	7/26/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	7/26/2007	0.5000	1.0000	4
Embiotoca lateralis Juvenile	7/26/2007	0.0000	0.0000	4
Damalichthys vacca Adult	7/26/2007	1.5000	1.0000	4
Damalichthys vacca Juvenile	7/26/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/26/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/26/2007	0.0000	0.0000	4
Girella nigricans Adult	7/26/2007	0.0000	0.0000	4
Girella nigricans Juvenile	7/26/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	7/26/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	7/26/2007	0.0000	0.0000	4
Santa Cruz Island - Devil's Peak Member				
Chromis punctipinnis Adult	8/24/2007	10.0000	16.8325	4
Chromis punctipinnis Adult	9/10/2007	39.0000	30.8653	4
Chromis punctipinnis Juvenile	8/24/2007	0.7500	1.5000	4
Chromis punctipinnis Juvenile	9/10/2007	0.0000	0.0000	4
Oxyjulis californica Adult	8/24/2007	8.7500	2.0616	4
Oxyjulis californica Adult	9/10/2007	7.7500	0.9574	4
Oxyjulis californica Juvenile	8/24/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/10/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/24/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Sebastes mystinus Adult	9/10/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/24/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/10/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/24/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/10/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/24/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/10/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/24/2007	0.2500	0.5000	4
Sebastes atrovirens Adult	9/10/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/24/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/10/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/24/2007	2.0000	1.4142	4
Paralabrax clathratus Adult	9/10/2007	0.5000	0.5774	4
Paralabrax clathratus Juvenile	8/24/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/10/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/24/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/10/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	8/24/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	9/10/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	8/24/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	9/10/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/24/2007	0.7500	0.5000	4
Embiotoca jacksoni Adult	9/10/2007	1.7500	1.5000	4
Embiotoca jacksoni Juvenile	8/24/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/10/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/24/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/10/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Embiotoca lateralis Juvenile	8/24/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/10/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/24/2007	0.2500	0.5000	4
Damalichthys vacca Adult	9/10/2007	0.5000	0.5774	4
Damalichthys vacca Juvenile	8/24/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/10/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/24/2007	1.5000	1.2910	4
Hypsypops rubicundus Adult	9/10/2007	1.2500	0.9574	4
Hypsypops rubicundus Juvenile	8/24/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/10/2007	0.0000	0.0000	4
Girella nigricans Adult	8/24/2007	0.2500	0.5000	4
Girella nigricans Adult	9/10/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/24/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/10/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/24/2007	1.0000	0.8165	4
Halichoeres semicinctus Male	9/10/2007	0.5000	0.5774	4
Halichoeres semicinctus Female	8/24/2007	0.7500	0.5000	4
Halichoeres semicinctus Female	9/10/2007	0.0000	0.0000	4
Santa Cruz Island - Potato Pasture				
Chromis punctipinnis Adult	9/18/2007	19.5000	7.3258	4
Chromis punctipinnis Adult	9/28/2007	6.0000	4.6904	4
Chromis punctipinnis Juvenile	9/18/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/28/2007	2.7500	3.2016	4
Oxyjulis californica Adult	9/18/2007	9.0000	9.4163	4
Oxyjulis californica Adult	9/28/2007	1.0000	0.8165	4
Oxyjulis californica Juvenile	9/18/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/28/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Sebastes mystinus Adult	9/18/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/28/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/18/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/28/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/18/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/28/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/18/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/28/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/18/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/28/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/18/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/28/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	9/18/2007	1.5000	1.0000	4
Paralabrax clathratus Adult	9/28/2007	2.5000	1.2910	4
Paralabrax clathratus Juvenile	9/18/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/28/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/18/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/28/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	9/18/2007	0.7500	0.9574	4
Semicossyphus pulcher Female	9/28/2007	0.5000	1.0000	4
Semicossyphus pulcher Juvenile	9/18/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	9/28/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/18/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/28/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/18/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/28/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/18/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Embiotoca lateralis Adult	9/28/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/18/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/28/2007	0.0000	0.0000	4
Damalichthys vacca Adult	9/18/2007	0.5000	0.5774	4
Damalichthys vacca Adult	9/28/2007	0.5000	1.0000	4
Damalichthys vacca Juvenile	9/18/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/28/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	9/18/2007	2.5000	0.5774	4
Hypsypops rubicundus Adult	9/28/2007	0.5000	1.0000	4
Hypsypops rubicundus Juvenile	9/18/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/28/2007	0.0000	0.0000	4
Girella nigricans Adult	9/18/2007	0.2500	0.5000	4
Girella nigricans Adult	9/28/2007	0.2500	0.5000	4
Girella nigricans Juvenile	9/18/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/28/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/18/2007	0.2500	0.5000	4
Halichoeres semicinctus Male	9/28/2007	0.5000	0.5774	4
Halichoeres semicinctus Female	9/18/2007	0.2500	0.5000	4
Halichoeres semicinctus Female	9/28/2007	1.0000	0.8165	4
Santa Cruz Island - Cavern Point				
Chromis punctipinnis Adult	6/19/2007	0.5000	1.0000	4
Chromis punctipinnis Adult	9/19/2007	39.2500	10.2754	4
Chromis punctipinnis Juvenile	6/19/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/19/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/19/2007	0.2500	0.5000	4
Oxyjulis californica Adult	9/19/2007	3.2500	0.9574	4
Oxyjulis californica Juvenile	6/19/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Oxyjulis californica Juvenile	9/19/2007	0.0000	0.0000	4
Sebastes mystinus Adult	6/19/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/19/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/19/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/19/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/19/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/19/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/19/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/19/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/19/2007	0.2500	0.5000	4
Sebastes atrovirens Adult	9/19/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/19/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/19/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	6/19/2007	0.5000	0.5774	4
Paralabrax clathratus Adult	9/19/2007	1.2500	0.5000	4
Paralabrax clathratus Juvenile	6/19/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	6/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	9/19/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	6/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/19/2007	0.2500	0.5000	4
Embiotoca jacksoni Adult	6/19/2007	0.5000	0.5774	4
Embiotoca jacksoni Adult	9/19/2007	1.0000	1.1547	4
Embiotoca jacksoni Juvenile	6/19/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/19/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Embiotoca lateralis Adult	6/19/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/19/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/19/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/19/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/19/2007	0.0000	0.0000	4
Damalichthys vacca Adult	9/19/2007	0.5000	0.5774	4
Damalichthys vacca Juvenile	6/19/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/19/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/19/2007	2.0000	1.4142	4
Hypsypops rubicundus Adult	9/19/2007	1.0000	0.8165	4
Hypsypops rubicundus Juvenile	6/19/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/19/2007	0.0000	0.0000	4
Girella nigricans Adult	6/19/2007	0.2500	0.5000	4
Girella nigricans Adult	9/19/2007	0.0000	0.0000	4
Girella nigricans Juvenile	6/19/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/19/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/19/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/19/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	6/19/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	9/19/2007	0.2500	0.5000	4
Santa Cruz Island - Little Scorpion				
Chromis punctipinnis Adult	6/27/2007	0.0000	0.0000	4
Chromis punctipinnis Adult	9/19/2007	1.2500	1.8930	4
Chromis punctipinnis Juvenile	6/27/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/19/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/27/2007	1.2500	2.5000	4
Oxyjulis californica Adult	9/19/2007	1.7500	1.5000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Oxyjulis californica Juvenile	6/27/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/19/2007	0.0000	0.0000	4
Sebastes mystinus Adult	6/27/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/19/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/19/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/27/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/19/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/19/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/27/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/19/2007	0.2500	0.5000	4
Sebastes atrovirens Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/19/2007	0.2500	0.5000	4
Paralabrax clathratus Adult	6/27/2007	1.0000	1.1547	4
Paralabrax clathratus Adult	9/19/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/27/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	9/19/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/19/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/27/2007	0.2500	0.5000	4
Embiotoca jacksoni Adult	9/19/2007	1.0000	0.8165	4
Embiotoca jacksoni Juvenile	6/27/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Embiotoca jacksoni Juvenile	9/19/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/27/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/19/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/27/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/19/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/27/2007	0.0000	0.0000	4
Damalichthys vacca Adult	9/19/2007	0.2500	0.5000	4
Damalichthys vacca Juvenile	6/27/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/19/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/27/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	9/19/2007	1.7500	0.9574	4
Hypsypops rubicundus Juvenile	6/27/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/19/2007	0.0000	0.0000	4
Girella nigricans Adult	6/27/2007	0.2500	0.5000	4
Girella nigricans Adult	9/19/2007	0.0000	0.0000	4
Girella nigricans Juvenile	6/27/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/19/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/27/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/19/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	6/27/2007	0.7500	0.9574	4
Halichoeres semicinctus Female	9/19/2007	0.0000	0.0000	4
Santa Cruz Island - Pedro Reef				
Chromis punctipinnis Adult	6/27/2007	0.0000	0.0000	4
Chromis punctipinnis Adult	8/9/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	6/27/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	8/9/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/27/2007	8.0000	8.0416	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Oxyjulis californica Adult	8/9/2007	2.2500	2.2174	4
Oxyjulis californica Juvenile	6/27/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/9/2007	0.2500	0.5000	4
Sebastes mystinus Adult	6/27/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/9/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/9/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/27/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/9/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/9/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/27/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/9/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/9/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	6/27/2007	0.2500	0.5000	4
Paralabrax clathratus Adult	8/9/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/27/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/9/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/9/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	8/9/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	8/9/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/27/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/9/2007	0.2500	0.5000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Embiotoca jacksoni Juvenile	6/27/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/9/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/27/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/9/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/27/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/9/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/27/2007	0.2500	0.5000	4
Damalichthys vacca Adult	8/9/2007	0.2500	0.5000	4
Damalichthys vacca Juvenile	6/27/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/9/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/27/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/9/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	6/27/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/9/2007	0.0000	0.0000	4
Girella nigricans Adult	6/27/2007	0.0000	0.0000	4
Girella nigricans Adult	8/9/2007	0.0000	0.0000	4
Girella nigricans Juvenile	6/27/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/9/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/27/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/9/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	6/27/2007	0.5000	1.0000	4
Halichoeres semicinctus Female	8/9/2007	0.0000	0.0000	4
Anacapa Island - Keyhole				
Chromis punctipinnis Adult	6/27/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	6/27/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/27/2007	1.7500	1.5000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Oxyjulis californica Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes mystinus Adult	6/27/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/27/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/27/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/27/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/27/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	6/27/2007	0.5000	1.0000	4
Paralabrax clathratus Juvenile	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/27/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	6/27/2007	0.5000	1.0000	4
Semicossyphus pulcher Juvenile	6/27/2007	1.0000	0.8165	4
Embiotoca jacksoni Adult	6/27/2007	1.2500	1.8930	4
Embiotoca jacksoni Juvenile	6/27/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/27/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/27/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/27/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/27/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/27/2007	0.5000	0.5774	4
Hypsypops rubicundus Juvenile	6/27/2007	0.0000	0.0000	4
Girella nigricans Adult	6/27/2007	0.0000	0.0000	4
Girella nigricans Juvenile	6/27/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/27/2007	0.2500	0.5000	4
Halichoeres semicinctus Female	6/27/2007	1.7500	0.9574	4
Anacapa Island - East Fish Camp				
Chromis punctipinnis Adult	8/7/2007	7.0000	10.7393	4
Chromis punctipinnis Adult	9/14/2007	7.0000	6.1644	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Chromis punctipinnis Juvenile	8/7/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/14/2007	0.0000	0.0000	4
Oxyjulis californica Adult	8/7/2007	0.0000	0.0000	4
Oxyjulis californica Adult	9/14/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/7/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/14/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/7/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/14/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/7/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/14/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/7/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/14/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/7/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/14/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/7/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/14/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/7/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/14/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/7/2007	0.2500	0.5000	4
Paralabrax clathratus Adult	9/14/2007	0.2500	0.5000	4
Paralabrax clathratus Juvenile	8/7/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/14/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/7/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	9/14/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	8/7/2007	0.5000	0.5774	4
Semicossyphus pulcher Female	9/14/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	8/7/2007	0.5000	0.5774	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Semicossyphus pulcher Juvenile	9/14/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/7/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/14/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/7/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/14/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/7/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/14/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/7/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/14/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/7/2007	0.0000	0.0000	4
Damalichthys vacca Adult	9/14/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/7/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/14/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/7/2007	1.5000	1.0000	4
Hypsypops rubicundus Adult	9/14/2007	0.2500	0.5000	4
Hypsypops rubicundus Juvenile	8/7/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/14/2007	0.0000	0.0000	4
Girella nigricans Adult	8/7/2007	0.0000	0.0000	4
Girella nigricans Adult	9/14/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/7/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/14/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/7/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/14/2007	0.5000	0.5774	4
Halichoeres semicinctus Female	8/7/2007	0.7500	0.9574	4
Halichoeres semicinctus Female	9/14/2007	0.0000	0.0000	4
Anacapa Island - Black Sea Bass Reef				
Chromis punctipinnis Adult	8/20/2007	23.0000	30.3535	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Chromis punctipinnis Juvenile	8/20/2007	1.7500	2.0616	4
Oxyjulis californica Adult	8/20/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/20/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/20/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/20/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/20/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/20/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/20/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/20/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/20/2007	0.7500	0.9574	4
Paralabrax clathratus Juvenile	8/20/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/20/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	8/20/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	8/20/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/20/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/20/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/20/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/20/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/20/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/20/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/20/2007	0.2500	0.5000	4
Hypsypops rubicundus Juvenile	8/20/2007	0.0000	0.0000	4
Girella nigricans Adult	8/20/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/20/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/20/2007	0.2500	0.5000	4
Halichoeres semicinctus Female	8/20/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Anacapa Island - Lighthouse				
Chromis punctipinnis Adult	8/30/2007	49.5000	24.7723	4
Chromis punctipinnis Adult	9/14/2007	22.2500	24.1851	4
Chromis punctipinnis Juvenile	8/30/2007	0.7500	1.5000	4
Chromis punctipinnis Juvenile	9/14/2007	0.0000	0.0000	4
Oxyjulis californica Adult	8/30/2007	31.7500	13.2004	4
Oxyjulis californica Adult	9/14/2007	10.2500	11.6726	4
Oxyjulis californica Juvenile	8/30/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/14/2007	0.0000	0.0000	4
Sebastes mystinus Adult	8/30/2007	0.0000	0.0000	4
Sebastes mystinus Adult	9/14/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/30/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/14/2007	0.0000	0.0000	4
Sebastes serranoides Adult	8/30/2007	0.0000	0.0000	4
Sebastes serranoides Adult	9/14/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/30/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/14/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	8/30/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	9/14/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/30/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/14/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	8/30/2007	1.0000	0.8165	4
Paralabrax clathratus Adult	9/14/2007	0.5000	1.0000	4
Paralabrax clathratus Juvenile	8/30/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/14/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	8/30/2007	0.2500	0.5000	4
Semicossyphus pulcher Male	9/14/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Semicossyphus pulcher Female	8/30/2007	0.2500	0.5000	4
Semicossyphus pulcher Female	9/14/2007	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	8/30/2007	1.2500	0.9574	4
Semicossyphus pulcher Juvenile	9/14/2007	0.7500	0.5000	4
Embiotoca jacksoni Adult	8/30/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/14/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/30/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/14/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	8/30/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	9/14/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/30/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/14/2007	0.0000	0.0000	4
Damalichthys vacca Adult	8/30/2007	0.0000	0.0000	4
Damalichthys vacca Adult	9/14/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/30/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/14/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/30/2007	1.2500	0.5000	4
Hypsypops rubicundus Adult	9/14/2007	0.7500	0.9574	4
Hypsypops rubicundus Juvenile	8/30/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/14/2007	0.0000	0.0000	4
Girella nigricans Adult	8/30/2007	0.0000	0.0000	4
Girella nigricans Adult	9/14/2007	0.0000	0.0000	4
Girella nigricans Juvenile	8/30/2007	0.0000	0.0000	4
Girella nigricans Juvenile	9/14/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	8/30/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	9/14/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	8/30/2007	1.5000	1.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Halichoeres semicinctus Female	9/14/2007	1.0000	1.4142	4
Santa Barbara Island - Webster's Arch				
Chromis punctipinnis Adult	6/4/2007	9.5000	10.3441	4
Chromis punctipinnis Juvenile	6/4/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/4/2007	0.0000	0.0000	4
Oxyjulis californica Juvenile	6/4/2007	0.0000	0.0000	4
Sebastes mystinus Adult	6/4/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/4/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/4/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/4/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/4/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/4/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	6/4/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/4/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/4/2007	0.2500	0.5000	4
Semicossyphus pulcher Female	6/4/2007	0.7500	0.9574	4
Semicossyphus pulcher Juvenile	6/4/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/4/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	6/4/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/4/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/4/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/4/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/4/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/4/2007	0.5000	1.0000	4
Hypsypops rubicundus Juvenile	6/4/2007	0.0000	0.0000	4
Girella nigricans Adult	6/4/2007	0.0000	0.0000	4
Girella nigricans Juvenile	6/4/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Halichoeres semicinctus Male	6/4/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	6/4/2007	0.0000	0.0000	4
Santa Barbara Island - Graveyard Canyon				
Chromis punctipinnis Adult	6/6/2007	0.0000	0.0000	4
Chromis punctipinnis Juvenile	6/6/2007	0.0000	0.0000	4
Oxyjulis californica Adult	6/6/2007	0.2500	0.5000	4
Oxyjulis californica Juvenile	6/6/2007	0.0000	0.0000	4
Sebastes mystinus Adult	6/6/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/6/2007	0.0000	0.0000	4
Sebastes serranoides Adult	6/6/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/6/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	6/6/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/6/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	6/6/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/6/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	6/6/2007	0.0000	0.0000	4
Semicossyphus pulcher Female	6/6/2007	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	6/6/2007	0.2500	0.5000	4
Embiotoca jacksoni Adult	6/6/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	6/6/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	6/6/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/6/2007	0.0000	0.0000	4
Damalichthys vacca Adult	6/6/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/6/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/6/2007	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	6/6/2007	0.0000	0.0000	4
Girella nigricans Adult	6/6/2007	0.0000	0.0000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Girella nigricans Juvenile	6/6/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	6/6/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	6/6/2007	0.0000	0.0000	4
Santa Barbara Island - Southeast Reef				
Chromis punctipinnis Adult	5/24/2007	33.2500	31.2130	4
Chromis punctipinnis Juvenile	5/24/2007	0.0000	0.0000	4
Oxyjulis californica Adult	5/24/2007	0.5000	1.0000	4
Oxyjulis californica Juvenile	5/24/2007	0.0000	0.0000	4
Sebastes mystinus Adult	5/24/2007	0.0000	0.0000	4
Sebastes mystinus Juvenile	5/24/2007	0.0000	0.0000	4
Sebastes serranoides Adult	5/24/2007	0.0000	0.0000	4
Sebastes serranoides Juvenile	5/24/2007	0.0000	0.0000	4
Sebastes atrovirens Adult	5/24/2007	0.0000	0.0000	4
Sebastes atrovirens Juvenile	5/24/2007	0.0000	0.0000	4
Paralabrax clathratus Adult	5/24/2007	0.0000	0.0000	4
Paralabrax clathratus Juvenile	5/24/2007	0.0000	0.0000	4
Semicossyphus pulcher Male	5/24/2007	0.7500	0.5000	4
Semicossyphus pulcher Female	5/24/2007	1.2500	1.2583	4
Semicossyphus pulcher Juvenile	5/24/2007	0.0000	0.0000	4
Embiotoca jacksoni Adult	5/24/2007	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	5/24/2007	0.0000	0.0000	4
Embiotoca lateralis Adult	5/24/2007	0.0000	0.0000	4
Embiotoca lateralis Juvenile	5/24/2007	0.0000	0.0000	4
Damalichthys vacca Adult	5/24/2007	0.0000	0.0000	4
Damalichthys vacca Juvenile	5/24/2007	0.0000	0.0000	4
Hypsypops rubicundus Adult	5/24/2007	3.5000	1.2910	4
Hypsypops rubicundus Juvenile	5/24/2007	0.2500	0.5000	4

2007 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3) (continued)

Species	Date	Mean	Std. Dev.	n
Girella nigricans Adult	5/24/2007	0.0000	0.0000	4
Girella nigricans Juvenile	5/24/2007	0.0000	0.0000	4
Halichoeres semicinctus Male	5/24/2007	0.0000	0.0000	4
Halichoeres semicinctus Female	5/24/2007	0.0000	0.0000	4

Appendix F. Roving Diver Fish Count.

2007 ROVING DIVER FISH COUNT

Island	Site Name	Date	# of Observers	# of spp. observed
San Miguel	Wyckoff Ledge	7/11/2007	7	28
San Miguel	Hare Rock	7/10/2007	6	28
Santa Rosa	Johnson's Lee North	9/26/2007	3	25
Santa Rosa	Johnson's Lee South	7/25/2007	4	30
Santa Rosa	Rodes Reef	7/9/2007	5	29
Santa Cruz	Gull Island South	7/23/2007	5	29
Santa Cruz	Fry's Harbor	7/27/2007	5	32
Santa Cruz	Fry's Harbor	9/11/2007	6	25
Santa Cruz	Pelican Bay	6/18/2007	4	24
Santa Cruz	Pelican Bay	8/16/2007	5	21
Santa Cruz	Scorpion Anchorage	9/5/2007	4	25
Santa Cruz	Scorpion Anchorage	10/4/2007	5	16
Santa Cruz	Scorpion Anchorage	10/4/2007	6	16
Santa Cruz	Yellow Banks	6/21/2007	3	27
Santa Cruz	Yellow Banks	8/15/2007	4	22
Anacapa	Admiral's Reef	7/13/2007	5	28
Anacapa	Admiral's Reef	8/8/2007	7	24
Anacapa	Cathedral Cove	9/4/2007	4	24
Anacapa	Landing Cove	6/19/2007	3	23
Santa Barbara	SE Sea Lion Rookery	5/23/2007	4	11
Santa Barbara	Arch Point	5/22/2007	4	15
Santa Barbara	Cat Canyon	5/25/2007	5	17
Santa Rosa	Cluster Point	8/23/2007	2	18
Santa Rosa	Trancion Canyon	8/21/2007	4	24
Santa Rosa	Chickasaw	8/22/2007	3	26

2007 ROVING DIVER FISH COUNT (continued)

Island	Site Name	Date	# of Observers	# of spp. observed
Santa Rosa	South Point	7/26/2007	6	31
Santa Cruz	Devil's Peak Member	8/24/2007	5	21
Santa Cruz	Devil's Peak Member	9/10/2007	5	23
Santa Cruz	Potato Pasture	9/18/2007	5	27
Santa Cruz	Potato Pasture	9/28/2007	5	29
Santa Cruz	Cavern Point	6/19/2007	3	26
Santa Cruz	Cavern Point	9/19/2007	5	28
Santa Cruz	Little Scorpion	6/27/2007	4	22
Santa Cruz	Little Scorpion	9/19/2007	5	29
Santa Cruz	Pedro Reef	6/27/2007	4	18
Santa Cruz	Pedro Reef	8/9/2007	7	17
Anacapa	Keyhole	6/27/2007	4	15
Anacapa	East Fish Camp	8/7/2007	7	23
Anacapa	East Fish Camp	9/14/2007	7	21
Anacapa	Black Sea Bass Reef	8/20/2007	4	17
Anacapa	Lighthouse	8/30/2007	3	18
Anacapa	Lighthouse	9/14/2007	5	19
Santa Barbara	Webster's Arch	6/4/2007	3	14
Santa Barbara	Graveyard Canyon	6/6/2007	4	13
Santa Barbara	Southeast Reef	5/24/2007	4	22

2007 ROVING DIVER FISH COUNT

San Miguel Island - Wyckoff Ledge

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	7/11/2007	7	6	9.00	0.63	2.17	0.41	9.83	4.67
black surfperch, adult	7/11/2007	7	7	5.71	4.23	1.14	0.90	1.57	1.51
black surfperch, all	7/11/2007	7	7	5.71	4.23	1.14	0.90	1.57	1.51
black surfperch, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	7/11/2007	7	7	8.86	1.07	2.29	0.49	11.86	13.95
blacksmith, adult	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, all	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/11/2007	7	7	10.00	0.00	2.43	0.53	10.71	8.50
blue rockfish, all	7/11/2007	7	7	10.00	0.00	2.43	0.53	13.14	10.22
blue rockfish, juvenile	7/11/2007	7	7	6.14	4.22	1.29	0.95	2.43	2.07
blue-banded goby	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	7/11/2007	7	1	9.00		1.00		1.00	
California sheephead,	7/11/2007	7	7	8.71	1.50	1.71	0.49	3.29	2.75
California sheephead,	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/11/2007	7	7	7.14	1.07	1.29	0.49	1.43	0.79
copper rockfish	7/11/2007	7	7	9.29	0.95	2.00	0.00	4.43	2.07
coralline sculpin	7/11/2007	7	5	9.40	0.89	1.80	0.45	3.00	1.58
garibaldi, adult	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	7/11/2007	7	5	6.00	1.22	1.00	0.00	1.00	0.00

San Miguel Island - Wyckoff Ledge (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
Gopher rockfish, juvenile	7/11/2007	7	2	8.50	0.71	1.00	0.00	1.00	0.00
gopher/copper rockfish,	7/11/2007	7	2	9.50	0.71	2.50	0.71	36.00	36.77
island kelpfish	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/11/2007	7	7	10.00	0.00	3.00	0.00	28.00	9.00
kelp rockfish, all	7/11/2007	7	7	10.00	0.00	3.00	0.00	28.43	9.71
kelp rockfish, juvenile	7/11/2007	7	7	0.71	1.89	0.29	0.76	0.43	1.13
kelp surfperch	7/11/2007	7	2	7.50	3.54	2.00	1.41	6.00	7.07
kelpfish spp.	7/11/2007	7	1	5.00		1.00		1.00	
lavender sculpin	7/11/2007	7	1	5.00		1.00		1.00	
lingcod	7/11/2007	7	6	7.33	1.37	1.50	0.55	1.50	0.55
olive rockfish, adult	7/11/2007	7	7	4.00	5.03	0.71	0.95	0.71	0.95
olive rockfish, all	7/11/2007	7	7	6.43	4.61	1.29	0.95	1.86	2.04
olive/yellowtail rockfish,	7/11/2007	7	7	3.57	4.61	0.57	0.79	1.14	2.19
opaleye, adult	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/11/2007	7	7	9.86	0.38	3.00	0.00	30.14	14.92
pile surfperch, adult	7/11/2007	7	7	7.14	3.58	1.43	0.79	2.29	1.80
pile surfperch, all	7/11/2007	7	7	7.14	3.58	1.43	0.79	2.29	1.80

San Miguel Island - Wyckoff Ledge (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
pile surfperch, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rockfish spp., juvenile	7/11/2007	7	1	8.00		2.00		6.00	
sculpin spp.	7/11/2007	7	1	8.00		1.00		1.00	
senorita, adult	7/11/2007	7	7	1.43	3.78	0.43	1.13	3.29	8.69
senorita, all	7/11/2007	7	7	1.43	3.78	0.43	1.13	3.29	8.69
senorita, juvenile	7/11/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	7/11/2007	7	5	7.80	1.30	2.00	0.00	3.20	1.79
spotfin sculpin	7/11/2007	7	1	7.00		1.00		1.00	
striped surfperch, adult	7/11/2007	7	7	9.86	0.38	3.00	0.00	21.29	7.70
striped surfperch, all	7/11/2007	7	7	9.86	0.38	3.00	0.00	24.86	10.95
striped surfperch, juvenile	7/11/2007	7	7	5.86	4.26	1.57	1.13	3.57	3.91
treefish, adult	7/11/2007	7	7	7.00	3.32	1.14	0.69	1.14	0.69
treefish, juvenile	7/11/2007	7	7	3.29	4.19	0.43	0.53	0.43	0.53
Tubesnout	7/11/2007	7	6	8.50	2.35	3.33	0.52	132.83	121.76
vermillion rockfish	7/11/2007	7	4	7.50	1.73	1.25	0.50	1.25	0.50
vermillion rockfish, juvenile	7/11/2007	7	1	5.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

San Miguel Island - Hare Rock

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	7/10/2007	6	5	9.60	0.89	1.80	0.45	4.60	2.30
black surfperch, adult	7/10/2007	6	6	8.33	1.63	1.83	0.41	3.17	1.94
black surfperch, all	7/10/2007	6	6	8.33	1.63	1.83	0.41	3.17	1.94
black surfperch, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	7/10/2007	6	6	10.00	0.00	2.67	0.52	14.83	8.52
blacksmith, adult	7/10/2007	6	6	9.17	1.60	3.00	0.00	34.67	15.76
blacksmith, all	7/10/2007	6	6	9.17	1.60	3.00	0.00	34.67	15.76
blacksmith, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/10/2007	6	6	9.17	0.98	2.83	0.41	20.67	8.76
blue rockfish, all	7/10/2007	6	6	9.17	0.98	2.83	0.41	22.83	10.11
blue rockfish, juvenile	7/10/2007	6	6	3.17	3.60	0.83	0.98	2.17	3.92
blue-banded goby	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
brown rockfish	7/10/2007	6	1	8.00		1.00		1.00	
cabezon	7/10/2007	6	5	7.60	1.67	1.40	0.55	1.60	0.89
California sheephead,	7/10/2007	6	6	7.83	3.92	1.33	0.82	1.67	1.21
California sheephead,	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/10/2007	6	6	4.50	4.97	0.50	0.55	0.50	0.55
copper rockfish	7/10/2007	6	3	9.00	1.00	1.67	0.58	2.67	2.08
coralline sculpin	7/10/2007	6	1	10.00		1.00		1.00	
garibaldi, adult	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00

San Miguel Island - Hare Rock (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
grass rockfish	7/10/2007	6	1	6.00		1.00		1.00	
island kelpfish	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/10/2007	6	6	9.67	0.52	2.00	0.00	6.00	2.37
kelp rockfish, all	7/10/2007	6	6	9.67	0.52	2.00	0.00	6.00	2.37
kelp rockfish, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	7/10/2007	6	3	9.00	0.00	3.00	0.00	21.67	4.16
kelpfish spp.	7/10/2007	6	2	6.00	1.41	1.50	0.71	1.50	0.71
lingcod	7/10/2007	6	5	7.00	1.87	1.40	0.55	1.40	0.55
olive rockfish, adult	7/10/2007	6	6	7.67	2.25	1.67	0.52	3.00	2.37
olive rockfish, all	7/10/2007	6	6	7.67	2.25	1.67	0.52	3.00	2.37
olive/yellowtail rockfish,	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/10/2007	6	6	9.67	0.52	2.67	0.52	11.17	2.32
pile surfperch, adult	7/10/2007	6	6	8.50	1.52	1.83	0.41	4.17	1.94
pile surfperch, all	7/10/2007	6	6	8.50	1.52	1.83	0.41	4.17	1.94
pile surfperch, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rainbow surfperch	7/10/2007	6	1	6.00		1.00		1.00	

San Miguel Island - Hare Rock (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rock wrasse, female	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rockfish spp.	7/10/2007	6	2	7.00	0.00	1.50	0.71	2.50	2.12
rubberlip surfperch	7/10/2007	6	2	10.00	0.00	2.00	0.00	2.00	0.00
senorita, adult	7/10/2007	6	6	2.83	4.40	0.83	1.33	4.00	6.96
senorita, all	7/10/2007	6	6	2.83	4.40	0.83	1.33	4.00	6.96
senorita, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	7/10/2007	6	3	8.33	1.53	1.67	0.58	3.33	3.21
striped surfperch, adult	7/10/2007	6	6	9.83	0.41	3.00	0.00	32.50	13.97
striped surfperch, all	7/10/2007	6	6	9.83	0.41	3.00	0.00	36.33	12.96
striped surfperch, juvenile	7/10/2007	6	6	6.50	3.33	1.83	0.98	3.83	3.76
stripedfin ronquil	7/10/2007	6	1	8.00		1.00		1.00	
treefish, adult	7/10/2007	6	6	3.00	4.69	0.50	0.84	0.50	0.84
treefish, juvenile	7/10/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	7/10/2007	6	4	7.50	1.73	2.00	0.82	7.75	11.53
vermillion rockfish, juvenile	7/10/2007	6	1	7.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Rosa Island - Johnson's Lee North

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	9/26/2007	3	3	9.00	0.00	2.00	0.00	6.33	0.58
black surfperch, adult	9/26/2007	3	3	10.00	0.00	3.00	0.00	13.67	0.58
black surfperch, all	9/26/2007	3	3	10.00	0.00	3.00	0.00	18.67	3.79
black surfperch, juvenile	9/26/2007	3	3	8.67	0.58	2.00	0.00	5.00	3.61
blackeye goby	9/26/2007	3	3	9.33	1.15	2.67	0.58	18.00	16.09
blacksmith, adult	9/26/2007	3	3	10.00	0.00	3.00	0.00	34.00	12.29
blacksmith, all	9/26/2007	3	3	10.00	0.00	3.00	0.00	36.33	11.06
blacksmith, juvenile	9/26/2007	3	3	5.00	4.36	1.00	1.00	2.33	3.21
blue rockfish, adult	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
bocaccio, juvenile	9/26/2007	3	1	6.00		2.00		3.00	
California sheephead,	9/26/2007	3	3	9.00	0.00	2.00	0.00	5.00	3.46
California sheephead,	9/26/2007	3	3	6.00	5.20	1.00	1.00	1.00	1.00
California sheephead, male	9/26/2007	3	3	7.33	1.53	1.33	0.58	1.67	1.15
coralline sculpin	9/26/2007	3	1	5.00		1.00		1.00	
crevice kelpfish	9/26/2007	3	1	5.00		1.00		1.00	
garibaldi, adult	9/26/2007	3	3	8.67	0.58	1.67	0.58	3.67	2.52
garibaldi, juvenile	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	9/26/2007	3	2	6.50	2.12	1.50	0.71	1.50	0.71

Santa Rosa Island - Johnson's Lee North (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
giant kelpfish, juvenile	9/26/2007	3	1	5.00		1.00		1.00	
island kelpfish	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	9/26/2007	3	3	7.67	2.08	2.00	0.00	3.00	0.00
kelp bass, calico bass, all	9/26/2007	3	3	7.67	2.08	2.00	0.00	3.33	0.58
kelp bass, juvenile	9/26/2007	3	3	3.33	5.77	0.33	0.58	0.33	0.58
kelp rockfish, adult	9/26/2007	3	3	10.00	0.00	3.00	0.00	27.00	3.61
kelp rockfish, all	9/26/2007	3	3	10.00	0.00	3.00	0.00	38.67	2.52
kelp rockfish, juvenile	9/26/2007	3	3	6.33	1.53	2.67	0.58	11.67	5.77
kelp surfperch	9/26/2007	3	3	7.00	2.65	3.33	0.58	111.00	43.49
olive rockfish, adult	9/26/2007	3	3	6.67	0.58	2.00	0.00	2.33	0.58
olive rockfish, all	9/26/2007	3	3	6.67	0.58	2.00	0.00	2.33	0.58
olive/yellowtail rockfish,	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/26/2007	3	3	4.67	4.51	1.00	1.00	1.00	1.00
opaleye, all	9/26/2007	3	3	4.67	4.51	1.00	1.00	1.00	1.00
opaleye, juvenile	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	9/26/2007	3	3	9.33	0.58	2.67	0.58	11.00	3.46
pile surfperch, adult	9/26/2007	3	3	5.33	4.62	1.33	1.15	2.33	2.52
pile surfperch, all	9/26/2007	3	3	9.33	1.15	2.00	0.00	4.00	1.73
pile surfperch, juvenile	9/26/2007	3	3	9.33	1.15	1.33	0.58	1.67	1.15
rainbow surfperch	9/26/2007	3	1	10.00		1.00		1.00	
rock wrasse, female	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00

Santa Rosa Island - Johnson's Lee North (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rock wrasse, male	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	9/26/2007	3	1	5.00		1.00		1.00	
senorita, adult	9/26/2007	3	3	10.00	0.00	3.00	0.00	32.33	17.04
senorita, all	9/26/2007	3	3	10.00	0.00	3.00	0.00	40.67	14.98
senorita, juvenile	9/26/2007	3	3	7.00	2.65	2.00	1.00	8.33	11.85
shiner surfperch	9/26/2007	3	1	10.00		3.00		71.00	
snubnose sculpin	9/26/2007	3	1	9.00		2.00		2.00	
striped surfperch, adult	9/26/2007	3	3	9.33	1.15	2.00	0.00	5.67	3.21
striped surfperch, all	9/26/2007	3	3	9.33	1.15	2.67	0.58	8.67	5.86
striped surfperch, juvenile	9/26/2007	3	3	5.33	4.62	1.33	1.15	3.00	2.65
treefish, adult	9/26/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	9/26/2007	3	3	4.67	4.51	0.67	0.58	0.67	0.58
zebra perch	9/26/2007	3	1	9.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Rosa Island - Johnson's Lee South

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	7/25/2007	4	2	10.00	0.00	1.50	0.71	1.50	0.71
black and yellow rockfish	7/25/2007	4	4	9.00	0.00	2.00	0.00	6.25	1.71
black surfperch, adult	7/25/2007	4	4	9.50	0.58	2.00	0.00	6.75	0.96
black surfperch, all	7/25/2007	4	4	9.75	0.50	2.00	0.00	7.50	1.29
black surfperch, juvenile	7/25/2007	4	4	2.50	5.00	0.50	1.00	0.75	1.50
blackeye goby	7/25/2007	4	4	9.00	0.82	2.75	0.50	22.25	17.11
blacksmith, adult	7/25/2007	4	4	4.50	5.26	1.00	1.15	1.75	2.36
blacksmith, all	7/25/2007	4	4	4.50	5.26	1.00	1.15	1.75	2.36
blacksmith, juvenile	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/25/2007	4	4	6.50	4.36	1.25	0.96	3.25	3.59
blue rockfish, all	7/25/2007	4	4	9.25	0.96	2.50	0.58	9.25	4.99
blue rockfish, juvenile	7/25/2007	4	4	9.25	0.96	2.00	0.00	6.00	2.16
blue-banded goby	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
bocaccio, juvenile	7/25/2007	4	1	5.00		1.00		1.00	
California sheephead,	7/25/2007	4	4	9.75	0.50	2.00	0.00	4.00	1.15
California sheephead,	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/25/2007	4	4	2.25	4.50	0.50	1.00	0.50	1.00
copper rockfish	7/25/2007	4	2	7.00	0.00	1.00	0.00	1.00	0.00
garibaldi, adult	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	7/25/2007	4	1	9.00		1.00		1.00	

Santa Rosa Island - Johnson's Lee South (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
gopher/copper rockfish,	7/25/2007	4	3	7.00	2.65	2.33	0.58	9.67	7.51
halfmoon	7/25/2007	4	3	7.67	1.15	1.67	0.58	2.00	1.00
island kelpfish	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
jack mackerel	7/25/2007	4	3	8.33	2.89	2.67	0.58	19.33	8.96
kelp bass, adult	7/25/2007	4	4	9.75	0.50	2.50	0.58	9.50	3.11
kelp bass, calico bass, all	7/25/2007	4	4	9.75	0.50	2.50	0.58	9.50	3.11
kelp bass, juvenile	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/25/2007	4	4	9.75	0.50	2.75	0.50	13.50	9.15
kelp rockfish, all	7/25/2007	4	4	9.75	0.50	2.75	0.50	13.50	9.15
kelp rockfish, juvenile	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	7/25/2007	4	4	6.50	2.38	2.00	0.82	10.25	14.59
ocean whitefish	7/25/2007	4	4	7.50	0.58	1.00	0.00	1.00	0.00
olive rockfish, adult	7/25/2007	4	4	9.25	0.50	2.00	0.00	3.25	1.89
olive rockfish, all	7/25/2007	4	4	9.50	0.58	2.00	0.00	4.75	2.06
olive/yellowtail rockfish,	7/25/2007	4	4	5.00	5.77	0.75	0.96	1.50	2.38
opaleye, adult	7/25/2007	4	4	9.25	0.96	1.75	0.50	4.00	2.58
opaleye, all	7/25/2007	4	4	9.25	0.96	1.75	0.50	4.00	2.58
opaleye, juvenile	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/25/2007	4	4	9.50	0.58	2.50	0.58	18.00	9.56
pile surfperch, adult	7/25/2007	4	4	8.25	0.96	2.50	0.58	11.00	9.06
pile surfperch, all	7/25/2007	4	4	8.25	0.96	2.50	0.58	11.50	8.58
pile surfperch, juvenile	7/25/2007	4	4	2.00	4.00	0.50	1.00	0.50	1.00

Santa Rosa Island - Johnson's Lee South (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rainbow surfperch	7/25/2007	4	4	9.25	1.50	2.00	0.00	4.75	2.36
rock wrasse, female	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	7/25/2007	4	4	8.75	0.96	2.00	0.82	7.50	7.90
senorita, adult	7/25/2007	4	4	10.00	0.00	3.50	0.58	139.00	94.81
senorita, all	7/25/2007	4	4	10.00	0.00	3.50	0.58	139.00	94.81
senorita, juvenile	7/25/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
spotted kelpfish	7/25/2007	4	1	9.00		1.00		1.00	
striped surfperch, adult	7/25/2007	4	4	10.00	0.00	2.50	0.58	13.25	5.85
striped surfperch, all	7/25/2007	4	4	10.00	0.00	2.50	0.58	13.50	6.35
striped surfperch, juvenile	7/25/2007	4	4	2.00	4.00	0.25	0.50	0.25	0.50
top smelt	7/25/2007	4	2	7.50	3.54	3.00	0.00	28.50	2.12
treefish, adult	7/25/2007	4	4	6.75	4.50	1.25	0.96	2.25	2.22
treefish, juvenile	7/25/2007	4	4	4.50	5.26	1.00	1.15	2.25	3.30
vermillion rockfish, juvenile	7/25/2007	4	1	8.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Rosa Island - Rodes Reef

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	7/9/2007	5	5	8.00	1.41	1.80	0.45	3.80	2.77
black rockfish	7/9/2007	5	3	8.00	1.00	2.00	0.00	7.00	2.65
black surfperch, adult	7/9/2007	5	4	8.25	0.96	2.00	0.00	4.25	0.96
black surfperch, all	7/9/2007	5	5	8.60	1.14	2.00	0.00	6.60	2.30
black surfperch, juvenile	7/9/2007	5	4	3.75	4.79	1.00	1.15	1.75	2.06
blackeye goby	7/9/2007	5	5	7.60	4.34	1.20	0.84	2.40	2.79
blacksmith, adult	7/9/2007	5	4	6.25	4.19	1.25	0.96	2.00	2.16
blacksmith, all	7/9/2007	5	5	5.00	4.58	1.00	1.00	1.60	2.07
blacksmith, juvenile	7/9/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/9/2007	5	4	8.00	0.82	3.00	0.00	27.50	7.77
blue rockfish, all	7/9/2007	5	5	8.40	1.14	3.00	0.00	28.00	6.82
blue rockfish, juvenile	7/9/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead,	7/9/2007	5	5	6.80	3.96	1.60	0.89	3.40	2.07
California sheephead,	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/9/2007	5	5	5.80	3.35	1.00	0.71	1.00	0.71
Copper rockfish	7/9/2007	5	3	7.67	2.08	1.67	0.58	4.33	4.93
coralline sculpin	7/9/2007	5	2	7.50	0.71	2.00	0.00	2.00	0.00
garibaldi, adult	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish,	7/9/2007	5	5	7.60	1.52	1.60	0.55	2.60	2.51

Santa Rosa Island - Rodes Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/9/2007	5	4	6.75	0.96	2.00	0.00	4.50	3.32
kelp bass, calico bass, all	7/9/2007	5	5	7.20	1.30	2.00	0.00	4.20	2.95
kelp bass, juvenile	7/9/2007	5	4	1.75	3.50	0.25	0.50	0.25	0.50
kelp rockfish, adult	7/9/2007	5	4	9.00	0.82	3.00	0.00	31.75	12.58
kelp rockfish, all	7/9/2007	5	5	9.20	0.84	3.00	0.00	33.20	11.43
kelp rockfish, juvenile	7/9/2007	5	4	1.50	3.00	0.25	0.50	0.25	0.50
kelpfish spp.	7/9/2007	5	2	6.00	0.00	1.00	0.00	1.00	0.00
lingcod	7/9/2007	5	2	7.50	0.71	1.50	0.71	1.50	0.71
olive rockfish, adult	7/9/2007	5	4	5.50	3.87	1.50	1.00	1.75	1.26
olive rockfish, all	7/9/2007	5	5	4.40	4.16	1.20	1.10	1.80	2.05
olive/yellowtail rockfish,	7/9/2007	5	4	1.75	3.50	0.50	1.00	0.50	1.00
opaleye, adult	7/9/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	7/9/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/9/2007	5	5	9.40	1.34	2.80	0.45	21.00	11.66
pile surfperch, adult	7/9/2007	5	4	8.25	1.26	2.50	0.58	9.25	2.75
pile surfperch, all	7/9/2007	5	5	8.40	1.14	2.60	0.55	10.60	3.85
pile surfperch, juvenile	7/9/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
rainbow surfperch	7/9/2007	5	2	7.50	0.71	2.00	0.00	3.50	2.12
rock wrasse, female	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Rosa Island - Rodes Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rock wrasse, male	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
ronquil spp.	7/9/2007	5	1	6.00		2.00		2.00	
Rubberlip surfperch	7/9/2007	5	5	7.00	1.00	2.00	0.00	6.80	3.11
senorita, adult	7/9/2007	5	4	1.75	3.50	0.75	1.50	8.75	17.50
senorita, all	7/9/2007	5	5	1.40	3.13	0.60	1.34	7.00	15.65
senorita, juvenile	7/9/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	7/9/2007	5	5	7.60	2.07	1.80	0.45	2.60	1.52
striped surfperch, adult	7/9/2007	5	4	8.25	0.50	2.75	0.50	16.00	8.04
striped surfperch, all	7/9/2007	5	5	8.60	0.89	2.80	0.45	20.60	15.14
striped surfperch, juvenile	7/9/2007	5	4	7.00	1.63	2.25	0.50	8.50	7.94
top smelt	7/9/2007	5	1	10.00		3.00		12.00	
treefish, adult	7/9/2007	5	5	4.60	4.34	0.60	0.55	0.60	0.55
treefish, juvenile	7/9/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	7/9/2007	5	4	10.00	0.00	4.00	0.00	1337.50	330.09
vermillion rockfish, juvenile	7/9/2007	5	1	8.00		2.00		2.00	
zebra perch	7/9/2007	5	1	7.00		2.00		2.00	

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Gull Island South

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	7/23/2007	5	5	8.00	1.58	1.20	0.45	1.20	0.45
black and yellow rockfish	7/23/2007	5	3	8.67	1.53	1.67	0.58	2.33	1.53
black surfperch, adult	7/23/2007	5	5	9.20	0.84	2.00	0.00	5.80	2.28
black surfperch, all	7/23/2007	5	5	9.20	0.84	2.00	0.00	8.20	1.92
black surfperch, juvenile	7/23/2007	5	5	8.20	1.30	1.80	0.45	2.40	1.14
blackeye goby	7/23/2007	5	5	9.80	0.45	2.80	0.45	16.40	8.11
blacksmith, adult	7/23/2007	5	5	10.00	0.00	3.40	0.55	122.60	44.15
blacksmith, all	7/23/2007	5	5	10.00	0.00	3.40	0.55	122.60	44.15
blacksmith, juvenile	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/23/2007	5	5	8.60	1.95	1.80	0.45	2.80	1.48
blue rockfish, all	7/23/2007	5	5	10.00	0.00	3.00	0.00	29.40	13.72
blue rockfish, juvenile	7/23/2007	5	5	10.00	0.00	3.00	0.00	26.60	13.18
blue-banded goby	7/23/2007	5	5	3.20	4.60	0.60	0.89	1.40	2.61
California sheephead,	7/23/2007	5	5	10.00	0.00	2.60	0.55	10.80	4.87
California sheephead,	7/23/2007	5	5	9.60	0.55	2.00	0.00	6.40	2.97
California sheephead, male	7/23/2007	5	5	10.00	0.00	2.00	0.00	6.20	3.35
coralline sculpin	7/23/2007	5	1	10.00		1.00		1.00	
garibaldi, adult	7/23/2007	5	5	6.60	3.91	1.40	0.89	1.60	1.14
garibaldi, juvenile	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	7/23/2007	5	3	7.00	0.00	1.00	0.00	1.00	0.00
gopher/copper rockfish,	7/23/2007	5	5	9.40	0.55	2.40	0.55	9.40	6.35

Santa Cruz Island - Gull Island South (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/23/2007	5	5	9.20	1.30	2.00	0.00	3.60	2.30
kelp bass, calico bass, all	7/23/2007	5	5	9.20	1.30	2.00	0.00	3.60	2.30
kelp bass, juvenile	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/23/2007	5	5	9.40	0.89	2.40	0.55	10.20	3.77
kelp rockfish, all	7/23/2007	5	5	9.60	0.55	2.40	0.55	10.80	4.66
kelp rockfish, juvenile	7/23/2007	5	5	1.80	4.02	0.40	0.89	0.60	1.34
kelp surfperch	7/23/2007	5	5	7.80	1.79	1.60	0.89	4.80	6.10
lingcod	7/23/2007	5	2	7.00	0.00	1.00	0.00	1.00	0.00
olive rockfish, adult	7/23/2007	5	5	6.60	3.85	1.60	0.89	2.80	1.79
olive rockfish, all	7/23/2007	5	5	9.20	1.10	2.20	0.45	6.60	2.70
olive/yellowtail rockfish,	7/23/2007	5	5	7.20	4.38	1.80	1.10	3.80	4.21
opaleye, adult	7/23/2007	5	5	5.40	4.98	1.00	1.00	1.20	1.30
opaleye, all	7/23/2007	5	5	5.40	4.98	1.00	1.00	1.20	1.30
opaleye, juvenile	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/23/2007	5	5	10.00	0.00	3.00	0.00	32.40	13.92
pile surfperch, adult	7/23/2007	5	5	3.00	4.12	0.60	0.89	0.60	0.89
pile surfperch, all	7/23/2007	5	5	4.80	4.44	1.00	1.00	1.60	1.82
pile surfperch, juvenile	7/23/2007	5	5	4.60	4.34	0.80	0.84	1.00	1.22
rock wrasse, female	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Gull Island South (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rockfish spp., juvenile	7/23/2007	5	1	8.00		1.00		1.00	
rosy rockfish	7/23/2007	5	2	6.00	0.00	1.00	0.00	1.00	0.00
sculpin spp.	7/23/2007	5	1	9.00		1.00		1.00	
senorita, adult	7/23/2007	5	5	10.00	0.00	3.40	0.55	75.80	34.18
senorita, all	7/23/2007	5	5	10.00	0.00	3.40	0.55	75.80	34.18
senorita, juvenile	7/23/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	7/23/2007	5	5	5.00	4.58	1.20	1.10	1.60	1.67
striped surfperch, all	7/23/2007	5	5	5.00	4.58	1.20	1.10	3.60	4.16
striped surfperch, juvenile	7/23/2007	5	5	3.20	4.38	0.80	1.10	2.00	2.74
swell shark	7/23/2007	5	1	10.00		1.00		1.00	
top smelt	7/23/2007	5	2	7.50	3.54	2.00	1.41	8.00	9.90
treefish, adult	7/23/2007	5	5	1.20	2.68	0.20	0.45	0.20	0.45
treefish, juvenile	7/23/2007	5	5	3.40	4.67	0.40	0.55	0.40	0.55

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Fry's Harbor

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	7/27/2007	5	1	9.00		1.00		1.00	
black and yellow rockfish	7/27/2007	5	2	9.00	1.41	2.00	0.00	7.00	0.00
black and yellow rockfish	9/11/2007	6	1	9.00		2.00		4.00	
black surfperch, adult	7/27/2007	5	5	8.60	1.34	2.00	0.71	5.80	3.56
black surfperch, adult	9/11/2007	6	5	10.00	0.00	2.80	0.45	16.80	8.64
black surfperch, all	7/27/2007	5	5	9.60	0.89	3.00	0.00	19.20	6.18
black surfperch, all	9/11/2007	6	6	10.00	0.00	3.00	0.00	24.60	7.83
black surfperch, juvenile	7/27/2007	5	5	9.60	0.89	2.80	0.45	13.40	2.70
black surfperch, juvenile	9/11/2007	6	5	8.00	4.47	1.80	1.10	7.80	6.87
blackeye goby	7/27/2007	5	5	10.00	0.00	3.60	0.55	118.20	77.89
blackeye goby	9/11/2007	6	6	10.00	0.00	4.00	0.00	372.20	136.55
blacksmith, adult	7/27/2007	5	5	10.00	0.00	4.00	0.00	304.80	59.61
blacksmith, adult	9/11/2007	6	5	10.00	0.00	4.00	0.00	317.40	157.77
blacksmith, all	7/27/2007	5	5	10.00	0.00	4.00	0.00	308.60	60.26
blacksmith, all	9/11/2007	6	6	10.00	0.00	4.00	0.00	334.20	155.28
blacksmith, juvenile	7/27/2007	5	5	3.60	4.98	1.00	1.41	3.80	5.31
blacksmith, juvenile	9/11/2007	6	5	7.60	2.30	2.60	0.55	16.80	15.45
blue rockfish, adult	7/27/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/11/2007	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	7/27/2007	5	5	6.80	2.17	2.00	0.00	5.60	2.41
blue rockfish, all	9/11/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Fry's Harbor (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	7/27/2007	5	5	6.80	2.17	2.00	0.00	5.60	2.41
blue rockfish, juvenile	9/11/2007	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	7/27/2007	5	5	9.60	0.55	3.60	0.55	98.60	84.29
blue-banded goby	9/11/2007	6	6	10.00	0.00	3.33	0.52	127.60	86.27
cabezon	7/27/2007	5	3	7.00	1.00	1.00	0.00	1.00	0.00
Cabezon	9/11/2007	6	2	6.00	0.00	1.00	0.00	1.00	0.00
California moray	7/27/2007	5	3	7.33	2.08	1.33	0.58	1.33	0.58
California sheephead,	7/27/2007	5	5	7.60	4.28	1.40	0.89	1.40	0.89
California sheephead,	9/11/2007	6	6	9.83	0.41	1.83	0.41	2.60	1.52
California sheephead,	7/27/2007	5	5	2.40	3.29	0.60	0.89	1.00	1.73
California sheephead,	9/11/2007	6	6	3.83	4.22	0.67	0.82	1.00	1.22
California sheephead, male	7/27/2007	5	5	1.00	2.24	0.20	0.45	0.20	0.45
California sheephead, male	9/11/2007	6	6	4.50	4.97	0.67	0.82	0.60	0.89
copper rockfish	9/11/2007	6	3	9.67	0.58	1.67	0.58	3.50	3.54
garibaldi, adult	7/27/2007	5	5	8.00	1.58	2.00	0.00	4.20	1.10
garibaldi, adult	9/11/2007	6	6	8.00	1.26	1.67	0.52	2.40	0.89
garibaldi, juvenile	7/27/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/11/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	7/27/2007	5	5	9.40	0.89	2.00	0.00	4.00	1.73
gopher rockfish	9/11/2007	6	6	9.33	0.52	1.83	0.41	4.60	2.30
gopher rockfish, juvenile	7/27/2007	5	1	6.00		1.00		1.00	
gopher/copper rockfish,	7/27/2007	5	5	9.00	1.73	3.00	0.71	94.40	81.99

Santa Cruz Island - Fry's Harbor (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
gopher/copper rockfish,	9/11/2007	6	6	8.83	1.60	2.67	0.82	8.40	5.90
halfmoon	7/27/2007	5	2	5.50	0.71	1.50	0.71	1.50	0.71
Halfmoon	9/11/2007	6	4	7.50	2.08	1.50	0.58	2.33	2.31
island kelpfish	7/27/2007	5	5	9.20	1.30	2.20	0.45	7.60	5.32
island kelpfish	9/11/2007	6	6	8.00	4.00	2.00	1.10	8.00	5.70
kelp bass, adult	7/27/2007	5	5	9.80	0.45	2.60	0.55	12.20	2.59
kelp bass, adult	9/11/2007	6	5	10.00	0.00	2.60	0.55	11.60	3.13
kelp bass, calico bass, all	7/27/2007	5	5	9.80	0.45	2.80	0.45	13.00	1.87
kelp bass, calico bass, all	9/11/2007	6	6	10.00	0.00	2.83	0.41	13.20	4.02
kelp bass, juvenile	7/27/2007	5	5	2.80	4.09	0.60	0.89	0.80	1.30
kelp bass, juvenile	9/11/2007	6	5	1.80	4.02	0.40	0.89	1.60	3.58
kelp rockfish, adult	7/27/2007	5	5	5.60	0.55	1.80	0.45	2.40	0.89
kelp rockfish, adult	9/11/2007	6	5	2.60	3.71	0.60	0.89	0.60	0.89
kelp rockfish, all	7/27/2007	5	5	6.60	1.95	2.00	0.71	8.60	14.22
kelp rockfish, all	9/11/2007	6	6	9.33	1.21	3.67	0.82	202.40	81.24
kelp rockfish, juvenile	7/27/2007	5	5	2.00	4.47	0.60	1.34	6.20	13.86
kelp rockfish, juvenile	9/11/2007	6	5	9.80	0.45	4.00	0.00	201.80	80.46
kelp surfperch	7/27/2007	5	1	9.00		2.00		4.00	
kelpfish spp.	7/27/2007	5	1	7.00		1.00		1.00	
lingcod	7/27/2007	5	2	5.50	0.71	1.00	0.00	1.00	0.00
ocean whitefish	7/27/2007	5	2	6.50	2.12	1.00	0.00	1.00	0.00
olive rockfish, adult	7/27/2007	5	5	5.40	3.58	1.20	0.84	1.20	0.84

Santa Cruz Island - Fry's Harbor (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
olive rockfish, adult	9/11/2007	6	5	1.40	3.13	0.20	0.45	0.20	0.45
olive rockfish, all	7/27/2007	5	5	5.40	3.58	1.20	0.84	2.00	2.35
olive rockfish, all	9/11/2007	6	6	1.17	2.86	0.17	0.41	0.20	0.45
olive/yellowtail rockfish,	7/27/2007	5	5	1.20	2.68	0.40	0.89	0.80	1.79
olive/yellowtail rockfish,	9/11/2007	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/27/2007	5	5	1.20	2.68	0.20	0.45	0.20	0.45
opaleye, adult	9/11/2007	6	5	6.20	3.56	1.40	0.89	2.60	2.70
opaleye, all	7/27/2007	5	5	1.20	2.68	0.20	0.45	0.20	0.45
opaleye, all	9/11/2007	6	6	6.50	3.27	1.50	0.84	2.60	2.70
opaleye, juvenile	7/27/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/11/2007	6	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/27/2007	5	5	10.00	0.00	2.80	0.45	19.00	8.28
painted greenling	9/11/2007	6	6	10.00	0.00	2.83	0.41	19.60	7.02
pile surfperch, adult	7/27/2007	5	5	9.20	0.84	2.00	0.00	6.00	2.00
pile surfperch, adult	9/11/2007	6	5	9.40	0.55	2.00	0.00	6.40	2.88
pile surfperch, all	7/27/2007	5	5	10.00	0.00	3.00	0.00	20.20	9.39
pile surfperch, all	9/11/2007	6	6	9.67	0.52	2.50	0.55	14.40	9.81
pile surfperch, juvenile	7/27/2007	5	5	9.00	2.24	2.40	0.55	14.20	10.03
pile surfperch, juvenile	9/11/2007	6	5	5.80	5.31	1.60	1.52	8.00	8.69
rock wrasse, female	7/27/2007	5	5	3.40	4.77	0.80	1.10	1.40	1.95
rock wrasse, female	9/11/2007	6	6	5.50	4.32	1.33	1.03	2.00	2.45
rock wrasse, juvenile	7/27/2007	5	5	4.00	5.48	0.80	1.10	0.80	1.10

Santa Cruz Island - Fry's Harbor (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rock wrasse, juvenile	9/11/2007	6	6	2.83	4.49	0.50	0.84	1.40	2.61
rock wrasse, male	7/27/2007	5	5	1.80	4.02	0.40	0.89	0.40	0.89
rock wrasse, male	9/11/2007	6	6	2.83	4.40	0.67	1.03	1.00	1.41
rubberlip surfperch	7/27/2007	5	4	7.75	1.71	2.00	0.00	2.00	0.00
rubberlip surfperch	9/11/2007	6	5	9.20	1.10	2.40	0.55	7.50	4.65
senorita, adult	7/27/2007	5	5	10.00	0.00	3.00	0.00	23.20	7.26
senorita, adult	9/11/2007	6	5	10.00	0.00	2.60	0.55	19.80	19.03
senorita, all	7/27/2007	5	5	10.00	0.00	3.00	0.00	23.60	6.84
senorita, all	9/11/2007	6	6	10.00	0.00	3.00	0.00	62.40	20.11
senorita, juvenile	7/27/2007	5	5	2.00	2.74	0.40	0.55	0.40	0.55
senorita, juvenile	9/11/2007	6	5	9.00	1.00	3.00	0.00	42.60	27.93
snubnose sculpin	7/27/2007	5	2	6.50	0.71	2.00	0.00	2.00	0.00
snubnose sculpin	9/11/2007	6	2	8.00	2.83	1.00	0.00	1.00	0.00
striped surfperch, adult	7/27/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/11/2007	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	7/27/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/11/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	7/27/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/11/2007	6	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	7/27/2007	5	5	9.40	0.89	2.20	0.45	8.40	3.78
treefish, adult	9/11/2007	6	6	8.00	4.00	2.00	1.10	7.20	5.12
treefish, juvenile	7/27/2007	5	5	5.80	3.63	1.00	0.71	1.00	0.71

Santa Cruz Island - Fry's Harbor (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
treefish, juvenile	9/11/2007	6	6	9.00	1.26	1.67	0.52	3.40	3.05
zebra goby	7/27/2007	5	3	7.67	2.08	1.33	0.58	2.33	2.31
zebra goby	9/11/2007	6	1	7.00		2.00		2.00	

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Pelican Bay

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	6/18/2007	4	1	9.00		2.00		2.00	
black surfperch, adult	6/18/2007	4	4	10.00	0.00	2.25	0.50	5.75	3.59
black surfperch, adult	8/16/2007	5	5	9.60	0.55	2.60	0.55	13.80	4.76
black surfperch, all	6/18/2007	4	4	10.00	0.00	2.25	0.50	5.75	3.59
black surfperch, all	8/16/2007	5	5	9.60	0.55	2.60	0.55	15.00	6.44
black surfperch, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	8/16/2007	5	5	2.40	3.29	0.80	1.10	1.20	1.79
blackeye goby	6/18/2007	4	4	10.00	0.00	4.00	0.00	275.75	107.73
blackeye goby	8/16/2007	5	5	10.00	0.00	4.00	0.00	390.20	168.98
blacksmith, adult	6/18/2007	4	4	9.25	0.96	3.00	0.00	48.50	15.80
blacksmith, adult	8/16/2007	5	5	9.40	0.89	2.60	0.55	25.60	20.18
blacksmith, all	6/18/2007	4	4	9.25	0.96	3.00	0.00	48.50	15.80
blacksmith, all	8/16/2007	5	5	9.40	0.89	2.80	0.45	29.20	19.59
blacksmith, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	8/16/2007	5	5	6.60	1.14	2.00	0.00	3.60	2.30
blue rockfish, adult	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Pelican Bay (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue-banded goby	6/18/2007	4	4	10.00	0.00	3.50	0.58	107.00	24.95
blue-banded goby	8/16/2007	5	5	10.00	0.00	3.60	0.55	90.80	31.67
California sheephead,	6/18/2007	4	4	9.75	0.50	1.50	0.58	1.50	0.58
California sheephead,	8/16/2007	5	5	9.20	1.10	1.60	0.55	1.80	0.84
California sheephead,	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead,	8/16/2007	5	5	4.80	4.55	0.60	0.55	0.60	0.55
California sheephead, male	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
finescale triggerfish	6/18/2007	4	2	7.00	0.00	1.00	0.00	1.00	0.00
fringehead spp.	8/16/2007	5	4	8.00	0.00	1.50	0.58	3.50	4.36
garibaldi, adult	6/18/2007	4	4	9.00	1.15	2.50	0.58	9.75	3.77
garibaldi, adult	8/16/2007	5	5	9.60	0.89	2.60	0.55	11.20	1.30
garibaldi, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	6/18/2007	4	2	9.00	0.00	1.50	0.71	2.00	1.41
halfmoon	8/16/2007	5	5	6.00	0.71	1.60	0.55	1.80	0.84
island kelpfish	6/18/2007	4	4	6.75	1.50	2.00	0.00	2.50	0.58
island kelpfish	8/16/2007	5	5	6.80	1.92	1.80	0.45	2.40	1.14
kelp bass, adult	6/18/2007	4	4	10.00	0.00	3.00	0.00	14.25	2.22
kelp bass, adult	8/16/2007	5	5	9.60	0.89	2.20	0.45	6.20	3.27
kelp bass, calico bass, all	6/18/2007	4	4	10.00	0.00	3.00	0.00	16.75	2.75
kelp bass, calico bass, all	8/16/2007	5	5	9.60	0.89	2.20	0.45	6.20	3.27

Santa Cruz Island - Pelican Bay (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, juvenile	6/18/2007	4	4	9.25	0.50	2.00	0.00	2.50	0.58
kelp bass, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/18/2007	4	4	4.50	5.26	1.00	1.15	1.50	1.91
kelp rockfish, adult	8/16/2007	5	5	9.40	0.89	2.00	0.00	2.60	0.55
kelp rockfish, all	6/18/2007	4	4	4.50	5.26	1.00	1.15	1.50	1.91
kelp rockfish, all	8/16/2007	5	5	9.40	0.89	2.00	0.00	2.60	0.55
kelp rockfish, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	6/18/2007	4	4	9.00	0.82	1.00	0.00	1.00	0.00
ocean whitefish	8/16/2007	5	3	7.67	2.08	1.33	0.58	1.33	0.58
olive rockfish, adult	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
onespot fringehead	6/18/2007	4	2	5.00	0.00	1.00	0.00	1.00	0.00
opaleye, adult	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/16/2007	5	5	1.00	2.24	0.20	0.45	0.20	0.45
opaleye, all	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	8/16/2007	5	5	1.00	2.24	0.20	0.45	0.20	0.45
opaleye, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Pelican Bay (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
opaleye, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pacific sardine	6/18/2007	4	1	7.00		4.00		3000.00	
painted greenling	6/18/2007	4	4	5.75	4.27	1.00	0.82	1.25	1.26
painted greenling	8/16/2007	5	5	6.40	3.65	1.20	0.84	2.00	1.87
pile surfperch, adult	6/18/2007	4	4	9.75	0.50	2.50	0.58	16.25	15.37
pile surfperch, adult	8/16/2007	5	5	9.40	0.89	2.00	0.00	5.40	2.07
pile surfperch, all	6/18/2007	4	4	9.75	0.50	2.50	0.58	16.25	15.37
pile surfperch, all	8/16/2007	5	5	9.40	0.89	2.00	0.00	5.40	2.07
pile surfperch, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/18/2007	4	4	9.25	1.50	2.00	0.00	2.75	0.96
rock wrasse, female	8/16/2007	5	5	9.40	0.89	2.00	0.00	4.80	1.10
rock wrasse, juvenile	6/18/2007	4	4	9.75	0.50	2.00	0.00	3.25	1.89
rock wrasse, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/18/2007	4	4	10.00	0.00	2.00	0.00	3.25	0.50
rock wrasse, male	8/16/2007	5	5	10.00	0.00	1.80	0.45	2.80	1.30
rubberlip surfperch	6/18/2007	4	2	8.00	0.00	3.00	0.00	15.50	3.54
rubberlip surfperch	8/16/2007	5	5	6.80	2.05	1.80	0.45	4.40	3.21
senorita, adult	6/18/2007	4	4	10.00	0.00	2.75	0.50	10.25	3.59
senorita, adult	8/16/2007	5	5	10.00	0.00	2.20	0.45	8.20	1.92
senorita, all	6/18/2007	4	4	10.00	0.00	2.75	0.50	10.25	3.59
senorita, all	8/16/2007	5	5	10.00	0.00	2.20	0.45	8.20	1.92

Santa Cruz Island - Pelican Bay (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	8/16/2007	5	1	8.00		2.00		2.00	
striped surfperch, adult	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/16/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/18/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
treefish, adult	8/16/2007	5	5	4.20	3.90	0.80	0.84	0.80	0.84
treefish, juvenile	6/18/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	8/16/2007	5	5	5.80	5.31	1.00	1.00	1.00	1.00
white surfperch	6/18/2007	4	1	7.00		2.00		2.00	
yellowfin fringehead	6/18/2007	4	3	8.00	2.65	1.67	0.58	1.67	0.58
zebra goby	6/18/2007	4	2	6.50	0.71	1.50	0.71	2.00	1.41
zebra goby	8/16/2007	5	2	8.50	2.12	1.50	0.71	1.50	0.71

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Scorpion Anchorage

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	9/5/2007	4	1	8.00		1.00		1.00	
black and yellow rockfish	9/5/2007	4	3	7.00	1.73	1.67	0.58	1.67	0.58
black surfperch, adult	9/5/2007	4	4	10.00	0.00	2.25	0.50	9.25	2.22
black surfperch, adult	10/4/2007	6	6	10.00	0.00	3.00	0.00	21.33	4.18
black surfperch, all	9/5/2007	4	4	10.00	0.00	2.50	0.58	10.75	0.96
black surfperch, all	10/4/2007	6	6	10.00	0.00	3.00	0.00	23.33	6.06
black surfperch, juvenile	9/5/2007	4	4	5.75	4.35	1.00	0.82	1.50	1.73
black surfperch, juvenile	10/4/2007	6	6	5.17	4.07	1.00	0.89	2.00	2.68
blackeye goby	9/5/2007	4	4	10.00	0.00	4.00	0.00	180.75	69.51
blackeye goby	10/4/2007	6	6	10.00	0.00	3.83	0.41	232.17	115.64
blacksmith, adult	9/5/2007	4	4	9.75	0.50	3.00	0.00	41.75	29.00
blacksmith, adult	10/4/2007	6	6	10.00	0.00	3.67	0.52	134.17	51.15
blacksmith, all	9/5/2007	4	4	9.75	0.50	3.00	0.00	41.75	29.00
blacksmith, all	10/4/2007	6	6	10.00	0.00	3.67	0.52	136.17	49.92
blacksmith, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	10/4/2007	6	6	5.50	4.59	1.00	0.89	2.00	2.68
blue rockfish, adult	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Scorpion Anchorage (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	10/4/2007	6	6	1.17	2.86	0.33	0.82	0.67	1.63
California sheephead,	9/5/2007	4	4	2.25	4.50	0.25	0.50	0.25	0.50
California sheephead,	10/4/2007	6	6	8.17	1.94	2.00	0.00	2.17	0.41
California sheephead,	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead,	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	9/5/2007	4	1	9.00		1.00		1.00	
fringehead spp.	9/5/2007	4	3	8.67	0.58	1.33	0.58	1.67	1.15
garibaldi, adult	9/5/2007	4	4	9.75	0.50	2.00	0.00	4.25	1.71
garibaldi, adult	10/4/2007	6	6	8.83	0.98	2.00	0.00	4.67	1.86
garibaldi, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish,	9/5/2007	4	1	10.00		2.00		3.00	
horn shark	9/5/2007	4	1	9.00		1.00		1.00	
island kelpfish	9/5/2007	4	4	5.00	3.74	1.00	0.82	1.00	0.82
island kelpfish	10/4/2007	6	6	7.67	3.78	1.67	0.82	4.00	3.29
kelp bass, adult	9/5/2007	4	4	10.00	0.00	2.75	0.50	14.75	6.85
kelp bass, adult	10/4/2007	6	6	10.00	0.00	3.00	0.00	28.33	7.81
kelp bass, calico bass, all	9/5/2007	4	4	10.00	0.00	2.75	0.50	14.75	6.85

Santa Cruz Island - Scorpion Anchorage (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, calico bass, all	10/4/2007	6	6	10.00	0.00	3.00	0.00	28.33	7.81
kelp bass, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/5/2007	4	4	4.25	4.92	0.75	0.96	0.75	0.96
kelp rockfish, adult	10/4/2007	6	6	4.67	3.78	0.83	0.75	1.17	1.47
kelp rockfish, all	9/5/2007	4	4	6.75	4.57	1.50	1.29	7.00	11.40
kelp rockfish, all	10/4/2007	6	6	8.00	1.41	2.17	0.98	13.00	14.32
kelp rockfish, juvenile	9/5/2007	4	4	3.75	4.79	1.00	1.41	6.25	11.84
kelp rockfish, juvenile	10/4/2007	6	6	5.17	4.31	1.67	1.51	11.83	14.93
kelp surfperch	9/5/2007	4	1	10.00		2.00		4.00	
kelpfish spp.	9/5/2007	4	2	6.00	1.41	1.50	0.71	1.50	0.71
lavender sculpin	9/5/2007	4	1	8.00		1.00		1.00	
olive rockfish, adult	9/5/2007	4	4	2.00	4.00	0.25	0.50	0.25	0.50
olive rockfish, adult	10/4/2007	6	6	5.17	4.36	0.83	0.75	0.83	0.75
olive rockfish, all	9/5/2007	4	4	2.00	4.00	0.25	0.50	0.25	0.50
olive rockfish, all	10/4/2007	6	6	5.17	4.36	0.83	0.75	0.83	0.75
olive/yellowtail rockfish,	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/5/2007	4	4	8.75	1.50	2.00	0.82	7.00	9.38
opaleye, adult	10/4/2007	6	6	8.50	1.38	2.67	0.52	26.00	24.77
opaleye, all	9/5/2007	4	4	8.75	1.50	2.00	0.82	7.00	9.38
opaleye, all	10/4/2007	6	6	8.50	1.38	2.67	0.52	26.00	24.77

Santa Cruz Island - Scorpion Anchorage (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
opaleye, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	9/5/2007	4	4	9.75	0.50	2.25	0.50	6.75	4.11
painted greenling	10/4/2007	6	6	9.83	0.41	2.33	0.52	9.67	3.14
pile surfperch, adult	9/5/2007	4	4	8.00	1.83	1.50	0.58	1.50	0.58
pile surfperch, adult	10/4/2007	6	6	6.33	3.14	1.00	0.63	1.00	0.63
pile surfperch, all	9/5/2007	4	4	8.00	1.83	1.75	0.50	2.50	1.73
pile surfperch, all	10/4/2007	6	6	7.33	1.21	1.33	0.52	1.50	0.84
pile surfperch, juvenile	9/5/2007	4	4	1.50	3.00	0.50	1.00	1.00	2.00
pile surfperch, juvenile	10/4/2007	6	6	2.17	3.49	0.50	0.84	0.50	0.84
rock wrasse, female	9/5/2007	4	4	9.50	1.00	1.75	0.50	2.50	1.73
rock wrasse, female	10/4/2007	6	6	9.00	1.26	2.00	0.00	6.83	0.98
rock wrasse, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	9/5/2007	4	4	5.75	4.19	0.75	0.50	0.75	0.50
rock wrasse, male	10/4/2007	6	6	8.33	1.97	1.67	0.52	1.83	0.75
rubberlip surfperch	9/5/2007	4	2	6.00	1.41	1.00	0.00	1.00	0.00
senorita, adult	9/5/2007	4	4	9.75	0.50	2.75	0.50	13.00	2.58
senorita, adult	10/4/2007	6	6	10.00	0.00	3.50	0.55	107.00	64.15
senorita, all	9/5/2007	4	4	9.75	0.50	2.75	0.50	20.75	10.63
senorita, all	10/4/2007	6	6	10.00	0.00	3.83	0.41	179.17	66.54
senorita, juvenile	9/5/2007	4	4	5.00	5.77	1.50	1.73	7.75	9.03

Santa Cruz Island - Scorpion Anchorage (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, juvenile	10/4/2007	6	6	8.33	0.82	3.33	0.52	72.17	63.36
striped surfperch, adult	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	10/4/2007	6	6	5.50	4.42	1.00	0.89	1.33	1.37
treefish, juvenile	9/5/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	10/4/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
zebra goby	9/5/2007	4	1	10.00		2.00		2.00	

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Yellow Banks

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	8/15/2007	4	1	6.00		1.00		1.00	
black surfperch, adult	6/21/2007	3	3	8.00	2.65	1.33	0.58	1.67	1.15
black surfperch, adult	8/15/2007	4	4	6.25	4.27	1.00	0.82	1.00	0.82
black surfperch, all	6/21/2007	3	3	8.00	2.65	1.33	0.58	2.33	2.31
black surfperch, all	8/15/2007	4	4	6.25	4.27	1.00	0.82	1.00	0.82
black surfperch, juvenile	6/21/2007	3	3	2.00	3.46	0.67	1.15	0.67	1.15
black surfperch, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/21/2007	3	3	9.67	0.58	3.00	0.00	49.33	19.63
blackeye goby	8/15/2007	4	4	10.00	0.00	4.00	0.00	133.75	26.40
blacksmith, adult	6/21/2007	3	3	9.00	1.73	2.00	1.00	5.33	5.86
blacksmith, adult	8/15/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
blacksmith, all	6/21/2007	3	3	9.00	1.73	2.00	1.00	5.33	5.86
blacksmith, all	8/15/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
blacksmith, juvenile	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/21/2007	3	3	5.33	4.62	1.33	1.15	1.33	1.15
blue rockfish, all	8/15/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
blue rockfish, juvenile	6/21/2007	3	3	5.33	4.62	1.33	1.15	1.33	1.15
blue rockfish, juvenile	8/15/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50

Santa Cruz Island - Yellow Banks (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue-banded goby	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
bocaccio	8/15/2007	4	1	5.00		2.00		2.00	
bocaccio, juvenile	6/21/2007	3	2	6.50	2.12	2.00	0.00	3.50	2.12
California sheephead,	6/21/2007	3	3	8.33	2.08	2.00	0.00	3.33	0.58
California sheephead,	8/15/2007	4	4	9.75	0.50	2.00	0.00	3.75	0.96
California sheephead,	6/21/2007	3	3	8.67	1.53	1.33	0.58	1.33	0.58
California sheephead,	8/15/2007	4	4	6.25	4.19	1.25	0.96	1.50	1.29
California sheephead, male	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
c-o turbot	6/21/2007	3	1	10.00		1.00		1.00	
copper rockfish	8/15/2007	4	4	7.25	1.71	1.50	0.58	2.00	1.41
copper rockfish, juvenile	6/21/2007	3	2	8.50	2.12	2.00	0.00	2.50	0.71
garibaldi, adult	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	6/21/2007	3	1	5.00		1.00		1.00	
giant kelpfish, juvenile	8/15/2007	4	2	6.00	1.41	2.00	0.00	2.00	0.00
gopher rockfish	6/21/2007	3	2	6.00	1.41	1.00	0.00	1.00	0.00
gopher/copper rockfish,	6/21/2007	3	3	8.67	0.58	2.00	1.00	11.33	11.06
gopher/copper rockfish,	8/15/2007	4	4	8.00	1.41	2.25	0.50	5.75	3.86

Santa Cruz Island - Yellow Banks (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
jack mackerel	6/21/2007	3	2	7.50	3.54	2.50	0.71	31.00	41.01
kelp bass, adult	6/21/2007	3	3	9.00	1.73	2.00	0.00	5.00	4.36
kelp bass, adult	8/15/2007	4	4	9.75	0.50	2.00	0.00	8.25	2.87
kelp bass, calico bass, all	6/21/2007	3	3	9.00	1.73	2.00	0.00	5.00	4.36
kelp bass, calico bass, all	8/15/2007	4	4	9.75	0.50	2.00	0.00	8.25	2.87
kelp bass, juvenile	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/21/2007	3	3	6.33	5.51	1.33	1.15	2.00	2.00
kelp rockfish, adult	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00kelp rockfish, all
kelp rockfish, all	8/15/2007	4	4	5.75	4.27	1.75	1.26	12.00	16.99
kelp rockfish, juvenile	6/21/2007	3	3	3.00	5.20	0.33	0.58	0.33	0.58
kelp rockfish, juvenile	8/15/2007	4	4	5.75	4.27	1.75	1.26	12.00	16.99
kelp surfperch	6/21/2007	3	3	7.67	2.52	2.67	0.58	11.67	2.08
kelp surfperch	8/15/2007	4	3	6.67	2.89	3.33	0.58	66.67	41.48
kelp surfperch, juvenile	6/21/2007	3	1	5.00		1.00		1.00	
lavender sculpin	6/21/2007	3	1	9.00		2.00		2.00	
olive rockfish, adult	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/21/2007	3	3	3.33	5.77	0.33	0.58	0.33	0.58
olive rockfish, all	8/15/2007	4	4	1.75	3.50	0.25	0.50	0.25	0.50

Santa Cruz Island - Yellow Banks (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
olive/yellowtail rockfish,	6/21/2007	3	3	3.33	5.77	0.33	0.58	0.33	0.58
olive/yellowtail rockfish,	8/15/2007	4	4	1.75	3.50	0.25	0.50	0.25	0.50
opaleye, adult	6/21/2007	3	3	3.33	5.77	0.67	1.15	1.67	2.89
opaleye, adult	8/15/2007	4	4	1.75	3.50	0.25	0.50	0.25	0.50
opaleye, all	6/21/2007	3	3	3.33	5.77	0.67	1.15	1.67	2.89
opaleye, all	8/15/2007	4	4	1.75	3.50	0.25	0.50	0.25	0.50
opaleye, juvenile	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/21/2007	3	3	9.67	0.58	3.00	0.00	12.00	1.00
painted greenling	8/15/2007	4	4	9.75	0.50	3.00	0.00	14.50	2.89
pile surfperch, adult	6/21/2007	3	3	6.33	5.51	1.00	1.00	1.00	1.00
pile surfperch, adult	8/15/2007	4	4	7.75	2.06	1.25	0.50	1.75	1.50
pile surfperch, all	6/21/2007	3	3	6.33	5.51	1.00	1.00	1.00	1.00
pile surfperch, all	8/15/2007	4	4	7.75	2.06	1.25	0.50	2.25	2.50
pile surfperch, juvenile	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/15/2007	4	4	1.25	2.50	0.50	1.00	0.50	1.00
rainbow surfperch	6/21/2007	3	1	6.00		1.00		1.00	
rock wrasse, female	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/15/2007	4	4	8.25	2.22	1.25	0.50	1.25	0.50
rock wrasse, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/15/2007	4	4	2.25	4.50	0.25	0.50	0.25	0.50

Santa Cruz Island - Yellow Banks (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rockfish spp., juvenile	6/21/2007	3	1	10.00		3.00		80.00	
senorita, adult	6/21/2007	3	3	8.00	1.73	3.33	0.58	107.00	116.36
senorita, adult	8/15/2007	4	4	9.50	0.58	2.25	0.50	7.75	3.86
senorita, all	6/21/2007	3	3	8.00	1.73	3.67	0.58	1480.33	1511.39
senorita, all	8/15/2007	4	4	9.50	0.58	2.25	0.50	7.75	3.86
senorita, juvenile	6/21/2007	3	3	7.33	2.52	3.67	0.58	1373.33	1508.69
senorita, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/15/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
top smelt	6/21/2007	3	2	6.50	2.12	3.00	0.00	75.00	35.36
treefish, adult	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/15/2007	4	4	1.50	3.00	0.50	1.00	0.50	1.00
treefish, juvenile	6/21/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	8/15/2007	4	4	4.00	4.90	0.50	0.58	0.50	0.58
tubesnout	6/21/2007	3	1	8.00		3.00		85.00	
vermillion rockfish, juvenile	6/21/2007	3	3	9.33	1.15	2.00	0.00	3.33	1.15
vermillion rockfish, juvenile	8/15/2007	4	2	7.00	0.00	1.50	0.71	1.50	0.71

2007 ROVING DIVER FISH COUNT

Anacapa Island - Admiral's Reef

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	7/13/2007	5	3	6.33	0.58	1.33	0.58	1.33	0.58
black and yellow rockfish	8/8/2007	7	3	6.67	1.15	1.33	0.58	1.67	1.15
black surfperch, adult	7/13/2007	5	5	9.60	0.55	2.00	0.00	5.40	2.19
black surfperch, adult	8/8/2007	7	5	9.80	0.45	2.40	0.55	9.00	3.39
black surfperch, all	7/13/2007	5	5	9.60	0.55	2.00	0.00	5.40	2.19
black surfperch, all	8/8/2007	7	7	9.43	0.79	2.29	0.49	8.43	3.15
black surfperch, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	7/13/2007	5	5	10.00	0.00	4.00	0.00	313.40	187.40
blackeye goby	8/8/2007	7	7	10.00	0.00	3.71	0.49	193.14	108.09
blacksmith, adult	7/13/2007	5	5	10.00	0.00	4.00	0.00	914.00	152.91
blacksmith, adult	8/8/2007	7	5	9.00	1.00	4.00	0.00	211.40	98.22
blacksmith, all	7/13/2007	5	5	10.00	0.00	4.00	0.00	953.80	147.64
blacksmith, all	8/8/2007	7	7	8.86	1.21	4.00	0.00	242.43	89.23
blacksmith, juvenile	7/13/2007	5	5	8.40	1.34	3.00	0.00	39.80	16.27
blacksmith, juvenile	8/8/2007	7	5	6.00	3.39	2.00	1.22	18.60	26.82
blue rockfish, adult	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/8/2007	7	5	1.40	3.13	0.20	0.45	0.20	0.45
blue rockfish, all	7/13/2007	5	5	6.60	3.78	1.40	0.89	1.80	1.48
blue rockfish, all	8/8/2007	7	7	8.29	1.89	1.86	0.38	4.00	2.31
blue rockfish, juvenile	7/13/2007	5	5	6.60	3.78	1.40	0.89	1.80	1.48

Anacapa Island - Admiral's Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	8/8/2007	7	5	7.40	1.95	1.80	0.45	2.60	1.14
blue-banded goby	7/13/2007	5	5	5.60	3.21	1.20	0.84	1.40	1.14
blue-banded goby	8/8/2007	7	7	3.86	4.81	0.86	1.07	1.29	1.89
California scorpionfish	7/13/2007	5	1	7.00		1.00		1.00	
California sheephead,	7/13/2007	5	5	9.80	0.45	2.20	0.45	8.60	8.73
California sheephead,	8/8/2007	7	7	9.86	0.38	2.14	0.38	6.86	4.63
California sheephead,	7/13/2007	5	5	9.60	0.89	2.20	0.45	7.00	2.92
California sheephead,	8/8/2007	7	7	9.29	1.11	2.14	0.38	6.29	3.15
California sheephead, male	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/8/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	7/13/2007	5	1	5.00		1.00		1.00	
coralline sculpin	8/8/2007	7	1	8.00		1.00		1.00	
garibaldi, adult	7/13/2007	5	5	9.20	1.79	1.80	0.45	7.00	3.67
garibaldi, adult	8/8/2007	7	7	9.86	0.38	2.00	0.00	6.57	1.81
garibaldi, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/8/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	7/13/2007	5	3	7.33	0.58	1.00	0.00	1.00	0.00
gopher/copper rockfish,	7/13/2007	5	3	7.67	0.58	2.00	0.00	8.00	1.00
gopher/copper rockfish,	8/8/2007	7	5	8.00	2.12	2.00	0.71	5.40	3.65
halfmoon	7/13/2007	5	1	7.00		1.00		1.00	
halfmoon	8/8/2007	7	6	8.83	1.17	2.00	0.00	4.67	2.94
island kelpfish	7/13/2007	5	5	9.20	0.84	2.20	0.45	7.40	3.65

Anacapa Island - Admiral's Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	8/8/2007	7	7	9.86	0.38	2.57	0.53	10.86	6.31
kelp bass, adult	7/13/2007	5	5	2.00	4.47	0.40	0.89	0.40	0.89
kelp bass, adult	8/8/2007	7	5	7.80	4.38	1.40	0.89	2.20	1.64
kelp bass, calico bass, all	7/13/2007	5	5	2.00	4.47	0.40	0.89	0.40	0.89
kelp bass, calico bass, all	8/8/2007	7	7	7.29	3.68	1.43	0.79	2.00	1.41
kelp bass, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/13/2007	5	5	6.00	3.54	1.20	0.84	1.80	1.92
kelp rockfish, adult	8/8/2007	7	5	5.20	4.76	0.80	0.84	1.00	1.22
kelp rockfish, all	7/13/2007	5	5	6.00	3.54	1.20	0.84	1.80	1.92
kelp rockfish, all	8/8/2007	7	7	6.29	4.50	1.71	1.25	4.86	6.01
kelp rockfish, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/8/2007	7	5	6.00	5.48	1.40	1.52	4.80	6.14
northern anchovy	7/13/2007	5	2	10.00	0.00	4.00	0.00	5000.00	2828.43
ocean whitefish	7/13/2007	5	2	7.50	3.54	1.00	0.00	1.00	0.00
ocean whitefish	8/8/2007	7	1	6.00		1.00		1.00	
olive rockfish, adult	7/13/2007	5	5	1.60	3.58	0.20	0.45	0.20	0.45
olive rockfish, adult	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	7/13/2007	5	5	1.60	3.58	0.20	0.45	0.20	0.45
olive rockfish, all	8/8/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00

Anacapa Island - Admiral's Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
opaleye, adult	7/13/2007	5	5	10.00	0.00	1.80	0.45	3.40	1.82
opaleye, adult	8/8/2007	7	5	9.40	0.89	2.40	0.55	12.80	6.38
opaleye, all	7/13/2007	5	5	10.00	0.00	1.80	0.45	3.40	1.82
opaleye, all	8/8/2007	7	7	9.57	0.79	2.43	0.53	11.86	5.52
opaleye, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/13/2007	5	5	9.80	0.45	2.60	0.55	20.40	10.31
painted greenling	8/8/2007	7	7	9.71	0.49	3.00	0.00	29.71	15.11
pile surfperch, adult	7/13/2007	5	5	9.20	0.84	2.00	0.00	3.00	0.00
pile surfperch, adult	8/8/2007	7	5	8.60	1.34	2.00	0.00	3.40	1.67
pile surfperch, all	7/13/2007	5	5	9.20	0.84	2.00	0.00	3.00	0.00
pile surfperch, all	8/8/2007	7	7	8.57	1.13	2.00	0.00	4.29	2.21
pile surfperch, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/13/2007	5	5	7.80	4.38	1.20	0.84	1.80	1.64
rock wrasse, female	8/8/2007	7	7	8.14	1.77	1.86	0.38	3.14	1.35
rock wrasse, juvenile	7/13/2007	5	5	1.60	3.58	0.20	0.45	0.20	0.45
rock wrasse, juvenile	8/8/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/13/2007	5	5	7.20	4.15	1.20	0.84	1.60	1.52
rock wrasse, male	8/8/2007	7	7	7.14	3.58	1.29	0.76	1.71	1.38
rubberlip surfperch	7/13/2007	5	2	6.50	0.71	2.00	0.00	2.50	0.71
rubberlip surfperch	8/8/2007	7	3	7.00	2.65	1.33	0.58	1.33	0.58

Anacapa Island - Admiral's Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, adult	7/13/2007	5	5	10.00	0.00	3.00	0.00	39.40	18.06
senorita, adult	8/8/2007	7	5	10.00	0.00	3.00	0.00	73.40	15.14
senorita, all	7/13/2007	5	5	10.00	0.00	3.00	0.00	39.40	18.06
senorita, all	8/8/2007	7	7	10.00	0.00	3.00	0.00	69.43	14.59
senorita, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/8/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	7/13/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/8/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	7/13/2007	5	5	9.60	0.55	2.00	0.00	6.20	3.42
treefish, adult	8/8/2007	7	7	7.14	3.44	1.43	0.79	4.14	4.14
treefish, juvenile	7/13/2007	5	5	4.60	4.28	0.80	0.84	1.40	2.07
treefish, juvenile	8/8/2007	7	7	4.29	4.11	0.86	0.90	1.14	1.46
walleye surfperch	8/8/2007	7	1	9.00		2.00		3.00	
white surfperch	7/13/2007	5	1	7.00		1.00		1.00	
zebra goby	7/13/2007	5	5	7.20	0.84	1.60	0.55	1.60	0.55
zebra goby	8/8/2007	7	3	8.67	1.15	1.67	0.58	2.33	1.53

2007 ROVING DIVER FISH COUNT

Anacapa Island - Cathedral Cove

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black surfperch, adult	9/4/2007	4	4	9.50	0.58	2.50	0.58	9.25	5.06
black surfperch, all	9/4/2007	4	4	9.50	0.58	3.00	0.00	14.25	2.87
black surfperch, juvenile	9/4/2007	4	4	6.50	4.36	1.50	1.00	5.00	3.92
blackeye goby	9/4/2007	4	4	9.50	0.58	2.00	0.00	7.00	2.16
blacksmith, adult	9/4/2007	4	4	9.50	0.58	4.00	0.00	191.00	56.07
blacksmith, all	9/4/2007	4	4	9.50	0.58	4.00	0.00	191.00	56.07
blacksmith, juvenile	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/4/2007	4	4	1.50	3.00	0.50	1.00	0.50	1.00
bocaccio, juvenile	9/4/2007	4	3	8.00	1.00	3.00	0.00	18.00	7.00
California sheephead,	9/4/2007	4	4	9.25	1.50	1.75	0.50	5.50	3.11
California sheephead,	9/4/2007	4	4	2.50	5.00	0.25	0.50	0.25	0.50
California sheephead, male	9/4/2007	4	4	5.25	3.86	0.75	0.50	0.75	0.50
garibaldi, adult	9/4/2007	4	4	9.50	1.00	2.00	0.00	6.50	1.29
garibaldi, juvenile	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	9/4/2007	4	3	8.00	2.00	1.00	0.00	1.00	0.00
giant kelpfish, juvenile	9/4/2007	4	2	10.00	0.00	1.50	0.71	3.50	3.54
gopher/copper rockfish,	9/4/2007	4	2	10.00	0.00	2.50	0.71	38.50	44.55
halfmoon	9/4/2007	4	2	6.50	0.71	1.50	0.71	1.50	0.71

Anacapa Island - Cathedral Cove (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	9/4/2007	4	4	9.25	0.96	1.75	0.50	4.50	3.00
kelp bass, adult	9/4/2007	4	4	10.00	0.00	3.00	0.00	23.75	10.63
kelp bass, calico bass, all	9/4/2007	4	4	10.00	0.00	3.00	0.00	27.75	14.08
kelp bass, juvenile	9/4/2007	4	4	4.75	5.50	1.00	1.15	4.00	4.69
kelp rockfish, adult	9/4/2007	4	4	4.50	5.26	0.75	0.96	1.00	1.41
kelp rockfish, all	9/4/2007	4	4	8.75	1.50	3.00	0.82	55.25	57.86
kelp rockfish, juvenile	9/4/2007	4	4	6.50	4.51	2.50	1.73	54.25	58.87
kelp surfperch	9/4/2007	4	3	8.33	1.53	1.67	1.15	33.33	56.00
kelpfish spp.	9/4/2007	4	1	10.00		1.00		1.00	
lavender sculpin	9/4/2007	4	1	8.00		1.00		1.00	
olive rockfish, adult	9/4/2007	4	4	4.50	5.26	1.00	1.41	3.50	6.35
olive rockfish, all	9/4/2007	4	4	4.50	5.26	1.00	1.41	3.50	6.35
olive/yellowtail rockfish,	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/4/2007	4	4	10.00	0.00	2.25	0.50	8.50	5.07
opaleye, all	9/4/2007	4	4	10.00	0.00	2.25	0.50	8.50	5.07
opaleye, juvenile	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	9/4/2007	4	4	1.25	2.50	0.25	0.50	0.25	0.50
pile surfperch, adult	9/4/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
pile surfperch, all	9/4/2007	4	4	4.50	5.26	1.00	1.15	2.50	3.79
pile surfperch, juvenile	9/4/2007	4	4	4.50	5.26	1.00	1.15	2.25	3.30
rock wrasse, female	9/4/2007	4	4	9.25	1.50	2.00	0.00	4.75	1.89
rock wrasse, juvenile	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Anacapa Island - Cathedral Cove (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rock wrasse, male	9/4/2007	4	4	4.00	4.69	0.50	0.58	0.50	0.58
rubberlip surfperch	9/4/2007	4	1	9.00		1.00		1.00	
senorita, adult	9/4/2007	4	4	10.00	0.00	2.75	0.50	13.25	4.19
senorita, all	9/4/2007	4	4	10.00	0.00	3.00	0.00	34.50	20.40
senorita, juvenile	9/4/2007	4	4	6.25	4.35	2.25	1.50	21.25	17.54
striped surfperch, adult	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	9/4/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
treefish, juvenile	9/4/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

2007 ROVING DIVER FISH COUNT

Anacapa Island - Landing Cove

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	6/19/2007	3	2	8.50	0.71	1.00	0.00	1.00	0.00
black surfperch, adult	6/19/2007	3	3	10.00	0.00	2.67	0.58	17.00	10.54
black surfperch, all	6/19/2007	3	3	10.00	0.00	2.67	0.58	18.00	10.54
black surfperch, juvenile	6/19/2007	3	3	7.67	1.15	1.00	0.00	1.00	0.00
blackeye goby	6/19/2007	3	3	8.33	1.53	2.00	0.00	6.33	4.04
blacksmith, adult	6/19/2007	3	3	10.00	0.00	4.00	0.00	301.33	98.19
blacksmith, all	6/19/2007	3	3	10.00	0.00	4.00	0.00	301.33	98.19
blacksmith, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/19/2007	3	3	9.33	0.58	2.33	0.58	10.00	7.00
cabezon	6/19/2007	3	1	10.00		1.00		1.00	
California moray	6/19/2007	3	1	6.00		1.00		1.00	
California scorpionfish	6/19/2007	3	1	7.00		1.00		1.00	
California sheephead,	6/19/2007	3	3	9.33	1.15	2.00	0.00	5.67	1.53
California sheephead,	6/19/2007	3	3	9.67	0.58	2.00	0.00	2.33	0.58
California sheephead, male	6/19/2007	3	3	5.00	4.58	0.67	0.58	0.67	0.58
garibaldi, adult	6/19/2007	3	3	10.00	0.00	3.00	0.00	13.33	1.53
garibaldi, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	6/19/2007	3	3	9.00	1.00	2.33	0.58	10.67	2.89

Anacapa Island - Landing Cove (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, adult	6/19/2007	3	3	10.00	0.00	3.00	0.00	12.33	1.53
kelp bass, calico bass, all	6/19/2007	3	3	10.00	0.00	3.00	0.00	12.33	1.53
kelp bass, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/19/2007	3	3	5.33	4.73	1.33	1.15	2.00	2.00
kelp rockfish, all	6/19/2007	3	3	5.33	4.73	1.33	1.15	2.00	2.00
kelp rockfish, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	6/19/2007	3	2	8.00	2.83	2.00	0.00	4.50	3.54
lavender sculpin	6/19/2007	3	1	9.00		1.00		1.00	
olive rockfish, adult	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/19/2007	3	3	10.00	0.00	2.67	0.58	13.67	8.02
opaleye, all	6/19/2007	3	3	10.00	0.00	2.67	0.58	13.67	8.02
opaleye, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/19/2007	3	3	9.00	1.00	2.00	0.00	5.33	1.15
pile surfperch, adult	6/19/2007	3	3	3.67	3.21	0.67	0.58	0.67	0.58
pile surfperch, all	6/19/2007	3	3	3.67	3.21	0.67	0.58	0.67	0.58
pile surfperch, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/19/2007	3	3	10.00	0.00	2.00	0.00	5.00	1.00
rock wrasse, juvenile	6/19/2007	3	2	9.50	0.71	2.00	0.00	3.50	0.71
rock wrasse, male	6/19/2007	3	3	9.67	0.58	2.00	0.00	2.33	0.58
senorita, adult	6/19/2007	3	3	10.00	0.00	3.67	0.58	168.00	58.92

Anacapa Island - Landing Cove (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, all	6/19/2007	3	3	10.00	0.00	3.67	0.58	168.00	58.92
senorita, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	6/19/2007	3	3	6.67	5.77	1.00	1.00	1.00	1.00
striped surfperch, all	6/19/2007	3	3	6.67	5.77	1.00	1.00	1.00	1.00
striped surfperch, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/19/2007	3	3	8.33	2.08	2.00	0.00	5.33	2.52
treefish, juvenile	6/19/2007	3	3	3.33	5.77	0.33	0.58	0.33	0.58
zebra goby	6/19/2007	3	1	6.00		2.00		3.00	

2007 ROVING DIVER FISH COUNT

Santa Barbara Island - SE Sea Lion Rookery

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	5/23/2007	4	1	10.00		2.00		5.00	
black surfperch, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	5/23/2007	4	4	10.00	0.00	3.00	0.00	47.00	10.13
blacksmith, adult	5/23/2007	4	4	6.75	4.72	1.25	1.26	4.25	7.18
blacksmith, all	5/23/2007	4	4	6.75	4.72	1.25	1.26	4.25	7.18
blacksmith, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California scorpionfish	5/23/2007	4	1	10.00		1.00		1.00	
California sheephead,	5/23/2007	4	4	1.25	2.50	0.25	0.50	0.25	0.50
California sheephead,	5/23/2007	4	4	4.25	5.06	0.75	0.96	1.00	1.41
California sheephead, male	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	5/23/2007	4	1	10.00		1.00		1.00	
garibaldi, adult	5/23/2007	4	4	9.00	1.15	2.00	0.00	3.25	0.50
garibaldi, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	5/23/2007	4	4	2.50	5.00	0.25	0.50	0.25	0.50
kelp bass, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Santa Barbara Island - SE Sea Lion Rookery (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, calico bass, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	5/23/2007	4	1	7.00		2.00		2.00	
olive rockfish, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	5/23/2007	4	4	9.50	0.58	2.00	0.00	4.00	0.82
pile surfperch, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Santa Barbara Island - SE Sea Lion Rookery (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
striped surfperch, all	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	5/23/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
vermillion rockfish, juvenile	5/23/2007	4	3	8.67	2.31	2.00	0.00	3.67	2.89

2007 ROVING DIVER FISH COUNT

Santa Barbara Island - Arch Point

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	5/22/2007	4	2	9.50	0.71	1.50	0.71	1.50	0.71
black surfperch, adult	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	5/22/2007	4	4	8.75	1.50	2.25	0.50	18.25	22.56
blacksmith, adult	5/22/2007	4	4	10.00	0.00	3.75	0.50	112.00	34.01
blacksmith, all	5/22/2007	4	4	10.00	0.00	3.75	0.50	112.00	34.01
blacksmith, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	5/22/2007	4	2	8.00	1.41	1.00	0.00	1.00	0.00
California moray	5/22/2007	4	2	7.50	0.71	1.00	0.00	1.00	0.00
California sheephead,	5/22/2007	4	4	9.50	1.00	2.00	0.00	4.75	0.96
California sheephead,	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	5/22/2007	4	1	6.00		1.00		1.00	
garibaldi, adult	5/22/2007	4	4	10.00	0.00	3.00	0.00	40.75	7.41
garibaldi, juvenile	5/22/2007	4	4	3.25	3.95	0.50	0.58	0.50	0.58
grass rockfish	5/22/2007	4	3	9.33	0.58	1.67	0.58	2.00	1.00

Santa Barbara Island - Arch Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
halfmoon	5/22/2007	4	3	9.67	0.58	2.33	0.58	9.00	7.81
island kelpfish	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	5/22/2007	4	4	4.50	5.20	0.75	0.96	0.75	0.96
kelp bass, calico bass, all	5/22/2007	4	4	4.50	5.20	0.75	0.96	0.75	0.96
kelp bass, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	5/22/2007	4	4	6.50	4.51	1.25	0.96	3.00	3.56
opaleye, all	5/22/2007	4	4	6.50	4.51	1.25	0.96	3.00	3.56
opaleye, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	5/22/2007	4	4	8.50	1.29	1.75	0.50	2.75	1.50
pile surfperch, adult	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	5/22/2007	4	4	2.50	5.00	0.50	1.00	2.25	4.50
senorita, all	5/22/2007	4	4	2.50	5.00	0.50	1.00	2.25	4.50

Santa Barbara Island - Arch Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	5/22/2007	4	1	10.00		2.00		2.00	
striped surfperch, adult	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	5/22/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

2007 ROVING DIVER FISH COUNT

Santa Barbara Island - Cat Canyon

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	5/25/2007	5	1	8.00		1.00		1.00	
black surfperch, adult	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	5/25/2007	5	5	10.00	0.00	3.00	0.00	36.80	8.96
blacksmith, adult	5/25/2007	5	5	9.40	1.34	3.20	0.45	69.00	24.54
blacksmith, all	5/25/2007	5	5	9.40	1.34	3.20	0.45	69.00	24.54
blacksmith, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	5/25/2007	5	5	1.40	3.13	0.20	0.45	0.20	0.45
blue rockfish, juvenile	5/25/2007	5	5	1.40	3.13	0.20	0.45	0.20	0.45
blue-banded goby	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California moray	5/25/2007	5	1	9.00		1.00		1.00	
California sheephead,	5/25/2007	5	5	5.00	4.80	0.80	0.84	0.80	0.84
California sheephead,	5/25/2007	5	5	6.20	3.77	1.00	0.71	1.00	0.71
California sheephead, male	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	5/25/2007	5	2	8.50	0.71	1.50	0.71	1.50	0.71
garibaldi, adult	5/25/2007	5	5	9.40	0.89	2.20	0.45	7.60	2.88
garibaldi, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
grass rockfish	5/25/2007	5	2	7.50	0.71	1.00	0.00	1.00	0.00
halfmoon	5/25/2007	5	4	8.75	1.50	2.00	0.82	8.75	12.23

Santa Barbara Island - Cat Canyon (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	5/25/2007	5	5	8.00	1.41	1.60	0.55	2.00	1.00
kelp bass, adult	5/25/2007	5	5	5.00	4.64	0.60	0.55	0.60	0.55
kelp bass, calico bass, all	5/25/2007	5	5	5.00	4.64	0.60	0.55	0.60	0.55
kelp bass, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	5/25/2007	5	5	8.60	1.52	2.00	0.00	4.00	1.73
opaleye, all	5/25/2007	5	5	8.60	1.52	2.00	0.00	4.00	1.73
opaleye, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	5/25/2007	5	5	8.40	0.55	1.80	0.45	2.00	0.71
pile surfperch, adult	5/25/2007	5	5	3.60	4.93	0.40	0.55	0.40	0.55
pile surfperch, all	5/25/2007	5	5	3.60	4.93	0.40	0.55	0.40	0.55
pile surfperch, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Barbara Island - Cat Canyon (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
snubnose sculpin	5/25/2007	5	3	8.33	1.53	1.00	0.00	1.00	0.00
striped surfperch, adult	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	5/25/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
yellowfin fringehead	5/25/2007	5	1	6.00		2.00		2.00	

2007 ROVING DIVER FISH COUNT

Santa Rosa Island - Cluster Point

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black rockfish	8/23/2007	2	2	10.00	0.00	2.00	0.00	3.50	0.71
black surfperch, adult	8/23/2007	2	2	10.00	0.00	2.00	0.00	4.00	1.41
black surfperch, all	8/23/2007	2	2	10.00	0.00	2.00	0.00	4.50	2.12
black surfperch, juvenile	8/23/2007	2	2	4.50	6.36	0.50	0.71	0.50	0.71
blackeye goby	8/23/2007	2	2	5.00	7.07	1.00	1.41	4.00	5.66
blacksmith, adult	8/23/2007	2	2	8.00	2.83	2.00	0.00	8.00	0.00
blacksmith, all	8/23/2007	2	2	8.00	2.83	2.00	0.00	8.00	0.00
blacksmith, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/23/2007	2	2	9.00	0.00	3.00	0.00	21.50	10.61
blue rockfish, all	8/23/2007	2	2	9.00	0.00	3.00	0.00	21.50	10.61
blue rockfish, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead,	8/23/2007	2	2	8.00	0.00	2.00	0.00	3.50	0.71
California sheephead,	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/23/2007	2	2	8.50	2.12	2.00	0.00	4.00	2.83
garibaldi, adult	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish,	8/23/2007	2	1	6.00		1.00		1.00	
island kelpfish	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00

Santa Rosa Island - Cluster Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/23/2007	2	2	9.00	0.00	2.00	0.00	8.00	0.00
kelp rockfish, all	8/23/2007	2	2	9.00	0.00	2.00	0.00	8.00	0.00
kelp rockfish, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	8/23/2007	2	2	8.00	0.00	2.00	0.00	2.00	0.00
kelpfish spp.	8/23/2007	2	1	5.00		1.00		1.00	
olive rockfish, adult	8/23/2007	2	2	8.50	2.12	2.00	0.00	2.50	0.71
olive rockfish, all	8/23/2007	2	2	8.50	2.12	2.00	0.00	2.50	0.71
olive/yellowtail rockfish,	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/23/2007	2	2	3.50	4.95	0.50	0.71	0.50	0.71
opaleye, all	8/23/2007	2	2	3.50	4.95	0.50	0.71	0.50	0.71
opaleye, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/23/2007	2	2	9.00	0.00	2.00	0.00	6.50	2.12
pile surfperch, adult	8/23/2007	2	2	9.50	0.71	2.00	0.00	2.50	0.71
pile surfperch, all	8/23/2007	2	2	9.50	0.71	2.00	0.00	2.50	0.71
pile surfperch, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	8/23/2007	2	1	6.00		1.00		1.00	
senorita, adult	8/23/2007	2	2	9.00	0.00	3.00	0.00	23.00	1.41
senorita, all	8/23/2007	2	2	9.00	0.00	3.00	0.00	23.00	1.41

Santa Rosa Island - Cluster Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/23/2007	2	2	7.50	0.71	2.00	0.00	4.00	1.41
striped surfperch, all	8/23/2007	2	2	7.50	0.71	2.00	0.00	4.00	1.41
striped surfperch, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	8/23/2007	2	2	0.00	0.00	0.00	0.00	0.00	0.00
vermillion rockfish	8/23/2007	2	2	9.50	0.71	2.00	0.00	2.50	0.71

2007 ROVING DIVER FISH COUNT

Santa Rosa Island - Trancion Canyon

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	8/21/2007	4	4	8.75	1.50	1.75	0.50	3.25	2.22
black rockfish	8/21/2007	4	4	8.00	1.83	2.00	0.82	5.50	5.26
black surfperch, adult	8/21/2007	4	4	9.50	0.58	2.25	0.50	10.00	5.72
black surfperch, all	8/21/2007	4	4	9.50	0.58	2.25	0.50	10.25	6.13
black surfperch, juvenile	8/21/2007	4	4	2.25	4.50	0.25	0.50	0.25	0.50
blackeye goby	8/21/2007	4	4	9.50	1.00	2.25	0.50	7.00	7.39
blacksmith, adult	8/21/2007	4	4	8.50	1.73	2.75	0.50	31.25	31.98
blacksmith, all	8/21/2007	4	4	8.50	1.73	2.75	0.50	31.25	31.98
blacksmith, juvenile	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/21/2007	4	4	10.00	0.00	3.00	0.00	38.75	12.42
blue rockfish, all	8/21/2007	4	4	10.00	0.00	3.00	0.00	39.75	12.61
blue rockfish, juvenile	8/21/2007	4	4	6.25	4.35	1.00	0.82	1.00	0.82
blue-banded goby	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	8/21/2007	4	1	10.00		1.00		1.00	
California sheephead,	8/21/2007	4	4	9.50	0.58	2.00	0.00	4.50	2.08
California sheephead,	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/21/2007	4	4	7.50	5.00	1.50	1.00	1.75	1.26
coralline sculpin	8/21/2007	4	2	6.00	1.41	1.00	0.00	1.00	0.00
garibaldi, adult	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish, juvenile	8/21/2007	4	1	8.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Rosa Island - Trancion Canyon (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
gopher/copper rockfish,	8/21/2007	4	4	9.25	0.96	1.75	0.50	2.25	1.26
island kelpfish	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	8/21/2007	4	4	2.50	5.00	0.25	0.50	0.25	0.50
kelp bass, calico bass, all	8/21/2007	4	4	2.50	5.00	0.25	0.50	0.25	0.50
kelp bass, juvenile	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/21/2007	4	4	10.00	0.00	3.00	0.00	17.50	4.80
kelp rockfish, all	8/21/2007	4	4	10.00	0.00	3.00	0.00	18.25	3.77
kelp rockfish, juvenile	8/21/2007	4	4	2.00	4.00	0.50	1.00	0.75	1.50
kelp surfperch	8/21/2007	4	3	9.00	1.73	2.00	0.00	4.67	2.89
kelpfish spp.	8/21/2007	4	1	8.00		1.00		1.00	
olive rockfish, adult	8/21/2007	4	4	9.75	0.50	2.00	0.00	5.75	0.96
olive rockfish, all	8/21/2007	4	4	9.75	0.50	2.00	0.00	5.75	0.96
olive/yellowtail rockfish,	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/21/2007	4	4	9.75	0.50	2.25	0.50	10.50	3.79
pile surfperch, adult	8/21/2007	4	4	8.00	1.63	1.50	0.58	3.25	3.30
pile surfperch, all	8/21/2007	4	4	8.25	1.71	1.75	0.50	3.75	3.59
pile surfperch, juvenile	8/21/2007	4	4	4.25	4.92	0.50	0.58	0.50	0.58
rock wrasse, female	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Santa Rosa Island - Trancion Canyon (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rock wrasse, male	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	8/21/2007	4	1	10.00		2.00		6.00	
senorita, adult	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/21/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/21/2007	4	4	9.75	0.50	2.75	0.50	16.50	6.61
striped surfperch, all	8/21/2007	4	4	9.75	0.50	3.00	0.00	18.00	4.24
striped surfperch, juvenile	8/21/2007	4	4	4.50	5.20	0.75	0.96	1.50	2.38
swell shark	8/21/2007	4	1	5.00		1.00		1.00	
top smelt	8/21/2007	4	1	10.00		3.00		70.00	
treefish, adult	8/21/2007	4	4	4.75	5.50	0.50	0.58	0.50	0.58
treefish, juvenile	8/21/2007	4	4	3.50	4.12	0.50	0.58	0.50	0.58
tubesnout	8/21/2007	4	1	7.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Rosa Island – Chickasaw

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	8/22/2007	3	3	8.67	2.31	2.00	0.00	4.33	1.53
black surfperch, adult	8/22/2007	3	3	9.67	0.58	2.00	0.00	6.67	0.58
black surfperch, all	8/22/2007	3	3	9.67	0.58	2.00	0.00	7.33	1.53
black surfperch, juvenile	8/22/2007	3	3	2.67	4.62	0.67	1.15	0.67	1.15
blackeye goby	8/22/2007	3	3	10.00	0.00	2.00	0.00	7.33	2.52
blacksmith, adult	8/22/2007	3	3	5.00	5.00	1.33	1.15	4.00	5.29
blacksmith, all	8/22/2007	3	3	5.00	5.00	1.33	1.15	4.00	5.29
blacksmith, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/22/2007	3	3	10.00	0.00	3.00	0.00	21.33	4.16
blue rockfish, all	8/22/2007	3	3	10.00	0.00	3.00	0.00	23.33	3.21
blue rockfish, juvenile	8/22/2007	3	3	9.67	0.58	1.67	0.58	2.00	1.00
blue-banded goby	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	8/22/2007	3	3	9.00	1.73	1.33	0.58	1.33	0.58
California sheephead,	8/22/2007	3	3	8.00	1.00	1.67	0.58	2.00	1.00
California sheephead,	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/22/2007	3	3	10.00	0.00	1.67	0.58	2.00	1.00
coralline sculpin	8/22/2007	3	1	7.00		1.00		1.00	
crevice kelpfish	8/22/2007	3	1	9.00		1.00		1.00	
garibaldi, adult	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	8/22/2007	3	1	10.00		1.00		1.00	

Santa Rosa Island – Chickasaw (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
gopher rockfish, juvenile	8/22/2007	3	1	9.00		1.00		1.00	
gopher/copper rockfish,	8/22/2007	3	3	9.00	1.00	2.00	0.00	3.00	1.00
island kelpfish	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp greenling	8/22/2007	3	1	9.00		1.00		1.00	
kelp rockfish, adult	8/22/2007	3	3	9.33	1.15	3.00	0.00	14.33	3.51
kelp rockfish, all	8/22/2007	3	3	9.67	0.58	3.00	0.00	23.00	8.19
kelp rockfish, juvenile	8/22/2007	3	3	9.33	0.58	2.67	0.58	8.67	4.93
kelp surfperch	8/22/2007	3	2	9.00	1.41	2.00	0.00	5.50	4.95
kelpfish spp.	8/22/2007	3	1	9.00		1.00		1.00	
lingcod	8/22/2007	3	3	6.00	1.00	1.00	0.00	1.00	0.00
olive rockfish, adult	8/22/2007	3	3	9.33	0.58	2.33	0.58	10.33	3.51
olive rockfish, all	8/22/2007	3	3	9.33	0.58	2.33	0.58	10.67	3.06
olive/yellowtail rockfish,	8/22/2007	3	3	1.67	2.89	0.33	0.58	0.33	0.58
opaleye, adult	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/22/2007	3	3	10.00	0.00	2.67	0.58	11.00	2.65
pile surfperch, adult	8/22/2007	3	3	7.33	2.31	1.33	0.58	2.33	2.31
pile surfperch, all	8/22/2007	3	3	7.33	2.31	1.33	0.58	2.33	2.31

Santa Rosa Island – Chickasaw (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
pile surfperch, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rainbow surfperch	8/22/2007	3	1	8.00		1.00		1.00	
rock wrasse, female	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	8/22/2007	3	1	6.00		2.00		2.00	
senorita, adult	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/22/2007	3	3	9.33	1.15	2.00	0.00	7.00	1.73
striped surfperch, all	8/22/2007	3	3	9.33	1.15	2.33	0.58	9.00	2.65
striped surfperch, juvenile	8/22/2007	3	3	5.67	5.13	1.33	1.15	2.00	2.00
top smelt	8/22/2007	3	2	10.00	0.00	3.00	0.00	92.50	10.61
treefish, adult	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	8/22/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	8/22/2007	3	2	7.00	0.00	2.50	0.71	9.00	4.24
two spotted kelpfish	8/22/2007	3	1	9.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Rosa Island - South Point

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	7/26/2007	6	1	9.00		1.00		1.00	
black and yellow rockfish	7/26/2007	6	6	8.00	1.79	2.00	0.00	5.50	3.62
black surfperch, adult	7/26/2007	6	6	9.67	0.52	2.83	0.41	13.33	2.94
black surfperch, all	7/26/2007	6	6	9.67	0.52	2.83	0.41	15.00	3.41
black surfperch, juvenile	7/26/2007	6	6	4.50	4.97	1.00	1.10	1.67	2.07
blackeye goby	7/26/2007	6	6	9.00	1.10	2.33	0.82	15.67	13.17
blacksmith, adult	7/26/2007	6	6	9.00	1.26	2.83	0.41	28.33	11.02
blacksmith, all	7/26/2007	6	6	9.00	1.26	2.83	0.41	28.33	11.02
blacksmith, juvenile	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/26/2007	6	6	9.00	0.63	2.00	0.00	8.33	0.82
blue rockfish, all	7/26/2007	6	6	9.00	0.63	2.00	0.00	8.83	0.75
blue rockfish, juvenile	7/26/2007	6	6	3.67	4.23	0.50	0.55	0.50	0.55
blue-banded goby	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	7/26/2007	6	1	5.00		1.00		1.00	
California sheephead,	7/26/2007	6	6	8.67	1.03	2.00	0.00	5.00	2.45
California sheephead,	7/26/2007	6	6	3.17	3.49	0.50	0.55	0.50	0.55
California sheephead, male	7/26/2007	6	6	8.17	0.98	1.33	0.52	1.83	1.33
coralline sculpin	7/26/2007	6	3	8.33	2.08	1.33	0.58	1.00	0.00
crevice kelpfish	7/26/2007	6	3	6.33	2.31	1.00	0.00	1.00	0.00
garibaldi, adult	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00

Santa Rosa Island - South Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
giant kelpfish, juvenile	7/26/2007	6	5	8.80	0.45	2.60	0.55	13.00	5.83
gopher rockfish	7/26/2007	6	1	7.00		2.00		3.00	
gopher/copper rockfish,	7/26/2007	6	5	7.60	1.67	1.60	0.55	4.20	3.56
island kelpfish	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/26/2007	6	6	8.83	1.33	1.83	0.41	2.33	1.03
kelp bass, calico bass, all	7/26/2007	6	6	8.83	1.33	1.83	0.41	2.33	1.03
kelp bass, juvenile	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/26/2007	6	6	9.50	0.55	3.00	0.00	29.83	9.24
kelp rockfish, all	7/26/2007	6	6	9.50	0.55	3.00	0.00	30.83	10.30
kelp rockfish, juvenile	7/26/2007	6	6	3.00	4.69	0.50	0.84	1.00	2.00
kelp surfperch	7/26/2007	6	3	8.33	2.08	1.33	0.58	1.33	0.58
lavender sculpin	7/26/2007	6	2	7.50	3.54	1.00	0.00	1.00	0.00
olive rockfish, adult	7/26/2007	6	6	9.83	0.41	2.17	0.41	8.50	2.59
olive rockfish, all	7/26/2007	6	6	9.83	0.41	2.17	0.41	8.67	2.66
olive/yellowtail rockfish,	7/26/2007	6	6	0.83	2.04	0.17	0.41	0.17	0.41
opaleye, adult	7/26/2007	6	6	6.17	4.83	0.83	0.75	1.00	1.10
opaleye, all	7/26/2007	6	6	6.17	4.83	0.83	0.75	1.00	1.10
opaleye, juvenile	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/26/2007	6	6	9.83	0.41	2.67	0.52	15.50	6.83
pile surfperch, adult	7/26/2007	6	6	7.00	3.46	1.50	0.84	1.83	1.17
pile surfperch, all	7/26/2007	6	6	7.00	3.46	1.50	0.84	1.83	1.17
pile surfperch, juvenile	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00

Santa Rosa Island - South Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rainbow surfperch	7/26/2007	6	4	8.00	0.00	1.25	0.50	1.25	0.50
rock wrasse, female	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	7/26/2007	6	3	8.33	1.15	1.33	0.58	1.33	0.58
senorita, adult	7/26/2007	6	6	9.67	0.52	3.00	0.00	29.50	15.19
senorita, all	7/26/2007	6	6	9.67	0.52	3.00	0.00	29.50	15.19
senorita, juvenile	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	7/26/2007	6	1	9.00		2.00		2.00	
speckled sanddab	7/26/2007	6	1	5.00		2.00		2.00	
striped surfperch, adult	7/26/2007	6	6	9.17	0.75	2.00	0.00	5.33	2.58
striped surfperch, all	7/26/2007	6	6	9.17	0.75	2.00	0.00	7.50	2.51
striped surfperch, juvenile	7/26/2007	6	6	5.00	4.00	1.33	1.03	2.17	1.83
top smelt	7/26/2007	6	1	10.00		3.00		50.00	
treefish, adult	7/26/2007	6	6	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	7/26/2007	6	6	3.33	3.72	1.00	1.10	1.00	1.10
tubesnout	7/26/2007	6	3	9.00	1.73	3.00	0.00	25.67	8.96

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Devil's Peak Member

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black surfperch, adult	8/24/2007	5	5	10.00	0.00	2.40	0.55	10.20	1.92
black surfperch, adult	9/10/2007	5	4	10.00	0.00	2.75	0.50	14.25	6.60
black surfperch, all	8/24/2007	5	5	10.00	0.00	2.40	0.55	10.40	2.30
black surfperch, all	9/10/2007	5	5	10.00	0.00	2.60	0.55	14.50	7.05
black surfperch, juvenile	8/24/2007	5	5	2.00	4.47	0.20	0.45	0.20	0.45
black surfperch, juvenile	9/10/2007	5	4	2.00	4.00	0.25	0.50	0.25	0.50
blackeye goby	8/24/2007	5	5	10.00	0.00	3.40	0.55	99.20	39.09
blackeye goby	9/10/2007	5	5	10.00	0.00	3.60	0.55	147.25	67.22
blacksmith, adult	8/24/2007	5	5	9.40	0.89	3.40	0.89	116.00	94.17
blacksmith, adult	9/10/2007	5	4	10.00	0.00	4.00	0.00	262.25	120.48
blacksmith, all	8/24/2007	5	5	9.40	0.89	3.60	0.55	127.80	84.43
blacksmith, all	9/10/2007	5	5	10.00	0.00	4.00	0.00	263.00	121.70
blacksmith, juvenile	8/24/2007	5	5	5.20	4.87	1.60	1.52	11.80	13.31
blacksmith, juvenile	9/10/2007	5	4	1.25	2.50	0.50	1.00	0.75	1.50
blue rockfish, adult	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/10/2007	5	4	2.50	5.00	0.50	1.00	0.50	1.00
blue rockfish, all	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/10/2007	5	5	3.20	4.60	0.80	1.10	0.50	1.00
blue rockfish, juvenile	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/24/2007	5	5	8.00	1.00	2.40	0.55	11.80	5.81

Santa Cruz Island - Devil's Peak Member (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue-banded goby	9/10/2007	5	5	7.40	4.22	1.80	1.30	11.25	8.66
California moray	8/24/2007	5	1	5.00		1.00		1.00	
California sheephead,	8/24/2007	5	5	8.80	2.17	1.80	0.45	2.20	0.84
California sheephead,	9/10/2007	5	5	8.60	1.14	2.00	0.00	3.00	0.82
California sheephead,	8/24/2007	5	5	5.40	3.58	1.20	0.84	1.20	0.84
California sheephead,	9/10/2007	5	5	3.20	4.60	0.60	0.89	0.75	0.96
California sheephead, male	8/24/2007	5	5	3.00	4.47	0.40	0.55	0.40	0.55
California sheephead, male	9/10/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
copper rockfish	9/10/2007	5	2	8.00	0.00	1.00	0.00	1.00	0.00
coralline sculpin	9/10/2007	5	1	8.00		1.00		1.00	
garibaldi, adult	8/24/2007	5	5	10.00	0.00	3.00	0.00	19.00	2.55
garibaldi, adult	9/10/2007	5	5	10.00	0.00	2.80	0.45	14.50	4.65
garibaldi, juvenile	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/10/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	8/24/2007	5	4	7.50	1.00	1.50	0.58	2.00	1.15
gopher rockfish	9/10/2007	5	4	7.75	1.89	2.00	0.00	3.00	1.41
gopher/copper rockfish,	9/10/2007	5	1	6.00		1.00		1.00	
halfmoon	8/24/2007	5	5	8.20	2.49	1.60	0.55	3.40	2.30
halfmoon	9/10/2007	5	5	9.00	0.71	1.80	0.45	2.25	0.50
island kelpfish	8/24/2007	5	5	9.80	0.45	3.00	0.00	23.20	10.94
island kelpfish	9/10/2007	5	5	9.60	0.89	2.80	0.45	24.75	7.63
kelp bass, adult	8/24/2007	5	5	10.00	0.00	3.00	0.00	19.20	4.87

Santa Cruz Island - Devil's Peak Member (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, adult	9/10/2007	5	4	10.00	0.00	2.75	0.50	11.50	1.91
kelp bass, calico bass, all	8/24/2007	5	5	10.00	0.00	3.00	0.00	19.40	5.13
kelp bass, calico bass, all	9/10/2007	5	5	10.00	0.00	2.80	0.45	11.50	1.91
kelp bass, juvenile	8/24/2007	5	5	1.60	3.58	0.20	0.45	0.20	0.45
kelp bass, juvenile	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/24/2007	5	5	7.60	1.52	2.00	0.00	4.20	2.39
kelp rockfish, adult	9/10/2007	5	4	9.50	0.58	2.00	0.00	4.00	1.41
kelp rockfish, all	8/24/2007	5	5	7.60	1.52	2.00	0.00	4.20	2.39
kelp rockfish, all	9/10/2007	5	5	8.60	2.07	1.80	0.45	4.00	1.41
kelp rockfish, juvenile	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	8/24/2007	5	5	3.80	5.22	0.40	0.55	0.40	0.55
olive rockfish, adult	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/24/2007	5	5	3.80	5.22	0.40	0.55	0.40	0.55
olive rockfish, all	9/10/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/24/2007	5	5	8.40	2.19	1.60	0.55	2.60	1.82
opaleye, adult	9/10/2007	5	4	7.25	1.71	1.75	0.50	2.00	0.82
opaleye, all	8/24/2007	5	5	8.40	2.19	1.60	0.55	2.60	1.82
opaleye, all	9/10/2007	5	5	5.80	3.56	1.40	0.89	2.00	0.82
opaleye, juvenile	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Devil's Peak Member (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
opaleye, juvenile	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/24/2007	5	5	10.00	0.00	2.80	0.45	15.00	4.30
painted greenling	9/10/2007	5	5	10.00	0.00	2.80	0.45	12.75	0.96
pile surfperch, adult	8/24/2007	5	5	9.20	0.84	2.00	0.00	3.20	0.45
pile surfperch, adult	9/10/2007	5	4	9.00	1.41	2.00	0.00	4.25	2.06
pile surfperch, all	8/24/2007	5	5	9.60	0.55	2.00	0.00	3.40	0.55
pile surfperch, all	9/10/2007	5	5	9.00	1.22	2.00	0.00	4.25	2.06
pile surfperch, juvenile	8/24/2007	5	5	2.00	4.47	0.20	0.45	0.20	0.45
pile surfperch, juvenile	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/24/2007	5	5	9.40	0.55	2.00	0.00	6.80	1.92
rock wrasse, female	9/10/2007	5	5	9.60	0.89	2.00	0.00	5.75	2.22
rock wrasse, juvenile	8/24/2007	5	5	2.00	4.47	0.40	0.89	1.00	2.24
rock wrasse, juvenile	9/10/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/24/2007	5	5	8.20	1.64	2.00	0.00	4.00	2.12
rock wrasse, male	9/10/2007	5	5	7.00	4.00	1.40	0.89	2.00	0.82
rubberlip surfperch	9/10/2007	5	1	8.00		1.00		1.00	
senorita, adult	8/24/2007	5	5	10.00	0.00	3.20	0.45	81.00	57.08
senorita, adult	9/10/2007	5	4	10.00	0.00	3.25	0.50	72.25	37.05
senorita, all	8/24/2007	5	5	10.00	0.00	3.20	0.45	81.00	57.08
senorita, all	9/10/2007	5	5	10.00	0.00	3.40	0.55	73.25	38.54
senorita, juvenile	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/10/2007	5	4	2.00	4.00	0.50	1.00	1.00	2.00

Santa Cruz Island - Devil's Peak Member (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
snubnose sculpin	9/10/2007	5	1	10.00		1.00		1.00	
striped surfperch, adult	8/24/2007	5	5	4.00	5.48	0.60	0.89	0.60	0.89
striped surfperch, adult	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/24/2007	5	5	4.00	5.48	0.60	0.89	0.60	0.89
striped surfperch, all	9/10/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/24/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/10/2007	5	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/24/2007	5	5	6.80	4.32	1.40	0.89	2.00	1.58
treefish, adult	9/10/2007	5	5	6.20	3.70	1.40	0.89	2.50	1.29
treefish, juvenile	8/24/2007	5	5	3.40	4.77	0.60	0.89	0.80	1.30
treefish, juvenile	9/10/2007	5	5	5.20	4.87	1.20	1.10	1.75	1.26
zebra goby	8/24/2007	5	1	7.00		2.00		4.00	

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Potato Pasture

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	9/18/2007	5	1	10.00		1.00		1.00	
black and yellow rockfish	9/18/2007	5	5	6.80	1.10	1.20	0.45	1.20	0.45
black and yellow rockfish	9/28/2007	5	2	5.00	0.00	1.00	0.00	1.00	0.00
black surfperch, adult	9/18/2007	5	5	9.20	0.84	2.20	0.45	5.80	3.70
black surfperch, adult	9/28/2007	5	5	9.80	0.45	2.00	0.00	6.00	2.55
black surfperch, all	9/18/2007	5	5	9.20	0.84	2.20	0.45	5.80	3.70
black surfperch, all	9/28/2007	5	5	9.80	0.45	2.00	0.00	6.00	2.55
black surfperch, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	9/18/2007	5	5	10.00	0.00	4.00	0.00	128.80	15.25
blackeye goby	9/28/2007	5	5	10.00	0.00	4.00	0.00	265.00	171.68
blacksmith, adult	9/18/2007	5	5	10.00	0.00	4.00	0.00	268.40	79.89
blacksmith, adult	9/28/2007	5	5	10.00	0.00	4.00	0.00	333.60	136.87
blacksmith, all	9/18/2007	5	5	10.00	0.00	4.00	0.00	274.80	78.77
blacksmith, all	9/28/2007	5	5	10.00	0.00	4.00	0.00	352.20	126.65
blacksmith, juvenile	9/18/2007	5	5	5.00	4.80	1.40	1.34	6.40	6.02
blacksmith, juvenile	9/28/2007	5	5	7.00	4.00	2.40	1.34	18.60	12.64
blue rockfish, adult	9/18/2007	5	5	5.20	5.02	1.00	1.00	1.20	1.30
blue rockfish, adult	9/28/2007	5	5	7.40	4.16	1.20	0.84	1.20	0.84
blue rockfish, all	9/18/2007	5	5	5.20	5.02	1.00	1.00	1.20	1.30
blue rockfish, all	9/28/2007	5	5	7.40	4.16	1.20	0.84	1.20	0.84

Santa Cruz Island - Potato Pasture (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/18/2007	5	5	8.60	1.14	2.60	0.55	18.80	12.32
blue-banded goby	9/28/2007	5	5	9.60	0.55	3.00	0.00	32.40	16.01
brown rockfish	9/18/2007	5	2	7.00	0.00	1.00	0.00	1.00	0.00
brown rockfish	9/28/2007	5	3	8.33	2.89	1.00	0.00	1.00	0.00
cabezon	9/28/2007	5	2	6.50	0.71	1.50	0.71	1.50	0.71
California scorpionfish	9/18/2007	5	2	8.50	2.12	1.00	0.00	1.00	0.00
California scorpionfish	9/28/2007	5	1	8.00		1.00		1.00	
California sheephead,	9/18/2007	5	5	9.20	1.30	2.00	0.00	6.00	1.00
California sheephead,	9/28/2007	5	5	9.40	0.55	2.00	0.00	5.80	2.17
California sheephead,	9/18/2007	5	5	3.00	4.12	0.40	0.55	0.40	0.55
California sheephead,	9/28/2007	5	5	1.80	4.02	0.20	0.45	0.20	0.45
California sheephead, male	9/18/2007	5	5	1.60	3.58	0.20	0.45	0.20	0.45
California sheephead, male	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
copper rockfish	9/28/2007	5	2	10.00	0.00	1.50	0.71	2.00	1.41
garibaldi, adult	9/18/2007	5	5	9.60	0.55	3.00	0.00	16.80	3.96
garibaldi, adult	9/28/2007	5	5	9.40	0.55	3.00	0.00	14.20	2.59
garibaldi, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	9/18/2007	5	5	7.80	1.48	1.20	0.45	1.20	0.45
gopher rockfish	9/28/2007	5	4	7.75	2.22	1.75	0.50	2.50	1.73

Santa Cruz Island - Potato Pasture (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
gopher/copper rockfish,	9/18/2007	5	1	8.00		2.00		3.00	
gopher/copper rockfish,	9/28/2007	5	1	7.00		2.00		2.00	
halfmoon	9/18/2007	5	5	8.20	1.30	1.80	0.45	2.40	1.14
halfmoon	9/28/2007	5	5	9.60	0.89	2.20	0.45	5.20	3.77
island kelpfish	9/18/2007	5	5	10.00	0.00	2.20	0.45	9.40	4.39
island kelpfish	9/28/2007	5	5	9.60	0.89	2.80	0.45	13.00	4.30
kelp bass, adult	9/18/2007	5	5	9.80	0.45	3.00	0.00	23.00	4.30
kelp bass, adult	9/28/2007	5	5	10.00	0.00	3.00	0.00	23.80	3.63
kelp bass, calico bass, all	9/18/2007	5	5	9.80	0.45	3.00	0.00	23.00	4.30
kelp bass, calico bass, all	9/28/2007	5	5	10.00	0.00	3.00	0.00	23.80	3.63
kelp bass, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	9/18/2007	5	5	8.20	0.84	1.80	0.45	1.80	0.45
ocean whitefish	9/28/2007	5	1	5.00		1.00		1.00	
olive rockfish, adult	9/18/2007	5	5	4.60	4.28	1.00	1.00	1.40	1.67
olive rockfish, adult	9/28/2007	5	5	6.40	3.58	0.80	0.45	0.80	0.45

Santa Cruz Island - Potato Pasture (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
olive rockfish, all	9/18/2007	5	5	4.60	4.28	1.00	1.00	1.40	1.67
olive rockfish, all	9/28/2007	5	5	6.40	3.58	0.80	0.45	0.80	0.45
olive/yellowtail rockfish,	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/18/2007	5	5	7.40	1.82	2.00	0.00	2.00	0.00
opaleye, adult	9/28/2007	5	5	9.40	0.89	2.00	0.00	3.20	1.30
opaleye, all	9/18/2007	5	5	7.40	1.82	2.00	0.00	2.00	0.00
opaleye, all	9/28/2007	5	5	9.40	0.89	2.00	0.00	3.20	1.30
opaleye, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	9/18/2007	5	5	10.00	0.00	3.00	0.00	17.40	3.85
painted greenling	9/28/2007	5	5	9.60	0.55	2.80	0.45	14.00	4.42
pile surfperch, adult	9/18/2007	5	5	7.40	4.16	1.80	1.10	6.80	4.66
pile surfperch, adult	9/28/2007	5	5	9.60	0.89	2.40	0.55	9.00	4.64
pile surfperch, all	9/18/2007	5	5	7.40	4.16	1.80	1.10	6.80	4.66
pile surfperch, all	9/28/2007	5	5	9.60	0.89	2.40	0.55	9.00	4.64
pile surfperch, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	9/18/2007	5	5	8.00	1.87	1.80	0.45	4.60	2.30
rock wrasse, female	9/28/2007	5	5	9.40	0.89	2.40	0.55	9.20	5.85
rock wrasse, juvenile	9/18/2007	5	5	1.60	3.58	0.20	0.45	0.20	0.45
rock wrasse, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Potato Pasture (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rock wrasse, male	9/18/2007	5	5	5.00	4.80	1.00	1.00	1.40	1.67
rock wrasse, male	9/28/2007	5	5	6.40	3.65	1.20	0.84	1.60	1.34
rubberlip surfperch	9/18/2007	5	5	9.00	1.00	1.60	0.55	2.20	1.30
rubberlip surfperch	9/28/2007	5	4	8.25	0.96	1.75	0.50	3.25	2.63
senorita, adult	9/18/2007	5	5	10.00	0.00	3.00	0.00	20.20	7.73
senorita, adult	9/28/2007	5	5	10.00	0.00	3.00	0.00	32.40	24.77
senorita, all	9/18/2007	5	5	10.00	0.00	3.00	0.00	20.20	7.73
senorita, all	9/28/2007	5	5	10.00	0.00	3.00	0.00	32.40	24.77
senorita, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	9/28/2007	5	2	7.50	2.12	1.00	0.00	1.00	0.00
striped surfperch, adult	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/18/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/28/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	9/18/2007	5	5	8.20	1.64	1.40	0.55	2.00	1.41
treefish, adult	9/28/2007	5	5	7.80	1.30	1.80	0.45	2.80	1.30
treefish, juvenile	9/18/2007	5	5	7.40	1.14	1.60	0.55	2.40	1.52
treefish, juvenile	9/28/2007	5	5	8.20	1.92	1.60	0.55	2.20	1.10
white surfperch	9/18/2007	5	2	10.00	0.00	1.50	0.71	1.50	0.71

Santa Cruz Island - Potato Pasture (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
white surfperch	9/28/2007	5	1	7.00		1.00		1.00	
zebra goby	9/18/2007	5	3	8.67	0.58	1.67	0.58	2.00	1.00
zebra goby	9/28/2007	5	3	8.33	2.08	1.67	0.58	1.67	0.58

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Cavern Point

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	6/19/2007	3	1	10.00		1.00		1.00	
black and yellow rockfish	9/19/2007	5	1	8.00		1.00		1.00	
black surfperch, adult	6/19/2007	3	3	9.00	1.00	2.00	0.00	3.33	0.58
black surfperch, adult	9/19/2007	5	5	10.00	0.00	2.40	0.55	10.20	3.96
black surfperch, all	6/19/2007	3	3	9.00	1.00	2.00	0.00	3.33	0.58
black surfperch, all	9/19/2007	5	5	10.00	0.00	2.60	0.55	10.80	4.21
black surfperch, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/19/2007	5	5	2.80	3.83	0.60	0.89	0.60	0.89
blackeye goby	6/19/2007	3	3	10.00	0.00	3.00	0.00	74.67	17.24
blackeye goby	9/19/2007	5	5	10.00	0.00	4.00	0.00	237.60	74.04
blacksmith, adult	6/19/2007	3	3	9.33	1.15	3.67	0.58	211.67	169.73
blacksmith, adult	9/19/2007	5	5	10.00	0.00	4.00	0.00	674.60	225.53
blacksmith, all	6/19/2007	3	3	9.33	1.15	3.67	0.58	211.67	169.73
blacksmith, all	9/19/2007	5	5	10.00	0.00	4.00	0.00	677.40	225.59
blacksmith, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/19/2007	5	5	2.80	3.90	0.80	1.30	2.80	5.72
blue rockfish, adult	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Cavern Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/19/2007	3	3	8.67	1.15	2.33	0.58	8.67	2.08
blue-banded goby	9/19/2007	5	5	7.40	4.22	2.20	1.30	9.60	6.02
brown rockfish	6/19/2007	3	1	9.00		1.00		1.00	
brown rockfish	9/19/2007	5	1	5.00		1.00		1.00	
cabezon	9/19/2007	5	2	6.50	2.12	1.00	0.00	1.00	0.00
California scorpionfish	9/19/2007	5	3	7.00	2.00	1.00	0.00	1.00	0.00
California sheephead,	6/19/2007	3	3	9.33	1.15	2.33	0.58	7.33	4.16
California sheephead,	9/19/2007	5	5	10.00	0.00	2.00	0.00	7.40	2.07
California sheephead,	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead,	9/19/2007	5	5	2.80	4.09	0.60	0.89	0.60	0.89
California sheephead, male	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/19/2007	5	5	9.20	1.79	1.20	0.45	1.20	0.45
fringehead spp.	9/19/2007	5	1	9.00		1.00		1.00	
garibaldi, adult	6/19/2007	3	3	9.33	1.15	3.00	0.00	11.33	0.58
garibaldi, adult	9/19/2007	5	5	10.00	0.00	3.00	0.00	13.00	1.41
garibaldi, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	6/19/2007	3	3	8.33	1.53	1.67	0.58	4.00	3.00
gopher rockfish	9/19/2007	5	5	7.60	2.51	1.80	0.45	2.20	0.84
gopher/copper rockfish,	9/19/2007	5	1	10.00		2.00		2.00	
halfmoon	6/19/2007	3	3	7.33	1.15	2.00	0.00	4.00	2.00

Santa Cruz Island - Cavern Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
halfmoon	9/19/2007	5	3	8.67	1.53	2.00	0.00	2.33	0.58
island kelpfish	6/19/2007	3	3	9.33	1.15	3.00	0.00	13.33	2.31
island kelpfish	9/19/2007	5	5	9.40	0.55	2.80	0.45	19.40	8.76
kelp bass, adult	6/19/2007	3	3	10.00	0.00	3.00	0.00	24.00	11.14
kelp bass, adult	9/19/2007	5	5	10.00	0.00	3.00	0.00	15.60	1.67
kelp bass, calico bass, all	6/19/2007	3	3	10.00	0.00	3.00	0.00	24.00	11.14
kelp bass, calico bass, all	9/19/2007	5	5	10.00	0.00	3.00	0.00	15.60	1.67
kelp bass, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/19/2007	3	3	6.33	5.51	0.67	0.58	0.67	0.58
kelp rockfish, adult	9/19/2007	5	5	1.80	4.02	0.20	0.45	0.20	0.45
kelp rockfish, all	6/19/2007	3	3	6.33	5.51	0.67	0.58	0.67	0.58
kelp rockfish, all	9/19/2007	5	5	1.80	4.02	0.20	0.45	0.20	0.45
kelp rockfish, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelpfish spp.	6/19/2007	3	1	5.00		1.00		1.00	
ocean whitefish	6/19/2007	3	3	10.00	0.00	2.33	0.58	9.67	7.64
ocean whitefish	9/19/2007	5	4	7.00	1.63	1.75	0.50	3.00	1.63
olive rockfish, adult	6/19/2007	3	3	3.33	5.77	0.33	0.58	0.33	0.58
olive rockfish, adult	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/19/2007	3	3	3.33	5.77	0.33	0.58	0.33	0.58
olive rockfish, all	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Cavern Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
olive/yellowtail rockfish,	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/19/2007	3	3	5.67	4.93	1.00	1.00	1.00	1.00
opaleye, adult	9/19/2007	5	5	7.00	4.06	1.00	0.71	1.60	1.95
opaleye, all	6/19/2007	3	3	5.67	4.93	1.00	1.00	1.00	1.00
opaleye, all	9/19/2007	5	5	7.00	4.06	1.00	0.71	1.60	1.95
opaleye, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/19/2007	3	3	9.67	0.58	2.33	0.58	9.67	3.06
painted greenling	9/19/2007	5	5	9.80	0.45	2.80	0.45	11.60	2.19
pile surfperch, adult	6/19/2007	3	3	9.67	0.58	2.67	0.58	33.67	23.97
pile surfperch, adult	9/19/2007	5	5	9.40	0.89	2.20	0.45	7.20	2.77
pile surfperch, all	6/19/2007	3	3	9.67	0.58	2.67	0.58	33.67	23.97
pile surfperch, all	9/19/2007	5	5	9.40	0.89	2.20	0.45	7.20	2.77
pile surfperch, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	9/19/2007	5	5	9.20	0.84	2.00	0.00	8.60	2.07
rock wrasse, juvenile	6/19/2007	3	1	6.00		2.00		2.00	
rock wrasse, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/19/2007	3	3	3.00	5.20	0.33	0.58	0.33	0.58
rock wrasse, male	9/19/2007	5	5	3.80	3.56	1.00	1.00	1.20	1.30

Santa Cruz Island - Cavern Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
rubberlip surfperch	6/19/2007	3	3	9.33	0.58	2.33	0.58	22.00	28.79
rubberlip surfperch	9/19/2007	5	5	9.80	0.45	2.00	0.00	7.00	2.00
senorita, adult	6/19/2007	3	3	9.00	1.00	3.33	0.58	105.33	143.03
senorita, adult	9/19/2007	5	5	10.00	0.00	3.60	0.55	101.40	57.63
senorita, all	6/19/2007	3	3	9.00	1.00	3.33	0.58	105.33	143.03
senorita, all	9/19/2007	5	5	10.00	0.00	3.60	0.55	106.00	58.84
senorita, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/19/2007	5	5	3.80	3.63	1.20	1.10	4.60	7.60
snubnose sculpin	6/19/2007	3	2	6.00	0.00	1.50	0.71	1.50	0.71
snubnose sculpin	9/19/2007	5	2	6.00	0.00	1.00	0.00	1.00	0.00
striped surfperch, adult	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
swell shark	6/19/2007	3	1	9.00		1.00		1.00	
top smelt	9/19/2007	5	1	8.00		3.00		17.00	
treefish, adult	6/19/2007	3	3	8.67	0.58	2.00	0.00	4.00	2.00
treefish, adult	9/19/2007	5	5	6.00	3.81	1.00	0.71	1.20	1.10
treefish, juvenile	6/19/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	9/19/2007	5	5	2.40	3.36	0.40	0.55	0.40	0.55

Santa Cruz Island - Cavern Point (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
zebra goby	6/19/2007	3	3	8.00	1.00	2.00	0.00	2.67	0.58
zebra goby	9/19/2007	5	1	5.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Little Scorpion

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	6/27/2007	4	4	8.00	1.83	1.75	0.50	1.75	0.50
black and yellow rockfish	9/19/2007	5	5	8.00	1.00	2.00	0.00	5.00	1.58
black surfperch, adult	6/27/2007	4	3	10.00	0.00	2.00	0.00	4.67	0.58
black surfperch, adult	9/19/2007	5	5	9.20	1.10	2.80	0.45	11.40	1.82
black surfperch, all	6/27/2007	4	4	10.00	0.00	1.75	0.50	3.75	1.89
black surfperch, all	9/19/2007	5	5	9.20	1.10	2.80	0.45	11.40	1.82
black surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/27/2007	4	4	9.75	0.50	3.75	0.50	165.00	83.62
blackeye goby	9/19/2007	5	5	10.00	0.00	4.00	0.00	272.40	124.93
blacksmith, adult	6/27/2007	4	3	10.00	0.00	3.33	0.58	130.67	95.71
blacksmith, adult	9/19/2007	5	5	10.00	0.00	4.00	0.00	277.00	82.35
blacksmith, all	6/27/2007	4	4	9.25	1.50	3.25	0.50	105.50	92.96
blacksmith, all	9/19/2007	5	5	10.00	0.00	4.00	0.00	278.40	81.81
blacksmith, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/19/2007	5	5	7.20	4.02	1.40	0.89	1.40	0.89
blue rockfish, adult	6/27/2007	4	3	1.67	2.89	0.33	0.58	0.33	0.58
blue rockfish, adult	9/19/2007	5	5	8.20	2.49	1.80	0.45	3.40	1.82
blue rockfish, all	6/27/2007	4	4	1.25	2.50	0.25	0.50	0.25	0.50
blue rockfish, all	9/19/2007	5	5	8.20	2.49	1.80	0.45	3.40	1.82
blue rockfish, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Little Scorpion (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/27/2007	4	4	9.00	1.15	3.00	0.00	24.25	9.22
blue-banded goby	9/19/2007	5	5	9.60	0.55	3.00	0.00	21.00	6.96
California moray	9/19/2007	5	1	6.00		1.00		1.00	
California scorpionfish	9/19/2007	5	2	8.00	1.41	1.00	0.00	1.00	0.00
California sheephead,	6/27/2007	4	4	10.00	0.00	1.75	0.50	2.00	0.82
California sheephead,	9/19/2007	5	5	5.40	4.98	0.80	0.84	0.80	0.84
California sheephead,	6/27/2007	4	4	4.50	5.20	1.00	1.15	1.25	1.50
California sheephead,	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/27/2007	4	4	2.25	4.50	0.25	0.50	0.25	0.50
California sheephead, male	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
c-o turbot	9/19/2007	5	1	8.00		1.00		1.00	
coralline sculpin	9/19/2007	5	1	7.00		1.00		1.00	
garibaldi, adult	6/27/2007	4	4	10.00	0.00	2.75	0.50	13.00	2.83
garibaldi, adult	9/19/2007	5	5	10.00	0.00	2.80	0.45	15.00	3.74
garibaldi, juvenile	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	9/19/2007	5	2	8.00	1.41	1.00	0.00	1.00	0.00
gopher/copper rockfish,	9/19/2007	5	1	7.00		1.00		1.00	
halfmoon	6/27/2007	4	2	10.00	0.00	2.00	0.00	2.50	0.71
halfmoon	9/19/2007	5	2	6.00	0.00	1.00	0.00	1.00	0.00
horn shark	9/19/2007	5	1	9.00		1.00		1.00	

Santa Cruz Island - Little Scorpion (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	6/27/2007	4	4	9.25	0.96	2.00	0.00	5.00	1.41
island kelpfish	9/19/2007	5	5	9.20	1.30	1.80	0.45	4.60	2.88
kelp bass, adult	6/27/2007	4	3	10.00	0.00	2.00	0.00	6.33	2.08
kelp bass, adult	9/19/2007	5	5	9.60	0.89	3.00	0.00	15.20	4.09
kelp bass, calico bass, all	6/27/2007	4	4	9.75	0.50	2.00	0.00	6.00	1.83
kelp bass, calico bass, all	9/19/2007	5	5	9.60	0.89	3.00	0.00	15.20	4.09
kelp bass, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/27/2007	4	3	9.67	0.58	2.33	0.58	8.00	4.00
kelp rockfish, adult	9/19/2007	5	5	9.60	0.55	2.20	0.45	9.40	2.97
kelp rockfish, all	6/27/2007	4	4	9.75	0.50	2.00	0.82	6.25	4.79
kelp rockfish, all	9/19/2007	5	5	9.60	0.55	2.20	0.45	9.40	2.97
kelp rockfish, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	6/27/2007	4	1	7.00		1.00		1.00	
ocean whitefish	9/19/2007	5	2	5.00	0.00	1.00	0.00	1.00	0.00
olive rockfish, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Little Scorpion (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
opaleye, adult	6/27/2007	4	3	5.33	5.03	0.67	0.58	0.67	0.58
opaleye, adult	9/19/2007	5	5	8.00	1.00	1.80	0.45	2.80	1.64
opaleye, all	6/27/2007	4	4	4.00	4.90	0.50	0.58	0.50	0.58
opaleye, all	9/19/2007	5	5	8.00	1.00	1.80	0.45	2.80	1.64
opaleye, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/27/2007	4	4	9.50	1.00	2.50	0.58	10.00	2.45
painted greenling	9/19/2007	5	5	9.80	0.45	3.00	0.00	19.40	5.50
pile surfperch, adult	6/27/2007	4	3	3.00	5.20	0.67	1.15	2.00	3.46
pile surfperch, adult	9/19/2007	5	5	9.00	0.71	2.00	0.00	7.40	2.07
pile surfperch, all	6/27/2007	4	4	4.00	4.69	1.00	1.15	3.00	3.46
pile surfperch, all	9/19/2007	5	5	9.00	0.71	2.00	0.00	7.40	2.07
pile surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/27/2007	4	4	5.50	4.20	1.25	0.96	1.75	1.71
rock wrasse, female	9/19/2007	5	5	8.40	1.52	1.80	0.45	3.00	1.58
rock wrasse, juvenile	6/27/2007	4	4	5.00	3.56	1.00	0.82	1.00	0.82
rock wrasse, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/27/2007	4	4	7.00	4.76	1.25	0.96	1.25	0.96
rock wrasse, male	9/19/2007	5	5	7.00	4.24	1.40	0.89	1.60	1.14
rubberlip surfperch	6/27/2007	4	1	10.00		2.00		2.00	
rubberlip surfperch	9/19/2007	5	4	8.75	0.50	1.75	0.50	2.75	1.26

Santa Cruz Island - Little Scorpion (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, adult	6/27/2007	4	3	10.00	0.00	3.00	0.00	23.67	9.87
senorita, adult	9/19/2007	5	5	9.60	0.89	3.00	0.00	28.20	10.89
senorita, all	6/27/2007	4	4	9.75	0.50	3.00	0.00	21.00	9.66
senorita, all	9/19/2007	5	5	9.60	0.89	3.40	0.55	74.80	49.62
senorita, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/19/2007	5	5	6.20	3.49	2.20	1.30	46.60	41.67
striped surfperch, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/19/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/27/2007	4	4	8.75	1.89	2.00	0.00	4.00	2.16
treefish, adult	9/19/2007	5	5	7.60	4.28	1.60	0.89	5.00	3.24
treefish, juvenile	6/27/2007	4	4	6.50	4.43	1.00	0.82	1.00	0.82
treefish, juvenile	9/19/2007	5	5	5.80	3.70	1.00	0.71	1.00	0.71
white surfperch	6/27/2007	4	2	7.00	0.00	2.00	1.41	8.50	10.61
white surfperch	9/19/2007	5	1	8.00		3.00		17.00	
zebra goby	6/27/2007	4	3	7.00	1.73	1.67	0.58	4.33	3.51
zebra goby	9/19/2007	5	2	8.50	2.12	1.00	0.00	1.00	0.00

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Pedro Reef

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	6/27/2007	4	1	9.00		1.00		1.00	
bat ray	8/9/2007	7	1	10.00		1.00		1.00	
black surfperch, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, adult	8/9/2007	7	5	7.00	4.06	1.00	0.71	1.00	0.71
black surfperch, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	8/9/2007	7	7	6.43	4.50	0.86	0.69	0.86	0.69
black surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/27/2007	4	4	10.00	0.00	4.00	0.00	236.50	125.82
blackeye goby	8/9/2007	7	7	10.00	0.00	3.86	0.38	177.43	87.18
blacksmith, adult	6/27/2007	4	3	10.00	0.00	3.67	0.58	150.33	71.65
blacksmith, adult	8/9/2007	7	5	7.20	4.09	1.80	1.30	26.00	38.40
blacksmith, all	6/27/2007	4	4	10.00	0.00	3.50	0.58	134.00	67.01
blacksmith, all	8/9/2007	7	7	7.14	3.34	2.00	1.15	25.71	35.60
blacksmith, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/9/2007	7	5	1.60	3.58	0.40	0.89	0.40	0.89
blue rockfish, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/9/2007	7	7	1.14	3.02	0.29	0.76	0.29	0.76
blue rockfish, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00

2007 ROVING DIVER FISH COUNT

Santa Cruz Island - Pedro Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/27/2007	4	4	9.00	1.41	2.00	0.00	5.00	3.16
blue-banded goby	8/9/2007	7	7	3.86	3.63	1.14	1.07	3.29	3.64
California moray	6/27/2007	4	1	9.00		1.00		1.00	
California sheephead,	6/27/2007	4	4	8.75	0.96	2.00	0.00	3.25	1.26
California sheephead,	8/9/2007	7	7	9.43	0.53	1.71	0.49	2.57	1.72
California sheephead,	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead,	8/9/2007	7	7	2.14	3.67	0.43	0.79	0.86	1.86
California sheephead, male	6/27/2007	4	4	2.50	5.00	0.25	0.50	0.25	0.50
California sheephead, male	8/9/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	6/27/2007	4	4	10.00	0.00	2.00	0.00	2.50	1.00
garibaldi, adult	8/9/2007	7	7	7.57	1.51	2.00	0.00	5.14	1.68
garibaldi, juvenile	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/9/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	6/27/2007	4	2	8.50	0.71	1.00	0.00	1.00	0.00
halfmoon	8/9/2007	7	7	9.86	0.38	1.71	0.49	2.14	0.90
island kelpfish	6/27/2007	4	4	4.00	4.90	0.75	0.96	0.75	0.96
island kelpfish	8/9/2007	7	7	2.86	4.88	0.43	0.79	0.43	0.79
kelp bass, adult	6/27/2007	4	3	9.67	0.58	2.00	0.00	3.33	1.15
kelp bass, adult	8/9/2007	7	5	9.40	0.55	2.20	0.45	7.80	4.21
kelp bass, calico bass, all	6/27/2007	4	4	8.75	1.89	1.75	0.50	2.75	1.50
kelp bass, calico bass, all	8/9/2007	7	7	9.43	0.53	2.29	0.49	8.43	3.78

Santa Cruz Island - Pedro Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/9/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	6/27/2007	4	3	8.67	2.31	1.33	0.58	1.33	0.58
ocean whitefish	8/9/2007	7	2	7.00	2.83	1.50	0.71	1.50	0.71
olive rockfish, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/9/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/27/2007	4	3	9.00	1.00	1.67	0.58	2.67	2.08
opaleye, adult	8/9/2007	7	5	7.20	0.45	1.40	0.55	2.40	2.19
opaleye, all	6/27/2007	4	4	9.25	0.96	1.50	0.58	2.25	1.89
opaleye, all	8/9/2007	7	7	6.29	2.81	1.29	0.76	2.86	3.02
opaleye, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Pedro Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
painted greenling	6/27/2007	4	4	10.00	0.00	2.25	0.50	8.25	4.57
painted greenling	8/9/2007	7	7	8.43	1.13	1.86	0.38	4.86	2.61
pile surfperch, adult	6/27/2007	4	3	4.00	3.46	0.67	0.58	0.67	0.58
pile surfperch, adult	8/9/2007	7	5	6.00	5.48	0.80	0.84	0.80	0.84
pile surfperch, all	6/27/2007	4	4	3.00	3.46	0.50	0.58	0.50	0.58
pile surfperch, all	8/9/2007	7	7	5.29	5.06	0.71	0.76	0.71	0.76
pile surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/27/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
rock wrasse, female	8/9/2007	7	7	6.14	4.34	1.14	0.90	2.57	2.76
rock wrasse, juvenile	6/27/2007	4	4	9.25	0.50	1.50	0.58	2.25	1.89
rock wrasse, juvenile	8/9/2007	7	7	2.29	3.95	0.43	0.79	0.43	0.79
rock wrasse, male	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/9/2007	7	7	6.71	3.35	1.29	0.76	1.57	1.27
senorita, adult	6/27/2007	4	3	10.00	0.00	3.00	0.00	57.67	12.90
senorita, adult	8/9/2007	7	5	10.00	0.00	3.00	0.00	44.80	9.34
senorita, all	6/27/2007	4	4	10.00	0.00	3.00	0.00	51.75	15.84
senorita, all	8/9/2007	7	7	9.86	0.38	3.43	0.53	85.00	29.46
senorita, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/9/2007	7	5	7.20	4.09	2.00	1.41	35.40	32.10
speckled sanddab	6/27/2007	4	1	5.00		1.00		1.00	
striped surfperch, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00

Santa Cruz Island - Pedro Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
striped surfperch, adult	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/9/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/9/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/9/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	8/9/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
zebra goby	6/27/2007	4	2	7.00	0.00	1.50	0.71	1.50	0.71

2007 ROVING DIVER FISH COUNT

Anacapa Island – Keyhole

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	6/27/2007	4	3	8.00	0.00	1.33	0.58	1.33	0.58
black surfperch, adult	6/27/2007	4	3	9.33	0.58	2.00	0.00	8.00	1.00
black surfperch, all	6/27/2007	4	4	9.50	0.58	2.00	0.00	7.50	1.91
black surfperch, juvenile	6/27/2007	4	3	2.33	4.04	0.33	0.58	0.33	0.58
blackeye goby	6/27/2007	4	4	10.00	0.00	3.25	0.50	82.75	45.33
blacksmith, adult	6/27/2007	4	3	10.00	0.00	4.00	0.00	257.00	164.35
blacksmith, all	6/27/2007	4	4	10.00	0.00	3.75	0.50	211.25	162.42
blacksmith, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/27/2007	4	4	8.50	2.38	2.75	0.50	17.75	12.84
California sheephead,	6/27/2007	4	4	8.00	1.41	1.25	0.50	2.00	2.00
California sheephead,	6/27/2007	4	4	7.25	4.86	1.50	1.00	3.75	2.99
California sheephead, male	6/27/2007	4	4	1.25	2.50	0.25	0.50	0.25	0.50
garibaldi, adult	6/27/2007	4	4	9.00	0.82	2.00	0.00	5.75	0.50
garibaldi, juvenile	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	6/27/2007	4	1	9.00		2.00		2.00	
island kelpfish	6/27/2007	4	4	10.00	0.00	3.00	0.00	39.25	15.78
kelp bass, adult	6/27/2007	4	3	9.33	0.58	2.00	0.00	5.33	1.15
kelp bass, calico bass, all	6/27/2007	4	4	8.75	1.26	2.00	0.00	5.00	1.15

Anacapa Island – Keyhole (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/27/2007	4	4	9.00	1.15	1.75	0.50	4.50	3.70
pile surfperch, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/27/2007	4	4	9.25	0.96	2.50	0.58	8.00	6.38
rock wrasse, juvenile	6/27/2007	4	4	9.75	0.50	2.50	0.58	8.75	4.27
rock wrasse, male	6/27/2007	4	4	6.50	4.73	1.25	0.96	1.50	1.29
senorita, adult	6/27/2007	4	3	10.00	0.00	3.00	0.00	30.00	5.57
senorita, all	6/27/2007	4	4	10.00	0.00	3.00	0.00	26.00	9.20
senorita, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Anacapa Island – Keyhole (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
striped surfperch, juvenile	6/27/2007	4	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/27/2007	4	4	6.25	4.27	1.50	1.00	2.00	1.41
treefish, juvenile	6/27/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
zebra goby	6/27/2007	4	3	8.00	2.00	2.33	0.58	7.67	5.69

2007 ROVING DIVER FISH COUNT

Anacapa Island - East Fish Camp

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	8/7/2007	7	5	8.60	1.14	1.80	0.45	2.20	1.10
black and yellow rockfish	9/14/2007	7	4	8.00	2.16	1.50	0.58	2.50	2.38
black surfperch, adult	8/7/2007	7	5	2.20	3.03	0.40	0.55	0.40	0.55
black surfperch, adult	9/14/2007	7	7	1.43	3.78	0.00	0.00	0.00	0.00
black surfperch, all	8/7/2007	7	7	2.86	3.76	0.43	0.53	0.43	0.53
black surfperch, all	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/7/2007	7	7	10.00	0.00	4.00	0.00	417.00	150.44
blackeye goby	9/14/2007	7	7	10.00	0.00	4.00	0.00	548.43	172.69
blacksmith, adult	8/7/2007	7	5	10.00	0.00	4.00	0.00	221.80	69.90
blacksmith, adult	9/14/2007	7	7	10.00	0.00	3.86	0.38	165.00	74.14
blacksmith, all	8/7/2007	7	7	9.86	0.38	3.86	0.38	199.14	83.26
blacksmith, all	9/14/2007	7	7	10.00	0.00	3.86	0.38	171.57	73.57
blacksmith, juvenile	8/7/2007	7	5	8.20	1.10	2.20	0.45	7.20	7.26
blacksmith, juvenile	9/14/2007	7	7	8.71	1.89	2.14	0.38	6.57	3.55
blue rockfish, adult	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/7/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00

Anacapa Island - East Fish Camp (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/7/2007	7	7	1.14	3.02	0.29	0.76	0.29	0.76
blue-banded goby	9/14/2007	7	7	3.57	4.61	0.71	0.95	1.14	1.86
California scorpionfish	9/14/2007	7	1	9.00		1.00		1.00	
California sheephead,	8/7/2007	7	7	7.71	3.86	1.57	0.79	2.43	1.51
California sheephead,	9/14/2007	7	7	4.86	4.71	0.57	0.53	0.57	0.53
California sheephead,	8/7/2007	7	7	9.86	0.38	1.71	0.49	2.29	0.95
California sheephead,	9/14/2007	7	7	8.00	1.83	1.43	0.53	1.71	1.11
California sheephead, male	8/7/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
c-o turbot	8/7/2007	7	1	10.00		2.00		2.00	
coralline sculpin	8/7/2007	7	1	6.00		1.00		1.00	
coralline sculpin	9/14/2007	7	1	7.00		1.00		1.00	
garibaldi, adult	8/7/2007	7	7	10.00	0.00	2.43	0.53	11.57	4.89
garibaldi, adult	9/14/2007	7	7	10.00	0.00	2.86	0.38	15.14	5.34
garibaldi, juvenile	8/7/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish,	8/7/2007	7	6	7.83	1.33	1.83	0.41	3.00	1.79
gopher/copper rockfish,	9/14/2007	7	6	9.33	1.21	1.83	0.41	2.67	1.37
halfmoon	8/7/2007	7	1	9.00		1.00		1.00	
halfmoon	9/14/2007	7	6	8.17	1.17	1.50	0.55	2.17	1.47
island kelpfish	8/7/2007	7	7	9.14	0.69	2.57	0.53	11.71	7.32

Anacapa Island - East Fish Camp (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	9/14/2007	7	7	9.86	0.38	2.71	0.49	13.83	6.91
kelp bass, adult	8/7/2007	7	5	9.80	0.45	2.00	0.00	5.80	0.84
kelp bass, adult	9/14/2007	7	7	8.71	1.11	2.00	0.00	4.86	2.27
kelp bass, calico bass, all	8/7/2007	7	7	9.86	0.38	2.00	0.00	6.57	1.72
kelp bass, calico bass, all	9/14/2007	7	7	8.71	1.11	2.00	0.00	4.86	2.27
kelp bass, juvenile	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/7/2007	7	7	0.86	2.27	0.14	0.38	0.14	0.38
kelp rockfish, all	9/14/2007	7	7	5.00	4.80	1.14	1.07	1.86	1.95
kelp rockfish, juvenile	8/7/2007	7	5	1.20	2.68	0.20	0.45	0.20	0.45
kelp rockfish, juvenile	9/14/2007	7	7	5.00	4.80	1.14	1.07	1.86	1.95
ocean whitefish	8/7/2007	7	1	9.00		1.00		1.00	
ocean whitefish	9/14/2007	7	5	8.00	0.71	1.40	0.55	1.60	0.89
olive rockfish, adult	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/7/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/7/2007	7	5	4.00	5.48	0.40	0.55	0.40	0.55

Anacapa Island - East Fish Camp (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
opaleye, adult	9/14/2007	7	7	7.71	3.50	1.43	0.79	2.43	2.64
opaleye, all	8/7/2007	7	7	2.86	4.88	0.29	0.49	0.29	0.49
opaleye, all	9/14/2007	7	7	7.71	3.50	1.43	0.79	2.43	2.64
opaleye, juvenile	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/7/2007	7	7	9.71	0.76	2.71	0.49	15.71	7.99
painted greenling	9/14/2007	7	7	10.00	0.00	3.00	0.00	26.86	5.21
pile surfperch, adult	8/7/2007	7	5	2.60	3.58	0.80	1.10	2.80	3.90
pile surfperch, adult	9/14/2007	7	7	0.71	1.89	0.29	0.76	0.29	0.76
pile surfperch, all	8/7/2007	7	7	1.86	3.18	0.57	0.98	2.00	3.46
pile surfperch, all	9/14/2007	7	7	0.71	1.89	0.29	0.76	0.29	0.76
pile surfperch, juvenile	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/7/2007	7	7	9.86	0.38	2.29	0.49	8.57	5.06
rock wrasse, female	9/14/2007	7	7	4.00	3.92	1.00	1.00	1.57	1.72
rock wrasse, juvenile	8/7/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/7/2007	7	7	7.86	3.76	1.57	0.79	2.57	1.51
rock wrasse, male	9/14/2007	7	7	7.29	3.35	1.57	0.79	2.00	1.29
rubberlip surfperch	8/7/2007	7	1	10.00		1.00		1.00	
senorita, adult	8/7/2007	7	5	5.80	3.70	1.80	1.30	6.40	6.88
senorita, adult	9/14/2007	7	7	6.00	4.16	1.00	0.82	1.43	1.51

2007 ROVING DIVER FISH COUNT

Anacapa Island - East Fish Camp (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, all	8/7/2007	7	7	4.86	3.72	1.57	1.27	5.86	6.26
senorita, all	9/14/2007	7	7	6.00	4.16	1.00	0.82	1.71	1.98
senorita, juvenile	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/14/2007	7	7	1.00	2.65	0.29	0.76	0.29	0.76
striped surfperch, adult	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/7/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/7/2007	7	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/7/2007	7	7	2.14	3.76	0.43	0.79	0.43	0.79
treefish, adult	9/14/2007	7	7	6.29	4.64	1.14	0.90	1.71	1.80
treefish, juvenile	8/7/2007	7	7	3.71	4.64	0.43	0.53	0.43	0.53
treefish, juvenile	9/14/2007	7	7	0.00	0.00	0.00	0.00	0.00	0.00
zebra goby	8/7/2007	7	5	7.00	1.41	1.80	0.84	4.00	5.61
zebra goby	9/14/2007	7	3	9.00	1.00	1.67	0.58	4.00	3.61

2007 ROVING DIVER FISH COUNT

Anacapa Island - Black Sea Bass Reef

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black surfperch, adult	8/20/2007	4	4	4.50	5.20	0.50	0.58	0.50	0.58
black surfperch, all	8/20/2007	4	4	4.50	5.20	0.50	0.58	0.50	0.58
black surfperch, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/20/2007	4	4	10.00	0.00	4.00	0.00	309.50	91.13
blacksmith, adult	8/20/2007	4	4	10.00	0.00	4.00	0.00	245.25	99.35
blacksmith, all	8/20/2007	4	4	10.00	0.00	4.00	0.00	285.25	93.52
blacksmith, juvenile	8/20/2007	4	4	9.25	0.96	3.00	0.00	40.00	9.49
blue rockfish, adult	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/20/2007	4	4	9.75	0.50	3.50	0.58	98.50	29.63
California barracuda	8/20/2007	4	2	6.50	0.71	3.00	0.00	27.50	10.61
California scorpionfish	8/20/2007	4	2	6.00	0.00	1.00	0.00	1.00	0.00
California sheephead,	8/20/2007	4	4	8.50	1.73	1.75	0.50	3.00	2.16
California sheephead,	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/20/2007	4	4	4.25	4.92	0.50	0.58	0.50	0.58
garibaldi, adult	8/20/2007	4	4	9.50	0.58	2.00	0.00	4.50	0.58
garibaldi, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	8/20/2007	4	4	9.50	0.58	2.25	0.50	5.75	3.59
island kelpfish	8/20/2007	4	4	9.75	0.50	3.00	0.00	31.50	6.56
kelp bass, adult	8/20/2007	4	4	9.75	0.50	2.75	0.50	13.00	2.45

Anacapa Island - Black Sea Bass Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, calico bass, all	8/20/2007	4	4	9.75	0.50	2.75	0.50	13.00	2.45
kelp bass, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/20/2007	4	4	8.25	2.06	1.50	0.58	1.75	0.96
kelp rockfish, juvenile	8/20/2007	4	4	8.25	2.06	1.50	0.58	1.75	0.96
ocean whitefish	8/20/2007	4	2	9.00	1.41	2.00	0.00	3.50	0.71
olive rockfish, adult	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/20/2007	4	4	6.50	4.36	1.00	0.82	1.00	0.82
opaleye, all	8/20/2007	4	4	6.50	4.36	1.00	0.82	1.00	0.82
opaleye, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/20/2007	4	4	9.25	0.50	1.75	0.50	2.50	1.00
pile surfperch, adult	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/20/2007	4	4	6.00	4.00	0.75	0.50	0.75	0.50
rock wrasse, juvenile	8/20/2007	4	4	1.25	2.50	0.25	0.50	0.25	0.50
rock wrasse, male	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00

Anacapa Island - Black Sea Bass Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
striped surfperch, adult	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/20/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/20/2007	4	4	7.75	0.96	1.25	0.50	1.25	0.50
treefish, juvenile	8/20/2007	4	4	8.75	1.50	1.75	0.50	3.25	2.06

2007 ROVING DIVER FISH COUNT

Anacapa Island – Lighthouse

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	8/30/2007	3	1	7.00		1.00		1.00	
black and yellow rockfish	8/30/2007	3	2	9.00	0.00	1.50	0.71	1.50	0.71
black and yellow rockfish	9/14/2007	5	3	6.00	1.73	1.00	0.00	1.00	0.00
black surfperch, adult	8/30/2007	3	3	8.67	2.31	1.67	0.58	2.00	1.00
black surfperch, adult	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	8/30/2007	3	3	8.67	2.31	1.67	0.58	2.00	1.00
black surfperch, all	9/14/2007	5	5	1.60	3.58	0.20	0.45	0.00	0.00
black surfperch, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/30/2007	3	3	10.00	0.00	3.67	0.58	202.67	129.14
blackeye goby	9/14/2007	5	5	10.00	0.00	4.00	0.00	373.67	40.87
blacksmith, adult	8/30/2007	3	3	10.00	0.00	4.00	0.00	221.67	36.17
blacksmith, adult	9/14/2007	5	3	9.67	0.58	4.00	0.00	389.00	173.77
blacksmith, all	8/30/2007	3	3	10.00	0.00	4.00	0.00	237.33	36.47
blacksmith, all	9/14/2007	5	5	9.40	0.55	4.00	0.00	395.00	176.77
blacksmith, juvenile	8/30/2007	3	3	9.67	0.58	2.67	0.58	15.67	9.50
blacksmith, juvenile	9/14/2007	5	3	5.33	5.03	1.33	1.15	6.00	5.20
blue rockfish, adult	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/14/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00

Anacapa Island – Lighthouse (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
blue rockfish, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/14/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California scorpionfish	9/14/2007	5	1	8.00		1.00		1.00	
California sheephead,	8/30/2007	3	3	10.00	0.00	2.00	0.00	3.67	0.58
California sheephead,	9/14/2007	5	5	8.40	2.07	2.00	0.00	3.67	1.15
California sheephead,	8/30/2007	3	3	9.67	0.58	2.00	0.00	4.00	1.00
California sheephead,	9/14/2007	5	5	9.60	0.89	2.00	0.00	4.33	1.15
California sheephead, male	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/14/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
c-o turbot	8/30/2007	3	1	8.00		1.00		1.00	
c-o turbot	9/14/2007	5	1	10.00		2.00		2.00	
coralline sculpin	8/30/2007	3	1	8.00		2.00		2.00	
garibaldi, adult	8/30/2007	3	3	10.00	0.00	2.67	0.58	11.67	4.16
garibaldi, adult	9/14/2007	5	5	10.00	0.00	2.60	0.55	10.33	2.89
garibaldi, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/14/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	8/30/2007	3	3	10.00	0.00	2.00	0.00	6.33	3.06
halfmoon	9/14/2007	5	5	9.80	0.45	2.40	0.55	11.67	4.93
island kelpfish	8/30/2007	3	3	9.67	0.58	2.00	0.00	5.33	2.08
island kelpfish	9/14/2007	5	5	5.80	5.31	1.20	1.10	4.67	4.16

Anacapa Island – Lighthouse (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, adult	8/30/2007	3	3	10.00	0.00	2.33	0.58	9.67	1.53
kelp bass, adult	9/14/2007	5	3	9.33	1.15	2.67	0.58	10.33	1.15
kelp bass, calico bass, all	8/30/2007	3	3	10.00	0.00	2.33	0.58	9.67	1.53
kelp bass, calico bass, all	9/14/2007	5	5	9.60	0.89	2.40	0.55	10.33	1.15
kelp bass, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	9/14/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	8/30/2007	3	1	10.00		1.00		1.00	
ocean whitefish	9/14/2007	5	4	7.50	2.08	1.50	0.58	1.67	0.58
olive rockfish, adult	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	9/14/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/30/2007	3	3	9.67	0.58	2.00	0.00	3.67	0.58
opaleye, adult	9/14/2007	5	3	8.00	1.00	2.00	0.00	5.67	2.89

Anacapa Island – Lighthouse (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
opaleye, all	8/30/2007	3	3	9.67	0.58	2.00	0.00	3.67	0.58
opaleye, all	9/14/2007	5	5	8.40	0.89	1.80	0.45	5.67	2.89
opaleye, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/30/2007	3	3	10.00	0.00	3.00	0.00	20.00	11.36
painted greenling	9/14/2007	5	5	10.00	0.00	2.80	0.45	25.67	4.16
pile surfperch, adult	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, adult	9/14/2007	5	3	4.67	4.51	1.33	1.15	4.00	3.61
pile surfperch, all	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	9/14/2007	5	5	2.80	4.09	0.80	1.10	4.00	3.61
pile surfperch, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/30/2007	3	3	10.00	0.00	2.00	0.00	6.33	2.52
rock wrasse, female	9/14/2007	5	5	9.00	0.71	2.00	0.00	3.67	1.53
rock wrasse, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	9/14/2007	5	5	3.80	5.22	0.80	1.10	3.33	3.06
rock wrasse, male	8/30/2007	3	3	10.00	0.00	2.00	0.00	4.00	1.73
rock wrasse, male	9/14/2007	5	5	4.60	4.51	0.80	0.84	1.33	1.53
senorita, adult	8/30/2007	3	3	10.00	0.00	4.00	0.00	213.00	58.92
senorita, adult	9/14/2007	5	3	10.00	0.00	3.33	0.58	127.00	103.44
senorita, all	8/30/2007	3	3	10.00	0.00	4.00	0.00	213.67	59.14
senorita, all	9/14/2007	5	5	10.00	0.00	3.40	0.55	127.00	103.44

2007 ROVING DIVER FISH COUNT

Anacapa Island – Lighthouse (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, juvenile	8/30/2007	3	3	2.67	4.62	0.67	1.15	0.67	1.15
senorita, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/14/2007	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/14/2007	5	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/30/2007	3	3	5.67	5.13	0.67	0.58	0.67	0.58
treefish, adult	9/14/2007	5	5	1.80	4.02	0.20	0.45	0.33	0.58
treefish, juvenile	8/30/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	9/14/2007	5	5	2.80	3.83	0.40	0.55	0.33	0.58
zebra goby	9/14/2007	5	1	6.00		1.00		1.00	

2007 ROVING DIVER FISH COUNT

Santa Barbara Island - Webster's Arch

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	6/4/2007	3	2	8.00	0.00	2.00	0.00	3.00	0.00
black surfperch, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/4/2007	3	3	9.00	0.00	3.00	0.00	25.00	8.49
blacksmith, adult	6/4/2007	3	3	10.00	0.00	4.00	0.00	170.67	49.81
blacksmith, all	6/4/2007	3	3	10.00	0.00	4.00	0.00	170.67	49.81
blacksmith, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/4/2007	3	3	2.33	4.04	0.67	1.15	1.00	1.73
cabezon	6/4/2007	3	3	9.00	0.00	1.00	0.00	1.00	0.00
California moray	6/4/2007	3	2	7.00	1.41	1.50	0.71	1.50	0.71
California sheephead,	6/4/2007	3	3	9.67	0.58	2.00	0.00	5.67	1.53
California sheephead,	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/4/2007	3	3	10.00	0.00	1.67	0.58	1.67	0.58
garibaldi, adult	6/4/2007	3	3	10.00	0.00	2.00	0.00	7.67	2.08
garibaldi, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	6/4/2007	3	3	5.33	4.62	1.33	1.15	1.33	1.15
kelp bass, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00

Santa Barbara Island - Webster's Arch (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, calico bass, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelpfish spp.	6/4/2007	3	1	8.00		1.00		1.00	
olive rockfish, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/4/2007	3	3	10.00	0.00	2.67	0.58	16.00	9.90
pile surfperch, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, juvenile	6/4/2007	3	1	6.00		1.00		1.00	
rock wrasse, male	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00

Santa Barbara Island - Webster's Arch (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
snubnose sculpin	6/4/2007	3	2	9.00	0.00	2.00	0.00	2.50	0.71
striped surfperch, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/4/2007	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	6/4/2007	3	3	2.33	4.04	0.33	0.58	0.33	0.58

2007 ROVING DIVER FISH COUNT

Santa Barbara Island - Graveyard Canyon

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
bat ray	6/6/2007	4	1	7.00		1.00		1.00	
black surfperch, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/6/2007	4	4	10.00	0.00	3.75	0.50	129.75	42.00
blacksmith, adult	6/6/2007	4	4	8.50	1.73	2.00	0.00	4.50	1.91
blacksmith, all	6/6/2007	4	4	8.50	1.73	2.00	0.00	4.50	1.91
blacksmith, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	6/6/2007	4	1	5.00		1.00		1.00	
California sheephead,	6/6/2007	4	4	2.25	4.50	0.25	0.50	0.25	0.50
California sheephead,	6/6/2007	4	4	7.75	1.89	1.50	0.58	1.50	0.58
California sheephead, male	6/6/2007	4	4	2.25	4.50	0.25	0.50	0.25	0.50
coralline sculpin	6/6/2007	4	1	9.00		1.00		1.00	
garibaldi, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish,	6/6/2007	4	1	8.00		1.00		1.00	
island kelpfish	6/6/2007	4	4	5.25	3.77	1.50	1.00	2.25	1.71

Santa Barbara Island - Graveyard Canyon (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
kelp bass, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/6/2007	4	4	8.75	1.50	1.50	0.58	2.50	1.91
pile surfperch, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/6/2007	4	4	4.50	5.26	0.50	0.58	0.50	0.58
rock wrasse, male	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	6/6/2007	4	4	9.00	0.00	2.00	0.00	2.50	0.58

Santa Barbara Island - Graveyard Canyon (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
speckled sanddab	6/6/2007	4	4	8.00	1.41	1.50	0.58	2.00	1.41
striped surfperch, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	6/6/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
vermillion rockfish, juvenile	6/6/2007	4	4	7.25	2.06	1.00	0.00	1.00	0.00

2007 ROVING DIVER FISH COUNT

Santa Barbara Island - Southeast Reef

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
black and yellow rockfish	5/24/2007	4	2	8.00	0.00	1.50	0.71	1.50	0.71
black surfperch, adult	5/24/2007	4	4	1.25	2.50	0.25	0.50	0.25	0.50
black surfperch, all	5/24/2007	4	4	1.25	2.50	0.25	0.50	0.25	0.50
black surfperch, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	5/24/2007	4	4	9.00	0.82	3.00	0.00	28.75	2.87
blacksmith, adult	5/24/2007	4	4	10.00	0.00	4.00	0.00	346.25	54.68
blacksmith, all	5/24/2007	4	4	10.00	0.00	4.00	0.00	346.25	54.68
blacksmith, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	5/24/2007	4	3	8.67	1.53	1.33	0.58	1.33	0.58
California moray	5/24/2007	4	2	8.50	0.71	2.00	0.00	2.00	0.00
California sheephead,	5/24/2007	4	4	10.00	0.00	2.25	0.50	10.25	3.40
California sheephead,	5/24/2007	4	4	7.75	0.96	2.00	0.00	4.00	1.15
California sheephead, male	5/24/2007	4	4	9.00	0.82	2.00	0.00	3.25	1.89
garibaldi, adult	5/24/2007	4	4	10.00	0.00	3.00	0.00	30.00	9.83
garibaldi, juvenile	5/24/2007	4	4	5.00	5.77	0.50	0.58	0.50	0.58
grass rockfish	5/24/2007	4	1	6.00		1.00		1.00	
halfmoon	5/24/2007	4	4	10.00	0.00	3.00	0.00	21.00	6.22

Santa Barbara Island - Southeast Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
island kelpfish	5/24/2007	4	4	9.25	0.96	2.25	0.50	7.75	3.95
kelp bass, adult	5/24/2007	4	4	7.25	4.86	1.50	1.00	1.50	1.00
kelp bass, calico bass, all	5/24/2007	4	4	7.25	4.86	1.50	1.00	1.50	1.00
kelp bass, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	5/24/2007	4	4	7.75	1.89	1.50	0.58	1.75	0.96
kelp rockfish, all	5/24/2007	4	4	7.75	1.89	1.50	0.58	1.75	0.96
kelp rockfish, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	5/24/2007	4	3	5.33	0.58	1.33	0.58	1.33	0.58
olive rockfish, adult	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	5/24/2007	4	4	9.00	2.00	2.00	0.00	6.25	3.10
opaleye, all	5/24/2007	4	4	9.00	2.00	2.00	0.00	6.25	3.10
opaleye, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	5/24/2007	4	4	9.50	1.00	2.75	0.50	12.50	3.11
pile surfperch, adult	5/24/2007	4	4	3.50	4.36	0.50	0.58	0.50	0.58
pile surfperch, all	5/24/2007	4	4	3.50	4.36	0.50	0.58	0.50	0.58
pile surfperch, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	5/24/2007	4	4	1.50	3.00	0.25	0.50	0.25	0.50
senorita, adult	5/24/2007	4	4	8.50	2.38	2.00	0.00	5.00	1.83
senorita, all	5/24/2007	4	4	8.50	2.38	2.00	0.00	5.00	1.83

Santa Barbara Island - Southeast Reef (continued)

Common Name	Date	Maximum # of Observers	# of Observations	Avg Score	StDev Score	Avg Abundance	StDev Abundance	Avg Count	StDev Count
senorita, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	5/24/2007	4	1	7.00		1.00		1.00	
striped surfperch, adult	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	5/24/2007	4	4	6.50	4.43	1.00	0.82	1.25	1.26
treefish, juvenile	5/24/2007	4	4	0.00	0.00	0.00	0.00	0.00	0.00
vermillion rockfish, juvenile	5/24/2007	4	2	8.00	1.41	1.50	0.71	1.50	0.71

Appendix G. Fish Size Frequency Distributions.

No fish size frequency distributions are included in this annual report. Raw fish size frequency data is available upon request from the Channel Islands National Park.

Appendix H. Natural Habitat Size Frequency Distributions.

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Wyckoff Ledge

Tethya aurantia	
<10	0.0%
10 - 19	0.0%
20 - 29	6.5%
30 - 39	6.5%
40 - 49	9.7%
50 - 59	14.5%
60 - 69	21.0%
70 - 79	19.4%
80 - 89	14.5%
90 - 99	1.6%
> 99	6.5%
(Cases) N=	62
mean	65
min size (mm)	23
max size (mm)	124

Haliotis rufescens	
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.9%
75 - 84	0.9%

Kelletia kelletii	
< 40	1.5%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	13.2%
70 - 79	20.6%
80 - 89	30.9%
90 - 99	23.5%
100 - 109	7.4%
110 - 119	2.9%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	68
mean	84
min size (mm)	32
max size (mm)	112

Lithopoma gibberosa	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	3.6%
40 - 49	16.4%

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	20.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	20.0%
80 - 89	20.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	40.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	5
mean	89
min size (mm)	39
max size (mm)	127

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	1.5%

San Miguel Island - Wyckoff Ledge (continued)

85 - 94	0.0%	50 - 59	54.5%	30 - 39	3.0%
95 - 104	2.7%	60 - 69	25.5%	40 - 49	4.5%
105 - 114	0.9%	70 - 79	0.0%	50 - 59	21.2%
115 - 124	2.7%	80 - 89	0.0%	60 - 69	25.8%
125 - 134	4.4%	90 - 99	0.0%	70 - 79	37.9%
135 - 144	5.3%	100 - 109	0.0%	80 - 89	4.5%
145 - 154	10.6%	110 - 119	0.0%	90 - 99	1.5%
155 - 164	12.4%	> 119	0.0%	> 99	0.0%
165 - 174	9.7%	(Cases) N=	55	(Cases) N=	66
175 - 184	11.5%	mean	55	mean	65
185 - 194	11.5%	min size (mm)	36	min size (mm)	24
>195	24.8%	max size (mm)	66	max size (mm)	96
(Cases) N=	113				
mean	171				
min size (mm)	65				
max size (mm)	224				

Pisaster giganteus		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	4.4%	5 - 9	0.0%	5 - 9	3.8%
40 - 59	29.4%	10 - 14	0.8%	10 - 14	15.4%
60 - 79	44.1%	15 - 19	3.4%	15 - 19	17.3%
80 - 99	14.7%	20 - 24	3.8%	20 - 24	15.4%
100 - 119	4.4%	25 - 29	7.2%	25 - 29	9.6%
120 - 139	1.5%	30 - 34	6.4%	30 - 34	17.3%
140 - 159	0.0%	35 - 39	4.9%	35 - 39	0.0%
160 - 179	0.0%	40 - 44	5.3%	40 - 44	7.7%

San Miguel Island - Wyckoff Ledge (continued)

180 - 199	1.5%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	68
mean	69
min size (mm)	34
max size (mm)	184

Pycnopodia helianthoides

< 20	0.0%
20 - 39	5.9%
40 - 59	11.8%
60 - 79	17.6%
80 - 99	29.4%
100 - 119	0.0%
120 - 139	11.8%
140 - 159	5.9%
160 - 179	5.9%
180 - 199	5.9%
200 - 219	0.0%
220 - 239	5.9%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%

45 - 49	3.8%
50 - 54	1.1%
55 - 59	1.5%
60 - 64	4.2%
65 - 69	3.4%
70 - 74	1.9%
75 - 79	3.8%
80 - 84	4.9%
85 - 89	7.5%
90 - 94	9.1%
95 - 99	5.7%
100 - 104	7.2%
105 - 109	5.3%
> 109	9.1%
(Cases) N=	265
mean	70
min size (mm)	12
max size (mm)	124

45 - 49	1.9%
50 - 54	9.6%
55 - 59	0.0%
60 - 64	1.9%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	52
mean	27
min size (mm)	8
max size (mm)	64

(Cases) N=	17
mean	105
min size (mm)	39
max size (mm)	230

San Miguel Island - Hare Rock

Tethya aurantia

<10	0.0%
10 - 19	6.3%
20 - 29	6.3%
30 - 39	18.8%
40 - 49	18.8%
50 - 59	12.5%
60 - 69	18.8%
70 - 79	6.3%
80 - 89	6.3%
90 - 99	6.3%
> 99	0.0%
(Cases) N=	16
mean	51
min size (mm)	11
max size (mm)	92

Haliotis rufescens

<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	20.0%
80 - 89	0.0%
90 - 99	20.0%
100 - 109	20.0%
110 - 119	20.0%
120 - 129	20.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	5
mean	101
min size (mm)	75
max size (mm)	123

Lithopoma gibberosa

<10	0.0%
10 - 19	3.8%
20 - 29	26.4%
30 - 39	43.4%
40 - 49	18.9%
50 - 59	5.7%

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	1.5%
30 - 39	1.5%
40 - 49	11.8%
50 - 59	30.9%
60 - 69	39.7%
70 - 79	13.2%
80 - 89	1.5%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	68
mean	59
min size (mm)	28
max size (mm)	82

Pisaster giganteus

< 20	0.0%
20 - 39	19.4%
40 - 59	40.3%
60 - 79	14.9%
80 - 99	14.9%
100 - 119	9.0%
120 - 139	0.0%
140 - 159	1.5%

San Miguel Island - Hare Rock (continued)

95 - 104	0.0%	60 - 69	0.0%	160 - 179	0.0%
105 - 114	0.0%	70 - 79	1.9%	180 - 199	0.0%
115 - 124	0.0%	80 - 89	0.0%	200 - 219	0.0%
125 - 134	100.0%	90 - 99	0.0%	220 - 239	0.0%
135 - 144	0.0%	100 - 109	0.0%	> 239	0.0%
145 - 154	0.0%	110 - 119	0.0%	(Cases) N=	67
155 - 164	0.0%	> 119	0.0%	mean	61
165 - 174	0.0%	(Cases) N=	53	min size (mm)	20
175 - 184	0.0%	mean	34	max size (mm)	153
185 - 194	0.0%	min size (mm)	15		
>195	0.0%	max size (mm)	70		
(Cases) N=	1				
mean	126				
min size (mm)	126				
max size (mm)	126				

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	6.2%	5 - 9	0.0%	5 - 9	0.0%
40 - 59	9.2%	10 - 14	1.9%	10 - 14	0.5%
60 - 79	15.4%	15 - 19	3.3%	15 - 19	8.8%
80 - 99	24.6%	20 - 24	7.5%	20 - 24	14.3%
100 - 119	13.8%	25 - 29	10.8%	25 - 29	15.9%
120 - 139	10.8%	30 - 34	7.5%	30 - 34	22.0%
140 - 159	3.1%	35 - 39	8.5%	35 - 39	14.3%
160 - 179	1.5%	40 - 44	4.2%	40 - 44	16.5%
180 - 199	1.5%	45 - 49	4.7%	45 - 49	5.5%

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Hare Rock (continued)

200 - 219	1.5%	50 - 54	5.6%	50 - 54	1.6%
220 - 239	3.1%	55 - 59	4.7%	55 - 59	0.5%
240 - 259	3.1%	60 - 64	3.3%	60 - 64	0.0%
260 - 279	3.1%	65 - 69	6.1%	65 - 69	0.0%
280 - 299	3.1%	70 - 74	4.2%	70 - 74	0.0%
> 299	0.0%	75 - 79	4.2%	75 - 79	0.0%
(Cases) N=	65	80 - 84	3.3%	> 79	0.0%
mean	112	85 - 89	4.2%	(Cases) N=	182
min size (mm)	23	90 - 94	6.1%	mean	32
max size (mm)	285	95 - 99	3.3%	min size (mm)	10
		100 - 104	3.8%	max size (mm)	56
		105 - 109	1.9%		
		> 109	0.9%		
		(Cases) N=	213		
		mean	55		
		min size (mm)	11		
		max size (mm)	124		

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee North

Tethya aurantia	
<10	0.0%
10 - 19	0.0%
20 - 29	1.4%
30 - 39	4.3%
40 - 49	5.7%
50 - 59	7.1%
60 - 69	25.7%
70 - 79	20.0%
80 - 89	14.3%
90 - 99	11.4%
> 99	10.0%
(Cases) N=	70
mean	73
min size (mm)	27
max size (mm)	121

Haliotis rufescens	
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	4.0%
65 - 74	8.0%
75 - 84	4.0%
85 - 94	0.0%

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	66.7%
140 - 149	33.3%
> 149	0.0%
(Cases) N=	3
mean	136
min size (mm)	133
max size (mm)	140

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	14.3%

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	11.1%
40 - 49	0.0%
50 - 59	11.1%
60 - 69	0.0%
70 - 79	11.1%
80 - 89	22.2%
90 - 99	22.2%
100 - 109	11.1%
110 - 119	0.0%
120 - 129	11.1%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	9
mean	84
min size (mm)	39
max size (mm)	129

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	2.9%
30 - 39	7.4%

Santa Rosa Island - Johnson's Lee North (continued)

95 - 104	4.0%	60 - 69	0.0%	40 - 49	14.7%
105 - 114	4.0%	70 - 79	14.3%	50 - 59	11.8%
115 - 124	4.0%	80 - 89	42.9%	60 - 69	33.8%
125 - 134	4.0%	90 - 99	0.0%	70 - 79	22.1%
135 - 144	12.0%	100 - 109	0.0%	80 - 89	7.4%
145 - 154	0.0%	110 - 119	28.6%	90 - 99	0.0%
155 - 164	20.0%	> 119	0.0%	> 99	0.0%
165 - 174	8.0%	(Cases) N=	7	(Cases) N=	68
175 - 184	16.0%	mean	88	mean	61
185 - 194	4.0%	min size (mm)	55	min size (mm)	27
>195	4.0%	max size (mm)	116	max size (mm)	86
(Cases) N=	25				
mean	144				
min size (mm)	62				
max size (mm)	203				

Pisaster giganteus		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	0.0%	5 - 9	0.0%	5 - 9	2.6%
40 - 59	6.8%	10 - 14	0.9%	10 - 14	10.5%
60 - 79	44.1%	15 - 19	0.5%	15 - 19	7.9%
80 - 99	33.9%	20 - 24	1.4%	20 - 24	28.3%
100 - 119	8.5%	25 - 29	2.4%	25 - 29	13.2%
120 - 139	0.0%	30 - 34	2.4%	30 - 34	20.4%
140 - 159	1.7%	35 - 39	1.9%	35 - 39	3.9%
160 - 179	3.4%	40 - 44	3.3%	40 - 44	3.9%
180 - 199	1.7%	45 - 49	1.9%	45 - 49	2.6%

Santa Rosa Island - Johnson's Lee North (continued)

200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	59
mean	84
min size (mm)	40
max size (mm)	188

Pycnopodia helianthoides

< 20	0.0%
20 - 39	1.8%
40 - 59	3.5%
60 - 79	5.3%
80 - 99	29.8%
100 - 119	15.8%
120 - 139	10.5%
140 - 159	10.5%
160 - 179	10.5%
180 - 199	10.5%
200 - 219	1.8%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	57

50 - 54	2.4%
55 - 59	1.9%
60 - 64	4.7%
65 - 69	5.2%
70 - 74	7.5%
75 - 79	5.2%
80 - 84	12.7%
85 - 89	8.0%
90 - 94	11.8%
95 - 99	9.0%
100 - 104	7.5%
105 - 109	5.7%
> 109	3.8%
(Cases) N=	212
mean	78
min size (mm)	11
max size (mm)	127

50 - 54	3.9%
55 - 59	2.6%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	152
mean	27
min size (mm)	5
max size (mm)	57

Santa Rosa Island - Johnson's Lee North (continued)

mean	121
min size (mm)	32
max size (mm)	212

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee South

Tethya aurantia	
<10	0.0%
10 - 19	0.0%
20 - 29	6.6%
30 - 39	6.6%
40 - 49	6.6%
50 - 59	13.1%
60 - 69	23.0%
70 - 79	16.4%
80 - 89	9.8%
90 - 99	8.2%
> 99	9.8%
(Cases) N=	61
mean	68
min size (mm)	22
max size (mm)	117

Kelletia kelletii	
< 40	5.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	30.0%
100 - 109	15.0%
110 - 119	40.0%
120 - 129	10.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	20
mean	104
min size (mm)	37
max size (mm)	120

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	5.0%
40 - 49	11.7%
50 - 59	11.7%
60 - 69	40.0%
70 - 79	25.0%
80 - 89	6.7%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	60
mean	63
min size (mm)	35
max size (mm)	86

Haliotis rufescens	
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%

Crassedoma giganteum	
<10	0.0%
10 - 19	8.3%
20 - 29	0.0%
30 - 39	8.3%
40 - 49	50.0%
50 - 59	8.3%

Pisaster giganteus	
< 20	0.0%
20 - 39	1.7%
40 - 59	31.7%
60 - 79	45.0%
80 - 99	15.0%
100 - 119	3.3%
120 - 139	0.0%
140 - 159	3.3%

Santa Rosa Island - Johnson's Lee South (continued)

95 - 104	0.0%	60 - 69	8.3%	160 - 179	0.0%
105 - 114	0.0%	70 - 79	0.0%	180 - 199	0.0%
115 - 124	20.0%	80 - 89	0.0%	200 - 219	0.0%
125 - 134	0.0%	90 - 99	0.0%	220 - 239	0.0%
135 - 144	20.0%	100 - 109	0.0%	> 239	0.0%
145 - 154	40.0%	110 - 119	0.0%	(Cases) N=	60
155 - 164	0.0%	120 - 129	0.0%	mean	70
165 - 174	0.0%	130 - 139	0.0%	min size (mm)	35
175 - 184	0.0%	> 139	16.7%	max size (mm)	157
185 - 194	20.0%	(Cases) N=	12		
>195	0.0%	mean	61		
(Cases) N=	5	min size (mm)	17		
mean	151	max size (mm)	152		
min size (mm)	120				
max size (mm)	189				

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	0.0%	5 - 9	0.0%	5 - 9	0.0%
40 - 59	6.1%	10 - 14	2.5%	10 - 14	5.6%
60 - 79	27.3%	15 - 19	6.4%	15 - 19	13.7%
80 - 99	9.1%	20 - 24	13.7%	20 - 24	24.2%
100 - 119	10.6%	25 - 29	7.8%	25 - 29	12.9%
120 - 139	22.7%	30 - 34	10.3%	30 - 34	14.5%
140 - 159	10.6%	35 - 39	7.8%	35 - 39	13.7%
160 - 179	9.1%	40 - 44	4.4%	40 - 44	9.7%
180 - 199	1.5%	45 - 49	2.5%	45 - 49	4.0%

Santa Rosa Island - Johnson's Lee South (continued)

200 - 219	3.0%	50 - 54	5.4%	50 - 54	0.8%
220 - 239	0.0%	55 - 59	1.0%	55 - 59	0.8%
240 - 259	0.0%	60 - 64	2.9%	60 - 64	0.0%
260 - 279	0.0%	65 - 69	2.5%	65 - 69	0.0%
280 - 299	0.0%	70 - 74	3.9%	70 - 74	0.0%
> 299	0.0%	75 - 79	3.4%	75 - 79	0.0%
(Cases) N=	66	80 - 84	5.4%	> 79	0.0%
mean	110	85 - 89	2.0%	(Cases) N=	124
min size (mm)	53	90 - 94	3.9%	mean	28
max size (mm)	210	95 - 99	4.9%	min size (mm)	12
		100 - 104	4.4%	max size (mm)	58
		105 - 109	3.4%		
		> 109	1.5%		
		(Cases) N=	204		
		mean	52		
		min size (mm)	11		
		max size (mm)	121		

Santa Rosa Island - Rodes Reef

Tethya aurantia

<10	0.9%
10 - 19	1.8%
20 - 29	12.3%
30 - 39	20.2%
40 - 49	12.3%
50 - 59	11.4%
60 - 69	13.2%
70 - 79	14.9%
80 - 89	7.9%
90 - 99	3.5%
> 99	1.8%
(Cases) N=	114
mean	53
min size (mm)	9
max size (mm)	107

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	12.5%
90 - 99	12.5%
100 - 109	37.5%
110 - 119	25.0%
> 119	12.5%
(Cases) N=	8
mean	108
min size (mm)	89
max size (mm)	125

Asterina miniata

<10	0.0%
10 - 19	1.0%
20 - 29	16.7%
30 - 39	19.6%
40 - 49	29.4%
50 - 59	15.7%
60 - 69	15.7%
70 - 79	1.0%
80 - 89	1.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	102
mean	44
min size (mm)	18
max size (mm)	81

Kelletia kelletii

< 40	1.8%
40 - 49	1.8%
50 - 59	1.8%
60 - 69	0.0%
70 - 79	5.5%
80 - 89	10.9%
90 - 99	5.5%
100 - 109	12.7%

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%

Pisaster giganteus

< 20	0.0%
20 - 39	8.3%
40 - 59	34.3%
60 - 79	44.4%
80 - 99	7.4%
100 - 119	1.9%
120 - 139	0.9%
140 - 159	1.9%

Santa Rosa Island - Rodes Reef (continued)

110 - 119	21.8%	60 - 69	0.0%	160 - 179	0.0%
120 - 129	32.7%	70 - 79	100.0%	180 - 199	0.9%
130 - 139	3.6%	80 - 89	0.0%	200 - 219	0.0%
140 - 149	1.8%	90 - 99	0.0%	220 - 239	0.0%
> 149	0.0%	100 - 109	0.0%	> 239	0.0%
(Cases) N=	55	110 - 119	0.0%	(Cases) N=	108
mean	108	120 - 129	0.0%	mean	64
min size (mm)	20	130 - 139	0.0%	min size (mm)	22
max size (mm)	143	> 139	0.0%	max size (mm)	185
		(Cases) N=	2		
		mean	75		
		min size (mm)	75		
		max size (mm)	75		

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	0.0%	5 - 9	0.0%	5 - 9	0.0%
40 - 59	10.0%	10 - 14	7.7%	10 - 14	0.0%
60 - 79	36.7%	15 - 19	22.2%	15 - 19	7.8%
80 - 99	31.7%	20 - 24	20.6%	20 - 24	10.0%
100 - 119	6.7%	25 - 29	5.7%	25 - 29	13.3%
120 - 139	5.0%	30 - 34	3.6%	30 - 34	6.7%
140 - 159	5.0%	35 - 39	3.6%	35 - 39	11.1%
160 - 179	1.7%	40 - 44	0.5%	40 - 44	15.6%
180 - 199	1.7%	45 - 49	2.1%	45 - 49	12.2%
200 - 219	1.7%	50 - 54	2.6%	50 - 54	12.2%
220 - 239	0.0%	55 - 59	0.5%	55 - 59	11.1%

Santa Rosa Island - Rodes Reef (continued)

240 - 259	0.0%	60 - 64	2.1%	60 - 64	0.0%
260 - 279	0.0%	65 - 69	3.1%	65 - 69	0.0%
280 - 299	0.0%	70 - 74	2.6%	70 - 74	0.0%
> 299	0.0%	75 - 79	4.1%	75 - 79	0.0%
(Cases) N=	60	80 - 84	3.6%	> 79	0.0%
mean	91	85 - 89	3.1%	(Cases) N=	90
min size (mm)	47	90 - 94	4.6%	mean	38
max size (mm)	210	95 - 99	2.6%	min size (mm)	16
		100 - 104	3.1%	max size (mm)	59
		105 - 109	2.1%		
		> 109	0.0%		
		(Cases) N=	194		
		mean	42		
		min size (mm)	11		
		max size (mm)	109		

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Gull Island South

Tethya aurantia	
<10	0.0%
10 - 19	7.9%
20 - 29	12.7%
30 - 39	15.9%
40 - 49	25.4%
50 - 59	14.3%
60 - 69	12.7%
70 - 79	3.2%
80 - 89	3.2%
90 - 99	1.6%
> 99	3.2%
(Cases) N=	63
mean	47
min size (mm)	12
max size (mm)	120

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	4.5%
90 - 99	27.3%
100 - 109	22.7%

Lithopoma undosa	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	50.0%
80 - 89	50.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	2
mean	80
min size (mm)	72
max size (mm)	87

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	5.6%
30 - 39	11.1%
40 - 49	22.2%
50 - 59	22.2%

Haliotis assimilis	
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	100.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	70
min size (mm)	70
max size (mm)	70

Asterina miniata

Santa Cruz Island - Gull Island South (continued)

110 - 119	40.9%	60 - 69	0.0%	<10	0.0%
120 - 129	4.5%	70 - 79	5.6%	10 - 19	1.5%
130 - 139	0.0%	80 - 89	11.1%	20 - 29	1.5%
140 - 149	0.0%	90 - 99	0.0%	30 - 39	1.5%
> 149	0.0%	100 - 109	11.1%	40 - 49	3.0%
(Cases) N=	22	110 - 119	11.1%	50 - 59	18.2%
mean	105	120 - 129	0.0%	60 - 69	47.0%
min size (mm)	89	130 - 139	0.0%	70 - 79	18.2%
max size (mm)	122	> 139	0.0%	80 - 89	9.1%
		(Cases) N=	18	90 - 99	0.0%
		mean	65	> 99	0.0%
		min size (mm)	25	(Cases) N=	66
		max size (mm)	116	mean	64
				min size (mm)	19
				max size (mm)	85

Pisaster giganteus		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	1.8%	5 - 9	0.0%	5 - 9	0.0%
40 - 59	1.8%	10 - 14	0.0%	10 - 14	1.7%
60 - 79	14.5%	15 - 19	3.2%	15 - 19	5.0%
80 - 99	41.8%	20 - 24	5.6%	20 - 24	13.3%
100 - 119	30.9%	25 - 29	4.0%	25 - 29	16.7%
120 - 139	5.5%	30 - 34	4.0%	30 - 34	23.3%
140 - 159	3.6%	35 - 39	4.8%	35 - 39	16.7%
160 - 179	0.0%	40 - 44	2.4%	40 - 44	11.7%
180 - 199	0.0%	45 - 49	3.2%	45 - 49	8.3%

Santa Cruz Island - Gull Island South (continued)

200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	55
mean	96
min size (mm)	25
max size (mm)	151

Pycnopodia helianthoides

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	4.2%
140 - 159	8.3%
160 - 179	20.8%
180 - 199	20.8%
200 - 219	25.0%
220 - 239	8.3%
240 - 259	8.3%
260 - 279	0.0%
280 - 299	0.0%
> 299	4.2%
(Cases) N=	24

50 - 54	1.6%
55 - 59	3.2%
60 - 64	3.2%
65 - 69	2.4%
70 - 74	9.6%
75 - 79	6.4%
80 - 84	7.2%
85 - 89	8.0%
90 - 94	5.6%
95 - 99	7.2%
100 - 104	5.6%
105 - 109	3.2%
> 109	9.6%
(Cases) N=	125
mean	72
min size (mm)	17
max size (mm)	129

50 - 54	3.3%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	60
mean	33
min size (mm)	14
max size (mm)	54

Santa Cruz Island - Gull Island South (continued)

mean	197
min size (mm)	123
max size (mm)	302

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Fry's Harbor

Tethya aurantia	
<10	0.0%
10 - 19	27.3%
20 - 29	22.7%
30 - 39	31.8%
40 - 49	13.6%
50 - 59	2.3%
60 - 69	2.3%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	44
mean	30
min size (mm)	12
max size (mm)	68

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	40.0%
100 - 109	0.0%

Lithopoma undosa	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	14.3%
50 - 59	14.3%
60 - 69	28.6%
70 - 79	14.3%
80 - 89	28.6%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	7
mean	66
min size (mm)	44
max size (mm)	82

Lithopoma gibberosa	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	100.0%
40 - 49	0.0%
50 - 59	0.0%

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	2.4%
30 - 39	2.4%
40 - 49	12.2%
50 - 59	24.4%
60 - 69	26.8%
70 - 79	19.5%
80 - 89	7.3%
90 - 99	4.9%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	41
mean	62
min size (mm)	24
max size (mm)	94

Crassedoma giganteum	
<10	0.0%
10 - 19	6.7%
20 - 29	13.3%
30 - 39	6.7%
40 - 49	40.0%
50 - 59	6.7%

Santa Cruz Island - Fry's Harbor (continued)

110 - 119	40.0%	60 - 69	0.0%	60 - 69	13.3%
120 - 129	20.0%	70 - 79	0.0%	70 - 79	0.0%
130 - 139	0.0%	80 - 89	0.0%	80 - 89	0.0%
140 - 149	0.0%	90 - 99	0.0%	90 - 99	0.0%
> 149	0.0%	100 - 109	0.0%	100 - 109	0.0%
(Cases) N=	5	110 - 119	0.0%	110 - 119	0.0%
mean	109	> 119	0.0%	120 - 129	6.7%
min size (mm)	97	(Cases) N=	1	130 - 139	0.0%
max size (mm)	122	mean	39	> 139	6.7%
		min size (mm)	39	(Cases) N=	15
		max size (mm)	39	mean	54
				min size (mm)	12
				max size (mm)	147

Tegula regina		***Pisaster giganteus***		***Lytechinus anamesus***	
< 5	0.0%	< 20	0.0%	< 5	0.0%
5 - 9	0.0%	20 - 39	0.0%	5 - 9	0.0%
10 - 14	0.0%	40 - 59	1.6%	10 - 14	0.0%
15 - 19	0.0%	60 - 79	4.9%	15 - 19	0.0%
20 - 24	0.0%	80 - 99	9.8%	20 - 24	100.0%
25 - 29	0.0%	100 - 119	26.2%	25 - 29	0.0%
30 - 34	0.0%	120 - 139	34.4%	30 - 34	0.0%
35 - 39	0.0%	140 - 159	8.2%	35 - 39	0.0%
40 - 44	0.0%	160 - 179	8.2%	40 - 44	0.0%
45 - 49	50.0%	180 - 199	3.3%	45 - 49	0.0%
50 - 54	50.0%	200 - 219	0.0%	> 49	0.0%
55 - 59	0.0%	220 - 239	0.0%	(Cases) N=	1

Santa Cruz Island - Fry's Harbor (continued)

60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	4
mean	50
min size (mm)	48
max size (mm)	51

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.6%
40 - 49	3.2%
50 - 59	19.0%
60 - 69	23.8%
70 - 79	23.8%
80 - 89	22.2%
90 - 99	4.8%
> 99	1.6%
(Cases) N=	63
mean	71
min size (mm)	35
max size (mm)	100

> 239	3.3%
(Cases) N=	61
mean	126
min size (mm)	50
max size (mm)	248

Pycnopodia helianthoides

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	3.8%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	3.8%
140 - 159	7.7%
160 - 179	15.4%
180 - 199	19.2%
200 - 219	23.1%
220 - 239	11.5%
240 - 259	7.7%
260 - 279	7.7%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	26
mean	194
min size (mm)	60

mean	21
min size (mm)	21
max size (mm)	21

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	1.7%
20 - 24	3.4%
25 - 29	5.1%
30 - 34	6.8%
35 - 39	3.4%
40 - 44	5.1%
45 - 49	5.1%
50 - 54	15.3%
55 - 59	8.5%
60 - 64	5.1%
65 - 69	5.1%
70 - 74	11.9%
75 - 79	8.5%
80 - 84	8.5%
85 - 89	0.0%
90 - 94	5.1%
95 - 99	1.7%
100 - 104	0.0%

Santa Cruz Island - Fry's Harbor (continued)

max size (mm)	265	105 - 109	0.0%
		> 109	0.0%
		(Cases) N=	59
		mean	58
		min size (mm)	17
		max size (mm)	97

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Fry's Harbor

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	10.5%
25 - 29	26.3%
30 - 34	15.8%
35 - 39	15.8%
40 - 44	21.1%
45 - 49	5.3%
50 - 54	0.0%
55 - 59	5.3%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	19
mean	34
min size (mm)	21
max size (mm)	56

Tethya aurantia	
<10	0.0%
10 - 19	2.5%
20 - 29	22.5%
30 - 39	12.5%
40 - 49	35.0%
50 - 59	15.0%
60 - 69	2.5%
70 - 79	5.0%
80 - 89	2.5%
90 - 99	0.0%
> 99	2.5%
(Cases) N=	40
mean	44
min size (mm)	17
max size (mm)	104

Lithopoma undosa	
<10	0.0%
10 - 19	0.0%
20 - 29	8.3%
30 - 39	0.0%
40 - 49	16.7%
50 - 59	16.7%
60 - 69	25.0%
70 - 79	8.3%

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	12.5%
40 - 49	0.0%
50 - 59	12.5%
60 - 69	0.0%
70 - 79	12.5%
80 - 89	62.5%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	8
mean	72
min size (mm)	33
max size (mm)	86

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	4.8%
50 - 59	11.3%

Santa Cruz Island - Fry's Harbor (continued)

80 - 89	25.0%	60 - 69	14.5%
90 - 99	0.0%	70 - 79	14.5%
100 - 109	0.0%	80 - 89	6.5%
110 - 119	0.0%	90 - 99	6.5%
> 119	0.0%	100 - 109	11.3%
(Cases) N=	12	110 - 119	17.7%
mean	61	120 - 129	8.1%
min size (mm)	22	130 - 139	3.2%
max size (mm)	84	> 139	1.6%
		(Cases) N=	62
		mean	89
		min size (mm)	40
		max size (mm)	144

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pelican Bay

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	14.3%
50 - 54	42.9%
55 - 59	42.9%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	7
mean	52
min size (mm)	45
max size (mm)	57

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	5.6%

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	1.7%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	3.4%
120 - 139	17.2%
140 - 159	37.9%
160 - 179	24.1%
180 - 199	6.9%
200 - 219	8.6%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	58
mean	156
min size (mm)	50
max size (mm)	210

Lytechinus anamesus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.6%
15 - 19	7.9%
20 - 24	14.6%
25 - 29	28.0%

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	1.1%
20 - 24	4.0%
25 - 29	4.0%
30 - 34	10.2%
35 - 39	11.9%
40 - 44	13.1%
45 - 49	21.6%
50 - 54	16.5%
55 - 59	9.7%
60 - 64	5.7%
65 - 69	1.1%
70 - 74	0.6%
75 - 79	0.6%
80 - 84	0.0%
85 - 89	0.0%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	176
mean	45

Santa Cruz Island - Pelican Bay (continued)

30 - 39	5.6%	30 - 34	46.3%	min size (mm)	17
40 - 49	19.4%	35 - 39	1.8%	max size (mm)	76
50 - 59	9.7%	40 - 44	0.6%		
60 - 69	13.9%	45 - 49	0.0%		
70 - 79	20.8%	> 49	0.0%		
80 - 89	13.9%	(Cases) N=	164		
90 - 99	8.3%	mean	28		
> 99	2.8%	min size (mm)	14		
(Cases) N=	72	max size (mm)	40		
mean	64				
min size (mm)	20				
max size (mm)	110				

Strongylocentrotus purpuratus		***Tethya aurantia***		***Megathura crenulata***	
< 5	0.0%	<10	0.0%	<10	0.0%
5 - 9	0.0%	10 - 19	7.1%	10 - 19	0.0%
10 - 14	0.0%	20 - 29	14.3%	20 - 29	0.0%
15 - 19	0.5%	30 - 39	21.4%	30 - 39	0.0%
20 - 24	18.7%	40 - 49	35.7%	40 - 49	1.6%
25 - 29	64.1%	50 - 59	21.4%	50 - 59	11.5%
30 - 34	15.3%	60 - 69	0.0%	60 - 69	19.7%
35 - 39	1.4%	70 - 79	0.0%	70 - 79	32.8%
40 - 44	0.0%	80 - 89	0.0%	80 - 89	32.8%
45 - 49	0.0%	90 - 99	0.0%	90 - 99	1.6%
50 - 54	0.0%	> 99	0.0%	100 - 109	0.0%
55 - 59	0.0%	(Cases) N=	28	110 - 119	0.0%
60 - 64	0.0%	mean	40	> 119	0.0%

65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	209
mean	27
min size (mm)	17
max size (mm)	38

min size (mm)	17
max size (mm)	58

Lithopoma undosa

<10	1.9%
10 - 19	0.0%
20 - 29	20.8%
30 - 39	3.8%
40 - 49	3.8%
50 - 59	9.4%
60 - 69	18.9%
70 - 79	15.1%
80 - 89	7.5%
90 - 99	11.3%
100 - 109	7.5%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	53
mean	62
min size (mm)	8
max size (mm)	102

(Cases) N=	61
mean	73
min size (mm)	49
max size (mm)	91

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	7.7%
40 - 49	15.4%
50 - 59	0.0%
60 - 69	7.7%
70 - 79	7.7%
80 - 89	0.0%
90 - 99	15.4%
100 - 109	7.7%
110 - 119	7.7%
120 - 129	15.4%
130 - 139	0.0%
> 139	15.4%
(Cases) N=	13
mean	93
min size (mm)	34
max size (mm)	149

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Scorpion Anchorage

Tegula regina		***Pisaster giganteus***		***Strongylocentrotus franciscanus***	
< 5	0.0%	< 20	0.0%	< 5	0.0%
5 - 9	0.0%	20 - 39	0.0%	5 - 9	0.0%
10 - 14	0.0%	40 - 59	2.4%	10 - 14	0.0%
15 - 19	0.0%	60 - 79	8.4%	15 - 19	0.0%
20 - 24	0.0%	80 - 99	10.8%	20 - 24	0.0%
25 - 29	0.0%	100 - 119	33.7%	25 - 29	1.0%
30 - 34	0.0%	120 - 139	34.9%	30 - 34	3.0%
35 - 39	0.0%	140 - 159	2.4%	35 - 39	11.8%
40 - 44	0.0%	160 - 179	4.8%	40 - 44	13.3%
45 - 49	60.0%	180 - 199	1.2%	45 - 49	25.6%
50 - 54	20.0%	200 - 219	1.2%	50 - 54	22.2%
55 - 59	20.0%	220 - 239	0.0%	55 - 59	7.9%
60 - 64	0.0%	> 239	0.0%	60 - 64	4.9%
65 - 69	0.0%	(Cases) N=	83	65 - 69	2.5%
70 - 74	0.0%	mean	116	70 - 74	4.9%
> 75	0.0%	min size (mm)	43	75 - 79	1.0%
(Cases) N=	5	max size (mm)	206	80 - 84	1.5%
mean	50			85 - 89	0.5%
min size (mm)	45	***Lytechinus anamesus***		90 - 94	0.0%
max size (mm)	56	< 5	0.0%	95 - 99	0.0%
		5 - 9	0.0%	100 - 104	0.0%
Asterina miniata		10 - 14	0.0%	105 - 109	0.0%
<10	0.0%	15 - 19	0.0%	> 109	0.0%
10 - 19	0.0%	20 - 24	100.0%	(Cases) N=	203
20 - 29	1.7%	25 - 29	0.0%	mean	50

Santa Cruz Island - Scorpion Anchorage (continued)

30 - 39	3.3%	30 - 34	0.0%	min size (mm)	28
40 - 49	10.0%	35 - 39	0.0%	max size (mm)	89
50 - 59	17.5%	40 - 44	0.0%		
60 - 69	25.0%	45 - 49	0.0%		
70 - 79	30.0%	> 49	0.0%		
80 - 89	11.7%	(Cases) N=	1		
90 - 99	0.8%	mean	22		
> 99	0.0%	min size (mm)	22		
(Cases) N=	120	max size (mm)	22		
mean	65				
min size (mm)	27				
max size (mm)	95				

Strongylocentrotus purpuratus		***Tethya aurantia***		***Lithopoma undosa***	
< 5	14.4%	<10	0.0%	<10	0.0%
5 - 9	4.6%	10 - 19	4.5%	10 - 19	0.0%
10 - 14	0.5%	20 - 29	9.1%	20 - 29	0.0%
15 - 19	0.0%	30 - 39	22.7%	30 - 39	3.6%
20 - 24	1.9%	40 - 49	18.2%	40 - 49	0.0%
25 - 29	38.9%	50 - 59	12.1%	50 - 59	0.0%
30 - 34	13.9%	60 - 69	13.6%	60 - 69	0.0%
35 - 39	7.4%	70 - 79	7.6%	70 - 79	1.8%
40 - 44	8.8%	80 - 89	6.1%	80 - 89	5.5%
45 - 49	6.9%	90 - 99	3.0%	90 - 99	3.6%
50 - 54	2.3%	> 99	3.0%	100 - 109	14.5%
55 - 59	0.5%	(Cases) N=	66	110 - 119	52.7%
60 - 64	0.0%	mean	51	> 119	18.2%

Santa Cruz Island - Scorpion Anchorage (continued)

65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	216
mean	27
min size (mm)	3
max size (mm)	56

min size (mm)	18
max size (mm)	113

Kelletia kelletii

< 40	0.0%
40 - 49	2.7%
50 - 59	8.1%
60 - 69	0.0%
70 - 79	5.4%
80 - 89	8.1%
90 - 99	24.3%
100 - 109	18.9%
110 - 119	32.4%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	37
mean	97
min size (mm)	47
max size (mm)	117

(Cases) N=	55
mean	108
min size (mm)	30
max size (mm)	130

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	100.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	1
mean	43
min size (mm)	43
max size (mm)	43

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Yellow Banks

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	27.3%
60 - 69	9.1%
70 - 79	27.3%
80 - 89	27.3%
90 - 99	0.0%
100 - 109	9.1%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	11
mean	73
min size (mm)	52
max size (mm)	103

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	66.7%
50 - 54	33.3%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	3
mean	50
min size (mm)	48
max size (mm)	52

Asterina miniata	
<10	0.0%
10 - 19	4.8%
20 - 29	7.9%

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	4.2%
200 - 219	0.0%
220 - 239	20.8%
240 - 259	25.0%
260 - 279	29.2%
280 - 299	4.2%
> 299	16.7%
(Cases) N=	24
mean	256
min size (mm)	190
max size (mm)	310

Lytechinus anamesus	
< 5	0.0%
5 - 9	19.7%
10 - 14	34.4%

Santa Cruz Island - Yellow Banks (continued)

60 - 69	0.0%	30 - 39	6.3%	15 - 19	39.3%
70 - 79	33.3%	40 - 49	19.0%	20 - 24	4.9%
80 - 89	0.0%	50 - 59	22.2%	25 - 29	1.6%
90 - 99	0.0%	60 - 69	14.3%	30 - 34	0.0%
100 - 109	0.0%	70 - 79	15.9%	35 - 39	0.0%
110 - 119	0.0%	80 - 89	7.9%	40 - 44	0.0%
120 - 129	0.0%	90 - 99	1.6%	45 - 49	0.0%
130 - 139	33.3%	> 99	0.0%	> 49	0.0%
> 139	33.3%	(Cases) N=	63	(Cases) N=	61
(Cases) N=	3	mean	55	mean	14
mean	119	min size (mm)	13	min size (mm)	5
min size (mm)	73	max size (mm)	94	max size (mm)	27
max size (mm)	145				

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***		***Tethya aurantia***	
< 5	0.0%	< 5	0.4%	<10	0.0%
5 - 9	0.0%	5 - 9	0.8%	10 - 19	1.9%
10 - 14	1.8%	10 - 14	6.6%	20 - 29	1.9%
15 - 19	14.0%	15 - 19	25.7%	30 - 39	0.0%
20 - 24	28.1%	20 - 24	28.8%	40 - 49	20.8%
25 - 29	12.3%	25 - 29	13.6%	50 - 59	30.2%
30 - 34	10.5%	30 - 34	9.3%	60 - 69	15.1%
35 - 39	14.0%	35 - 39	4.3%	70 - 79	7.5%
40 - 44	5.3%	40 - 44	3.5%	80 - 89	7.5%
45 - 49	0.0%	45 - 49	3.9%	90 - 99	11.3%
50 - 54	0.0%	50 - 54	1.2%	> 99	3.8%
55 - 59	0.0%	55 - 59	1.9%	(Cases) N=	53

Santa Cruz Island - Yellow Banks (continued)

60 - 64	0.0%
65 - 69	0.0%
70 - 74	1.8%
75 - 79	3.5%
80 - 84	1.8%
85 - 89	0.0%
90 - 94	1.8%
95 - 99	0.0%
100 - 104	3.5%
105 - 109	0.0%
> 109	1.8%
(Cases) N=	57
mean	35
min size (mm)	12
max size (mm)	121

60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	257
mean	25
min size (mm)	3
max size (mm)	59

mean	63
min size (mm)	19
max size (mm)	103

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	6.7%
70 - 79	0.0%
80 - 89	6.7%
90 - 99	20.0%
100 - 109	6.7%
110 - 119	53.3%
120 - 129	6.7%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	15
mean	106
min size (mm)	63
max size (mm)	120

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Admiral's Reef

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	10.0%
60 - 69	10.0%
70 - 79	20.0%
80 - 89	10.0%
90 - 99	20.0%
100 - 109	30.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	10
mean	85
min size (mm)	59
max size (mm)	106

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	2.2%
50 - 59	23.9%

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	66.7%
60 - 69	0.0%
70 - 79	16.7%
80 - 89	0.0%
90 - 99	16.7%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	6
mean	64
min size (mm)	51
max size (mm)	95

Tegula regina

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	4.8%
40 - 49	17.7%
50 - 59	24.2%
60 - 69	33.9%
70 - 79	17.7%
80 - 89	1.6%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	62
mean	59
min size (mm)	34
max size (mm)	80

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	6.3%
80 - 99	4.2%
100 - 119	8.3%
120 - 139	22.9%
140 - 159	27.1%

Anacapa Island - Admiral's Reef (continued)

60 - 69	45.7%	20 - 24	0.0%	160 - 179	22.9%
70 - 79	21.7%	25 - 29	0.0%	180 - 199	8.3%
80 - 89	2.2%	30 - 34	0.0%	200 - 219	0.0%
90 - 99	4.3%	35 - 39	0.0%	220 - 239	0.0%
100 - 109	0.0%	40 - 44	0.0%	> 239	0.0%
110 - 119	0.0%	45 - 49	0.0%	(Cases) N=	48
> 119	0.0%	50 - 54	83.3%	mean	143
(Cases) N=	46	55 - 59	16.7%	min size (mm)	62
mean	65	60 - 64	0.0%	max size (mm)	196
min size (mm)	49	65 - 69	0.0%		
max size (mm)	93	70 - 74	0.0%		
		> 75	0.0%		
		(Cases) N=	6		
		mean	53		
		min size (mm)	50		
		max size (mm)	56		

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***		***Tethya aurantia***	
< 5	0.0%	< 5	0.0%	<10	0.0%
5 - 9	0.0%	5 - 9	0.0%	10 - 19	0.0%
10 - 14	0.0%	10 - 14	0.0%	20 - 29	0.0%
15 - 19	0.5%	15 - 19	3.9%	30 - 39	0.0%
20 - 24	8.4%	20 - 24	18.8%	40 - 49	33.3%
25 - 29	27.4%	25 - 29	29.3%	50 - 59	50.0%
30 - 34	27.4%	30 - 34	17.9%	60 - 69	16.7%
35 - 39	13.0%	35 - 39	18.8%	70 - 79	0.0%
40 - 44	6.5%	40 - 44	8.7%	80 - 89	0.0%

Anacapa Island - Admiral's Reef (continued)

45 - 49	3.7%	45 - 49	2.6%	90 - 99	0.0%
50 - 54	2.3%	50 - 54	0.0%	> 99	0.0%
55 - 59	3.3%	55 - 59	0.0%	(Cases) N=	6
60 - 64	2.3%	60 - 64	0.0%	mean	55
65 - 69	3.3%	65 - 69	0.0%	min size (mm)	42
70 - 74	1.9%	70 - 74	0.0%	max size (mm)	68
75 - 79	0.0%	75 - 79	0.0%		
80 - 84	0.0%	> 79	0.0%	***Kelletia kelletii***	
85 - 89	0.0%	(Cases) N=	229	< 40	20.0%
90 - 94	0.0%	mean	30	40 - 49	20.0%
95 - 99	0.0%	min size (mm)	17	50 - 59	40.0%
100 - 104	0.0%	max size (mm)	48	60 - 69	20.0%
105 - 109	0.0%			70 - 79	0.0%
> 109	0.0%			80 - 89	0.0%
(Cases) N=	215			90 - 99	0.0%
mean	36			100 - 109	0.0%
min size (mm)	18			110 - 119	0.0%
max size (mm)	73			120 - 129	0.0%
				130 - 139	0.0%
				140 - 149	0.0%
				> 149	0.0%
				(Cases) N=	5
				mean	49
				min size (mm)	24
				max size (mm)	66

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Cathedral Cove

Lithopoma undosa	
<10	0.0%
10 - 19	3.7%
20 - 29	0.0%
30 - 39	3.7%
40 - 49	7.3%
50 - 59	11.9%
60 - 69	11.9%
70 - 79	6.4%
80 - 89	23.9%
90 - 99	24.8%
100 - 109	6.4%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	109
mean	75
min size (mm)	14
max size (mm)	109

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	19.4%
50 - 59	33.3%

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	12.5%
60 - 69	9.4%
70 - 79	21.9%
80 - 89	15.6%
90 - 99	9.4%
100 - 109	6.3%
110 - 119	21.9%
120 - 129	3.1%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	32
mean	87
min size (mm)	52
max size (mm)	127

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	1.4%
10 - 14	7.1%
15 - 19	6.6%
20 - 24	10.0%
25 - 29	10.0%
30 - 34	3.8%
35 - 39	2.4%
40 - 44	1.4%
45 - 49	1.4%
50 - 54	1.4%
55 - 59	1.9%
60 - 64	0.9%
65 - 69	0.5%
70 - 74	0.0%
75 - 79	0.0%
80 - 84	0.9%
85 - 89	1.4%
90 - 94	2.8%
95 - 99	7.1%
100 - 104	16.1%
105 - 109	10.4%
> 109	12.3%
(Cases) N=	211
mean	67

Anacapa Island - Cathedral Cove (continued)

60 - 69	22.2%	20 - 24	0.0%	min size (mm)	8
70 - 79	11.1%	25 - 29	0.0%	max size (mm)	124
80 - 89	13.9%	30 - 34	9.1%		
90 - 99	0.0%	35 - 39	0.0%		
100 - 109	0.0%	40 - 44	45.5%		
110 - 119	0.0%	45 - 49	36.4%		
> 119	0.0%	50 - 54	9.1%		
(Cases) N=	36	55 - 59	0.0%		
mean	60	60 - 64	0.0%		
min size (mm)	40	65 - 69	0.0%		
max size (mm)	85	70 - 74	0.0%		
		> 75	0.0%		
		(Cases) N=	11		
		mean	44		
		min size (mm)	34		
		max size (mm)	53		

Strongylocentrotus purpuratus		***Tethya aurantia***		***Kelletia kelletii***	
< 5	0.0%	<10	0.0%	< 40	0.0%
5 - 9	1.7%	10 - 19	0.0%	40 - 49	20.0%
10 - 14	14.0%	20 - 29	0.0%	50 - 59	20.0%
15 - 19	11.7%	30 - 39	100.0%	60 - 69	0.0%
20 - 24	10.6%	40 - 49	0.0%	70 - 79	20.0%
25 - 29	7.3%	50 - 59	0.0%	80 - 89	0.0%
30 - 34	6.1%	60 - 69	0.0%	90 - 99	20.0%
35 - 39	10.1%	70 - 79	0.0%	100 - 109	0.0%
40 - 44	10.1%	80 - 89	0.0%	110 - 119	20.0%

45 - 49	6.1%
50 - 54	10.1%
55 - 59	5.0%
60 - 64	3.9%
65 - 69	2.8%
70 - 74	0.0%
75 - 79	0.6%
> 79	0.0%
(Cases) N=	179
mean	34
min size (mm)	7
max size (mm)	75

90 - 99	0.0%
> 99	0.0%
(Cases) N=	1
mean	34
min size (mm)	34
max size (mm)	34

Haliotis corrugata

<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	50.0%
165 - 174	0.0%
175 - 184	50.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	2

120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	5
mean	77
min size (mm)	42
max size (mm)	112

Lithopoma undosa

<10	0.0%
10 - 19	8.0%
20 - 29	6.0%
30 - 39	6.0%
40 - 49	0.0%
50 - 59	40.0%
60 - 69	24.0%
70 - 79	6.0%
80 - 89	2.0%
90 - 99	8.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	50
mean	55
min size (mm)	13
max size (mm)	96

Anacapa Island - Cathedral Cove (continued)

mean	168
min size (mm)	158
max size (mm)	178

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Landing Cove

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	15.4%
60 - 69	7.7%
70 - 79	15.4%
80 - 89	7.7%
90 - 99	30.8%
100 - 109	23.1%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	13
mean	84
min size (mm)	58
max size (mm)	103

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.3%
40 - 49	15.0%
50 - 59	22.5%

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	28.6%
40 - 44	28.6%
45 - 49	28.6%
50 - 54	14.3%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	7
mean	44
min size (mm)	37
max size (mm)	53

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	5.3%
80 - 99	5.3%
100 - 119	0.0%
120 - 139	10.5%
140 - 159	5.3%
160 - 179	5.3%
180 - 199	36.8%
200 - 219	10.5%
220 - 239	10.5%
> 239	10.5%
(Cases) N=	19
mean	182
min size (mm)	78
max size (mm)	261

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	4.0%
15 - 19	1.5%
20 - 24	5.1%
25 - 29	3.5%

Anacapa Island - Landing Cove (continued)

60 - 69	11.3%	30 - 39	100.0%	30 - 34	6.6%
70 - 79	15.0%	40 - 49	0.0%	35 - 39	5.6%
80 - 89	10.0%	50 - 59	0.0%	40 - 44	0.5%
90 - 99	3.8%	60 - 69	0.0%	45 - 49	2.5%
100 - 109	3.8%	70 - 79	0.0%	50 - 54	1.5%
110 - 119	10.0%	80 - 89	0.0%	55 - 59	1.5%
120 - 129	3.8%	90 - 99	0.0%	60 - 64	0.5%
130 - 139	3.8%	> 99	0.0%	65 - 69	0.5%
> 139	0.0%	(Cases) N=	1	70 - 74	1.5%
(Cases) N=	80	mean	32	75 - 79	1.5%
mean	75	min size (mm)	32	80 - 84	0.0%
min size (mm)	38	max size (mm)	32	85 - 89	3.0%
max size (mm)	133			90 - 94	4.0%
				95 - 99	5.6%
				100 - 104	6.6%
				105 - 109	10.6%
				> 109	33.8%
				(Cases) N=	198
				mean	83
				min size (mm)	11
				max size (mm)	141

Strongylocentrotus purpuratus		***Tethya aurantia***		***Lithopoma gibberosa***	
< 5	0.0%	<10	0.0%	<10	0.0%
5 - 9	1.5%	10 - 19	0.0%	10 - 19	0.0%
10 - 14	14.5%	20 - 29	0.0%	20 - 29	0.0%
15 - 19	9.9%	30 - 39	11.5%	30 - 39	20.0%

Anacapa Island - Landing Cove (continued)

20 - 24	6.1%	40 - 49	11.5%	40 - 49	0.0%
25 - 29	4.6%	50 - 59	11.5%	50 - 59	80.0%
30 - 34	6.9%	60 - 69	19.7%	60 - 69	0.0%
35 - 39	4.6%	70 - 79	14.8%	70 - 79	0.0%
40 - 44	9.9%	80 - 89	21.3%	80 - 89	0.0%
45 - 49	6.9%	90 - 99	4.9%	90 - 99	0.0%
50 - 54	19.1%	> 99	4.9%	100 - 109	0.0%
55 - 59	8.4%	(Cases) N=	61	110 - 119	0.0%
60 - 64	3.8%	mean	67	> 119	0.0%
65 - 69	3.8%	min size (mm)	30	(Cases) N=	5
70 - 74	0.0%	max size (mm)	101	mean	50
75 - 79	0.0%			min size (mm)	35
> 79	0.0%	***Lithopoma undosa***		max size (mm)	56
(Cases) N=	131	<10	0.0%		
mean	37	10 - 19	0.0%	***Megathura crenulata***	
min size (mm)	6	20 - 29	0.0%	<10	0.0%
max size (mm)	68	30 - 39	10.6%	10 - 19	0.0%
		40 - 49	18.2%	20 - 29	0.0%
		50 - 59	19.7%	30 - 39	0.0%
		60 - 69	19.7%	40 - 49	0.0%
		70 - 79	18.2%	50 - 59	15.8%
		80 - 89	12.1%	60 - 69	5.3%
		90 - 99	1.5%	70 - 79	0.0%
		100 - 109	0.0%	80 - 89	42.1%
		110 - 119	0.0%	90 - 99	31.6%
		> 119	0.0%	100 - 109	0.0%

Anacapa Island - Landing Cove (continued)

(Cases) N=	66	110 - 119	5.3%
mean	60	> 119	0.0%
min size (mm)	30	(Cases) N=	19
max size (mm)	92	mean	83
		min size (mm)	51
		max size (mm)	112

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - SE Sea Lion Rookery

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	20.0%
50 - 59	20.0%
60 - 69	0.0%
70 - 79	20.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	20.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	20.0%
> 139	0.0%
(Cases) N=	5
mean	81
min size (mm)	45
max size (mm)	130

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	7.3%
30 - 39	16.4%
40 - 49	9.1%
50 - 59	9.1%
60 - 69	20.0%
70 - 79	20.0%
80 - 89	9.1%
90 - 99	5.5%
> 99	3.6%
(Cases) N=	55
mean	60
min size (mm)	22
max size (mm)	106

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	6.3%
60 - 79	43.8%
80 - 99	18.8%
100 - 119	18.8%
120 - 139	12.5%
140 - 159	0.0%

Lytechinus anamesus	
< 5	0.0%
5 - 9	21.4%
10 - 14	50.0%
15 - 19	19.0%
20 - 24	9.5%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	42
mean	12
min size (mm)	7
max size (mm)	21

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.9%
15 - 19	5.8%
20 - 24	9.2%
25 - 29	5.3%
30 - 34	13.6%
35 - 39	27.2%

Santa Barbara Island - SE Sea Lion Rookery (continued)

20 - 24	1.5%	160 - 179	0.0%	40 - 44	27.7%
25 - 29	0.0%	180 - 199	0.0%	45 - 49	7.3%
30 - 34	4.6%	200 - 219	0.0%	50 - 54	1.0%
35 - 39	4.6%	220 - 239	0.0%	55 - 59	0.5%
40 - 44	15.4%	> 239	0.0%	60 - 64	0.5%
45 - 49	41.5%	(Cases) N=	16	65 - 69	0.0%
50 - 54	32.3%	mean	86	70 - 74	0.0%
55 - 59	0.0%	min size (mm)	59	75 - 79	0.0%
60 - 64	0.0%	max size (mm)	128	80 - 84	0.0%
65 - 69	0.0%			85 - 89	0.0%
70 - 74	0.0%			90 - 94	0.0%
> 75	0.0%			95 - 99	0.0%
(Cases) N=	65			100 - 104	0.0%
mean	46			105 - 109	0.0%
min size (mm)	22			> 109	0.0%
max size (mm)	54			(Cases) N=	206
				mean	35
				min size (mm)	10
				max size (mm)	63

Strongylocentrotus purpuratus		***Lithopoma undosa***		***Tegula regina***	
< 5	0.0%	<10	0.0%	< 5	0.0%
5 - 9	1.9%	10 - 19	9.5%	5 - 9	0.0%
10 - 14	3.8%	20 - 29	28.6%	10 - 14	0.0%
15 - 19	57.5%	30 - 39	22.2%	15 - 19	1.7%
20 - 24	28.8%	40 - 49	12.7%	20 - 24	0.0%
25 - 29	8.1%	50 - 59	6.3%	25 - 29	1.7%

30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	160
mean	19
min size (mm)	8
max size (mm)	28

60 - 69	7.9%
70 - 79	3.2%
80 - 89	7.9%
90 - 99	1.6%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	63
mean	40
min size (mm)	10
max size (mm)	92

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	33.3%
110 - 119	33.3%
120 - 129	0.0%
130 - 139	33.3%
> 139	0.0%

30 - 34	1.7%
35 - 39	6.9%
40 - 44	32.8%
45 - 49	46.6%
50 - 54	8.6%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	58
mean	44
min size (mm)	16
max size (mm)	52

Asterina miniata

<10	0.0%
10 - 19	3.3%
20 - 29	11.5%
30 - 39	23.0%
40 - 49	29.5%
50 - 59	23.0%
60 - 69	6.6%
70 - 79	3.3%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	61

Santa Barbara Island - SE Sea Lion Rookery (continued)

(Cases) N=	3	mean	43
mean	118	min size (mm)	17
min size (mm)	103	max size (mm)	72
max size (mm)	133		

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Arch Point

Pisaster giganteus		*Strongylocentrotus franciscanus*		*Strongylocentrotus purpuratus*	
< 20	0.0%	< 5	0.0%	< 5	0.6%
20 - 39	0.0%	5 - 9	1.4%	5 - 9	10.0%
40 - 59	0.0%	10 - 14	5.4%	10 - 14	38.1%
60 - 79	0.0%	15 - 19	4.5%	15 - 19	23.6%
80 - 99	30.8%	20 - 24	17.2%	20 - 24	20.9%
100 - 119	38.5%	25 - 29	20.4%	25 - 29	3.8%
120 - 139	23.1%	30 - 34	19.9%	30 - 34	1.8%
140 - 159	7.7%	35 - 39	10.9%	35 - 39	0.0%
160 - 179	0.0%	40 - 44	5.4%	40 - 44	0.9%
180 - 199	0.0%	45 - 49	5.0%	45 - 49	0.3%
200 - 219	0.0%	50 - 54	3.6%	50 - 54	0.0%
220 - 239	0.0%	55 - 59	2.7%	55 - 59	0.0%
> 239	0.0%	60 - 64	0.5%	60 - 64	0.0%
(Cases) N=	13	65 - 69	0.9%	65 - 69	0.0%
mean	112	70 - 74	0.0%	70 - 74	0.0%
min size (mm)	88	75 - 79	1.4%	75 - 79	0.0%
max size (mm)	144	80 - 84	0.5%	> 79	0.0%
		85 - 89	0.5%	(Cases) N=	339
Lytechinus anamesus		90 - 94	0.0%	mean	16
< 5	0.0%	95 - 99	0.0%	min size (mm)	3
5 - 9	8.3%	100 - 104	0.0%	max size (mm)	45
10 - 14	27.1%	105 - 109	0.0%		
15 - 19	45.8%	> 109	0.0%		
20 - 24	12.5%	(Cases) N=	221		
25 - 29	6.3%	mean	32		

Santa Barbara Island - Arch Point (continued)

30 - 34	0.0%	min size (mm)	6
35 - 39	0.0%	max size (mm)	86
40 - 44	0.0%		
45 - 49	0.0%		
> 49	0.0%		
(Cases) N=	48		
mean	16		
min size (mm)	8		
max size (mm)	29		

Lithopoma undosa		***Crassedoma giganteum***		***Asterina miniata***	
<10	0.0%	<10	0.0%	<10	0.0%
10 - 19	11.3%	10 - 19	0.0%	10 - 19	0.0%
20 - 29	47.5%	20 - 29	0.0%	20 - 29	8.3%
30 - 39	8.8%	30 - 39	0.0%	30 - 39	33.3%
40 - 49	11.3%	40 - 49	0.0%	40 - 49	18.3%
50 - 59	5.0%	50 - 59	33.3%	50 - 59	16.7%
60 - 69	10.0%	60 - 69	0.0%	60 - 69	21.7%
70 - 79	5.0%	70 - 79	0.0%	70 - 79	1.7%
80 - 89	1.3%	80 - 89	0.0%	80 - 89	0.0%
90 - 99	0.0%	90 - 99	0.0%	90 - 99	0.0%
100 - 109	0.0%	100 - 109	0.0%	> 99	0.0%
110 - 119	0.0%	110 - 119	0.0%	(Cases) N=	60
> 119	0.0%	120 - 129	33.3%	mean	46
(Cases) N=	80	130 - 139	33.3%	min size (mm)	20
mean	35	> 139	0.0%	max size (mm)	70
min size (mm)	16	(Cases) N=	3		

Santa Barbara Island - Arch Point (continued)

max size (mm)	80

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	100.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	1
mean	38
min size (mm)	38
max size (mm)	38

mean	102
min size (mm)	53
max size (mm)	132

Tegula regina

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	3.6%
35 - 39	0.0%
40 - 44	3.6%
45 - 49	33.9%
50 - 54	53.6%
55 - 59	5.4%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	56
mean	49
min size (mm)	30
max size (mm)	55

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	1.6%
60 - 79	14.1%
80 - 99	57.8%
100 - 119	17.2%
120 - 139	6.3%
140 - 159	3.1%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	64
mean	94
min size (mm)	59
max size (mm)	142

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Cat Canyon

Lytechinus anamesus		*Strongylocentrotus purpuratus*		*Haliotis rufescens*	
< 5	0.0%	< 5	1.3%	<25	0.0%
5 - 9	3.8%	5 - 9	0.4%	25 - 34	0.0%
10 - 14	71.7%	10 - 14	6.7%	35 - 44	0.0%
15 - 19	22.6%	15 - 19	5.8%	45 - 54	0.0%
20 - 24	1.9%	20 - 24	30.5%	55 - 64	1.6%
25 - 29	0.0%	25 - 29	47.5%	65 - 74	0.8%
30 - 34	0.0%	30 - 34	6.7%	75 - 84	1.6%
35 - 39	0.0%	35 - 39	0.9%	85 - 94	0.8%
40 - 44	0.0%	40 - 44	0.0%	95 - 104	0.8%
45 - 49	0.0%	45 - 49	0.0%	105 - 114	3.2%
> 49	0.0%	50 - 54	0.0%	115 - 124	1.6%
(Cases) N=	53	55 - 59	0.0%	125 - 134	0.8%
mean	13	60 - 64	0.0%	135 - 144	4.0%
min size (mm)	8	65 - 69	0.0%	145 - 154	4.8%
max size (mm)	20	70 - 74	0.0%	155 - 164	8.0%
		75 - 79	0.0%	165 - 174	5.6%
Strongylocentrotus franciscanus		> 79	0.0%	175 - 184	19.2%
< 5	0.0%	(Cases) N=	223	185 - 194	17.6%
5 - 9	1.0%	mean	24	>195	28.8%
10 - 14	0.0%	min size (mm)	3	(Cases) N=	125
15 - 19	2.5%	max size (mm)	35	mean	175
20 - 24	4.5%			min size (mm)	59
25 - 29	32.3%			max size (mm)	240
30 - 34	46.0%				
35 - 39	9.6%				

Santa Barbara Island - Cat Canyon (continued)

40 - 44	2.5%
45 - 49	1.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
80 - 84	0.0%
85 - 89	0.5%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	198
mean	30
min size (mm)	9
max size (mm)	86

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Miracle Mile

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.4%
10 - 14	1.2%
15 - 19	2.0%
20 - 24	2.4%
25 - 29	0.8%
30 - 34	2.4%
35 - 39	0.8%
40 - 44	2.4%
45 - 49	2.8%
50 - 54	3.6%
55 - 59	3.2%
60 - 64	3.2%
65 - 69	2.4%
70 - 74	6.9%
75 - 79	4.8%
80 - 84	9.3%
85 - 89	8.5%
90 - 94	10.5%
95 - 99	9.7%
100 - 104	8.9%
105 - 109	7.3%
> 109	6.5%
(Cases) N=	248
mean	79

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.0%
10 - 14	7.5%
15 - 19	20.0%
20 - 24	10.0%
25 - 29	7.5%
30 - 34	5.0%
35 - 39	7.5%
40 - 44	12.5%
45 - 49	5.0%
50 - 54	5.0%
55 - 59	7.5%
60 - 64	7.5%
65 - 69	0.0%
70 - 74	2.5%
75 - 79	0.0%
> 79	2.5%
(Cases) N=	40
mean	36
min size (mm)	13
max size (mm)	81

Tethya aurantia	
<10	0.0%
10 - 19	0.0%
20 - 29	3.9%
30 - 39	2.6%
40 - 49	5.3%
50 - 59	6.6%
60 - 69	19.7%
70 - 79	22.4%
80 - 89	18.4%
90 - 99	10.5%
> 99	10.5%
(Cases) N=	76
mean	74
min size (mm)	20
max size (mm)	142

Haliotis rufescens	
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	100.0%
85 - 94	0.0%

San Miguel Island - Miracle Mile (continued)

min size (mm)	9
max size (mm)	126

95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	83
min size (mm)	83
max size (mm)	83

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Cluster Point

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	23.1%
100 - 109	50.0%
110 - 119	23.1%
120 - 129	3.8%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	26
mean	106
min size (mm)	92
max size (mm)	124

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	4.8%

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	7.7%
40 - 49	23.1%
50 - 59	38.5%
60 - 69	7.7%
70 - 79	7.7%
80 - 89	0.0%
90 - 99	7.7%
100 - 109	7.7%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	13
mean	59
min size (mm)	37
max size (mm)	102

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	4.3%
30 - 39	8.6%

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	20.3%
60 - 79	48.4%
80 - 99	18.8%
100 - 119	6.3%
120 - 139	1.6%
140 - 159	1.6%
160 - 179	3.1%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	64
mean	77
min size (mm)	45
max size (mm)	179

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	6.9%
60 - 79	17.2%
80 - 99	3.4%
100 - 119	6.9%

Santa Rosa Island - Cluster Point (continued)

60 - 69	4.8%	40 - 49	18.6%	120 - 139	6.9%
70 - 79	0.0%	50 - 59	42.9%	140 - 159	6.9%
80 - 89	9.5%	60 - 69	21.4%	160 - 179	13.8%
90 - 99	42.9%	70 - 79	2.9%	180 - 199	10.3%
100 - 109	28.6%	80 - 89	1.4%	200 - 219	3.4%
110 - 119	9.5%	90 - 99	0.0%	220 - 239	10.3%
> 119	0.0%	> 99	0.0%	240 - 259	3.4%
(Cases) N=	21	(Cases) N=	70	260 - 279	10.3%
mean	97	mean	52	280 - 299	0.0%
min size (mm)	59	min size (mm)	20	> 299	0.0%
max size (mm)	113	max size (mm)	80	(Cases) N=	29
				mean	153
				min size (mm)	45
				max size (mm)	275

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***		***Tethya aurantia***	
< 5	0.0%	< 5	0.0%	<10	0.0%
5 - 9	0.0%	5 - 9	1.4%	10 - 19	0.0%
10 - 14	1.1%	10 - 14	4.2%	20 - 29	0.0%
15 - 19	1.1%	15 - 19	15.3%	30 - 39	1.7%
20 - 24	2.2%	20 - 24	9.7%	40 - 49	1.7%
25 - 29	3.8%	25 - 29	11.1%	50 - 59	5.0%
30 - 34	2.7%	30 - 34	2.8%	60 - 69	10.0%
35 - 39	1.6%	35 - 39	13.9%	70 - 79	25.0%
40 - 44	1.6%	40 - 44	11.1%	80 - 89	13.3%
45 - 49	2.2%	45 - 49	12.5%	90 - 99	21.7%
50 - 54	2.2%	50 - 54	12.5%	> 99	21.7%

Santa Rosa Island - Cluster Point (continued)

55 - 59	1.1%	55 - 59	2.8%	(Cases) N=	60
60 - 64	3.2%	60 - 64	1.4%	mean	85
65 - 69	1.6%	65 - 69	1.4%	min size (mm)	35
70 - 74	2.7%	70 - 74	0.0%	max size (mm)	127
75 - 79	2.2%	75 - 79	0.0%		
80 - 84	8.1%	> 79	0.0%	***Haliotis rufescens***	
85 - 89	12.4%	(Cases) N=	72	<25	0.0%
90 - 94	8.1%	mean	35	25 - 34	0.0%
95 - 99	12.9%	min size (mm)	7	35 - 44	50.0%
100 - 104	11.8%	max size (mm)	68	45 - 54	50.0%
105 - 109	7.0%			55 - 64	0.0%
> 109	10.8%			65 - 74	0.0%
(Cases) N=	186			75 - 84	0.0%
mean	83			85 - 94	0.0%
min size (mm)	12			95 - 104	0.0%
max size (mm)	131			105 - 114	0.0%
				115 - 124	0.0%
				125 - 134	0.0%
				135 - 144	0.0%
				145 - 154	0.0%
				155 - 164	0.0%
				165 - 174	0.0%
				175 - 184	0.0%
				185 - 194	0.0%
				>195	0.0%
				(Cases) N=	2

Santa Rosa Island - Cluster Point (continued)

mean	45
min size (mm)	38
max size (mm)	52

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Trancion Canyon

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	100.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	1
mean	52
min size (mm)	52
max size (mm)	52

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	3.3%
30 - 39	6.7%

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	5.0%
60 - 79	53.3%
80 - 99	21.7%
100 - 119	6.7%
120 - 139	6.7%
140 - 159	1.7%
160 - 179	5.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	60
mean	87
min size (mm)	51
max size (mm)	176

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	25.0%
40 - 59	75.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	2.8%
15 - 19	3.8%
20 - 24	7.5%
25 - 29	5.2%
30 - 34	6.1%
35 - 39	3.3%
40 - 44	3.3%
45 - 49	3.8%
50 - 54	9.0%
55 - 59	2.4%
60 - 64	3.3%
65 - 69	0.9%
70 - 74	2.8%
75 - 79	1.4%
80 - 84	4.2%
85 - 89	2.8%
90 - 94	13.7%
95 - 99	5.2%
100 - 104	7.5%
105 - 109	2.8%
> 109	8.0%
(Cases) N=	212
mean	66

Santa Rosa Island - Trancion Canyon (continued)

40 - 49	10.0%	120 - 139	0.0%	min size (mm)	12
50 - 59	18.3%	140 - 159	0.0%	max size (mm)	124
60 - 69	36.7%	160 - 179	0.0%		
70 - 79	23.3%	180 - 199	0.0%		
80 - 89	1.7%	200 - 219	0.0%		
90 - 99	0.0%	220 - 239	0.0%		
> 99	0.0%	240 - 259	0.0%		
(Cases) N=	60	260 - 279	0.0%		
mean	60	280 - 299	0.0%		
min size (mm)	27	> 299	0.0%		
max size (mm)	87	(Cases) N=	4		
		mean	42		
		min size (mm)	25		
		max size (mm)	55		

Strongylocentrotus purpuratus		***Tethya aurantia***		***Megathura crenulata***	
< 5	1.1%	<10	0.0%	<10	0.0%
5 - 9	2.2%	10 - 19	1.6%	10 - 19	0.0%
10 - 14	6.5%	20 - 29	4.9%	20 - 29	0.0%
15 - 19	15.2%	30 - 39	1.6%	30 - 39	0.0%
20 - 24	13.0%	40 - 49	0.0%	40 - 49	0.0%
25 - 29	17.4%	50 - 59	4.9%	50 - 59	0.0%
30 - 34	16.3%	60 - 69	11.5%	60 - 69	0.0%
35 - 39	7.6%	70 - 79	14.8%	70 - 79	0.0%
40 - 44	13.0%	80 - 89	18.0%	80 - 89	25.0%
45 - 49	3.3%	90 - 99	16.4%	90 - 99	25.0%
50 - 54	2.2%	> 99	26.2%	100 - 109	0.0%

Santa Rosa Island - Trancion Canyon (continued)

55 - 59	0.0%
60 - 64	1.1%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	1.1%
(Cases) N=	92
mean	29
min size (mm)	4
max size (mm)	82

(Cases) N=	61
mean	84
min size (mm)	19
max size (mm)	144

Haliotis rufescens

<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	2.7%
115 - 124	2.7%
125 - 134	5.4%
135 - 144	2.7%
145 - 154	5.4%
155 - 164	0.0%
165 - 174	2.7%
175 - 184	5.4%
185 - 194	13.5%
>195	56.8%
(Cases) N=	37

110 - 119	25.0%
> 119	25.0%
(Cases) N=	4
mean	105
min size (mm)	84
max size (mm)	122

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	8.3%
30 - 39	8.3%
40 - 49	16.7%
50 - 59	8.3%
60 - 69	16.7%
70 - 79	0.0%
80 - 89	25.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	16.7%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	12
mean	66
min size (mm)	26

Santa Rosa Island - Trancion Canyon (continued)

mean	188	max size (mm)	115
min size (mm)	106		
max size (mm)	226		

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Chickasaw

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	1.6%
30 - 39	0.0%
40 - 49	11.3%
50 - 59	16.1%
60 - 69	32.3%
70 - 79	27.4%
80 - 89	9.7%
90 - 99	1.6%
> 99	0.0%
(Cases) N=	62
mean	65
min size (mm)	24
max size (mm)	90

Pisaster giganteus	
< 20	0.0%
20 - 39	1.6%
40 - 59	6.5%
60 - 79	27.4%
80 - 99	33.9%
100 - 119	19.4%
120 - 139	9.7%
140 - 159	1.6%

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	6.7%
60 - 79	26.7%
80 - 99	13.3%
100 - 119	20.0%
120 - 139	6.7%
140 - 159	6.7%
160 - 179	0.0%
180 - 199	6.7%
200 - 219	6.7%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	6.7%
> 299	0.0%
(Cases) N=	15
mean	117
min size (mm)	52
max size (mm)	280

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.5%
10 - 14	0.5%
15 - 19	4.3%
20 - 24	5.7%
25 - 29	2.9%
30 - 34	2.4%
35 - 39	1.9%
40 - 44	2.4%
45 - 49	1.9%
50 - 54	2.4%
55 - 59	1.9%
60 - 64	1.4%
65 - 69	1.4%
70 - 74	1.0%
75 - 79	2.4%
80 - 84	2.9%
85 - 89	3.8%
90 - 94	4.3%
95 - 99	6.2%
100 - 104	8.1%
105 - 109	13.3%
> 109	28.6%
(Cases) N=	210
mean	84

Santa Rosa Island – Chickasaw (continued)

160 - 179	0.0%			min size (mm)	7
180 - 199	0.0%			max size (mm)	132
200 - 219	0.0%				
220 - 239	0.0%				
> 239	0.0%				
(Cases) N=	62				
mean	89				
min size (mm)	31				
max size (mm)	142				

Strongylocentrotus purpuratus		***Tethya aurantia***		***Kelletia kelletii***	
< 5	0.0%	<10	0.0%	< 40	0.0%
5 - 9	0.0%	10 - 19	0.0%	40 - 49	0.0%
10 - 14	4.5%	20 - 29	1.5%	50 - 59	0.0%
15 - 19	13.5%	30 - 39	4.4%	60 - 69	0.0%
20 - 24	15.3%	40 - 49	2.9%	70 - 79	0.0%
25 - 29	14.4%	50 - 59	5.9%	80 - 89	0.0%
30 - 34	15.3%	60 - 69	8.8%	90 - 99	0.0%
35 - 39	8.1%	70 - 79	11.8%	100 - 109	0.0%
40 - 44	12.6%	80 - 89	20.6%	110 - 119	50.0%
45 - 49	3.6%	90 - 99	22.1%	120 - 129	50.0%
50 - 54	4.5%	> 99	22.1%	130 - 139	0.0%
55 - 59	6.3%	(Cases) N=	68	140 - 149	0.0%
60 - 64	1.8%	mean	83	> 149	0.0%
65 - 69	0.0%	min size (mm)	26	(Cases) N=	2
70 - 74	0.0%	max size (mm)	126	mean	123
75 - 79	0.0%			min size (mm)	118

Santa Rosa Island – Chickasaw (continued)

> 79	0.0%
(Cases) N=	111
mean	32
min size (mm)	10
max size (mm)	63

Haliotis rufescens

<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	1.1%
115 - 124	1.1%
125 - 134	3.3%
135 - 144	3.3%
145 - 154	5.6%
155 - 164	8.9%
165 - 174	10.0%
175 - 184	30.0%
185 - 194	23.3%
>195	13.3%
(Cases) N=	90
mean	177
min size (mm)	107
max size (mm)	220

max size (mm)	127

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	40.0%
> 119	60.0%
(Cases) N=	5
mean	125
min size (mm)	115
max size (mm)	135

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - South Point

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	100.0%
> 119	0.0%
(Cases) N=	1
mean	117
min size (mm)	117
max size (mm)	117

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	37.5%
50 - 59	37.5%

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.7%
40 - 49	15.3%
50 - 59	18.6%
60 - 69	40.7%
70 - 79	20.3%
80 - 89	3.4%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	59
mean	62
min size (mm)	35
max size (mm)	85

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	7.7%
60 - 79	29.2%
80 - 99	35.4%
100 - 119	15.4%
120 - 139	10.8%
140 - 159	0.0%

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	25.0%
80 - 99	0.0%
100 - 119	25.0%
120 - 139	0.0%
140 - 159	25.0%
160 - 179	25.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	4
mean	121
min size (mm)	63
max size (mm)	160

Santa Rosa Island - South Point (continued)

60 - 69	0.0%	160 - 179	1.5%
70 - 79	25.0%	180 - 199	0.0%
80 - 89	0.0%	200 - 219	0.0%
90 - 99	0.0%	220 - 239	0.0%
100 - 109	0.0%	> 239	0.0%
110 - 119	0.0%	(Cases) N=	65
120 - 129	0.0%	mean	90
130 - 139	0.0%	min size (mm)	47
> 139	0.0%	max size (mm)	169
(Cases) N=	8		
mean	55		
min size (mm)	40		
max size (mm)	74		

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***		***Tethya aurantia***	
< 5	0.0%	< 5	0.0%	<10	0.0%
5 - 9	0.0%	5 - 9	0.5%	10 - 19	0.0%
10 - 14	0.0%	10 - 14	1.4%	20 - 29	30.8%
15 - 19	2.8%	15 - 19	12.7%	30 - 39	30.8%
20 - 24	9.3%	20 - 24	24.9%	40 - 49	30.8%
25 - 29	6.5%	25 - 29	18.8%	50 - 59	0.0%
30 - 34	6.1%	30 - 34	14.6%	60 - 69	7.7%
35 - 39	2.8%	35 - 39	11.3%	70 - 79	0.0%
40 - 44	3.7%	40 - 44	6.6%	80 - 89	0.0%
45 - 49	4.2%	45 - 49	4.7%	90 - 99	0.0%
50 - 54	2.8%	50 - 54	2.8%	> 99	0.0%
55 - 59	1.9%	55 - 59	1.9%	(Cases) N=	13

Santa Rosa Island - South Point (continued)

60 - 64	2.8%
65 - 69	3.7%
70 - 74	2.3%
75 - 79	3.3%
80 - 84	3.3%
85 - 89	3.3%
90 - 94	2.3%
95 - 99	4.7%
100 - 104	4.2%
105 - 109	4.7%
> 109	25.2%
(Cases) N=	214
mean	73
min size (mm)	15
max size (mm)	136

60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	213
mean	29
min size (mm)	9
max size (mm)	57

mean	37
min size (mm)	24
max size (mm)	68

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	33.3%
120 - 129	33.3%
130 - 139	33.3%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	3
mean	127
min size (mm)	119
max size (mm)	133

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Devil's Peak Member

Lithopoma undosa	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	4.8%
50 - 59	6.5%
60 - 69	21.0%
70 - 79	14.5%
80 - 89	19.4%
90 - 99	29.0%
100 - 109	4.8%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	62
mean	79
min size (mm)	43
max size (mm)	104

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.8%
60 - 69	4.8%
70 - 79	28.6%
80 - 89	38.9%
90 - 99	23.0%
100 - 109	4.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	126
mean	83
min size (mm)	55
max size (mm)	108

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	15.8%
50 - 54	73.7%
55 - 59	10.5%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	38
mean	52
min size (mm)	47
max size (mm)	57

Lithopoma gibberosa	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	100.0%
40 - 49	0.0%
50 - 59	0.0%

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	4.5%
40 - 49	7.5%
50 - 59	10.4%

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	2.5%

Santa Cruz Island - Devil's Peak Member (continued)

60 - 69	0.0%	60 - 69	13.4%	30 - 39	8.3%
70 - 79	0.0%	70 - 79	14.9%	40 - 49	22.3%
80 - 89	0.0%	80 - 89	16.4%	50 - 59	33.9%
90 - 99	0.0%	90 - 99	10.4%	60 - 69	19.8%
100 - 109	0.0%	100 - 109	7.5%	70 - 79	11.6%
110 - 119	0.0%	110 - 119	6.0%	80 - 89	1.7%
> 119	0.0%	120 - 129	3.0%	90 - 99	0.0%
(Cases) N=	1	130 - 139	4.5%	> 99	0.0%
mean	36	> 139	1.5%	(Cases) N=	121
min size (mm)	36	(Cases) N=	67	mean	55
max size (mm)	36	mean	80	min size (mm)	22
		min size (mm)	32	max size (mm)	85
		max size (mm)	151		

Pisaster giganteus		***Lytechinus anamesus***		***Strongylocentrotus purpuratus***	
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	0.0%	5 - 9	0.0%	5 - 9	0.0%
40 - 59	3.5%	10 - 14	18.2%	10 - 14	0.5%
60 - 79	14.0%	15 - 19	65.9%	15 - 19	0.0%
80 - 99	38.4%	20 - 24	11.4%	20 - 24	2.3%
100 - 119	26.7%	25 - 29	3.4%	25 - 29	22.5%
120 - 139	10.5%	30 - 34	1.1%	30 - 34	59.6%
140 - 159	5.8%	35 - 39	0.0%	35 - 39	14.1%
160 - 179	0.0%	40 - 44	0.0%	40 - 44	0.9%
180 - 199	1.2%	45 - 49	0.0%	45 - 49	0.0%
200 - 219	0.0%	> 49	0.0%	50 - 54	0.0%
220 - 239	0.0%	(Cases) N=	88	55 - 59	0.0%

Santa Cruz Island - Devil's Peak Member (continued)

> 239	0.0%	mean	17	60 - 64	0.0%
(Cases) N=	86	min size (mm)	12	65 - 69	0.0%
mean	99	max size (mm)	30	70 - 74	0.0%
min size (mm)	42			75 - 79	0.0%
max size (mm)	186	***Strongylocentrotus franciscanus***		> 79	0.0%
		< 5	0.0%	(Cases) N=	213
Pycnopodia helianthoides		5 - 9	0.0%	mean	31
< 20	0.0%	10 - 14	0.5%	min size (mm)	14
20 - 39	0.0%	15 - 19	0.0%	max size (mm)	40
40 - 59	0.0%	20 - 24	5.2%		
60 - 79	0.0%	25 - 29	9.5%		
80 - 99	0.0%	30 - 34	26.7%		
100 - 119	0.0%	35 - 39	19.5%		
120 - 139	0.0%	40 - 44	14.3%		
140 - 159	16.7%	45 - 49	13.3%		
160 - 179	0.0%	50 - 54	4.3%		
180 - 199	0.0%	55 - 59	3.3%		
200 - 219	33.3%	60 - 64	2.9%		
220 - 239	16.7%	65 - 69	0.0%		
240 - 259	33.3%	70 - 74	0.0%		
260 - 279	0.0%	75 - 79	0.5%		
280 - 299	0.0%	80 - 84	0.0%		
> 299	0.0%	85 - 89	0.0%		
(Cases) N=	6	90 - 94	0.0%		
mean	212	95 - 99	0.0%		
min size (mm)	140	100 - 104	0.0%		

Santa Cruz Island - Devil's Peak Member (continued)

max size (mm)	242	105 - 109	0.0%
		> 109	0.0%
		(Cases) N=	210
		mean	38
		min size (mm)	13
		max size (mm)	75

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Potato Pasture

Tethya aurantia	
<10	0.0%
10 - 19	16.7%
20 - 29	8.3%
30 - 39	16.7%
40 - 49	20.8%
50 - 59	29.2%
60 - 69	4.2%
70 - 79	4.2%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	24
mean	41
min size (mm)	12
max size (mm)	77

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	17.9%
60 - 69	28.6%
70 - 79	0.0%
80 - 89	7.1%
90 - 99	3.6%
100 - 109	7.1%

Lithopoma undosa	
<10	0.0%
10 - 19	0.0%
20 - 29	4.1%
30 - 39	2.7%
40 - 49	23.0%
50 - 59	25.7%
60 - 69	32.4%
70 - 79	10.8%
80 - 89	1.4%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	74
mean	56
min size (mm)	22
max size (mm)	86

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	2.9%
50 - 59	1.5%

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	1.8%
30 - 39	5.5%
40 - 49	10.9%
50 - 59	7.3%
60 - 69	14.5%
70 - 79	1.8%
80 - 89	7.3%
90 - 99	5.5%
100 - 109	5.5%
110 - 119	9.1%
120 - 129	12.7%
130 - 139	5.5%
> 139	12.7%
(Cases) N=	55
mean	92
min size (mm)	28
max size (mm)	182

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Santa Cruz Island - Potato Pasture (continued)

110 - 119	17.9%	60 - 69	10.3%	20 - 24	0.0%
120 - 129	14.3%	70 - 79	29.4%	25 - 29	0.0%
130 - 139	3.6%	80 - 89	50.0%	30 - 34	0.0%
140 - 149	0.0%	90 - 99	5.9%	35 - 39	0.0%
> 149	0.0%	100 - 109	0.0%	40 - 44	0.0%
(Cases) N=	28	110 - 119	0.0%	45 - 49	35.7%
mean	88	> 119	0.0%	50 - 54	64.3%
min size (mm)	54	(Cases) N=	68	55 - 59	0.0%
max size (mm)	139	mean	78	60 - 64	0.0%
		min size (mm)	40	65 - 69	0.0%
		max size (mm)	92	70 - 74	0.0%
				> 75	0.0%
				(Cases) N=	28
				mean	50
				min size (mm)	46
				max size (mm)	54

Asterina miniata		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
<10	0.0%	< 5	0.0%	< 5	0.0%
10 - 19	0.0%	5 - 9	1.0%	5 - 9	1.0%
20 - 29	8.1%	10 - 14	0.0%	10 - 14	0.0%
30 - 39	17.7%	15 - 19	0.0%	15 - 19	1.0%
40 - 49	22.6%	20 - 24	1.0%	20 - 24	10.9%
50 - 59	33.9%	25 - 29	1.5%	25 - 29	54.5%
60 - 69	14.5%	30 - 34	5.8%	30 - 34	25.7%
70 - 79	1.6%	35 - 39	10.2%	35 - 39	6.4%
80 - 89	1.6%	40 - 44	19.4%	40 - 44	0.5%

Santa Cruz Island - Potato Pasture (continued)

90 - 99	0.0%	45 - 49	34.0%	45 - 49	0.0%
> 99	0.0%	50 - 54	18.4%	50 - 54	0.0%
(Cases) N=	62	55 - 59	6.3%	55 - 59	0.0%
mean	49	60 - 64	1.9%	60 - 64	0.0%
min size (mm)	20	65 - 69	0.5%	65 - 69	0.0%
max size (mm)	84	70 - 74	0.0%	70 - 74	0.0%
		75 - 79	0.0%	75 - 79	0.0%
Lytechinus anamesus		80 - 84	0.0%	> 79	0.0%
< 5	0.0%	85 - 89	0.0%	(Cases) N=	202
5 - 9	0.0%	90 - 94	0.0%	mean	28
10 - 14	9.3%	95 - 99	0.0%	min size (mm)	5
15 - 19	30.7%	100 - 104	0.0%	max size (mm)	42
20 - 24	45.4%	105 - 109	0.0%		
25 - 29	14.6%	> 109	0.0%		
30 - 34	0.0%	(Cases) N=	206		
35 - 39	0.0%	mean	45		
40 - 44	0.0%	min size (mm)	7		
45 - 49	0.0%	max size (mm)	68		
> 49	0.0%				
(Cases) N=	205				
mean	20				
min size (mm)	11				
max size (mm)	27				

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Cavern Point

Tethya aurantia	
<10	0.0%
10 - 19	2.0%
20 - 29	13.7%
30 - 39	19.6%
40 - 49	17.6%
50 - 59	21.6%
60 - 69	13.7%
70 - 79	7.8%
80 - 89	3.9%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	51
mean	48
min size (mm)	11
max size (mm)	88

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%

Lithopoma undosa	
<10	0.0%
10 - 19	2.3%
20 - 29	2.3%
30 - 39	7.0%
40 - 49	32.6%
50 - 59	23.3%
60 - 69	23.3%
70 - 79	0.0%
80 - 89	2.3%
90 - 99	2.3%
100 - 109	4.7%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	43
mean	55
min size (mm)	19
max size (mm)	105

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	3.3%
50 - 59	3.3%

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.3%
40 - 49	9.3%
50 - 59	11.6%
60 - 69	7.0%
70 - 79	7.0%
80 - 89	12.8%
90 - 99	8.1%
100 - 109	8.1%
110 - 119	11.6%
120 - 129	8.1%
130 - 139	9.3%
> 139	4.7%
(Cases) N=	86
mean	90
min size (mm)	37
max size (mm)	152

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Santa Cruz Island - Cavern Point (continued)

110 - 119	0.0%	60 - 69	1.6%	20 - 24	0.0%
120 - 129	100.0%	70 - 79	8.2%	25 - 29	0.0%
130 - 139	0.0%	80 - 89	41.0%	30 - 34	0.0%
140 - 149	0.0%	90 - 99	34.4%	35 - 39	0.0%
> 149	0.0%	100 - 109	8.2%	40 - 44	0.0%
(Cases) N=	1	110 - 119	0.0%	45 - 49	8.3%
mean	124	> 119	0.0%	50 - 54	68.8%
min size (mm)	124	(Cases) N=	61	55 - 59	22.9%
max size (mm)	124	mean	86	60 - 64	0.0%
		min size (mm)	44	65 - 69	0.0%
		max size (mm)	106	70 - 74	0.0%
				> 75	0.0%
				(Cases) N=	48
				mean	53
				min size (mm)	46
				max size (mm)	59

Asterina miniata		***Lytechinus anamesus***		***Strongylocentrotus purpuratus***	
<10	0.0%	< 5	0.0%	< 5	0.0%
10 - 19	0.0%	5 - 9	5.4%	5 - 9	0.7%
20 - 29	3.3%	10 - 14	44.6%	10 - 14	1.7%
30 - 39	3.3%	15 - 19	46.4%	15 - 19	2.4%
40 - 49	13.3%	20 - 24	3.6%	20 - 24	8.4%
50 - 59	11.7%	25 - 29	0.0%	25 - 29	43.9%
60 - 69	21.7%	30 - 34	0.0%	30 - 34	35.5%
70 - 79	26.7%	35 - 39	0.0%	35 - 39	6.4%
80 - 89	13.3%	40 - 44	0.0%	40 - 44	1.0%

Santa Cruz Island - Cavern Point (continued)

90 - 99	6.7%	45 - 49	0.0%	45 - 49	0.0%
> 99	0.0%	> 49	0.0%	50 - 54	0.0%
(Cases) N=	60	(Cases) N=	56	55 - 59	0.0%
mean	65	mean	14	60 - 64	0.0%
min size (mm)	22	min size (mm)	8	65 - 69	0.0%
max size (mm)	95	max size (mm)	22	70 - 74	0.0%
				75 - 79	0.0%
Pisaster giganteus		***Strongylocentrotus franciscanus***		> 79	0.0%
< 20	0.0%	< 5	0.0%	(Cases) N=	296
20 - 39	0.0%	5 - 9	0.0%	mean	29
40 - 59	0.0%	10 - 14	0.0%	min size (mm)	9
60 - 79	5.3%	15 - 19	1.4%	max size (mm)	42
80 - 99	10.5%	20 - 24	1.4%		
100 - 119	13.2%	25 - 29	1.4%		
120 - 139	15.8%	30 - 34	1.4%		
140 - 159	21.1%	35 - 39	4.1%		
160 - 179	23.7%	40 - 44	21.9%		
180 - 199	7.9%	45 - 49	30.1%		
200 - 219	2.6%	50 - 54	17.8%		
220 - 239	0.0%	55 - 59	11.6%		
> 239	0.0%	60 - 64	6.8%		
(Cases) N=	38	65 - 69	1.4%		
mean	140	70 - 74	0.7%		
min size (mm)	71	75 - 79	0.0%		
max size (mm)	207	80 - 84	0.0%		
		85 - 89	0.0%		

Santa Cruz Island - Cavern Point (continued)

90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	146
mean	48
min size (mm)	18
max size (mm)	70

Santa Cruz Island - Little Scorpion

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	4.5%
30 - 39	18.2%
40 - 49	13.6%
50 - 59	40.9%
60 - 69	9.1%
70 - 79	4.5%
80 - 89	9.1%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	22
mean	51
min size (mm)	21
max size (mm)	80

Haliotis corrugata

<25	0.0%
25 - 34	0.0%
35 - 44	100.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	14.8%
100 - 109	37.0%
110 - 119	22.2%
120 - 129	22.2%
130 - 139	3.7%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	27
mean	110
min size (mm)	90
max size (mm)	131

Lithopoma undosa

<10	0.0%
10 - 19	5.2%
20 - 29	0.0%
30 - 39	9.1%
40 - 49	24.7%
50 - 59	33.8%

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.8%
40 - 49	14.1%
50 - 59	16.9%
60 - 69	15.5%
70 - 79	42.3%
80 - 89	7.0%
90 - 99	1.4%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	71
mean	65
min size (mm)	30
max size (mm)	92

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	6.3%
30 - 39	3.1%
40 - 49	25.0%
50 - 59	12.5%

Santa Cruz Island - Little Scorpion (continued)

95 - 104	0.0%	60 - 69	15.6%	60 - 69	3.1%
105 - 114	0.0%	70 - 79	1.3%	70 - 79	6.3%
115 - 124	0.0%	80 - 89	1.3%	80 - 89	15.6%
125 - 134	0.0%	90 - 99	0.0%	90 - 99	9.4%
135 - 144	0.0%	100 - 109	7.8%	100 - 109	3.1%
145 - 154	0.0%	110 - 119	0.0%	110 - 119	6.3%
155 - 164	0.0%	> 119	1.3%	120 - 129	3.1%
165 - 174	0.0%	(Cases) N=	77	130 - 139	6.3%
175 - 184	0.0%	mean	54	> 139	0.0%
185 - 194	0.0%	min size (mm)	17	(Cases) N=	32
>195	0.0%	max size (mm)	123	mean	71
(Cases) N=	1			min size (mm)	23
mean	41			max size (mm)	139
min size (mm)	41				
max size (mm)	41				

Tegula regina		***Pisaster giganteus***		***Lytechinus anamesus***	
< 5	0.0%	< 20	0.0%	< 5	0.0%
5 - 9	0.0%	20 - 39	0.0%	5 - 9	1.9%
10 - 14	0.0%	40 - 59	0.0%	10 - 14	5.8%
15 - 19	0.0%	60 - 79	0.0%	15 - 19	13.5%
20 - 24	0.0%	80 - 99	1.6%	20 - 24	42.3%
25 - 29	0.0%	100 - 119	0.0%	25 - 29	34.6%
30 - 34	0.0%	120 - 139	3.1%	30 - 34	1.9%
35 - 39	0.0%	140 - 159	6.3%	35 - 39	0.0%
40 - 44	0.0%	160 - 179	20.3%	40 - 44	0.0%
45 - 49	7.7%	180 - 199	10.9%	45 - 49	0.0%

Santa Cruz Island - Little Scorpion (continued)

50 - 54	76.9%
55 - 59	15.4%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	13
mean	52
min size (mm)	49
max size (mm)	58

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	9.6%
40 - 49	11.0%
50 - 59	21.9%
60 - 69	16.4%
70 - 79	23.3%
80 - 89	16.4%
90 - 99	1.4%
> 99	0.0%
(Cases) N=	73
mean	63
min size (mm)	32

200 - 219	23.4%
220 - 239	9.4%
> 239	25.0%
(Cases) N=	64
mean	206
min size (mm)	93
max size (mm)	330

Pycnopodia helianthoides

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	100.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	1

> 49	0.0%
(Cases) N=	52
mean	22
min size (mm)	8
max size (mm)	34

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	1.4%
30 - 34	1.4%
35 - 39	1.4%
40 - 44	1.8%
45 - 49	4.1%
50 - 54	13.3%
55 - 59	25.2%
60 - 64	18.8%
65 - 69	11.5%
70 - 74	8.3%
75 - 79	5.0%
80 - 84	3.7%
85 - 89	3.2%
90 - 94	0.9%

Santa Cruz Island - Little Scorpion (continued)

max size (mm)	91	mean	230	95 - 99	0.0%
		min size (mm)	230	100 - 104	0.0%
		max size (mm)	230	105 - 109	0.0%
				> 109	0.0%
				(Cases) N=	218
				mean	61
				min size (mm)	25
				max size (mm)	91

Strongylocentrotus purpuratus		***Tethya aurantia***		***Lithopoma undosa***	
< 5	0.0%	<10	1.7%	<10	0.0%
5 - 9	0.0%	10 - 19	13.3%	10 - 19	14.5%
10 - 14	0.0%	20 - 29	18.3%	20 - 29	24.2%
15 - 19	0.0%	30 - 39	16.7%	30 - 39	4.8%
20 - 24	0.4%	40 - 49	13.3%	40 - 49	33.9%
25 - 29	3.1%	50 - 59	20.0%	50 - 59	17.7%
30 - 34	4.0%	60 - 69	10.0%	60 - 69	3.2%
35 - 39	9.9%	70 - 79	5.0%	70 - 79	0.0%
40 - 44	29.6%	80 - 89	1.7%	80 - 89	1.6%
45 - 49	26.9%	90 - 99	0.0%	90 - 99	0.0%
50 - 54	15.7%	> 99	0.0%	100 - 109	0.0%
55 - 59	9.0%	(Cases) N=	60	110 - 119	0.0%
60 - 64	0.9%	mean	41	> 119	0.0%
65 - 69	0.4%	min size (mm)	8	(Cases) N=	62
70 - 74	0.0%	max size (mm)	81	mean	38
75 - 79	0.0%			min size (mm)	14
> 79	0.0%	***Kelletia kelletii***		max size (mm)	88

Santa Cruz Island - Little Scorpion (continued)

(Cases) N=	223	< 40	0.0%
mean	45	40 - 49	14.3%
min size (mm)	24	50 - 59	42.9%
max size (mm)	68	60 - 69	28.6%
		70 - 79	0.0%
		80 - 89	0.0%
		90 - 99	14.3%
		100 - 109	0.0%
		110 - 119	0.0%
		120 - 129	0.0%
		130 - 139	0.0%
		140 - 149	0.0%
		> 149	0.0%
		(Cases) N=	7
		mean	61
		min size (mm)	48
		max size (mm)	90

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	1.7%
30 - 39	5.0%
40 - 49	28.3%
50 - 59	23.3%
60 - 69	16.7%
70 - 79	16.7%
80 - 89	8.3%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	60
mean	58
min size (mm)	29
max size (mm)	87

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pedro Reef

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.1%
40 - 49	14.6%
50 - 59	16.7%
60 - 69	10.4%
70 - 79	8.3%
80 - 89	2.1%
90 - 99	6.3%
100 - 109	14.6%
110 - 119	4.2%
120 - 129	10.4%
130 - 139	6.3%
> 139	4.2%
(Cases) N=	48
mean	84
min size (mm)	32
max size (mm)	158

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Asterina miniata	
<10	0.0%
10 - 19	2.0%
20 - 29	4.0%
30 - 39	14.0%
40 - 49	12.0%
50 - 59	36.0%
60 - 69	14.0%
70 - 79	12.0%
80 - 89	4.0%
90 - 99	2.0%
> 99	0.0%
(Cases) N=	50
mean	54
min size (mm)	19
max size (mm)	97

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	5.9%
80 - 99	17.6%
100 - 119	41.2%
120 - 139	23.5%
140 - 159	11.8%

Lytechinus anamesus	
< 5	0.0%
5 - 9	0.0%
10 - 14	3.4%
15 - 19	48.7%
20 - 24	17.7%
25 - 29	19.8%
30 - 34	9.9%
35 - 39	0.4%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	232
mean	21
min size (mm)	11
max size (mm)	37

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.0%
15 - 19	6.4%
20 - 24	25.1%
25 - 29	22.7%
30 - 34	18.7%
35 - 39	12.3%

Santa Cruz Island - Pedro Reef (continued)

20 - 24	0.0%	160 - 179	0.0%	40 - 44	8.4%
25 - 29	0.0%	180 - 199	0.0%	45 - 49	4.4%
30 - 34	0.0%	200 - 219	0.0%	50 - 54	0.5%
35 - 39	0.0%	220 - 239	0.0%	55 - 59	0.5%
40 - 44	0.0%	> 239	0.0%	60 - 64	0.0%
45 - 49	23.1%	(Cases) N=	17	65 - 69	0.0%
50 - 54	53.8%	mean	115	70 - 74	0.0%
55 - 59	23.1%	min size (mm)	78	75 - 79	0.0%
60 - 64	0.0%	max size (mm)	154	80 - 84	0.0%
65 - 69	0.0%			85 - 89	0.0%
70 - 74	0.0%			90 - 94	0.0%
> 75	0.0%			95 - 99	0.0%
(Cases) N=	13			100 - 104	0.0%
mean	52			105 - 109	0.0%
min size (mm)	47			> 109	0.0%
max size (mm)	58			(Cases) N=	203
				mean	29
				min size (mm)	13
				max size (mm)	57

Strongylocentrotus purpuratus		***Kelletia kelletii***		***Megathura crenulata***	
< 5	0.0%	< 40	0.0%	<10	0.0%
5 - 9	0.5%	40 - 49	16.7%	10 - 19	0.0%
10 - 14	2.4%	50 - 59	8.3%	20 - 29	0.0%
15 - 19	35.4%	60 - 69	0.0%	30 - 39	23.1%
20 - 24	54.4%	70 - 79	16.7%	40 - 49	23.1%
25 - 29	7.3%	80 - 89	16.7%	50 - 59	23.1%

Santa Cruz Island - Pedro Reef (continued)

30 - 34	0.0%	90 - 99	25.0%	60 - 69	7.7%
35 - 39	0.0%	100 - 109	16.7%	70 - 79	11.5%
40 - 44	0.0%	110 - 119	0.0%	80 - 89	3.8%
45 - 49	0.0%	120 - 129	0.0%	90 - 99	7.7%
50 - 54	0.0%	130 - 139	0.0%	100 - 109	0.0%
55 - 59	0.0%	140 - 149	0.0%	110 - 119	0.0%
60 - 64	0.0%	> 149	0.0%	> 119	0.0%
65 - 69	0.0%	(Cases) N=	12	(Cases) N=	26
70 - 74	0.0%	mean	80	mean	54
75 - 79	0.0%	min size (mm)	44	min size (mm)	31
> 79	0.0%	max size (mm)	106	max size (mm)	94
(Cases) N=	206				
mean	20	***Lithopoma undosa***		***Crassedoma giganteum***	
min size (mm)	6	<10	0.0%	<10	0.0%
max size (mm)	29	10 - 19	0.0%	10 - 19	0.0%
		20 - 29	4.5%	20 - 29	0.0%
		30 - 39	23.9%	30 - 39	7.9%
		40 - 49	19.3%	40 - 49	15.8%
		50 - 59	23.9%	50 - 59	5.3%
		60 - 69	18.2%	60 - 69	5.3%
		70 - 79	4.5%	70 - 79	0.0%
		80 - 89	2.3%	80 - 89	5.3%
		90 - 99	2.3%	90 - 99	10.5%
		100 - 109	1.1%	100 - 109	10.5%
		110 - 119	0.0%	110 - 119	7.9%
		> 119	0.0%	120 - 129	5.3%

Santa Cruz Island - Pedro Reef (continued)

(Cases) N=	88	130 - 139	21.1%
mean	51	> 139	5.3%
min size (mm)	22	(Cases) N=	38
max size (mm)	101	mean	94
		min size (mm)	32
		max size (mm)	169

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Keyhole

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	4.5%
45 - 49	40.9%
50 - 54	50.0%
55 - 59	4.5%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	44
mean	49
min size (mm)	44
max size (mm)	55

Asterina miniata	
<10	0.0%
10 - 19	1.5%
20 - 29	3.1%

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	7.7%
140 - 159	3.8%
160 - 179	7.7%
180 - 199	26.9%
200 - 219	15.4%
220 - 239	11.5%
> 239	26.9%
(Cases) N=	26
mean	212
min size (mm)	121
max size (mm)	309

Lytechinus anamesus	
< 5	0.0%
5 - 9	3.7%
10 - 14	3.7%
15 - 19	7.3%
20 - 24	45.1%
25 - 29	37.8%

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	2.5%
15 - 19	5.4%
20 - 24	9.4%
25 - 29	10.3%
30 - 34	5.4%
35 - 39	3.9%
40 - 44	4.4%
45 - 49	4.4%
50 - 54	10.8%
55 - 59	11.8%
60 - 64	11.8%
65 - 69	7.4%
70 - 74	4.9%
75 - 79	3.9%
80 - 84	2.5%
85 - 89	0.5%
90 - 94	0.5%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	203
mean	47

Anacapa Island – Keyhole (continued)

30 - 39	30.8%	30 - 34	2.4%	min size (mm)	11
40 - 49	12.3%	35 - 39	0.0%	max size (mm)	92
50 - 59	13.8%	40 - 44	0.0%		
60 - 69	24.6%	45 - 49	0.0%		
70 - 79	12.3%	> 49	0.0%		
80 - 89	1.5%	(Cases) N=	82		
90 - 99	0.0%	mean	23		
> 99	0.0%	min size (mm)	6		
(Cases) N=	65	max size (mm)	32		
mean	51				
min size (mm)	11				
max size (mm)	84				

Strongylocentrotus purpuratus		***Tethya aurantia***		***Lithopoma undosa***	
< 5	0.0%	<10	0.0%	<10	0.0%
5 - 9	0.5%	10 - 19	3.6%	10 - 19	0.0%
10 - 14	2.1%	20 - 29	21.4%	20 - 29	3.3%
15 - 19	6.4%	30 - 39	25.0%	30 - 39	3.3%
20 - 24	9.1%	40 - 49	14.3%	40 - 49	35.0%
25 - 29	11.2%	50 - 59	10.7%	50 - 59	43.3%
30 - 34	18.7%	60 - 69	10.7%	60 - 69	13.3%
35 - 39	19.8%	70 - 79	7.1%	70 - 79	0.0%
40 - 44	18.2%	80 - 89	3.6%	80 - 89	1.7%
45 - 49	12.8%	90 - 99	3.6%	90 - 99	0.0%
50 - 54	0.5%	> 99	0.0%	100 - 109	0.0%
55 - 59	0.5%	(Cases) N=	28	110 - 119	0.0%
60 - 64	0.0%	mean	45	> 119	0.0%

Anacapa Island – Keyhole (continued)

65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	187
mean	34
min size (mm)	6
max size (mm)	57

min size (mm)	13
max size (mm)	99

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	10.0%
100 - 109	31.7%
110 - 119	46.7%
120 - 129	10.0%
130 - 139	1.7%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	60
mean	111
min size (mm)	96
max size (mm)	130

(Cases) N=	60
mean	52
min size (mm)	25
max size (mm)	89

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	13.3%
40 - 49	18.3%
50 - 59	25.0%
60 - 69	26.7%
70 - 79	15.0%
80 - 89	1.7%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	60
mean	56
min size (mm)	33
max size (mm)	81

Anacapa Island - East Fish Camp

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	20.0%
40 - 49	13.3%
50 - 59	33.3%
60 - 69	13.3%
70 - 79	0.0%
80 - 89	6.7%
90 - 99	6.7%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	6.7%
> 139	0.0%
(Cases) N=	15
mean	60
min size (mm)	36
max size (mm)	130

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Asterina miniata	
<10	0.0%
10 - 19	1.4%
20 - 29	8.1%
30 - 39	9.5%
40 - 49	8.1%
50 - 59	17.6%
60 - 69	14.9%
70 - 79	21.6%
80 - 89	14.9%
90 - 99	2.7%
> 99	1.4%
(Cases) N=	74
mean	61
min size (mm)	10
max size (mm)	100

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%

Lytechinus anamesus	
< 5	0.0%
5 - 9	0.0%
10 - 14	22.1%
15 - 19	44.7%
20 - 24	18.3%
25 - 29	12.0%
30 - 34	2.9%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	208
mean	18
min size (mm)	11
max size (mm)	31

Strongylocentrotus franciscanus	
< 5	0.4%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	3.1%
20 - 24	12.7%
25 - 29	48.9%
30 - 34	24.9%
35 - 39	8.7%

Anacapa Island - East Fish Camp (continued)

20 - 24	0.0%	160 - 179	33.3%	40 - 44	1.3%
25 - 29	0.0%	180 - 199	33.3%	45 - 49	0.0%
30 - 34	0.0%	200 - 219	33.3%	50 - 54	0.0%
35 - 39	0.0%	220 - 239	0.0%	55 - 59	0.0%
40 - 44	0.0%	> 239	0.0%	60 - 64	0.0%
45 - 49	22.2%	(Cases) N=	3	65 - 69	0.0%
50 - 54	44.4%	mean	188	70 - 74	0.0%
55 - 59	33.3%	min size (mm)	170	75 - 79	0.0%
60 - 64	0.0%	max size (mm)	207	80 - 84	0.0%
65 - 69	0.0%			85 - 89	0.0%
70 - 74	0.0%			90 - 94	0.0%
> 75	0.0%			95 - 99	0.0%
(Cases) N=	9			100 - 104	0.0%
mean	53			105 - 109	0.0%
min size (mm)	47			> 109	0.0%
max size (mm)	58			(Cases) N=	229
				mean	28
				min size (mm)	4
				max size (mm)	41

Strongylocentrotus purpuratus		***Tethya aurantia***		***Lithopoma undosa***	
< 5	0.0%	<10	0.0%	<10	0.0%
5 - 9	1.5%	10 - 19	0.0%	10 - 19	2.9%
10 - 14	2.1%	20 - 29	0.0%	20 - 29	2.9%
15 - 19	44.5%	30 - 39	0.0%	30 - 39	5.9%
20 - 24	46.6%	40 - 49	11.1%	40 - 49	11.8%
25 - 29	4.7%	50 - 59	0.0%	50 - 59	8.8%

Anacapa Island - East Fish Camp (continued)

30 - 34	0.6%	60 - 69	33.3%	60 - 69	14.7%
35 - 39	0.0%	70 - 79	55.6%	70 - 79	20.6%
40 - 44	0.0%	80 - 89	0.0%	80 - 89	14.7%
45 - 49	0.0%	90 - 99	0.0%	90 - 99	8.8%
50 - 54	0.0%	> 99	0.0%	100 - 109	8.8%
55 - 59	0.0%	(Cases) N=	9	110 - 119	0.0%
60 - 64	0.0%	mean	68	> 119	0.0%
65 - 69	0.0%	min size (mm)	45	(Cases) N=	34
70 - 74	0.0%	max size (mm)	78	mean	67
75 - 79	0.0%			min size (mm)	19
> 79	0.0%	***Kelletia kelletii***		max size (mm)	107
(Cases) N=	337	< 40	0.0%		
mean	20	40 - 49	0.0%	***Megathura crenulata***	
min size (mm)	5	50 - 59	0.0%	<10	0.0%
max size (mm)	31	60 - 69	0.0%	10 - 19	0.0%
		70 - 79	0.0%	20 - 29	0.0%
		80 - 89	0.0%	30 - 39	1.6%
		90 - 99	0.0%	40 - 49	1.6%
		100 - 109	0.0%	50 - 59	8.2%
		110 - 119	0.0%	60 - 69	3.3%
		120 - 129	100.0%	70 - 79	26.2%
		130 - 139	0.0%	80 - 89	39.3%
		140 - 149	0.0%	90 - 99	19.7%
		> 149	0.0%	100 - 109	0.0%
		(Cases) N=	2	110 - 119	0.0%
		mean	128	> 119	0.0%

Anacapa Island - East Fish Camp (continued)

min size (mm)	127	(Cases) N=	61
max size (mm)	128	mean	79
		min size (mm)	32
		max size (mm)	99

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Black Sea Bass Reef

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	11.1%
50 - 59	0.0%
60 - 69	11.1%
70 - 79	0.0%
80 - 89	22.2%
90 - 99	11.1%
100 - 109	11.1%
110 - 119	11.1%
120 - 129	11.1%
130 - 139	11.1%
> 139	0.0%
(Cases) N=	9
mean	93
min size (mm)	44
max size (mm)	130

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	6.7%
50 - 59	20.0%
60 - 69	60.0%
70 - 79	13.3%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	15
mean	62
min size (mm)	49
max size (mm)	74

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	11.1%
140 - 159	33.3%

Strongylocentrotus franciscanus	
< 5	0.5%
5 - 9	9.0%
10 - 14	0.5%
15 - 19	0.0%
20 - 24	1.6%
25 - 29	3.2%
30 - 34	22.2%
35 - 39	29.6%
40 - 44	24.9%
45 - 49	7.4%
50 - 54	1.1%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
80 - 84	0.0%
85 - 89	0.0%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	189
mean	34

Anacapa Island - Black Sea Bass Reef (continued)

20 - 24	0.0%	160 - 179	33.3%	min size (mm)	4
25 - 29	0.0%	180 - 199	22.2%	max size (mm)	52
30 - 34	0.0%	200 - 219	0.0%		
35 - 39	0.0%	220 - 239	0.0%		
40 - 44	7.1%	> 239	0.0%		
45 - 49	64.3%	(Cases) N=	9		
50 - 54	21.4%	mean	163		
55 - 59	7.1%	min size (mm)	132		
60 - 64	0.0%	max size (mm)	197		
65 - 69	0.0%				
70 - 74	0.0%				
> 75	0.0%				
(Cases) N=	14				
mean	49				
min size (mm)	44				
max size (mm)	58				

Strongylocentrotus purpuratus		***Tethya aurantia***		***Lithopoma undosa***	
< 5	6.1%	<10	0.0%	<10	0.0%
5 - 9	40.2%	10 - 19	3.5%	10 - 19	0.0%
10 - 14	6.7%	20 - 29	5.3%	20 - 29	0.0%
15 - 19	0.0%	30 - 39	17.5%	30 - 39	1.0%
20 - 24	20.1%	40 - 49	31.6%	40 - 49	5.1%
25 - 29	17.7%	50 - 59	15.8%	50 - 59	4.1%
30 - 34	7.3%	60 - 69	21.1%	60 - 69	5.1%
35 - 39	1.8%	70 - 79	3.5%	70 - 79	7.1%
40 - 44	0.0%	80 - 89	1.8%	80 - 89	31.6%

Anacapa Island - Black Sea Bass Reef (continued)

45 - 49	0.0%	90 - 99	0.0%	90 - 99	33.7%
50 - 54	0.0%	> 99	0.0%	100 - 109	10.2%
55 - 59	0.0%	(Cases) N=	57	110 - 119	2.0%
60 - 64	0.0%	mean	48	> 119	0.0%
65 - 69	0.0%	min size (mm)	18	(Cases) N=	98
70 - 74	0.0%	max size (mm)	85	mean	85
75 - 79	0.0%			min size (mm)	38
> 79	0.0%	***Kelletia kelletii***		max size (mm)	116
(Cases) N=	164	< 40	0.0%		
mean	16	40 - 49	0.0%	***Megathura crenulata***	
min size (mm)	3	50 - 59	0.0%	<10	0.0%
max size (mm)	39	60 - 69	0.0%	10 - 19	0.0%
		70 - 79	1.2%	20 - 29	0.0%
		80 - 89	1.2%	30 - 39	0.0%
		90 - 99	19.8%	40 - 49	7.7%
		100 - 109	27.2%	50 - 59	15.4%
		110 - 119	9.9%	60 - 69	10.8%
		120 - 129	28.4%	70 - 79	27.7%
		130 - 139	12.3%	80 - 89	33.8%
		140 - 149	0.0%	90 - 99	4.6%
		> 149	0.0%	100 - 109	0.0%
		(Cases) N=	81	110 - 119	0.0%
		mean	112	> 119	0.0%
		min size (mm)	79	(Cases) N=	65
		max size (mm)	139	mean	72
				min size (mm)	42

Anacapa Island - Black Sea Bass Reef (continued)

max size (mm)	92

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Lighthouse

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	7.1%
40 - 49	10.7%
50 - 59	3.6%
60 - 69	7.1%
70 - 79	3.6%
80 - 89	7.1%
90 - 99	14.3%
100 - 109	14.3%
110 - 119	10.7%
120 - 129	3.6%
130 - 139	3.6%
> 139	14.3%
(Cases) N=	28
mean	95
min size (mm)	36
max size (mm)	169

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%

Asterina miniata	
<10	0.0%
10 - 19	4.2%
20 - 29	5.6%
30 - 39	15.5%
40 - 49	9.9%
50 - 59	7.0%
60 - 69	26.8%
70 - 79	16.9%
80 - 89	7.0%
90 - 99	7.0%
> 99	0.0%
(Cases) N=	71
mean	58
min size (mm)	14
max size (mm)	95

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	8.3%
60 - 79	33.3%
80 - 99	0.0%
100 - 119	12.5%
120 - 139	12.5%
140 - 159	8.3%

Lytechinus anamesus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	33.3%
20 - 24	66.7%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	3
mean	20
min size (mm)	15
max size (mm)	24

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	1.0%
10 - 14	1.5%
15 - 19	1.5%
20 - 24	9.2%
25 - 29	31.8%
30 - 34	30.3%
35 - 39	14.4%

Anacapa Island – Lighthouse (continued)

20 - 24	0.0%	160 - 179	8.3%	40 - 44	4.1%
25 - 29	0.0%	180 - 199	4.2%	45 - 49	1.5%
30 - 34	0.0%	200 - 219	4.2%	50 - 54	1.0%
35 - 39	0.0%	220 - 239	0.0%	55 - 59	1.5%
40 - 44	0.0%	> 239	8.3%	60 - 64	0.5%
45 - 49	28.6%	(Cases) N=	24	65 - 69	0.0%
50 - 54	71.4%	mean	121	70 - 74	0.0%
55 - 59	0.0%	min size (mm)	53	75 - 79	0.5%
60 - 64	0.0%	max size (mm)	255	80 - 84	0.0%
65 - 69	0.0%			85 - 89	0.5%
70 - 74	0.0%			90 - 94	0.5%
> 75	0.0%			95 - 99	0.0%
(Cases) N=	7			100 - 104	0.0%
mean	50			105 - 109	0.0%
min size (mm)	45			> 109	0.0%
max size (mm)	53			(Cases) N=	195
				mean	32
				min size (mm)	5
				max size (mm)	92

Strongylocentrotus purpuratus		***Lithopoma undosa***		***Megathura crenulata***	
< 5	0.4%	<10	0.0%	<10	0.0%
5 - 9	3.1%	10 - 19	0.0%	10 - 19	0.0%
10 - 14	5.4%	20 - 29	3.8%	20 - 29	0.0%
15 - 19	13.1%	30 - 39	12.5%	30 - 39	2.9%
20 - 24	33.1%	40 - 49	10.0%	40 - 49	11.8%
25 - 29	16.5%	50 - 59	48.8%	50 - 59	2.9%

Anacapa Island – Lighthouse (continued)

30 - 34	11.9%	60 - 69	20.0%	60 - 69	26.5%
35 - 39	6.2%	70 - 79	2.5%	70 - 79	23.5%
40 - 44	3.8%	80 - 89	0.0%	80 - 89	11.8%
45 - 49	3.5%	90 - 99	1.3%	90 - 99	5.9%
50 - 54	1.5%	100 - 109	1.3%	100 - 109	5.9%
55 - 59	0.8%	110 - 119	0.0%	110 - 119	8.8%
60 - 64	0.8%	> 119	0.0%	> 119	0.0%
65 - 69	0.0%	(Cases) N=	80	(Cases) N=	34
70 - 74	0.0%	mean	53	mean	75
75 - 79	0.0%	min size (mm)	26	min size (mm)	35
> 79	0.0%	max size (mm)	102	max size (mm)	112
(Cases) N=	260				
mean	26	***Lithopoma gibberosa***		***Crassedoma giganteum***	
min size (mm)	4	<10	0.0%	<10	0.0%
max size (mm)	60	10 - 19	0.0%	10 - 19	0.0%
		20 - 29	50.0%	20 - 29	0.0%
		30 - 39	50.0%	30 - 39	0.0%
		40 - 49	0.0%	40 - 49	0.0%
		50 - 59	0.0%	50 - 59	0.0%
		60 - 69	0.0%	60 - 69	0.0%
		70 - 79	0.0%	70 - 79	50.0%
		80 - 89	0.0%	80 - 89	0.0%
		90 - 99	0.0%	90 - 99	50.0%
		100 - 109	0.0%	100 - 109	0.0%
		110 - 119	0.0%	110 - 119	0.0%
		> 119	0.0%	120 - 129	0.0%

Anacapa Island – Lighthouse (continued)

(Cases) N=	2	130 - 139	0.0%
mean	30	> 139	0.0%
min size (mm)	29	(Cases) N=	2
max size (mm)	31	mean	86
		min size (mm)	74
		max size (mm)	98

Santa Barbara Island - Webster's Arch

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	13.1%
40 - 44	50.8%
45 - 49	29.5%
50 - 54	4.9%
55 - 59	1.6%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	61
mean	43
min size (mm)	35
max size (mm)	56

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	3.3%

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	1.8%
80 - 99	12.5%
100 - 119	32.1%
120 - 139	41.1%
140 - 159	10.7%
160 - 179	1.8%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	56
mean	119
min size (mm)	72
max size (mm)	160

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%

Lytechinus anamesus	
< 5	0.0%
5 - 9	33.3%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	66.7%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	3
mean	22
min size (mm)	9
max size (mm)	29

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	2.1%
15 - 19	13.8%
20 - 24	14.4%
25 - 29	22.1%
30 - 34	23.1%
35 - 39	12.3%

Santa Barbara Island - Webster's Arch (continued)

30 - 39	8.3%	120 - 139	0.0%	40 - 44	6.7%
40 - 49	20.0%	140 - 159	0.0%	45 - 49	3.1%
50 - 59	35.0%	160 - 179	10.0%	50 - 54	1.0%
60 - 69	20.0%	180 - 199	20.0%	55 - 59	0.0%
70 - 79	13.3%	200 - 219	10.0%	60 - 64	0.0%
80 - 89	0.0%	220 - 239	10.0%	65 - 69	0.0%
90 - 99	0.0%	240 - 259	0.0%	70 - 74	0.5%
> 99	0.0%	260 - 279	10.0%	75 - 79	1.0%
(Cases) N=	60	280 - 299	10.0%	80 - 84	0.0%
mean	54	> 299	30.0%	85 - 89	0.0%
min size (mm)	22	(Cases) N=	10	90 - 94	0.0%
max size (mm)	78	mean	249	95 - 99	0.0%
		min size (mm)	174	100 - 104	0.0%
		max size (mm)	330	105 - 109	0.0%
				> 109	0.0%
				(Cases) N=	195
				mean	29
				min size (mm)	12
				max size (mm)	79

Strongylocentrotus purpuratus		***Tethya aurantia***		***Lithopoma undosa***	
< 5	0.5%	<10	0.0%	<10	0.0%
5 - 9	2.3%	10 - 19	5.1%	10 - 19	0.0%
10 - 14	41.7%	20 - 29	6.8%	20 - 29	7.7%
15 - 19	30.6%	30 - 39	8.5%	30 - 39	0.0%
20 - 24	16.2%	40 - 49	16.9%	40 - 49	30.8%
25 - 29	8.3%	50 - 59	15.3%	50 - 59	30.8%

Santa Barbara Island - Webster's Arch (continued)

30 - 34	0.0%
35 - 39	0.5%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	216
mean	16
min size (mm)	3
max size (mm)	36

60 - 69	15.3%
70 - 79	22.0%
80 - 89	6.8%
90 - 99	3.4%
> 99	0.0%
(Cases) N=	59
mean	56
min size (mm)	10
max size (mm)	94

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	100.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	1
mean	131

60 - 69	15.4%
70 - 79	0.0%
80 - 89	7.7%
90 - 99	7.7%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	13
mean	56
min size (mm)	29
max size (mm)	95

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	100.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%

Santa Barbara Island - Webster's Arch (continued)

min size (mm)	131	(Cases) N=	1
max size (mm)	131	mean	46
		min size (mm)	46
		max size (mm)	46

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Graveyard Canyon

Megathura crenulata	
<10	0.0%
10 - 19	0.0%
20 - 29	7.1%
30 - 39	14.3%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	7.1%
70 - 79	50.0%
80 - 89	21.4%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	14
mean	68
min size (mm)	29
max size (mm)	85

Tegula regina	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	100.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	1
mean	54
min size (mm)	54
max size (mm)	54

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	4.5%
80 - 99	22.7%
100 - 119	59.1%
120 - 139	13.6%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	22
mean	107
min size (mm)	72
max size (mm)	135

Crassedoma giganteum	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	1.7%

Lytechinus anamesus	
< 5	0.4%
5 - 9	24.9%
10 - 14	53.3%
15 - 19	12.2%
20 - 24	5.2%
25 - 29	3.9%

Santa Barbara Island - Graveyard Canyon (continued)

60 - 69	0.0%	30 - 39	5.2%	30 - 34	0.0%
70 - 79	0.0%	40 - 49	5.2%	35 - 39	0.0%
80 - 89	0.0%	50 - 59	10.3%	40 - 44	0.0%
90 - 99	0.0%	60 - 69	19.0%	45 - 49	0.0%
100 - 109	0.0%	70 - 79	32.8%	> 49	0.0%
110 - 119	0.0%	80 - 89	22.4%	(Cases) N=	229
120 - 129	50.0%	90 - 99	3.4%	mean	12
130 - 139	50.0%	> 99	0.0%	min size (mm)	3
> 139	0.0%	(Cases) N=	58	max size (mm)	27
(Cases) N=	2	mean	69		
mean	130	min size (mm)	23		
min size (mm)	129	max size (mm)	93		
max size (mm)	130				

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***		***Tethya aurantia***	
< 5	0.0%	< 5	1.0%	<10	0.0%
5 - 9	1.5%	5 - 9	1.5%	10 - 19	0.0%
10 - 14	8.3%	10 - 14	29.6%	20 - 29	100.0%
15 - 19	12.7%	15 - 19	40.3%	30 - 39	0.0%
20 - 24	9.8%	20 - 24	23.5%	40 - 49	0.0%
25 - 29	24.9%	25 - 29	3.6%	50 - 59	0.0%
30 - 34	14.1%	30 - 34	0.5%	60 - 69	0.0%
35 - 39	9.8%	35 - 39	0.0%	70 - 79	0.0%
40 - 44	3.9%	40 - 44	0.0%	80 - 89	0.0%
45 - 49	4.4%	45 - 49	0.0%	90 - 99	0.0%
50 - 54	2.4%	50 - 54	0.0%	> 99	0.0%
55 - 59	3.9%	55 - 59	0.0%	(Cases) N=	1

Santa Barbara Island - Graveyard Canyon (continued)

60 - 64	2.0%
65 - 69	1.0%
70 - 74	0.0%
75 - 79	1.0%
80 - 84	0.5%
85 - 89	0.0%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	205
mean	30
min size (mm)	9
max size (mm)	80

60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	196
mean	17
min size (mm)	3
max size (mm)	31

mean	26
min size (mm)	26
max size (mm)	26

Lithopoma undosa

<10	0.0%
10 - 19	1.8%
20 - 29	1.8%
30 - 39	14.0%
40 - 49	12.3%
50 - 59	10.5%
60 - 69	7.0%
70 - 79	17.5%
80 - 89	22.8%
90 - 99	7.0%
100 - 109	5.3%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	57
mean	66
min size (mm)	18
max size (mm)	109

2007 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Southeast Reef

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	20.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	20.0%
80 - 89	20.0%
90 - 99	20.0%
100 - 109	20.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	5
mean	82
min size (mm)	45
max size (mm)	109

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	3.0%
30 - 39	18.2%
40 - 49	21.2%
50 - 59	15.2%

Tegula regina

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	1.4%
35 - 39	5.4%
40 - 44	29.7%
45 - 49	50.0%
50 - 54	13.5%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	74
mean	45
min size (mm)	30
max size (mm)	53

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	7.7%
100 - 119	33.3%
120 - 139	25.6%
140 - 159	25.6%
160 - 179	7.7%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	39
mean	126
min size (mm)	93
max size (mm)	178

Lytechinus anamesus

< 5	0.0%
5 - 9	0.0%
10 - 14	100.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%

Santa Barbara Island - Southeast Reef (continued)

60 - 69	9.1%	30 - 39	0.0%	30 - 34	0.0%
70 - 79	9.1%	40 - 49	0.0%	35 - 39	0.0%
80 - 89	9.1%	50 - 59	0.0%	40 - 44	0.0%
90 - 99	0.0%	60 - 69	0.0%	45 - 49	0.0%
100 - 109	9.1%	70 - 79	0.0%	> 49	0.0%
110 - 119	3.0%	80 - 89	100.0%	(Cases) N=	1
120 - 129	0.0%	90 - 99	0.0%	mean	11
130 - 139	0.0%	> 99	0.0%	min size (mm)	11
> 139	3.0%	(Cases) N=	1	max size (mm)	11
(Cases) N=	33	mean	83		
mean	63	min size (mm)	83		
min size (mm)	21	max size (mm)	83		
max size (mm)	146				

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***	
< 5	0.0%	< 5	0.0%
5 - 9	1.4%	5 - 9	3.1%
10 - 14	3.8%	10 - 14	10.4%
15 - 19	7.1%	15 - 19	10.9%
20 - 24	10.9%	20 - 24	15.1%
25 - 29	10.0%	25 - 29	9.4%
30 - 34	5.2%	30 - 34	18.2%
35 - 39	7.6%	35 - 39	13.0%
40 - 44	3.8%	40 - 44	11.5%
45 - 49	4.7%	45 - 49	4.7%
50 - 54	4.7%	50 - 54	3.1%
55 - 59	2.4%	55 - 59	0.5%

Santa Barbara Island - Southeast Reef (continued)

60 - 64	2.4%	60 - 64	0.0%
65 - 69	4.3%	65 - 69	0.0%
70 - 74	6.6%	70 - 74	0.0%
75 - 79	7.6%	75 - 79	0.0%
80 - 84	7.1%	> 79	0.0%
85 - 89	3.3%	(Cases) N=	192
90 - 94	2.4%	mean	29
95 - 99	3.3%	min size (mm)	7
100 - 104	1.4%	max size (mm)	55
105 - 109	0.0%		
> 109	0.0%		
(Cases) N=	211		
mean	49		
min size (mm)	7		
max size (mm)	102		

Appendix I. Macrocystis pyrifera Size Frequency Distributions.

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Wyckoff Ledge

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	8.0%	< 6	0.0%
3 - 5	5.3%	6 - 11	12.7%
6 - 8	10.7%	12 - 17	23.3%
9 - 11	12.0%	18 - 23	26.0%
12 - 14	11.3%	24 - 29	11.3%
15 - 17	13.3%	30 - 35	10.7%
18 - 20	13.3%	36 - 41	8.0%
21 - 23	10.0%	42 - 47	4.7%
24 - 26	10.7%	48 - 53	2.7%
27 - 29	0.7%	54 - 59	0.7%
30 - 32	0.7%	60 - 65	0.0%
33 - 35	2.0%	66 - 71	0.0%
36 - 38	0.7%	72 - 77	0.0%
39 - 41	0.7%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.7%	> 89	0.0%
(Cases) N=	150	(Cases) N=	150
mean	15	mean	23
min number	1	min width (cm)	6
max number	49	max width (cm)	59

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

San Miguel Island - Hare Rock

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	19.3%	< 6	5.3%
3 - 5	21.3%	6 - 11	21.3%
6 - 8	21.3%	12 - 17	31.3%
9 - 11	15.3%	18 - 23	19.3%
12 - 14	9.3%	24 - 29	10.0%
15 - 17	4.0%	30 - 35	6.0%
18 - 20	1.3%	36 - 41	1.3%
21 - 23	2.7%	42 - 47	1.3%
24 - 26	3.3%	48 - 53	2.0%
27 - 29	0.7%	54 - 59	0.7%
30 - 32	0.0%	60 - 65	1.3%
33 - 35	0.7%	66 - 71	0.0%
36 - 38	0.7%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	150	(Cases) N=	150
mean	8	mean	18
min number	1	min width (cm)	3
max number	38	max width (cm)	64

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Johnson's Lee North

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	37.5%	< 6	0.0%
3 - 5	19.1%	6 - 11	30.9%
6 - 8	14.5%	12 - 17	9.2%
9 - 11	16.4%	18 - 23	9.9%
12 - 14	9.2%	24 - 29	9.9%
15 - 17	1.3%	30 - 35	9.9%
18 - 20	1.3%	36 - 41	7.9%
21 - 23	0.0%	42 - 47	9.9%
24 - 26	0.7%	48 - 53	6.6%
27 - 29	0.0%	54 - 59	3.9%
30 - 32	0.0%	60 - 65	1.3%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.7%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	152	(Cases) N=	152
mean	6	mean	26
min number	1	min width (cm)	6
max number	24	max width (cm)	76

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Johnson's Lee South

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	10.6%	< 6	0.0%
3 - 5	18.5%	6 - 11	4.6%
6 - 8	20.5%	12 - 17	10.6%
9 - 11	22.5%	18 - 23	11.9%
12 - 14	13.9%	24 - 29	17.2%
15 - 17	6.6%	30 - 35	17.2%
18 - 20	2.6%	36 - 41	17.9%
21 - 23	2.0%	42 - 47	10.6%
24 - 26	1.3%	48 - 53	4.0%
27 - 29	0.0%	54 - 59	4.0%
30 - 32	0.7%	60 - 65	0.7%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.7%
39 - 41	0.0%	78 - 83	0.7%
42 - 44	0.7%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	151	(Cases) N=	151
mean	9	mean	32
min number	1	min width (cm)	6
max number	43	max width (cm)	78

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Rodes Reef

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	12.7%	< 6	12.7%
3 - 5	9.7%	6 - 11	14.2%
6 - 8	14.2%	12 - 17	23.1%
9 - 11	7.5%	18 - 23	29.9%
12 - 14	14.2%	24 - 29	13.4%
15 - 17	14.2%	30 - 35	6.0%
18 - 20	10.4%	36 - 41	0.7%
21 - 23	4.5%	42 - 47	0.0%
24 - 26	7.5%	48 - 53	0.0%
27 - 29	3.7%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.7%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.7%	> 89	0.0%
(Cases) N=	134	(Cases) N=	134
mean	13	mean	17
min number	1	min width (cm)	2
max number	52	max width (cm)	37

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Gull Island South

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	7.3%	< 6	1.3%
3 - 5	18.7%	6 - 11	10.0%
6 - 8	20.7%	12 - 17	20.7%
9 - 11	26.0%	18 - 23	21.3%
12 - 14	14.0%	24 - 29	22.0%
15 - 17	9.3%	30 - 35	11.3%
18 - 20	2.7%	36 - 41	6.7%
21 - 23	0.7%	42 - 47	2.7%
24 - 26	0.7%	48 - 53	2.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.7%
33 - 35	0.0%	66 - 71	0.7%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.7%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	150	(Cases) N=	150
mean	9	mean	24
min number	1	min width (cm)	1
max number	24	max width (cm)	83

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Fry's Harbor

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	55.8%	< 6	30.8%
3 - 5	25.0%	6 - 11	36.5%
6 - 8	3.8%	12 - 17	17.3%
9 - 11	1.9%	18 - 23	5.8%
12 - 14	7.7%	24 - 29	5.8%
15 - 17	3.8%	30 - 35	3.8%
18 - 20	1.9%	36 - 41	0.0%
21 - 23	0.0%	42 - 47	0.0%
24 - 26	0.0%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	52	(Cases) N=	52
mean	4	mean	10
min number	1	min width (cm)	2
max number	18	max width (cm)	32

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Pelican Bay

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	0.0%	< 6	0.0%
3 - 5	50.0%	6 - 11	0.0%
6 - 8	0.0%	12 - 17	50.0%
9 - 11	50.0%	18 - 23	50.0%
12 - 14	0.0%	24 - 29	0.0%
15 - 17	0.0%	30 - 35	0.0%
18 - 20	0.0%	36 - 41	0.0%
21 - 23	0.0%	42 - 47	0.0%
24 - 26	0.0%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	2	(Cases) N=	2
mean	7	mean	18
min number	3	min width (cm)	12
max number	11	max width (cm)	23

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Scorpion Anchorage

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	59.9%	< 6	15.8%
3 - 5	21.7%	6 - 11	50.7%
6 - 8	4.6%	12 - 17	13.2%
9 - 11	1.3%	18 - 23	9.9%
12 - 14	3.9%	24 - 29	5.3%
15 - 17	3.9%	30 - 35	2.6%
18 - 20	2.6%	36 - 41	2.0%
21 - 23	0.7%	42 - 47	0.7%
24 - 26	1.3%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	152	(Cases) N=	152
mean	4	mean	12
min number	1	min width (cm)	4
max number	25	max width (cm)	44

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Yellow Banks

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	12.5%	< 6	7.4%
3 - 5	11.8%	6 - 11	13.2%
6 - 8	16.2%	12 - 17	7.4%
9 - 11	22.1%	18 - 23	15.4%
12 - 14	14.0%	24 - 29	22.8%
15 - 17	8.8%	30 - 35	15.4%
18 - 20	2.2%	36 - 41	8.8%
21 - 23	5.1%	42 - 47	4.4%
24 - 26	2.9%	48 - 53	2.9%
27 - 29	2.9%	54 - 59	0.7%
30 - 32	1.5%	60 - 65	1.5%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	136	(Cases) N=	136
mean	11	mean	25
min number	1	min width (cm)	2
max number	32	max width (cm)	63

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Admiral's Reef

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	34.6%	< 6	19.2%
3 - 5	23.1%	6 - 11	30.8%
6 - 8	11.5%	12 - 17	17.3%
9 - 11	7.7%	18 - 23	19.2%
12 - 14	3.8%	24 - 29	11.5%
15 - 17	1.9%	30 - 35	1.9%
18 - 20	3.8%	36 - 41	0.0%
21 - 23	5.8%	42 - 47	0.0%
24 - 26	3.8%	48 - 53	0.0%
27 - 29	1.9%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	1.9%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	52	(Cases) N=	52
mean	8	mean	13
min number	1	min width (cm)	3
max number	34	max width (cm)	30

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Cathedral Cove

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	24.8%	< 6	6.4%
3 - 5	15.2%	6 - 11	20.0%
6 - 8	12.8%	12 - 17	6.4%
9 - 11	16.0%	18 - 23	23.2%
12 - 14	8.8%	24 - 29	25.6%
15 - 17	6.4%	30 - 35	12.8%
18 - 20	8.8%	36 - 41	4.8%
21 - 23	1.6%	42 - 47	0.0%
24 - 26	3.2%	48 - 53	0.8%
27 - 29	2.4%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	125	(Cases) N=	125
mean	9	mean	21
min number	1	min width (cm)	3
max number	27	max width (cm)	52

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Landing Cove

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	16.8%	< 6	8.8%
3 - 5	11.2%	6 - 11	16.0%
6 - 8	19.2%	12 - 17	23.2%
9 - 11	13.6%	18 - 23	27.2%
12 - 14	13.6%	24 - 29	11.2%
15 - 17	13.6%	30 - 35	8.8%
18 - 20	5.6%	36 - 41	2.4%
21 - 23	2.4%	42 - 47	2.4%
24 - 26	0.8%	48 - 53	0.0%
27 - 29	2.4%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.8%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	125	(Cases) N=	125
mean	10	mean	18
min number	1	min width (cm)	3
max number	40	max width (cm)	46

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Barbara Island - SE Sea Lion Rookery

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	0.0%	< 6	0.0%
3 - 5	50.0%	6 - 11	50.0%
6 - 8	0.0%	12 - 17	0.0%
9 - 11	50.0%	18 - 23	0.0%
12 - 14	0.0%	24 - 29	50.0%
15 - 17	0.0%	30 - 35	0.0%
18 - 20	0.0%	36 - 41	0.0%
21 - 23	0.0%	42 - 47	0.0%
24 - 26	0.0%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	2	(Cases) N=	2
mean	7	mean	18
min number	3	min width (cm)	10
max number	11	max width (cm)	25

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

San Miguel Island - Miracle Mile

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	12.7%	< 6	3.3%
3 - 5	11.3%	6 - 11	16.0%
6 - 8	8.0%	12 - 17	14.0%
9 - 11	7.3%	18 - 23	20.0%
12 - 14	8.7%	24 - 29	22.0%
15 - 17	12.0%	30 - 35	10.7%
18 - 20	6.0%	36 - 41	8.7%
21 - 23	4.7%	42 - 47	2.7%
24 - 26	10.0%	48 - 53	2.7%
27 - 29	3.3%	54 - 59	0.0%
30 - 32	4.0%	60 - 65	0.0%
33 - 35	3.3%	66 - 71	0.0%
36 - 38	2.7%	72 - 77	0.0%
39 - 41	2.0%	78 - 83	0.0%
42 - 44	1.3%	84 - 89	0.0%
> 44	2.7%	> 89	0.0%
(Cases) N=	150	(Cases) N=	150
mean	17	mean	23
min number	1	min width (cm)	4
max number	79	max width (cm)	51

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Cluster Point

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	14.3%	< 6	0.0%
3 - 5	37.9%	6 - 11	0.7%
6 - 8	24.3%	12 - 17	10.7%
9 - 11	12.9%	18 - 23	20.7%
12 - 14	5.7%	24 - 29	27.1%
15 - 17	2.9%	30 - 35	20.0%
18 - 20	2.1%	36 - 41	15.7%
21 - 23	0.0%	42 - 47	3.6%
24 - 26	0.0%	48 - 53	1.4%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	140	(Cases) N=	140
mean	6	mean	28
min number	1	min width (cm)	11
max number	20	max width (cm)	49

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Trancion Canyon

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	29.0%	< 6	1.9%
3 - 5	16.1%	6 - 11	18.1%
6 - 8	14.2%	12 - 17	14.8%
9 - 11	11.0%	18 - 23	10.3%
12 - 14	10.3%	24 - 29	12.3%
15 - 17	5.2%	30 - 35	10.3%
18 - 20	5.8%	36 - 41	11.6%
21 - 23	2.6%	42 - 47	8.4%
24 - 26	3.2%	48 - 53	2.6%
27 - 29	0.0%	54 - 59	1.9%
30 - 32	0.6%	60 - 65	1.9%
33 - 35	0.6%	66 - 71	2.6%
36 - 38	0.6%	72 - 77	0.6%
39 - 41	0.0%	78 - 83	1.3%
42 - 44	0.0%	84 - 89	0.6%
> 44	0.6%	> 89	0.6%
(Cases) N=	155	(Cases) N=	155
mean	9	mean	29
min number	1	min width (cm)	5
max number	45	max width (cm)	92

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Chickasaw

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	12.9%	< 6	0.0%
3 - 5	15.0%	6 - 11	2.0%
6 - 8	29.3%	12 - 17	10.2%
9 - 11	19.7%	18 - 23	14.3%
12 - 14	13.6%	24 - 29	27.9%
15 - 17	5.4%	30 - 35	21.8%
18 - 20	2.0%	36 - 41	12.9%
21 - 23	0.7%	42 - 47	2.7%
24 - 26	1.4%	48 - 53	8.2%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	147	(Cases) N=	147
mean	8	mean	29
min number	1	min width (cm)	7
max number	24	max width (cm)	52

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - South Point

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	4.7%	< 6	0.7%
3 - 5	8.7%	6 - 11	4.7%
6 - 8	14.7%	12 - 17	4.7%
9 - 11	12.0%	18 - 23	13.3%
12 - 14	19.3%	24 - 29	14.7%
15 - 17	13.3%	30 - 35	21.3%
18 - 20	8.0%	36 - 41	13.3%
21 - 23	7.3%	42 - 47	11.3%
24 - 26	6.7%	48 - 53	6.0%
27 - 29	2.7%	54 - 59	5.3%
30 - 32	1.3%	60 - 65	3.3%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.7%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.7%
42 - 44	0.0%	84 - 89	0.7%
> 44	0.7%	> 89	0.0%
(Cases) N=	150	(Cases) N=	150
mean	14	mean	34
min number	1	min width (cm)	4
max number	46	max width (cm)	85

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Black Sea Bass Reef

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	100.0%	< 6	0.0%
3 - 5	0.0%	6 - 11	0.0%
6 - 8	0.0%	12 - 17	100.0%
9 - 11	0.0%	18 - 23	0.0%
12 - 14	0.0%	24 - 29	0.0%
15 - 17	0.0%	30 - 35	0.0%
18 - 20	0.0%	36 - 41	0.0%
21 - 23	0.0%	42 - 47	0.0%
24 - 26	0.0%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	1	(Cases) N=	1
mean	2	mean	12
min number	2	min width (cm)	12
max number	2	max width (cm)	12

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Lighthouse

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	50.0%	< 6	25.0%
3 - 5	25.0%	6 - 11	50.0%
6 - 8	0.0%	12 - 17	0.0%
9 - 11	0.0%	18 - 23	0.0%
12 - 14	0.0%	24 - 29	25.0%
15 - 17	0.0%	30 - 35	0.0%
18 - 20	0.0%	36 - 41	0.0%
21 - 23	25.0%	42 - 47	0.0%
24 - 26	0.0%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	4	(Cases) N=	4
mean	7	mean	11
min number	1	min width (cm)	4
max number	21	max width (cm)	25

2007 *Macrocystis pyrifera* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Barbara Island - Southeast Reef

Macrocystis pyrifera* Ad.*(>1m) number of stipes		***Macrocystis pyrifera* Ad.*(>1m) holdfast diameters***	
< 3	15.8%	< 6	6.7%
3 - 5	18.3%	6 - 11	6.7%
6 - 8	17.5%	12 - 17	33.3%
9 - 11	15.8%	18 - 23	40.8%
12 - 14	15.0%	24 - 29	9.2%
15 - 17	10.0%	30 - 35	3.3%
18 - 20	6.7%	36 - 41	0.0%
21 - 23	0.0%	42 - 47	0.0%
24 - 26	0.8%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.0%
30 - 32	0.0%	60 - 65	0.0%
33 - 35	0.0%	66 - 71	0.0%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	120	(Cases) N=	120
mean	9	mean	18
min number	1	min width (cm)	3
max number	24	max width (cm)	34

Appendix J. Gorgonian/Stylaster californica Size Frequency Distributions.

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee North

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	100.0%	9 - 12	100.0%
13 - 16	0.0%	13 - 16	0.0%
17 - 20	0.0%	17 - 20	0.0%
21 - 24	0.0%	21 - 24	0.0%
25 - 28	0.0%	24 - 28	0.0%
29 - 32	0.0%	29 - 32	0.0%
33 - 36	0.0%	33 - 36	0.0%
37 - 40	0.0%	37 - 40	0.0%
41 - 44	0.0%	41 - 44	0.0%
45 - 48	0.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	0.0%	53 - 56	0.0%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%

Santa Rosa Island - Johnson's Lee North (continued)

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
(Cases) N=	1	(Cases) N=	1
mean	12	mean	10
min height (cm)	12	min width (cm)	10
max height (cm)	12	max width (cm)	10

Santa Rosa Island - Johnson's Lee South

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	0.0%
13 - 16	0.0%	13 - 16	12.5%
17 - 20	0.0%	17 - 20	6.3%
21 - 24	6.3%	21 - 24	6.3%
25 - 28	0.0%	24 - 28	6.3%
29 - 32	0.0%	29 - 32	6.3%
33 - 36	12.5%	33 - 36	12.5%
37 - 40	6.3%	37 - 40	31.3%
41 - 44	12.5%	41 - 44	6.3%
45 - 48	37.5%	45 - 48	0.0%
49 - 52	12.5%	49 - 52	0.0%
53 - 56	12.5%	53 - 56	6.3%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	6.3%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%

Santa Rosa Island - Johnson's Lee South (continued)

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	16	(Cases) N=	16
mean	44	mean	34
min height (cm)	21	min width (cm)	14
max height (cm)	55	max width (cm)	62

Santa Cruz Island - Gull Island South

Stylaster californica heights		***Stylaster californica widths***	
< 3	13.4%	< 3	3.0%
3 - 4	23.9%	3 - 4	16.4%
5 - 6	22.4%	5 - 6	11.9%
7 - 8	11.9%	7 - 8	9.0%
9 - 10	9.0%	9 - 10	11.9%
11 - 12	6.0%	1 - 12	13.4%
13 - 14	3.0%	13 - 14	3.0%
15 - 16	7.5%	15 - 16	9.0%
17 - 18	0.0%	17 - 18	1.5%
19 - 20	3.0%	19 - 20	4.5%
21 - 22	0.0%	21 - 22	3.0%
23 - 24	0.0%	23 - 24	0.0%
25 - 26	0.0%	25 - 26	0.0%
27 - 28	0.0%	27 - 28	1.5%
29 - 30	0.0%	29 - 30	1.5%

Santa Cruz Island - Gull Island South (continued)

Stylaster californica heights

> 30	0.0%
(Cases) N=	67
mean	7
min height (cm)	1
max height (cm)	20

Stylaster californica widths

> 30	10.4%
(Cases) N=	67
mean	13
min width (cm)	1
max width (cm)	50

Lophogorgia chilensis heights

< 5	0.0%
5 - 8	3.8%
9 - 12	3.8%
13 - 16	19.2%
17 - 20	7.7%
21 - 24	7.7%
25 - 28	7.7%
29 - 32	26.9%
33 - 36	7.7%
37 - 40	15.4%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%

Lophogorgia chilensis widths

< 5	0.0%
5 - 8	15.4%
9 - 12	19.2%
13 - 16	7.7%
17 - 20	7.7%
21 - 24	11.5%
24 - 28	19.2%
29 - 32	7.7%
33 - 36	11.5%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%

Santa Cruz Island - Gull Island South (continued)

Lophogorgia chilensis heights	
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	26
mean	25
min height (cm)	8
max height (cm)	40

Lophogorgia chilensis widths	
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	26
mean	20
min width (cm)	6
max width (cm)	35

Santa Cruz Island - Fry's Harbor

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	1.6%
21 - 24	3.2%
25 - 28	8.1%
29 - 32	3.2%
33 - 36	16.1%
37 - 40	6.5%
41 - 44	16.1%
45 - 48	12.9%
49 - 52	3.2%
53 - 56	17.7%
57 - 60	8.1%
61 - 64	1.6%
65 - 68	1.6%

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	1.6%
13 - 16	0.0%
17 - 20	3.2%
21 - 24	3.2%
24 - 28	9.7%
29 - 32	1.6%
33 - 36	11.3%
37 - 40	11.3%
41 - 44	11.3%
45 - 48	9.7%
49 - 52	11.3%
53 - 56	1.6%
57 - 60	8.1%
61 - 64	1.6%
65 - 68	8.1%

Santa Cruz Island - Fry's Harbor (continued)

Lophogorgia chilensis heights	
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	62
mean	43
min height (cm)	17
max height (cm)	67

Lophogorgia chilensis widths	
69 - 72	0.0%
73 - 76	3.2%
77 - 80	1.6%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	1.6%
(Cases) N=	62
mean	45
min width (cm)	12
max width (cm)	134

Santa Cruz Island - Pelican Bay

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	2.8%
13 - 16	8.3%
17 - 20	4.2%
21 - 24	13.9%
25 - 28	8.3%
29 - 32	9.7%
33 - 36	4.2%
37 - 40	12.5%
41 - 44	11.1%
45 - 48	11.1%

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	8.3%
9 - 12	4.2%
13 - 16	8.3%
17 - 20	12.5%
21 - 24	6.9%
24 - 28	6.9%
29 - 32	2.8%
33 - 36	9.7%
37 - 40	5.6%
41 - 44	5.6%
45 - 48	13.9%

Santa Cruz Island - Pelican Bay (continued)

Lophogorgia chilensis heights

49 - 52	9.7%
53 - 56	4.2%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	72
mean	34
min height (cm)	9
max height (cm)	55

Lophogorgia chilensis widths

49 - 52	6.9%
53 - 56	5.6%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	1.4%
69 - 72	1.4%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	72
mean	31
min width (cm)	5
max width (cm)	69

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	100.0%
21 - 24	0.0%
25 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Pelican Bay (continued)

Muricea californica heights		***Muricea californica widths***	
37 - 40	0.0%	37 - 40	0.0%
41 - 44	0.0%	41 - 44	100.0%
45 - 48	0.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	0.0%	53 - 56	0.0%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	1	(Cases) N=	1
mean	18	mean	43
min height (cm)	18	min width (cm)	43
max height (cm)	18	max width (cm)	43

Santa Cruz Island - Scorpion Anchorage

***Lophogorgia chilensis* heights**		***Lophogorgia chilensis* widths**	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	0.0%
13 - 16	0.0%	13 - 16	0.0%
17 - 20	25.0%	17 - 20	50.0%
21 - 24	50.0%	21 - 24	25.0%
25 - 28	0.0%	24 - 28	0.0%
29 - 32	0.0%	29 - 32	25.0%
33 - 36	25.0%	33 - 36	0.0%
37 - 40	0.0%	37 - 40	0.0%
41 - 44	0.0%	41 - 44	0.0%
45 - 48	0.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	0.0%	53 - 56	0.0%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	4	(Cases) N=	4
mean	24	mean	23

Santa Cruz Island - Scorpion Anchorage (continued)

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
min height (cm)	19	min width (cm)	17
max height (cm)	34	max width (cm)	32

Cruz Island - Yellow Banks

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	4.0%
5 - 8	6.0%	5 - 8	18.0%
9 - 12	8.0%	9 - 12	20.0%
13 - 16	12.0%	13 - 16	10.0%
17 - 20	14.0%	17 - 20	16.0%
21 - 24	16.0%	21 - 24	16.0%
25 - 28	16.0%	24 - 28	6.0%
29 - 32	4.0%	29 - 32	2.0%
33 - 36	8.0%	33 - 36	4.0%
37 - 40	14.0%	37 - 40	2.0%
41 - 44	2.0%	41 - 44	0.0%
45 - 48	0.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	0.0%	53 - 56	0.0%
57 - 60	0.0%	57 - 60	2.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%

Cruz Island - Yellow Banks (continued)

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	50	(Cases) N=	50
mean	24	mean	17
min height (cm)	5	min width (cm)	4
max height (cm)	42	max width (cm)	60

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Admiral's Reef

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	5.5%
13 - 16	0.0%	13 - 16	7.3%
17 - 20	0.0%	17 - 20	3.6%
21 - 24	1.8%	21 - 24	3.6%
25 - 28	9.1%	24 - 28	7.3%
29 - 32	5.5%	29 - 32	7.3%
33 - 36	12.7%	33 - 36	5.5%
37 - 40	1.8%	37 - 40	7.3%
41 - 44	14.5%	41 - 44	1.8%
45 - 48	16.4%	45 - 48	7.3%
49 - 52	12.7%	49 - 52	12.7%
53 - 56	5.5%	53 - 56	7.3%
57 - 60	10.9%	57 - 60	10.9%
61 - 64	1.8%	61 - 64	0.0%
65 - 68	3.6%	65 - 68	1.8%
69 - 72	0.0%	69 - 72	5.5%
73 - 76	1.8%	73 - 76	1.8%
77 - 80	0.0%	77 - 80	1.8%
81 - 84	1.8%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	1.8%
> 100	0.0%	> 100	0.0%
(Cases) N=	55	(Cases) N=	55
mean	45	mean	42

Anacapa Island - Admiral's Reef (continued)

Lophogorgia chilensis heights

min height (cm)	24
max height (cm)	83

Lophogorgia chilensis widths

min width (cm)	9
max width (cm)	97

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	25.0%
21 - 24	0.0%
25 - 28	25.0%
29 - 32	0.0%
33 - 36	50.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	50.0%
49 - 52	0.0%
53 - 56	25.0%
57 - 60	25.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%

Anacapa Island - Admiral's Reef (continued)

***Muricea fruticosa* heights**		***Muricea fruticosa* widths**	
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	4	(Cases) N=	4
mean	29	mean	51
min height (cm)	19	min width (cm)	47
max height (cm)	36	max width (cm)	57
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	0.0%
13 - 16	0.0%	13 - 16	0.0%
17 - 20	5.0%	17 - 20	0.0%
21 - 24	0.0%	21 - 24	0.0%
25 - 28	10.0%	24 - 28	0.0%
29 - 32	5.0%	29 - 32	5.0%
33 - 36	10.0%	33 - 36	5.0%
37 - 40	5.0%	37 - 40	0.0%
41 - 44	5.0%	41 - 44	5.0%
45 - 48	15.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	5.0%
53 - 56	10.0%	53 - 56	0.0%
57 - 60	20.0%	57 - 60	10.0%
61 - 64	5.0%	61 - 64	5.0%
65 - 68	5.0%	65 - 68	5.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	5.0%
77 - 80	0.0%	77 - 80	10.0%
81 - 84	5.0%	81 - 84	5.0%
85 - 88	0.0%	85 - 88	15.0%

Anacapa Island - Admiral's Reef (continued)

Muricea fruticosa heights

89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	20
mean	47
min height (cm)	19
max height (cm)	82

Muricea fruticosa widths

89 - 92	5.0%
93 - 96	5.0%
97 - 100	5.0%
> 100	10.0%
(Cases) N=	20
mean	76
min width (cm)	29
max width (cm)	150

Santa Cruz Island - Devil's Peak Member

Lophogorgia chilensis heights

< 5	0.0%
5 - 8	0.0%
9 - 12	1.6%
13 - 16	1.6%
17 - 20	9.8%
21 - 24	18.0%
25 - 28	13.1%
29 - 32	9.8%
33 - 36	14.8%
37 - 40	16.4%
41 - 44	9.8%
45 - 48	1.6%
49 - 52	1.6%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%

Lophogorgia chilensis widths

< 5	0.0%
5 - 8	1.6%
9 - 12	4.9%
13 - 16	18.0%
17 - 20	14.8%
21 - 24	23.0%
24 - 28	6.6%
29 - 32	13.1%
33 - 36	9.8%
37 - 40	4.9%
41 - 44	1.6%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%

Santa Cruz Island - Devil's Peak Member (continued)

Lophogorgia chilensis heights

69 - 72	1.6%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	61
mean	31
min height (cm)	11
max height (cm)	72

Lophogorgia chilensis widths

69 - 72	1.6%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	61
mean	24
min width (cm)	7
max width (cm)	71

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	50.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
25 - 28	50.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	50.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	50.0%
49 - 52	0.0%

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Devil's Peak Member (continued)

Muricea fruticosa heights		***Muricea fruticosa widths***	
53 - 56	0.0%	53 - 56	0.0%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	2	(Cases) N=	2
mean	19	mean	36
min height (cm)	12	min width (cm)	26
max height (cm)	26	max width (cm)	46
< 5	0.0%	< 5	20.0%
5 - 8	20.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	0.0%
13 - 16	0.0%	13 - 16	0.0%
17 - 20	0.0%	17 - 20	0.0%
21 - 24	20.0%	21 - 24	0.0%
25 - 28	0.0%	24 - 28	20.0%
29 - 32	0.0%	29 - 32	0.0%
33 - 36	0.0%	33 - 36	0.0%
37 - 40	0.0%	37 - 40	0.0%
41 - 44	0.0%	41 - 44	0.0%

Santa Cruz Island - Devil's Peak Member (continued)

Muricea fruticosa heights		***Muricea fruticosa widths***	
45 - 48	20.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	40.0%	53 - 56	20.0%
57 - 60	0.0%	57 - 60	20.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	20.0%
(Cases) N=	5	(Cases) N=	5
mean	37	mean	49
min height (cm)	7	min width (cm)	4
max height (cm)	56	max width (cm)	103

Santa Cruz Island - Potato Pasture

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	1.7%
13 - 16	0.0%	13 - 16	1.7%
17 - 20	1.7%	17 - 20	11.7%

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Potato Pasture (continued)

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
21 - 24	3.3%	21 - 24	8.3%
25 - 28	11.7%	24 - 28	13.3%
29 - 32	10.0%	29 - 32	10.0%
33 - 36	20.0%	33 - 36	11.7%
37 - 40	18.3%	37 - 40	11.7%
41 - 44	10.0%	41 - 44	5.0%
45 - 48	6.7%	45 - 48	5.0%
49 - 52	11.7%	49 - 52	6.7%
53 - 56	6.7%	53 - 56	11.7%
57 - 60	0.0%	57 - 60	1.7%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	60	(Cases) N=	60
mean	38	mean	35
min height (cm)	19	min width (cm)	11
max height (cm)	55	max width (cm)	60

Santa Cruz Island - Potato Pasture (continued)

Muricea californica heights		***Muricea californica widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	0.0%
13 - 16	0.0%	13 - 16	0.0%
17 - 20	0.0%	17 - 20	0.0%
21 - 24	0.0%	21 - 24	0.0%
25 - 28	0.0%	24 - 28	0.0%
29 - 32	50.0%	29 - 32	0.0%
33 - 36	0.0%	33 - 36	0.0%
37 - 40	50.0%	37 - 40	0.0%
41 - 44	0.0%	41 - 44	50.0%
45 - 48	0.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	0.0%	53 - 56	50.0%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	2	(Cases) N=	2
mean	35	mean	47

Santa Cruz Island - Potato Pasture (continued)

Muricea californica heights		***Muricea californica widths***	
min height (cm)	30	min width (cm)	42
max height (cm)	40	max width (cm)	52

Santa Cruz Island - Cavern Point

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	1.8%	9 - 12	12.3%
13 - 16	0.0%	13 - 16	5.3%
17 - 20	10.5%	17 - 20	7.0%
21 - 24	7.0%	21 - 24	7.0%
25 - 28	5.3%	24 - 28	14.0%
29 - 32	5.3%	29 - 32	14.0%
33 - 36	5.3%	33 - 36	8.8%
37 - 40	3.5%	37 - 40	8.8%
41 - 44	15.8%	41 - 44	1.8%
45 - 48	19.3%	45 - 48	12.3%
49 - 52	1.8%	49 - 52	1.8%
53 - 56	7.0%	53 - 56	1.8%
57 - 60	8.8%	57 - 60	1.8%
61 - 64	3.5%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	1.8%	69 - 72	0.0%
73 - 76	1.8%	73 - 76	1.8%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	1.8%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	1.8%
89 - 92	0.0%	89 - 92	0.0%

Santa Cruz Island - Cavern Point (continued)

Lophogorgia chilensis heights

93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	57
mean	41
min height (cm)	12
max height (cm)	82

Lophogorgia chilensis widths

93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	57
mean	31
min width (cm)	9
max width (cm)	86

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
25 - 28	0.0%
29 - 32	0.0%
33 - 36	33.3%
37 - 40	33.3%
41 - 44	33.3%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	33.3%
29 - 32	33.3%
33 - 36	33.3%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%

Santa Cruz Island - Cavern Point (continued)

Muricea californica heights	
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	3
mean	38
min height (cm)	35
max height (cm)	42

Muricea californica widths	
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	3
mean	31
min width (cm)	27
max width (cm)	35

Santa Cruz Island - Little Scorpion

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	4.7%
13 - 16	3.1%
17 - 20	3.1%
21 - 24	4.7%
25 - 28	7.8%
29 - 32	7.8%
33 - 36	10.9%
37 - 40	9.4%
41 - 44	14.1%
45 - 48	6.3%
49 - 52	9.4%
53 - 56	6.3%
57 - 60	3.1%

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	7.8%
13 - 16	6.3%
17 - 20	9.4%
21 - 24	3.1%
24 - 28	3.1%
29 - 32	7.8%
33 - 36	14.1%
37 - 40	7.8%
41 - 44	7.8%
45 - 48	3.1%
49 - 52	7.8%
53 - 56	4.7%
57 - 60	4.7%

Santa Cruz Island - Little Scorpion (continued)

Lophogorgia chilensis heights

61 - 64	3.1%
65 - 68	4.7%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	1.6%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	64
mean	40
min height (cm)	10
max height (cm)	86

Lophogorgia chilensis widths

61 - 64	0.0%
65 - 68	3.1%
69 - 72	0.0%
73 - 76	1.6%
77 - 80	4.7%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	1.6%
93 - 96	0.0%
97 - 100	1.6%
> 100	0.0%
(Cases) N=	64
mean	39
min width (cm)	10
max width (cm)	98

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
25 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	100.0%
41 - 44	0.0%

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%

Santa Cruz Island - Little Scorpion (continued)

Muricea californica heights		***Muricea californica widths***	
45 - 48	0.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	0.0%	53 - 56	0.0%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	100.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	1	(Cases) N=	1
mean	37	mean	68
min height (cm)	37	min width (cm)	68
max height (cm)	37	max width (cm)	68

Santa Cruz Island - Pedro Reef

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	1.5%
9 - 12	1.5%	9 - 12	3.0%
13 - 16	0.0%	13 - 16	3.0%
17 - 20	0.0%	17 - 20	7.5%
21 - 24	4.5%	21 - 24	10.4%

Santa Cruz Island - Pedro Reef (continued)

Lophogorgia chilensis heights

25 - 28	6.0%
29 - 32	9.0%
33 - 36	7.5%
37 - 40	16.4%
41 - 44	11.9%
45 - 48	17.9%
49 - 52	11.9%
53 - 56	9.0%
57 - 60	0.0%
61 - 64	1.5%
65 - 68	3.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	67
mean	42
min height (cm)	12
max height (cm)	65

Lophogorgia chilensis widths

24 - 28	4.5%
29 - 32	17.9%
33 - 36	7.5%
37 - 40	11.9%
41 - 44	10.4%
45 - 48	6.0%
49 - 52	6.0%
53 - 56	0.0%
57 - 60	1.5%
61 - 64	3.0%
65 - 68	1.5%
69 - 72	1.5%
73 - 76	0.0%
77 - 80	1.5%
81 - 84	0.0%
85 - 88	1.5%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	67
mean	36
min width (cm)	7
max width (cm)	86

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%

Santa Cruz Island - Pedro Reef (continued)

Muricea californica heights		***Muricea californica widths***	
13 - 16	0.0%	13 - 16	0.0%
17 - 20	0.0%	17 - 20	0.0%
21 - 24	0.0%	21 - 24	0.0%
25 - 28	0.0%	24 - 28	0.0%
29 - 32	0.0%	29 - 32	0.0%
33 - 36	25.0%	33 - 36	0.0%
37 - 40	25.0%	37 - 40	25.0%
41 - 44	25.0%	41 - 44	0.0%
45 - 48	0.0%	45 - 48	0.0%
49 - 52	0.0%	49 - 52	0.0%
53 - 56	25.0%	53 - 56	25.0%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	50.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	4	(Cases) N=	4
mean	42	mean	67
min height (cm)	36	min width (cm)	39
max height (cm)	52	max width (cm)	88

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Keyhole

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	14.8%
13 - 16	7.4%	13 - 16	3.7%
17 - 20	11.1%	17 - 20	14.8%
21 - 24	11.1%	21 - 24	7.4%
25 - 28	7.4%	24 - 28	0.0%
29 - 32	3.7%	29 - 32	7.4%
33 - 36	11.1%	33 - 36	14.8%
37 - 40	7.4%	37 - 40	11.1%
41 - 44	3.7%	41 - 44	3.7%
45 - 48	22.2%	45 - 48	0.0%
49 - 52	3.7%	49 - 52	11.1%
53 - 56	3.7%	53 - 56	7.4%
57 - 60	7.4%	57 - 60	3.7%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	27	(Cases) N=	27
mean	36	mean	32

Anacapa Island – Keyhole (continued)

Lophogorgia chilensis heights

min height (cm)	15
max height (cm)	57

Lophogorgia chilensis widths

min width (cm)	10
max width (cm)	60

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
25 - 28	0.0%
29 - 32	0.0%
33 - 36	25.0%
37 - 40	75.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	50.0%
49 - 52	25.0%
53 - 56	25.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%

Anacapa Island – Keyhole (continued)

Muricea californica heights	
> 100	0.0%
(Cases) N=	4
mean	38
min height (cm)	33
max height (cm)	40

Muricea californica widths	
> 100	0.0%
(Cases) N=	4
mean	49
min width (cm)	47
max width (cm)	52

Anacapa Island - East Fish Camp

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
25 - 28	10.0%
29 - 32	10.0%
33 - 36	10.0%
37 - 40	20.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	10.0%
53 - 56	30.0%
57 - 60	0.0%
61 - 64	10.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	20.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	30.0%
37 - 40	20.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	20.0%
53 - 56	0.0%
57 - 60	10.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%

Anacapa Island - East Fish Camp (continued)

Lophogorgia chilensis heights

81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	10
mean	44
min height (cm)	25
max height (cm)	63

Lophogorgia chilensis widths

81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	10
mean	37
min width (cm)	13
max width (cm)	59

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	50.0%
21 - 24	50.0%
25 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	25.0%
29 - 32	25.0%
33 - 36	25.0%
37 - 40	0.0%
41 - 44	25.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%

Anacapa Island - East Fish Camp (continued)

Muricea fruticosa heights

69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	4
mean	21
min height (cm)	17
max height (cm)	23

Muricea fruticosa widths

69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	4
mean	32
min width (cm)	26
max width (cm)	41

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	13.3%
25 - 28	6.7%
29 - 32	13.3%
33 - 36	13.3%
37 - 40	6.7%
41 - 44	13.3%
45 - 48	13.3%
49 - 52	6.7%
53 - 56	6.7%

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	6.7%
41 - 44	6.7%
45 - 48	6.7%
49 - 52	20.0%
53 - 56	6.7%

Anacapa Island - East Fish Camp (continued)

Muricea californica heights		***Muricea californica widths***	
57 - 60	0.0%	57 - 60	6.7%
61 - 64	0.0%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	6.7%	69 - 72	6.7%
73 - 76	0.0%	73 - 76	6.7%
77 - 80	0.0%	77 - 80	6.7%
81 - 84	0.0%	81 - 84	13.3%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	6.7%
97 - 100	0.0%	97 - 100	6.7%
> 100	0.0%	> 100	0.0%
(Cases) N=	15	(Cases) N=	15
mean	40	mean	65
min height (cm)	23	min width (cm)	38
max height (cm)	71	max width (cm)	100

Anacapa Island - Lighthouse

Lophogorgia chilensis heights		***Lophogorgia chilensis widths***	
< 5	1.3%	< 5	1.3%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	0.0%	9 - 12	7.8%
13 - 16	2.6%	13 - 16	13.0%
17 - 20	1.3%	17 - 20	11.7%
21 - 24	7.8%	21 - 24	15.6%
25 - 28	19.5%	24 - 28	6.5%
29 - 32	18.2%	29 - 32	9.1%

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island – Lighthouse (continued)

Lophogorgia chilensis heights

33 - 36	14.3%
37 - 40	20.8%
41 - 44	6.5%
45 - 48	5.2%
49 - 52	1.3%
53 - 56	1.3%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	77
mean	33
min height (cm)	4
max height (cm)	54

Lophogorgia chilensis widths

33 - 36	13.0%
37 - 40	6.5%
41 - 44	10.4%
45 - 48	3.9%
49 - 52	0.0%
53 - 56	1.3%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	77
mean	27
min width (cm)	4
max width (cm)	52

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	16.7%
13 - 16	33.3%
17 - 20	0.0%

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island – Lighthouse (continued)

Muricea fruticosa heights	
21 - 24	16.7%
25 - 28	0.0%
29 - 32	33.3%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	6
mean	20
min height (cm)	9
max height (cm)	31

Muricea fruticosa widths	
21 - 24	33.3%
24 - 28	0.0%
29 - 32	50.0%
33 - 36	16.7%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	6
mean	28
min width (cm)	21
max width (cm)	33

Muricea californica heights	
< 5	0.0%
5 - 8	0.0%

Muricea californica widths	
< 5	0.0%
5 - 8	0.0%

2007 GORGONIAN/*Stylaster californica* SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island – Lighthouse (continued)

Muricea californica heights		***Muricea californica widths***	
9 - 12	0.0%	9 - 12	0.0%
13 - 16	2.7%	13 - 16	1.3%
17 - 20	6.7%	17 - 20	0.0%
21 - 24	5.3%	21 - 24	5.3%
25 - 28	12.0%	24 - 28	0.0%
29 - 32	12.0%	29 - 32	2.7%
33 - 36	14.7%	33 - 36	0.0%
37 - 40	18.7%	37 - 40	6.7%
41 - 44	8.0%	41 - 44	2.7%
45 - 48	6.7%	45 - 48	4.0%
49 - 52	9.3%	49 - 52	10.7%
53 - 56	2.7%	53 - 56	4.0%
57 - 60	1.3%	57 - 60	5.3%
61 - 64	0.0%	61 - 64	8.0%
65 - 68	0.0%	65 - 68	6.7%
69 - 72	0.0%	69 - 72	5.3%
73 - 76	0.0%	73 - 76	8.0%
77 - 80	0.0%	77 - 80	2.7%
81 - 84	0.0%	81 - 84	10.7%
85 - 88	0.0%	85 - 88	5.3%
89 - 92	0.0%	89 - 92	2.7%
93 - 96	0.0%	93 - 96	4.0%
97 - 100	0.0%	97 - 100	2.7%
> 100	0.0%	> 100	1.3%
(Cases) N=	75	(Cases) N=	75
mean	35	mean	63
min height (cm)	13	min width (cm)	13
max height (cm)	60	max width (cm)	107

Santa Barbara Island - Graveyard Canyon

***Lophogorgia chilensis* heights**		***Lophogorgia chilensis* widths**	
< 5	0.0%	< 5	1.7%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	1.7%	9 - 12	5.1%
13 - 16	0.0%	13 - 16	0.0%
17 - 20	1.7%	17 - 20	1.7%
21 - 24	6.8%	21 - 24	3.4%
25 - 28	3.4%	24 - 28	11.9%
29 - 32	16.9%	29 - 32	13.6%
33 - 36	20.3%	33 - 36	20.3%
37 - 40	18.6%	37 - 40	13.6%
41 - 44	11.9%	41 - 44	8.5%
45 - 48	10.2%	45 - 48	10.2%
49 - 52	3.4%	49 - 52	5.1%
53 - 56	5.1%	53 - 56	1.7%
57 - 60	0.0%	57 - 60	0.0%
61 - 64	0.0%	61 - 64	3.4%
65 - 68	0.0%	65 - 68	0.0%
69 - 72	0.0%	69 - 72	0.0%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.0%
81 - 84	0.0%	81 - 84	0.0%
85 - 88	0.0%	85 - 88	0.0%
89 - 92	0.0%	89 - 92	0.0%
93 - 96	0.0%	93 - 96	0.0%
97 - 100	0.0%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	59	(Cases) N=	59
mean	37	mean	35

Santa Barbara Island - Graveyard Canyon (continued)

Lophogorgia chilensis heights

min height (cm)	11
max height (cm)	53

Lophogorgia chilensis widths

min width (cm)	4
max width (cm)	63

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	33.3%
21 - 24	33.3%
25 - 28	33.3%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	66.7%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	33.3%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%

Santa Barbara Island - Graveyard Canyon (continued)

Muricea fruticosa heights

> 100	0.0%
(Cases) N=	3
mean	21
min height (cm)	18
max height (cm)	25

Muricea fruticosa widths

> 100	0.0%
(Cases) N=	3
mean	42
min width (cm)	39
max width (cm)	49

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	0.0%
25 - 28	11.1%
29 - 32	8.3%
33 - 36	13.9%
37 - 40	11.1%
41 - 44	13.9%
45 - 48	25.0%
49 - 52	2.8%
53 - 56	11.1%
57 - 60	2.8%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	2.8%
17 - 20	0.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	2.8%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	2.8%
49 - 52	0.0%
53 - 56	5.6%
57 - 60	5.6%
61 - 64	2.8%
65 - 68	5.6%
69 - 72	2.8%
73 - 76	11.1%
77 - 80	19.4%
81 - 84	11.1%
85 - 88	8.3%

Santa Barbara Island - Graveyard Canyon (continued)

Muricea californica heights		***Muricea californica widths***	
89 - 92	0.0%	89 - 92	5.6%
93 - 96	0.0%	93 - 96	8.3%
97 - 100	0.0%	97 - 100	2.8%
> 100	0.0%	> 100	2.8%
(Cases) N=	36	(Cases) N=	36
mean	41	mean	75
min height (cm)	26	min width (cm)	14
max height (cm)	58	max width (cm)	109

Appendix K. Artificial Recruitment Modules Size Frequencies Distributions.

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee North

Cypraea spadicea	
Number of ARMs	**9**
<30	1.3%
30 - 32	1.3%
33 - 35	0.0%
36 - 38	1.3%
39 - 41	8.0%
42 - 44	14.7%
45 - 47	32.0%
48 - 50	18.7%
51 - 53	17.3%
54 - 56	5.3%
>56	0.0%
(Cases) N=	75
mean	47
min size (mm)	27
max size (mm)	55

Patiria miniata	
Number of ARMs	**9**
<10	2.9%
10 - 19	11.4%
20 - 29	37.1%
30 - 39	20.0%
40 - 49	11.4%
50 - 59	2.9%
60 - 69	5.7%
70 - 79	8.6%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	35
mean	34
min size (mm)	9
max size (mm)	79

Pycnopodia helianthoides	
Number of ARMs	**9**
< 20	0.0%
20 - 39	14.3%
40 - 59	7.1%
60 - 79	21.4%
80 - 99	21.4%
100 - 119	7.1%
120 - 139	21.4%
140 - 159	0.0%
160 - 179	7.1%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	14
mean	89
min size (mm)	36
max size (mm)	165

Crassedoma giganteum	
Number of ARMs	**9**
<10	0.0%
10 - 19	8.3%
20 - 29	41.7%
30 - 39	0.0%
40 - 49	8.3%
50 - 59	0.0%

Pisaster giganteus	
Number of ARMs	**9**
< 20	10.0%
20 - 39	40.0%
40 - 59	50.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%

Santa Rosa Island - Johnson's Lee North (continued)

Crassedoma giganteum		***Pisaster giganteus***	
Number of ARMs	**9**	**Number of ARMs**	**9**
60 - 69	8.3%	120 - 139	0.0%
70 - 79	0.0%	140 - 159	0.0%
80 - 89	0.0%	160 - 179	0.0%
90 - 99	8.3%	180 - 199	0.0%
100 - 109	8.3%	200 - 219	0.0%
110 - 119	16.7%	220 - 239	0.0%
120 - 129	0.0%	> 239	0.0%
130 - 139	0.0%	(Cases) N=	10
> 139	0.0%	mean	36
(Cases) N=	12	min size (mm)	18
mean	56	max size (mm)	50
min size (mm)	16		
max size (mm)	118		

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Johnson's Lee North (continued)

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***	
Number of ARMs	**9**	**Number of ARMs**	**9**
< 5	0.0%	< 5	0.0%
5 - 9	0.8%	5 - 9	12.2%
10 - 14	3.2%	10 - 14	28.5%
15 - 19	3.2%	15 - 19	16.9%
20 - 24	4.0%	20 - 24	15.7%
25 - 29	5.2%	25 - 29	14.0%
30 - 34	8.0%	30 - 34	6.4%
35 - 39	6.0%	35 - 39	3.5%
40 - 44	3.6%	40 - 44	2.3%
45 - 49	6.0%	45 - 49	0.6%
50 - 54	5.2%	50 - 54	0.0%
55 - 59	4.0%	55 - 59	0.0%
60 - 64	6.0%	60 - 64	0.0%
65 - 69	5.2%	65 - 69	0.0%
70 - 74	9.2%	70 - 74	0.0%
75 - 79	9.6%	75 - 79	0.0%
80 - 84	7.2%	> 79	0.0%
85 - 89	5.2%	(Cases) N=	172
90 - 94	4.4%	mean	19
95 - 99	1.6%	min size (mm)	5
100 - 104	2.0%	max size (mm)	45
105 - 109	0.4%		
> 109	0.4%		
(Cases) N=	251		
mean	57		

Santa Rosa Island - Johnson's Lee North (continued)

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***	
Number of ARMs	**9**	**Number of ARMs**	**9**
min size (mm)	5		
max size (mm)	111		

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Johnson's Lee South

Haliotis rufescens

Number of ARMs	**7**
<25	0.0%
25 - 34	0.0%
35 - 44	100.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	35
min size (mm)	35
max size (mm)	35

Megathura crenulata

Number of ARMs	**7**
<10	0.0%
10 - 19	25.0%
20 - 29	50.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	25.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	4
mean	34
min size (mm)	19
max size (mm)	70

Crassedoma giganteum

Number of ARMs	**7**
<10	0.0%
10 - 19	25.0%
20 - 29	0.0%
30 - 39	12.5%

Patiria miniata

Number of ARMs	**7**
<10	4.8%
10 - 19	19.0%
20 - 29	27.0%
30 - 39	15.9%
40 - 49	11.1%
50 - 59	6.3%
60 - 69	14.3%
70 - 79	1.6%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	63
mean	34
min size (mm)	5
max size (mm)	71

Pisaster giganteus

Number of ARMs	**7**
< 20	0.0%
20 - 39	84.6%
40 - 59	11.5%
60 - 79	3.8%
80 - 99	0.0%
100 - 119	0.0%

		40 - 49	0.0%	120 - 139	0.0%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Johnson's Lee South (continued)

Cypraea spadicea		***Crassedoma giganteum***		***Pisaster giganteus***	
Number of ARMs	**7**	**Number of ARMs**	**7**	**Number of ARMs**	**7**
50 - 59	0.0%	140 - 159	0.0%		
<30	4.4%	60 - 69	0.0%	160 - 179	0.0%
30 - 32	0.0%	70 - 79	12.5%	180 - 199	0.0%
33 - 35	0.0%	80 - 89	12.5%	200 - 219	0.0%
36 - 38	2.2%	90 - 99	0.0%	220 - 239	0.0%
39 - 41	4.4%	100 - 109	12.5%	> 239	0.0%
42 - 44	13.3%	110 - 119	0.0%	(Cases) N=	26
45 - 47	35.6%	120 - 129	12.5%	mean	34
48 - 50	17.8%	130 - 139	0.0%	min size (mm)	23
51 - 53	20.0%	> 139	12.5%	max size (mm)	71
54 - 56	2.2%	(Cases) N=	8		
>56	0.0%	mean	75		
(Cases) N=	45	min size (mm)	18		
mean	46	max size (mm)	140		
min size (mm)	23				
max size (mm)	54				

Santa Rosa Island - Johnson's Lee South (continued)

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
Number of ARMs	**7**	**Number of ARMs**	**7**	**Number of ARMs**	**7**
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	5.4%	5 - 9	0.0%	5 - 9	1.3%
40 - 59	59.5%	10 - 14	4.0%	10 - 14	8.9%
60 - 79	21.6%	15 - 19	5.4%	15 - 19	16.5%
80 - 99	2.7%	20 - 24	10.8%	20 - 24	25.3%
100 - 119	8.1%	25 - 29	9.7%	25 - 29	15.2%
120 - 139	2.7%	30 - 34	4.7%	30 - 34	5.1%
140 - 159	0.0%	35 - 39	6.8%	35 - 39	12.7%
160 - 179	0.0%	40 - 44	4.3%	40 - 44	2.5%
180 - 199	0.0%	45 - 49	5.8%	45 - 49	7.6%
200 - 219	0.0%	50 - 54	5.4%	50 - 54	2.5%
220 - 239	0.0%	55 - 59	5.4%	55 - 59	2.5%
240 - 259	0.0%	60 - 64	4.7%	60 - 64	0.0%
260 - 279	0.0%	65 - 69	3.6%	65 - 69	0.0%
280 - 299	0.0%	70 - 74	4.7%	70 - 74	0.0%
> 299	0.0%	75 - 79	2.9%	75 - 79	0.0%
(Cases) N=	37	80 - 84	4.0%	> 79	0.0%
mean	61	85 - 89	5.0%	(Cases) N=	79
min size (mm)	38	90 - 94	6.5%	mean	27
max size (mm)	122	95 - 99	4.3%	min size (mm)	9
		100 - 104	1.1%	max size (mm)	56
		105 - 109	0.7%		
		> 109	0.4%		
		(Cases) N=	278		

mean	52

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Rosa Island - Johnson's Lee South (continued)

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
Number of ARMs	**7**	**Number of ARMs**	**7**	**Number of ARMs**	**7**
		min size (mm)	10		
		max size (mm)	113		

Santa Cruz Island - Gull Island South

Cypraea spadicea

Number of ARMs	**14**
<30	11.7%
30 - 32	3.5%
33 - 35	2.3%
36 - 38	7.6%
39 - 41	17.0%
42 - 44	22.2%
45 - 47	21.1%
48 - 50	8.8%
51 - 53	5.8%
54 - 56	0.0%
>56	0.0%
(Cases) N=	171
mean	41
min size (mm)	8
max size (mm)	53

Kelletia kelletii

Number of ARMs	**14**
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%

Megathura crenulata

Number of ARMs	**14**
<10	0.0%
10 - 19	42.9%
20 - 29	42.9%
30 - 39	14.3%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	7
mean	22
min size (mm)	13
max size (mm)	35

Crassedoma giganteum

Number of ARMs	**14**
<10	0.0%
10 - 19	25.9%
20 - 29	37.0%
30 - 39	14.8%

Tegula regina

Number of ARMs	**14**
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	50.0%
35 - 39	0.0%
40 - 44	50.0%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	2
mean	36
min size (mm)	31
max size (mm)	41

Patiria miniata

Number of ARMs	**14**
<10	6.9%

90 - 99	100.0%	40 - 49	0.0%	10 - 19	54.0%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Gull Island South (continued)

Kelletia kelletii		***Crassedoma giganteum***		***Patiria miniata***	
Number of ARMs	**14**	**Number of ARMs**	**14**	**Number of ARMs**	**14**
100 - 109	0.0%	50 - 59	7.4%	20 - 29	26.4%
110 - 119	0.0%	60 - 69	0.0%	30 - 39	6.9%
120 - 129	0.0%	70 - 79	3.7%	40 - 49	1.1%
130 - 139	0.0%	80 - 89	0.0%	50 - 59	1.1%
140 - 149	0.0%	90 - 99	3.7%	60 - 69	2.3%
> 149	0.0%	100 - 109	3.7%	70 - 79	1.1%
(Cases) N=	1	110 - 119	3.7%	80 - 89	0.0%
mean	99	120 - 129	0.0%	90 - 99	0.0%
min size (mm)	99	130 - 139	0.0%	> 99	0.0%
max size (mm)	99	> 139	0.0%	(Cases) N=	87
		(Cases) N=	27	mean	20
		mean	36	min size (mm)	6
		min size (mm)	13	max size (mm)	71
		max size (mm)	117		

Santa Cruz Island - Gull Island South (continued)

Pisaster giganteus	
Number of ARMs	**14**
< 20	0.0%
20 - 39	53.2%
40 - 59	27.7%
60 - 79	12.8%
80 - 99	4.3%
100 - 119	2.1%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	47
mean	45
min size (mm)	20
max size (mm)	100

Pycnopodia helianthoides	
Number of ARMs	**14**
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%

Strongylocentrotus franciscanus	
Number of ARMs	**14**
< 5	0.0%
5 - 9	0.4%
10 - 14	6.7%
15 - 19	22.2%
20 - 24	25.7%
25 - 29	14.7%
30 - 34	7.4%
35 - 39	3.3%
40 - 44	3.8%
45 - 49	4.6%
50 - 54	3.7%
55 - 59	3.1%
60 - 64	2.6%
65 - 69	0.8%
70 - 74	0.5%
75 - 79	0.1%
80 - 84	0.1%
85 - 89	0.1%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%

Strongylocentrotus purpuratus	
Number of ARMs	**14**
< 5	0.0%
5 - 9	3.4%
10 - 14	6.2%
15 - 19	44.6%
20 - 24	36.2%
25 - 29	5.6%
30 - 34	2.8%
35 - 39	0.6%
40 - 44	0.0%
45 - 49	0.6%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	177
mean	19
min size (mm)	7
max size (mm)	46
max size (mm)	46

60 - 79	0.0%	(Cases) N=	734

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Gull Island South (continued)

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***	
Number of ARMs	**14**	**Number of ARMs**	**14**
80 - 99	0.0%	mean	28
100 - 119	0.0%	min size (mm)	8
120 - 139	0.0%	max size (mm)	85
140 - 159	25.0%		
160 - 179	50.0%		
180 - 199	25.0%		
200 - 219	0.0%		
220 - 239	0.0%		
240 - 259	0.0%		
260 - 279	0.0%		
280 - 299	0.0%		
> 299	0.0%		
(Cases) N=	4		
mean	170		
min size (mm)	154		
max size (mm)	199		

Santa Cruz Island - Fry's Harbor

Cypraea spadicea

Number of ARMs	**5**
<30	0.0%
30 - 32	0.0%
33 - 35	1.8%
36 - 38	14.3%
39 - 41	23.2%
42 - 44	37.5%
45 - 47	16.1%
48 - 50	5.4%
51 - 53	1.8%
54 - 56	0.0%
>56	0.0%
(Cases) N=	56
mean	42
min size (mm)	35
max size (mm)	51

Megastraea undosa

Number of ARMs	**5**
<10	0.0%
10 - 19	0.0%
20 - 29	100.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%

Megathura crenulata

Number of ARMs	**5**
<10	0.0%
10 - 19	16.7%
20 - 29	50.0%
30 - 39	16.7%
40 - 49	16.7%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	6
mean	28
min size (mm)	17
max size (mm)	40

Crassedoma giganteum

Number of ARMs	**5**
<10	0.0%
10 - 19	9.1%
20 - 29	0.0%
30 - 39	4.5%
40 - 49	22.7%

Patiria miniata

Number of ARMs	**5**
<10	7.0%
10 - 19	4.7%
20 - 29	7.0%
30 - 39	23.3%
40 - 49	25.6%
50 - 59	14.0%
60 - 69	11.6%
70 - 79	7.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	43
mean	43
min size (mm)	7
max size (mm)	77

Pisaster giganteus

Number of ARMs	**5**
< 20	0.0%
20 - 39	0.0%
40 - 59	20.0%
60 - 79	40.0%
80 - 99	40.0%
100 - 119	0.0%
120 - 139	0.0%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Fry's Harbor (continued)

Megastraea undosa	
Number of ARMs	**5**
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	1
mean	25
min size (mm)	25
max size (mm)	25

Crassedoma giganteum	
Number of ARMs	**5**
50 - 59	13.6%
60 - 69	18.2%
70 - 79	4.5%
80 - 89	4.5%
90 - 99	4.5%
100 - 109	4.5%
110 - 119	4.5%
120 - 129	0.0%
130 - 139	4.5%
> 139	4.5%
(Cases) N=	22
mean	67
min size (mm)	10
max size (mm)	159

Pisaster giganteus	
Number of ARMs	**5**
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	5
mean	72
min size (mm)	57
max size (mm)	97

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Fry's Harbor (continued)

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***	
Number of ARMs	**5**	**Number of ARMs**	**5**
< 5	0.0%	< 5	0.0%
5 - 9	1.4%	5 - 9	12.0%
10 - 14	7.1%	10 - 14	4.0%
15 - 19	4.3%	15 - 19	24.0%
20 - 24	10.0%	20 - 24	16.0%
25 - 29	4.3%	25 - 29	24.0%
30 - 34	5.7%	30 - 34	16.0%
35 - 39	15.7%	35 - 39	0.0%
40 - 44	8.6%	40 - 44	0.0%
45 - 49	20.0%	45 - 49	0.0%
50 - 54	14.3%	50 - 54	4.0%
55 - 59	4.3%	55 - 59	0.0%
60 - 64	2.9%	60 - 64	0.0%
65 - 69	1.4%	65 - 69	0.0%
70 - 74	0.0%	70 - 74	0.0%
75 - 79	0.0%	75 - 79	0.0%
80 - 84	0.0%	> 79	0.0%
85 - 89	0.0%	(Cases) N=	25
90 - 94	0.0%	mean	23
95 - 99	0.0%	min size (mm)	5
100 - 104	0.0%	max size (mm)	54
105 - 109	0.0%		
> 109	0.0%		
(Cases) N=	70		
mean	38		

Santa Cruz Island - Fry's Harbor (continued)

Strongylocentrotus franciscanus

Number of ARMs	**5**
min size (mm)	9
max size (mm)	65

Santa Cruz Island - Pelican Bay

Cypraea spadicea

Number of ARMs	**6**
<30	0.0%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	23.8%
39 - 41	33.3%
42 - 44	23.8%
45 - 47	9.5%
48 - 50	4.8%
51 - 53	4.8%
54 - 56	0.0%
>56	0.0%
(Cases) N=	21
mean	42
min size (mm)	36
max size (mm)	51

Megastraea undosa

Number of ARMs	**6**
<10	0.0%
10 - 19	0.0%
20 - 29	75.0%
30 - 39	25.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%

Megathura crenulata

Number of ARMs	**6**
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	57.1%
60 - 69	0.0%
70 - 79	28.6%
80 - 89	14.3%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	7
mean	65
min size (mm)	52
max size (mm)	82

Crassedoma giganteum

Number of ARMs	**6**
<10	0.0%
10 - 19	0.0%
20 - 29	10.5%
30 - 39	10.5%
40 - 49	5.3%

Patiria miniata

Number of ARMs	**6**
<10	3.7%
10 - 19	18.5%
20 - 29	35.8%
30 - 39	24.7%
40 - 49	7.4%
50 - 59	6.2%
60 - 69	1.2%
70 - 79	2.5%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	81
mean	30
min size (mm)	6
max size (mm)	76

Strongylocentrotus franciscanus

Number of ARMs	**6**
< 5	0.0%
5 - 9	0.9%
10 - 14	15.0%
15 - 19	4.7%
20 - 24	3.7%
25 - 29	11.2%
30 - 34	17.8%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Pelican Bay (continued)

Megastraea undosa	
Number of ARMs	**6**
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	4
mean	26
min size (mm)	22
max size (mm)	32

Crassedoma giganteum	
Number of ARMs	**6**
50 - 59	10.5%
60 - 69	10.5%
70 - 79	21.1%
80 - 89	0.0%
90 - 99	5.3%
100 - 109	10.5%
110 - 119	0.0%
120 - 129	5.3%
130 - 139	5.3%
> 139	5.3%
(Cases) N=	19
mean	74
min size (mm)	22
max size (mm)	141

Strongylocentrotus franciscanus	
Number of ARMs	**6**
35 - 39	11.2%
40 - 44	12.1%
45 - 49	7.5%
50 - 54	5.6%
55 - 59	6.5%
60 - 64	2.8%
65 - 69	0.9%
70 - 74	0.0%
75 - 79	0.0%
80 - 84	0.0%
85 - 89	0.0%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	107
mean	34
min size (mm)	9
max size (mm)	65

Santa Cruz Island - Pelican Bay (continued)

Strongylocentrotus purpuratus

Number of ARMs	**6**
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	2.3%
20 - 24	6.8%
25 - 29	27.3%
30 - 34	46.6%
35 - 39	14.8%
40 - 44	2.3%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	88
mean	31
min size (mm)	17
max size (mm)	44

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Scorpion Anchorage

Haliotis corrugata

Number of ARMs	**7**
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	100.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	61
min size (mm)	61
max size (mm)	61

Crassedoma giganteum

Number of ARMs	**7**
<10	19.2%
10 - 19	7.7%
20 - 29	3.8%
30 - 39	7.7%
40 - 49	11.5%
50 - 59	3.8%
60 - 69	15.4%
70 - 79	3.8%
80 - 89	7.7%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	7.7%
> 139	11.5%
(Cases) N=	26
mean	60
min size (mm)	6
max size (mm)	171

Patiria miniata

Number of ARMs	**7**
<10	0.0%
10 - 19	0.0%

Pisaster giganteus

Number of ARMs	**7**
< 20	0.0%
20 - 39	40.0%
40 - 59	0.0%
60 - 79	60.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	5
mean	50
min size (mm)	30
max size (mm)	63

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Scorpion Anchorage (continued)

Cypraea spadicea		***Patiria miniata***	
Number of ARMs	**7**	**Number of ARMs**	**7**
<30	0.70%	20 - 29	100.00%
30 - 32	4.80%	30 – 39	0.00%
33 - 35	13.00%	40 – 49	0.00%
36 - 38	23.30%	50 – 59	0.00%
39 - 41	19.90%	60 - 69	0.00%
42 - 44	19.20%	70 - 79	0.00%
45 - 47	13.70%	80 – 89	0.00%
48 - 50	3.40%	90 – 99	0.00%
51 - 53	1.40%	> 99	0.00%
54 - 56	0.70%	(Cases) N=	1
>56	0.00%	mean	27
(Cases) N=	146	min size (mm)	27
mean	40	max size (mm)	27
min size (mm)	29		
max size (mm)	54		

Santa Cruz Island - Scorpion Anchorage (continued)

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***	
Number of ARMs	**7**	**Number of ARMs**	**7**
< 5	0.0%	< 5	0.2%
5 - 9	0.0%	5 - 9	1.3%
10 - 14	0.0%	10 - 14	1.3%
15 - 19	1.0%	15 - 19	2.9%
20 - 24	3.0%	20 - 24	7.1%
25 - 29	5.0%	25 - 29	5.8%
30 - 34	10.9%	30 - 34	10.8%
35 - 39	7.9%	35 - 39	13.7%
40 - 44	12.9%	40 - 44	13.0%
45 - 49	10.9%	45 - 49	14.6%
50 - 54	6.9%	50 - 54	18.1%
55 - 59	10.9%	55 - 59	9.4%
60 - 64	14.9%	60 - 64	1.6%
65 - 69	10.9%	65 - 69	0.2%
70 - 74	3.0%	70 - 74	0.0%
75 - 79	0.0%	75 - 79	0.0%
80 - 84	1.0%	> 79	0.0%
85 - 89	1.0%	(Cases) N=	553
90 - 94	0.0%	mean	41
95 - 99	0.0%	min size (mm)	4
100 - 104	0.0%	max size (mm)	65
105 - 109	0.0%		
> 109	0.0%		
(Cases) N=	101		
mean	49		

Santa Cruz Island - Scorpion Anchorage (continued)

Strongylocentrotus franciscanus

Number of ARMs	**7**
min size (mm)	16
max size (mm)	87

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Yellow Banks

Haliotis corrugata

Number of ARMs	**15**
<25	0.0%
25 - 34	100.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	29
min size (mm)	29
max size (mm)	29

Kelletia kelletii

Number of ARMs	**15**
< 40	100.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	2
mean	22
min size (mm)	21
max size (mm)	22

Megathura crenulata

Number of ARMs	**15**
<10	0.0%
10 - 19	20.0%
20 - 29	50.0%
30 - 39	30.0%

Crassedoma giganteum

Number of ARMs	**15**
<10	0.0%
10 - 19	2.6%
20 - 29	31.6%
30 - 39	31.6%
40 - 49	2.6%
50 - 59	7.9%
60 - 69	10.5%
70 - 79	2.6%
80 - 89	5.3%
90 - 99	0.0%
100 - 109	2.6%
110 - 119	0.0%
120 - 129	2.6%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	38
mean	44
min size (mm)	16
max size (mm)	128

Patiria miniata

Number of ARMs	**15**
<10	15.2%
10 - 19	38.4%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Yellow Banks (continued)

Cypraea spadicea	
Number of ARMs	**15**
<30	1.5%
30 - 32	4.6%
33 - 35	10.0%
36 - 38	26.2%
39 - 41	23.8%
42 - 44	17.7%
45 - 47	11.5%
48 - 50	3.1%
51 - 53	1.5%
54 - 56	0.0%
>56	0.0%
(Cases) N=	130
mean	40
min size (mm)	19
max size (mm)	53

Kelletia kelletii	
Number of ARMs	**15**
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	10
mean	26
min size (mm)	18
max size (mm)	36

Crassedoma giganteum	
Number of ARMs	**15**
20 - 29	17.0%
30 - 39	10.7%
40 - 49	2.7%
50 - 59	5.4%
60 - 69	2.7%
70 - 79	3.6%
80 - 89	3.6%
90 - 99	0.9%
> 99	0.0%
(Cases) N=	112
mean	26
min size (mm)	7
max size (mm)	90

Santa Cruz Island - Yellow Banks (continued)

Pisaster giganteus

Number of ARMs	**15**
< 20	69.0%
20 - 39	28.6%
40 - 59	2.4%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	42
mean	19
min size (mm)	6
max size (mm)	51

Pycnopodia helianthoides

Number of ARMs	**15**
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	100.0%

Lytechinus anamesus

Number of ARMs	**15**
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	33.3%
20 - 24	33.3%
25 - 29	33.3%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	3
mean	22
min size (mm)	18
max size (mm)	27

Strongylocentrotus franciscanus

Number of ARMs	**7**
< 5	0.5%
5 - 9	3.7%
10 - 14	10.5%
15 - 19	15.7%
20 - 24	20.0%
25 - 29	20.2%

Strongylocentrotus purpuratus

Number of ARMs	**7**
< 5	3.1%
5 - 9	7.3%
10 - 14	4.0%
15 - 19	13.7%
20 - 24	23.8%
25 - 29	12.1%
30 - 34	5.5%
35 - 39	4.7%
40 - 44	3.9%
45 - 49	5.1%
50 - 54	6.1%
55 - 59	5.7%
60 - 64	2.8%
65 - 69	1.7%
70 - 74	0.4%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	1516
mean	29
min size (mm)	3
max size (mm)	74

Centrostephanus coronatus

Number of ARMs	**15**

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Santa Cruz Island - Yellow Banks (continued)

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***		***Centrostephanus coronatus***	
Number of ARMs	**15**	**Number of ARMs**	**15**	**Number of ARMs**	**7**
80 - 99	0.0%	30 - 34	12.9%	< 5	0.0%
100 - 119	0.0%	35 - 39	5.5%	5 - 9	100.0%
120 - 139	0.0%	40 - 44	4.8%	10 - 14	0.0%
140 - 159	0.0%	45 - 49	1.5%	15 - 19	0.0%
160 - 179	0.0%	50 - 54	1.1%	20 - 24	0.0%
180 - 199	0.0%	55 - 59	0.4%	25 - 29	0.0%
200 - 219	0.0%	60 - 64	0.3%	30 - 34	0.0%
220 - 239	0.0%	65 - 69	0.4%	35 - 39	0.0%
240 - 259	0.0%	70 - 74	0.5%	40 - 44	0.0%
260 - 279	0.0%	75 - 79	0.6%	45 - 49	0.0%
280 - 299	0.0%	80 - 84	0.7%	50 - 54	0.0%
> 299	0.0%	85 - 89	0.5%	55 - 59	0.0%
(Cases) N=	2	90 - 94	0.2%	60 - 64	0.0%
mean	66	95 - 99	0.2%	65 - 69	0.0%
min size (mm)	65	100 - 104	0.1%	70 - 74	0.0%
max size (mm)	66	105 - 109	0.0%	75 - 79	0.0%
		> 109	0.0%	> 79	0.0%
		(Cases) N=	1042	(Cases) N=	1
		mean	26	mean	8
		min size (mm)	4	min size (mm)	8
		max size (mm)	101	max size (mm)	8

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Admiral's Reef

Haliotis corrugata

Number of ARMs	6
<25	100.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	24
min size (mm)	24
max size (mm)	24

Megathura crenulata

Number of ARMs	6
<10	0.0%
10 - 19	25.0%
20 - 29	41.7%
30 - 39	0.0%
40 - 49	16.7%
50 - 59	8.3%
60 - 69	8.3%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	12
mean	30
min size (mm)	12
max size (mm)	63

Crassedoma giganteum

Number of ARMs	6
<10	0.0%
10 - 19	0.0%
20 - 29	33.3%
30 - 39	0.0%

Tegula regina

Number of ARMs	6
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	5.6%
20 - 24	5.6%
25 - 29	16.7%
30 - 34	16.7%
35 - 39	27.8%
40 - 44	16.7%
45 - 49	11.1%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	18
mean	35
min size (mm)	19
max size (mm)	46

Patiria miniata

Number of ARMs	6
<10	4.6%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Admiral's Reef (continued)

Cypraea spadicea	
Number of ARMs	**6**
<30	0.0%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	0.0%
39 - 41	0.0%
42 - 44	0.0%
45 - 47	100.0%
48 - 50	0.0%
51 - 53	0.0%
54 - 56	0.0%
>56	0.0%
(Cases) N=	2
mean	45
min size (mm)	45
max size (mm)	45

Crassedoma giganteum	
Number of ARMs	**6**
40 - 49	0.0%
50 - 59	33.3%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	33.3%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	3
mean	64
min size (mm)	21
max size (mm)	113

Patiria miniata	
Number of ARMs	**6**
10 - 19	25.3%
20 - 29	44.8%
30 - 39	23.0%
40 - 49	1.1%
50 - 59	0.0%
60 - 69	1.1%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	87
mean	24
min size (mm)	6
max size (mm)	62

Anacapa Island - Admiral's Reef (continued)

Strongylocentrotus franciscanus		***Strongylocentrotus purpuratus***	
Number of ARMs	**6**	**Number of ARMs**	**6**
< 5	0.0%	< 5	1.3%
5 - 9	1.3%	5 - 9	6.3%
10 - 14	3.9%	10 - 14	3.8%
15 - 19	0.0%	15 - 19	10.1%
20 - 24	27.3%	20 - 24	38.0%
25 - 29	32.5%	25 - 29	20.3%
30 - 34	27.3%	30 - 34	12.7%
35 - 39	6.5%	35 - 39	2.5%
40 - 44	1.3%	40 - 44	2.5%
45 - 49	0.0%	45 - 49	2.5%
50 - 54	0.0%	50 - 54	0.0%
55 - 59	0.0%	55 - 59	0.0%
60 - 64	0.0%	60 - 64	0.0%
65 - 69	0.0%	65 - 69	0.0%
70 - 74	0.0%	70 - 74	0.0%
75 - 79	0.0%	75 - 79	0.0%
80 - 84	0.0%	> 79	0.0%
85 - 89	0.0%	(Cases) N=	79
90 - 94	0.0%	mean	24
95 - 99	0.0%	min size (mm)	3
100 - 104	0.0%	max size (mm)	47
105 - 109	0.0%		
> 109	0.0%		
(Cases) N=	77		
mean	27		

Anacapa Island - Admiral's Reef (continued)

Strongylocentrotus franciscanus

Number of ARMs	**6**
min size (mm)	8
max size (mm)	40

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Cathedral Cove

Haliotis corrugata

Number of ARMs	**7**
<25	50.0%
25 - 34	25.0%
35 - 44	25.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	4
mean	28
min size (mm)	16
max size (mm)	44

Kelletia kelletii

Number of ARMs	**7**
< 40	100.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	6
mean	25
min size (mm)	22
max size (mm)	28

Megastraea undosa

Number of ARMs	**7**
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	11.1%
40 - 49	44.4%

Megathura crenulata

Number of ARMs	**7**
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	100.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	2
mean	44
min size (mm)	42
max size (mm)	45

Crassedoma giganteum

Number of ARMs	**7**
<10	17.2%
10 - 19	34.5%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	3.4%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Cathedral Cove (continued)

Cypraea spadicea	
Number of ARMs	**7**
<30	5.4%
30 - 32	11.5%
33 - 35	16.2%
36 - 38	23.1%
39 - 41	17.7%
42 - 44	15.4%
45 - 47	8.5%
48 - 50	2.3%
51 - 53	0.0%
54 - 56	0.0%
>56	0.0%
(Cases) N=	130
mean	37
min size (mm)	19
max size (mm)	50

Megastraea undosa	
Number of ARMs	**7**
50 - 59	11.1%
60 - 69	33.3%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	9
mean	51
min size (mm)	38
max size (mm)	63

Crassedoma giganteum	
Number of ARMs	**7**
50 - 59	6.9%
60 - 69	10.3%
70 - 79	3.4%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	3.4%
110 - 119	6.9%
120 - 129	3.4%
130 - 139	6.9%
> 139	3.4%
(Cases) N=	29
mean	50
min size (mm)	6
max size (mm)	141

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Cathedral Cove (continued)

Tegula regina

Number of ARMs	**7**
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	100.0%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	1
mean	35
min size (mm)	35
max size (mm)	35

Patiria miniata

Number of ARMs	**7**
<10	14.5%
10 - 19	46.4%

Pisaster giganteus

Number of ARMs	**7**
< 20	20.0%
20 - 39	56.0%
40 - 59	16.0%
60 - 79	8.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	25
mean	32
min size (mm)	14
max size (mm)	69

Strongylocentrotus franciscanus

Number of ARMs	**7**
< 5	0.0%
5 - 9	5.7%
10 - 14	5.0%
15 - 19	8.9%
20 - 24	11.3%
25 - 29	7.0%
30 - 34	10.2%
35 - 39	8.0%
40 - 44	9.3%
45 - 49	6.3%
50 - 54	4.6%
55 - 59	4.8%
60 - 64	5.0%
65 - 69	2.4%
70 - 74	5.7%
75 - 79	2.8%
80 - 84	1.3%
85 - 89	0.4%
90 - 94	0.4%
95 - 99	0.2%
100 - 104	0.2%
105 - 109	0.0%
> 109	0.4%
(Cases) N=	460
mean	39

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Cathedral Cove (continued)

Patiria miniata

Number of ARMs	**7**
20 - 29	20.3%
30 - 39	17.4%
40 - 49	1.4%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	69
mean	18
min size (mm)	5
max size (mm)	42

Strongylocentrotus franciscanus

Number of ARMs	**7**
min size (mm)	5
max size (mm)	119

Anacapa Island - Cathedral Cove (continued)

Strongylocentrotus purpuratus

Number of ARMs	**7**
< 5	0.1%
5 - 9	20.2%
10 - 14	10.4%
15 - 19	12.1%
20 - 24	8.8%
25 - 29	5.2%
30 - 34	5.2%
35 - 39	5.1%
40 - 44	4.6%
45 - 49	5.5%
50 - 54	5.5%
55 - 59	8.8%
60 - 64	5.8%
65 - 69	2.5%
70 - 74	0.1%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	672
mean	29
min size (mm)	4
max size (mm)	71

Centrostephanus coronatus

Number of ARMs	**7**
< 5	0.0%
5 - 9	33.3%

Anacapa Island - Cathedral Cove (continued)

Strongylocentrotus purpuratus

Number of ARMs	**7**
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	33.3%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	33.3%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	3
mean	34
min size (mm)	7
max size (mm)	56

Anacapa Island - Landing Cove

Haliotis corrugata

Number of ARMs	**7**
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	50.0%
55 - 64	0.0%
65 - 74	50.0%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	0.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	2
mean	61
min size (mm)	50
max size (mm)	72

Kelletia kelletii

Number of ARMs	**7**
< 40	100.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	1
mean	37
min size (mm)	37
max size (mm)	37

Megastraea undosa

Number of ARMs	**7**
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	8.3%
40 - 49	16.7%

Megathura crenulata

Number of ARMs	**7**
<10	0.0%
10 - 19	0.0%
20 - 29	40.0%
30 - 39	20.0%
40 - 49	0.0%
50 - 59	40.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	5
mean	40
min size (mm)	26
max size (mm)	55

Crassedoma giganteum

Number of ARMs	**7**
<10	3.3%
10 - 19	10.0%
20 - 29	3.3%
30 - 39	10.0%
40 - 49	10.0%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Landing Cove (continued)

Cypraea spadicea	
Number of ARMs	**7**
<30	5.1%
30 - 32	15.4%
33 - 35	10.3%
36 - 38	10.3%
39 - 41	17.9%
42 - 44	17.9%
45 - 47	12.8%
48 - 50	5.1%
51 - 53	2.6%
54 - 56	2.6%
>56	0.0%
(Cases) N=	39
mean	40
min size (mm)	25
max size (mm)	54

Megastraea undosa	
Number of ARMs	**7**
50 - 59	33.3%
60 - 69	16.7%
70 - 79	8.3%
80 - 89	16.7%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	12
mean	60
min size (mm)	39
max size (mm)	83

Crassedoma giganteum	
Number of ARMs	**7**
50 - 59	10.0%
60 - 69	3.3%
70 - 79	6.7%
80 - 89	3.3%
90 - 99	6.7%
100 - 109	6.7%
110 - 119	13.3%
120 - 129	10.0%
130 - 139	3.3%
> 139	0.0%
(Cases) N=	30
mean	71
min size (mm)	6
max size (mm)	132

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Landing Cove (continued)

Tegula regina

Number of ARMs	7
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	100.0%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	1
mean	35
min size (mm)	35
max size (mm)	35

Patiria miniata

Number of ARMs	7
<10	20.5%
10 - 19	48.7%

Pisaster giganteus

Number of ARMs	7
< 20	60.0%
20 - 39	40.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	5
mean	23
min size (mm)	11
max size (mm)	38

Strongylocentrotus franciscanus

Number of ARMs	7
< 5	0.4%
5 - 9	5.5%
10 - 14	6.0%
15 - 19	9.9%
20 - 24	16.3%
25 - 29	10.3%
30 - 34	6.7%
35 - 39	6.6%
40 - 44	5.1%
45 - 49	3.4%
50 - 54	4.8%
55 - 59	2.5%
60 - 64	3.0%
65 - 69	5.1%
70 - 74	2.8%
75 - 79	5.0%
80 - 84	2.7%
85 - 89	2.0%
90 - 94	1.1%
95 - 99	0.9%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	564
mean	38

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

Anacapa Island - Landing Cove (continued)

Patiria miniata

Number of ARMs	**7**
20 - 29	20.5%
30 - 39	10.3%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	39
mean	17
min size (mm)	5
max size (mm)	39

Strongylocentrotus franciscanus

Number of ARMs	**7**
min size (mm)	4
max size (mm)	98

Anacapa Island - Landing Cove (continued)

Strongylocentrotus purpuratus

Number of ARMs	**7**
< 5	0.9%
5 - 9	24.0%
10 - 14	11.7%
15 - 19	9.4%
20 - 24	11.2%
25 - 29	8.5%
30 - 34	6.1%
35 - 39	4.4%
40 - 44	5.2%
45 - 49	3.6%
50 - 54	5.3%
55 - 59	3.6%
60 - 64	3.2%
65 - 69	2.1%
70 - 74	0.6%
75 - 79	0.1%
> 79	0.0%
(Cases) N=	1236
mean	26
min size (mm)	3
max size (mm)	76

Centrostephanus coronatus

Number of ARMs	**7**
< 5	0.0%
5 - 9	100.0%

Anacapa Island - Landing Cove (continued)

Centrostephanus coronatus

Number of ARMs	**7**
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	0.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	1
mean	6
min size (mm)	6
max size (mm)	6

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

San Miguel Island - Miracle Mile

Haliotis rufescens

Number of ARMs	7
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	10.0%
55 - 64	0.0%
65 - 74	10.0%
75 - 84	10.0%
85 - 94	10.0%
95 - 104	10.0%
105 - 114	0.0%
115 - 124	0.0%
125 - 134	30.0%
135 - 144	0.0%
145 - 154	10.0%
155 - 164	10.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	10
mean	108
min size (mm)	54
max size (mm)	157

Lithopoma gibberosa

Number of ARMs	7
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	100.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	1
mean	34
min size (mm)	34
max size (mm)	34

Crassedoma giganteum

Number of ARMs	7
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%

Patiria miniata

Number of ARMs	7
<10	0.0%
10 - 19	15.7%
20 - 29	27.1%
30 - 39	24.3%
40 - 49	11.4%
50 - 59	11.4%
60 - 69	7.1%
70 - 79	2.9%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	70
mean	35
min size (mm)	10
max size (mm)	71

Pisaster giganteus

Number of ARMs	7
< 20	0.0%
20 - 39	16.7%
40 - 59	16.7%
60 - 79	50.0%
80 - 99	16.7%
100 - 119	0.0%

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

San Miguel Island - Miracle Mile (continued)

Kelletia kelletii	
Number of ARMs	**7**
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	50.0%
80 - 89	50.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	2
mean	79
min size (mm)	77
max size (mm)	80

Lithopoma gibberosa	
Number of ARMs	**7**
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	50.0%
120 - 129	50.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	2
mean	116
min size (mm)	111
max size (mm)	120

Patiria miniata	
Number of ARMs	**7**
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	6
mean	62
min size (mm)	36
max size (mm)	82

2007 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS (continued)

San Miguel Island - Miracle Mile (continued)

Pycnopodia helianthoides		***Strongylocentrotus franciscanus***		***Strongylocentrotus purpuratus***	
Number of ARMs	**7**	**Number of ARMs**	**7**	**Number of ARMs**	**7**
< 20	0.0%	< 5	0.0%	< 5	0.0%
20 - 39	0.0%	5 - 9	0.0%	5 - 9	25.0%
40 - 59	50.0%	10 - 14	3.0%	10 - 14	0.0%
60 - 79	16.7%	15 - 19	0.0%	15 - 19	25.0%
80 - 99	16.7%	20 - 24	3.0%	20 - 24	25.0%
100 - 119	0.0%	25 - 29	6.1%	25 - 29	0.0%
120 - 139	16.7%	30 - 34	3.0%	30 - 34	0.0%
140 - 159	0.0%	35 - 39	3.0%	35 - 39	0.0%
160 - 179	0.0%	40 - 44	0.0%	40 - 44	0.0%
180 - 199	0.0%	45 - 49	0.0%	45 - 49	0.0%
200 - 219	0.0%	50 - 54	3.0%	50 - 54	0.0%
220 - 239	0.0%	55 - 59	3.0%	55 - 59	0.0%
240 - 259	0.0%	60 - 64	3.0%	60 - 64	0.0%
260 - 279	0.0%	65 - 69	3.0%	65 - 69	0.0%
280 - 299	0.0%	70 - 74	3.0%	70 - 74	0.0%
> 299	0.0%	75 - 79	3.0%	75 - 79	0.0%
(Cases) N=	6	80 - 84	0.0%	> 79	25.0%
mean	72	85 - 89	9.1%	(Cases) N=	4
min size (mm)	44	90 - 94	21.2%	mean	31
max size (mm)	138	95 - 99	15.2%	min size (mm)	7
		100 - 104	12.1%	max size (mm)	81
		105 - 109	3.0%		
		> 109	3.0%		
		(Cases) N=	33		
		mean	78		

San Miguel Island - Miracle Mile (continued)

Strongylocentrotus franciscanus

Number of ARMs	**7**
min size (mm)	12
max size (mm)	116

Appendix L. Annual Species List.

*This method was conducted at six sites in 2007 and the data collected are included below.

*This method was conducted at six sites in 2007 and the data collected are included below.

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
CHLOROPHYTA						
BRYOPSIS SP.						
BRYOPSIS CORTICULANS						
BRYOPSIS HYPNOIDES						
CHAETOMORPHA SP.						
CHAETOMORPHA LINUM						
CHAETOMORPHA SPIRALIS						
CLADOPHORA GRAMINEA		1				
CLADOPHORA MICROCLADIOIDES						
CLADOPHORA SP.						
CODIUM CUNEATUM	1	1	1	1		
CODIUM FRAGILE		1				
CODIUM HUBBSII						
CODIUM HUBBSII/SETCHELLII	2	2				2
CODIUM JOHNSTONEI						
CODIUM SETCHELLII						
DERBESIA MARINA	1	2	1	1		
ENTEROMORPHA SP.						
ENTEROMORPHA COMPRESSA						
ENTEROMORPHA INTESTINALIS						
ENTEROMORPHA LINZA						
FILAMENTOUS GREEN ALGAE						
GREEN MAT ON SAND						
HALICYSTIS OVALIS		2			X	1
ULVA SP.					X	
ULVA CALIFORNICA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
ULVA LACTUCA						
ULVA LOBATA						
ULVA RIGIDA						
ULVA TAENIATA						
PHAEOPHYTA						
ACINETOSPORA NICHOLSONIAE						
AGARUM FIMBRIATUM						
COILODESME SP.						
COILODESME CALIFORNICA						
COILODESME CORRUGATA						
COILODESME RIGIDA						
COLPOMENIA SP.					3	
COLPOMENIA PEREGRINA	1	2				
COLPOMENIA SINUOSA						
COLPOMENIA/HYDROCLATHRUS						
COSTARIA COSTATA						
CUTLERIA CYLINDRICA						
CYSTOSEIRA SP.	J1				2	
CYSTOSEIRA NEGLECTA						
CYSTOSEIRA OSMUNDACEA		2				
CYSTOSEIRA SETCHELLII		2				
DESMARESTIA SP.					0	
DESMARESTIA LATIFRONS						
DESMARESTIA LIGULATA						
DESMARESTIA LIGULATA VAR. FIRMA						
DESMARESTIA MUNDA						
DESMARESTIA VIRIDIS						
DICTYONEUROPSIS RETICULATA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
DICTYOPTERIS NEW SP.						
DICTYOPTERIS UNDULATA		3				
DICTYOTA SP.	1					
DICTYOTA BINGHAMIAE						
DICTYOTA FLABELLATA	1	2	1			1
DICTYOTA/PACHYDICTYON		X			3	
ECTOCARPOID FUZZ						
EGREGIA MENZIESII		X				
EISENIA ARBOREA	1	3			2/J3	
GIFFORDIA SP.						
GIFFORDIA/ECTOCARPUS						
GIFFORDIA GRANULOSA						
GIFFORDIA MITCHELLIAE						
HALIDRYS DIOICA						
HAPTEROPHYCUS CANALICULATUS						
HYDROCLATHRUS CLATHRATUS	2					
LAMINARIA SP.						
LAMINARIA FARLOWII		4			J2	
LAMINARIA SETCHELLII						
LEATHESIA DIFFORMIS						
MACROCYSTIS PYRIFERA	2	J3/2			0/J2	
NEREOCYSTIS LUETKEANA						
PACHYDICTYON CORIACEUM						
PELAGOPHYCUS PORRA						
PTERYGOPHORA CALIFORNICA		3				
PUNCTARIA HESPERA						
PUNCTARIA OCCIDENTALIS						
ROSENVINGEA FLORIDANA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
SARGASSUM SP.					4	
SARGASSUM AGARDHIANUM						
SARGASSUM MUTICUM						
SARGASSUM PALMERI						
SCYTOSIPHON SP.						
SCYTOSIPHON DOTYI						
SCYTOSIPHON LOMENTARIA						
SPHACELARIA SP.						
SPHACELARIA CALIFORNICA						
SPHACELARIA FURCIGERA						
SPOROCHNUS PEDUNCULATUS						
TAONIA LENNEBACKERIAE						
TINOCLADIA CRASSA						
ZONARIA FARLOWII						
RHODOPHYTA					2	
ACROCHAETIUM DESMARESTIAE						
ACROSORIUM UNCINATUM						
AHNFELTIA SP.						
AMPHIROA ZONATA						
AMPLISIPHONIA PACIFICA						
ANISOCLADELLA SP.						
ANISOCLADELLA PACIFICA						
ANTITHAMNION SP.						
ANTITHAMNION DEFECTUM						
ANTITHAMNION DENDROIDEUM						
ANTITHAMNIONELLA BREVIRAMOSA						
ANTITHAMNIONELLA SP.						
ASPARAGOPSIS TAXIFORMIS						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
ASTEROCOLAX GARDNERI						
BINGHAMIA SP.						
BINGHAMIA CALIFORNICA						
BONNEMAISONIA HAMIFERA						
BOSSIELLA SP.						
BOSSIELLA CALIFORNICA						
BOSSIELLA CALIFORNICA VAR. SCHMITTII						
BOSSIELLA ORBIGNIANA						
BOSSIELLA ORBIGNIANA SSP. DICHOTOMA						
BOSSIELLA PLUMOSA						
BOSSIELLA/CALLIARTHRON						
BOTRYOCLADIA SP.						
BOTRYOCLADIA NEUSHULII						
BOTRYOCLADIA PSEUDODICHOTOMA						
BOTRYOGLOSSUM FARLOWIANUM						
BOTRYOGLOSSUM RUPRECHTIANUM						
BRANCHIOGLOSSUM SP.						
BRANCHIOGLOSSUM WOODII						
CALLIARTHRON SP.				1		
CALLIARTHRON CHEILOSPORIOIDES						
CALLITHAMNION SP.						
CALLIARTHRON TUBERCULOSUM						
CALLITHAMNION BISERIATUM						
CALLITHAMNION PIKEANUM						
CALLITHAMNION RUPICOLUM						
CALLOCOLAX FUNGIFORMIS						
CALLOPHYLLIS SP.		3				
CALLOPHYLLIS FIRMA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
CALLOPHYLLIS FLABELLULATA						
CALLOPHYLLIS HEANOPHYLLA						
CALLOPHYLLIS OBTUSIFOLIA						
CALLOPHYLLIS PINNATA						
CALLOPHYLLIS VIOLACEA						
CARPOPELTIS SP.			1			
CARPOPELTIS BUSHIAE		X				
CENTROCERAS SP.						
CENTROCERAS CLAVULATUM						
CERAMIACEAE	X		X	X		X
CERAMIUM SP.						
CERAMIUM CALIFORNICUM						
CERAMIUM CAUDATUM						
CERAMIUM CLARIONENSE						
CERAMIUM CODICOLA						
CERAMIUM EATONIANUM						
CERAMIUM PACIFICUM						
CERAMIUM PROCUMBENS						
CERAMIUM SINICOLA						
CHONDRIA SP.						
CHONDRIA CALIFORNICA						
CHONDRIA DECIPIENS						
CHONDRIA NIDIFICA						
COELOSEIRA SP.						
COELOSEIRA COMPRESSA						X
CORALLINA SP.						
CORALLINA OFFICINALIS		2				
CORALLINA PINNATIFOLIA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
CORALLINA VANCOUVERIENSIS						
CORALLINES - ENCRUSTING			4	4		
CORALLINES - ERECT	4		0	1		
CRYPTONEMIA SP.	0					
CRYPTONEMIA OBOVATA						
CRYPTOPLEURA SP.						
CRYPTOPLEURA CORALLINARA						
CRYPTOPLEURA CRISPA						
CRYPTOPLEURA LOBULIFERA						
CRYPTOPLEURA RUPRECHTIANA						
CRYPTOPLEURA VIOLACEA						
CUMAGLOIA ANDERSONII						
DASYA SINICOLA						
DASYA SINICOLA VAR. CALIFORNICA						
DASYA SINICOLA VAR. ABYSSICOLA						
DERMOCORYNUS OCCIDENTALIS						
DELESSERIACEAE						
ERYTHROCYSTIS SACCATA						
ERYTHROPHYLLUM DELISSERIOIDES						
ERYTHROTRICHIA CARNEA						
ERYTHROTRICHIA TETRASERIATA						
FARLOWIA COMPRESSA						
FARLOWIA CONFERTA						
FARLOWIA PINK/WHITE ROSETTE						
FAUCHEA SP.						
FAUCHEA LACINIATA	X					
FAUCHEA N.SP.						
FRYEELLA GARDNERI						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
GASTROCLONIUM SP.						
GASTROCLONIUM SUBARTICULATUM						
GELIDIUM SP.						
GELIDIUM NUDIFRONS						
GELIDIUM PURPURASCENS						
GELIDIUM PUSILLUM						
GELIDIUM ROBUSTUM		3	1			
GELIDIUM/PTEROCLADIA						
GIGARTINA SP.						
GIGARTINA CANALICULATA						
GIGARTINA CORYMBIFERA	1	X				
GIGARTINA EXASPERATA						
GIGARTINA HARVEYANA						
GIGARTINA SPINOSA						
GIGARTINA VOLANS						
GONIOTRICHOPSIS SUBLITTORALIS						
GONIOTRICHUN ALSIDII						
GRACILARIA SP.						
GRACILARIA ANDERSONII						
GRACILARIA ROBUSTA						
GRACILARIA SJOESTEDTII						
GRACILARIA TEXTORII						
GRACILARIA VERRUCOSA						
GRACILARIOPHILA ORYZOIDES						
GRATELOUPIA SP.						
GRATELOUPIA DORYPHORA						
GRATELOUPIA FILICINA						
GRATELOUPIA PROLONGATA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
GRIFFITHSIA PACIFICA						
GYMNOGONGRUS SP.						
GYMNOGONGRUS LEPTOPHYLLUS						
GYMNOGONGRUS PLATYPHYLLUS						
HALIPTYLON GRACILE						
HALYMENIA SP.						
HALYMENIA CALIFORNICA						
HALYMENIA COCCINEA						
HALYMENIA/SCHIZYMENIA						
HELMINTHOCLADIA AUSTRALIS						
HERPOSIPHONIA SP.						
HERPOSIPHONIA VERTICILLATA						
HERPOSIPHONIA PLUMULA						
HETEROSIPHONIA ERECTA						
HETEROSIPHONIA JAPONICA						
HILDENBRANDIA SP.						
HYMENENA FLABILLIGERA						
HYPNEA SP.						
HYPNEA CERVICORNIS						
HYPNEA JOHNSTONII						
HYPNEA VALENTIAE						
HYPNEA VARIABILIS						
IRIDAEA SP./ MAZAELLA						
IRIDAEA CORDATA						
IRIDAEA LINEARIS						
IRIDAEA/RHODOGLOSSUM						
JANCZEWSKIA GARDNERI						
JANCZEWSKIA LAPPACEA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
JANIA SP.						
JANIA CRASSA						
JANTINELLA VERRUCAEFORMIS						
KALYMENIA PACIFICA						
LAURENCIA SP.						
LAURENCIA CRISPA						
LAURENCIA MASONII						
LAURENCIA PACIFICA	X		1	1		X
LAURENCIA SINICOLA						
LAURENCIA SNYDERIAE						
LAURENCIA SPECTABILIS						
LAURENCIA SPECTABILIS VAR. DIEGOENSIS						
LAURENCIA SPLENDENS						
LAURENCIA SUBDISTICA						
LAURENCIA SUBOPPOSITA						
LEPTOCLADIA BINGHAMIAE						
LIAGORA CALIFORNICA						
LITHOPHYLLUM PROBOSCIDEUM						
LITHOTHAMNION/LITHOPHYLUM	4	X				4
LITHOTHAMNIUM SP.						
LITHOTHAMNIUM AUSTRALE						
LITHOTHAMNIUM CALIFORNICUM						
LITHOTHAMNIUM CRASSIUSCULUM						
LITHOTHAMNIUM GIGANTEUM						
LITHOTHRIX ASPERGILLUM						
MARIPELTA ROTATA						
MELOBESIA SP.						
MELOBESIA MARGINATA						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
MELOBESIA MEDIOCRIS						
MESOPHYLLUM LAMELLATUM						
MESOPHYLLUM SP.						
MICROCLADIA SP.						
MICROCLADIA COULTERI	X					
NEOAGARDHIELLA						
NEOPTILOTA DENSA						
NIENBURGIA ANDERSONIANA						
OPUNTIELLA CALIFORNICA						
OZOPHORA CLEVELANDII						
OZOPHORA LATIFOLIA						
PETROCELIS FRANCISCANA						
PETROCELIS SP.						
PEYSSONELLIA SP.						
PHYCODRYS SP.						
PHYCODRYS ISABELLIAE						
PHYCODRYS SETCHELLII						
PIKEA SP.						
PIKEA ROBUSTA						
PLATOMA N.SP.						
PLATYTHAMNION VILLOSUM						
PLEONOSPORIUM SP.						
PLEONOSPORIUM SQUARRULOSUM						
PLEONOSPORIUM VANCOUVERIANUM						
PLOCAMIUM SP.						
PLOCAMIUM CARTILAGINEUM		X				
PLOCAMIUM VIOLACEUM						
POGONOPHORELLA CALIFORNICA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
POLYSIPHONIA SP.						
POLYNEURA LATISSIMA						
POLYSIPHONIA HENDRYI						
POLYSIPHONIA HENDRYI VAR. GARDNERI						
POLYSIPHONIA PACIFICA						
POLYSIPHONIA PACIFICA VAR. DELICATULA						
POLYSIPHONIA PANICULATA						
POLYSIPHONIA SAVATIERI						
POLYSIPHONIA SCOPULORUM						
PORPHYRA SP.						
PORPHYRA OCCIDENTALIS						
PREDAEA MASONII						
PRIONITIS SP.						
PRIONITIS ANGUSTA						
PRIONITIS AUSTRALIS						
PRIONITIS CORNEA						
PRIONITIS LANCEOLATA						
PRIONITIS LYALLII						
PRIOPELTIS						
PSEUDOLITHOPHYLLUM MURICATUM						
PSEUDOGLOIOPHLOEA CONFUSA						
PSEUDOSCINAIA SNYDERIAE						
PTEROCHONDRIA WOODII						
PTEROCHONDRIA DENDROIODEA						
PTEROCLADIA SP.						
PTEROCLADIA CAPILLACEA						
PTEROSIPHONIA SP.						
PTEROSIPHONIA BAILEYI						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
PTEROSIPHONIA DENDROIDEA						
PTEROSIPHONIA PENNATA						
PTILOTHAMNIOPSIS LEJOLISEA						
PUGETIA FRAGILISSIMA						
RHODOGLOSSUM SP.						
RHODOGLOSSUM ROSEUM						
RHODOPTILUM PLUMOSUM						
RHODYMENIA SP.	X	X				
RHODYMENIA ARBORESCENS						
RHODYMENIA CALIFORNICA						
RHODYMENIA CALLOPHYLLIDOIDES						
RHODYMENIA PACIFICA						
RHODYMENIOCOLAX BOTRYOIDES						
SARCODIOTHECA FURCATA						
SARCODIOTHECA GAUDICHAUDII						
SCHIMMELMANIA PLUMOSA						
SCHIZYMENIA SP.						
SCHIZYMENIA EPIPHYTICA						
SCHIZYMENIA/HALIMENIA						
SCHIZYMENIA PACIFICA						
SCIADOPHYCUS STELLATUS	1	2				
SCINAIA SP.						
SCINAIA ARTICULATA						
SCINAIA CONFUSA						
SCINAIA JOHNSTONIAE						
SMITHORA NAIADUM						
SORELLA SP.						
SORELLA DELICATULA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
STENOGRAMME INTERRUPTA						
TENAREA SP.						
TENAREA DISPAR						
TIFFANIELLA SNYDERIAE						
WEEKSIA RETICULATA						
FILAMENTOUS RED ALGAE	X	X			3	
NON - FILA. REDS microscopic						
HYPSYPOPS TURF NEST	X	X				
ANGIOSPERMA						
PHYLLOSPADIX SP.						
PHYLLOSPADIX SCOULERI						
PHYLLOSPADIX TORREYI						
ZOSTERA MARINA			?			
BACTERIA						
WHITE BACTERIAL FILAMENTS						
CYANOBACTERIAL FILM						
CYANOBACTERIAL FILAMENTS						
DIATOMS						
DIATOM FILM					3	
SCHIZYMENIA COLONIAL DIATOMS						
DENDRITIS JELLY						
PROTOZOA						
HOMOTREMA RUBRUM	X	X	1			
GROMIA OVIFORMIS						
SUCTORIANS (EPHELOTA ?)						
PORIFERA					1	
CLATHRINA SP.						
CLATHRINA BLANCA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
LEUCANDRA SP.						
CLATHRINA CORIACEA						
LEUCANDRA HEALTHI						
LEUCANDRA/SCYPHA						
LEUCETTA LOSANGELENSIS						
LEUCILLA NUTTINGI		X				
LEUCOSOLENIA ELEANOR		X				
SCYPHA CILIATA	X	X				
YELLOW SPONGE W/TALL PORES						
ACARNUS SP.						
ACARNUS ERITHACUS						
ADOCIA SP.						
ANAATA SPONGIGARTINA						
ANTHO LITHIPHOENIX						
APLYSILLA GLACIALIS		X				
ARTEMISINA ARCHEGONA						
ASTYLINIFER ARNDTI						
AXINELLA MEXICANA						
AXOCIELITA ORIGINALIS						
CLATHRIOPSAMMA PSEUDONAPYA						
CLIONA SP.						
CLIONA CELATA						
CLIONA CELATA VAR. CALIFORNIANA						
CYAMON NEON						
DYSIDEA AMBLIA						
EURYPON ASODES						
GEODIA MESOTRIAENA						
HALICHONDRIA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
HALICLONA SP.						
HALICLONA PERMOLLIS	1	2	X			2
HALICLONA ORANGE OR GRN/WHT FORM						
HALISARCA SACRE						
HEMECTYON HYALE						
HIGGINSIA HIGGINSINA						
HYMEDESMIA BREPHA						
HYMENAMPHIASTRA CYANOCRYPTA		X				
HYMENIACIDON SINAPIUM						
HYMENIACIDON SP.						
IOPHON CHELIFER						
LISSODENDORYX FIRMA						
LISSODENDORYX TOPSENTI	X	X				
MICROCIONA PARTHENA						
MICROCIONA MICROJOANNA						
MYCALE MACGINITIEI						
MYXILLA SP.						
OPHALITASPONGIA PENNATA		X	X	X		
PENARES CORTIUS	1	X	X			1
PLOCAMIA KARYKINA						
PLOCAMISSA IGZO						
POLYMASTIA PACHYMASTIA						
RED SPONGES - ENCRUSTING		3		2	1	1
SPHECIOSPONGIA CONFOEDERATA	1					
STELETTA ESTRELLA						
SUBERITES SP.						
TETHYA AURANTIA	3	1	X	3	1	2
TETILLA SP.						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
TETILLA ARB						
TETILLA FLAMINGO						
TOXODOCIA ZUMI						
VERONGIA AUREA	2	3	X			
APLYSINA FISTULARIS						
XESTOSPONGIA TRINDINAEA			X			
XESTOSPONGIA VANILLA						
CNIDARIA						
HYDROZOA					2	
ABIETINARIA SP.						
AGLAOPHENIA SP.		X				
AGLAOPHENIA LATIROSTRIS						
AGLAOPHENIA STRUTHIONOIDES						
ALLOPORA CALIFORNICA (STYLASTER CALIFORNICUS)						
ALLOPORA PORPHYRA						
ANTENELLA AVALONIA						
BOUGAINVILLIA						
CAMPANULARIA SP.						
CLYTIA SP.						
CORYMORPHA PALMA						
CORYMORPHA SP.						
CORYNE/SYNCORYNE						
EUCOPELLA EVERTA						
EUDENDRIUM SP.						
EUDENDRIUM CALIFORNICUM						
GARVEIA ANNULATA						
HYDRACTINIA SP.						
LYTOCARPUS NUTTINGI						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
OBELIA SP.					X	
PHYSOPHORA HYDROSTATICA						
PLUMULARIA SP.	2	2				X
SERTULARELLA SP./SERTULARIA SP.						
SERTULARIA SP.						
TUBULARIA SP.						
CLAVULARIA SP.	3		X	X		X
PACHYCERIANTHUS FIMBRIATUS	2		X	X		1
CHRYSAURA MELANASTER						
PELAGIA COLORATA						
STAUROMEDUSAE						
THAUMATOSCYPHUS ATLANTICUS						
HYDRACTINIA MILLERI	3	1	X			1
SIPHONOPHORES						1
VELELLA VELELLA						
ANTHOZOA						
ADELOGORGIA PHYLLOSCLERA						
EUGORGIA RUBENS	4				4	
LOPHOGORGIA CHILENSIS	3	1	2	3	2/J2	2
MURICEA CALIFORNICA	2		1	2	1	2
MURICEA FRUTICOSA	1			1	1	1
ACANTHOPTILUM SP.						
PTILOSARCUS GURNEYI						
RENILLA KOLLIKERI						
STYLATULA ELONGATA						
EPIZOANTHUS INDURATUM						
EPIZOANTHUS LEPTODERMA						
EPIZOANTHUS SP.						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
PARAZOANTHUS LUCIFICUM	2				1	
CORYNACTIS CALIFORNICA	3	X	X	X		3
ANTHOPLEURA ARTEMISIA	X		1	1		2
ANTHOPLEURA SOLA	X	X	1	1		1
ANTHOPLEURA XANTHOGRAMMICA						
CACTOSOMA/SAGARTIA	X			X	X	X
CACTOSOMA ARENARIA						
DIADUMENE SP.						
EPIACTIS PROLIFERA		X				
HALCAMPA DECEMTENTACULATA						
HARENACTIS ATTENUATA						
ISANTHUS SP.						
METRIDIUM EXILIS		X				
METRIDIUM SENILE						
PHYLACTIS SP.					X	
PHYLLACTIS BRADLEYI				X		X
SAGARTIA CATALINENSIS						
TEALIA SP. (=URTICINA SP.)						
TEALIA COLUMBIANA						
TEALIA CORIACEA	X			X	2	
TEALIA N.SP.						
TEALIA CRASSICORNIS						
TEALIA LOFOTENSIS					0	
TEALIA PISCIVORA						
ZAOLUTUS ACTIUS		2				X
ORDER MADREPORARIA						
ASTRANGIA LAJOLLENSIS (=A. HAIMEI)	X	X	X	X	2	1
BALANOPHYLLIA ELEGANS			X	X	0	0

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
COENOCYATHUS BOWERSI	2	2	X	X	X	1
PARACYATHUS STEARNSI (=P. STEARNSII)	2	2	X	X		2
NOMLANDIA CALIFORNICA						
DESMOPHYLLUM DIANTHUS						
LABYRINTHOCYATHUS QUAYLEI						
LOPHELIA PERTUSA						
MADREPORA OCULATA						
POLYMYCES MONTEREYENSIS						
CTENOPHORA						
BEROE SP.						
LEUCOTHEA SP.						
PLEUROBRACHIA SP.						
CESTUM/VELLUM						
PLATYHELMINTHES		2				
ENCHIRIDIUM PUNCTATUM						
EURYLEPTA AURANTIACA						
EURYLEPTA CALIFORNICA						
KABURAKIA/Alloioplana californica				X		
LEPTOPLANA/NOTOPLANA						
PHYLLOPLANA VIRIDIS						
PROSTHECERAEUS BELLOSTRIATUS						
PSUEDOCEROS LUTEUS						
PSEUDOCEROS MONTEREYENSIS						
PSEUDOCEROS PERVIOLACEUS						
STYLOCHUS INSOLITUS						
STYLOCHUS TRIPARTITUS						
THYSANOZOON CALIFORNICUM						
NEMERTEA					X	

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	**11**	**13**	**27**	**30**	**31**	**32**
BASEODISCUS PUNNETTI						
CEREBRATULUS CALIFORNIENSIS						
CEREBRATULUS SP.						
EMPLECTONEMA GRACILE						
LINEUS PICTIFRONS						
MICRURA PARDALIS						
PARANEMERTES PEREGRINA						
PARANEMERTES SP.						
TUBULANUS FRENATUS						
SPECIES: SITE#:	11	13	27	30	31	32
TUBULANUS SEXLINEATUS						
TUBULANUS POLYMORPHOUS						
TUBULANUS SP.						
SIPUNCULA				X		
PHASCOLOSOMA SP.						
PHASCOLOSOMA AGASSIZII						
SIPUNCULUS NUDUS						
THEMISTE PYROIDES						
ECHIURA						
URECHIS CAUPO						
ANNELIDA						
POLYCHAETA						
APHRODITE						
ANAITIDES SP.						
ANAITIDES GROENLANDICA						
ARCTONOE SP.						
ARCTONOE PULCHRA	0	X			3	X
ARCTONOE VITTATA	X		X	X		X

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
ARCTONOE ON DERMESTERIAS						
BISPIRA TURNERI				X		
CHAETOPTERUS VARIOPEDATUS	X		X	2	2	X
CIRRIFORMIA LUXURIOSA						
DIOPATRA ORNATA		2		2	2	1
DODECACERIA FEWKESI	1		X	3	X	2
EUDISTYLIA SP.		1				1
EUDISTYLIA POLYMORPHA			X	2		
EUPHROSINE SP.						
HALOSYDNA BREVISETOSA						
HALOSYDNA JOHNSONI						
HALOSYDNA SP.						
HARMOTHOE LUNULATA						
HARMOTHOE SP.						
FLABELLIGERA COMMENSALIS		X				
FLABELLIGERA ESSENBERGE						
MESOCHAETOPTERUS SP.						
MYXICOLA INFUNDIBULUM	X	X			X	3
NEREID						
OPHIODROMUS PUGETTENSIS	4	X	X	4	3	3
PECTINARIA CALIFORNIENSIS						
PHRAGMATOPOMA CALIFORNICA						
PHYLLOCHAETOPTERUS PROLIFICA						
PHYLLODOCE HARTMANAE						
PHYLLODOCID						
PISTA ELONGATA			X	X		X
POLYDORIS ALLOPORIS						
POLYCHETE EGGS						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
POLYNOID						
POTAMILLA OCCELATA						
BISPIRA CRASSICORNIS						
SABELLARIA CEMENTUM						
SABELLID				2		X
SAND SABELLID						
SABELLID WITH EYESTALK	X			X		
SALMACINA TRIBRANCHIATA		2	X	X		
SERPULID		X				
SERPULA VERMICULARIS						
"SODA STRAW TUBES IN SAND"						
SPIOCHAETOPTERUS COSTARUM						
SPIROBRANCHUS SPINOSUS	3	2	4	4		3
SPIROBRANCHUS SPIONID						
SPIRORBID		X				
TEREBELLID			X	X		X
THELEPUS SP.						
THELEPUS CRISPUS						
THELEPUS SETOSUS						
POLYCHAETE "BALLOONS"						
ARTHROPODA						
PYCNOGONIDA						
CRUSTACEA						
CIRRIPEDIA/THORACIA						
ARMATOBALANUS NEFRENS						
BALANUS SP.			X	4	2	X
BALANUS AMPHITRITE						
BALANUS AQUILA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
BALANUS AQUILA/NUBILUS	X		1			
BALANUS GLANDULA						
BALANUS NUBILUS						
BALANUS PACIFICUS						
BALANUS TRIGONUS						
CHTHAMALUS DALLI/FISSUS						
CONOPEA GALEATA	X			X		X
MEGABALANUS CALIFORNICUS						
MEMBRANOBALANUS ORCUTTI						
POLLICIPES POLYMERUS						
TETRACLITA ELEGANS						
TETRACLITA RUBESCENS						
MALACOSTRACA						
MYSIDS						
MYSIDS (brown canopy dwellers)						
MYSIDS (clear bottom dwellers)						
ACANTHOMYSIS SCULPTA						
ISOPODA						
ALLONISCUS PERCONVEXUS						
CIROLANA SP.						
CIROLANA HARFORDI						
COLIDOTEA SP.						
IDOTEA SP.						
IDOTEA RESECATA		X				
IDOTEA STENOPS						
LIRONECA VULGARIS						
TYLOS SP.						
AMPHIPODA		X				

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
AMPHIPOD TUBE MASSES						
AMPITHOE HUMERALIS						
BROWN AND YELLOW PLEUSTID						
PERAMPITHOE SP.						
PLEUSTES PLATYPA						
COROPHIUM SP.						
GAMMARIDEA						
CAPRELLIDEA						
EUPHSUSIACEA						
COPEPODS						
COPEPODS ON MEGATHURA CRENULATA						
COPEPODS ON FISH					X	
DECAPODA						
ALPHEUS SP.						
ALPHEUS CLAMATOR		X				
BETAEUS SP.						
BETAEUS HARFORDI		X				
BETAEUS LONGIDACTYLUS						
BETAEUS MACGINITIEAE						
CRANGON SP.						
CRANGON ALASKENSIS						
CRANGON NIGRICAUDA						
HEPTACARPUS SP.						
HEPTACARPUS PICTUS						
HIPPOLYTE SP.						
HIPPOLYTE CALIFORNIENSIS						
HIPPOLYTE CLARKI						
LYSMATA CALIFORNICA	2	3		X		

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
NEOCRANGON SP.						
NEOCRANGON RESIMA						
NEOCRANGON ZACAE						
PANDALUS SP.						
PANDALUS DANAE	1			X		1
SPIRONTOCARIS SP.						
SPIRONTOCARIS PRIONATA						
SYNALPHEUS LOCKINGTONI						
PANULIRUS INTERRUPTUS		3	2	2	1	1
BLEPHARIPODA OCCIDENTALIS						
LEPIDOPA CALIFORNICA						
CALLIANASSA SP.						
CRYPTOLITHODES SITCHENSIS						
FABIA SP.						
HAPALOGASTER CAVICAUDA		X				
ISOCHELES PILOSUS						
PACHYCHELES RUDIS						
ORTHOPAGURUS SP.						
ORTHOPAGURUS MINIMUS						
PACHYCHELES SP.						
PAGURISTES SP.			X	X	X	
PAGURISTES BAKERI						
PAGURISTES PARVUS						
PAGURISTES TURGIDUS						
PAGURUS SP.	X	X	X	X	X	X
PAGURUS ARMATUS						
PAGURUS GRANOSIMANUS						
PAGURUS HEMPHILLI						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
PAGURUS HIRSUTIUSCULUS						
PETROLISTHES SP.						
PETROLISTHES CABRILLOI						
PHIMOCHIRUS CALIFORNIENSIS	X					
PLEURONCODES PLANIPES						
POLYONYX QUADRIUNGULATUS						
PYLOPAGURUS SP.(=Pimochirus)						
CANCER SP.						
CANCER ANTENNARIUS						
CANCER ANTHONYI						
CANCER BRANNERI						
CANCER GRACILIS						
CANCER JORDANI						
CANCER PRODUCTUS						
CYCLOXANTHOPS NOVEMDENTATUS						
EPIALTOIDES HILTONI						
ERILEPTUS SPINOSUS						
HERBSTIA PARVIFRONS	X	X			2	X
HETEROCRYPTA OCCIDENTALIS						
LOPHOPANOPEUS SP.						
LOXORHYNCHUS CRISPATUS				X		
LOXORHYNCHUS GRANDIS				X	1	
MIMULUS FOLIATUS						
OREGONIA GRACILIS						
MURSIA GAUDICHAUDII						
PARAXANTHIAS TAYLORI	X	3			X	X
PELIA TUMIDA	X	X				
PHYLLOLITHODES PAPILLOSUS						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
PILUMNUS SPINOHIRSUTUS						
PINNIXA SP.						
PINNOTHERID SP.						
PODOCHELA HEMPHILLI						
PORTUNUS XANTUSII						
PUGETTIA SP.						
PUGETTIA DALLI						
PUGETTIA PRODUCTA		X				
PUGETTIA RICHII						
PYROMAIA TUBERCULATA						
RANDALLIA ORNATA						
SCYRA ACUTIFRONS				X		
TALIEPUS NUTTALLI						
HEMISQUILLA ENSIGERA						
ARACHNIDA						
ACARINA						
GAMMARIDACARUS BREVISTERNALIS						
INSECTA						
DIPTERA						
CHLOROPIDAE						
CHIRONOMIDAE						
COELOPIDAE						
COELOPA VANDUZEI						
EPHYDRIDAE						
COLEPTERA						
STAPHYLINIDAE						
BLEDIUS FENYESI						
CAFIUS CANESCENS						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
CAFIUS SEMINITENS						
CARPELIMUS SP.						
EMPENOTA ARENARIA						
HADROTES CRASSUS						
PONTOMALOTA OPACA						
THINOPINUS PICTUS						
CARABIDAE						
DYSCHIRIUS MARINUS						
PHALARIA ROTUNDATA						
HYDRAENIDAE						
NEOCHTHOBIUS VANDYKEI						
CURCULIONIDAE						
EMPHYASTES FUCICOLA						
HISTERIDAE						
NEOPACHYLOPUS SULCIFRONS						
HYDROPHILIDAE						
CERCYON LUNIGER						
HEMIPTERA						
SALIDIIDAE						
TRICHOCORIXA RETICULATA						
MOLLUSCA						
GASTROPODA						
ACANTHINA SP.						
ACMAEA MITRA						
ALIA CARINATA						
AMPHISSA VERSICOLOR		2				
LITHOPOMA GIBBEROSUM (=Astraea gibberosa)					0	0
LITHOPOMA UNDOSUM (=Astraea undosa)	2	2	3	3	3	3

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
BALCIS SP.						
BALCIS RUTILA						
BITTIUM SP.						
BITTIUM ATTENUATUM						
BURSA CALIFORNICA (=Crossata californica)				2	2/E	X
CAECUM SP.						
CAECUM CREBRICINCTUM						
CALLIOSTOMA SP.						
CALLIOSTOMA ANNULATUM	1					
CALLIOSTOMA CANALICULATUM						
CALLIOSTOMA GEMMULATUM						
CALLIOSTOMA GLORIOSUM						
CALLIOSTOMA LIGATUM						
CALLIOSTOMA SUPRAGRANOSUM	2			X		X
CANCELLARIA COOPERI						
CERATOSTOMA FOLIATUM						
CERATOSTOMA NUTTALLI	1	1	X		2	
CERITHIOPSIS SP.						
CONUS CALIFORNICUS	X	2		X	3	2
CRASSISPIRA SEMIINFLATA						
CREPIDULA SP.					X	
CREPIDULA ADUNCA						
CREPIDULA DORSATA						
CREPIDULA NORRISARUM						
CREPIDULA ONYX						
CREPIDULA PERFORANS						
CREPIPATELLA LINGULATA	X	2	X	X		3
CRUCIBULUM SPINOSUM						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
CYPRAEA SPADICEA	1	2	X	X	2	2
DENDROPOMA SP.						
DENDROPOMA LITUELLA						
DIODORA SP.	X					
DIODORA ARNOLDI						1
DIODORA ASPERA						
EPITONIUM SP.						
EPITONIUM TINCTUM		X				
ERATO SP.						1
ERATO COLUMBELLA						
ERATO VITELLINA		X				
FISSURELLA VOLCANO						
FUSINUS KOBELTI						
F.Kobelti GOBLET EGG CAPSULES						
FUSINUS LUTEOPICTUS	X					2
HALIOTIS CORRUGATA	J1	X	S	S	0	
HALIOTIS CRACHERODII					0	
HALIOTIS FULGENS					0	
HALIOTIS RUFESCENS					0	
HALIOTIS SORENSENI					0	
HALIOTIS WALALLENSIS					0	
HALIOTIS ASSIMILIS					0	
HIPPONIX SP.						
HIPPONIX TUMENS						
HOMALOPOMA SP.		X				
HOMALOPOMA BACULUM						
HOMALOPOMA LURIDUM						
KELLETIA KELLETII	2	1	X	X	1	3

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
LACUNA SP.						
LACUNA UNIFASCIATA						
LAMELLARIA SP.						
LATIAXIS OLDROYDI						
LIOTIA FENESTRATA						
LITTORINA KEENAE						
LITTORINA SCUTULATA						
LOTTIA GIGANTEA						
MACRON LIVIDUS						
MAXWELLIA GEMMA	X	X	J	J	3	2
MAXWELLIA SANTAROSANA						
MEGASURCULA CARPENTERIANA						
MEGASURCULA STEARNSIANA						
MEGATHURA CRENULATA	X	2	2	2	1/J1	1/J3
MEGATEBENNUS BIMACULATUS						
MITRA IDAE	X	X				
MITRELLA SP.						
MITRELLA TUBEROSA						
MITROMORPHA CARPENTERI						
NASSARINA PENICILLATA						
NASSARIUS FOSSATUS						
NASSARIUS INSCULPTUS						
NASSARIUS MENDICUS						
NASSARIUS PERPINGUIS						
NASSARIUS SP.						
NEVERITA RECLUZIANA						
NORRISIA NORRISI		X				0/J1
NOTOACMAEA DEPICTA (=Tectura depicta)						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
NUCELLA SP. (=Thais sp.)						
OCENEBRA SP.						
OCENEBRA FOVEOLATA						
OCENEBRA LURIDA						
OCENEBRA INTERFOSSA						
OLIVELLA SP.						
OLIVELLA BAETICA						
OLIVELLA BIPLICATA						
OPALIA FUNICULATA						
OPHIODERMELLA OPHIODERMA						
PARVITURBO ACUTICOSTATUS						
PEDICULARIA CALIFORNICA						
PETALOCONCHUS SP.						
PETALOCONCHUS MONTEREYENSIS						
POLINICES SP.						
POLINICES ALTUS						
POLINICES RECLUSIANUS (=Neverita?)						
POLINICES LEWISII						
PSEUDOMELATOMA SP.						
PSEUDOMELATOMA TOROSA						
PTEROPURPURA SP.						
PTEROPURPURA FESTIVA						
PTEROPURPURA TRIALATA	X					
ROPERIA POULSONI						
SEILA MONTEREYENSIS						
SERPULORBIS SQUAMIGERUS	2	X	X	3	2	2
SIMNIA VIDLERI (=Neosimnia)	0		0	0		
TEGULA SP.					2	

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
TEGULA AUREOTINCTA						
TEGULA BRUNNEA						
TEGULA EISENI	2	X	X	X		3
TEGULA FUNEBRALIS						
TEGULA GALLINA						
TEGULA PULLIGO						
TEGULA REGINA	2	X	X	1	2	2
TEGULA MONTEREYI						
TEREBRA PEDROANA						
TRICOLIA SP.						
TRICOLIA PULLOIDES						
TRIPHORA SP.						
TRIPHORA PEDROANA						
TRIVIA SP.					2	
TRIVIA CALIFORNIANA						
TRIVIA SOLANDRI	X	X		S		
VITRINELLA SP.						
VITRINELLA OLDROYDI						
VOLVARINA TAENIOLATA		X				2
ACTEOCINA SP.						
ACTEOCINA HARPA						
ACTEOCINA INCULTA						
OPISTOBRANCHIA						
APLYSIA SP.						
APLYSIA CALIFORNICA	2E		X	2	2	3
APLYSIA VACCARIA		3E			1	0
APLYSIOPSIS SMITHI						
BERTHELLA CALIFORNICA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
BERTHELLINA ENGELI						
BULLA SP.						
BULLA GOULDIANA						
BULLA/HAMINOEA						
NAVANAX INERMIS		X	X		2	
CYLICHNA SP.						
CYLICHNA DIEGENSIS						
ELYSIA HEDGEPETHII						
HAMINOEA SP.					X	
HAMINOEA VESICULA						
HAMINOEA VIRESCENS						
HAMINOEA VIRESCENS EGGS				X		
ISELICA OVOIDEA						
ODOSTOMIA SP.						
ODOSTOMIA NAVISA						
PHYLLAPLYSIA TAYLORI						
PLEUROBRANCHUS SP.						
PLEUROBRANCHAEA CALIFORNICA						
RICTAXIS SP.						
RICTAXIS PUNCTOCAELATUS						
RICTAXIS "DNA" EGG SPIRALS						
TYLODINA FUNGINA						
VOLVULELLA SP.						
VOLVULELLA PANAMICA						
NUDIBRANCHIA						
ACANTHODORIS SP.						
ACANTHODORIS BRUNNEA						
ACANTHODORIS LUTEA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
ACANTHODORIS RHODOCERAS						
ACANTHODORIS HUDSONI						
AEGIRES ALBOPUNCTATUS						
AEOLIDIA PAPILLOSA						
ALDISA SANGUINEA			X			
ANCULA PACIFICA						
ANISODORIS NOBILIS	X		X			
ANTIOPELLA BARBARENSIS			X			
ARCHIDORIS MONTEREYENSIS						
ARCHIDORIS ODHNERI						
ARMINA CALIFORNICA						
ATAGEMA QUADRIMACULATA						
CADLINA SP.						
CADLINA FLAVOMACULATA						
CADLINA LIMBAUGHI						
CADLINA LUTEOMARGINATA						
CERBERILLA SP.						
CHROMODORIS MACFARLANDI						X
CHROMODORIS PORTERAE						X
CONUALEVIA ALBA						
CORAMBE PACIFICA						
CORYPHELLA SP.						
CORYPHELLA TRILINEATA						
CUTHONA LAGUNAE						
DENDRODORIS N.SP.						
DENDRONOTUS ALBUS/DIVERSICOLOR						
DENDRONOTUS FRONDOSUS						
DENDRONOTUS IRIS						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
DENDRONOTUS SUBRAMOSUS						
DIAULULA SANDIEGENSIS	X	X		X		X
DIRONA ALBOLINEATA						
DIRONA PICTA						
DISCODORIS HEATHI						
DORIOPSILLA ALBOPUNCTATA	X			X		X
DOTO AMYRA						
FACELINA STEARNSI						
FIONA PINNATA						
FLABELLINOPSIS IODINEA (=Coryphella iodinea)	X	X	X	X		
HERMISSENDA CRASSICORNIS						
HOPKINSIA ROSACEA						
HYPSELODORIS CALIFORNIENSIS						
JORUNNA PARDUS						
LAILA COCKERELLI	X	X				
MELIBE LEONINA						
MEXICHROMIS PORTERAE						
PELTODORIS N.SP.						
PHIDIANA PUGNAX						
POLYCERA ATRA						
POLYCERA TRICOLOR						
PRECUTHONA DIVAE						
ROSTANGA PULCHRA						
SPURILLA CHROMOSOMA						
SPURILLA OLIVAE						
THORDISA BIMACULATA						
TRIOPHA CATALINAE		X				
TRIOPHA MACULATA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
TRITONIA DIOMEDEA						
TRITONIA FESTIVA						
PULM0NATA						
TRIMUSCULUS RETICULATUS						
ONCHIDELLA BOREALIS						
POLYPLACOPHORA						
CALLISTOCHITON CRASSICOSTATUS						
CALLISTOCHITON SP.						
CHAETOPLEURA GEMMA						
CRYPTOCHITON STELLERI						
LEPIDOCHITONA SP. (=Cyanoplax sp.)						
LEPIDOCHITONA DENTIENS CRYPTICA						
LEPIDOCHITONA HARTWEGII						
LEPIDOZONA SP.		X	X			
LEPIDOZONA MERTENSII						
LEPIDOZONA PECTINULATA						
MOPALIA SP.						
MOPALIA MUSCOSA						
NUTTALINA SP.						
NUTTALINA CALIFORNICA						
PLACIPHORELLA VELATA						
STENOPLAX SP.						
STENOPLAX CONSPICUA						
TONICELLA LINEATA						
BIVALVIA						
ADULA DIEGENSIS						
ADULA FALCATA						
AMERICARDIA BIANGULATA					X	

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
BRACHIDONTES/SEPTIFER						
BRACHIDONTIES ADAMSIANUS						
CHACEIA OVOIDEA						
CHAMA ARCANA			X		2	X
CHIONE SP.						
CHIONE CALIFORNIENSIS						
CHIONE UNDATELLA						
CHLAMYDOCONCHA ORCUTTI						
CLINOCARDIUM NUTTALLII						
DIPLODONTA ORBELLUS						S
DONAX SP.						
ENSIS SP.						
EPILUCINA CALIFORNICA						
LEPORIMETIS OBESA						
GARI CALIFORNICA	X		S	S		S
GLANS CARPENTERI						
GREGARIELLA CHENUI						
HIATELLA ARTICA						
CRASSEDOMA GIGANTEUM (=Hinnites giganteus)	X	4	X	X	2	3
IRUSELLA LAMELLIFERA						S
KELLIA LAPEROUSII						
LAEVICARDIUM SUBSTRIATUM						
LEPTOPECTEN LATIAURATUS						
LIMA HEMPHILLI		S		S		S
LITHOPHAGA PLUMULA						
LITHOPHAGA SUBULA						
LYONSIA CALIFORNICA				S		
MACOMA SP.						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
MACOMA NASUTA						
MACOMA SECTA						
MACTRA CALIFORNICA						
MODIOLUS CAPAX						
MODIOLUS RECTUS						
MYSELLA PEDROANA						
MYTILIMERIA NUTTALLI						
MYTILUS CALIFORNIANUS		S				
MYTILUS EDULIS						
MYTILUS GALLOPROVENCIALIS						
PANOPEA GENEROSA (=PANOPEA ABRUPTA)						
PARAPHOLUS CALIFORNICUS						
PARVILUCINA SP.						
PARVILUCINA TENUISCULPTA						
PECTEN DIEGENSIS						
PENITELLA CONRADI						
PENITELLA PENITA						
PHOLAD						
PITAR NEWCOMBIANUS						
PLATYDON CANCELLATUS						
PODODESMUS CEPIO		X	X	X		X
PROTOTHACA LACINIATA						
PROTOTHACA SP.						
PROTOTHACA STAMINEA						
PSEUDOCHAMA EXOGYRA						
PTERIA STERNA						
SAXIDOMUS NUTTALLI						
SEMELE SP.				S	X	

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
SEMELE DECISA						S
SEMELE RUPICOLA						S
SILIQUA SP.						
SILIQUA LUCIDA						
SOLEN ROSACEUS						
SOLEMYA REIDI						
TAGELUS SP.						
TAGELUS CALIFORNIANUS						
TAGELUS SUBTERES						
TELLINA SP.						
THRACIA CURTA						
TIVELA STULTORUM						
TRACHYCARDIUM QUADRAGENARIUM			S			
TRESUS NUTTALLII				S		
VENTRICOLARIA FORDII	S	S	S	X		S
ZIRFAEA PILSBRYI						
CEPHALAPODA						
ARGONATA PACIFICA						
LOLIGO OPALESCENS						
ROSSIA PACIFICA						
OCTOPUS SP.	X					
OCTOPUS BIMACULATUS			X			
OCTOPUS BIMACULOIDES		X				
OCTOPUS BIMACULATUS/BIMACULOIDES					2	
OCTOPUS DOFLEINI						
OCTOPUS MICROPYRSUS						
OCTOPUS RUBESCENS						
ECTOPROCTA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
AETEA SP.	X					X
ANTROPORA TINCTA			4			
BICRISIA EDWARDSIANA						
BOWERBANKIA SP.						
BUGULA SP.					4	
BUGULA CALIFORNICA	X	X		X	4	
BUGULA NERITINA	X	X		X		
CALLOPORA SP.						
CAULORAMPHUS SP.						
CELLARIA SP.						
CELLARIA MANDIBULATA						
CELLEPORARIA BRUNNEA						
CELLEPORELLA HYALINA						
COLEOPORA GIGANTEA						
COSTAZIA ROBERTSONIAE						
CRISIA SP.	X					
CRISULIPORA SP.						
CRISULIPORA OCCIDENTALIS						
DENDROBEANIA TYPE (FLEXIBLE)						
DIAPEROECIA CALIFORNICA	2	2	2	2	1	1
DISPORELLA SP.						
EURYSTOMELLA BILABIATA		X	X	X		X
EURYSTOMELLA SP.						
FENESTRULINA MALUSI						
FILICRISIA SP.						
FILICRISIA GENICULATA						
FLUSTRELLIDRA SP.						
HETEROPORA MAGNA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
HIPPODIPLOSIA INSCULPTA						
HIPPOTHOA DISTANS						
LAGENIPORA SP.						
LAGENIPORA PUNCTATA						
LICHENOPORA NOVAE-ZELANDIAE		X	1			1
LYRULA HIPPOCREPIS						
MEMBRANIPORA SP.					X	
MEMBRANIPORA MEMBRANACEA	X	X				
MEMBRANIPORA TUBERCULATA		X				
MICROPORELLA SP.						
PARASMITTINA/RHYNCHOZOON	X	X	X	X		X
PHERUSELLA BREVITUBA						
PHIDOLOPORA SP.	1	X	X	X		1
PHIDOLOPORA LABIATA						
PHIDOLOPORA PACIFICA						
RHYNCHOZOON SP.						
SCHIZOPORELLA SP.						
SCRUPOCELLARIA SP.						
THALAMOPORELLA CALIFORNICA	X	X				
TRICELLARIA OCCIDENTALIS						
TRICELLARIA SP.						
TUBULIPORA SP.						
ENTOPROCTA						
BARENTSIA SP.						
PHORONIDA						
PHORONIS SP.						
PHORONIS VANCOUVERENSIS						
PHORONOPSIS CALIFORNICA						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
BRACHIOPODA						
GLOTTIDIA ALBIDA						
TEREBRATALIA SP.		X				
TEREBRATALIA TRANSVERSA						
ECHINODERMATA						
ASTEROIDEA						
ASTROMETIS SERTULIFERA						
ASTROPECTEN SP.						
ASTROPECTEN ARMATUS				2		
ASTROPECTEN VERRILLI						
DERMASTERIAS IMBRICATA						
HENRICIA SP.	X					
HENRICIA LEVIUSCULA	X					2
HENRICIA N.SP.						
LEPTASTERIAS SP.						
LINCKIA COLUMBIAE	2	2			3	
LUIDIA FOLIOLATA						
MEDIASTER AEQUALIS						
ORTHASTERIAS KOEHLERI						
ASTERINA MINIATA (=Patiria miniata)	3	2	3	3	3	3
PISASTER BREVISPINUS						1
PISASTER GIGANTEUS	2	2	2	2	2	2
PISASTER OCHRACEUS						
PYCNOPODIA HELIANTHOIDES					0	0
diseased seastars			1	1	0	1
ECHINOIDEA						
ARBACIA INCISA						
CENTROSTEPHANUS CORONATUS	3	2	2	2	2	3

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
DENDRASTER EXCENTRICUS				3		
LOVENIA CORDIFORMIS						
LYTECHINUS ANAMESUS			2	3	2	3
LYTECHINUS ANAMESUS JUVENILES				0	1	
STRONGYLOCENTROTUS FRANCISCANUS	4	2	4	4	2	4
S. FRANCISCANUS JUV.	1	2	1	1	1	
STRONGYLOCENTROTUS PURPURATUS	4	2	4	4	2	4
S. PURPURATUS JUV.	1	2	1	1	1	
diseased urchins	X	X	X	X	1	2
OPHIUROIDEA						
AMPHIODIA OCCIDENTALIS						
AMPHIPHOLIS SQUAMATA						
OPHIACTIS SIMPLEX	X	X	X	X		X
OPHIODERMA PANAMENSE	2	X	3	3	X	4
OPHIONEREIS ANNULATA			X			1
OPHIONEREIS SP.	X					
OPHIOPHOLIS SP.						
OPHIOPLOCUS ESMARKI	1	3		X		X
OPHIOPSILLA CALIFORNICA					X	
OPHIOPTERIS PAPILLOSA	2	4	X	X	X	3
OPHIOTHRIX SPICULATA	4		1	2		4
CHIRODOTA						
HOLOTHUROIDEA						
CAUDINA CHILENSIS (C. arenicola)						
CUCUMARIA SP.				X	2	
CUCUMARIA CURATA/PSEUDOCURATA						
CUCUMARIA LUBRICA						
CUCUMARIA MINIATA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
CUCUMARIA PIPERATA				X		
CUCUMARIA SALMA	2	3	3	3		2
EUPENTACTA QUINQUESEMITA	1		X	X		
LEPTOSYNAPTA ALBICANS						
LISSOTHURIA NUTRIENS						
MOLPADIA SP.						
MOLPADIA ARENICOLA						
PACHYTHYONE RUBRA			4	3		
PARASTICHOPUS CALIFORNICUS					0	
PARASTICHOPUS PARVIMENSIS	3	3	2	2	3/J2	3
CHORDATA						
UROCHORDATA (TUNICATA)						
APLIDIUM SP.					X	
APLIDIUM CALIFORNICUM						
APLIDIUM PROPINQUUM						
APLIDIUM SOLIDUM						
ARCHIDISTOMA SP.						
ARCHIDISTOMA DIAPHANES						
ARCHIDISTOMA MOLLE						
ARCHIDISTOMA PSAMMION						
ARCHIDISTOMA RITTERI						
ASCIDIA CERATODES						
ASCIDIA VERMIFORMIS						
BOLTENIA VILLOSA						
BOTRYLLOIDES DIEGENSIS						
BOTRYLLUS/BOTRYLLOIDES						
BOTRYLLUS SP.						
BOTRYLLUS TUBERATUS						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
CIONA INTESTINALIS						
CLAVELINA HUNTSMANI		1			X	
CNEMIDOCARPA FINMARKIENSIS						
CYSTODYTES LOBATUS						
DIDEMNUM SP.						
DIDEMNUM/TRIDIDEMNUM	X	X	X	X	X	X
DIDEMNUM CARNULENTUM						
DIPLOSOMA MACDONALDI						
DISTAPLIA OCCIDENTALIS					3	
EUHERDMANIA CLAVIFORMIS						
HALOCYNTHIA HILGENDORFI IGABOJA						
LARVACEANS						
METANDROCARPA DURA						
METANDROCARPA TAYLORI	1	3				X
UNID. WHITE TUNICATE						
MOLGULA SP.						1
MOLGULA PUGETIENSIS						
MOLGULA REGULARIS						
PEROPHORA ANNECTENS		2				
POLYCLINUM PLANUM						
PYCNOCLAVELLA STANLEYI		1				X
PYURA HAUSTOR						
PYURA MIRABILIS						
RITTERELLA SP.						
STYELA SP.						
STYELA CLAVA						
STYELA CORIACEA						
STYELA GIBBSII/TRUNCATA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
STYELA MONTEREYENSIS					0	
STYELA PLICATA						
SYNOICUM PARFUSTIS						
TRIDIDEMNUM OPACUM						
SALPS						X
CYCLOSALPIA SP.						
THETYS VAGINA						
PEGEA CONFEDERATA						
PYROSOMA ATLANTICUM						
VERTEBRATA						
CHONDRICHTYES						
CEPHALOSCYLLIUM VENTRIOSUM						
CETORHINUS MAXIMUS						
HETERODONTUS FRANCISCI		X				
SQUALUS ACANTHIAS						
GALEORHINUS GALEUS						
ALOPIAS SUPERCILOSUS						
ALOPIAS VULPIUS						
CARCHARODON CARCHARIAS						
ISURUS OXYRINCHUS						
MUSTELUS SP.						
MUSTELUS CALIFORNICUS						
MUSTELUS HENLEI						
MYLIOBATIS CALIFORNICA				X		
PLATYRHINOIDIS TRISERIATA						
PRIONACE GLAUCA						
RAJA BINOCULATA						
RAJA INORNATA						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
RAJA STELLULATA						
RHINOBATOS PRODUCTUS						
SQUATINA CALIFORNICA						
TORPEDO CALIFORNICA						
TRIAKIS SEMIFASCIATA						
UROLOPHUS HALLERI						
EPTATRETUS STOUTII						
HYDROLAGUS COLLIEI						
OSTEICHTHYES						
GYMNOTHORAX MORDAX	1	2			1	1
PORICHTHYS SP.		1				
PORICHTHYS SP. (JUVENILES)						
PORICHTHYS MYRIASTER						
PORICHTHYS NOTATUS						
GOBIESOX SP.		3				
GOBIESOX EUGRAMMUS						
GOBIESOX MAEANDRICUS						
GOBIESOX RHESSODON						
RIMICOLA MUSCARUM						
CHILARA TAYLORI						
SARDINOPS SAGAX						
ENGRAULIS MORDAX	X					
COLOLABIS SAIRA						
ATHERINOPS AFFINIS		2				
ATHERINOPS CALIFORNIENSIS	X					
LEURESTHES TENUIS						
ATHERINOPS/LEURESTHES						
SYNODUS LUCIOCEPS						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
CYPSELURUS CALIFORNICUS						
AULORHYNCHUS FLAVIDUS						
SYNGNATHUS SP.						
SYGNATHUS AULISCUS						
SYNGNATHUS ARCTUS (=Bryx arctus)						
SYNGNATHUS CALIFORNIENSIS						
SYNGNATHUS LEPTORHYNCHUS						
AGONIDAE						
RATHBUNELLA / RONQUILUS						
RATHBUNELLA HYPOPLECTA						
KATHETOSTOMA AVERRUNCUS						
ANARRHICHTHYS OCELLATUS						
HYPSOBLENNIUS SP.						
HYPSOBLENNIUS GILBERTI						
HYPSOBLENNIUS JENKINSI						
LIPARIS PULCHELLINI						
SERIOLA LALANDEI						
TRACHURUS SYMMETRICUS						
ALLOCLINUS HOLDERI	3	3	1	1		3
CRYPTOTREMA CORALLINUM						
CHAENOPSIS ALEPIDOTA						
GIBBONSIA SP.						
GIBBONSIA ELEGANS						
GIBBONSIA METZI		X	1			
GIBBONSIA MONTEREYENSIS		X				
GIBBONSIA ERYTHRA						
HETEROSTICHUS ROSTRATUS		2				

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
H. ROSTRATUS (JUVENILES)		1				
NEOCLINUS SP.						
NEOCLINUS BLANCHARDI						
NEOCLINUS STEPHANSAE			1	X		
NEOCLINUS UNINOTATUS						
PARACLINUS INTEGRIPINNIS						
COTTIDAE						
ARTEDIUS SP.						
ARTEDIUS CORALLINUS	1					
ARTEDIUS CREASERI		X				
ARTEDIUS HARRINGTONI						
ARTEDIUS NOTOSPILOTUS						
CHITONOTUS PUGETENSIS						
CLINOCOTTUS SP.						
CLINOCOTTUS ANALIS						
ICELINUS TENIUS						
LEIOCOTTUS HIRUNDO						
OLIGOCOTTUS SNYDERI						
ORTHONOPIAS TRIACIS						1
SCORPAENODES XYRIS						
SCORPAENICHTHYS MARMORATUS			1			
AMPHISTICHUS ARGENTEUS						
AMPHISTICHUS KOELZI						
BRACHYISTIUS FRENATUS		1				
CYMATOGASTER SP.						
CYMATOGASTER AGGREGATA						
RHACOCHILUS VACCA	2	2	X	X		1
EMBIOTOCA JACKSONI	2	2	X	X	2	1

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
EMBIOTOCA LATERALIS		1				
HYPERPROSOPON SP.						
HYPERPROSOPON ARGENTEUM	1					
HYPERPROSOPON ELLIPTICUM						
HYPSURUS CARYI						
MICROMETRUS AUROA						
MICROMETRUS MINIMUS						
NAUTICHTHYS OCULOFASCIATUS						
PHANERODON SP.						
PHANERODON ATRIPES						
PHANERODON FURCATUS						
RHACOCHILUS TOXOTES	1		X			
CORYPHOPTERUS NICHOLSI	3	2	X	4		4
LYTHRYPNUS DALLI	2	2	1	1		1
LYTHRYPNUS ZEBRA	2	2	1			2
TYPHLOGOBIUS CALIFORNIENSIS						
LETHOPS CONNECTENS						
EUCYCLOGOBIUS NEWBERRYI						
CLEVELANDIA IOS						
LEPIDOGOBIUS LEPIDUS						
ANISOTREMUS DAVIDSONII						
XENISTIUS CALIFORNIENSIS						
HEXAGRAMMOS DECAGRAMMUS						
OPHIODON ELONGATUS						
OXYLEBIUS PICTUS	2	2	X	X		2
GIRELLA NIGRICANS	3	3	X	X		1
HERMOSILLA AZUREA						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
MEDIALUNA CALIFORNIENSIS	1	1	X	X		1
MEDIALUNA (JUVENILES)						
CHAETODON FALCIFER						
HALICHOERES SEMICINCTUS	2	2	1	2		2
H. SEMICINCTUS (FEMALES)	2	1	X	X		2
H. SEMICINCTUS (MALES)	2	2		X		2
H. SEMICINCTUS (JUVENILES)	0	1		X	2	0
OXYJULIS CALIFORNICA	2	2	2	2		1
O. CALIFORNICA (JUVENILES)	0	1		X		0
SEMICOSSYPHUS PULCHER	1	2	2	1		1
S. PULCHER (FEMALES)	2	2	X	1		1
S. PULCHER (MALES)	0	2	X	0		0
S. PULCHER (JUVENILES)	2	2		1	2	1
CAULOLATILUS PRINCEPS	1	1		1	1	1
STEREOLEPIS GIGAS		1				
PHOLIS SP.						
ULVICOLA SANCTAEROSAE						
XEREPES FUCORUM						
CHROMIS PUNCTIPINNIS	3	2	3	2		3
CHROMIS PUNCTIPINNIS (JUVENILES)	1	2	X	X		1
HYPSYPOPS RUBICUNDUS	2	2E	2	2		3
HYPSOPOPS RUBICUNDUS (JUVENILES)		1				
ATRACTOSCION NOBILIS						
CHEILOTREMA SATURNUM						
RONCADOR STEARNSI						
SERIPHUS POLITUS						
UMBRINA RONCADOR						
SARDA CHILIENSIS						

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: SITE#:	11	13	27	30	31	32
SCOMBER JAPONICUS						
SCORPAENA GUTTATA	1	1				
SEBASTES SP.						
SEBASTES SP. (JUVS.)						X
SEBASTES AURICULATUS						
SEBASTES ATROVIRENS	1	2				
S. ATROVIRENS (JUVENILES)	2	2				
SEBASTES CARNATUS			1			
SEBASTES CAURINUS						
S. CARNATUS/CAURINUS (JUVENILES)						
SEBASTES CHRYSOMELAS	1	1				1
SEBASTES CONSTELLATUS						
SEBASTES DALLI						
SEBASTES MELANOPS						
SEBASTES MINIATUS						
S. MINIATUS (JUVENILES)						
SEBASTES MYSTINUS	1			1		
S. MYSTINUS (JUVENILES)	1					1
SEBASTES NEBULOSUS						
SEBASTES PAUCISPINIS						
S. PAUCISPINIS (JUVENILES)						
SEBASTES PINNIGER						
SEBASTES RASTRELLIGER						
SEBASTES ROSACEUS						
SEBASTES SAXICOLA						
SEBASTES SERRANOIDES		1				
S. SERRAN./S. FLAVIDUS (JUVENILES)						
SEBASTES SERRICEPS	3	2	2	0		1

Appendix L. Annual Species List (continued)

LOCATION:	ANAR	ANLC	PP	PRF	KH	EFC
SPECIES: **SITE#:**	**11**	**13**	**27**	**30**	**31**	**32**
S. SERRICEPS (JUVENILES)	2	1				1
APOGON GUALALUPENSIS						
APOGON SP.						
PARALABRAX CLATHRATUS	1	2	2	1		2
P. CLATHRATUS (JUVENILES)						0
PARALABRAX MACULATOFASCIATUS						
PARALABRAX NEBULIFER						
CHIROLOPHIS NUGATOR						
SPHYRAENA ARGENTEA		X				
CEBIDICHTHYS VIOLACEUS						
STICHAEID						
XIPHISTER ATROPUPUREUS						
ANOPLARCHUS PURPURESCENS						
XIPHIAS GLADIUS						
TETRAPTURUS AUDAX						
CITHARICHTHYS SP.						
CITHARICHTHYS SORDIDUS						
CITHARICHTHYS STIGMAEUS						
CITHARICHTHYS XANTHOSTIGMA						
CITHARICHTHYS (JUVENILES)						
HIPPOGLOSSINA STOMATA						
HYPSOPSETLA GUTTULATA						
PARALICHTHYS CALIFORNICUS		X				
XYSTREURYS LIOLEPIS						
SYMPHURUS ATRICAUDA						
PLATICHTHYS STELLATUS						
PLEURONICHTHYS SP.						
PLEURONICHTHYS COENOSUS						

Appendix L. Annual Species List (continued)

LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
PLEURONICHTHYS DECURRENS						
PLEURONICHTHYS RITTERI						
PLEURONICHTHYS VERTICALIS						
PAROPHRYS VENTULUS						
GLYPTOCEPHALUS ZACHIRUS						
EOPSETTA JORDANI						
MICROSTOMUS PACIFICUS						
SYMPHURUS ATRICAUDA						
DIODON HYSTRIX						
OSTRACION DIAPHANUM						
BALISTES POLYLEPIS						
ICICHTHYS LOCKINGTONI						
MOLA MOLA						
BROSMOPHYCIS MARGINATA						
AVES						
CEPPHUS COLUMBA						
PHALACROCORAX SP.						
MAMMALIA						
PINNIPEDIA						
MIROUNGA ANGUSTIROSTRIS						
PHOCA VITULINA	X	X	X			
ZALOPHUS CALIFORNIANUS		X				1
EUMETOPIAS JUBATA						
ARCTOCEPHALUS TOWNSENDI						
CALLORHINUS URSINUS						
CARNIVORA						
ENHYDRA LUTRIS						

Appendix L. Annual Species List (continued)

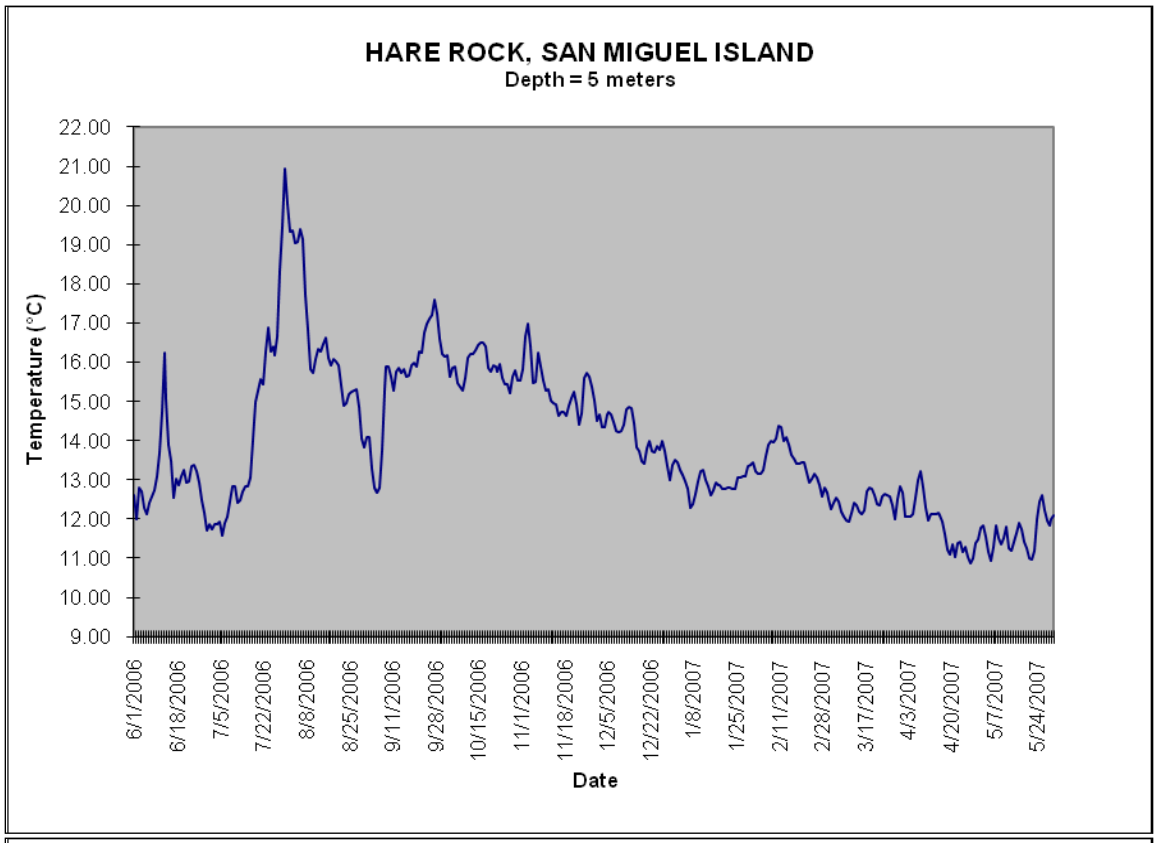
LOCATION: / SPECIES: / SITE#:	ANAR	ANLC	PP	PRF	KH	EFC
	11	13	27	30	31	32
CETACEA						
BALAENA GLACIALIS						
ESCHRICHTIUS GIBBOSUS						
BALAENOPTERA MUSCULUS						
BALAENOPTERA PHYSALUS						
BALAENOPTERA BOREALIS						
BALAENOPTERA ACUTOROSTRATA						
MEGAPTERA NOVAENGLIAE						
REPTILIA						
DERMOCHELYS CORIACEA						
CHELONIA MYDAS						

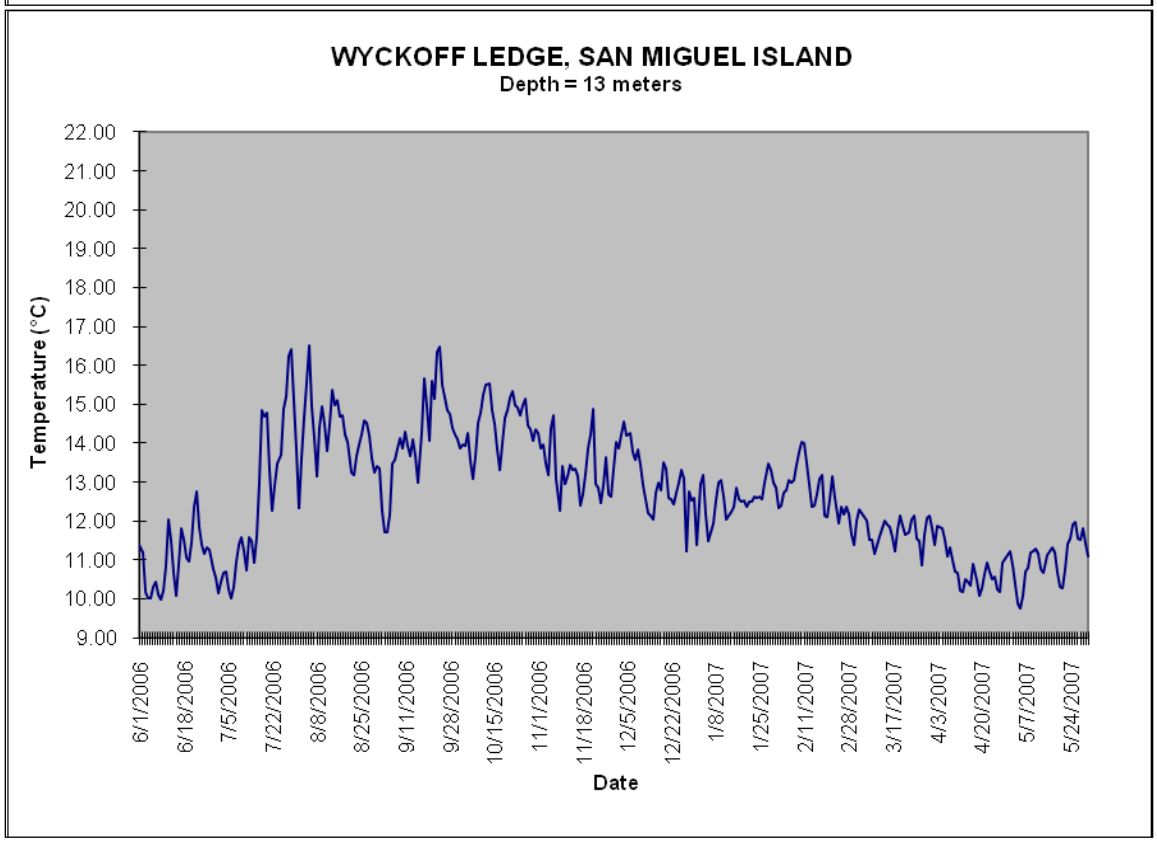
Appendix M. Temperature Data.

Introduction

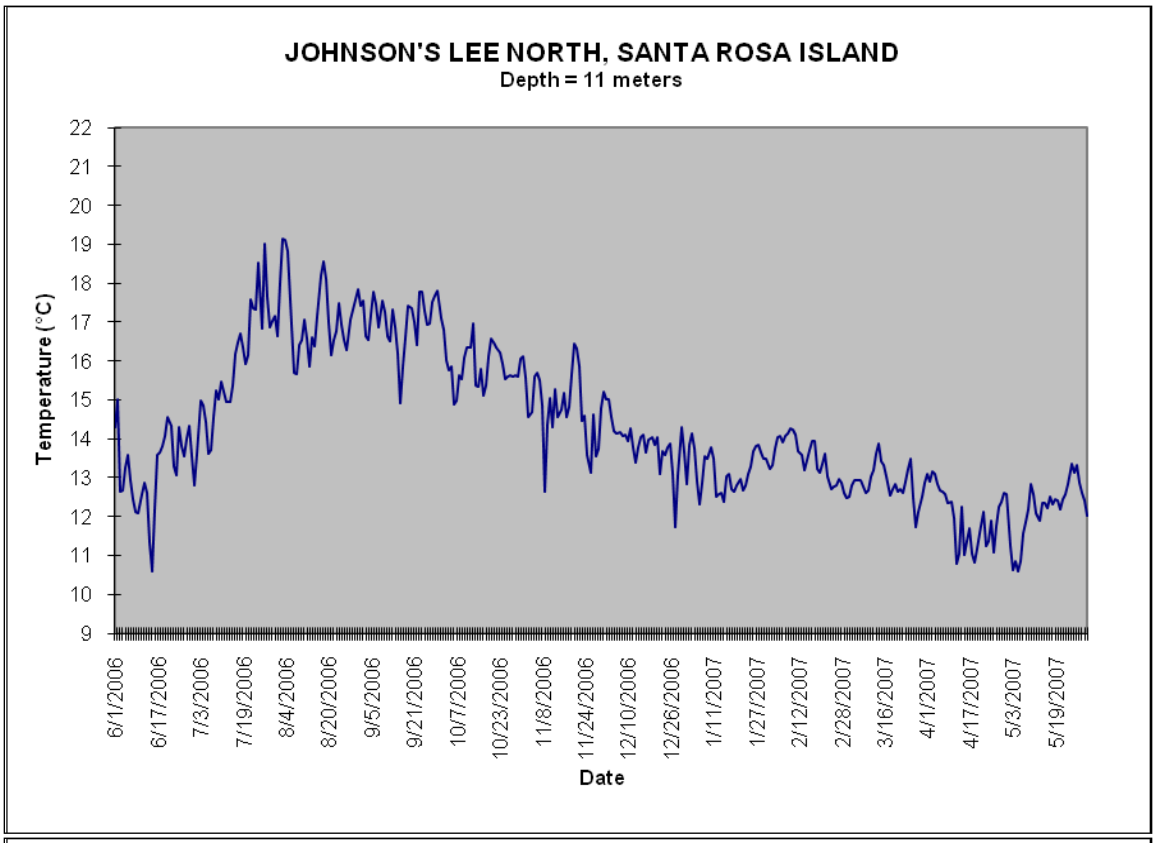
This appendix contains the temperature data (presented graphically) collected by temperature loggers that were deployed at 32 Kelp Forest Monitoring sites. Missing data at some sites is the result of technical problems or loss of the temperature unit. Temperature loggers were not deployed until the first date of sampling at the 16 new sites this year as noted in the graphs.

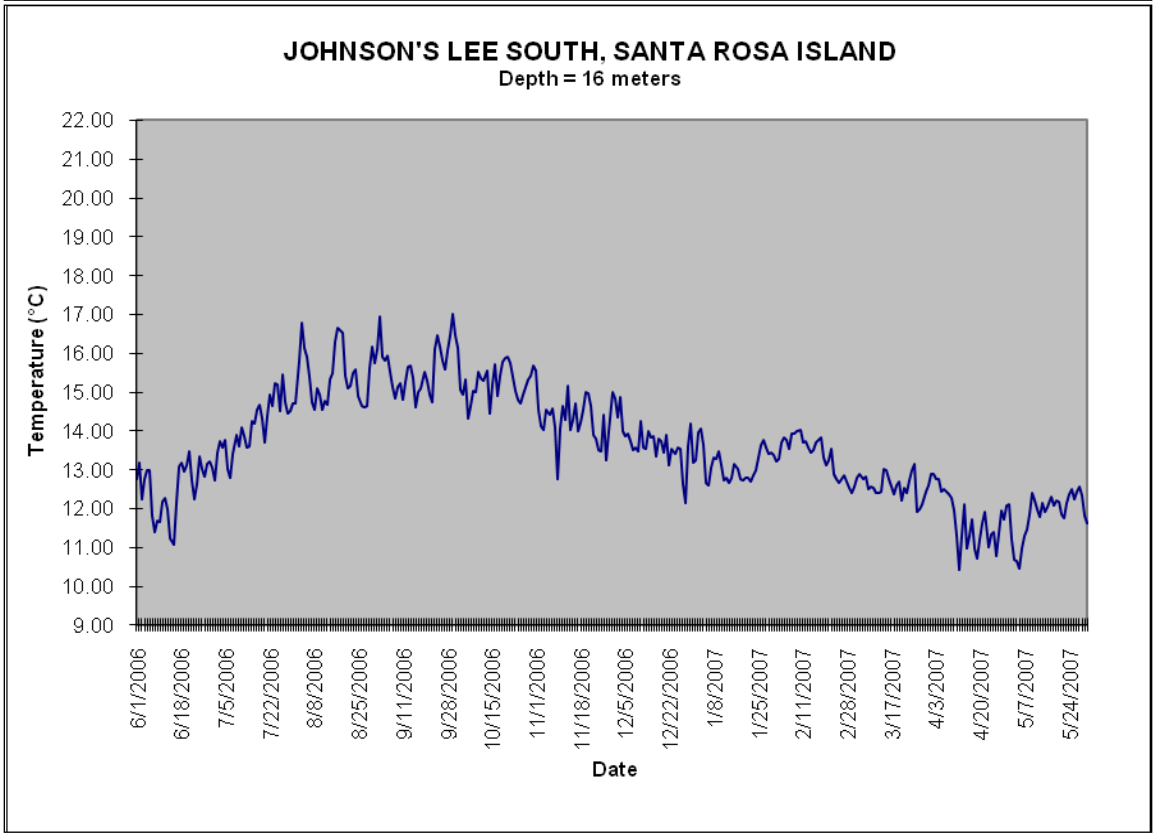
2007 TEMPERATURE DATA GRAPHS



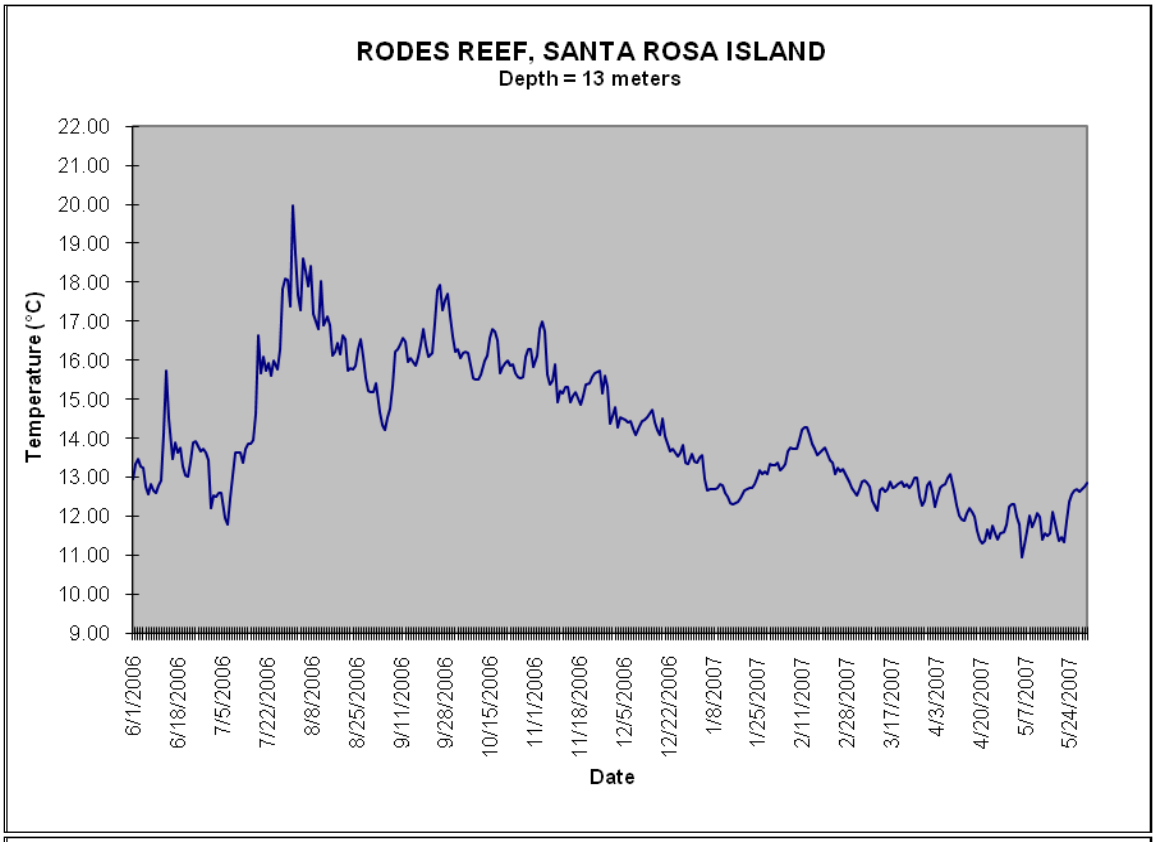


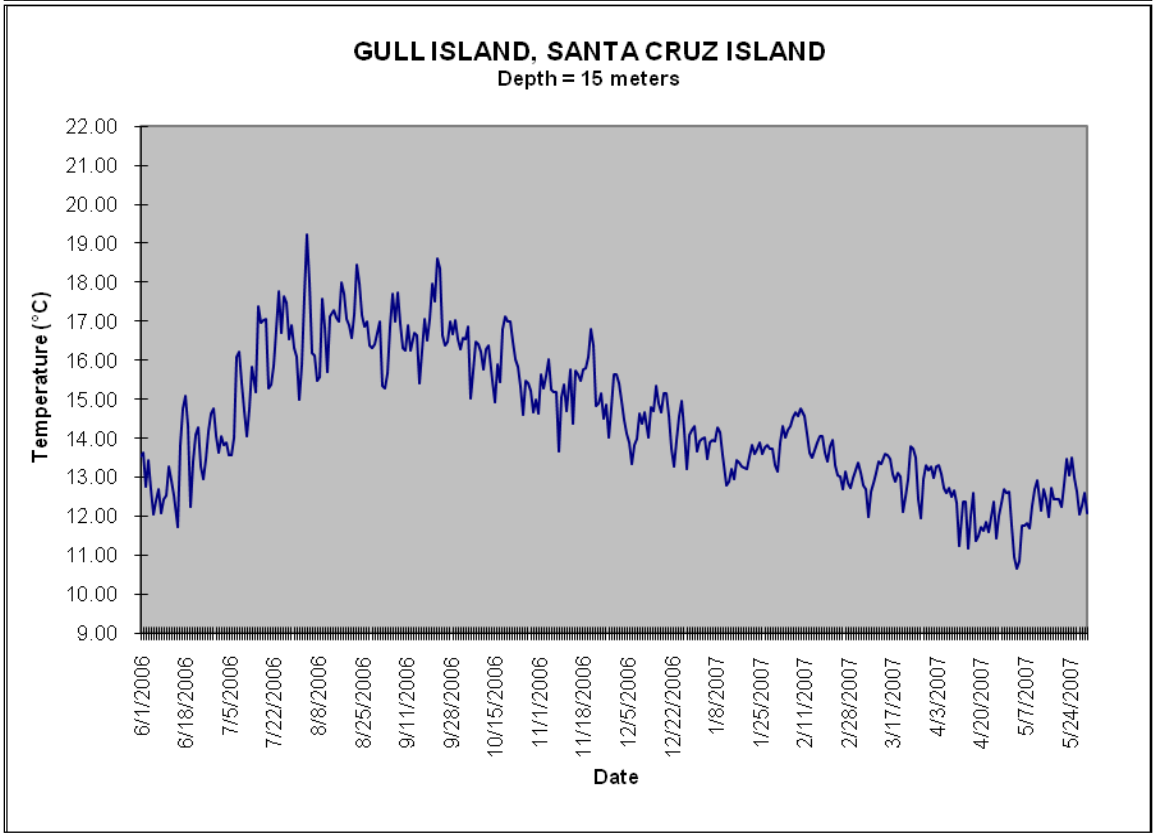
2007 TEMPERATURE DATA GRAPHS



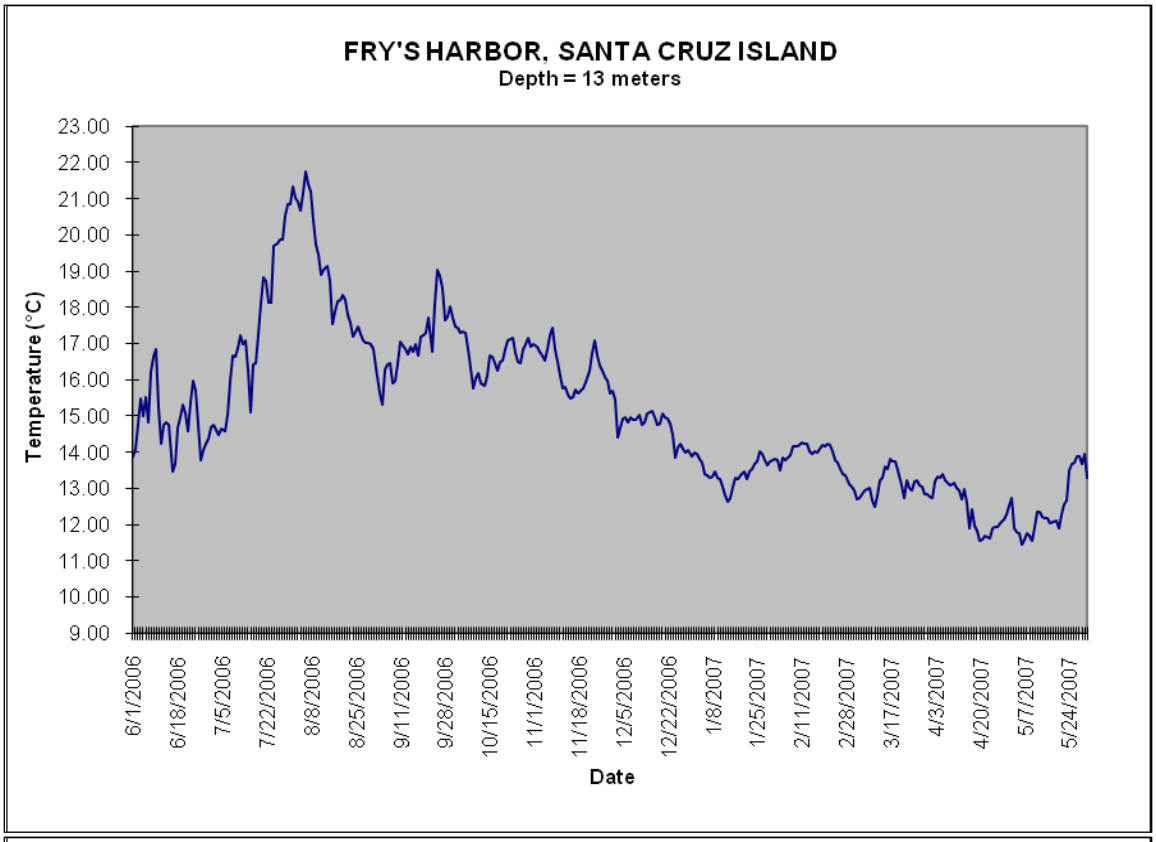


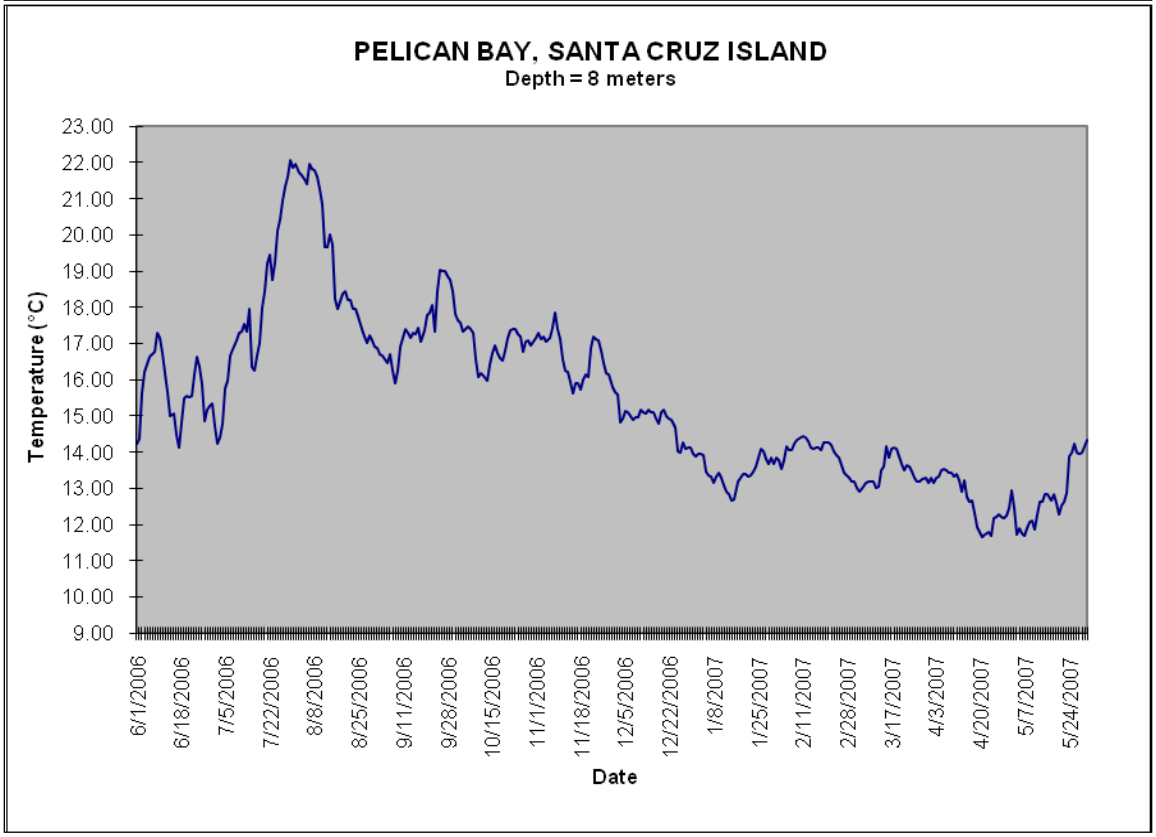
2007 TEMPERATURE DATA GRAPHS



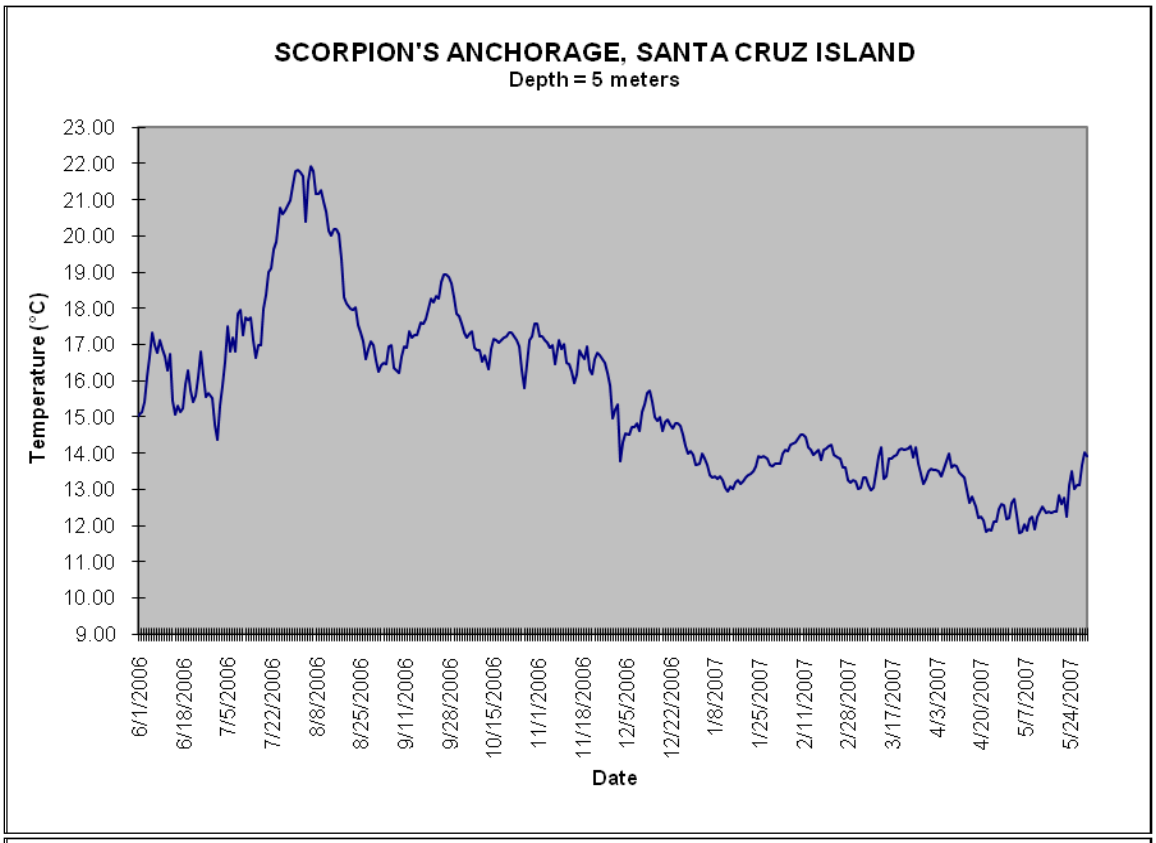


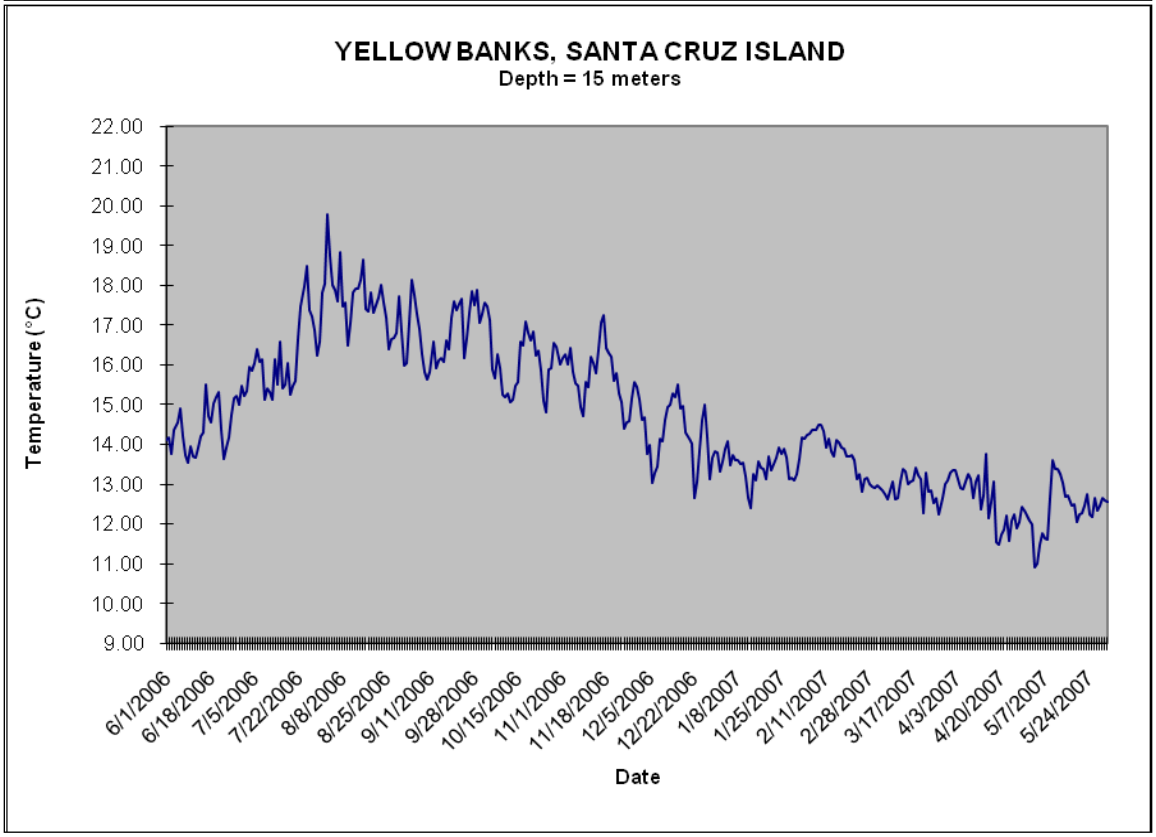
2007 TEMPERATURE DATA GRAPHS



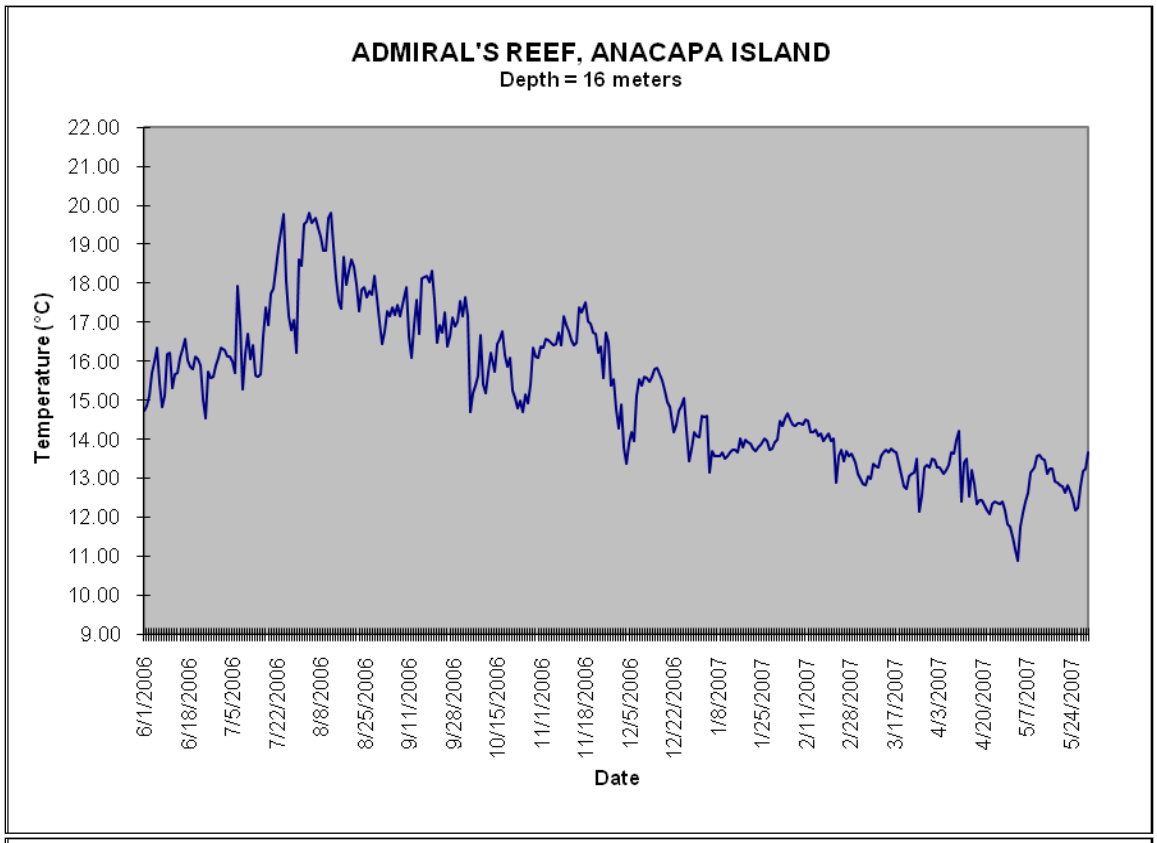


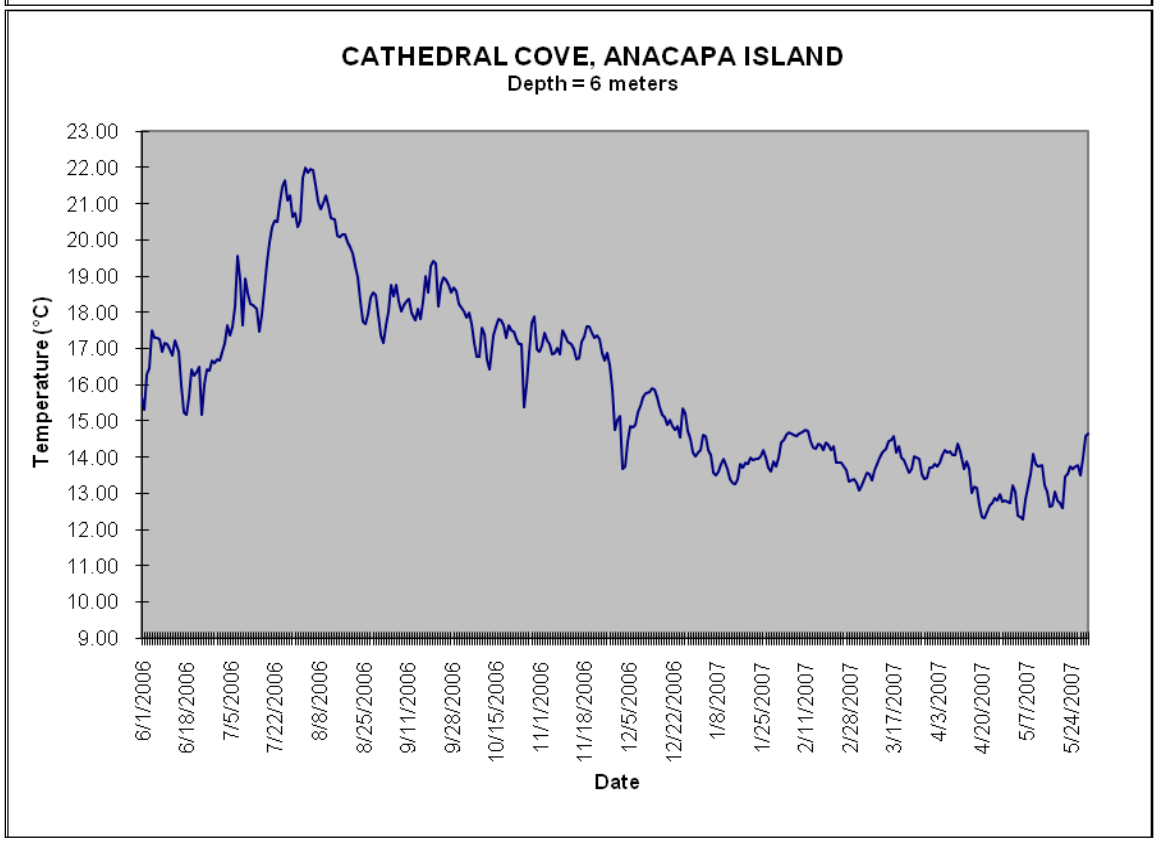
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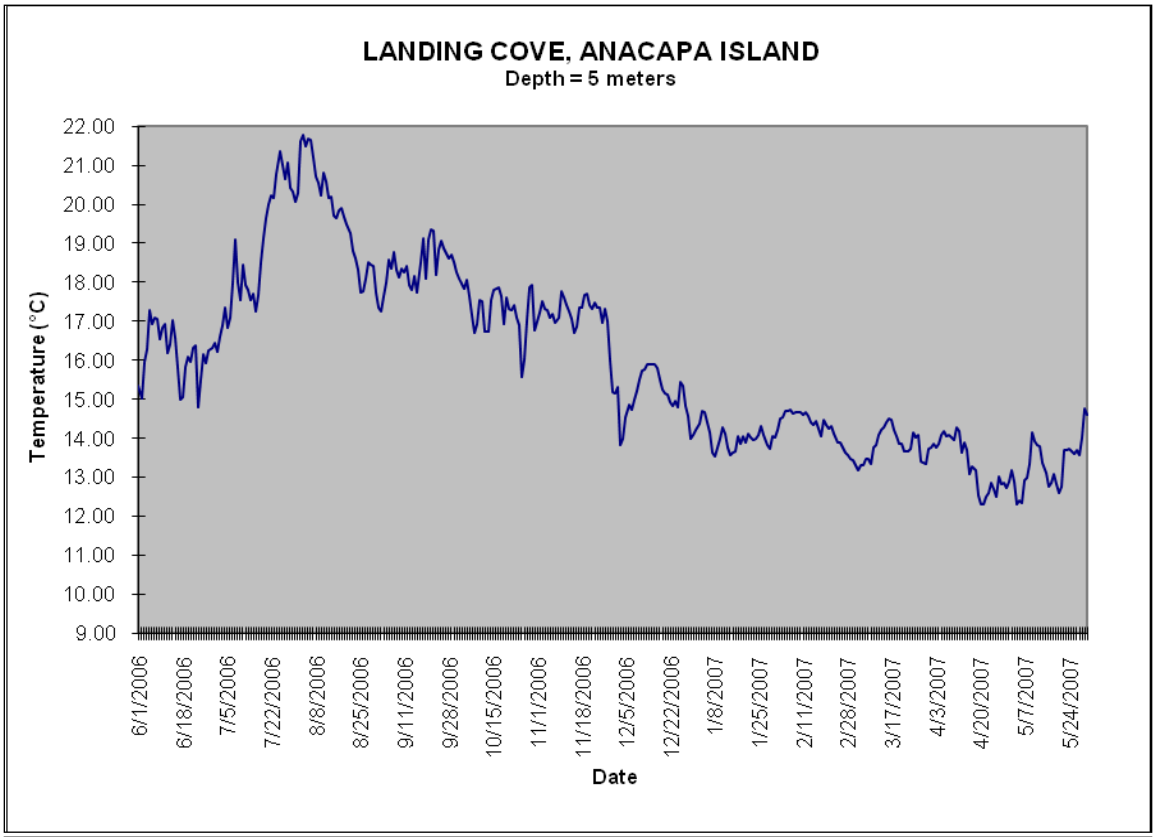


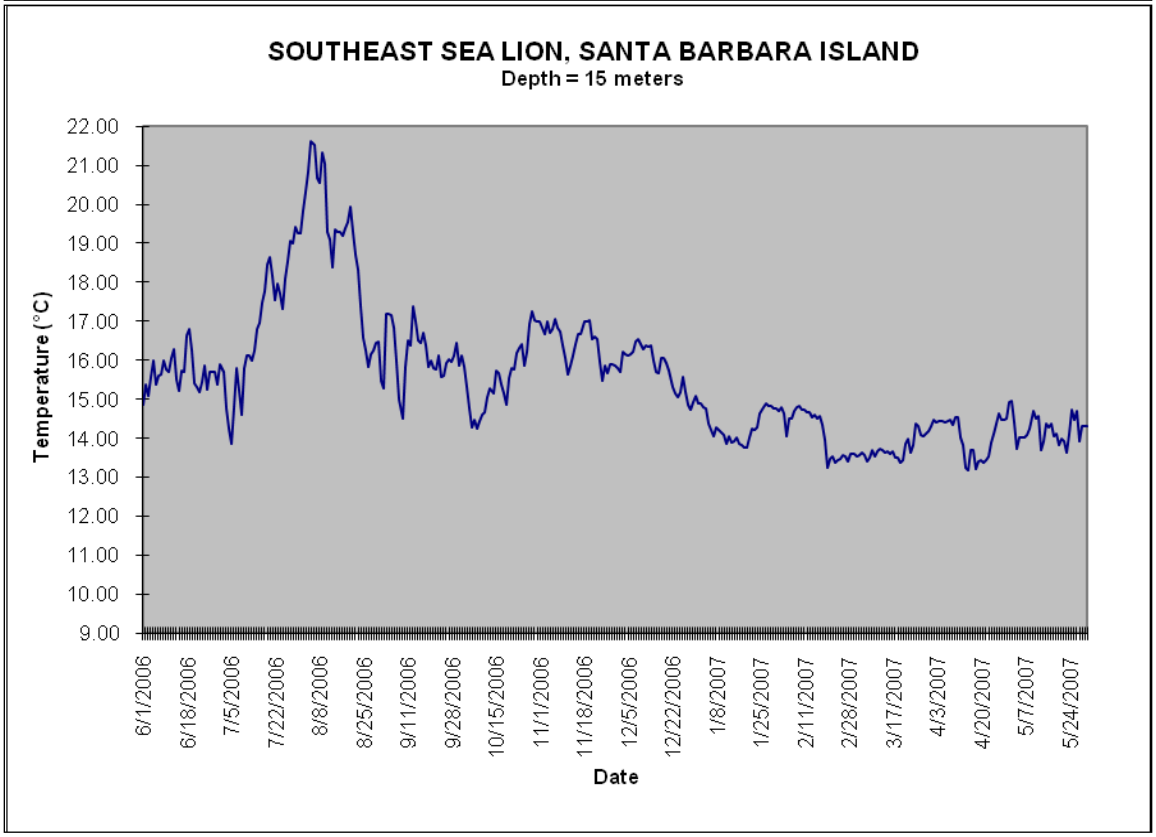
2007 TEMPERATURE DATA GRAPHS



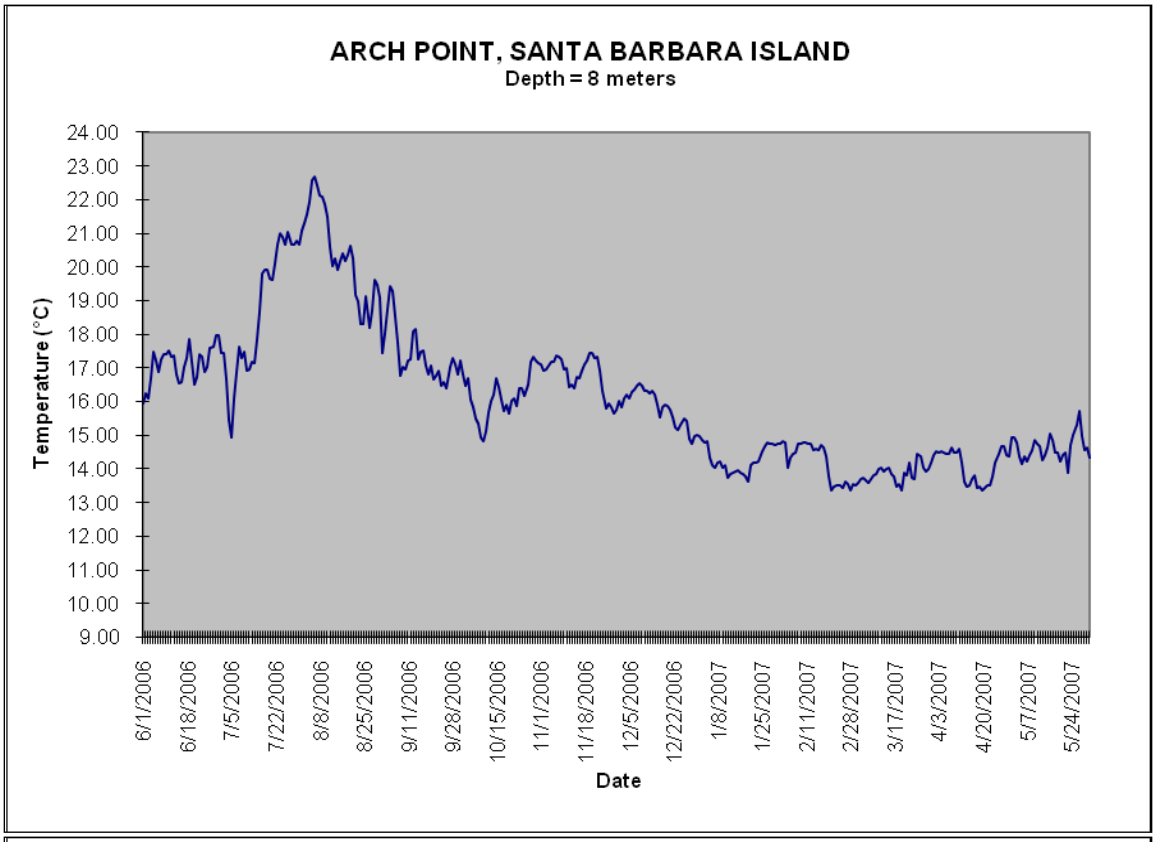


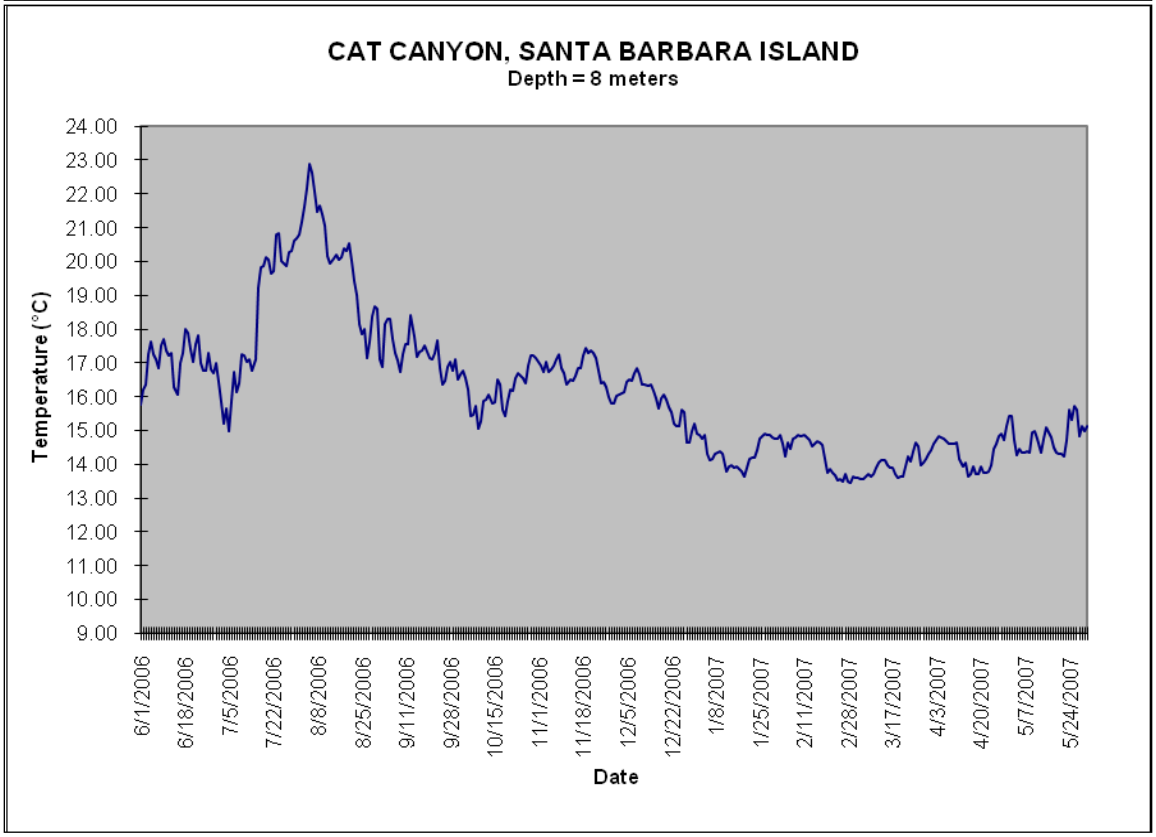
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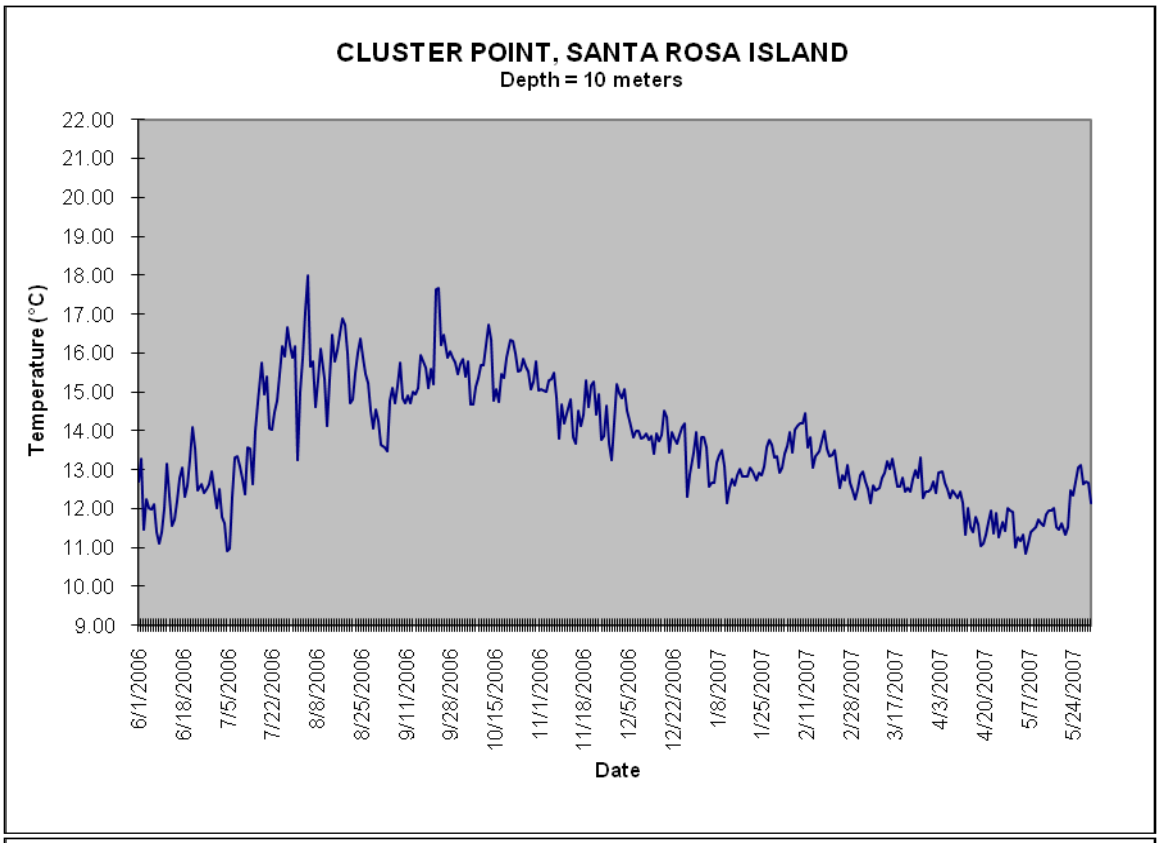


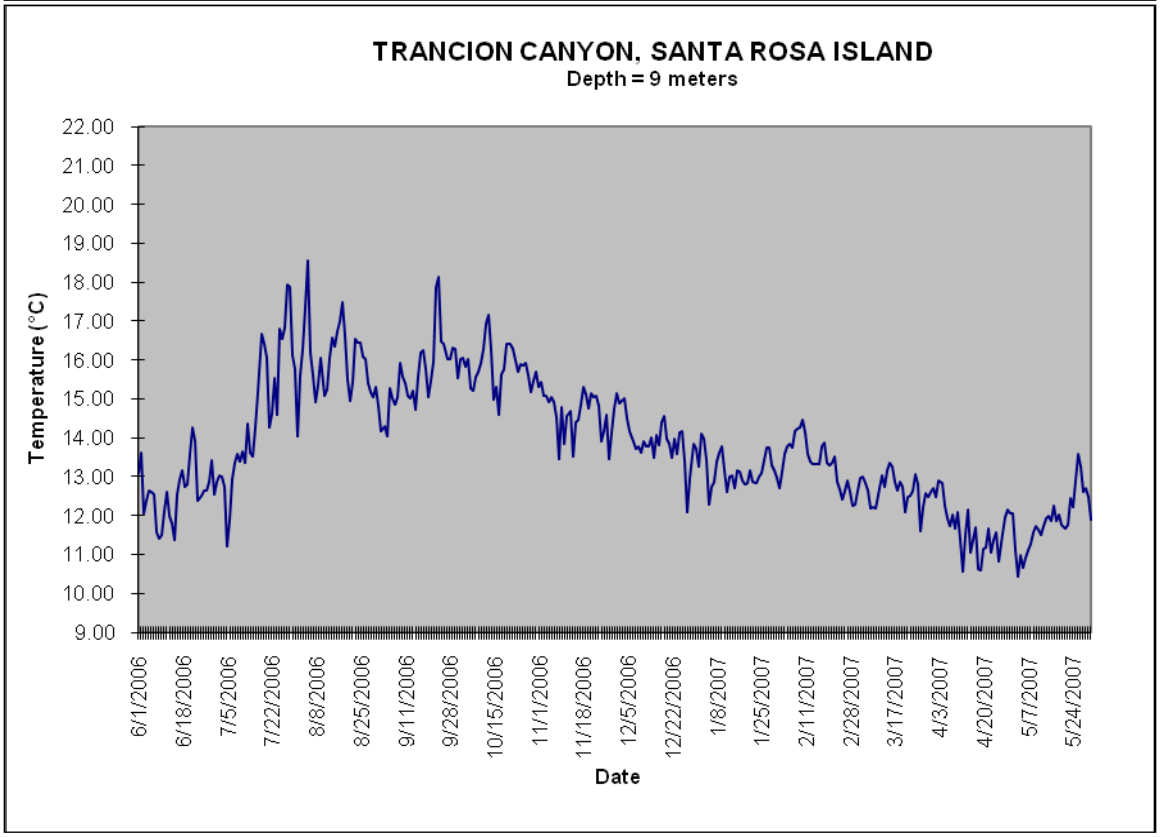
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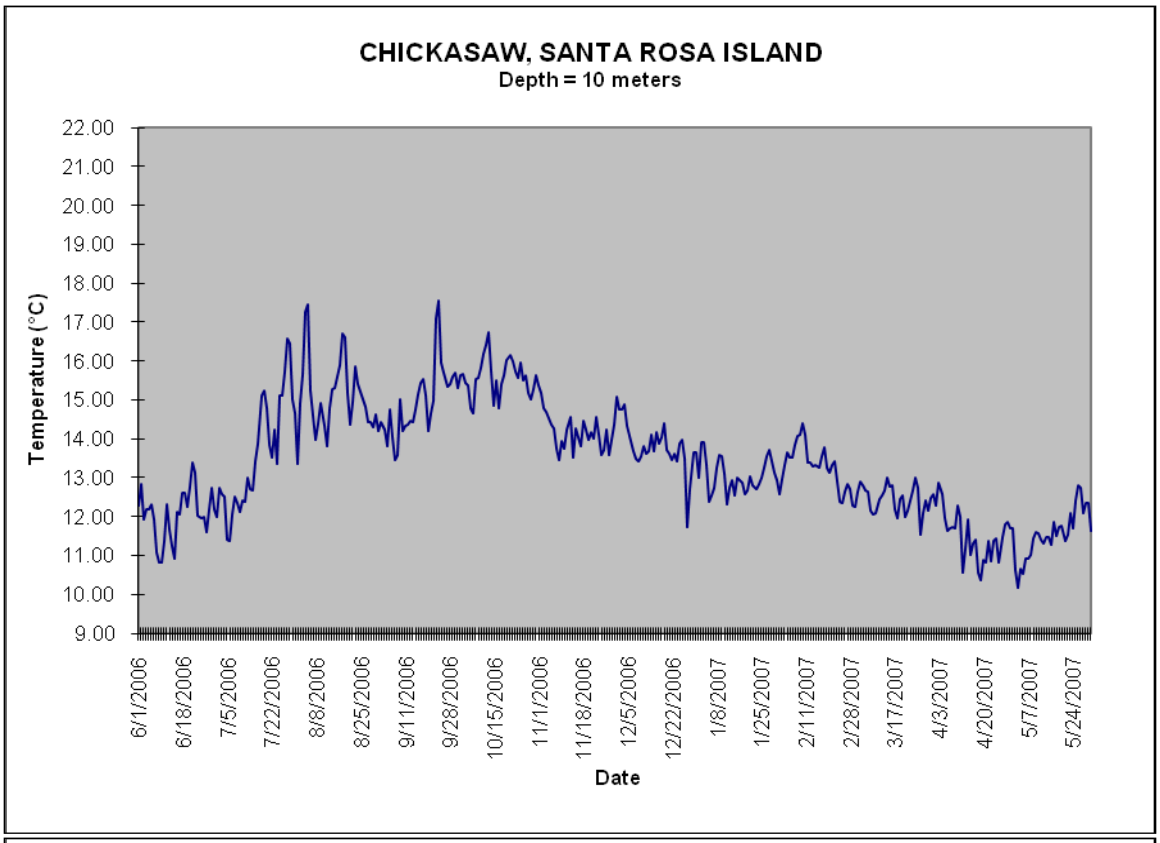


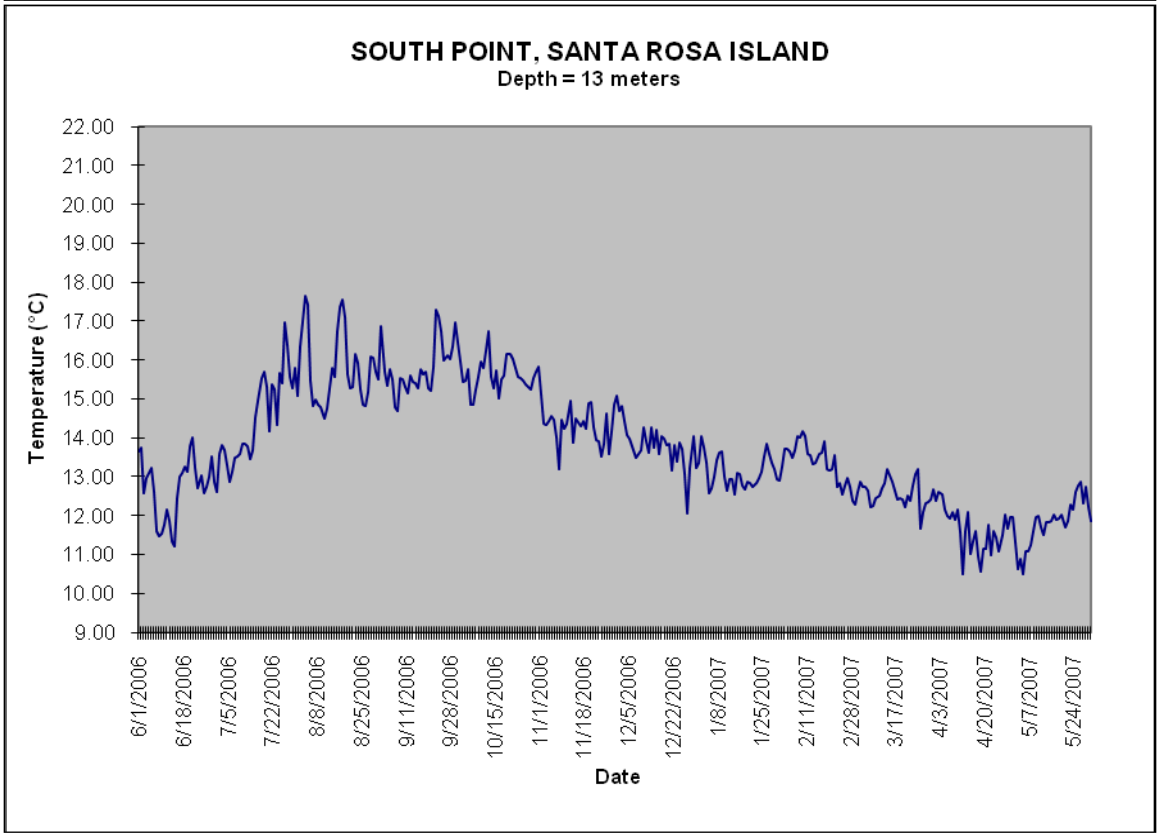
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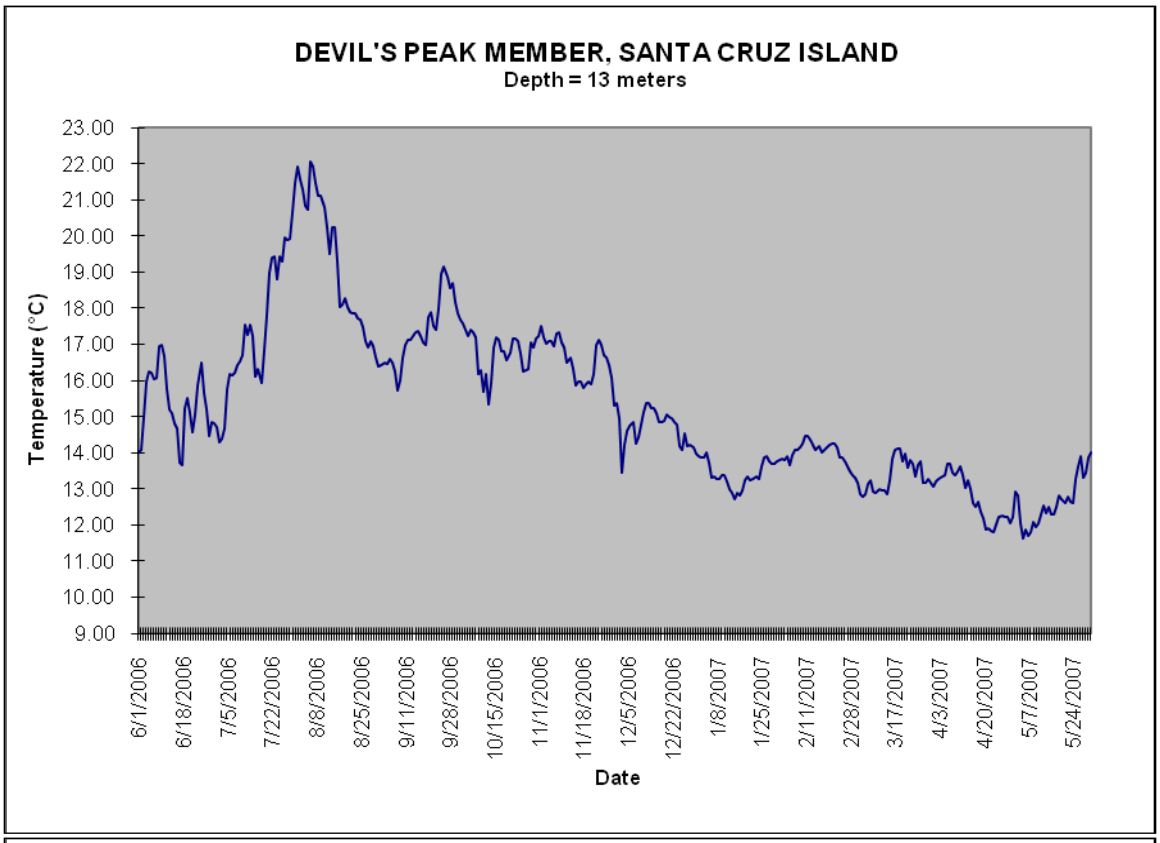


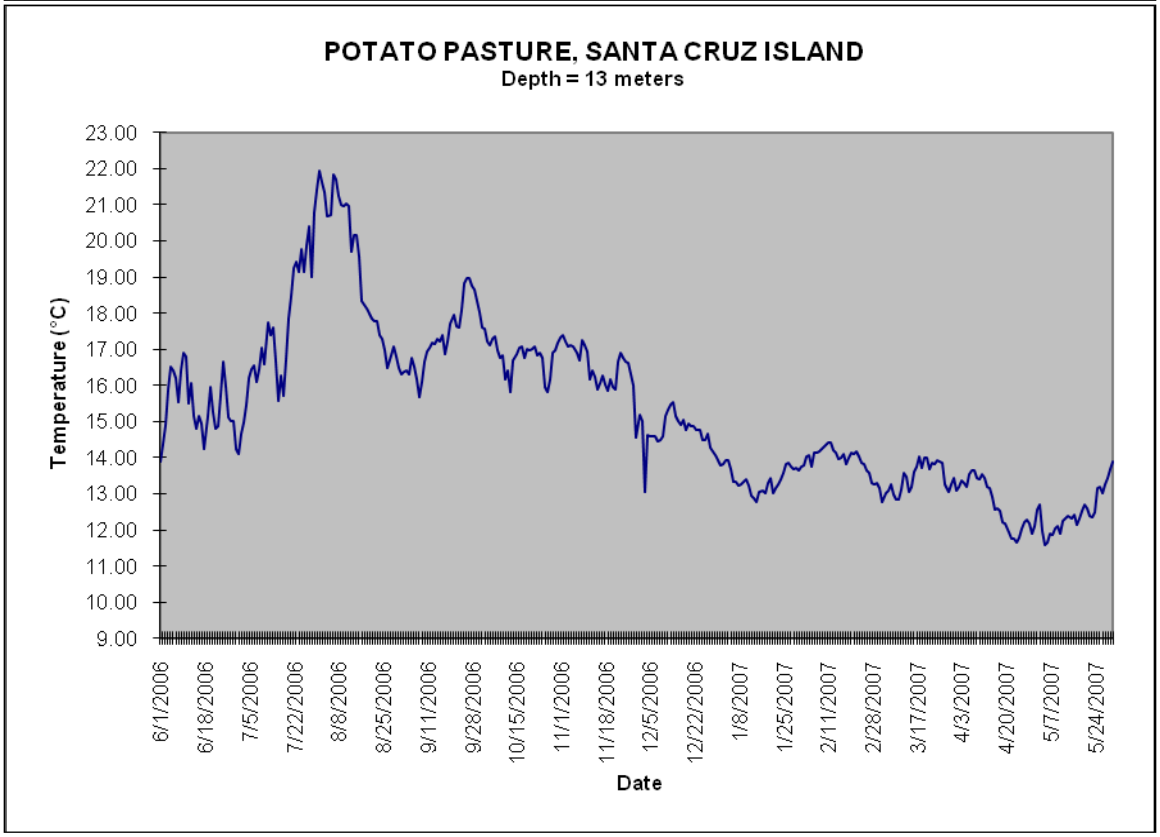
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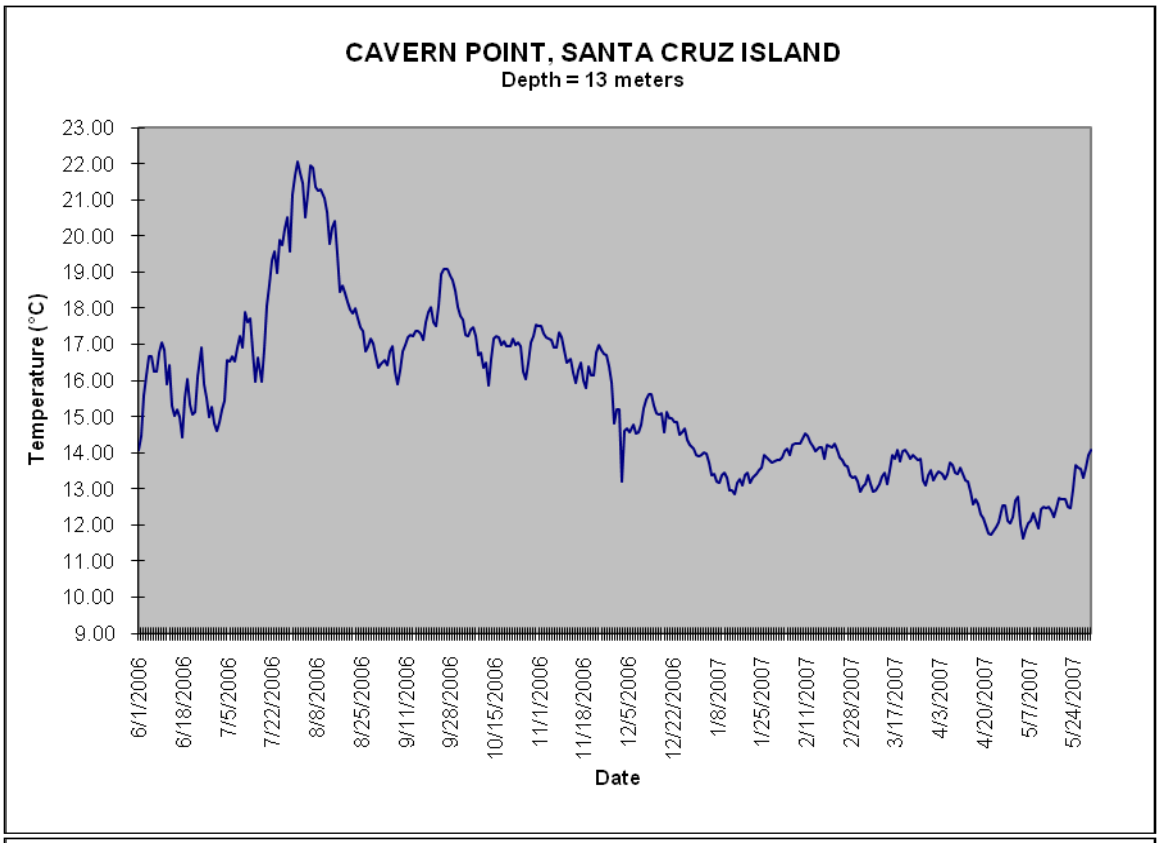


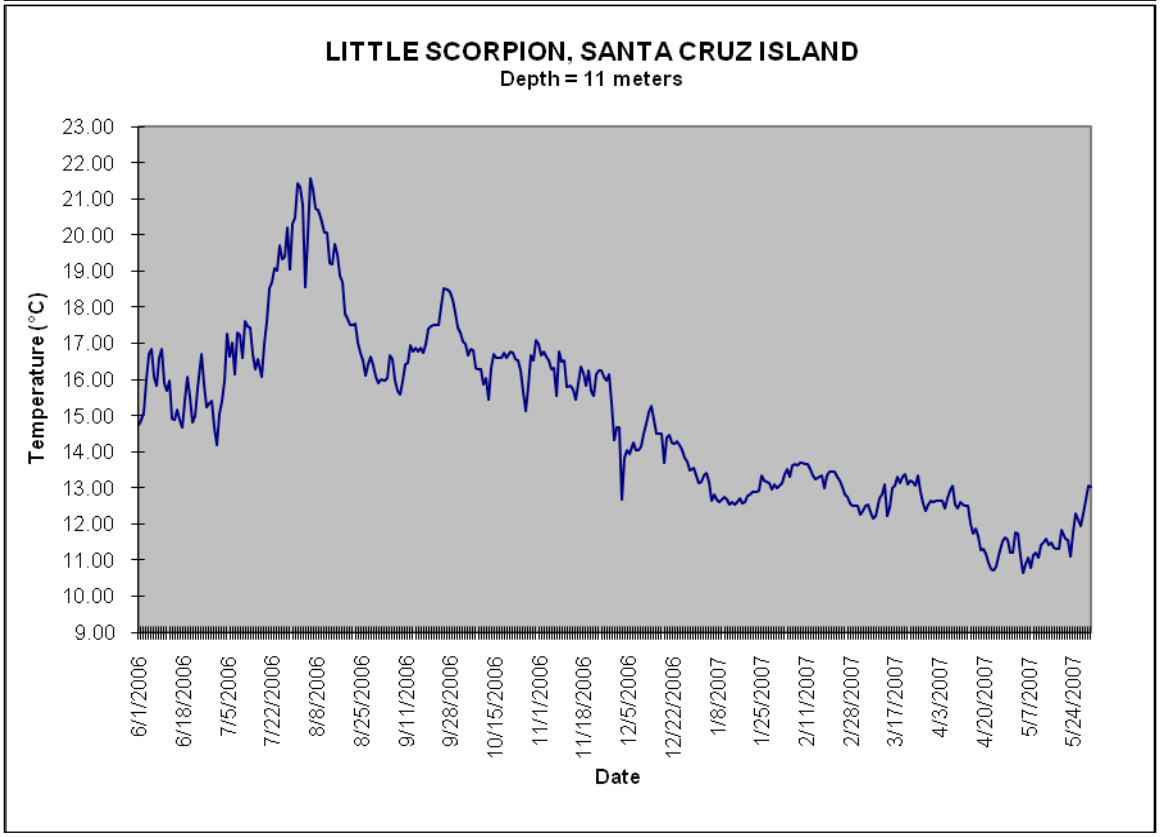
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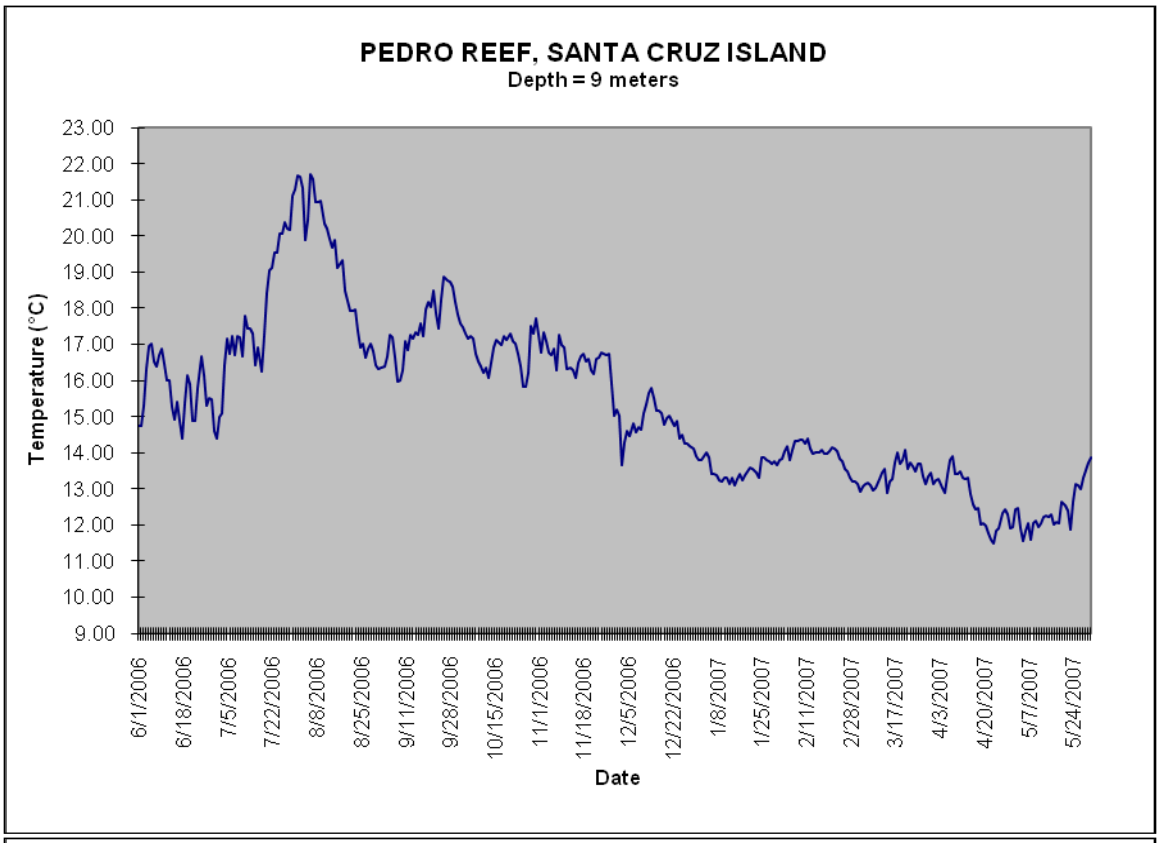


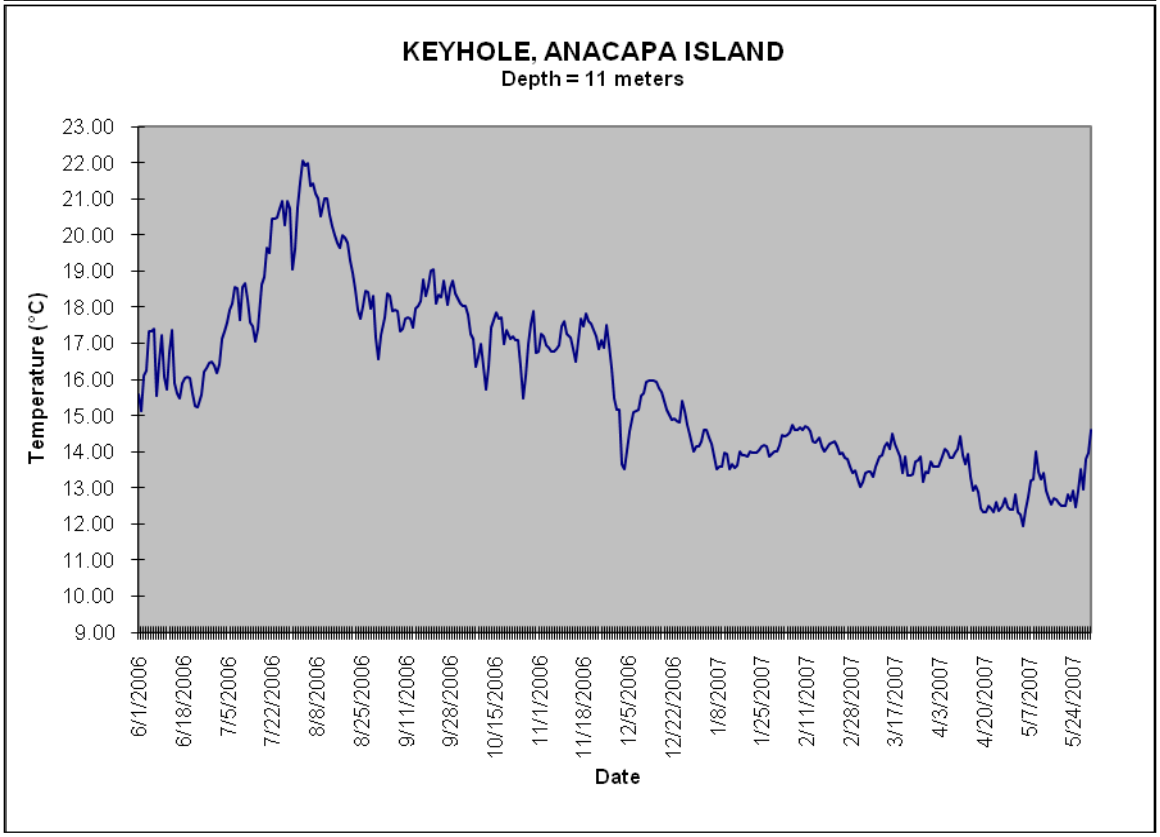
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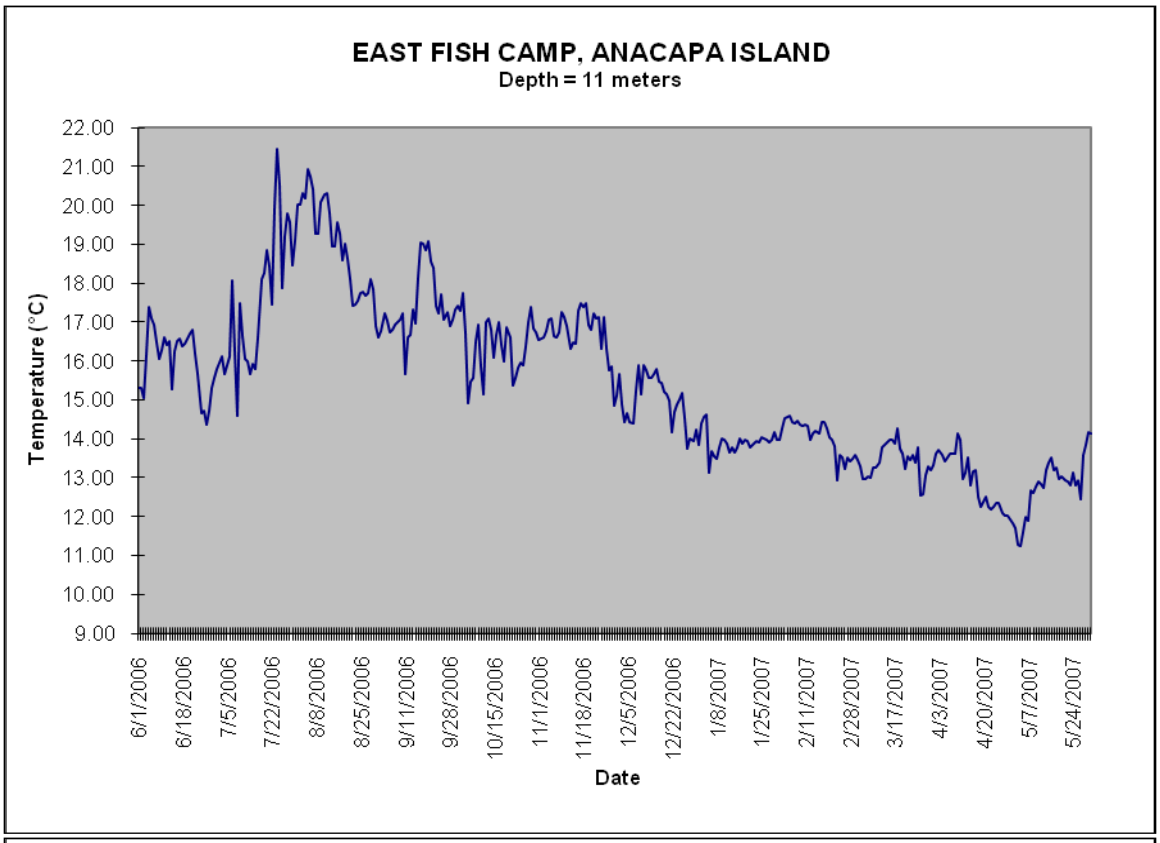


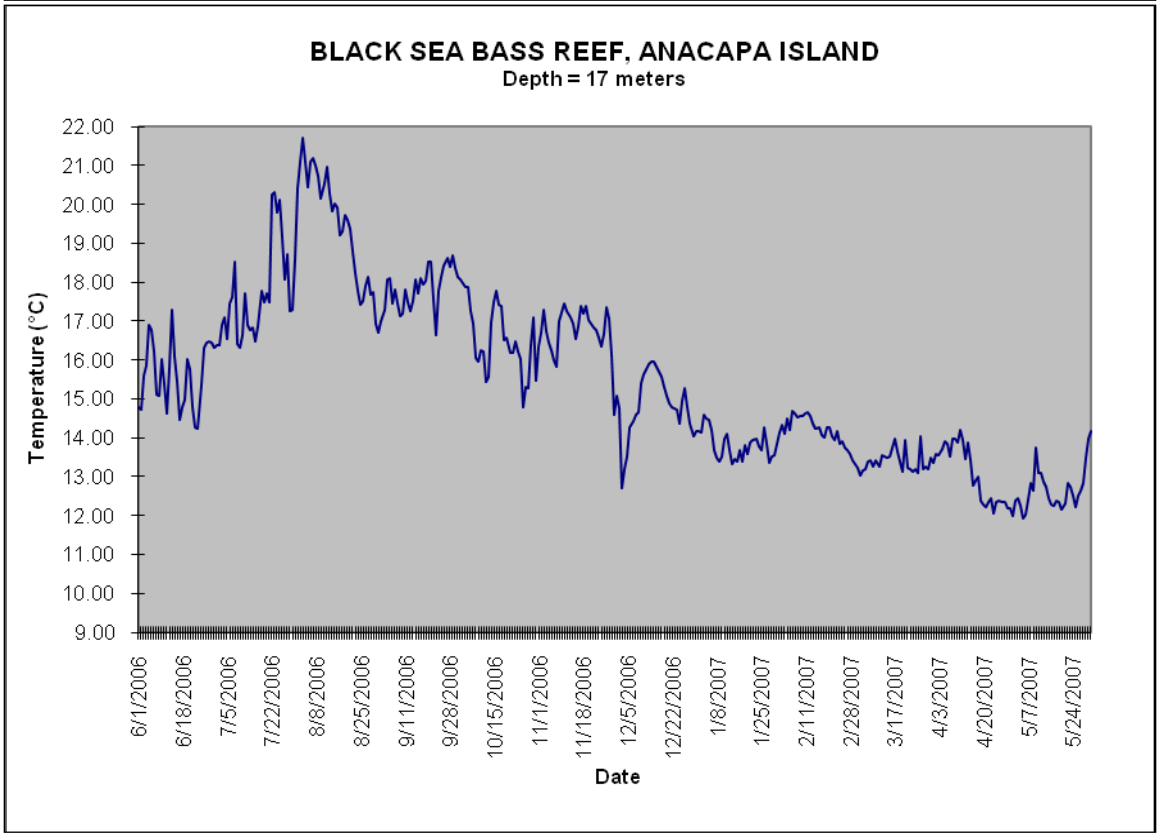
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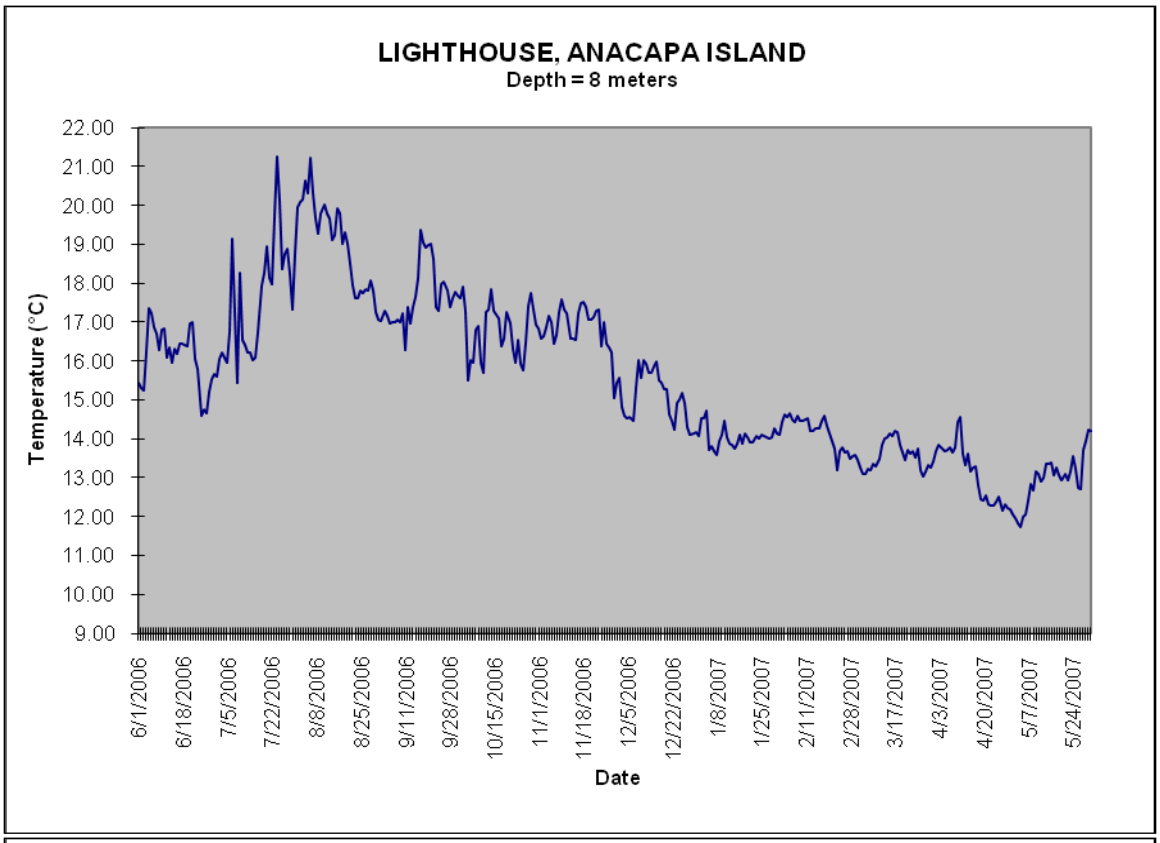


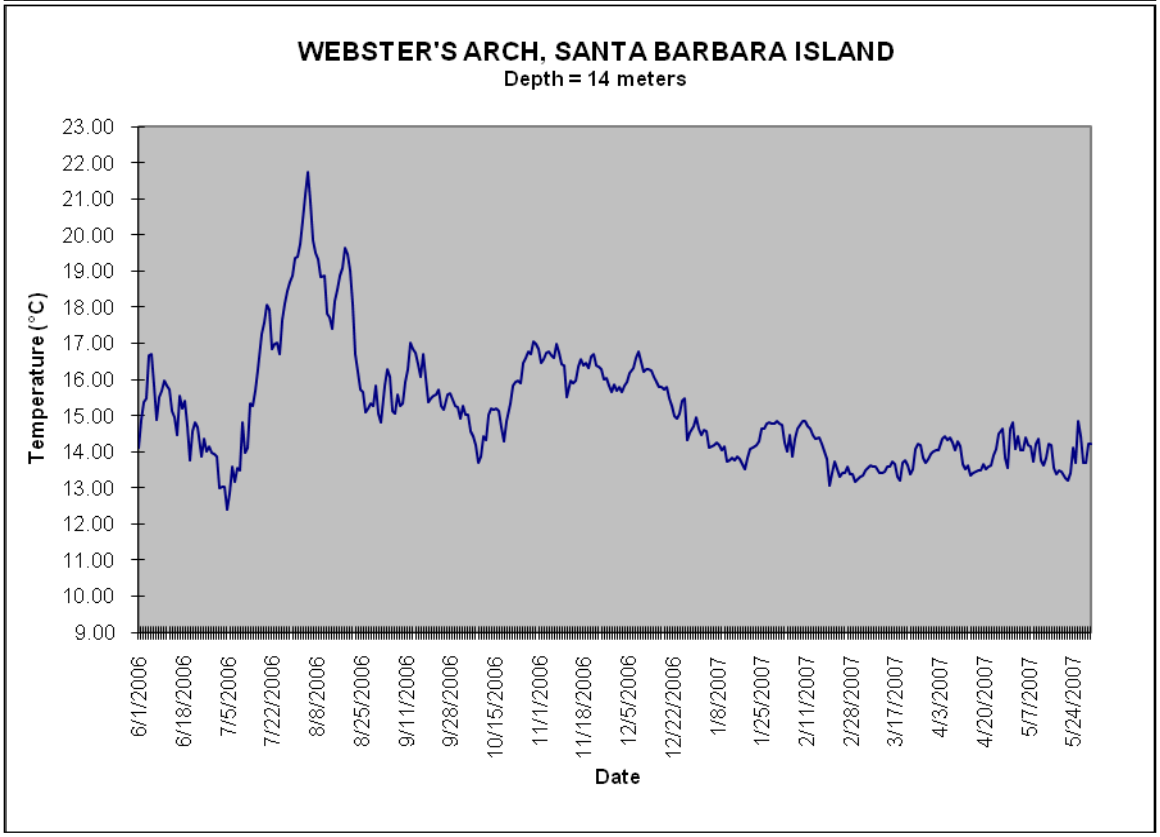
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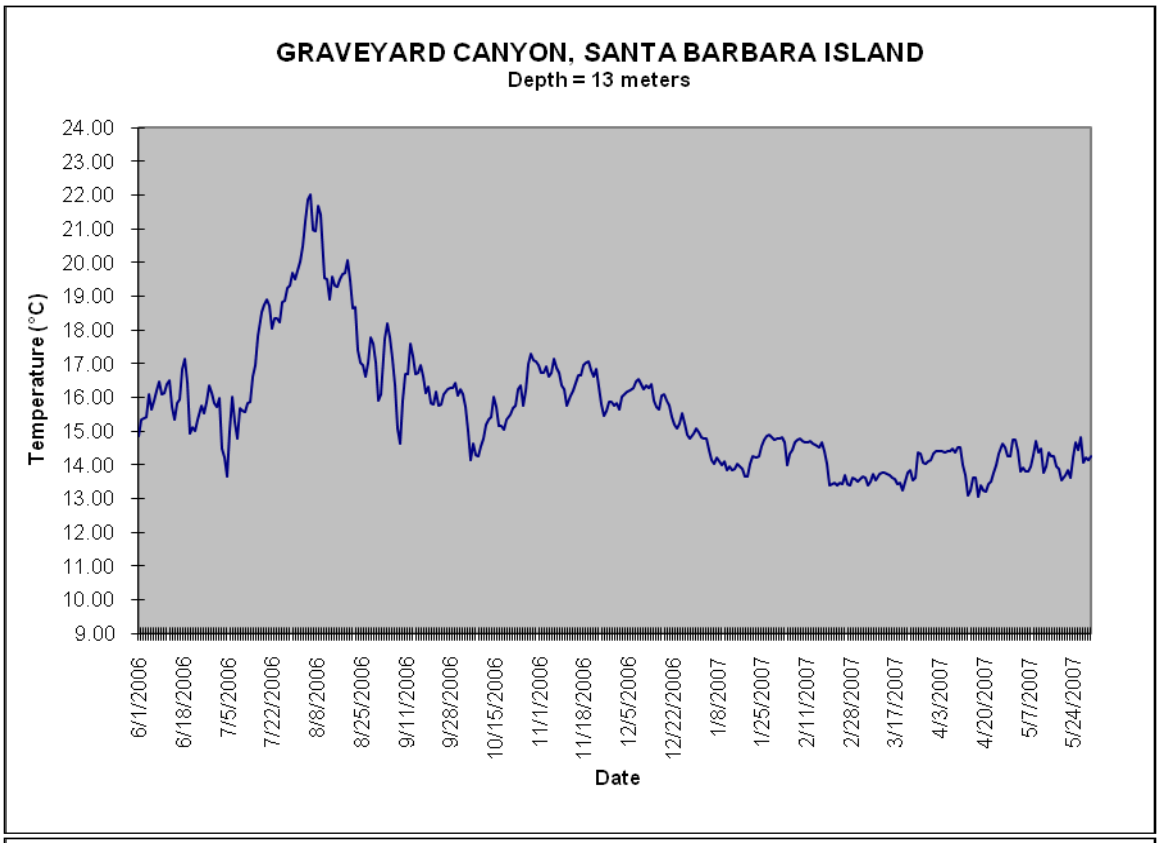


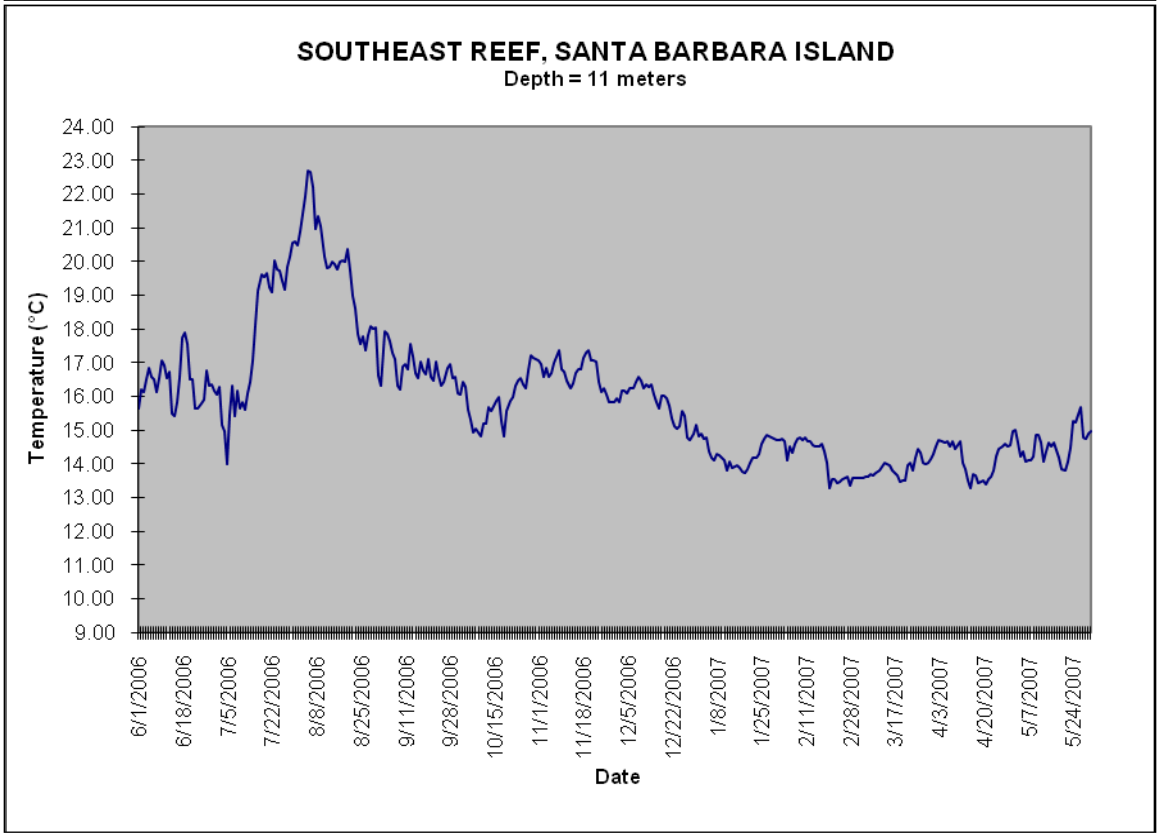
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2007 TEMPERATURE DATA GRAPHS





Appendix N. Oxylebius pictus Density Data.

Island Name	Site Name	Species Name	Year	Mean	StdDev	Count
San Miguel	Wyckoff Ledge	*Oxylebius pictus*	2007	0.1250	0.2261	12
San Miguel	Hare Rock	*Oxylebius pictus*	2007	0.2500	0.3371	12
Santa Rosa	Johnson's Lee North	*Oxylebius pictus*	2007	0.2917	0.3965	12
Santa Rosa	Johnson's Lee South	*Oxylebius pictus*	2007	0.2500	0.4523	12
Santa Rosa	Rodes Reef	*Oxylebius pictus*	2007	0.1667	0.2462	12
Santa Cruz	Gull Island South	*Oxylebius pictus*	2007	0.3750	0.3769	12
Santa Cruz	Fry's Harbor	*Oxylebius pictus*	2007	0.0833	0.1946	12
Santa Cruz	Pelican Bay	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Cruz	Scorpion Anchorage	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Cruz	Yellow Banks	*Oxylebius pictus*	2007	0.1667	0.2462	12
Anacapa	Admiral's Reef	*Oxylebius pictus*	2007	0.1667	0.2462	12
Anacapa	Cathedral Cove	*Oxylebius pictus*	2007	0.0000	0.0000	12
Anacapa	Landing Cove	*Oxylebius pictus*	2007	0.0833	0.2887	12
Santa Barbara	SE Sea Lion Rookery	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Barbara	Arch Point	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Barbara	Cat Canyon	*Oxylebius pictus*	2007	0.0000	0.0000	12
San Miguel	Miracle Mile	*Oxylebius pictus*	2007	0.0417	0.1443	12
Santa Rosa	Cluster Point	*Oxylebius pictus*	2007	0.2083	0.3343	12
Santa Rosa	Trancion Canyon	*Oxylebius pictus*	2007	0.0833	0.1946	12
Santa Rosa	Chickasaw	*Oxylebius pictus*	2007	0.5000	0.6030	12
Santa Rosa	South Point	*Oxylebius pictus*	2007	0.3750	0.4330	12
Santa Cruz	Devil's Peak Member	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Cruz	Potato Pasture	*Oxylebius pictus*	2007	0.0417	0.1443	12
Santa Cruz	Cavern Point	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Cruz	Little Scorpion	*Oxylebius pictus*	2007	0.0417	0.1443	12
Santa Cruz	Pedro Reef	*Oxylebius pictus*	2007	0.0417	0.1443	12
Anacapa	Keyhole	*Oxylebius pictus*	2007	0.0417	0.1443	12
Anacapa	East Fish Camp	*Oxylebius pictus*	2007	0.0000	0.0000	12
Anacapa	Black Sea Bass Reef	*Oxylebius pictus*	2007	0.0000	0.0000	12
Anacapa	Lighthouse	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Barbara	Webster's Arch	*Oxylebius pictus*	2007	0.0417	0.1443	12
Santa Barbara	Graveyard Canyon	*Oxylebius pictus*	2007	0.0000	0.0000	12
Santa Barbara	Southeast Reef	*Oxylebius pictus*	2007	0.0417	0.1443	12

Appendix O. Fish Size Frequency Method.

Purpose
To estimate fish population size structure

Materials
1 fish slate with 40 cm etched marks along top edge (Figure 3)

1 fish size frequency summary sheet (Figure 4)

Personnel
A minimum of one SCUBA equipped observer who has been trained in underwater fish size frequencies. If only one trained observer is available, this observer's buddy can conduct roving diver fish counts, as both divers will be covering the same area within the same time frame.

Methods
This method will be performed during or after the roving diver fish count (RDFC) in accordance with the RDFC protocol with a minimum sampling time of 30 minutes. As with the RDFC, the observer will sample as much of the 2000 m² area (ten meters on either side of the 100 m permanent transect line) as possible. Within this area and time, as many fish sizes of the species prioritized below will be measured. The observers for this protocol must be trained, tested and be able to accurately estimate fish sizes underwater. Training procedures for this protocol can be found in Appendix P. The observer should be proficient in sizing fish to within 20% of the actual total length (TL).

Observers will estimate TL (Figure 2) of small fish (<15 cm TL) to the nearest centimeter and larger fish (>15 cm) to the nearest 5 cm. All observed species names and sizes are recorded on a blank dive slate. In the case where there are relatively high densities of certain species (e.g. *Chromis punctipinnis*, blacksmith), a size range measurement for the entire school is recorded in parentheses followed by a count (Figure 3). If gender is visually distinguishable (e.g. California sheephead and rock wrasse) these are kept separate and recorded as well. Similar to the RDFC method, each observer should attempt to search all habitats (i.e. bottom, midwater, under ledges, water column, canopy, etc.); however, cryptic species are not measured (see organisms sampled section below).

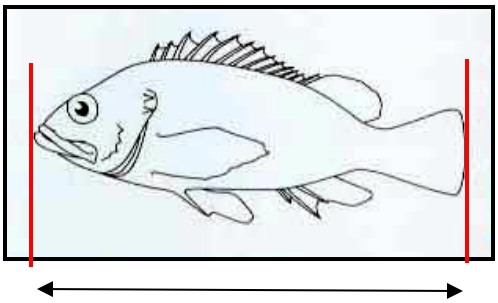


Figure 2. Total length, TL, of a fish.

Upon completion of the dive, each observer will review and tally all totals for each size category per species. On the surface and as soon as possible with the assistance of a recorder, the observer transfers the information from the dive slate to a fish size frequency summary datasheet (Figure 4). Repeat this procedure for each observer on the same datasheet. The summary datasheets are then stored and from these sheets the data are entered into the database after the cruise.

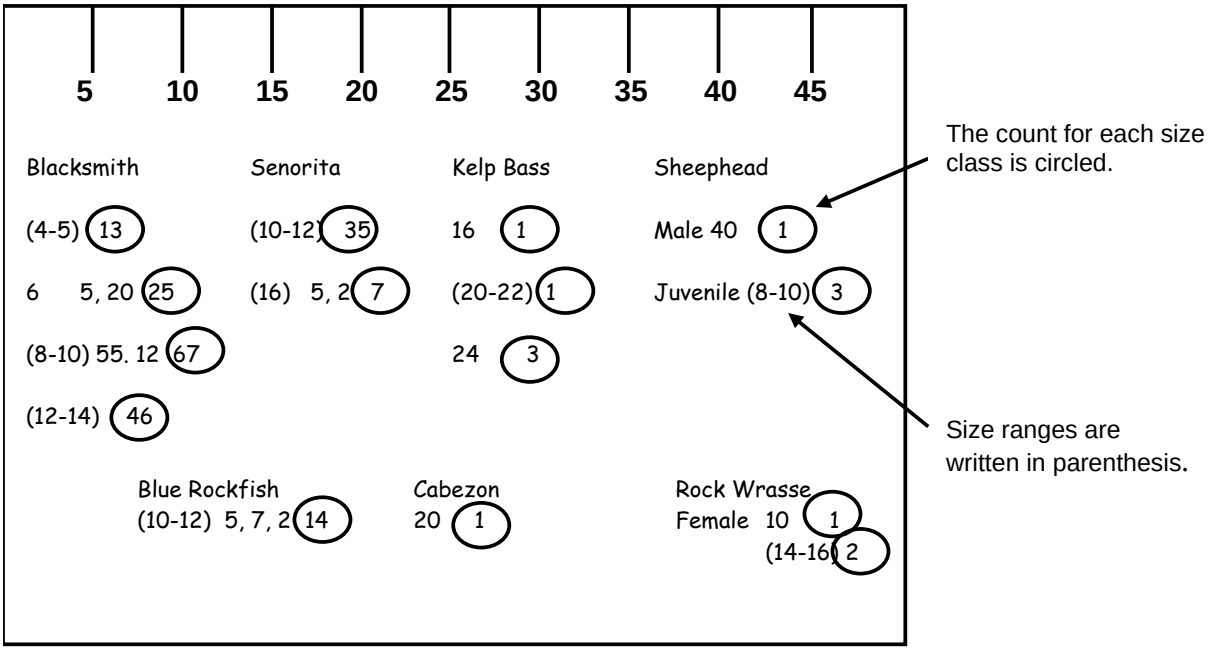


Figure 3. An example dive slate for fish size frequency measurements.

Common Name									
Black & yellow rockfish	Count								
	Length (cm)								
Black surfperch	Count								
	Length (cm)								
Blacksmith	Count	13	25	67	46				
	Length (cm)								
Blue rockfish	Count	4-5	6	8-10	12-14				
	Length (cm)								
Cabezon	Count	14							
	Length (cm)	10-12							
California scorpionfish	Count								
	Length (cm)	1							
California sheephead	Count **fem**	20							
	juv								
	male								
	Length (cm)								

Notice the separate rows for gender and juveniles.

Figure 4. An example of summarized data on a fish size frequency summary sheet.

A minimum of 30 minutes is required to cover a site and collect adequate sample size of indicator species present. More time can be used if necessary to get a larger sample size, similar to size frequency measurements of invertebrates and *Macrocystis pyrifera*.

Time Required

A minimum of 30 minutes per observer is required to measure fish.

Organisms Sampled

No cryptic species should be measured for size (e.g. *Alloclinus holderi, Coryphopterus nicholsii, Lythrypnus dalli* and *L. zebra, Gibbonsia* spp., *Citharichthys* spp., *Cottidae, Leiocottus hirundo,* etc.). Schooling baitfish such as sardines, anchovies and smelt will also not be sized. All other species can be measured.

Appendix P. Fish Size Frequency Training Protocol.

Purpose
To learn the skills to accurately size fish underwater

Materials
A minimum of six fish size frequency training model arrays (Figure 5)

One dive slate per trainee with a 40 cm scale (minimum) along top edge marked in 5 cm increments (Figure 3)

One fish size frequency training datasheet per trainee (Figure 6)

One training model array fish size answer sheet per trainee (Figure 7)

Personnel
Trainees already proficient in identifying fish species as required by the Roving Diver Fish Count protocol

Fish size frequency training exercise

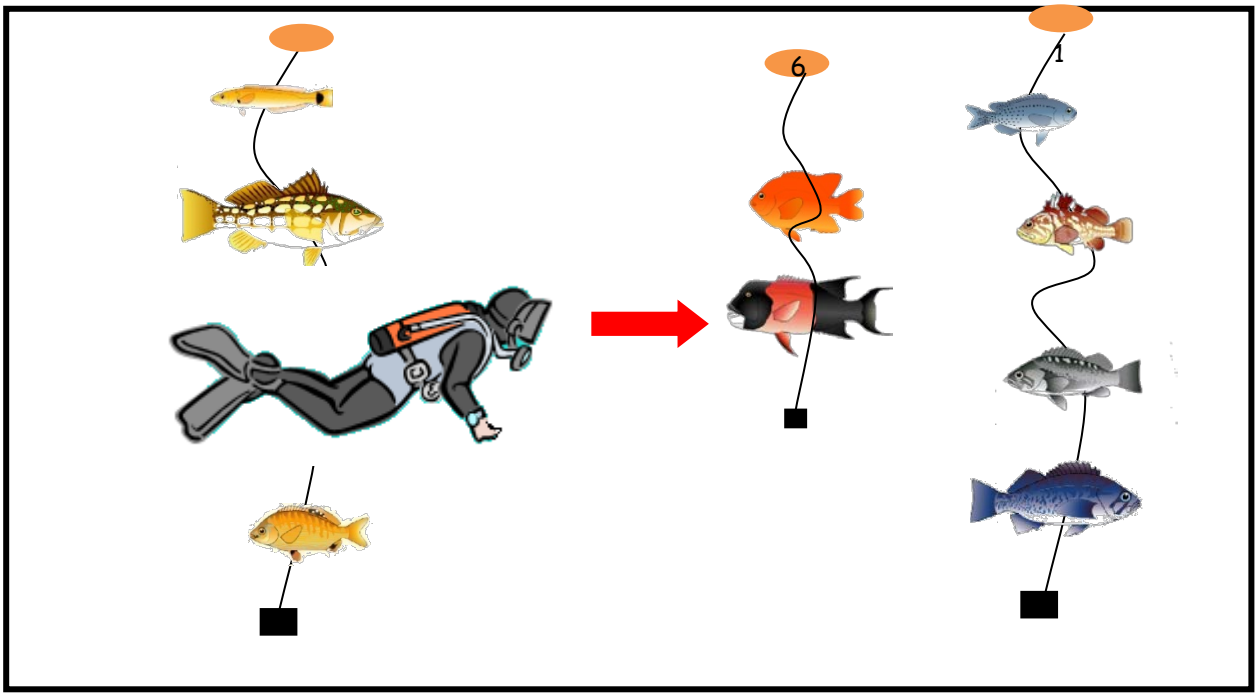


Figure 5. Fish size frequency training model arrays.

One or more pair of divers will assist in setting up the fish size frequency training model arrays in a course-like fashion underwater prior to the trainees beginning their dive. Each fish size frequency training model array is made up of plastic models of various fish sizes and species that are attached in series to a line anchored to the seafloor by a weight (Figure 5). Trainees should already be proficient in fish identification and should only concern themselves with fish sizes during this

exercise. Each trainee will be equipped with a fish size frequency datasheet with a series of vertical lines representing each fish model array (Figure D). Alternatively this can be drawn on a blank data slate. Along the vertical lines are blank spaces on which to record fish measurements for each individual array. Not all model arrays have the same number of fish on them, so some spaces may be left blank. Working in buddy pairs, descend and locate where the fish size models were placed. The trainees will swim through the array course and record the total length of each fish to the nearest centimeter. The fish sizes need to be recorded in the same order as the fish on the arrays to facilitate checking later. Also, each training array has an identifying number located on the float that should be recorded on the datasheet at the top of each vertical line. This will assist with the grading of size measurements once the student returns to the surface.

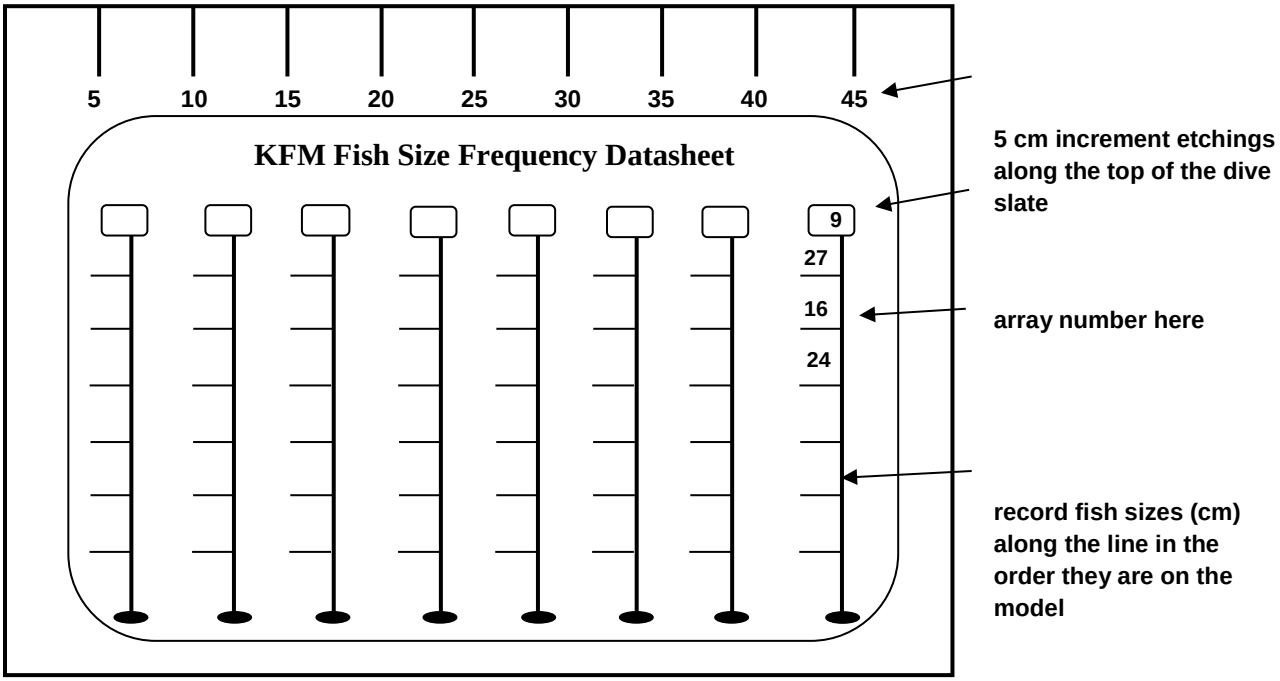


Figure 6. Fish size frequency slate with a fish size frequency training datasheet.

Students should make an effort to maintain a consistent pace through the course. Stopping at every fish is not possible with live fish, so sizes should be recorded as quickly and as accurately as possible. After the course has been completed the student should compare their size measurements with the laminated answer sheets (Figure C). At this point, trainees should take particular note if there are specific characteristics of fish that result in consistent over- or underestimation of size (elongate fish, bright body colors, etc). Each trainee will continue swimming through and measuring all the model arrays until they feel confident that all measurements are accurate within one or two centimeters of the correct length for each fish. Students will likely have to make several passes through the arrays before consistent measurements are achieved. After several passes, trainees may begin to remember the size of the fish models, so no more than six passes should be conducted during any one training session.

After a diver has gone through this training and can measure fish with 20% or less error, the diver is now ready to size live fish with a trained observer. The trained observer and trainee will then measure the same fish and sizes will be compared during or at the end of the dive. Fish size frequency training is complete when the trained observer compares measurements with the

student and feels confident that they are measuring with high consistency and accuracy. Accuracy within 20% or less of the actual size is sufficient.

Sizing Aids

There are a variety of different sizing aids that observers can use. Each fish slate has etchings along the top edge in 5 cm increments that should be used as the primary sizing aid. Divers can measure the width of their hand and use that for reference as well. If one is able to get a comparison measurement using natural habitat features such as a rock, kelp blade or plant that a fish was observed near, that too can be very useful. Observers should use whatever aids they can to get the best size estimate possible. Be resourceful and practice using these aids during the fish size frequency training exercise.

Aside from everything appearing larger underwater, there are many other factors that can influence the sizing of fish underwater and each observer should take great care during their training to discern whether they tend to over- or underestimate in each situation. Students should always be aware of these tendencies during fish size frequency sampling. Listed below are some factors that tend to influence the over- and/or underestimation of fish sizes.

Overestimation	Underestimation
low light conditions	bright light conditions
dull body color	bright body color
poor visibility	good visibility
object in foreground	objects in background
deep-bodied fish	elongate fish

Fish Size Frequency Training Answer Sheet

Array #		1	2	3	4	5	6	7	8	9
Length	top	14.5	31.0	25.0	13.0	25.0	18.0	19.5	18.0	29.0
(cm)	↓	42.0	16.0	23.5	27.0	18.0	13.5	50.0	28.0	15.0
		26.5	25.0	22.0	12.0	-----	13.5	27.0	13.0	24.0
	bottom	44.0	25.0	26.0	23.0	-----	27.5	-----	22.0	-----

Figure 7. Fish size frequency training answer sheet.

Additional fish sizing information is available on the PISCO website at www.piscoweb.org.