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Kelp Forest Monitoring Program

Annual Report 2006

Natural Resource Data Series NPS/CHIS/NRDS—2013/478



ON THE COVER
Sebastes chrysomelas, black and yellow rockfish, at the Channel Islands.
Photograph by Kelly Moore.

Channel Islands National Park
Kelp Forest Monitoring Program

Annual Report 2006

Natural Resource Data Series NPS/CHIS/NRDS—2013/478

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All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner. This report received informal peer review by subject-matter experts who were not directly involved in the collection, analysis, or reporting of the data. Data in this report were collected and analyzed using methods based on established, peer-reviewed protocols and were analyzed and interpreted within the guidelines of the protocols.

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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 and Yellow Rockfish Complex young of the year
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 Contact
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 San Miguel, Santa Rosa, Santa Cruz, Anacapa and Santa Barbara 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 2005, an additional 16 permanent sites were established to collect base line data from inside and adjacent to four marine reserves that were established in 2003. Sampling results from all 33 sites as mentioned above are included in this report. Kelp forests are considered a "Vital Sign" of ecosystem health for CINP (Davis and Halvorson 1988) and monitoring is supported largely through the NPS Inventory and Monitoring Program.

Observations and results of the 2006 CINP Kelp Forest Monitoring Program 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 last year 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 and the funding was from NRPP funded project mentioned above.

The 2006 monitoring efforts utilized 61 days of vessel time to conduct 1,055 dives totaling 1,000 hours of bottom time. This does not include the dives or bottom time that University of California Santa Barbara's Partnership for Interdisciplinary Studies of Coastal Oceans (UCSB/PISCO) incurred to conduct the visual fish transects. All of the proposed monitoring was completed in 2006. This annual report contains a summary of the methods used to conduct the monitoring in 2006 and a brief description of the sites along with the results. All of the data collected during 2006 can be found summarized in the Appendices A-L in this report.

In 2006, 12 sites had mature *Macrocystis pyrifera* (giant kelp) forests, one site had a developing kelp forest, three sites were in a state of transition, 16 sites were dominated by echinoderms, and one site was about half kelp forest and half dominated by echinoderms. Of the 16 sites dominated by echinoderms, four were dominated by *Strongylocentrotus purpuratus* (purple sea urchins), seven by *S. purpuratus* and *S. franciscanus* (red sea urchins), one by *Ophiothrix spiculata*(brittle stars), one by *O. spiculata* and *S. purpuratus*, and three by *Strongylocentrotus*

purpuratus and *Strongylocentrotus franciscanus* and *Ophiothrix spiculata*. All of the proposed monitoring was completed in 2006.

At Santa Barbara Island, there was a continued decline of kelp forests at all of the sites as well as the surrounding areas at the island. Nearly all of the kelp observed in 2005 did not persist in 2006 and the few areas where kelp persisted, it appeared less abundant. *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus* densities remained high and were similar to last year. Overall there was a decrease in macroalgae in 2006. Five of the six sites were dominated by *S. purpuratus* and *S. franciscanus* and Southeast Sea Lion continued to have an abundance of *Ophiothrix spiculata*. Southeast Reef was kelp forest from 0-40 meters with the remainder of the transect dominated by *S. purpuratus*. In general we feel that the six KFM sites well represent the overall condition of the kelp forests and there is little indication that kelp forests will recover in the near future at this island.

At Anacapa Island, the four new and three original sites represent the island well and have changed little from last year with the exception of Lighthouse. Lighthouse changed from a mature kelp forest in 2005 to an area dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus*. *Strongylocentrotus purpuratus* and *S. franciscanus* densities remained similar at all the sites except for Lighthouse. Algae abundance remained high at Cathedral Cove and Landing Cove, similar to last year. There were notably more algae in other inshore areas around Anacapa this year. However, *S. purpuratus* and *O. spiculata* still appear to dominate many areas along the south side of East Anacapa, and both the south and north sides of middle and West Anacapa Island. Overall, *Strongylocentrotus* spp. abundance slightly increased at Anacapa Island this year.

The kelp forests of Santa Cruz Island remained similar to 2005, but the canopy cover was notably less dense this year. *Strongylocentrotus* spp. increased at Pedro Reef, decreased at Pelican Bay, and remained the same at all the other sites on Santa Cruz Island. Echinoderm densities remained low at Fry's Harbor, which is in a state of transition. Scorpion Anchorage and Pelican Bay both remain dominated by *S. purpuratus*, though their densities are much lower than in recent years. The western third of the island is under-represented by our monitoring program as we don't have any sites west of Gull Island. The kelp forests at that end of the island appeared to remain abundant but seemed less dense, like many other sites this year.

Kelp forests continued to be abundant around Santa Rosa and San Miguel Islands. Mature kelp forests were present at nine of ten sites at these two islands. *Strongylocentrotus franciscanus* densities increased at Hare Rock and *Strongylocentrotus purpuratus* decreased at Miracle Mile. The *Strongylocentrotus* spp. densities remained similar to last year at all Santa Rosa sites.

Acknowledgements

This ecological monitoring program was supported by the U.S. National Park Service in cooperation with the California Department of Fish and Game (CDFG) and the U.S. Department of Commerce, National Oceanographic and Atmospheric Administration (NOAA), Marine Sanctuary Program. Additional funding through the NPS NRPP funded the monitoring of the 16 new monitoring sites from 2005-2007.

We are deeply indebted to the many divers who have participated in this project in 2006 (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 well-trained and qualified 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, 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.

Introduction

The waters of Channel Islands National Park (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 the 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. CINMS overlaps the subtidal portions of the park, and its boundary extends six miles seaward from the park islands. Channel Islands National Park 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 living marine resources within the park and manages them through CDFG.

The KFM Program is part of the long-term ecological monitoring conducted by the Mediterranean Coast Network of the NPS Inventory and Monitoring Program (I&M), which is designed to measure the health of the Park's ecosystems (Davis and Halvorson 1988; Cameron 2006). The objectives of the KFM Program are as follows:

- Identify trends in ecosystem health
- Determine limits of variability
- Diagnose abnormal conditions
- Suggest potential remedial treatments

Following a five-year design study that began in 1982, the KFMP was fully implemented as an Inventory & Monitoring Program prototype "vital sign" in 1987 by the park's resource management division, using the protocol 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. (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. (2001), Kushner et al. (2002), Kushner et al. (2003) describe the 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004 and 2005 monitoring efforts and results, respectively. A review of the Kelp Forest Monitoring Program 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 consists of the addition of 16 new monitoring sites that are to be monitored from 2005-2007 with this funding. These sites were located inside or adjacent to the following four newly established 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 KFMPs existing base line data, and potential anthropogenic impacts. 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 2006, our 25th year of monitoring. It is hoped that these reports will provide some insight into kelp forest dynamics and stimulate further research into the long-term trends and changes in this near-shore ecosystem. We have highlighted some of the most important observations and tried to provide a characterization for each site. Organisms are referred to by genus and species, except when non-indicator species are mentioned where both scientific and common names are used. Common names for the indicator species are cross-referenced to their scientific names in Table 1. Since the design of the kelp forest monitoring program, several genera and species names have been changed. These 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 22nd and October 27th 2006, using the NPS vessel "Pacific Ranger", CDFG vessel "Garibaldi", and NOAA vessel "Shearwater". Data management and entry procedures are described in the Kelp Forest Monitoring Handbook Volume II (Kushner et al. 1997c).

Each site is marked by a 100 m long transect affixed to the rocky substrate. The sampling techniques employed to gather patterns of abundance and age structure are summarized in Table 3. At each station, 24 paired 1 m x 1 m quadrats were systematically arranged along the transect with a random start, 40 continuous and adjacent 1 m x 5 m quadrats, and 24 paired 3 m x 10 m band transects were systematically arranged along the transect with a random start, were used to determine densities and distribution of discrete benthic organisms; 600 random non-adjacent random point contacts (RPCs) were used to determine percent cover of encrusting invertebrates, algae, and substrate composition; four 2 m x 3 m x 50 m fixed transects were used to determine fish abundance; roving diver fish counts with a time component and estimated abundance were used to determine an index of abundance and diversity; videotaped transects provide a record of the site appearance; and size frequency measurements were collected to determine age structure and recruitment cohorts. All animals measured for the natural habitat size frequency distributions were located using a band transect type search method. A general species list was established for each site, noting presence/absence and relative abundance for all positively identified species. Artificial recruitment modules (ARMs) were in place at 11 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$^{TM.}$, 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 bottom 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.

Prior to 2005, 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 monitoring sites, effectively doubling the size of the monitoring program, logistical constraints enabled us to only conduct fish transect and roving diver fish counts once per site this year. However, in addition to the kelp forest monitoring program fish protocol, we initiated and incorporated an additional visual fish transect protocol this year as part of the three year Marine Reserve baseline. This new method for the Kelp Forest Monitoring Program was conducted under a cooperative agreement with University of California at Santa Barbara (UCSB), Partnership of Interdisciplinary Studies Coastal Oceans (PISCO). The methods for this protocol can be located at:

http://piscoweb.org/research/science-by-discipline/ecosystem-monitoring/kelp-forest-monitoring/subtidal-sampling-protoco.

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, and roving diver fish count) during the same visit. During the second and subsequent visits we will often conduct size frequency sampling, transect line repair, and fish protocol for a second time if time allows. On rare occasions the abundance techniques are not completed during our first visit and are completed at subsequent visits as soon as possible. If this happens, it is documented under the site information in this Results section below. If there appears to be large changes in abundance between visits within a sampling season, an additional sampling may be conducted to document these changes. Differences are reported in the Results section below. 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 in 2006 and a summary of the status of each site is presented in Table 4. Twenty four divers (Table 5) collected data on eight five-day cruises, one four-day cruise, and nine two-day cruise between May and October. The 2006 monitoring efforts were conducted with 61 days of vessel time between May and October. The divers logged 1055 dives with 1,000 hours of bottom time. This does not include the dives or bottom time that PISCO incurred to conduct the fish monitoring. All prescribed monitoring data were collected in 2006 except for minimal species list coverage, and fish transects and roving diver fish counts were only performed once per site this year due to the logistical constraints of the new monitoring sites established in 2005. In lieu of only sampling fish one at each site, PISCO continued to sample fish using their protocol as established by the park's cooperative agreement with UCSB.

A brief description of each site is included with the station results below. Complete updated site descriptions can be located in Appendix M and will be added the next edition the KFMP Handbook Volume One.

Complete data summaries from the sampling protocol are listed in the appendices. Mean densities for 1 m quadrats are in Appendix A and represent average counts obtained from 24 paired 1 m x 1 m quadrats or otherwise described as 12-2 m^2 quadrats. Mean densities for 5 m-quadrats in 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 5m-quadrats, and the juvenile densities from the 1m quadrats, unless otherwise noted. Mean densities for band transects in Appendix C represent average counts obtained from 24 paired 3 m x 10 m transects or otherwise described as 12 3 m x 20 m transects. Mean percent cover for random point contacts in Appendix D represent average percent cover for a given organism, group of taxa, or substrate for the 600 points systematically taken along the transect. Percent cover for all categories combined may total more than 100% due to layering (Davis et al., 1997).

Mean densities for fish transects in Appendix E represent the average of four adjacent and continuous 2 m x 3 m x 50 m transects along the transect line.

The Roving Diver Fish Count data are presented in Appendix F. The first page of this Appendix contains the number of observers that sampled for each site, the date that the fish count was conducted, and the total number of species observed. The following pages in Appendix F 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 - 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 non-indicator (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). This field is summarized numerically where 1 = single, 2 = few, 3 = common and 4 = many. The Count field is the average 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. All fish transects and fish counts were conducted between 0900 and 1500 hours unless otherwise noted.

In the site descriptions below, we began using the whole counts in 2003 to describe the abundance of fish as they are better and more consistent at describing fish abundance than descriptive words like common or rare. However, different observers count different numbers of the same species at a site for a number of reasons. We mostly describe fish below with the highest number of fish observed at a site, which is why we use the wording of "up to" or "as many as" XX number of fish were observed.

For each site, it will be noted if and when the UCSB/PISCO fish protocol was conducted. It is important to note that the data collected by the UCSB/PISCO method should not be compared with the KFM fish data as the methodology and location of transects are considerably different. Rather, the data should be used as a separate information source about fish abundances and size at the location. The data collected under the cooperative agreement with UCSB/PISCO is not included in this report, though the park does have a copy of the raw data. All data can be requested by contacting PISCO directly through their website www.piscoweb.org.

Natural habitat size frequency distributions for invertebrates other than gorgonians and *Stylaster (Allopora) californica* are in Appendix G. *Macrocystis pyrifera* size frequency distributions are in Appendix H. Gorgonian and *Stylaster (Allopora) californica* size frequency distributions are in Appendix I. Size frequency measurements taken from the Artificial Recruitment Modules were kept separate from the natural habitat measurements and their distributions are in Appendix J. Species lists for only some locations were collected this year and can be found in Appendix K. Video transects were completed for all locations, and the videotapes are stored at the park's headquarters in Ventura.

Temperature data were collected at 32 sites using TIDBIT^{TM} temperature loggers. The temperature loggers are retrieved and deployed during our regular sampling season of May - October. To expedite report writing we will present 12 months of temperature data from May 30th 2005 – June 1st 2006 (Appendix L). In 2006, temperature data was collected from all 32 sites where loggers were installed. For explanations of any missing data, please see the station results below and/or Appendix L.

Location: Wyckoff Ledge, San Miguel Island
Site #1 SMWL
2006 sampling dates: 9/12.
2006 status: Mature kelp forest.

This site remained a mature *Macrocystis pyrifera* forest with widely spaced large adult plants. Canopy cover was lower than last year and estimated at 50%. Adult, sub-adult, and juvenile *M. pyrifera* densities were 0.38/m², 0.70/m², and 2.9/m² respectively and cover was 47.0% all higher than the past several years, but similar to past years. Understory algae was thick and diverse as usual for this site and increased from last year. *Eisenia arborea* were common on the tops of large rocks near the edge of the kelp forest and was even present along the main transect this year with adults and juveniles both increasing to 0.13/m² and none were observed on RPCs.

Adult and juvenile *Pterygophora californica* were common with densities of 0.67/m² and 0.33/m² respectively and a cover of 15.0%, relatively high for this site. Miscellaneous brown algae remained at high cover for the second year at 12.2%. *Desmarestia* spp. was common with a cover of 14.2%, similar to last year. *Cystoseira* spp. was present at a cover of 1.3%. *Dictyoneuropsis reticulata* was common at the site and we counted it on 1 m quadrats for a density of 1.5/m². Green algae cover was 0.2%, similar to past years. Miscellaneous red algae increased to 64.7%, notably higher than last year but similar to past years. *Gigartina* spp. cover was 0.5%. Articulated coralline algae cover was relatively high at 17.8%. Encrusting coralline algae was present at a cover of 23.2%, but was similar to previous years. Bare substrate decreased to 4.8%, relatively low for this site and the lowest cover recorded since 1986.

The most common miscellaneous invertebrate, excluding *Ophiothrix spiculata,* was present at a cover of 8.8% lower than the past five years and consisted mostly of hydroids. There was a noticeably decrease in amphipod tube mats and hydroids which made up most of this category last year. *Phragmatopoma californica* remained relatively uncommon with none observed on RPCs for the second year. Sponge cover was 0.7%. *Tethya aurantia* were abundant with a density of 0.19/m^2, similar to past years. Tunicate cover was 2.5%. *Styela montereyensis* density was 0.13/m^2, similar to last year. Miscellaneous bryozoan cover was 9.8% similar to last year. *Corynactis californica, Balanophyllia elegans* and *Astrangia lajollaensis* cover were 0.3%, 3.0% and 0.0% respectively and all similar to past years. *Tealia lofotensis* were abundant on the tops and sides of rocks, with a density of 0.32/m^2, similar to past years. Similar to past years gorgonians were absent or rare with none sampled on band transects and only one or two *Lophogorgia chilensis* observed at the site. *Diopatra ornata* were moderately abundant, similar to past years, with a cover of 11.7%.

Patiria miniata density was 2.3/m^2, similar to last year. As usual for this site, *Pisaster giganteus* were common on the rocky outcrops within the transect area, but there were few stars directly along the transect where they are counted in quadrats. Their densities on 1 m quadrats and 5 m quadrats were 0.042/m^2 and 0.11/m^2 respectively. *Pycnopodia helianthoides* density was 0.014/m^2, lower than last year. The leather star, *Dermasterias imbricata*, was common. *Parastichopus parvimensis* density was 0.13/m², similar to past years they are notably large at this site. No sea star wasting disease was observed this year.

Strongylocentrotus franciscanus tends to be patchy and dense in their distribution at this site. *S. franciscanus* and *S. purpuratus* densities both increased from very low densities in 2005 and were 2.3/m² and 0.042/m² respectively, similar to past years. Juvenile *S. franciscanus* and *S. purpuratus* were present under the spine canopy of conspecifics, but were relatively rare. No sea urchin wasting disease was observed.

Haliotis rufescens density remained high at 0.039/m², similar to last year, but still relatively high for this site. A total of 115 *H. rufescens* were located for size frequency measurements, similar to the number found last year. David Kushner has consistently been the observer for size frequency measurements the past several years and the entire transect area has been covered for size frequency measurements. Few small *H. rufescens* were found with two less than 100 mm measured during size frequencies, indicating little recent recruitment. *Kelletia kelletii* were abundant as usual for this site at a density of 0.28/m². *Lithopoma gibberosa* were common with a

density of 0.83/m^2, the highest density recorded at this site since we began monitoring them in 1985. Rock crabs, *Cancer* spp. were common. *Cryptochiton stelleri,* gumboot chitons, continued to be relatively abundant at this site. They appear to have been increasing and four were observed during band transects. There were several kelp plants that had an abundance of the *Melibe leonina,* a nudibranch that is sometimes particularly abundant in aggregations. The snail *Bursa californica* was common and 12 were observed during band transects.

Fish were moderately abundant and diverse at this site, similar to past years. *Coryphopterus nicholsii* density was 0.21/m² with up to eight observed. *Oxylebius pictus* were uncommon with up to five adults observed. One female and one male *Semicossyphus pulcher* were observed. Embiotocidae and *Sebastes* spp. were abundant at this site, similar to past years. Up to five juvenile and five adult *Embiotoca jacksoni* were observed. One juvenile and one adult *Rhacochilus vacca* were observed. *Embiotoca lateralis* were common with up to 17 adults and six juveniles observed. Three adult *Hypsurus caryi,* rainbow surfperch, were observed. Adult *Sebastes mystinus* were common with up to 24 observed. Up to eight and seven juvenile *Sebastes atrovirens* were observed. One adult *Sebastes serranoides* was observed. One adult *Sebastes serriceps* was observed. *Sebastes chrysomelas* were common with up to nine adults observed. Two large *Sebastes miniatus,* vermillion rockfish, were observed. *Sebastes caurinus,* copper rockfish, were common with up to four adults observed. Two adult *Sebastes auriculatus,* brown rockfish, were observed. One *Sebastes carnatus,* gopher rockfish, was observed. Two *Ophiodon elongatus,* lingcod, were observed. Up to eight *Brachyistius frenatus,* kelp surfperch, were observed. One *Leiocottus hirundo,* lavender sculpin, was observed. Up to 11 *Atherinops affinis,* topsmelt, were observed. *Aulorhynchus flavidus,* tubesnouts, were the most abundant fish with up to 365 observed. Roving diver fish count was conducted on September 12th by four divers observing 22 species.

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

Location: Hare Rock, San Miguel Island
Site #2 SMHR
2006 sampling dates: 06/21, 9/14.
2006 status: Mature kelp forest.

This site continued to mature as a kelp forest even though there are still high density patches of *Strongylocentrotus franciscanus*. *Macrocystis pyrifera* canopy covered 100% of the transect and was thick with mostly healthy plants. Sub canopy algae were diverse and more abundant than last year. Adult and subadult *M. pyrifera* densities were 0.48/m² and 0.55/m² respectively and cover was 14.2%, similar to last year. Juvenile *M. pyrifera* density was 4.9/m², the highest recorded at this site since monitoring began in 1983. Green algae, consisting mostly of *Ulva* sp., was relatively abundant increasing to a cover of 20.3%. *Desmarestia* spp. was abundant with a cover of 33.5%, this algae is subject to high seasonal and temporal variations. No adult or juvenile *Eisenia arborea, Pterygophora californica* or *Laminaria farlowii* were observed on quadrats or RPC's this year. *Cystoseira* spp. remained relatively abundant, but was not observed on RPC's, similar to last year. Some of the *Cystoseira* sp. was in its reproductive phase. Miscellaneous brown algae cover was 1.5%, similar to last year. Miscellaneous red algae were

moderately abundant and cover increased to 16.0%. *Gigartina* spp. cover was 7.3%, similar to last year. *Gelidium* spp. was present with a cover of 0.2%, the first time since 1993. Articulated and encrusting coralline algae covered 0.5% and 44.7% respectively, similar to previous years. Bare substrate cover was 9.7% the lowest recorded since 1998 and possibly a result of the increase in understory algae.

The most common miscellaneous invertebrates on RPCs were *Spirobranchus Spinosus* and hydroids. This category covered 10.3% of the bottom, similar to past years. *Corynactis californica* cover was 1.3%. *Balanophyllia elegans* and *Astrangia lajollaensis* cover was 0.5% and 1.7% respectively. *Tethya aurantia* density was 0.036/m^2, similar to past years. Miscellaneous bryozoan cover was relatively high for this site at 20.3%, and consisted mostly of *Membranipora* sp. *Diaperoecia californica* was rare and was not observed on RPC's. *Diopatra ornata* cover was 1.3%, similar to the past two years. Tunicate cover was 0.2%. *Styela montereyensis* density was 0.042/m^2, similar to the past two years but still relatively high for this site.

Strongylocentrotus franciscanus remained in high density patches and several urchin fronts were observed. *Strongylocentrotus purpuratus* was scattered amongst the *S. franciscanus* spine canopy. *Strongylocentrotus franciscanus* density increased this year to 17/m^2, with a noted presence of larger individuals at this site. *Strongylocentrotus purpuratus* density remained low at 0.46/m^2, similar to last year and one of the lower densities recorded at this site. Juvenile *Strongylocentrotus* spp. were present. No sea urchin wasting disease was observed.

Pisaster giganteus were counted on both 1 m quadrats and 5 m quadrats with densities of 0.42/m^2 and 0.11/m^2, similar to last year. *Patiria miniata* remained abundant and density was relatively high at 3.8/m^2, similar to last year. *Pycnopodia helianthoides* were abundant with a density of 0.13/m^2, similar to last year. All sizes of *P. helianthoides* were observed. *Parastichopus parvimensis* were not present on quadrats for the second consecutive year. No sea star wasting disease was observed.

Small fresh *Haliotis rufescens* shells remained relatively uncommon, similar to the previous three years indicating low recruitment. No *H. rufescens* were observed on band transects. *Kelletia kelletii* were present in low numbers with a density of 0.0028/m^2. *Crassadoma giganteus* was present with a density of 0.0014/m^2. *Aplysia californica* were not present on band transects this year. *Cypraea spadicea* density was 0.54/m^2. *Megathura crenulata* were rare with only one observed and none on band transects.

Similar to past years at this site fish were abundant and diverse. *Coryphopterus nicholsii* were not observed on quadrats for a density of 0.0/m^2, but were common off the main transect with up to 22 observed. *Oxylebius pictus* were common with up to 22 adults observed. *Oxyjulis californica* were moderately abundant with up to 53 adults and no juveniles observed. Two males and four female *Semicossyphus pulcher* were observed. *Chromis punctipinnis* were present with up to 23 adults and no juveniles observed. *Embiotoca jacksoni* were present with up to five adults and no juveniles observed. *Embiotoca lateralis* were common with up to 22 adults and 15 juveniles observed. *Rhacochilus vacca* were common with up to eleven adults and three juveniles observed. One adult *Rhacochilus toxotes*, rubberlip surfperch, was observed.

Brachyistius frenatus were present with up to 12 observed. *Hypsurus caryi,* rainbow surfperch, were present with six adults observed. *Sebastes mystinus* were abundant with up to 32 adults observed. Adult *Sebastes atrovirens* were present with up to 12 observed. Two adult *Sebastes serranoides* were observed. Nine *Sebastes chrysomelas,* black and yellow rockfish, were observed. One large adult *Sebastes caurinus,* copper rockfish, was observed. Two adult *Ophiodon elongatus,* ling cod, were observed. One *Scorpaenichthys marmoratus,* cabezon, was observed. The most abundant fish was a large school of *Aulorhynchus flavidus,* tubesnouts, with up to 1035 observed. Roving diver fish count was conducted on June 21st by three divers observing 22 species.

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

Location: Johnson's Lee North, Santa Rosa Island
Site #3 SRJLNO
2006 sampling dates: 8/9, 8/10, 9/25.
2006 status: Mature kelp forest.

Similar to Johnson's Lee South there was less canopy forming *Macrocystis pyrifera,* though density of adult was similar to last year. At this site we often see variable canopy cover even if adults are present. The canopy was estimated at 50% down from 100% of last year. The site appeared as though it had been subjected to some scouring compared to last year. Adult, subadult, juvenile and cover of *M. pyrifera* were all similar to last year at 0.41/m², 0.13/m², 3.8/m², and 10.0% respectively. Adult *Eisenia arborea* were moderately abundant on the upper edge of the shelf just inshore of the transect line, but densities were low directly along the transect with no adults and juvenile observed on quadrats, and none observed on RPCs, similar to past years. *Pterygophora californica* density remained similar to last year for adults at 0.21/m² and increased for juveniles to 0.29/m². *Laminaria farlowii* were rare directly along the transect with a density of 0.13/m² for adults, no juveniles, and a cover of 0.3%, similar to last year. However, just off the transect adults and juveniles were common in the flat, low-lying areas. *Cystoseira* spp. were moderately abundant in areas just off the main transect line with a cover of 3.2%, and most of the plants were small. *Desmarestia* spp. was common, but none were observed on RPCs. Miscellaneous red algae cover was 31.2%, similar to past years. *Gigartina* spp. cover was 0.2%, similar to recent years. Articulated and encrusting coralline algae cover were 2.8% and 12.3% respectively, similar to past years. Bare substrate was 5.0%, similar to last year.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata,* was 17.2% and consisted mostly of Amphipod tube mats. No *O. spiculata* were observed. *Styela montereyensis* remained abundant with a density of 3.6/m². Tunicate cover also remained high at 19.5%. Sponge cover was less than last year but similar to previous years at 1.0%. *Tethya aurantia* remained abundant at 0.15/m^2, similar to last year. *Phragmatopoma californica* were less abundant than the past several years with a cover of 1.7%. Miscellaneous bryozoans were present with a cover of 18.3%, similar to past years. *Diaperoecia* californica was present for a cover of 1.0%. *Corynactis californica* were common with a cover of 0.7%, lower than recent years. *Balanophyllia elegans* and *Astrangia lajollaensis* had covers of 0.7% and 0.7% respectively.

Strongylocentrotus spp. remained at low densities along the transect. *Strongylocentrotus franciscanus* density was 1.8/m², similar to recent years. *Strongylocentrotus purpuratus* density was 0.67/m², also similar to recent years. *Strongylocentrotus* spp. were patchy and the few *S. purpuratus* that were present were typically in small depressions on the tops of rocky reef areas. Only 143 *S. purpuratus* could be found for size frequency measurements. Most of the *Strongylocentrotus* spp. were in crevices. In some areas, juvenile *Strongylocentrotus* spp. were moderately abundant in the spine canopy of conspecifics. No sea urchin wasting disease was observed.

Pycnopodia helianthoides density remained high at 0.11/m^2, similar to the past four years. Both small and large *P. helianthoides* were common. *Patiria miniata* density was 0.38/m^2, similar to the past four years. *Pisaster giganteus* densities continued to gradually decline, with densities on quadrats and 5-meter quadrats at 0.17/m^2 and 0.12/m^2 respectively. *Parastichopus parvimensis* density was 0.083/m^2, similar to previous years. One *Patiria miniata* was observed with wasting disease on September 25th.

Cypraea Spadicea density was relatively high at 0.79/m². No *Megastraea undosa* were observed along the transect this year. In the early 1990s, very large *L. undosum* were common, but they have gradually declined. *Kelletia kelletii* were rare with a density of 0.0014/m^2, similar to previous years. *Megathura crenulata* density was 0.0069/m², similar to past years. *Crassadoma giganteum* have steadily increased since 2001 at this site to the present density of 0.029/m². No *Aplysia californica* were observed along the transect this year, similar to Johnson's Lee South. Twenty five red abalone, *Haliotis rufescens* were found along the transect and measured for size frequencies. Their density increased to 0.0125/m², similar to last year. *Haliotis rufescens* covered a large size distribution and were found in the same cracks and crevices as they were observed last year. David Kushner remembers that some of these cracks and crevices were utilized by *H. rufescens* in the early 1990s before they declined to near zero and now are being utilized again. One fresh *H. rufescens* shell of 78 mm was found. *Tealia lofotensis* continued to be relatively abundant for this site at 0.044/m².

Fish were moderately diverse and abundant, similar to past years. *Coryphopterus nicholsii* were present at 0.13/m² with up to 16 observed. *Oxylebius pictus* were common with up to 33 observed. Adult *Chromis punctipinnis* were common with up to 47 adults and 38 juveniles observed. *Oxyjulis californica* were abundant with up to 25 adults and 39 juveniles observed. Up to three female and one male *Semicossyphus pulcher* were observed. Six adult *Hypsypops rubicundus* were observed and the adult with the nest at meter 72 was present as he has been since at least 1990. *Paralabrax clathratus* were relatively common for this site with up to eight adults observed. Two adult *Girella nigricans* were observed. *Embiotoca jacksoni* and *Embiotoca lateralis* were both abundant as per usual for this site. Up to 18 adults and five juveniles *Embiotoca jacksoni* were observed. Up to ten adult and four juvenile *Embiotoca lateralis* were observed. Five adult *Rhacochilus vacca* were observed. Up to 11 *Hypsurus caryi*, rainbow surfperch, were observed. Seventeen *Brachyistius frenatus*, kelp surfperch, were observed. One adult *Sebastes mystinus* was observed. *Sebastes atrovirens* were common with up to 62 adults and seven juveniles observed. Five adult *Sebastes serriceps* were observed. Up to eight adult and two juvenile *Sebastes serranoides* were observed. These were the first juveniles of this species

observed this year and overall there were few seen at the other sites. Up to 14 adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. Three adult *Sebastes carnatus*, gopher rockfish, were observed. There were some kelp, gopher, black and yellow, and copper rockfish young of the year complexes (KGB) present with up to 4 observed. Cottidae species were common with one *Leiocottus hirundo*, lavender sculpin, two *Artedius harringtoni*, scalyhead sculpin, and one *Ornothopias triacis*, snubnose sculpin, observed. One adult and eleven juvenile *Heterostichus rostratus*, giant kelpfish, were observed. Roving Diver Fish Count was conducted on August 9th by five divers counting 29 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. PISCO fish transects were performed on October 17th.

All of the ARMs were monitored for indicator species. Similar to past years the ARM bricks were covered with encrusting sponges and tunicates **(**mostly *Cystodytes lobatus* and *Tridemnum* sp.). Similar to the past three years, three octopi were observed in ARMs this year. No *Phyllolithodes papillosus*, heart crabs, were observed in the ARMs this year. They have been observed periodically in the ARMs at Johnson's Lee South since 1997 and we believe it is a range extension for this northern species.

No *Haliotis rufescens* were found in the ARMs this year, the first year none were observed since 1999. However, this year there were as many if not more *H. rufescens* around the transect than last year. *Cypraea Spadicea* remained relatively abundant at 8.3/ARM, but lower than last year. *Crassadoma giganteum* were more abundant in the ARMs than in recent years with 2.6/ARM, similar to what we observed at Johnson's Lee South. *Patiria miniata* density remain relatively high for this site at 3.8/ARM, similar to recent years and with a mean size of 35 mm suggesting little recruitment. *Pisaster giganteus* density was relatively low at 0.90/ARM, a gradual decline since 2002. *Pycnopodia helianthoides* density was relatively high at 1.0/ARM, similar to Johnson's Lee South. *Strongylocentrotus franciscanus* density remained high at 26/ARM, with a mean size of 54 mm. *Strongylocentrotus purpuratus* abundance was higher than the past several years, but remained low for the site at 5.9/ARM with a lower mean size of 17mm, indicating some recent recruitment. *Parastichopus parvimensis* <10 cm were present at a density of 0.22/ARM and individuals >10 cm were present at a density of 0.33/ARM. This is the first time adults *P. parvimensis* have been observed in the ARMs since 2003 and the juveniles since 2000.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Johnson's Lee South, Santa Rosa Island
Site #4 SRJLSO
2006 sampling dates: 8/9, 8/10, 9/11.
2006 status: Mature kelp forest.

This site has changed considerably compared to last year and in between our two subsequent visits during the 2006 monitoring year. Large canopy forming *Macrocystis pyrifera* were less common as canopy was estimated at 10% compared to 65% last year. This produced more favorable light conditions for understory algae for which there was an observed increase in many categories especially the juveniles. The dense understory algae at this site are similar to past

years. Adult *M. pyrifera* density was similar to last year at 0.14/m². *Macrocystis pyrifera* subadult and juvenile densities increased to 0.51/m² and 12/m² respectively and cover increased to 18.2%. Though there were few *Eisenia arborea* directly along the transect where quadrats are conducted, adults and juveniles were common and noticeably abundant on the tops of high relief areas along the transect. Adult and juvenile densities were 0.083/m^2 and 0.0/m^2 respectively and cover was 1.2%, similar to last year. Adult and juvenile *Pterygophora californica* densities were 0.083/m² and 0.33/m², and cover of 0.7%. Adult and juvenile *Laminaria farlowii* densities were 0.58/m² and 0.46/m², respectively, and cover increased to 8.5%. Miscellaneous brown algae cover was 0.67%. *Dictyoneuropsis* spp. was common. *Desmarestia* sp. was present with a cover of 2.8%, higher than last year. Small *Cystoseira* spp. were common and had a cover of 0.3%. Cover of miscellaneous red algae was higher than the past two years at 46.5%, but similar to years prior. *Gigartina* spp. (mostly *G. corymbifera*) was moderately abundant on the northern end of the transect and had a cover of 12.5%. Articulated coralline and encrusting coralline algae cover were 3.3% was and 11.0% respectively, similar to recent years. Bare substrate cover was 17.0%, similar to past years.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, on RPCs covered 29.5%, similar to last year. This category consisted mostly of hydroids and amphipod tube mats. *Ophiothrix spiculata* were absent along the main transect. *Styela montereyensis* was common at a density of 0.75/m², similar to Johnson's Lee North. Tunicates covered 4.0% of the bottom, similar to last year. Bryozoans remained abundant this year with a cover of 15.8%. *Diaperoecia californica* decreased to 0.5%. Similar to past years, *D. californica* was common on the steep parts of high relief rocks, but is uncommon directly along the transect. *Tethya aurantia* density remained at high levels at 0.27/m². *Astrangia lajollaensis* and *Balanophyllia elegans* cover were 1.3% and 2.2% respectively, similar to previous years. *Corynactis californica* cover was 2.5%, similar to previous years. *Diopatra ornata* cover was 8.3%, similar to the past two years. *Lophogorgia chilensis* density was 0.057/m^2, similar to last year, but still relatively low for this site and the lowest density recorded since 1984. One *Muricea californica* was observed on band transects for a density of 0.0014/m². *Tealia lofotensis* density remained relatively high at 0.16/m^2, similar to last year.

Strongylocentrotus franciscanus density remained at low levels at 0.058/m². Most of *S. franciscanus* were found off the main transect in cracks and crevices and many were large and notably commercially legal size. *Strongylocentrotus purpuratus* density remained low at 0.58/m^2, similar to the past four years. Juvenile *Strongylocentrotus* spp. were common. No sea urchin wasting disease was observed.

Pycnopodia helianthoides density remained high at 0.19/m^2, similar to recent years and all sizes were present with juveniles being common. *Patiria miniata* density remained high at 3.1/m², similar to other sites this year. *Pisaster giganteus* densities were low and were counted in both quadrats and 5-meter quadrats with densities of 0.0/m² and 0.020/m² respectively and both the lowest densities recorded since monitoring began. *Parastichopus parvimensis* density remained low at 0.042/m^2, similar to recent years. No sea star wasting disease was observed.

Unlike Johnson's Lee North, *Haliotis rufescens* density decreased to 0.0014/m². Only four *H. rufescens* were measured for size frequencies all of which were large adults. One fresh *H. rufescens* shell at 111 mm and one fresh *Haliotis assimilis* at 50 mm were found. *Cypraea Spadicea* density was 0.25/m², similar to past years. *Kelletia kelletii* density was 0.014/m², similar to past years. *Crassadoma giganteum* density was 0.017/m², relatively low for this site. *Megathura crenulata* decreased slightly to 0.0028/m².

Heart Crabs, *Phyllolithodes papilla* were commonly observed in the ARMs this year. These are rare this far south, but have been observed in the ARMs at this site in recent years. As mentioned several years ago, this is likely a range extension for this species. Several large and small individuals were present indicating possible recent recruitment.

Fish were abundant and diverse at this site, similar to past years. *Coryphopterus nicholsii* were present with a density of 0.38/m² and up to 18 observed, similar to past years. *Oxylebius pictus* were abundant with up to 11 counted. *Oxyjulis californica* were the most abundant fish at this site with up to 122 adults and six juveniles observed. *Chromis punctipinnis* were relatively abundant with up to 21 adults and no juveniles observed. Twelve female, no juveniles, and four male *Semicossyphus pulcher* were observed. No *Halichoeres semicinctus* were observed. One large *Paralabrax clathratus* was observed. Adult *Girella nigricans* were present with up to 4 observed. Similar to the north site, *Embiotoca jacksoni* and *Embiotoca lateralis* were abundant. Eleven adult and three juvenile *E. jacksoni* were observed. Up to 25 adult and 10 juvenile *E. lateralis* were observed. *Rhacochilus vacca* were relatively abundant with up to eight adults and one juveniles observed. *Brachyistius frenatus,* kelp surfperch, were not as abundant this year, possibly due to the lack of canopy with up to seven observed. Up to 17 adult *Rhacochilus toxotes,* rubberlip surfperch were observed. One *Hypsurus caryi,* rainbow surfperch, was observed. Up to five adult *Sebastes mystinus* were observed. Up to three adult and one juvenile *Sebastes serranoides* were observed. Up to three adult *Sebastes serriceps* were observed. There were high numbers of *Sebastes atrovirens* observed, which were frequently in the crevice habitat, with up to 47 adults and four juveniles observed. There were some KGBs present with up to 10 observed. Up to 17 adult *Sebastes chrysomelas,* black and yellow rockfish, were observed. One *Sebastes carnatus*, gopher rockfish, was observed. One large adult *Caulolatilus princeps,* ocean whitefish, was observed. Adult *Medialuna californiensis,* halfmoon, were common with up to 21 observed. One *Artedius corallinus*, coralline sculpin, was observed. One *Ornothopias triacis,* snubnose sculpin, was observed. Roving Diver Fish Count was conducted on August 9th by four divers counting 25 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on October 16th.

Six ARMs were monitored for all indicator species, one ARM was broken up and repaired and two cages were replaced. The ARM that was repaired was given a new number tag (#2764) to replace the original tag that was missing.

We continue to observe heart crabs, *Phyllolithodes papillosus* in the ARMs and nine were observed this year, more than we have seen in the past. These measured 23, 36, 41, 54, 35, 51, 43, 41 mm in carapace length, and one not measured. We have observed this species in the

ARMs at this site in 1997, 2002, 2003, 2004, 2005 and 2006 and we believe this may be a range extension for this species.

Three *Haliotis rufescens* were observed in the ARMs for a density of 0.50/ARM, similar to past years. *Cypraea Spadicea* density was 4.5/ARM, similar to recent years. One *Kelletia kelletii* was observed at 0.17/ARM. *Megathura crenulata* were observed with density of 0.50/ARM, similar to past years. *Crassadoma giganteus* density was 2.3/ARM, relatively high for this site. *Patiria miniata* density and mean size both increased at 10.7/ARM and 51 mm respectively. *Pisaster giganteus* were present at 2.2/ARM with a mean size of 31mm, similar to past years. *Pycnopodia helianthoides* density was 3.0/ARM, the highest recorded in the ARMs since we have been monitoring this species at this site. Their mean size was 101mm, similar to past years. *Strongylocentrotus franciscanus* density and mean size remained similar to last year at 39/ARM and 54mm respectively. Similar to past years, *S. purpuratus* were observed at 12/ARM and a mean size of 32mm. No *Parastichopus parvimensis* <10 cm were observed in the ARMs. *Parastichopus parvimensis* >10 cm were at lower levels as well at 0.5/ARM. Although *P. parvimensis* was present at low levels there were two *P. californicus* <10 cm observed in the ARMs this year indicating recent recruitment of this cooler water species.

Last year we placed a temperature logger at both ends of the transect to attempt to standardize the location of the logger stakes at each of the sites. The temperature loggers were both retrieved and both deployed again this year. The temperature loggers at both ends were within 0.02 degrees centigrade of each other and therefore we believe this is a small enough difference to justify moving the logger to the beginning of the transect to help standardize this site with the other sites.

Location: Rodes Reef, Santa Rosa Island
Site #5 SRRR
2006 sampling dates: 06/22.
2006 status: State of transition.

This site changed dramatically from last year and is nearly devoid of adult *Macrocystis pyrifera* for the first time in three years. Only 21 *M. pyrifera* adults were observed and most were either small and/or unhealthy. There was no canopy cover over the transect, noticeably lower than last year. Old mature intact adult holdfasts were common on the bottom from plant that had died during the past year. Since the holdfasts are still present, it does not appear that storms ripped the plants out. We speculate that the plants could have possibly died from the apparent heavy epiphytic bryozoan (*Membranipora* sp.) cover on the blades. *Cypraea Spadicea* were feeding upon many of the holdfasts. Adult *M. pyrifera* density decreased to 0.010/m², less than the past two years. Subadult and juvenile *M. pyrifera* densities were 0.0/m² and 0.50/m² respectively and cover was recorded at 2.3%. No *Eisenia arborea, Pterygophora californica, Cystoseira* spp., *Laminaria farlowii or Desmarestia* sp. were observed along the transect, similar to last year. Miscellaneous red algae cover notably increased from last year to a cover of 37.8% which was to be expected with favorable light conditions created by less *M. pyrifera* canopy cover. *Gigartina corymbifera* was common and the cover for *Gigartina* spp. increased to 7.0%, the highest recorded at this site since 1985. In general, this site has had an abundance of understory red algae since 1983 and the site seems to have returned to this state after two years of relatively low

abundance for this category. *Desmarestia* spp. were common with a cover of 4.5% but most individuals were small. Similar to last year and at other sites this year, no miscellaneous plants (brown filamentous diatoms) were observed on RPC's. Articulated coralline algae were uncommon with a cover of 0.2%. Encrusting coralline algae continued to decline for the third consecutive year and covered 22.0% of the bottom, the lowest recorded since 1990.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata*, increased to 13.7%, similar to recent years. The most common miscellaneous invertebrates were hydroids. *Diopatra ornata* were abundant in the low lying patches where they have been observed in the past with a cover of 4.2%. They were notably larger than last year, which is expected from the recent recruitment event. *Astrangia lajollaensis* remained abundant with a cover of 10.2%, similar to past years. *Balanophyllia elegans* were abundant with a cover of 6.7%, similar to past years. *Corynactis californica* was common but was not observed along the main transect line during RPC's. Miscellaneous bryozoan cover remained high with a cover of 19.5%. The bryozoans were abundant and diverse and most notable were large patches of *Costazia costazi* and *Membranipora* spp. There were also some large patches of the fluted bryozoan *Hippodiplosia insculpta*. *Diaperoecia californica* was common on the steep sides of rocky relief mostly off the main transect, and none were recorded on RPCs. *Tealia lofotensis* density was 0.0403/m^2, similar to past years. *Telia coriacea* and *Telia colombiana* were also common, typical for this site. *Lophogorgia chilensis* were rare along the transect and none observed on band transects. Sponges covered 2.8% of the bottom, similar to the past two years. *Leucosolenia eleanor* were abundant and notably large. *Tethya aurantia* were moderately abundant at 0.13/m^2, similar to past years. The gray puffball sponge, *Tetilla arb* was common. *Styela montereyensis* were common at 0.42/m^2, an increase from last year. Tunicate cover was 2.3%.

Strongylocentrotus franciscanus density was 3.1/m^2 relatively low for this site, but similar to the past three years. *Strongylocentrotus purpuratus* density remained low at 0.67/m^2, similar to the past five years. Although densities remained low there were notably large *Strongylocentrotus* spp. present at this site and they were more out in the open as opposed to the confined to a crevice which often occurs at these low densities. Juvenile *Strongylocentrotus* spp. were rare indicating little recruitment. No *Lytechinus anamesus* were observed on band transects, similar to the last several years. No sea urchin wasting disease was observed.

No *Ophiothrix spiculata* were observed on RPCs similar to last year. *Patiria miniata* density remained high at 5.4/m^2, the highest density recorded since monitoring began at this site in 1983. *Pisaster giganteus* were counted on both quadrats and 5-meter quadrats, with densities of 0.38/m^2 and 0.36/m^2 respectively and similar to recent years. *Pycnopodia helianthoides* density was relatively high and similar to last year at 0.160/m^2. Large *Parastichopus parvimensis* were present in low abundance on the western/rocky half of the transect, but none were observed in quadrats this year (0.0/m^2), similar to past years. These continue to be some of the largest *P. parvimensis* we have observed anywhere on the islands. No sea star wasting disease was observed this year.

One live 155 mm *Haliotis rufescens* was observed as was one fresh shell approximately 35 mm. This was the first live red abalone that has been observed at this site in many years. *Kelletia kelletii* density was 0.021/m^2, similar to past years. No *Megastraea undosa* were observed and

Lithopoma gibberosa were rare with none sampled in quadrats and only six found for size frequency measurements. *Megathura crenulata* continued to decline for the third year to a density of 0.0056/m^2, relatively low for this site. Most were present on the western/rocky end of the transect and only 15 were found for size frequencies this year. *Aplysia californica* were rare, and none were observed on band transects this year. *Cypraea Spadicea* were common at the site at a density of 0.13/m^2 and many were out in the open feeding on the dead holdfasts.

Overall, fish abundance was notably less abundant than in recent years. There were not many juvenile species recorded, indicating a year of little recruitment. Similar to previous years, fish were concentrated at the western/rocky end of the transect. *Coryphopterus nicholsii* decreased with none observed on quadrats and 12 counted on roving diver fish counts. *Oxylebius pictus* were present with up to 23 counted. No *Chromis punctipinnis* or *Oxyjulis californica* were observed this year. Four female and two male *Semicossyphus pulcher* were observed. After the Roving Diver Fish Count there were seven large *S. pulcher* observed displaying territorial behavior. Up to three adult *Paralabrax clathratus* were counted, at least two were large. Five adult and no juvenile *Embiotoca jacksoni* were observed. Up to 10 adult *Embiotoca lateralis* and two juveniles were observed. Two adult *Rhacochilus vacca* were observed. No *Brachyistius frenatus*, kelp surfperch, were observed this year, which is not surprising due to the lower abundance of *M. pyrifera*. Overall *Sebastes* spp. were moderately abundant at this site. Up to 24 adult *Sebastes mystinus* were observed. *Sebastes atrovirens* were moderately abundant with up to 20 adults and 1 juvenile observed. One adult *Sebastes serranoides* was observed. *Sebastes melanops,* black rockfish, were present with up to four adults observed. One adult *Sebastes carnatus,* gopher rockfish, three adult *Sebastes chrysomelas,* black and yellow rockfish, and four adult *Sebastes caurinus,* copper rockfish, were observed. One KGB was observed. Two adult *Caulolatilus princes,* ocean whitefish, were observed. Two *Scorpaenichthys marmoratatus,* cabezon, and two *Ophiodon elongates,* lingcod, were observed. *Artedius corallinus*, coralline sculpin, were present with up to 2 observed. One *Ronquil* spp. was observed. Roving diver fish count was conducted on June 22nd by four divers observing 20 species of fish.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Gull Island, Santa Cruz Island
Site #6 SCGI
2006 sampling dates: 6/23, 7/10, 7/11.
2006 status: Mature kelp forest.

This site remained a mature kelp forest with large widely spaced *Macrocystis pyrifera* plants and a moderate understory. The *M. pyrifera* canopy cover was estimated at 35% and the blades were approximately 50% healthy and 50% covered with epiphytic bryozoan *Membranipora* spp., similar to what we have observed elsewhere. There was a decrease in canopy cover which allows for more favorable light conditions for understory algae. *Macrocystis pyrifera* adult and subadult densities decreased to 0.19/m^2 and 0.025/m^2 respectively, while juvenile and cover increased to 1.4/m^2 and 31.0% respectively. Small adult *Eisenia arborea* were observed at the site but only juveniles were observed on quadrats with a density of 0.17/m^2 and cover was recorded at 1.5%. No *Pterygophora californica* were observed on quadrats or RPC's this year, but they were common in the low lying areas. No *Laminaria farlowii* was observed this year. Neither

Cystoseira spp nor *Desmarestia* spp were observed on RPC's this year, similar to previous years. However, several small *Cystoseira* sp. were observed within the transect area. Miscellaneous red algae increased possibly due to favorable light conditions to a cover of 44.8%, the highest recorded at this site since monitoring began in 1982. Green algae cover was 0.7%. Miscellaneous brown algae cover was of 0.5%. Articulated and encrusting coralline algae covers were similar to past at 1.3% and 39.0% respectively. Bare substrate cover remained low at 1.2%, similar to recent years.

The most common miscellaneous invertebrates on RPC's were hydroids. Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata*, decreased to 18.7%. Overall, Encrusting invertebrates were more abundant this year. *Corynactis californica* cover was 4.3%, similar to recent years. *Balanophyllia elegans* and *Astrangia lajollaensis* cover were 3.2% and 1.8% respectively. Similar to past years, *Diopatra ornata* were common in the low-lying sandy areas of the transect, but were rare directly along the transect with a cover of 4.2%. Miscellaneous bryozoans remained abundant with a cover of 19.8%, similar to the past three years. Similar to last year, the most common bryozoans were *Membranipora* spp., *Diaperoecia californica*, *Phidolopora pacifica*, and *Costazia costazii*. *Diaperoecia californica* cover remained relatively high at 5.5%, similar to the past three years. Sponges and tunicates were more abundant than past years with covers of 3.7% and 4.2% respectively, both the highest recorded at this site. *Lophogorgia chilensis* density remained relatively low for this site at 0.036/m^2. *Stylaster californica* density was similar to last year at 0.046/m^2, relatively low compared to recent years. However, there was no noticeable change in abundance and this is most likely a sampling artifact due to patchiness. Both large and small colonies of *S. californica* were common. *Tethya aurantia* density remained high at 0.17/m^2.

Strongylocentrotus spp. remained rare at this site for the fifth consecutive year. The few urchins that remain at the site remain mostly in crevice habitat. *Strongylocentrotus franciscanus* and *S. purpuratus* densities remain low at 0.58/m^2 and 0.67/m^2 respectively. Juvenile *Strongylocentrotus* spp. were rare, similar to last year so we do not expect any changes in *Strongylocentrotus* spp. densities in the near future. No *Centrostephanus coronatus* and *Lytechinus anamesus* were observed on quadrats or band transects. No sea urchin wasting disease was observed. But there were a few piles of small whole *S. purpuratus* tests found throughout the site that were probably a result of *Pycnopodia helianthoides* predation. From the number of small *S. purpuratus* tests found near crevices, it appears they are common in crevices.

Similar to what we have observed at other sites this year, *Patiria miniata* density remained high for the fourth consecutive year at 2.5/m^2. *Pisaster giganteus* were counted on both quadrats and 5-meter quadrats and had densities of 0.29/m^2, and 0.26/m^2 respectively and similar to recent years. *Pycnopodia helianthoides* remained relatively abundant with a density of 0.0236/m^2, similar to last year. No *Pachythyone rubra* were observed on RPC's. We have noticed a few of these in recent years, but this year we observed none at the site. *Parastichopus parvimensis* was present with a density of 0.13/m^2. No sea star wasting disease was observed.

Cypraea Spadicea density was 0.42/m^2, higher than the past three years. *Megastraea undosa* continued to be rare with none observed on quadrats for the fourth consecutive year, and none were found during size frequency measurements. *Tegula regina* was common at a density of

0.042/m² and appeared to be the most abundant large snail at this site, similar to last year. *Megathura crenulata* continued to be rare and their density declined for the sixth consecutive year; none were observed on band transects for a density of 0.0/m^2, the lowest density recorded at this site since monitoring for this species began in 1983. *Aplysia californica* were rare with a density of 0.011/m². *Kelletia kelletii* density was 0.022/m^2. *Crassadoma giganteum* density remained relatively low for this site at 0.014/m^2.

Similar to previous years, fish were diverse but not particularly abundant. *Coryphopterus nicholsii* density was 0.29/m² similar to past years, and up to 31 observed during the roving diver fish count. *Alloclinus holderi* were not observed for the fifth consecutive year on quadrats and none were observed during the roving diver fish count. *Oxylebius pictus* were present with up to 41 observed. *Chromis punctipinnis* were common with up to 94 adults observed and no juveniles. *Oxyjulis californica* were the most abundant fish with up to 109 adults observed. No *Halichoeres semicinctus* were observed. Eighteen female, one juvenile, and six male *Semicossyphus pulcher* were observed. One adult *Paralabrax clathratus* was observed. Two adult *Hypsypops rubicundus* and two adult *Girella nigricans* were observed. *Embiotoca jacksoni* were present with up to 8 adults and 1 juvenile observed. *Embiotoca lateralis* were present with up to four adults and one juvenile observed. Three adults and no juvenile *Rhacochilus vacca* were observed. One *Rhacochilus toxotes*, rubberlip surfperch,, was observed. Twelve *Brachyistius frenatus*, kelp surfperch, were observed. *Sebastes mystinus* were moderately abundant with up to 27 adults and six juveniles observed. This is one of the few sites this year where *S. mystinus* young of year were observed. Up to 16 adult and three juvenile *Sebastes atrovirens* were observed. Two *Sebastes serriceps* were observed. Up to eight adult *Sebastes serranoides* were observed. *Sebastes chrysomelas*, black and yellow rockfish, were common with up to six adults observed. Four adult *Sebastes carnatus*, gopher rockfish, were observed. One adult *Ophiodon elongates*, lingcod, was observed. One *S. mystinus* and one female *S. pulcher* were observed with fish tags that we suspect were from UCSB research activities. Roving diver fish count was conducted on July 10th with five divers observing up to 21 species.

All 14 ARMs were monitored for all indicator species. Overall, the ARMs were in good condition but the north ARM cages will need replacing next year.

No *Haliotis* spp. were observed in the ARMs for the second consecutive year. *Cypraea Spadicea* density remained high at 14/ARM, similar to the past three years. A total of 49 C. *Spadicea* egg masses were observed in the ARMs, more than have ever been observed in any of the ARMs. Two *Kelletia kelletii* were observed for a density of 0.14/ARM, similar to past years. No *Lithopoma undosum* or *Lithopoma gibberosa* were observed in the ARMs. *Tegula regina* density was 0.29/ARM. This was the first year that we added this species as an indicator species to the monitoring program. Similar to the past several years, *Megathura crenulata* were observed for a density of 0.14/ARM, relatively low for this site. *Crassadoma giganteum* were present at 0.64/ARM, lower than the past two years, but similar to years prior. The *C. giganteum* mean size increased to 64 mm, indicative of no recruitment. Two octopi were observed. *Patiria miniata* density continued to increase to 6.6/ARM, the highest recorded at this site, but similar to the past two years. Their mean size was relatively low at 25 mm, indicative of recent recruitment. *Pisaster giganteus* density was also relatively high at 1.6/ARM and mean size was relatively low at 38mm. *Pycnopodia helianthoides* density was the same as last year at 0.29/ARM with a mean

size of 133 mm, similar to recent years. *Strongylocentrotus franciscanus* density was 29/ARM, similar to recent years and mean size increased to 33 mm, relatively high for this site. *Strongylocentrotus purpuratus* decreased to the lowest density recorded in the ARMs at this site at 6.1/ARM. Their mean size was high for recent years at 21 mm indicative of lower recruitment. No *Centrostephanus coronatus* were observed in the ARMs for the fifth consecutive year. *Parastichopus parvimensis* density <10cm was high compared to recent years at 0.64/ARM, and the lowest recorded for >10 cm at 0.0/ARM. All of the *P. parvimensis* <10 cm were noted to be very small in an approximate 3-5cm range indicative of recent recruitment as we have observed at many of the sites with ARMs this year.

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

Location: Fry's Harbor, Santa Cruz Island
Site #7 SCFH
2006 sampling dates: 6/05, 6/06, 9/26.
2006 status: State of transition.

This site continued to change dramatically this year and had the most macroalgae observed in the past 20 years. *Macrocystis pyrifera* subadults and juveniles were rare along the transect, but nonetheless they were present and more abundant than they have been for over 20 years. *Eisenia arborea* adults and juveniles were moderately abundant throughout the site. Only one small patch of *Pachythyone rubra* was observed this year. *Strongylocentrotus* spp. abundance remained low, similar to last year.

Macroalgae was common and notably more abundant than since the early 1980's at this site, and consisted mostly of juvenile and adult *Eisenia arborea* and foliose red algae. No *Macrocystis pyrifera* was observed on 5 meter quadrats, but one juvenile was observed on RPC's for a cover of 0.5%. Juveniles were present and eight plants larger than one meter were located within the transect area for size frequency measurements. Adult and juvenile *Eisenia arborea* densities were similar to last year at 0.50/m² and0.58/m² respectively. *Eisenia arborea* cover was 13.5%, the highest recorded for this species at this site since we began monitoring this species in 1985. *Cystoseira* spp. were present mostly on the southern end of the transect and were observed on RPC's for a cover of 0.8%, the highest cover recorded for this site since we began monitoring this species in 1985. On September 26th we observed *Sargassum* sp. along the transect. Miscellaneous red algae remained at high levels for a cover of 25.2%. Most of the red algae consisted of a *Rhodymenia* sp. like algae. Green algae were present with a cover of 0.5%. Miscellaneous brown algae cover was 1.2%. Miscellaneous plants, predominately consisting of diatoms, decreased to 1.5%, this parameter tends to fluctuate temporally. Like many of our other sites encrusting coralline algae was most abundant with a cover of 28.7%. Articulated coralline algae were present for a cover of 0.5%, similar to last year. Bare substrate cover was 10.3%.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata,* was 15.8%, similar to last year. The most common miscellaneous invertebrates in this category were *Cucumaria salma* and hydroids, respectively. *Balanophyllia elegans* cover decreased from high levels last year to 1.5%, but is still relatively high for this site. *Astrangia lajollaensis* cover was 6.8%, higher than last

year, but still relatively low for this site. *Corynactis californica* cover was recorded at 0.5%. *Diaperoecia californica* has declined over the past three years and was absent along the main transect line for a cover of 0.0%, the lowest cover since 1985. *D. californica* was noticeably abundant on the sides of large boulders, but less abundant directly along the transect line, similar to last year. Miscellaneous bryozoans increased dramatically to 18.8% cover, the highest recorded at this site since 1985. Bryozoans were noticeably abundant and diverse as has been observed at other sites on Anacapa and Santa Cruz Islands. Notable bryozoan species were *Thalamoporella* spp., *Membranipora* spp., and *Costazia costazi*. We observed *Patiria miniata* and *Cypraea Spadicea* feeding on *Membranipora* spp. encrusted on *Eisenia arborea* blades. *Lophogorgia chilensis* were abundant on the offshore/deep side of the transect, with a density of 0.24/m^2, similar to recent years. *Eugorgia rubens* were common on the offshore side of the transect as well. *Tethya aurantia* density was 0.0083/m^2, similar to recent years. Sponges covered 1.3% of the bottom, a slight increase from last year.

Overall, *Strongylocentrotus* spp. were rare and no *Lytechinus anamesus* were observed. *Strongylocentrotus purpuratus* density remained low for the second consecutive year at 0.13/m^2. *Strongylocentrotus franciscanus* density also remained low for the third consecutive year at 0.13/m^2. Both of these densities are some of the lowest recorded at this site since 1982. With a moderate amount of effort we were only able to find 71 *S. franciscanus* and 21 *S. purpuratus* for size frequency measurements. *Centrostephanus coronatus* density remained low with none observed on quadrats for the second consecutive year (0.0/m^2). *Lytechinus anamesus* densities continued to decline for the fifth consecutive year with none observed on band transects (0.0/m^2), the lowest density recorded since 1984. No sea urchin wasting disease was observed in 2006 at this site.

Ophiothrix spiculata were noticeably rare along the transect and none were observed on RPCs, similar to last year. *Pachythyone rubra* remained relatively rare at this site with a cover of 0.2%. Only one small patch of *Pachythyone rubra* was observed at the site and it appeared smaller than last year. We believe the dramatic decline in *P. rubra* in recent years may be a result of predation by *Pycnopodia helianthoides*. *Pycnopodia helianthoides* were observed feeding on *P. rubra* at sites nearby Fry's Harbor in 2003 and their density has dramatically increased at this site. *Pycnopodia helianthoides* continued to be abundant, especially on the deeper side of the transect, and their density remained high for this site at 0.042/m^2. *Pisaster giganteus* density was recorded on quadrats and 5 meter quadrats at 0.29/m^2 and 0.38/m^2, similar to last year. *Patiria miniata* density remained high and was similar to last year at 1.38/m^2. One *Dermasterias imbricata* was observed. *Parastichopus parvimensis* density decreased from last year to 0.042/m^2, a relatively low density for this site. No sea star wasting disease was observed in June, but we observed one *Patiria miniata* with this disease on September 26th.

Cypraea Spadicea density was 0.29/m^2, similar to the past decade. *Megastraea undosa* continued to be rare at this site with a density of 0.042/m^2 similar to the past three years. There were slightly more *L. undosum* at the site than last year with eight individuals found opposed to one last year during size frequencies and all were less than 50 mm, indicating relatively young animals. Several large *Aplysia californica* were observed, but they were rare at 0.0014/m^2. *Megathura crenulata* density continued to decline for the fifth consecutive year and was recorded at 0.0097/m^2, the lowest density recorded since 1983. *Crassadoma giganteum* were

relatively uncommon with only nine found for size frequencies and a density of 0.0069/m², the lowest since monitoring began at this site for this species in 1983. Most of the live individuals and remnant shells of *C. giganteum* were small.

Similar to past years, fish diversity and abundance were high at this site. 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. During the later count, on September 26th, we picked up many of the warm water fish species that probably recruited during the warm water event in July-August this year. *Coryphopterus nicholsii* decreased to 1.3/m² from their highest density recorded at this site last year (4.0/m²). Up to 320 *C. nicholsii* were observed. No *Alloclinus holderi* were observed in quadrats, but up to 13 were observed during Roving Diver Fish Counts. No *Lythrypnus dalli* were observed on June 5th, but up to 330 were observed on September 26th. Most of the *L. dalli* were tiny, but there were some that were about half the size of an adult and all probably recruited during the anomalous warm water event. *Oxylebius pictus*, were common with up to 24 observed. *Chromis punctipinnis* were the most abundant fish with up to 485 adults and 340 juveniles observed. The juvenile were only observed during the September 26th count indicating recruitment some time after June 5th. Up to 118 adult and 62 juvenile *Oxyjulis californicus* were observed. No *Halichoeres semicinctus* were observed on June 5th, but up to one female, three male and five juveniles were observed on September 26th. Up to five female, two males and one juvenile *Semicossyphus pulcher* were observed. *Hypsypops rubicundus* were common with up to nine observed. *Paralabrax clathratus* were more abundant during our fish count on September 26th with up to 45 adult and 22 juveniles observed. Seventeen adult and seven juvenile *Embiotoca jacksoni* were observed. *Rhacochilus vacca* were abundant with up to 27 adults and two juveniles observed. No *Embiotoca lateralis* were observed at this site, similar to previous years. Ten adult *Rhacochilus toxotes*, rubberlip surfperch,, were observed this year. *Sebastes* spp. were much more common than last year at this site. *Sebastes mystinus* young of the year were common with up to seven juveniles and two adults observed. Five adult *Sebastes serranoides* were observed. Up to five adult and three juvenile *Sebastes atrovirens* were observed. *Sebastes serriceps* were common with up to ten adults and one juveniles observed. *Sebastes carnatus*, gopher rockfish, were common with up to seven adults observed. One adult *Sebastes caurinus*, copper rockfish, was observed. Two adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. One medium sized adult *Sebastes auriculatus*, brown rockfish, was observed during both fish counts and was possibly the same fish. One cabezon, *Scorpaenichthys marmoratus* was observed. Up to eight *Caulolatilus princes,* ocean whitefish, were observed. One adult and one juvenile giant kelpfish, *Heterostichus rostratus* were observed. Two zebra gobies, *Lythrypnus zebra* were observed. One *Rathbunella* spp, ronquil, was observed. A large school of approximately 180 *Sarda chilensis*, Pacific bonito, was observed by most of the divers on September 26th. Roving Diver fish counts were performed on June 5th, by five divers observing 26 species and on September 26th with five divers observing 32 species.

All five ARMs were intact and monitored for all indicator species. No *Haliotis* spp. were found in the ARMs this year. *Cypraea Spadicea* were abundant at 15/ARM, the highest recorded density for this species since we began monitoring ARMS here in 1993. *Megathura crenulata* density remained low with only one small one observed, 0.20/ARM. *Crassadoma giganteum* density was relatively high at 4.0/ARM, higher than the past four years. *Patiria miniata* density

was similar to last year at 12/ARM and mean size was similar to past years at 34 mm. *Pisaster giganteus* density continued to gradually decline for the fifth consecutive year to 0.60/ARM and mean size continued to increase for the fifth consecutive year to 37 mm. This decrease in density and increase in size indicates little recent recruitment.
Strongylocentrotus franciscanus density was 16/ARM, higher than the past four years, and mean size decreased to 30 mm. This increase in density and subsequent decrease in mean size is indicative of some recruitment occurring. *Strongylocentrotus purpuratus* density remained very low for the fourth consecutive year at 1.6ARM and had a mean size of 27 mm, similar to past years. *Parastichopus parvimensis* density <10 cm increased to 1.4/ARM, the highest recorded at this site since we began monitoring this species in the ARMs in 1996, and the density >10 cm was 1.0/ARM, similar to last year. We have observed this recruitment event for *P. parvimensis* at many of the sites this year.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Pelican Bay, Santa Cruz Island
Site #8 SCPB
2006 sampling dates: 7/28, 9/15, 9/26.
2006 status: Dominated by *Strongylocentrotus purpuratus*.

This site has changed little in recent years. The site continues to be dominated by *Strongylocentrotus purpuratus* and is mostly devoid of macroalgae. Some macroalgae were present in small patches and consisted of juvenile and subadult *Macrocystis pyrifera* off the northern end of the transect, and *Sargassum* sp. and *Dictyota/Pachydictyon* sp. On the tops of large rocks there appeared to be more algae than last year. These algae consisted mostly of *Colpomenia* sp., *Gelidium robustum*, *Rhodomenia* spp. and articulated coralline algae. Most of these large rocks are just inshore of the transect line and are not sampled during quadrats or RPCs. There were also small adult *Eisenia arborea* on top of rocks but that appeared to have been grazed. *Macrocystis pyrifera*, *Pterygophora californica*, *Eisenia arborea*, *Laminaria farlowii*, *Cystoseira* spp., *Desmarestia* spp., and *Gigartina* spp. were not observed during the sampling protocol. Similar to last year, the most common foliose algae were the red alga, *Laurencia pacifica*, and the brown alga, *Colpomenia* sp. Miscellaneous red algae cover was 1.8%. Miscellaneous brown algae cover was 0.2%. Miscellaneous plants, consisting entirely of filamentous brown diatoms were present at 16.8%, relatively high for this site and the highest cover recorded since we began monitoring this category in 1985. Articulated coralline algae were rare with a cover of 0.2% similar to recent years. Encrusting coralline algae cover was 18.5%, lower than the past several years. Bare substrate cover was 44.3%, similar to past years.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata*, was 10.8% with hydroids being the most common in this category. *Serpulorbis squamigerus* were relatively abundant on the tops of large rocks, however they are typically rare directly along the transect and none were observed on RPC's, similar to past years. *Diaperoecia californica* was relatively common on the steep sides of large rocks on the inshore side of the line, but similar to previous years were relatively rare directly along the transects with a cover of 0.0%. Other bryozoans were relatively rare with a cover of 0.0%. *Tethya aurantia* continued to be relatively abundant for this site with a density of 0.018/m², similar to the past three years. *Balanophyllia elegans* were uncommon

directly along the transect with none observed on RPCs for 0.0% cover. *Astrangia lajollaensis* was abundant with a cover of 13.7%, similar to past years. *Corynactis californica* were uncommon and had a cover of 0.7%. *Muricea californica* were uncommon with a density of 0.0028/m². *Lophogorgia chilensis* remained abundant with a density of 0.17/m^2, similar to the past seven years.

Strongylocentrotus purpuratus density continued to gradually decline for the fifth consecutive year and was 12.2/m², the lowest recorded since 1993. Similarly, *Strongylocentrotus franciscanus* density declined for nearly the fifth year and was 0.83/m²; this is the lowest recorded at this site since monitoring began in 1982. Juvenile *S. franciscanus* were common but *S. purpuratus* were rare. *Lytechinus anamesus* density was 2.7/m², similar to recent years. Most of the *L. anamesus* were large. *Centrostephanus coronatus* were common at the site but absent from quadrats again this year, 0.0/m². This species prefers crevice habitat of which there is little directly along the transect line where quadrats are conducted. Approximately less than 5% of the *S. purpuratus* and *Lytechinus anamesus* were observed with wasting disease on July 28th and September 15th.

Patiria miniata declined for the second year and was recorded at 0.25/m^2, but is still relatively high for this site. *Pisaster giganteus* remained relatively abundant for this site. They were counted on both 1 m quadrats and 5 m quadrats, with densities of 0.13/m^2 and 0.085/m^2 respectively, similar to last year. *Ophiothrix spiculata* were observed along the transect for a cover of 0.2%. One *Pycnopodia helianthoides* was present on band transects for a density of 0.0014/m². *Parastichopus parvimensis* density remained low and was similar to recent years at 0.042/m^2. *Pachythyone rubra* were noticeably more common than in recent years with a cover of 2.2%, the highest recorded since we began monitoring this site in 1982. No sea stars were observed with wasting disease on July 28th, but on September 15th approximately 50% of *Patiria miniata* appeared to be recovering from wasting disease. We think that many of these were affected by wasting disease during the anomalously warm water event that occurred between July 19 – August 21st and since then have recovered some.

Crassadoma giganteum density was 0.047/m², similar to recent years. *Aplysia californica* density was 0.014/m^2, similar to previous years. *Lithopoma undosum* density continued to be very low for this site with none recorded on quadrats at 0.0/m²; this is the lowest record since 1982. Only twelve were found for size frequency measurements. No *L. gibberosa* were observed on quadrats, but five were found for size frequency measurements. *Kelletia kelletii* density was 0.0056/m^2, similar to past years. Octopus were noticeably abundant over the entire site.

For a site that is dominated by *Strongylocentrotus purpuratus* the fish continue to be relatively abundant and diverse. 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. *Coryphopterus nicholsii* continue to be the most abundant fish at this site. Their density remained normally high for this site at 5.4/m² with up to 505 observed during roving diver fish count. Only ten Lythrypnus dalli were observed on July 28th and up to 184 *Lythrypnus dalli* were observed on September 15th indicating recruitment between those two dates. None were observed on quadrats. *Alloclinus holderi* density continued to be low at 0.0/m^2, similar to the past four years. Up to seven *A. holderi* were counted during the

roving diver fish count. There were up to eight *Oxylebius pictus,* counted. *Chromis punctipinnis* were abundant with up to 172 adults and six juveniles observed. *Oxyjulis californicus* adults were present with 30 observed. Three female and one juvenile *Semicossyphus pulcher* were observed. Four female, five male, and seven juvenile *Halichoeres semicinctus* were observed. The recruits were likely from the recent warm water event. Similar to past years, but notably abundant, were *Paralabrax clathratus* with up to 48 adults and three juveniles counted. Up to 16 adult *Hypsypops rubicundus* were observed. One *Girella nigricans* was observed. Up to 14 adult *Medialuna californiensis,* halfmoon, were observed. *Caulolatilus princeps,* Ocean whitefish, were common with up to fourteen adults observed. *Embiotoca jacksoni* were abundant with up to 55 observed. *Rhacochilus vacca* were common with up to 19 adults observed. Similar to past years, no *Embiotoca lateralis* were observed. Up to 24 adult *Rhacochilus toxotes,* rubberlip surfperch, were observed. This site was somewhat devoid of *Sebastes* spp. Five adult *Sebastes atrovirens,* three adult *Sebastes serriceps,* one *Sebastes carnatus,* gopher rockfish, and one *Sebastes auriculatus*, brown rockfish, were observed. Two *Scorpaenichthys marmoratus*, cabezon, were observed. Two *Neoclinus stephensae*, yellowfin fringehead, were observed. Four *Lythrypnus zebra,* zebra gobies, were observed. One *Ornothopias triacis*, snubnose sculpin, was observed. Three *Gibbonsia* spp., kelpfish, were observed. One *Myliobatis californica*, California bat ray, was observed. One *Cephaloscyllium ventriosum,* swell shark, was observed. Roving Diver Fish Counts were conducted on July 28th and September 15th with six divers counting 26 and 24 species respectively.

All six ARMs were intact and sampled for all indicator species. Three ARMs cages were replaced. Two octopi were observed in the ARMs this year. No *Haliotis* spp. has been found in the ARMs since 1999. *Cypraea Spadicea* density was similar to past years at 6.5/ARM. No *Megastraea undosa* were observed in the ARMs for the fifth consecutive year. One *Megathura crenulata* was observed in the ARMs this year, 0.17/ARM. *Crassadoma giganteum* density was 2.2/ARM, similar to last year. *Patiria miniata* density and size were 9.5/ARM and 29 mm, an increase for the density. *Pisaster giganteus* density remained low at 0.17/ARM with one 137 mm individual found. No *Lytechinus anamesus* were observed in the ARMs this year. *Strongylocentrotus franciscanus* density was similar to the past two years at 9.8/ARM and mean size decreased slightly to 33mm. *Strongylocentrotus purpuratus* density continued to decline and was recorded at its lowest densities in the since we began monitoring the ARMs in 1994. Its density was 9.8/ARM with a mean size of 28 mm, similar to recent years. No *Centrostephanus coronatus* have been observed in the ARMs since 2000. Overall *Parastichopus parvimensis* density increased with <10 cm was 1.5/ARM and >10 cm was 0.83/ARM, similar to what we have observed at other sites.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Scorpion Anchorage, Santa Cruz Island
Site #9 SCSA
2006 sampling dates: 8/24.
2006 status: Dominated by *Strongylocentrotus purpuratus.*

This site continued to be dominated by *Strongylocentrotus purpuratus*, but some *Macrocystis pyrifera* continued to be present at this site. Although there was a notable increase in algae, the

site remained mostly devoid of macroalgae. There was a small area of *M. pyrifera* of with approximately six plants located on the offshore side near the 100 meter end of the transect. In addition there were a few other plants scattered around the transect. There were no adult or subadult *M. pyrifera* recorded, but juvenile density was 0.13/m² and *M. pyrifera* cover was 2.7%, the first time recorded since 1995. No, *Eisenia arborea, Pterygophora californica, Laminaria farlowii,* or *Cystoseira* spp. were present, similar to recent years. Miscellaneous brown algae increased to 3.3%, the highest recorded since 1994. Green algae increased to a cover of 12.0%, the highest recorded since monitoring began in 1982, and was mainly *Ulva* spp. Miscellaneous red algae cover was 3.7%, similar to recent years and consisted mostly of *Laurencia pacifica*. Miscellaneous plants consisting of filamentous brown diatoms slightly decreased in cover to 15.0%. These diatoms were in several large patches mostly in low lying soft bottom areas. Articulated coralline algae were rare with a cover of 1.0%. Encrusting coralline algae were abundant with a cover of 46.2%, similar to recent years. Bare substrate cover was 19.2%, similar to last year.

Similar to past years, the most common miscellaneous invertebrate on RPCs was the Christmas tree worm, *Spirobranchus Spinosus*. Miscellaneous invertebrates, excluding *Ophiothrix spiculata,* covered 16.7% of the bottom, similar to recent years. *Serpulorbis squamigerus* cover was 0.3%. Bryozoans were uncommon with a cover of 0.7%, similar to past years. There was some *Diaperoecia californica* present on the steep sides of the largest boulders around the transect, but none were observed on RPCs similar to past years. Several *Lophogorgia chilensis* were observed along the transect and had a density of 0.0028/m^2, similar to recent years. Sponges were present at a cover of 0.17%. *Tethya aurantia* density remained relatively high for this site at 0.036/m², similar to the past several years.

Strongylocentrotus franciscanus density was 2.9/m^2, similar to the past several years. *Strongylocentrotus purpuratus* continued to dominate this site with a density of 41/m², similar to the past two years. No *Centrostephanus coronatus* were observed on quadrats, but they were common at the site, similar to recent years. *Lytechinus anamesus* were present at 0.0056/m², similar to recent years. Approximately 5% of *S. franciscanus* and 10% of *S. purpuratus* were observed with sea urchin wasting disease on August 24th.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.042/m^2 and 0.020/m^2 respectively, similar to recent years. *Patiria miniata* density remained the same as last year at 0.13/m², and also similar they were noticeably large with a mean size of 72 mm. *Pycnopodia helianthoides* were present at a density of 0.0028/m². *Parastichopus parvimensis* density was 0.33/m², similar to recent years. Several *Patiria miniata* were observed with sea star wasting disease on August 24th. One *Parastichopus parvimensis* was observed with what looked like wasting disease on this same date.

Aplysia californica density remained at low at 0.0056/m². *Megastraea undosa* density remained low for the fourth consecutive year at 0.33/m². *Megathura crenulata* density was 0.086/m², similar to last year. *Cypraea Spadicea* were present at a density of 0.17/m², similar to past years. *Crassadoma giganteum* density increased to 0.054/m², similar to past years. *Panulirus interruptus* were more common than usual at this site with a density of 0.0236/m², the highest

recorded for this species since monitoring them began in 1983. It is possible that this is a result of this transect being inside one of the new MPAs.

Similar to recent years, fish were moderately diverse but had low abundances. The roving diver fish counts were conducted at this site on August 24th, at the end of the month long warm water event and warm water fish recruits were observed. *Coryphopterus nicholsii* were abundant at this site with up to 285 observed. *C. nicholsii* remained relatively abundant along the main transect with an increase in density to 2.0/m². *Alloclinus holderi* were present with a density of 0.13/m² and up to nine observed during the fish count, similar to recent years. No *Lythrypnus dalli* were observed. *Oxylebius pictus* were moderately abundant with up to 15 observed. *Chromis punctipinnis* were abundant with up to 142 adults and 289 juveniles observed. *Oxyjulis californica* were also very abundant with up to 90 adults and 90 juveniles observed, similar to last year. Three females, three juveniles, and no male *Semicossyphus pulcher* were observed. One female, seven juveniles and two male *Halichoeres semicinctus* were observed. Fourteen adult and one juvenile *Hypsypops rubicundus* were observed, the second juvenile observed this year. *Paralabrax clathratus* were abundant with up to 26 adults and two juveniles observed. Up to nine adult *Girella nigricans* were observed. *Embiotoca jacksoni* were common with up to 36 adults and no juveniles observed. Eleven *Rhacochilus vacca* adults and no juveniles were observed. A school of up to 130 of *Brachyistius frenatus,* kelp surfperch, was observed. Up to two adult *Sebastes atrovirens* were observed. Two adult *Sebastes serranoides* and two adult *Sebastes serriceps* were observed. Up to five *Sebastes chrysomelas,* black and yellow rockfish, were observed. One *Sebastes auriculatus*, brown rockfish, was observed. One *Sebastes carnatus*, gopher rockfish, was observed. Five adult *Medialuna californiensis*, halfmoon, were observed. Two adult *Scorpaenichthys marmoratus,* cabezon, were observed. Up to eight juveniles and one adult *Heterostichus rostratus*, giant kelpfish, were observed. One *Heterodontus francisci*, horn shark, was observed. A *Neoclinus uninotatus*, one spot fringe head, was observed. Roving diver fish count was conducted on August 24th by six divers observing 24 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on August 30th.

All seven ARMs were monitored for all indicator species. No octopi were observed in the ARMs this year. One 11 mm *Haliotis rufescens* was observed at 0.14/ARM, the first observation of this species in the ARMs at this site since we began monitoring them in 1993. *Cypraea Spadicea* density remained high at 15/ARM. *Megastraea undosa* density was relatively low for this site at 0.29/ARM. *Megathura crenulata* density was 0.43/ARM, similar to past years. *Crassadoma giganteum* density increased to 6.7/ARM, the highest recorded at this site and mean size decreased to 41 mm which is indicative of a recent recruitment. *Patiria miniata* were present at 0.43/ARM, similar to last year. *Pisaster giganteus* were present at 0.57/ARM with a mean size of 82 mm. One 21 mm *Pycnopodia helianthoides* was observed, 0.14/ARM, the first observation of this species in the ARMs at this site. *Strongylocentrotus franciscanus* density was 7.1/ARM and had a mean size of 34 mm, similar to past years. *Strongylocentrotus purpuratus* density was higher than the last several years at 38/ARM. Mean size was relatively high at 35 mm, the highest recorded at this site and indicative of little recruitment. *Parastichopus parvimensis* <10

cm were uncommon with 0.43/ARM, similar to last year and ones >10 cm were 2.6/ARM, similar to recent years.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Yellow Banks, Santa Cruz Island
Site #10 SCYB
2006 sampling dates: 8/11, 8/21, 8/22.
2006 status: Mature kelp forest.

There was notably less *Macrocystis pyrifera* this year and canopy cover decreased to less than 5% from 90% in 2005. Most of the *Macrocystis pyrifera* individuals had only one or two stipes attached to large holdfasts that appeared to be rotting. This allowed for more favorable light conditions for understory algae. The kelp forest in the Yellow banks area still covered an expansive area as it has historically.

Adult *Macrocystis pyrifera* density decreased to 0.030/m², while subadult density remained about the same as last year at 0.020/m², and juvenile density increased to 6.2/m² which is relatively high for this site. Cover of *M. pyrifera* was similar to recent years at 14.3%. No, *Eisenia arborea, Pterygophora californica, Laminaria farlowii,* and *Desmarestia* sp. were observed on quadrats. However, *P. californica, L. farlowii* and *E. arborea* were rare at the site and all decreased from last year. A few small individual *Cystoseira* spp. were present at 0.2% cover. Miscellaneous brown algae were uncommon at a cover of 0.5%. Miscellaneous red algae increased to a cover of 30.2%, the highest recorded for this category at this site since we began monitoring this site in 1986. Foliose red algae were abundant and diverse on the first half of the transect, but the specific taxa for this category was not noted and filamentous red algae could have quite possibly been abundant as well. *Botryacladia* spp. was common. Green algae were present at a cover of 0.2%. Encrusting coralline algae was abundant with a cover of 39.8%, similar to past years. Articulate coralline algae remained relatively abundant compared to years past 1997 at 7.3%, however this cover is still low compared to what was observed from 1989-1997. Bare substrate cover continued to decline for the fifth consecutive year and was 10.2%, the lowest recorded at this site.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata,* was low compared to the past several years at 10.0%. Similar to last year, the most dominant miscellaneous invertebrate was hydroids and consisted of a low lying *Obelia* sp. type that was covered with sediment, typical for this site. Miscellaneous bryozoans decreased from last year to a cover of 9.0%, but similar to past years. *Diaperoecia californica* cover was 0.5%, similar to past years. Sponges remained relatively abundant for this site at a cover of 2.8%, the highest recorded since 1992. *Tethya aurantia* were moderately abundant at a density of 0.046/m². *Lophogorgia chilensis* was present at a density of 0.081/m². Small <10 cm *L. chilensis* were common indicating recent recruitment. *Muricea fruticosa* density was 0.0014/m², similar to last year, but relatively low for this site. *Muricea californica* were common at 0.011/m², similar to past years. *Corynactis californica* cover was 0.5%. *Balanophyllia elegans* and *Astrangia lajollaensis* cover was 1.5% and 0.7% respectively. One small *Tealia lofotensis* was observed on band transects 0.0014/m².

Strongylocentrotus franciscanus density was 1.2/m², similar to past years. *Strongylocentrotus purpuratus* density increased to 9.5/m², higher than the past four years. Both *S. purpuratus* and *S. franciscanus* were confined to crevices and not out in the open, similar to recent years. Only 127 *S. franciscanus* were located for measurements this year. We observed some recruitment *S. purpuratus* and *S. franciscanus* on the cobble bottom and in crevice habitat under spines of conspecifics. *Lytechinus anamesus* were common, small, and heavily covered with debris which is typical at this site; their density was 0.40/m². No *Centrostephanus coronatus* were observed on quadrats for the fourth consecutive year. Several *Lytechinus anamesus* were observed with sea urchin wasting disease on August 21st.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.042/m² and 0.035/m² respectively, similar to past years. *Patiria miniata* remained relatively abundant for this site at 1.2/m², similar to the past two years. *Pycnopodia helianthoides* remained relatively abundant for this site, were of sizes ranging from 22-320 mm and mostly observed in crevices with a density of 0.024/m². This is the highest density recorded at this site since monitoring began in 1986 and 32 were found for size frequency measurements. It appeared that the *P. helianthoides* in the crevices were hunting for sea urchins and whole tests were observed nearby some of them. At least five *Dermasterias leviuscula* were observed. *Ophiothrix spiculata* remained rare, but were observed on RPC's at a cover of 0.2%. Small *Parastichopus parvimensis* and *Parastichopus californica* juveniles (<6 cm) were common, similar to other sites. *Parastichopus parvimensis* density was present at 0.04/m². One *P. giganteus*, and one *D. leviuscula* were observed with sea star wasting disease and one *P. parvimensis* was observed to be wasting on August 21st.

One live *Haliotis rufescens* measuring 183 mm was observed along the transect. One fresh *H. rufescens* shell was measuring 165 mm was found. One old *Haliotis assimilis* shell was found in an ARM measuring 58 mm. The *H. assimilis* that has been on the offshore side for the past several years was observed several times this year on the same rock as before and measured at 137 mm. *Megastraea undosa* density remained low for this site for the fourth consecutive year at 0.25/m², consisting mainly of larger individuals with a mean size of 106 mm. *Lithopoma gibberosa* were present with five observed on size frequencies, but were not observed on quadrats at 0.0/m². Similarly 10 *Tegula regina* were found for size frequencies, but none were observed on quadrats. *Cypraea Spadicea* density was 0.17/m², similar to past years. *Kelletia kelletii* density was 0.078/m^2, similar past years. Several small (<40 mm) were observed indicating some recent recruitment. Two *Bursa californica* were observed on band transects. *Megathura crenulata* remained relatively uncommon at a density of 0.0028/m², and only eight were found for size frequencies. *Crassadoma giganteum* density was 0.097/m², similar to the last few years. One *Aplysia californica* was observed on band transects, 0.0014/m². Nudibranchs were abundant and diverse.

Fish diversity and abundance were relatively low for this site, similar to recent years. *Coryphopterus nicholsii* were common with up to 140 observed and a density of 1.1/m². *Alloclinus holderi* were rare with none observed on quadrats or during the fish count. *Oxylebius pictus* were relatively abundant with up to 21 observed. Thirty five adult *Chromis punctipinnis* were observed. Up to three adult *Oxyjulis californica* were observed. Up to six female,

Semicossyphus pulcher and no males or juveniles were observed. All but one *S. pulcher* were small and estimated at less than 30 cm. One *Halichoeres semicinctus* female was observed. *Paralabrax clathratus* were common with up to 24 adults observed. Both *P. clathratus* and *S. pulcher* were noticeably more abundant than in recent years. Up to three adult *Embiotoca jacksoni* were observed. No other Embiotocidae were observed. Up to eight adult *Sebastes atrovirens* were observed. Two adult and two juvenile *Sebastes serriceps* were observed. Up to four young of the year *Sebastes miniatus,* vermillion rockfish, were observed. One adult *Sebastes caurinus,* copper rockfish, was observed. Two *Sebastes chrysomelas,* black and yellow rockfish, were observed. One *Scorpaena guttata,* California scorpionfish, was observed. One *Artedius corallinus,* coralline sculpin, was observed. One *Cephaloscyllium ventriosum,* swell shark, was observed. Roving Diver Fish Counts were conducted on August 21st by five divers observing 17 species.

Along this transect there are three groups of five ARMs; one group at each end and one group on the middle, onshore side of the transect. Because of the large number of *Strongylocentrotus* spp. in the ARMs and the large amount of bottom time to collect them we did not sample all of the ARMs for *Strongylocentrotus* spp. this year. ARM #2370 was caught by the stern anchor and dragged about 15-20 feet from that set of ARMs and 3 bricks fell out. The ARM was moved back and the necessary repairs were made. A total of nine ARMs were monitored for all indicator species and the remaining six ARMs were sampled for all indicator species excluding urchins. Octopi were similar to last year with four observed. No live *Haliotis* spp. were observed. One fresh *Haliotis rufescens* 37 mm and one fresh *Haliotis assimilis* 57 mm shell were observed inside the ARMs. This was the fifth consecutive year that no *Haliotis corrugata* were observed. One *Tegula regina* was observed in the ARMs for a density of 0.067/ARM. *Cypraea Spadicea* density was 6.1/ARM, similar to recent years. No *Kelletia kelletii* were observed in the ARMs. No *Megastraea undosa* were observed in the ARMs. *Megathura crenulata* density was to 0.20/ARM. *Crassadoma giganteum* density was 1.1/ARM, similar to past years. *Patiria miniata* density was 9.9/ARM, similar to recent years and still relatively high for this site. Mean size was 22 mm, similar to recent years. Similarly, *Pisaster giganteus* remained relatively abundant at 4.4/ARM though less than the past two years. Mean size was 19 mm, similar to the past two years. *Pycnopodia helianthoides* was present at a density of 0.27/ARM. *Strongylocentrotus franciscanus* density remained relatively high for the fourth consecutive year and increased to 92/ARM. Mean size for *S. franciscanus* was 29 mm, similar to last year, but still relatively high for this site compared to recent years. This suggests that the increase in *S. franciscanus* in the ARMs is not a result of recruitment, but rather immigration possibly for the purpose of refuge. Similarly, *Strongylocentrotus purpuratus* density remained relatively high for the third consecutive year at 150/ARM, the highest since 1999. Mean size continued to increase for the third consecutive year to 34 mm the highest since 1998, indicating little recruitment and more likely immigration possibly for the purpose of refuge. Over the last several years that this site has become a mature kelp forest we have noticed a large decline in *Strongylocentrotus* spp. densities in quadrats and a shift from sea urchins being out in the open to greater usage of crevice habitat. The ARMs act as crevices, therefore we suspect greater use of the ARMs as preferred habitat. Greater usage of crevice habitat often suggests an increased abundance of food for the sea urchins. No *Lytechinus anamesus* were observed in the ARMs for the second consecutive year. No *Centrostephanus coronatus* were observed in the ARMs. *Parastichopus parvimensis* <10 cm and >10 cm densities were 3.7/ARM and 0.13/ARM, an increase in juveniles from last year

which is similar to other sites. This recruitment pulse of *P. parvimensis* is the largest one on record at this site since ARMs monitoring began in 1996. Small *Parastichopus californicus* were common with eight <10 cm observed within the ARMs this year, more than we have ever observed. We do not monitor P. *californicus* in the ARMs, but the current staff have been keeping notes on this species as well.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Admirals Reef, Anacapa Island
Site #11 ANAR
2006 sampling dates: 8/8, 9/28.
2006 status: Dominated by *Ophiothrix spiculata* from 0-65 m and moderate densities of *Strongylocentrotus franciscanus* and/or *Strongylocentrotus purpuratus* for the remainder of the transect.

The site was similar to last year except there were notably less macroalgae. The macroalgae that were present appeared to be unhealthy. Small adult *Macrocystis pyrifera* were rare with none observed on 1 m quadrats or 5 m quadrats this year. Most of the plants observed at the site were either recently dead or unhealthy. Juvenile M. pyrifera density was 0.042/m² and cover was 1.0%. Only 10 *M. pyrifera* individuals were observed within 10 m of the main transect. *Eisenia arborea* was present on top of rocks, but neither juveniles nor adults were observed on quadrats or RPCs. Similar to the *M. pyrifera*, the *E. arborea* that were observed appeared unhealthy as well. *Pterygophora californica*, *Agarum fimbriatum* and *Laminaria farlowii* were absent from the transect this year, similar to recent years. *Cystoseira* spp. was present at a cover of 0.3%. Miscellaneous red algae cover increased to 29.3%. *Laurencia pacifica* and filamentous red algae were the most abundant in this category. *Gigartina* Spp. cover was 0.2%, similar to last year and consisted mainly of *Gigartina corymbifera*. Green algae cover was 2.8%, similar to last year. Encrusting coralline algae cover was similar to last year at 46.8%. Bare substrate cover was 6.5%, relatively low for this site, and the lowest recorded since monitoring began for this category in 1985.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, cover was 11.8% lower than last year. Most of the category consisted of Christmas tree worms, *Spirobranchus Spinosus*, and hydroids for which consisted specifically of *Obelia* sp. *Lophogorgia chilensis* density was 0.069/m², similar to recent years. *Muricea fruticosa* and *Muricea californica* densities were also similar to recent years at 0.0083/m^2 and 0.021/m^2 respectively. *Eugorgia rubens* were relatively abundant along the transect, and their abundance appeared similar to recent years; however, we do not monitor this species. *Corynactis californica* were common with a cover of 5.0%, similar to past years. *Astrangia lajollaensis* cover remained low for this site for the sixth consecutive year and none were observed on RPCs this year representing the lowest cover recorded at this site since monitoring began in 1982. The largest change at this site over those years was the abundance of *Ophiothrix spiculata*, and their abundance could be the cause of low *A. lajollaensis* densities. Similarly, *Balanophyllia elegans* remained uncommon and none were observed on RPC's for the seventh consecutive year. Sponges were present at 0.3%. *Tethya aurantia* density was 0.015/m², and 26 were found for size frequencies for an average size of 56 mm, similar to past years. Miscellaneous bryozoans increased with a cover of 5.7%. *Diaperoecia californica*

was common on the steep sides of large rocks or reef at the west end of the transect and directly along the transect cover was 0.8%, similar to recent years. Tunicates remained relatively uncommon for this site and none were observed on RPCs.

Echinoderms remained abundant with *Ophiothrix spiculata* being the most abundant and covering 40.7% of the bottom, similar to recent years. Sea urchin densities remained similar to last year. *Strongylocentrotus franciscanus* density increased to 10.5/m², the highest recorded at this site since monitoring began in 1982. *Strongylocentrotus purpuratus* density was 6.2/m², similar to the past three years. This density is very low compared to 1994-2002, but similar to the densities recorded from 1982-1993. *Strongylocentrotus franciscanus* and *S. purpuratus* juveniles were common in the spine canopy indicating some recent recruitment. No *Lytechinus anamesus* were observed on Band Transects and they were rare at the site with only several observed. *Centrostephanus coronatus* density remained relatively high at 0.46/m^2, similar to the past four years. At most sites where *C. coronatus* recruited during the 1997/1998 El Niño we have observed recent declines, however this site the density has remained stable over the last several years. There has been no indication of recent recruitment and most of these urchins are large so there may be higher survivorship here compared to other sites. No sea urchin wasting disease was observed.

Pisaster giganteus were counted on quadrats and 5-meter quadrats with densities of 0.042/m² and 0.050/m², respectively and 20 were found with a mean size of 173.8 mm. *Patiria miniata* remained relatively abundant for this site for the second consecutive year with a density of 1.3/m². Similar to the previous five years, *Parastichopus parvimensis* density remained relatively low at 0.42/m^2. On August 8th approximately 15% of the *A. miniata* were observed with wasting disease. On August 27th only two *A. miniata* were observed with wasting disease.

No *Haliotis corrugata* were observed along the transect for the seventh consecutive year. No *Megastraea undosa* were observed on quadrats and only 15 were found along the transect for size frequencies. *Tegula regina* were common and often in pairs with a density of 0.042/m^2 and 18 were found for size frequencies. *Crassadoma giganteum* density remained relatively low for this site with a density of 0.032/m^2. *Megathura crenulata* were common with a density was 0.069/m². *Aplysia californica* density was 0.0028/m², the lowest recorded since 1990. *Kelletia kelletii* density was 0.058/m², an increase from the last several years. At least eight *Panulirus interruptus* were observed along the transect and they had a density of 0.0014/m².

Fish were abundant and moderately diverse this 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. *Coryphopterus nicholsii* were moderately abundant at 1.4/m² and up to 243 were counted. *Alloclinus holderi* density was 0.13/m² with up to 19 observed. Three *Lythrypnus dalli* were observed but none were observed on quadrats (0.0/m²). *Oxylebius pictus* were abundant with up to 73 counted. Nineteen *Semicossyphus pulcher* females and no juveniles nor males were observed, similar to past years. Adult and juvenile *Chromis punctipinnis* were the most abundant fish with up to 600 and 530 observed respectively. *Oxyjulis californica* were also abundant with up to 367 adults and 30 juveniles observed. Four male and four female *Halichoeres semicinctus* were observed. Up to 11 adult *Paralabrax clathratus* were observed. *Girella nigricans* were common with up to 35

observed. *Hypsypops rubicundus* were present with up to 12 observed, similar to last year. *Embiotoca jacksoni* were common with up to 15 adults and one juvenile observed. Up to seven adult *Rhacochilus vacca* were observed. A small school of ten adult *Phanerodon furcatus,* white surfperch, was observed. One adult *Sebastes mystinus* was observed. Up to five adult *Sebastes atrovirens* were observed. *Sebastes serriceps* were common with up to eleven adults and three juveniles observed. Up to seven *Sebastes chrysomelas,* black and yellow rockfish, were observed. One *Sebastes carnatus,* gopher rockfish, was observed. Two *Sebastes caurinus,* copper rockfish, were observed. *Medialuna californiensis,* halfmoon, were present in the midwater with up to 26 observed. One *Ophiodon elongatus,* lingcod, was observed. *Scorpaena guttata,* California scorpion fish, were common with up to five observed. Two *Stereolepis gigas,* giant black sea bass, were observed, which have been a commonly observed at this site in recent years. Two *Seriola dorsalis,* yellowtail,and nine *Sphyraena argentea,* barracuda, were observed. One *Gymnothorax mordax,* California moray eel, was observed. Roving Diver Fish Counts were conducted on August 8th and September 28th by five and seven divers counting 25 and 24 species respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on August 29th.

All six ARMs at this site were monitored for all indicator species. The ARMs were in good condition, but nearly completely covered by *Ophiothrix spiculata* inside and outside, similar to recent years since this species has dominated this site. Two *octopus* sp. were found in the ARMs this year. No *Haliotis* spp. were observed in the ARMs at this site, similar to past years. *Cypraea Spadicea* density was 0.83/ARM, similar to recent years. *Megathura crenulata* density was 0.67/ARM, similar to past years. *Tegula regina* were present at a density of 2.5/ARM. *Crassedoma giganteum* density was 1.5/ARM, similar to recent years, but remained low compared to the 1990's. *Patiria miniata* density remained high and similar to last year at 23/ARM, the highest recorded at this site sine monitoring the ARM began in 1992. Mean size was 29 mm, slightly higher than the past several years. *Pisaster giganteus* were observed in the ARMS at 0.67/ARM, this is the first time since 2001 that these have been observed in the ARMs. Their mean size was 37 mm, relatively small with juveniles observed. *Lytechinus anamesus* continued to be rare with none observed in the ARMs for the third consecutive year. *Strongylocentrotus franciscanus* density was higher than the past five years at 28/ARM. Their mean size was slightly higher than last year at 36 mm. *Strongylocentrotus purpuratus* density also increased from relatively low densities the past three years to 24/ARM. The means size was similar to last year at 27 mm with very few juveniles present. One *Centrostephanus coronatus* was observed at 0.17/ARM, similar to recent years. *Parastichopus parvimensis* density >10 cm and <10 cm were 0.17/ARM, and 0.50/ARM respectively and similar to last year. Three octopuses were found in the ARMs this year, slight more than in recent years.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Cathedral Cove, Anacapa Island
Site #12 ANCC
2006 sampling dates: 8/24, 9/7, 10/27.
2006 status: Mature kelp forest.

This site was similar to last year with a continued increase in macroalgae along the transect. The *Macrocystis pyrifera* canopy was less than last year at an estimated 50% cover. *Macrocystis pyrifera* were abundant along the entire transect. Adult and subadult densities were similar to last year at 0.24/m² and 0.60/m², respectively. Juvenile densities were lower at 9.8/m², but still relatively high for this site and cover increased to 64.3%, the highest recorded for this category at this site since monitoring began in 1985. Several adult and juvenile *Eisenia arborea* were observed on the tops of rocks, and adult and juvenile plants were abundant in the shallow areas above the north side of the transect. Adult and juvenile *E. arborea* densities were 0.25/m² and 0.13/m² respectively and none were observed on RPCs this year. *Laminaria farlowii* was notably more abundant than last year. Adult and juvenile *L. farlowii* densities increased and were 2.0/m² and 12/m² respectively, and cover increased to 15.7%. These are highest abundances recorded at this site since monitoring began in 1982. *Cystoseira* spp. was present in small patches at a cover of 5.3%, lower than last year. Miscellaneous brown algae cover was 11.2% similar to recent years and consisted mostly of *Dictyota/Pachydictyon*. Miscellaneous red algae cover was 11.8%, relatively high for this site. Green algae cover was 0.5%. Miscellaneous plants cover was 1.2% similar to last year. Articulated coralline algae cover was 10.2%, similar to the past four years, and still relatively low for this site. Encrusting coralline algae cover was 38.2%, similar to the past two years. Bare substrate cover was 10.0%, relatively low for this site.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata*, was 16.3%, similar to past years. The most common miscellaneous invertebrates were hydroids of various species. Miscellaneous bryozoan cover remained relatively abundant and increased to 39.7%, the highest recorded abundance for this site. *Diaperoecia californica* cover was 0.3%. Sponges were present for a cover of 2.2%. One *Tethya aurantia* was recorded on band transects for a density of 0.0014/m². Tunicate cover was similar to previous years at 3.8%. *Serpulorbis squamigerus* was present for a cover of 1.0%. *Phragmatopoma californica* was present at a cover of 0.2%, mainly associated with *M. pyrifera* holdfasts. *Corynactis californica* and *Balanophyllia elegans* were both present this year at 0.2% and 0.2% cover, an increase from previous years. *Astrangia lajollaensis* was present at a cover of 1.0%. No *Lophogorgia chilensis* were observed this year.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* density were similar to the last several years at 6.3/m² and 1.4/m² respectively. Both of these densities were relatively low and possibly due to patchiness, but *S. purpuratus* density was the lowest since monitoring began in 1982. Similar to recent years, high density patches of *S. franciscanus* were scattered around the transect and there were few *S. purpuratus* directly along the transect and these were confined in crevices. The larger *S. franciscanus* were mostly out in the open while the smaller ones were often in crevices. *Centrostephanus coronatus were* present at a density of 0.042/m². No urchin wasting disease was observed. However, we observed black spot disease on a moderate number of *S. franciscanus* tests, but to a lesser extent than the Landing Cove site.

No *Pisaster giganteus* and *Patiria miniata* were observed on both 1 m quadrats and 5 m quadrats and were rare at the site similar to previous years. *Parastichopus parvimensis* density was 1.6/m², similar to past years. No sea star wasting disease was observed at this site.

Megastraea undosa density was 2.9/m², similar to the previous five years. *Crassadoma giganteum* were common at 0.026/m², similar to recent years. No *Aplysia californica* were observed on band transect this year, 0.0/m². One *Aplysia vaccaria* was observed. We typically see one or more of these at this site. *Panulirus interruptus* were moderately abundant with a density was 0.018/m^2, similar to past years. There were some notably large *P. interruptus* at the site, and it appears that overall, there were larger lobster at this site, possibly as a result of the expanded MPA. *Megathura crenulata* density remained relatively high and was similar to last year at 0.032/m². *Cypraea Spadicea* density was 0.042/m², similar to previous years. *Kelletia kelletii* were common and had a density of 0.0028/m², one or two small juveniles were observed. *Tegula regina* were rare with none observed in quadrats this year.

Similar to past years, fish were abundant and diverse at this site. During a brief October 27th visit to this site, there was a notable recruitment event for many of the warm water species that was likely from the warm water event that occurred between July 19th to August 21st, similar to what we have observed at other sites. We did not conduct Roving Diver Fish Counts or fish transects during that second visit. *Coryphopterus nicholsii* were present at a density of 0.21/m² with up to 15 observed. *Alloclinus holderi* were present at a density of 0.38/m² with up to 23 observed. One *Lythrypnus dalli* was observed, but none were on recorded on quadrats. During our October 27th visit we did not observe any small *L. dalli* as we might have expected from the warm water event. One *Lythrypnus zebra*, zebra goby, was observed. *Oxylebius pictus* were present with up to 11 observed. *Chromis punctipinnis* were abundant with up to 145 adults and 295 juveniles observed. *Oxyjulis californica* were common with up to 24 adults and ten juveniles observed. Two female and one male *Halichoeres semicinctus* were observed. Up to eight adult *Hypsypops rubicundus* were observed. *Embiotoca jacksoni* were common with up to 31 adults and 14 juveniles observed. One adult and four juvenile *Rhacochilus vacca* were observed. *Cymatogaster aggregata*, shiner perch, were the most abundant fish with schools swimming around the site and up to 720 observed. *Brachyistius frenatus*, kelp surfperch, were abundant in the areas with thicker kelp canopy with 77 observed. Four adult *Girella nigricans* were observed. Up to nine adults and 12 juvenile *Paralabrax clathratus* were observed, the first juveniles noted this year. This was an interesting site this year for *Sebastes* spp. One adult *Sebastes mystinus* was observed. *Sebastes atrovirens* were common with up to 13 adults and two juveniles. One adult *Sebastes serranoides* was observed. Two adult *Sebastes serriceps were* observed. Michael Moss who is proficient with Sebastes spp. identification observed one young of year *Sebastes dalli*, calico rockfish, which was observed tucked in a crack in a rock pile. Another odd species was observed at the base of a *M. pyrifera* holdfast that was a young of year *Sebastes diploproa,* splitnose rockfish. Three adult *Medialuna californiensis*, halfmoon, were observed in the midwater. One *Citharichthys stigmaeus*, speckled sanddab, was observed. One *Artedius harringtoni*, scalyhead sculpin, was observed which is uncommon. David Kushner actually captured one of these earlier in the season and kept it alive long enough to attain a positive identification, and promptly returned it to the site near its home. Up to 570 juvenile and one adult *Heterostichus rostratus*, giant kelpfish, were observed. The juvenile *H. rostratus* were observed in large aggregating groups in the midwater around *M. pyrifera* plants. One *Gymnothorax mordax*, California moray eel, was observed. *Atherinops affinis*, topsmelt, were abundant with up to 330 juveniles and seven adults observed. During our visit on October 27th we observed many more juveniles of the following species: *P. clathratus, Halichoeres semicinctus, C. punctipinnis*

and *O. californica*. The Roving Diver Fish Count was conducted on August 4th by 4 divers counting 30 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on August 23rd.

Seven ARMs are present at this site, but only five were monitored for all indicator species. The remaining two had large holes in their corroded cages and bricks were falling out. These were repaired and will be sampled next season. Octopi were abundant with nine were found in the five ARMs this year. One 27 mm *Haliotis corrugata* was observed for a density of 0.20/ARM, similar to past years. Also, one 28 mm *Haliotis rufescens* was found for a density of 0.20/ARM. Cypraea *Spadicea* density remained high at 17.2/ARM. *Kelletia kelletii* were present at a density of 0.60/ARM. *Megastraea undosa* density was 2.4/ARM, similar to the past five years. *Megathura crenulata* were present at a density of 0.80/ARM. *Crassadoma giganteum* density was 4.4/ARM, similar to past years. *Patiria miniata* density remained high at 13/ARM, and the mean size was relatively low at 21 mm. *Pisaster giganteus* density decreased to 2.8/ARM and mean size remained similar to last year at 30 mm. *Strongylocentrotus franciscanus* were abundant as usual in the ARMs with a relatively high density of 130/ARM and their mean sized remained the same as last year at 30 mm. *Strongylocentrotus purpuratus* density increased to 146/ARM and the mean size decreased to 22 mm, indicative of recent recruitment. *Centrostephanus coronatus* were observed at 0.40/ARM, the first time since 2002. *Parastichopus parvimensis* notably increased in the ARMs this year, similar to what we have observed at other sites this year. Small <10 cm and large >10 cm densities were 21.4/ARM and 8.0/ARM respectively. This is the highest density of juvenile *P. parvimensis* observed at any of our sites since we began the artificial recruitment modules in 1992.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

In September, Jim Marshall was contracted to replace eight eyebolts along this transect that have needed replacing for several years.

Location: Landing Cove, Anacapa Island
Site #13 ANLC
2006 sampling dates: 6/9, 8/23, 9/27.
2006 status: Mature kelp forest.

Canopy cover of *Macrocystis pyrifera* over the transect was sparse and estimated at 20%, similar to past years. Canopy was thickest on the eastern end of the transect above the shallow reef where large mature plants were common. The deeper portions of the transect have a cobble bottom which limits the size of kelp plants in this area because as they grow large enough to float the rock substrate they move. In addition, there is a lot of boat traffic in the Cove that tends to thin out the canopy. Similar to previous years, the top of the reef at the east end of the transect had an abundance of red algae that consisted mostly of *Gelidium* spp. and *Gigartina* spp.

Overall, there was an abundance of macroalgae, more than usual for this site. Adult, subadult, and juvenile *Macrocystis pyrifera* densities were 0.030/m², 1.5/m², and 4.8/m² respectively and

cover was recorded at 40.7%. Adult density was lower than last year, while subadult and juvenile densities were similar and cover notably increased. Cover for *M. pyrifera* was high due to patches of subadults present throughout the entire transects. Juvenile *M. pyrifera, Eisenia arborea, Pterygophora californica,* and *Laminaria farlowii* were all abundant. Adult and juvenile *E. arborea* were abundant at 1.2/m² and 1.6/m², the highest densities recorded for this species since they were added to quadrats in 1996. Cover of *E. arborea* was similar to past years at 15.8%. *Pterygophora californica* was relatively abundant as well with adults and juveniles at 0.50/m² and 2.0/m² respectively, and the highest recorded density for juveniles. Cover for *P. californica* was abundant at 5.7%, the highest recorded since 1993. *Laminaria farlowii* remained at high densities with adults and juveniles at 6.3/m² and 26/m² respectively, and nearly completely covered the low lying areas in the middle of the transect. *Laminaria farlowii* cover was consequently the highest recorded at this site at a cover of 44.3%. *Cystoseira* spp. were common with a cover of 7.0%, also relatively high for this site. Miscellaneous brown algae were common at a cover of 3.5%. Miscellaneous red algae cover increased to 33.3%, the highest recorded since 1983. *Gelidium* spp. cover was 13.8%, similar to the past 17 years. All of the *Gelidium* spp. was present on top of the reef at the eastern end of the transect, similar to previous years. *Gigartina* spp. was present at a cover of 1.8%, an increase but similar to past years. Green algae cover was 1.7%. Miscellaneous plant cover was 3.5% similar to past years at this site. Articulated and encrusting coralline algae covered 17.5% and 39.0% of the bottom respectively, similar to previous years. Bare substrate cover decreased and was 3.8%, the lowest recorded since 1986, most likely due to an increase in algal abundance.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata*, remained high at 16.2%. The most common invertebrates in this category were *Spirobranchus Spinosus,* hydroids, and Amphipod tube mats in that order. Sponge cover was 7.7%, similar to past years. *Tethya aurantia* were uncommon as usual at 0.0083/m². Miscellaneous bryozoans were abundant at 42.8%, this category consisted mainly of *Thalamoporella californica*, and this species was noticeably abundant at several of the sites this year especially early in the summer. This is the highest cover recorded for bryozoans since monitoring began for this category in 1985. *Diaperoecia californica* cover was 2.5%, similar to past years. *Diopatra ornata* cover was 2.3%. No *Phragmatopoma californica* were observed on RPCs and were less common. Tunicate cover was 2.7%, similar to past years. Overall, gorgonians are rare with few at the site, similar to past years. *Lophogorgia chilensis* was the only species present at 0.0042/m². *Corynactis californica* cover was 3.5%, similar to past years. *Astrangia lajollaensis* cover was relatively low for this site at 0.5%, but similar to the past two years.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* densities were similar to recent years at 3.6/m² and 2.4/m² respectively. Approximately 40% of the large *S. franciscanus* were too difficult to remove without damaging for size frequencies to look under the spine canopy for conspecifics. However, under the ones we could remove, and similar to past years juvenile *S. franciscanus* and *S. purpuratus* were common under the spine canopy of large *S. franciscanus*. *Centrostephanus coronatus* were present at a density of 0.042/m², similar to past years. *Centrostephanus coronatus* were more common at the shallow eastern section of the site where there is more of their preferred habitat. No sea urchin wasting disease was observed, however *S. franciscanus* with Black Spot disease were common and several *S. purpuratus* were observed with this disease. Overall, this disease appears to be stable or increasing. Several

Strongylocentrotus spp. with black spot disease were observed last year. This year there was an unusually high mortality of large *S. franciscanus* and *S. purpuratus* at Landing Cove from this disease as was evident by whole test, including several whole tests that still had spines attached that had black spots/lesions on them. Not all the tests, but we estimated over 70% had black spots/lesions on them that looked like this disease was the primary cause of their death. Most of the *S. franciscanus* that were affected were large over 100 mm, and we believe this disease could have a significant impact on this group of long-lived animals.

Emergent *Patiria miniata* were rare as usual at this site and were not observed on quadrats, 0.0/m². *Pisaster giganteus* were counted on quadrats and 5 meter quadrats with densities of 0.13/m² and 0.020/m² respectively. *Linkia columbiae* were relatively common on the vertical walls of the site. *Parastichopus parvimensis* were present with a density of 0.46/m², similar to past years. On August 23rd two *Patiria miniata* were observed with wasting disease.

Haliotis corrugata remained rare with none observed on band transects for the third time since monitoring began for this species in 1983. Only one adult *H. corrugata* was observed at the site this year, this abalone measured 164 mm and is the same one observed for many years and is several meters onshore of around the 40 m mark, below the wall and on the same small rock. *Megastraea undosa* density remained low at 0.50/m². The mean size of *L. undosum* decreased to 57.6mm from 71mm last year, which could be indicative of some recruitment. One *Lithopoma gibberosa* was observed for size frequencies. No *Tegula regina* were observed on quadrats and only two were found for size frequencies. *Crassadoma giganteum* were abundant along the vertical walls at this site and were counted on both density of 0.38/m² similar to past years. *Aplysia californica* were present for a density of 0.0014/m². *Panulirus interruptus* were moderately abundant with a density of 0.032/m², similar to recent years. Several very large *P. interruptus* were observed, and the overall size of this species appears to have increased in recent years. *Cypraea Spadicea* density was 0.042/m². *Megathura crenulata* density was 0.026/m^2, similar to past years.

Fish were abundant and diverse at this site, similar to past years. We conducted fish counts at this site twice, the second to capture any warm water fish recruitment that may have occurred from the month long warm water recruitment event. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. *Coryphopterus nicholsii* continued to decline and none were observed in the quadrats for the first time since 1986, however they were still present at the site with up to 41 observed. The decline could be a displacement by the increased algal abundance (especially *Laminaria farlowii*) which alters its preferred habitat. *Alloclinus holderi* density was 0.083/m², a relatively low density for this site, and up to 11 observed. *Lythrypnus dalli* were not observed on quadrats but up to 37 were counted during the Roving Diver Fish Count. Up to seven *Lythrypnus zebra* were observed. Up to thirteen *Oxylebius pictus* were observed. *Chromis punctipinnis* were the most abundant fish species with up to 300 adults and 626 juveniles counted. Up to 280 adult and 26 juvenile *Oxyjulis californica* were observed. *Halichoeres semicinctus* were common with five males, three females, and five juveniles observed. *Semicossyphus pulcher* were common with up to eight females, one juvenile, and two males observed. *Paralabrax clathratus* were common with up to 35 adults and eight juveniles observed. *Hypsypops rubicundus* were moderately abundant with up to 16 adults and two juveniles observed. The two *H. rubicundus* were the first recruits

observed this year. *Girella nigricans*, were present with a total of 45 counted. Up to 26 adults and 15 juvenile *Embiotoca jacksoni* were observed. Four *Rhacochilus vacca* were observed. Up to four *Embiotoca lateralis* were observed. This is one of the more common places to observe this species in the eastern islands. Up to four adult *Rhacochilus toxotes*, rubberlip surfperch, were observed. Up to seven adult and 10 juvenile *Sebastes atrovirens* were observed. Up to four adults and one juvenile *Sebastes serriceps* were observed. Two *Sebastes chrysomelas*, black and yellow rockfish, and one *Sebastes carnatus*, gopher rockfish, were observed. Up to 17 *Medialuna californiensis*, halfmoon, were observed. Two *Scorpaena guttata*, California scorpion fish, were observed. One *Gibbonsia elegans*, two spotted kelpfish, was observed. *Heterostichus rostratus*, giant kelp fish, were common with up to three adults and five juveniles observed. Up to 50 *Brachyistius frenatus*, kelp surfperch, were observed. One *Myliobatis californica*, California bat ray, was observed swimming along the edge of the kelp forest. One *Ornothopias triacis*, snubnose sculpin, was observed. Three *Cephaloscyllium ventriosum*, swell shark, were observed. Roving Diver Fish Counts were conducted on June 9th and September 27th by six and seven divers observing 24 and 27 species respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on August 23rd.

Only six of the seven ARMs were monitored for all indicator species. One ARM (#2416) was upside down and was not monitored. Three cages were replaced and one more will need replacement in 2007. Two octopi were observed, similar to past years. Two *Haliotis corrugata* were observed in the ARMs for a density of 0.33/ARM and were measured at 49 mm and 70 mm. One fresh *Haliotis corrugata* shell at 98mm and one fresh *Haliotis rufescens* shell at 52 mm were found in the ARMs. *Cypraea Spadicea* were abundant with many juveniles observed. Their density was 8.2/ARM, and had a mean size of 31 mm, indicative of the recruitment event. Note that the *C. Spadicea* juveniles shell are of a different color shape and morph and some may have been missed, but we are confident most were found. *Megastraea undosa* density was 0.50/ARM, similar to past years. *Tegula regina* were added as an indicator species this year and were present at a density of 0.67/ARM. *Kelletia kelletii* were more abundant than usual with a density of 2.8/ARM, the highest recorded density at this site. *Megathura crenulata* density was relatively high at 1.2/ARM, the highest recorded at this site, and mean size was relatively low at 27mm. *Crassadoma giganteum* density was 4.0/ARM, similar last year. *Patiria miniata* density remained low at 4.3/ARM with a mean size of 18 mm, similar to last year. *Pisaster giganteus* density was 2.0/ARM, and mean size of 28 mm, similar to recent years. One 20mm *Astrometis sertulifera* was observed. *Strongylocentrotus franciscanus* density remained high at 110/ARM, higher than last year. Mean size was similar to last year at 29mm. *Strongylocentrotus purpuratus* density increased to 200/ARM with a decrease in mean size of 21mm indicative of some recruitment. One 52 mm *S. purpuratus* was observed with black spot disease in the ARMs. One 37 mm *Centrostephanus coronatus* was observed in the ARMs for a density of 0.17/ARM, the first observation of this species in four years. Similar to what we have observed at the other sites this year, there was the largest recruitment of *Parastichopus parvimensis* we have ever observed in the ARMs, their density <10 cm increased dramatically to 11/ARM, and *P. parvimensis* >10 cm declined slightly but remained relatively high at 3.7/ARM.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Southeast Sea Lion Rookery, Santa Barbara Island
Site #14 SBSESL
2006 sampling dates: 5/24, 10/24.
2006 status: Site dominated by *Ophiothrix spiculata*, *S. purpuratus* and *S. franciscanus*.

This site was very similar to last year and was nearly devoid of macroalgae. Some *Laurencia pacifica* was present and a few epiphytic juvenile *Macrocystis pyrifera* that were unhealthy looking were observed. We commonly observe this phenomenon at this site and we presume that they are growing on the gorgonians because they act as a refuge from *Strongylocentrotus* spp. grazing. No algae were counted on quadrats, similar to the last several years. Green algae were present at a cover of 0.5%, similar to last year. Miscellaneous brown algae were present at a cover of 0.2%, similar to last year. Miscellaneous red algae cover was relatively low for this site at 1.5%. Articulate coralline algae cover was 0.3%. Encrusting coralline algae was very common and increased to 67.2%, the highest recorded in 25 years. Miscellaneous plants, mostly consisting of filamentous diatoms cover was 1.7%. Bare substrate covered 20.5% of the bottom, similar to recent years.

Ophiothrix spiculata continue to dominate this site. However, invertebrate diversity appeared to be higher than recent years at the southern end of the transect. The most common miscellaneous invertebrates, excluding were hydroids. Miscellaneous invertebrate cover, excluding *Ophiothrix spiculata*, was 6.3%, similar to recent years. *Corynactis californica* cover was 1.2%, similar to past years. *Astrangia lajollaensis* and *Balanophyllia elegans* continued to have low cover at 1.5% and 0.0% respectively. Prior to 2000, both of these species were more abundant. Miscellaneous bryozoan cover remained low at 1.0%, similar to last year. Sponge cover was 0.7%. *Tethya aurantia* density was 0.145/m², similar to the past decade. *Lophogorgia chilensis* were relatively abundant with a density of 0.18/m^2, similar to recent years. *Muricea californica* were common with a density of 0.033/m^2, relatively high for this site. *Muricea fruticosa* were rare as usual with a density of 0.0014/m^2 similar to past years.

Strongylocentrotus purpuratus density continued to decline to 1.8/m², one of the lowest densities recorded at this site in the past 25 years. *Strongylocentrotus franciscanus* density was 11/m², similar to the past two years, and relatively high for the past 25 years. *Strongylocentrotus franciscanus* and *S. purpuratus* juveniles were rare. *Lytechinus anamesus* were rare and none were observed on band transects and only 12 were found for size frequency measurements. Adult *Centrostephanus coronatus* were present in moderate numbers with a density of 0.33/m², most were large indicating little recent recruitment. No sea urchin wasting disease was observed on May 24th, but we estimated 10% of the S. purpuratus and 5% of the *S. franciscanus* showed pronounced signs of this disease on October 24th.

Ophiothrix spiculata continued to dominate the site and cover was recorded at 43.2%, similar to 2005. *Ophiothrix spiculata* were mostly present along the northern 60 meters of the transect and less abundant along the remaining southern 40 meters where there tends to be more rocky relief. *Patiria miniata* density was 0.67/m^2, similar to the last several years and relatively high for this site compared to the past 25 years. *Pisaster giganteus* density was similar to last year and was counted

on quadrats and 5-m quadrats with densities of 0.17/m² and 0.085/m² respectively. *Pycnopodia helianthoides* density was 0.0014/m², and only two large individuals were found for size frequency measurements. *Parastichopus parvimensis* density was similar to recent years at 0.29/m², but relatively low compared to years prior to 2002. Lower *P. parvimensis* densities may be a result of increased abundance of *O. spiculata*. No sea star wasting disease was observed during our May or October visits.

Megastraea undosa density was 0.33/m^2, similar to past years. *Megathura crenulata* density continued to gradually increase in density for the fourth consecutive year and was 0.035/m^2, the highest recorded at this site since monitoring for this species began in 1983. We found no live abalone, *Haliotis* spp., for the twelfth consecutive year. No fresh abalone shells were found. *Aplysia californica* density was 0.0014/m², the lowest recorded at this site since monitoring began. However, *A. californica* density has been high at some of the other Santa Barbara Island sites. *Crassadoma giganteum* density increased to 0.017/m². No pencil oysters, *Pteria sterna* were observed for the fourth consecutive year. *Pteria sterna* are a warm water species that recruited here during the 1997/1998 El Niño and have since declined.

Fish abundance and diversity remained low this year. The decline in diversity appears to be correlated with the continued decline in algal abundance. *Coryphopterus nicholsii* ended a three year density decline with an increase to 0.58/m². *C. nicholsii* were the most abundant fish at this site with up to 56 observed. No *Alloclinus holderi* were observed on quadrats (0.0/m²) or during the roving diver fish count, the lowest recorded value since 1985. Several individual *A. holderi* were observed after the fish count. Three *Oxylebius pictus* were observed, similar to last year. No *Chromis punctipinnis, Oxyjulis californicus, Semicossyphus pulcher*, or *Halichoeres semicinctus* were observed. Three adult *Hypsypops rubicundus* were observed. No Embiotocidae were observed. Two KGB were observed. One adult *Scorpaena guttata*, California scorpionfish, was observed. One *Squatina californica*, Pacific angel shark, was observed. One *Paralichthys californicus*, California halibut, was observed. We have made increasing observations of these over the past several years, indicating a recovery from depressed abundances that were presumably caused by an intensive fishery for this species during the 1980's. Roving diver fish counts were conducted on May 24th by three divers observing 10 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on October 24th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Arch Point, Santa Barbara Island
Site #15 SBAP
2006 sampling dates: 05/23, 10/23.
2006 status: Site dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus*.

Strongylocentrotus spp. density remained high. Similar to last year, the site was mostly devoid of macroalgae and what was present was mostly found on tops of rocks such as *Codium setchelli/hubsii*, *Sargassum muticum,* and *Codium fragile*. *Laurencia pacifica* was common.

There was a small patch of *Cystoseira* spp. but it was not observed on RPC's. Green algae were present at 0.2% cover. Miscellaneous brown algae were not observed, 0.0% cover, the lowest recorded since 1995. No *Desmarestia* spp. was observed this year. Miscellaneous red algae remained similar to last year at 13.3% cover, and consisted mainly of *Laurencia pacifica*. *Hypsypops rubicundus* turf nests were very abundant at this site, similar to past years. Cover of miscellaneous plants was 0.7% and consisted of filamentous diatoms, similar to last year. Articulated coralline algae remained similar to last year at 0.7% cover. Encrusting coralline algae was present at 58.2% cover of the bottom, similar to last year. Bare substrate cover was 20.8%, similar to recent years.

The most common miscellaneous invertebrates observed on RPC's, excluding *Ophiothrix spiculata*, had a cover of 6.8%, and consisted mostly of barnacles *Balanus* spp. *followed* by hydroids. *Corynactis californica* cover was 1.7%, similar to recent years. *Astrangia lajollaensis* cover was 0.2%. Tunicate cover was 0.2%, similar to last year. Bryozoans have been quite abundant this year throughout our sites at the eastern Channel Islands. Most notable has been *Thalamoporella californica* and epiphytic *Membranipora* spp. on *Macrocystis pyrifera*. Other noted bryozoan species present were *Hippodiplosia insculpta* and *Heteropora pacifica*. Although the bryozoans were abundant throughout the site they were mainly observed off the main transect on top of large rocks and their cover was 1.0%, similar to last year. Similar to previous years, *Diaperoecia californica* was rare at 0.2% cover. *Lophogorgia chilensis* density was 0.0014/m²; one individual was observed which is usual for this site.

Strongylocentrotus purpuratus and S. franciscanus densities remained high and were similar to last year at 74.7/m² and 18.3/m² respectively. *Strongylocentrotus purpuratus* recruits were common while *S. franciscanus* recruits were rare. *Lytechinus anamesus* were rare with a density of 0.21/m², similar to recent years. *Centrostephanus coronatus* density remained low at 0.25/m², with no juveniles observed. No sea urchin wasting disease was observed on May 23rd, and we estimated that 20% of the *S. purpuratus* had prominent signs of wasting disease on October 23rd.

Pisaster giganteus was recorded on 1 m quadrats and 5 m quadrats with densities of 0.0/m² and 0.12/m² respectively. *Patiria miniata* density was similar to last year at 1.0/m². No *Pycnopodia helianthoides* were observed on band transects this year (0.0/m²). No *Ophiothrix spiculata* were observed on RPC's this year, similar to past years. *Parastichopus parvimensis* density was 0.042/m², the lowest recorded since 1998. *Parastichopus parvimensis* were present just not along the main transect. No sea star wasting disease was observed on May 23rd, and two *Patiria miniata* were observed with wasting disease on October 23rd.

Megastraea undosa density was 0.38/m², similar to last year with mainly smaller individuals' present indicative of recent recruitment. *Tegula regina* were abundant with a density of 0.38/m²., *Tegula aureotincta* and *Tegula eiseni* were quite abundant at this site. *Lithopoma gibberosum* were rare at this site with a density of 0.042/m². *Aplysia californica* have been common at many of the Santa Barbara Island sites this year, at this site density was 0.093/m². *Crassadoma giganteum* density was 0.022/m², higher than in recent years. One live 10 mm *Haliotis corrugata* was observed in a quadrat. *Megathura crenulata* density was 0.0014/m², similar to past years. *Panulirus interruptus* density was 0.011/m², higher than usual for this site.

Similar to recent years, fish abundance and diversity at this site were moderately low. *Coryphopterus nicholsii* were common with a density of 0.17/m² and up to 43 observed. *Alloclinus holderi* were uncommon with up to seven observed, and none were sampled on quadrats. This is only the second time they haven't been sampled in quadrats since monitoring began for this species in 1985. *Oxylebius pictus* were common with up to 37 adults observed, and several individuals were noted with mating colors. Adult *Chromis punctipinnis* were the most abundant fish with up to 198 adults and no juveniles observed. *Oxyjulis californica* were present with up to 30 adults observed. One female *Halichoeres semicinctus* was observed. Up to five female and one male *Semicossyphus pulcher* were observed, all were relatively small. *Hypsypops rubicundus* were abundant with up to 36 adults observed, with males commonly guarding their nests. *Paralabrax clathratus* were rare with one adult observed. *Girella nigricans* were moderately abundant with up to 20 adults observed. No other Embiotocidae were observed, similar to last year. One *Sebastes rastrelliger*, grass rockfish, was observed near the south end of the transect. It is possible that this is the same fish that has been observed in previous years. One adult *Sebastes serriceps* was observed. One KGB was observed. Up to three adult *Medialuna californiensis* were observed in the midwater. Two adult and one juvenile *Embiotoca jacksoni* was observed. One *Artedius corallinus*, coralline sculpin, and one *Ornothopias triacis*, snubnose sculpin, were observed. One juvenile *Scorpaenichthys marmoratus*, cabezon, was observed but not during the roving diver fish count. Roving diver fish count was conducted by four divers on May 23rd observing 17 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on October 23rd.

On October 23rd we observed pieces of the ARMs that were installed here many years ago about 100 m to the south of the site. One ARM was still somewhat intact.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Cat Canyon, Santa Barbara Island
Site #16 SBCAT
2006 sampling dates: 6/19, 10/26.
2006 status: Dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus.*

Similar to the other original monitoring sites on this island, this site a remains dominated by *Strongylocentrotus* spp. and is essentially devoid of macroalgae. As seen at the other echinoderm dominated areas diversity was low. No macroalgae was observed on quadrats or 5-meter quadrats this year. No *M. pyrifera*, *Eisenia arborea*, *Pterygophora californica*, *Laminaria farlowii*, *Cystoseira* sp., or *Desmarestia* sp. were observed along the transect this year. Miscellaneous brown algae cover was not observed on RPC's (0.0%). Miscellaneous red algae cover slightly increased to 7.5%, mainly consisting of *Laurencia pacifica* and filamentous red algae. Encrusting coralline algae remained abundant, as expected for an echinoderm-dominated area, with a cover of 71.8%, similar to the past eight years. Articulate coralline algae remained low for a cover of 1.8%. Miscellaneous plants, usually consisting of brown filamentous diatoms

were present at 12.0% cover, similar to other sites this year. Bare substrate cover was recorded at 21.7%, similar to past years.

The most common miscellaneous invertebrates encountered on RPCs, excluding *Ophiothrix spiculata,* was the Christmas tree worm, *Spirobranchus Spinosus* and hydroids. This category covered 13.2% of the bottom, similar to recent years. Tunicate abundance remained low and none were observed on RPCs this year. The tunicate *Pycnoclavella stanleyi* was notably less abundant than last year. Miscellaneous bryozoan cover remained low for this site and none were observed on RPCs. Similar to past years *Diaperoecia californica* was uncommon and not observed on RPCs this year. No sponges were observed on RPCs this year. No *Tethya aurantia* were observed on band transects this year. *Astrangia lajollaensis* cover was 3.2%, the highest recorded at this site. *Balanophyllia elegans* was observed on RPCs for a cover of 1.5%. *Corynactis californica* was not observed on RPCs.

Strongylocentrotus spp. remained abundant, but declined since last year. *Strongylocentrotus purpuratus* were abundant but their density declined to 34/m². *Strongylocentrotus franciscanus* also remained abundant with a density of 13/m², a slight decrease from last year. *Lytechinus anamesus* were rare with one observed on quadrats for a density of 0.042/m². *Centrostephanus coronatus* density remained low at 0.042/m², similar the past three years. We estimated that 10% of the *S. franciscanus and 25% of S. purpuratus* showed pronounced signs of sea urchin wasting disease on June 19th. This disease noticeably became more prevalent later on in the summer and during our October 26th visit we estimated that 100% of the *S. purpuratus* and 20% of the *S. franciscanus* showed prominent signs of the disease. In October, whole *S. purpuratus* tests were common indicating most likely recent death as a result of wasting disease. If this continues, we predict precipitous declines in sea urchin density and possibly the return of a kelp forest in the near future. Wasting disease was observed in many areas around the island in October.

Pisaster giganteus densities declined and were counted on both 1 m quadrats and 5 m quadrats for densities of 0.042/m^2 and 0.080/m^2 respectively, similar to prior years. *Patiria miniata* density remained relatively high for this site at 0.33/m^2, similar to last past three years. *Parastichopus parvimensis* density remained relatively high for this site at 0.83/m², the highest recorded but similar to recent years. No *Ophiothrix spiculata* were observed on RPCs this year. No sea star wasting disease was observed.

Megastraea undosa density remained low at 0.13/m², similar to last year. Both large and small individuals were common. *Cypraea Spadicea* density remained low with none observed on quadrats, similar to past years. *Megathura crenulata* density was 0.0097/m², higher than the past several years. No *Haliotis* spp. were observed on band transects, similar to recent years. *Aplysia californica* density was 0.049/m². *Crassadoma giganteum* density decreased to 0.0097/m², similar to recent years, but relatively high for this site. One fresh Haliotis corrugata shell measuring 27 mm was found.

Fish were low in abundance, but there was higher diversity this year. Similar to the past several years, *Coryphopterus nicholsii* density was 0.083/m² with up to six observed. *Alloclinus holderi* were common and notably large with a density of 0.042/m² and up to 15 observed. No *Lythrypnus dalli* were observed. *Oxylebius pictus* were uncommon with up to seven observed,

same as last year. *Chromis punctipinnis* were the most abundant fish with up to 375 adults observed, and no juveniles. *Oxyjulis californica* were common with up to 150 observed. Two female *Semicossyphus pulcher* were observed. One male and one female *Halichoeres semicinctus* were observed this year. Up to eighteen adult and no juvenile *Hypsypops rubicundus* were observed. Up to three adult *Paralabrax clathratus* were observed. Up to four adult *Girella nigricans* were observed. Two adult *Embiotoca jacksoni* were observed. One adult *Sebastes serriceps* was observed. One adult *Sebastes atrovirens* was observed. One adult *Sebastes rastrelliger,* grass rockfish, was observed, similar to past years. *Medialuna californiensis,* halfmoon, were very abundant with up to 40 observed. One *Artedius corallinus*, coralline sculpin, was observed. One *Caulolatilus princeps*, ocean whitefish, was observed. One *Paralichthys californicus,* California halibut, was observed, but not during the roving diver fish count. One *Caulolatilus princes*, ocean whitefish, was observed. Roving Diver Fish Counts were conducted on June 19th by five divers counting 18 species. There was a large swell when we conducted fish counts and fish transects and this could have affected the data as fish tend to move offshore during turbulent conditions.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on October 26th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Miracle Mile, San Miguel Island
Site #21 SMMM
2006 sampling dates: 9/13, 9/14.
2006 status: Mature kelp forest.

Note: this 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 to specifically look at a *Haliotis rufescens* population. The site was specifically selected for its high density of *H. rufescens* and perhaps was one of the reasons why density declined in subsequent years.

Macrocystis pyrifera formed a thick mature canopy that was estimated to cover 90% of the transect, similar to last year. The kelp forest at this site has remained mature and still has very large mature widely spaced *M. pyrifera* plants, especially in the deeper areas along the transect. Adult, subadult and juvenile *M. pyrifera* densities were 0.12/m², 0.11/m², and 1.4/m², respectively and cover was 18.2% similar to past years. Adult and juvenile *Eisenia arborea* densities were 0.92/m² and 0.083/m², and cover was 42.3% similar to last year. Adult and juvenile *Pterygophora californica* densities were 0.96/m² and 0.58/m² respectively and cover was 14.0%, similar to recent years. *Cystoseira* sp. was common with a cover of 3.8%. Miscellaneous red algae were abundant with a cover of 72.0%, the highest recorded since we began monitoring this species at this site in 2003. This category mainly consisted of *Callophyllis* spp.*, and Rhodymenia* spp. *Gigartina* spp. was also relatively abundant with a cover of 7.3%, also the highest recorded. Articulated coralline algae cover increased to 43.8%. Encrusting coralline algae cover declined to 23.2% cover, probably a result of the abundance of other understory algae. Bare substrate covered 14.0% of the bottom, similar to past years.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata,* was 11.0%. The most dominant miscellaneous invertebrates in this category were hydroids and amphipod tube mats. *Phragmatopoma californica* remained at low levels compared to several years ago with a cover of 0.2%, lower than last year. Sponges were relatively abundant with a cover of 5.0%, similar to past years. *Tethya aurantia* were abundant with a density of 0.23/m², similar to past years. Miscellaneous bryozoans covered 5.5% of the bottom, lower than the past two years. Tunicates were abundant with a cover of 24.3%, higher than the past two years. No *Styela montereyensis* was observed on quadrats, similar to past years. *Tealia lofotensis* were abundant on the high relief areas with a density of 0.22/m², similar to past years. *Corynactis californica* and *Balanophyllia elegans* cover were both 0.3%.

Strongylocentrotus franciscanus density was relatively low for this site at 3.1/m², the lowest recorded since monitoring began in 2001. *Strongylocentrotus purpuratus* remained rare with a density of 0.0/m², and only 29 were found for size frequency measurements. *Strongylocentrotus franciscanus* were large and mainly located in the crevice habitat along with *S. purpuratus,* similar to past years. No sea urchin wasting disease was observed this year.

Patiria miniata density remained similar to last year at 1.8/m². *Pisaster giganteus* are abundant at this site and were counted on both quadrats and 5-meter quadrats with densities of 0.75/m^2 and 0.40/m^2 respectively, similar to recent years. *Pycnopodia helianthoides* was present at a density of 0.039/m², similar to past years. *Parastichopus parvimensis* density was 0.083/m². No sea star wasting disease was observed this year.

Haliotis rufescens were counted on both band transects and quadrats and their densities were 0.52/m^2 and 0.25/m^2 respectively. Quadrats are not the proper protocol for this species, but are easy to add as an additional species and we decided to count them using this technique because of their relatively high abundance at this site directly along the main transect. These densities were both similar to last year and represent a similar density on band transects and a small decline on quadrats, but there is high sampling variability with both techniques. These densities indicated an end to the decline that has been observed along the transect since this site was established in 2001. Few small *H. rufescens* were found during size frequencies this year, a total of 121 were measured with a mean size of 175 mm. Similar to last year, only a few fresh *H. rufescens* shells were present and older shells were moderately abundant, but do not appear to be abnormally abundant for an area with such a high density of live animals. Similar to last year, it appears that the *H. rufescens* originally along the transect have moved towards the northeastern side of the transect and are in deeper water (10+ m) at the sand-rock interface.

No *Megastraea undosa* were observed along the transect this year. *Lithopoma gibberosum* density was 0.13/m², similar to past years. *Kelletia kelletii* remained relatively abundant at a density of 0.029/m², similar to last year. *Megathura crenulata* density remained low for this site, but was similar to last year at 0.029/m², with mostly larger individuals observed. Rock crabs, *Cancer productus* and *C. antennarius* were common. Gumboot chitons, *Cryptochiton stelleri*, were common and counted during band transects (but these data are not entered in the data base); 12 were observed on band transect for a density of 0.017/m^2.

For the first time in several years we were able to conduct Roving Diver Fish Counts. Fish were moderately abundant and diverse, similar to past years. *Coryphopterus nicholsii* were rare and none were observed on quadrats and up to three observed on the fish count. *Oxylebius pictus* were common with up to 23 observed. *Oxyjulis californica* were present with up to 11 adults and two juveniles observed. One female *Semicossyphus pulcher* was observed. Up to six adult and three juvenile *Embiotoca jacksoni* were observed. Up to two adult *Rhacochilus vacca* were observed. *Embiotoca lateralis* were common with up to 23 adults and three juveniles observed. Two *Rhacochilus toxotes*, rubberlip surfperch, were observed. *Sebastes* spp. were moderately abundant and notably diverse at this site, similar to other sites around San Miguel Island. Up to 22 adult and no juvenile *Sebastes mystinus* were observed. *Sebastes atrovirens* were common with up to 21 adults and seven juveniles observed. Up to nine adult *Sebastes serranoides* were observed. One adult *Sebastes serriceps* was observed. Up to eight *Sebastes chrysomelas* were observed. *Sebastes melanops*, black rockfish, were present with up to three adults observed. Four KGB were observed. Two *Sebastes rastrelliger*, grass rockfish, were observed. One *Sebastes miniatus*, vermillion rockfish, was observed. Up to 12 *Brachyistius frenatus*, kelp surfperch, were observed in the midwater among the *M. pyrifera* stipes. Tow adult *Scorpaenichthys marmoratus*, cabezon, were observed. One *Ophiodon elongatus*, lingcod, was observed. One *Anarrhichthys ocellatus*, wolf eel, was observed. One adult and one juvenile *Heterodontus rostratus*, giant kelpfish, were observed. One *Artedius corallinus*, coralline sculpin, was observed. One *Ornothopias triacis*, snubnose sculpin, was observed. A small school of 10 *Aulorhynchus flavidus*, tube snouts, were observed. Roving Diver Fish Counts were conducted on September 13th by five divers counting 27 species.

All seven ARMs present last year were intact, in good condition, and were monitored for all indicator species. Similar to past years, the ARMs had sand in them covering some of the bricks, especially the bottom layers. There was noticeably less *Phragmatopoma californica* covering the ARMs though they were still common. Several *Tealia lofotensis* were noted in the ARMs. Thirteen *Haliotis rufescens* were found in the ARMs for a density of 1.9/ARM, a decrease from last year, but higher than all of the other sites with ARMs. Mean size increased to 84 mm; and, only 23% of the *H. rufescens* were less than 45 mm, suggesting lower recruitment than the past two years. Three fresh *H. rufescens* shells were found within the ARMs at 21, 37, and 39 mm respectively. *Crassadoma giganteum* density was 0.57/ARM, similar to past years. *Patiria miniata* density was 8.9/ARM similar to last year and their mean size was 33 mm. *Pisaster giganteus* density decreased to 0.71/ARM and mean size increased to 48 mm. *Pycnopodia helianthoides* density was 0.71/ARM, higher than past years. *Strongylocentrotus franciscanus* density was similar to last year at 6.1/ARM and size increased to 74 mm. *Strongylocentrotus purpuratus* density remained low and was 0.71/ARM, similar to the past two years. Similar to previous years, no *Parastichopus parvimensis* were observed in the ARMs.

No temperature loggers are deployed at this site.

Location: Santa Rosa Island, Cluster Point
Site #22 SRCP
2006 sampling dates: 7/26, 7/27.
2006 status: Developing kelp forest.

There was a notable decrease in canopy cover at this site and a shift from a mature kelp forest to a developing kelp forest. The disturbance that caused this shift was not obvious and it is unknown whether it was from winter storms, temperature, or species interactions. *Macrocystis pyrifera* canopy cover was estimated at 20%, considerably less than the 100% canopy cover observed last year. The decrease in canopy cover allows for optimal light conditions for understory algae and we observed a corresponding increase in a number of species or taxa. All categories of *M. pyrifera* increased this year. Adult, subadult, and juvenile densities were 0.24/m², 1.02/m² and 7.8/m² respectively, and cover was 22.3%. Similar to last year, adult *Eisenia arborea* density was 0.042/m² and several juveniles were observed at the site, but none on quadrats and cover was 0.3%. Adult and juvenile *Pterygophora californica* increased to 1.4/m² and 5.8/m² respectively and had a cover of 9.2%. *Laminaria farlowii* was not observed at the site, but several *Laminaria setchelli* were observed. Green algae were present at a cover of 0.2%. Miscellaneous brown algae cover increased to 3.7%. *Desmarestia* spp. was common with a cover of 8.0%, none was observed on RPCs last year. Miscellaneous red algae cover dramatically increased to 57.7% from 12.8% last year. *Gigartina* spp. cover was higher than last year at 2.0%. Articulated and encrusting coralline algae covered 5.2% and 25.2% respectively. Bare substrate covered 15.8% of the bottom, similar to last year.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata,* notably declined to 8.3%. Similar to last year the most dominant miscellaneous invertebrate in this category were hydroids, mainly *Obelia* spp., but other hydroid were common as well. Tunicates were abundant and diverse with a cover of 6.0%, similar to last year. The most common tunicates were *Cystodytes* spp., *Pycnoclavella* sp., *Aplidium* spp., and *Distaplia* sp. *Styela montereyensis* density was 0.33/m². Sponges were moderately abundant with a cover of 6.3% and mainly consisted of a cobalt blue (*Hymenamphiastra cyanocrypta*), an orange encrusting species and *Tethya aurantia*. *Tethya aurantia* were abundant with a density of 0.28/m² and all sizes were present. Miscellaneous bryozoans were abundant at 12.2% cover, similar to last year. *Membranipora* spp. and *Bugula* spp. were the most common in this category. No *Diaperoecia californica* were observed on RPCs, and they were uncommon at the site. *Diopatra ornata* were common in the low lying areas but few were directly along the transect with a cover of 1.3%. *Phragmatopoma californica* were common at 0.5% cover, but notably less than last year. *Phragmatopoma californica* was mostly associated with *M. pyrifera* holdfasts. *Balanophyllia elegans* were moderately abundant and *Astrangia lajollaensis* were common with covers of 0.5% and 0.5% respectively. *Corynactis californica* were common at a cover of 1.0%. *Tealia lofotensis* were common on the steep rocky areas with a density of 0.061/m². Similar to Chickasaw, *Lophogorgia chilensis*, *Muricea californica* and *Muricea fruticosa* were all absent from the site.

Densities of *Strongylocentrotus* spp. remained low and they were mostly confined to the crevice habitat. *Strongylocentrotus franciscanus* and *Strongylocentrotus purpuratus* were common in patches with densities of 1.0/m² and 0.29/m² respectively. Juvenile *Strongylocentrotus* spp. were common in the spine canopy of conspecifics. Similar to Chickasaw which is inside the MPA, *S. franciscanus* were notably large at this site with more than half of the ones measured over the commercial legal size of 83 mm; their mean size was 82 mm. No sea urchin wasting disease was observed.

Pisaster giganteus were recorded on 1 m quadrats and 5 m quadrats with densities of 0.21/m² and 0.12/m² respectively, similar to last year. *Patiria miniata* were moderately abundant at a density of 1.6/m², similar to last year. *Pycnopodia helianthoides* were abundant with a density of 0.065/m² and consisted of mostly medium and small stars. *Henricia leviuscula* were abundant throughout the site. *Parastichopus parvimensis* were present at a density of 0.25/m². No sea star wasting disease was observed.

Cypraea Spadicea were present at a density of 0.13/m². No *Megastraea undosa* were observed and *L. gibberosa* were rare with none observed on quadrats. *Megathura crenulata* were common and comprised mostly of large individuals with a density of 0.021/m². *Kelletia kelletii* were common with a density of 0.013/m². *Crassadoma giganteum* were common with a density of 0.028/m² and most were small. No *Aplysia californica* were observed. *Haliotis rufescens* were uncommon with a density of 0.0014/m² and only 2 were found for size frequencies. These two were relatively small at 65 mm and 124 mm. In addition four fresh *H. rufescens* shells were found were and these measured at 17, 70, 116, and 133 mm. One fresh *Haliotis walallensis*, flat abalone, shell was found and it measure at 61 mm.

Fish were abundant but less diverse than last year. *Coryphopterus nicholsii* were rare with only up to four observed and none on quadrats, similar to other sites on Santa Rosa Island. *Oxylebius pictus* were common with up to 18 observed. *Oxyjulis californica* were rare with up to eight adults observed. Four female and four male *Semicossyphus pulcher* were observed. Ten adult and one juvenile *Embiotoca jacksoni* was observed. *Rhacochilus vacca* were present with up three adults. *Embiotoca lateralis* were relatively abundant for this species with up to 37 adults and five juvenile observed. Eight *Hypsurus caryi*, rainbow surfperch, were observed. *Brachyistius frenatus,* kelp surfperch, were present in the canopy with up to five observed. Thirty three adult and one juvenile *Sebastes mystinus* were observed. Nine adult and no juvenile *Sebastes atrovirens* was observed. Four adult *Sebastes serranoides* and one *Sebastes melanops*, black rockfish, were observed in the midwater. One adult and no juvenile *Sebastes serriceps* were observed. Three adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. One *Sebastes caurinus*, copper rockfish, was observed. Two large adult *Sebastes miniatus*, vermillion rockfish, were observed. Three adult *Ophiodon elongatus,* lingcod, were observed. One *Scorpaenichthys marmoratus*, cabezon, was observed. Roving Diver Fish Count was conducted on July 26th by 6 divers counting 21 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on November 21st.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Trancion Canyon, Santa Rosa Island
Site #23 SRTC
2006 sampling dates: 7/13.
2006 status: Mature kelp forest.

This site continued to be a mature kelp forest with healthy *Macrocystis pyrifera* and with slightly less canopy this year estimated to cover 60% of the transect. There was an abundance of

understory algae and encrusting invertebrates at this site. Adult *M. pyrifera* density declined to 0.15/m² while subadult and juvenile increased to 0.18/m² and 4.2/m² respectively. Cover remained about the same at 10.8%. Adult and juvenile *Pterygophora californica* were moderately abundant in the appropriate habitat and had densities of 0.29/m² and 0.71/m² respectively, and had a cover of 1.7%, similar to last year. *Laminaria farlowii* was common at the site just not along the main transect with none observed on quadrats and RPCs, similar to last year. *Eisenia arborea* was rare with none observed on quadrats and a cover of 0.2%, similar to last year. Miscellaneous brown algae cover was 1.3%. Miscellaneous red algae were abundant with a cover of 45.3%. This category was diverse, with *Callophyllis* spp. likely the most abundant species. *Gigartina* spp. was moderately abundant, but patchy with a cover of 2.8%. Articulated coralline algae were moderately abundant with a cover of 8.3%. Encrusting coralline algae cover was 19.3%. Bare substrate cover was 11.0%.

Encrusting invertebrates including tunicates, sponges, and bryozoans were abundant and diverse. Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata*, was 9.7%, with hydroids being the most abundant invertebrate in this category. Sponges were abundant and diverse with a cover of 6.3%, similar to last year. *Tethya aurantia* were common with a density of 0.21/m² and notably large with a mean size of 87 mm. *Corynactis californica*, *Balanophyllia elegans*, and *Astrangia lajollaensis* were all present with covers of 0.8%, and 1.3% and 0.7%, respectively. Gorgonians were almost entirely absent from the site, similar to nearby sites, with none recorded on band transects. Tunicates were relatively abundant and diverse with a cover of 8.3%, similar to last year and sites nearby. *Styela montereyensis* were common at a density of 0.46/m². Bryozoans were abundant and diverse with a cover of 13.5%. *Diaperoecia californica* was not observed along on RPCs this year but was present at the site. *Diopatra ornata* was abundant in the lower lying areas at the west end of the transect with a cover of 13.7%. *Phragmatopoma californica* was present with a cover of 2.8%.

Strongylocentrotus franciscanus were moderately abundant with a density of 5.1/m², similar to last year. *Strongylocentrotus purpuratus* were common with a density of 1.9/m², similar to last year. *Strongylocentrotus* spp. were mostly located in crevice habitat. Juvenile *Strongylocentrotus* spp. were rare. No *Lytechinus anamesus* were observed. No sea urchin wasting disease was observed.

Pisaster giganteus were counted on both quadrats and 5 meter quadrats at densities of 0.083/m² and 0.14/m² respectively and both declines from last year. *Patiria miniata* density was 1.7/m², similar to other nearby sites on Santa Rosa Island. *Pycnopodia helianthoides* density was lower than last year at 0.029/m² and mostly comprised of larger individuals. *Parastichopus parvimensis* density was 0.50/m². No sea star wasting disease was observed.

Cypraea Spadicea were abundant at a density of 0.79/m². No *Lithopoma gibberosa* were observed and *Megastraea undosa* were rare with none observed on quadrats. No *Kelletia kelletii* were observed at the site. Large and small *Crassadoma giganteum* were moderately abundant with a density of 0.022/m². No *Aplysia californica* were observed on band transects. *Haliotis rufescens* were rare with one juvenile observed under the sea urchin spine canopy while conducting size frequency measurements.

Fish were abundant and diverse, similar to last year. *Coryphopterus nicholsii* were present at a density of 0.083/m² and up to 12 observed. Adult *Oxylebius pictus* were moderately abundant with up to 20 observed. *Chromis punctipinnis* were present with up to 13 adults observed. *Oxyjulis californicus* were abundant last year but were not observed this year during the Roving Diver Fish Count. Nine Female, three male and no juvenile *Semicossyphus pulcher* were observed. The *S. pulcher* males were notably large. Up to 16 adult *Embiotoca jacksoni* were observed. Up to five adult *Rhacochilus vacca* were observed. *Embiotoca lateralis* were moderately abundant with up to 14 adults and one juvenile observed. One *Rhacochilus toxotes*, rubberlip surfperch, was observed. Three *Brachyistius frenatus*, kelp surfperch, were observed. *Sebastes mystinus* were the most abundant fish with up to 110 adults and one juvenile observed. Up to 16 adult *Sebastes atrovirens* were observed. Up to eight adult *Sebastes serranoides* were observed. One adult *Sebastes serriceps* was observed. *Sebastes melanops*, black rockfish, were present with up to six adults observed. Up to two adults and one juvenile *Sebastes chrysomelas*, black and yellow rockfish, were observed. Up to three adult *Sebastes carnatus* were observed. One KGB was observed. Two adult *Ophiodon elongates*, lingcod, were observed. Three adult *Scorpaenichthys marmoratus*, cabezon, were observed. One *Artedius corallinus*, coralline sculpin, was observed. A small school of 20 *Aulorhynchus flavidus*, tubesnout, was observed. Roving Diver Fish Counts were conducted on July 13th by five divers observing 22 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on November 15th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Chickasaw, Santa Rosa Island
Site #24 SRCSAW
2006 sampling dates: 7/12.
2006 status: Mature kelp forest.

This site remained a healthy mature kelp forest with widely spaced *Macrocystis pyrifera* plants. The *M. pyrifera* canopy cover was estimated at 65%, slightly less than last year. Adult *M. pyrifera* density decline to 0.095/m² while subadult, juvenile and cover increased to 0.24/m², 4.0/m² and 16.0% respectively. Adult *Pterygophora californica* density was lower than last year with none observed on quadrats. Juvenile *P californica* density was higher at 0.21/m², and cover increased to 1.3%. *Laminaria farlowii* adults were absent at the site, but juveniles were present at a low density of 0.042/m². Adult and juvenile *Eisenia arborea* were common on top of large rocks but none were recorded along the main transect, similar to last year. *Desmarestia* spp. was present with a cover of 0.5%. *Cystoseira* spp. was present at a cover of 1.0%. Miscellaneous red algae increased dramatically to 68.3% cover, possibly due to less canopy and more favorable light conditions, this has been a general trend at many of the sites this year. This category mainly consisted of *Rhodymenia* spp. and *Microcladia* spp. Both articulated coralline and encrusting algae cover were lower than last year at 7.0% and 5.8% respectively. Bare substrate covered 15.0% of the bottom, higher than last year.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, were more abundant than last year covering 34.7% of the bottom. This most dominant miscellaneous invertebrate in this category

were hydroids, *Obelia* spp., and these were often covered in silt. Bryozoans were abundant and diverse with a cover of 13.3%, lower than last year. *Diaperoecia californica* was common on the steep rock faces, but few were along the main transect with a cover of 0.7%. Tunicates were moderately abundant and covered 11.0% of the bottom. *Styela montereyensis* was common with a density of 0.29/m². Sponges were common with a cover of 5.5%, similar to last year. *Tethya aurantia* density was 0.11/m². *Balanophyllia elegans* and *Astrangia lajollaensis* cover were 1.0% and 0.3% respectively. *Corynactis californica* cover was 0.8%, similar to last year. *Tealia lofotensis* were common with a density of 0.13/m², similar to last year. Similar to Cluster Point, no *Lophogorgia chilensis*, *Muricea californica* or *Muricea fruticosa* were observed at this site.

Similar to other Santa Rosa Island sites, *Strongylocentrotus* spp. were mainly found in crevice habitat. *Strongylocentrotus franciscanus* were moderately abundant in patches but had a low density along the transect at 0.58/m², similar to last year. *Strongylocentrotus purpuratus* were common, but were mostly under the *S. franciscanus* spine canopy in the crevices and had a density of 0.083/m², also similar to last year. Only 36 *S. purpuratus* were found for size frequency measurements with a moderate amount of effort. Most of these were found during removal of *S. franciscanus* for size frequency measurements. Similar to Cluster point which is outside the MPA, *S. franciscanus* were notably large with more than half of the ones measured over the commercial legal size of 83 mm and a mean size of 82 mm. Juvenile *Strongylocentrotus* spp. were rare. No *Centrostephanus coronatus* or *Lytechinus anamesus* were observed. No sea urchin wasting disease was observed**.**

Pisaster giganteus were recorded on quadrats and 5 meter quadrats with densities of 0.042/m² and 0.18/m² respectively. *Patiria miniata* were common with a density of 1.0/m². *Pycnopodia helianthoides* were common with a density of 0.039/m². *Parastichopus parvimensis* density was low at 0.083/m², similar to last year. No sea star wasting disease was observed.

Haliotis rufescens were common in many of the large cracks and crevices with a density of 0.024/m², similar to last year. A good search effort was made to locate *H. rufescens* for size frequencies and 25 were found, slightly less than last year. There was a wide range in sizes, but most were large with a mean size of 176 mm. Fresh *H. rufescens* shells were common and were collected and measured at 45, 60, 88, and 91 millimeters respectively. *Cypraea Spadicea* were uncommon along the main transect at a density of 0.0/m². *Megathura crenulata* consisting mostly of larger individuals had a density of 0.0097/m², similar to last year. Large *Cancer antennarius* were abundant in the crevice habitat.

Fish were moderately abundant with high diversity, similar to last year. *Coryphopterus nicholsii* were rare with a density of 0.0/m² and only up to four observed, similar to other sites on Santa Rosa Island. *Oxylebius pictus* were abundant with up to 26 observed with juveniles present. Adult *Chromis punctipinnis* were uncommon with only up to three observed. Adult *Oxyjulis californica* were present mostly in the midwater with up to 45 adults observed. Four female and five male *Semicossyphus pulcher* were observed. Up to 12 adult and no juvenile *Embiotoca jacksoni* were observed. Seven adult and one juvenile *Rhacochilus vacca* were observed. *Embiotoca lateralis* were relatively abundant with up to 12 adults and three juveniles observed. *Brachyistius frenatus*, kelp surfperch, were present in the midwater and canopy with up to seven adults observed. Up to 16 adult *Hypsurus caryi*, rainbow surfperch, were observed. Three adult

Rhacochilus toxotes, rubberlip surfperch, were observed. Rockfish Genera, *Sebastes* spp. were relatively abundant at this site with several juveniles noted. *Sebastes mystinus* were present with up to 26 adults and six juveniles observed. One adult *Sebastes melanops*, black rockfish, was observed. *Sebastes serranoides* were common with up to 12 adults observed. There were some large individuals but the very large individuals we observed last year were not present. *Sebastes atrovirens* were also abundant with up to 14 adults and one juvenile observed. Two adult and two juvenile *Sebastes serriceps* were observed, similar to other sites this year. *Sebastes chrysomelas*, black and yellow rockfish, were relatively abundant with up five adults and three juvenile observed. One adult and one juvenile *Sebastes carnatus*, gopher rockfish, were observed. Ten KGB were observed. KGB's were abundant in the canopy and were all very small approximately 3-4 centimeters and had likely recruited recently. Two adult *Scorpaenichthys marmoratus*, cabezon, and four adult *Ophiodon elongatus*, lingcod, were observed. Two *Ornothopias triacis*, snubnose sculpin, and two *Artedius corallinus*, coralline sculpin, were observed. A small school of 40 *Aulorhynchus flavidus*, tubesnouts, was observed. Fifty *Atherinops affinis*, top smelt, were observed in the upper water column. One adult *Heterostichus rostratus*, giant kelpfish, was observed. Roving Diver Fish Count was conducted on July 11th by five dives counting 28 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on November 20th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Due to the high relief of this site and wave exposure, we expect to have several repairs of the lead line each year. In the future, installation of more eyebolts may aid in locating this transect.

Location: South Point, Santa Rosa Island
Site # 25 SRSP
2006 sampling dates: 6/6, 6/7.
2006 status: Mature kelp forest.

This transect line was installed mostly on flat rock and encounters very little crevice habitat. A result of this is that animals such as *Strongylocentrotus* spp. that often prefer crevice habitat appear to be underrepresented directly along the transect where most of our protocols such as quadrats are conducted. Overall there was an increase in invertebrate and algal coverage this year. *Macrocystis pyrifera* adults, subadults, and juveniles were all present with densities of 0.22/m², 0.50/m², and 5.5/m² respectively and cover was 30.5%. These abundances represent increases for adult, subadult and cover and a small decrease for juveniles. Adult and juvenile *Pterygophora californica* were moderately abundant with densities of 0.75/m² and 0.79/m² respectively and both increases from last year, while cover was similar at 11.2%. Adult *Eisenia arborea* was present but relatively uncommon with none observed on quadrats and a cover of 0.3%. Adult and juvenile *Laminaria farlowii* were both common with respective densities of 0.33/m² and 0.17/m², and with a cover of 3.0%. *Cystoseira* spp. cover was 0.8%. *Desmarestia* spp. was rare with a cover of 0.3%. Miscellaneous red algae cover was high at 51.3%, similar to last year, and mostly consisted of *Callophyllis* spp., *Microcladia* spp., and *Gigartina* spp. *Gigartina* spp., mostly or entirely consisting of *Gigartina corymbifera*, was common with a

cover of 5.2%. Articulated and encrusting coralline algae were less abundant this year with a cover of 17.8%and 7.8% respectively.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata,* increased to 35.2% and consisted mainly of hydroids and *Cucumaria* spp. Sponges were abundant with a cover of 11.5%. *Tethya aurantia* were abundant at a density of 0.13/m², similar to last year. Tunicates were more abundant than last year at a cover of 10.5% and were diverse. *Styela montereyensis* density was lower than last year at 0.71/m². Bryozoans cover increased to 11.8%, an increase that has been observed at many our sites this year. No *Astrangia lajollaensis* or *Corynactis californica* were observed on RPCs. However, *Corynactis californica* were common on the steep rocky faces around the transect. *Balanophyllia elegans* was present with a cover of 0.2%. *Diopatra ornata* was present in the low lying areas with a cover of 2.2%. *Phragmatopoma californica* was moderately abundant and mostly associated with *M. pyrifera* holdfasts with a cover of 6.7%, similar to last year. Similar to other nearby sites, no *Lophogorgia chilensis*, *Muricea californica* or *Muricea fruticosa* were observed.

Note that *Strongylocentrotus franciscanus* and *Strongylocentrotus purpuratus* were abundant in crevice habitat, but there is little of this habitat directly along the transect where quadrats are conducted. *Strongylocentrotus franciscanus* was observed this year along the main transect at a density of 0.21/m² with no *S. purpuratus* observed. *Strongylocentrotus* spp. juveniles were rare and were mainly observed under the spine canopy of adult *Strongylocentrotus* spp. *Strongylocentrotus franciscanus* were large, similar to our other sites on the south side of Santa Rosa, with a mean size of 78 mm. No urchin wasting disease was observed.

Patiria miniata were common with a density of 1.5/m². *Pisaster giganteus* were common and counted on quadrats and 5-meter quadrats with densities of 0.08/m² and 0.010/m², respectively. *Pycnopodia helianthoides* were common with a density of 0.038/m², and were mostly small to medium sized. No sea star wasting disease was observed.

Haliotis rufescens density was higher than last year at 0.090/m². One small *H. rufescens* was found under the spine canopy of a *S. franciscanus* and measured 19 mm. A total of 64 *H. rufescens* were observed on band transects this year, and we found 89 during size frequencies when most of the site was searched. It appears that we may have by chance hit many of the higher density patches of *H. rufescens* on band transect this year so one might expect densities to decline some next year, but all within the sampling variability of our protocol. *Megathura crenulata* were rare with none observed on band transects and only one found for size frequency measurements. *Crassadoma giganteum* density declined to 0.0014/m². *Kelletia kelletii* were rare with a density of 0.0014/m², similar to last year. Several very large *Megastraea undosa* were observed at a density of 0.042/m². *Tealia lofotensis* were common on the rocky outcrops with a density of 0.043/m². *Cypraea Spadicea* were common and had a density of 0.083/m².

Similar to last year, and similar to our other sites in and around the South Point MPA, fish were moderately abundant and diverse. *Coryphopterus nicholsii* were rare with one observed during the fish count and one on quadrats for a density of 0.042/m², similar to other sites in and around the South Point MPA. *Oxylebius pictus* were less abundant this year with up to five observed. *Chromis punctipinnis* were common with up to 63 adults observed. Adult *Oxyjulis californica*

were the most abundant fish with up to 90 adults observed. Eleven female and two male *Semicossyphus pulcher* were observed, similar to last year. *Embiotoca jacksoni* were present with up to 18 adults observed. *Rhacochilus vacca* were present with up to three adults observed. *Embiotoca lateralis* were present with up to 14 adults and four juveniles observed. Present in the canopy and midwater were *Brachyistius frenatus,* kelp surfperch, with up to six observed. Three adult *Rhacochilus toxotes,* rubberlip surfperch, were observed. Two *Hypsurus caryi,* rainbow surfperch, were observed. Sixteen adult and one juvenile *Sebastes mystinus* were observed. Four adult *Sebastes atrovirens* were observed. Two adult *Sebastes serriceps* were observed. Twelve adult and one juvenile *Sebastes serranoides* were observed. Three adult *Sebastes chrysomelas,* black and yellow rockfish, were observed. One *Ophiodon elongatus,* lingcod, and one *Scorpaenichthys marmoratus,* cabezon, was observed. Roving Diver Fish Count was conducted on June 6th by five divers observing 20 species of fish.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on November 20th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Devil's Peak Member, Santa Cruz Island
Site #26 SCDPM
2006 sampling dates: 7/14, 9/20.
2006 status: Dominated by *Strongylocentrotus purpuratus.*

The site continued to be dominated by *Strongylocentrotus purpuratus* and was devoid of macroalgae. No *Macrocystis pyrifera* was observed at this site. Adult and Juvenile *Eisenia arborea* were present on top of rocks but mostly off the main transect line and consequently were not recorded on quadrats but was recorded on RPCs with a cover of 0.3%. *Eisenia arborea* was noticeably more common inshore or shallower areas around the transect. No *Pterygophora californica, Laminaria farlowii,* or *Desmarestia* spp. were observed. There were several small patches of *Cystoseira* Sp. and *Sargassum* Sp. within the transect, but none were observed on RPCs. Miscellaneous red algae were common at 12.0% cover and mainly consisted of *Rhodymenia* spp. *Gelidium* spp. was present in small patches on the tops of very large boulders, but not along the main transect. Although no green algae were recorded on RPCs, *Codium setchelli/hubsii* were present at the site. Brown algae was recorded at 0.2% cover with patches of *Dictyota/Pachydictyon* present. Miscellaneous plants cover, consisting mostly of filamentous diatoms, was 0.8%, similar to other sites this year. Encrusting coralline algae was the most abundant algae with a cover of 52.8%, similar to last year. Articulate coralline algae were rare with a 1.0% cover. Bare substrate cover was 9.2%.

Miscellaneous invertebrate cover, excluding *Ophiothrix spiculata,* was 18.2%, similar to last year. The most dominant miscellaneous invertebrate in this category was *Cucumaria salma* and hydroids in that order. *Diopatra ornata* were common in the low lying areas with sand, but were rare along the main transect with a cover of 0.7%. Sponges covered 1.5% of the bottom. *Tethya aurantia* density was 0.0056/m². *Corynactis californica* and *Astrangia lajollaensis* were both present at 0.3% and 4.7% cover, respectively. *Lophogorgia chilensis* was abundant with a density of 0.11/m². Large *Muricea californica* were common and several *M. fruticosa* were

observed with densities of 0.0042/m² and 0.0028/m², respectively. Miscellaneous bryozoans cover was 12.0%, an increase from last year and mostly consisted of *Bugula californica*. *Diaperoecia californica* cover was 2.8%, and were mainly in high relief areas along the transect.

Strongylocentrotus purpuratus dominated this site at a density of 19.9/m². *Strongylocentrotus franciscanus* were common at a density of 2.3/m². *Strongylocentrotus* spp. juveniles were present but uncommon. *Centrostephanus coronatus* were moderately abundant in the crevice habitat, but had a relatively low density at 0.083/m², similar to last year. *Lytechinus anamesus* were rare with a density of 0.0097/m^2. No sea urchin wasting disease was observed on July 14th but on a subsequent visit on September 20th approximately 10% of *Strongylocentrotus* spp. were observed with the disease.

Pisaster giganteus were counted on 1 m quadrats and 5 m quadrats with densities of 0.042/m² and 0.060/m², respectively. *Patiria miniata* were common at a density of 1.0/m². *Pycnopodia helianthoides* were present at 0.0069/m²; these were large and found mostly in deep crevices. *Pachythyone rubra* increased from last year and were present over much of the center of the transect with a cover of 13.7%. *Parastichopus parvimensis* density was 0.29/m². No sea star wasting disease was observed on July 14th but on a subsequent visit on September 20th there were signs of recovering stars that appeared to have had the disease, probably during the July-August warm water event experienced this year.

Megathura crenulata were relatively abundant with a density of 0.18/m², similar to last year. A few large *Kelletia kelletii* were observed and were recorded at a density of 0.0014/m². *Megastraea undosa* were rare with none observed on quadrats and only 11 found for size frequency measurements, most of these consisted of larger individuals with a mean size of 77 mm. *Crassadoma giganteum* were abundant at 0.035/m², with all sizes present. *Aplysia californica* density was 0.022/m². *Cypraea Spadicea* density was 0.042/m².

Similar to last year this site had high diversity and abundance of fish. *Coryphopterus nicholsii* were slightly less abundant this year with a density of 0.50/m² and up to 60 observed. *Alloclinus holderi* were also slightly less abundant this year with a density of 0.083/m² and up to 14 observed. No *Lythrypnus dalli* were observed on quadrats but up to 10 were observed during the roving diver fish count. Note that this roving diver fish count was conducted after the month-long warm water event and we believe these small *L. dalli* recruited during that event. *Oxylebius pictus* were present with up to 14 observed. *Chromis punctipinnis* was the most abundant species with up to 535 adults and 102 juveniles observed. Eight female, no juvenile, and three male *Semicossyphus pulcher* were observed. Four adult male, four female and eight juvenile *Halichoeres semicinctus* were observed. These juvenile *H. semicinctus* were observed after the warm water event. Up to 36 adult *Medialuna californiensis*, halfmoon, were observed. *Hypsypops rubicundus* were abundant with up to 24 adults observed. Large, adult *Paralabrax clathratus* were observed with up to 25 and one juvenile counted. Up to 11 adult *Girella nigricans* were observed. *Embiotoca jacksoni* were moderately abundant with up to 24 adults, and one juvenile observed. Adult *Rhacochilus vacca* were abundant with up to 19 observed. One adult *Rhacochilus toxotes*, rubberlip surfperch, was observed. *Sebastes* spp. were common, but most the individuals were small. Two adult *Sebastes mystinus* were observed. Seven adult *Sebastes atrovirens* were observed, and were mostly found in crevices. Three adult *Sebastes*

serranoides were observed. Up to three adult and one juvenile *Sebastes serriceps* were observed. One adult *Sebastes chrysomelas,* black and yellow rockfish, and three *Sebastes carnatus,* gopher rockfish, were observed. One *Sebastes melanops,* black rockfish, was observed. Three adult *Scorpaena guttata,* California scorpionfish, were observed. One *Ophiodon elongatus,* lingcod, was observed. One *Ornothopias triacis,* snubnose sculpin, was observed. A school of approximately 200 *Trachurus symmetricus,* jack mackerel, was observed. A school of 50 *Atherinops affinis,* top smelt, was observed. Roving Diver Fish Count was conducted on September 20th with five divers observing 29 species of fish.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on September 6th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Potato Pasture, Santa Cruz Island
Site #27 SCPP
2006 sampling dates: 8/7, 8/25.
2006 status: Dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus*.

This site remained dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus* and was almost entirely devoid of brown macroalgae except on top of a few taller rocks/reefs at this high relief site. Overall, there was little noticeable change since last year. No *Macrocystis pyrifera*, *Pterygophora californica*, *Laminaria farlowii*, *Cystoseira* spp., or *Desmarestia* spp. were observed at the site. Similar to other sites encompassed in the Scorpion reserve area, *Eisenia arborea* adults and juveniles were the only brown macroalgae observed. *Eisenia arborea* were located on top of few rocks just off of the main transect and none were recorded on quadrats for a density of 0.0/m². Brown algae were rare with none observed on RPCs, and what was present at the site mainly consisted of *Colpomenia* spp. on top of rocks. Miscellaneous red algae were present at 15.0% cover, similar to last year and was primarily located on top to large rocks and consisted of algae like *Rhodymenia* sp. and *Laurencia pacifica*. Miscellaneous plants comprised of filamentous diatoms cover was 15.3%. The most abundant algae, usually in low relief areas, were encrusting coralline algae at a cover of 44.8%, similar to last year. Articulated coralline algae were rare at a cover of 0.3%. Bare substrate cover was 16.3%, similar to last year.

Encrusting invertebrates were abundant in the high relief areas. Miscellaneous invertebrate cover, excluding *Ophiothrix spiculata,* was similar to last year at 20.0%. The most dominant miscellaneous invertebrate was the Christmas tree worm, *Spirobranchus Spinosus*, although various cucumber species and hydroids were moderately abundant as well. Sponges were present at a cover of 1.0%. There was an unidentified orange/peach colored sponge that was quite common. This particular sponge was observed at other sites this year. *Tethya aurantia* were common at a density of 0.022/m². *Tethya aurantia* were mostly small with a mean size of 37.7 mm, and many were covered with detrital material, making them difficult to observe. Miscellaneous bryozoans were present at a cover of 4.8%, similar to other sites. *Diaperoecia*

californica was common on the sides of rocks, but mostly off the main transect with none recorded on RPCs. Tunicates were present at a cover of 0.3%. *Corynactis californica* were common with a cover of 3.2%. *Astrangia lajollaensis* were moderately abundant with a cover of 5.3%. *Balanophyllia elegans* were present at 0.3% in the low lying areas. *Lophogorgia chilensis* were 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* were rare at 0.0014/m², and no *M. fruticosa* were observed.

Strongylocentrotus spp. continued to dominate the site and densities were similar to last year. *Strongylocentrotus purpuratus* density was 28.7/m² with smaller individuals present with a mean size of 21.6mm, although slightly larger than last year. *Strongylocentrotus franciscanus* were moderately abundant at 6.5/m² and were also relatively small with a mean size of 35.7mm. *Lytechinus anamesus* were also moderately abundant in the low lying areas and were recorded at a density of 0.48/m² on band transects and 0.96/m² on quadrats. *Lytechinus anamesus* were mainly present at the east end of the transect in the first 20 m which is a low-lying section of the transect. *Centrostephanus coronatus* were common with a density of 0.13/m², similar to last year. We estimated at least 1% of *Strongylocentrotus* spp. and L. anamesus had wasting disease on August 7th.

Unfortunately 5 m quadrats data were not recorded. There were no *Macrocystis pyrifera* at the site and *Pisaster giganteus* were common, on the rocky areas. Instead of creating a "hole" in the database, we decided to extrapolate out the number of *P. giganteus* observed on 5 meter quadrats based on the density seen on quadrats over suitable habitat. Since these techniques are conducted over the same bottom along the transect, just different sample sizes, we feel that for one year this will be an adequate density and better than leaving a hole in the database. From quadrats, we estimated that eight were observed on 5 m quadrats.

Pisaster giganteus density on quadrats and 5 meter quadrats were 0.042/m² and 0.40/m² respectively. The *P. giganteus* were notably large with 33 found for size frequencies and a mean size of 177 mm. *Patiria miniata* were common at a density of 0.46/m², similar to last year. *Pachythyone rubra* were abundant along the first five meters of the transect similar to last year and were recorded at 1.5% cover. *Parastichopus parvimensis* were moderately abundant at a density of 0.63/m², similar to last year. This was the first site we visited where we observed the effects of the month long warm water event on the emergent echinoids. Approximately 50% of the *Pisaster giganteus* and *Patiria miniata* were observed with wasting disease on August 7th, but it appeared that fewer had the disease on August 25th. One *Pycnopodia helianthoides* was observed with wasting disease and was almost completely "melted". We expect sea star densities to decline by next year as a result of disease-caused mortality.

Crassadoma giganteum were notably abundant at 0.11/m² with all sizes present, and large ones were notably common. *Megathura crenulata* was 0.053/m². *Lithopoma undosum* were relatively rare, but notably patchy with a density of 0.042/m². A total of 53 were observed and most were small with a mean size of 44 mm, as juveniles were common. *Tegula regina* were relatively abundant with a density of 0.17/m²; 64 were found for size frequencies with a mean size of 48mm. *Kelletia kelletii* density was 0.026/m², with one patch of about eight observed. Only 12

could be found for size frequencies. *Aplysia californica* density was 0.011/m², lower than last year.

Fish were moderately abundant and diverse at this site. Roving diver fish counts were conducted during both visits and there was a noticeable warm water fish recruitment just 18 days after the first counts were conducted. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. *Coryphopterus nicholsii* were very abundant in their preferred habitat at a density of 1.8/m², and up to 286 observed. Most of the *C. nicholsii* were located in the low lying areas off the main transect. *Alloclinus holderi* were present at a density of 0.29/m² with up to 6 observed. Up to 40 *Lythrypnus dalli* was observed during roving diver fish counts, but none were observed on quadrats. Only a several adult L. dalli were observed on August 7th, however on August 25th tiny recruits were common and we expect there was more recruitment that occurred after this date as we observed at other sites later on in the season. Up to three *Lythrypnus zebra*, zebra goby, were observed. *Oxylebius pictus* were present with up to nine observed. *Chromis punctipinnis* was the most abundant fish with up to 790 adults and 80 juveniles observed. *Oxyjulis californica* were present with up to 93 adults and 11 juveniles observed. Eight female, no juveniles and two male *Semicossyphus pulcher* were observed. *Halichoeres semicinctus* were common with up to seven females and 11 males observed. *Hypsypops rubicundus* were abundant with up to 19 adults observed. *Embiotoca jacksoni* were present with up to 12 adults and no juveniles observed. *Rhacochilus vacca* were abundant with up to 45 adults and no juveniles observed. *Girella nigricans* were abundant with up to 30 observed. *Rhacochilus toxotes*, rubberlip surfperch, were common with up 22 adults observed. *Sebastes mystinus* were present with up to two adults and no juveniles observed. No *Sebastes atrovirens* were observed. Two adult *Sebastes serranoides* were observed. Six adult and one juvenile *Sebastes serriceps* were observed. Three adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. Two *Sebastes carnatus*, gopher rockfish, were observed. Twelve adult *Medialuna californiensis*, halfmoon, were observed. Three *Caulolatilus princeps*, ocean whitefish, were observed. One *Scorpaenichthys marmoratus*, cabezon, was observed. One *Scorpaena guttata*, California scorpionfish, was observed. One *Cephaloscyllium ventriosum*, swell shark, was observed. One *Stereolepis gigas*, giant black sea bass, was observed. One *Myliobatis californicus*, California bat ray, was observed. A small school of *Seriola dorsalis*, yellowtail, was observed. Roving Diver Fish Counts were conducted on August 7th and 25th by six and five divers counting 23 and 26 species respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on September 6th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Cavern Point, Santa Cruz Island
Site #28 SCCVP
2006 sampling dates: 6/8, 9/20.
2006 status: Dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus.*

Similar to last year, algae were low in abundance and diversity. No macroalgae were recorded on quadrats or RPCs, although some small *Macrocystis pyrifera* and *Eisenia arborea* were observed on the tops of rocks. Encrusting coralline algae were the most abundant algae with a cover of 70.7%. Articulated coralline algae were present on the tops of rocks with a cover of 1.5%, similar to last year. Miscellaneous red algae was one of the more abundant algal categories at a cover of 25.7%, and consisted mainly of filamentous reds. *Colpomenia* spp. was common on the tops of large boulders. Green algae cover was 0.2%, and consisted mostly of encrusting *Codium* spp. and *Codium fragile*. Miscellaneous plants, consisting of filamentous diatoms, were present at a cover of 2.0%, similar to other sites. Bare substrate cover was 9.2%.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, covered 38.2% of the bottom, an increase from last year. The most dominant miscellaneous invertebrate in this category was the Christmas tree worm, *Spirobranchus Spinosus*, and hydroids. There were noticeably more bryozoans this year, similar to what we had observed at many of the sites, at 4.0% cover. The bryozoan *Thalamoporella californica* was very abundant similar to other sites this year and completely covered the tops of some large boulders at the site. Tunicates and sponges were abundant and diverse and increased in cover to 4.7% and 2.3% respectively. *Tethya aurantia* density was 0.039/m². *Corynactis californica* and *Balanophyllia elegans* were both present at a cover of 2.2% and 1.7% respectively. *Astrangia lajollaensis* was more abundant with a cover of 6.2%. *Lophogorgia chilensis* was abundant on the offshore side transect at a density of 0.22/m², similar to last year. Several *Muricea fruticosa* and *Muricea californica* were observed and both had a density of 0.0014/m².

Densities of *Strongylocentrotus* spp. changed little from last year. *Strongylocentrotus purpuratus* was the most abundant echinoderm with a density of 31.9/m² and dominated the site. Most of the *S. purpuratus* were small with a mean size of 25 mm. *Strongylocentrotus franciscanus* were moderately abundant, but remained in the crevice habitat as opposed to *S. purpuratus* which were out in the open grazing. *Strongylocentrotus franciscanus* density was 4.7/m^2. *Centrostephanus coronatus* were moderately abundant in the crevice habitat with a density of 0.29/m², the same as last year. *Lytechinus anamesus* were rare overall with a density of 0.0/m². Only three *L. anamesus* were found for size frequency measurements. No *Ophiothrix spiculata* was observed at the site. No urchin wasting disease was observed at this site.

Pisaster giganteus were common, but had low densities. They were counted on quadrats and 5 meter quadrats with a density of 0.0/m² and 0.065/m^2 respectively. Forty one were observed for size frequencies and they were mainly large individuals with a mean size of 153 mm. *Patiria miniata* were present at a density of 0.67/m² and were also large with a mean size of 69 mm. *Linkia columbiae* were moderately abundant at this site, indicating warm water influence. *Parastichopus parvimensis* were abundant at a density of 1.3/m². No sea star wasting disease was observed this year.

Megastraea undosa density was 0.29/m². Most were small and only several large individuals (>70mm) were observed. *Crassadoma giganteum* were notably abundant at 0.23/m², and many were large. *Kelletia kelletii* were rare with none observed on band transects. *Megathura crenulata* were moderately abundant with all sizes present at a density of 0.11/m². *Tegula regina* were common, but none were observed on quadrats. Most were similar in size and nearly all of

the 41 found for size frequencies were between 45-60 mm, with a mean size of 52mm. Several *Panulirus interruptus* were observed along the main transect with a density of 0.0042/m². *Aplysia californica* were present at a density of 0.0056/m², they were mostly large and in small groups mating with egg clusters present.

Similar to last year fish were abundant and diverse. This is interesting because the site has low algal and invertebrate abundance. Roving Diver Fish Counts were conducted two times this season. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. *Coryphopterus nicholsii* were less abundant this year with a density of 0.58/m², and up to 150 observed. *Alloclinus holderi* were present at a density of 0.13/m² and up to ten observed. *Oxylebius pictus* were abundant with up to 38 observed. *Chromis punctipinnis* were the most abundant fish with up to 258 adults and 340 juveniles observed. *Oxyjulis californica* were abundant with up to 123 adults observed, similar to last year. Ten female, one male, and three juvenile *Semicossyphus pulcher* were observed. *Halichoeres semicinctus* were common with up to five female, three male and one juvenile observed. The juvenile *C. punctipinnis, S. pulcher,* and *H. semicinctus* were all observed in late summer during our second fish count on September 29th. Twelve adult *Girella nigricans* were observed. Up to 20 adult and one juvenile *Embiotoca jacksoni* were observed. *Rhacochilus vacca* were moderately abundant with up to 47 adults observed. *Rhacochilus toxotes*, rubberlip surfperch, were moderately abundant with up to 17 adults observed. One *Phanerodon truncates*, white surfperch, was observed. Two adult *Sebastes mystinus* were observed. One adult *Sebastes atrovirens* was observed. One adult *Sebastes serranoides* was observed. Six adults and one juvenile *Sebastes serriceps* were observed. Five adult *Sebastes carnatus*, gopher rockfish, were observed, similar to last year. One Sebastes auriculatus, brown rockfish, was observed. One *Sebastes chrysomelas*, black and yellow rockfish, was observed. Two *Scorpaenichthys marmoratus*, cabezon, were counted. Five *Caulolatilus princeps*, ocean whitefish, were observed. Up to seven *Medialuna californiensis*, halfmoon, were observed. One *Pleuronichthys coenosus*, C-O turbot, was observed. One *Myliobatis californicus*, bat ray, was observed. A large school of *Sphyraena argentea*, California barracuda, was observed at the site, but not during the fish counts. Roving diver fish counts were conducted on June 8th by five divers observing 25 species and on September 20th with four divers observing 21 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on September 14th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Little Scorpion, Santa Cruz Island
Site #29 SCLS
2006 sampling dates: 07/20, 9/20.
2006 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 top of a few taller rocks. Overall there was less macroalgae this year and accordingly no *Macrocystis pyrifera*, *Pterygophora californica*, *Laminaria farlowii* or

Cystoseira spp. were present at this site. Several adult and juvenile *Eisenia arborea* were observed, but they were located on top of few rocks off of the main transect with none observed on quadrats. Green algae were present at a cover of 0.2%. Miscellaneous red algae declined in cover to 9.0%. Encrusting coralline algae cover was lower than last year at 29.0%, and may have been in part due to increased cover of sand. Articulated coralline algae were rare and none were observed on RPCs. Miscellaneous plants cover was higher than last year at 22.7% and consisted entirely of filamentous diatoms. Bare substrate cover was 14.8%, similar to last year.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata,* were abundant with a cover of 21.2%, similar to last year. The most dominant miscellaneous invertebrates were hydroids which were notably abundant on the tops of rocks. Sponges cover was 0.2%. *Tethya aurantia* density was 0.013/m². Tunicates cover remained low at 0.2%. Miscellaneous bryozoan cover was 2.3%. *Diaperoecia californica* was common in small patches off the main transect and cover remained low at 0.2%. *Astrangia lajollaensis* cover increased to 8.3% and *Balanophyllia elegans* cover was 0.2%. *Corynactis californica* was common at the site and had a cover of 0.2%. *Lophogorgia chilensis* were abundant on the offshore/deeper side and their density was 0.13/m². One *Muricea californica* was observed at the entire site and was not recorded on band transects. No *Muricea fruticosa* were observed.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* were both moderately abundant in the crevices and cracks and were recorded at densities of 4.6/m² and 10.6/m² respectively. Juvenile *Strongylocentrotus* spp. were common. Most the *S. purpuratus* and *S. franciscanus* were notably large in size relative to other sites nearby even sites close by like Scorpion's Anchorage; their mean sizes were 48 mm and 64 mm, respectively. One variable that may cause larger urchins here is this area just behind little Scorpion Rock appears to act as an eddy that entraps more drift algae, as we often see more drift algae here than at other areas nearby. *Lytechinus anamesus* were common in the low lying, sandier areas with a density of 0.23/m², and we were able to find 95 for size frequency measurements. *Centrostephanus coronatus* were moderately abundant at the site and had a density of 0.083/m². Approximately 10% of the *Strongylocentrotus* spp. were observed with wasting disease on July 20th, but none were observed on September 20th.

Patiria miniata were relatively abundant for this area with a density of 0.67/m². *Pisaster giganteus* were less abundant and were recorded on quadrats and 5 meter quadrats with densities of 0.083/m² and 0.11/m² respectively. *Pycnopodia helianthoides* were observed with a density of 0.0028/m². *Linkia columbiae* were relatively abundant. *Parastichopus parvimensis* density was 0.25/m². No sea star wasting disease was observed.

Crassadoma giganteum were moderately abundant at a density of 0.094/m², with some notably large individuals. Adult and Juvenile *Megathura crenulata* were notably abundant with a density of 0.23/m², similar to last year. *Cypraea Spadicea* were common at 0.21/m². Adult and juvenile *Megastraea undosa* were common in small patches, with a density of 0.042/m², similar to last year. With a moderate amount of search effort we were only able to find 47 for size frequencies. *Kelletia kelletii* were common with a density of 0.058/m^2. No *Tegula regina* were observed on quadrats, but they were common in the high relief areas and 32 were found for size frequencies.

Kelletia kelletii had a density of 0.058/m^2. *Aplysia californica* were not observed on band transects. *Panulirus interruptus* were rare and not observed on band transects.

This site continued to have a high fish abundance and diversity. We visited this site two times this field season to conduct fish counts. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. *Coryphopterus nicholsii* were abundant with a density of 3.1/m² and up to 285 observed on our first visit, but only up to 61 were observed on our second visit. It is possible that *C. nicholsii* are in their dens for periodic durations during sampling. *Alloclinus holderi* density was 0.083/m² and up to six observed. No *Lythrypnus dalli* were observed on quadrats and only one was counted during our first visit, but up to 16 were counted on our second visit. On September 20th these *L. dalli* were likely new recruits from the warm water event this summer. Two *Lythrypnus zebra*, zebra goby, were observed. *Oxylebius pictus* were abundant with up to 57 observed during our first visit, but only 9 were counted during second visit. *Chromis punctipinnis* were the most abundant fish with up to 365 adults and 356 juveniles observed. *Oxyjulis californica* were relatively abundant with up to 101 adults and 147 juveniles observed. Six female, one juvenile and no male *Semicossyphus pulcher* were observed. Up to four females, four juveniles and one male *Halichoeres semicinctus* were observed. *Hypsypops rubicundus* were abundant with up to 19 adults observed. *Paralabrax clathratus* were common with up to 26 adults observed. *Embiotoca jacksoni* were abundant with up to 25 adults and one juvenile observed. Up to 72 adult *Rhacochilus vacca* were observed. A school of approximately 60 *R. vacca* swam through the site during the fish count. Two adult *Rhacochilus toxotes*, rubberlip surfperch, were observed. One *Phanerodon furcatus*, white surfperch, was observed. There was a relatively high number of rockfish present: *Sebastes atrovirens*, *Sebastes serriceps* (young of the year and adults), *Sebastes carnatus*, *Sebastes chrysomelas*, *Sebastes melanops*, and *Sebastes mystinus* were all present. Notably, most of the adult rockfish were smaller in size, in the 15-20 cm category with few larger fish present. Up to 10 adult *S. mystinus* were observed with no juveniles. Up to 23 adult *S. atrovirens* were observed. Three adult *S. serranoides* were observed. Six adult and three juvenile *S. serriceps* were observed. Three adult *S. carnatus*, gopher rockfish, were observed. Six adult *S. chrysomelas*, black and yellow rockfish, were observed. Notably at the southern end of their geographic range, one *S. melanops*, black rockfish, was observed. One *Sebastes auriculatus*, brown rockfish, was observed. Three *Caulolatilus princeps*, ocean whitefish, were observed. Nine *Medialuna californiensis*, halfmoon, were observed. One *Scorpaena guttata*, California scorpionfish, and one *Scorpaenichthys marmoratus*, cabezon, were observed. One *Gymnothorax mordax*, California moray eel, was observed. Roving Diver Fish Counts were conducted on July 20th and September 20th by five and four divers tallying 28 and 26 species respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on September 14th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Pedro Reef, Santa Cruz Island
Site #30 SCPRF
2006 sampling dates: 8/18, 9/21.

2006 status: Dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus*.

This site was similar to last year and continues to be devoid of brown macroalgae and had a high abundance of *Strongylocentrotus* spp. No, *Macrocystis pyrifera*, *Eisenia arborea*, *Pterygophora californica*, *Laminaria farlowii*, *Cystoseira* sp. or *Desmarestia* sp. were observed. The most abundant algae were filamentous red algae and *Laurencia pacifica*. These algae are counted as miscellaneous red algae, which had a cover of 5.5%, a decrease from last year. Miscellaneous green algae were present at 0.7% cover. Articulated coralline algae were rare with a cover of 0.8%. Encrusting coralline algae cover was 24.7%. Miscellaneous plants consisting of filamentous diatoms were present with a cover of 17.5%, higher than last year. Bare substrate continued to have a high cover at 33.3%.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata*, was 13.2%, similar to last year. The most dominant miscellaneous invertebrates were hydroids and the Christmas tree worm, *Spirobranchus Spinosus*. Sponges were rare with a cover of 0.0%. *Tethya aurantia* were common with a density of 0.065/m², similar to last year, and consisted of mostly smaller individuals. *Corynactis californica* was abundant with a cover of 12.2% an increase from last year. *Astrangia lajollaensis* was common with a cover of 1.2%. *Balanophyllia elegans* was common and was observed for a cover of 1.3%. Miscellaneous bryozoans were present but not common along the transect with a cover of 0.0%, similar to last year. *Diaperoecia californica* were rare and colonies were small for a cover of 0.5%. *Lophogorgia chilensis* were abundant with a density of 0.29/m², with a few small juveniles present. Five *Muricea californica* were observed for a density of 0.0042/m². *Muricea fruticosa* were present for a cover of 0.0028/m².

Strongylocentrotus purpuratus continued to be abundant with a density of 60.0/m² and small with a mean size of 20 mm. *Strongylocentrotus franciscanus* were moderately abundant and their density increased to 11.4/m² and were also small with a mean size of 32 mm. *Strongylocentrotus* spp. were out in the open and not confined to crevice habitat, and juveniles were common. *Centrostephanus coronatus* were relatively common with a density of 0.083/m². *Lytechinus anamesus* were common in the low-lying, sandy area, with a density of 0.24/m² on band transects and 0.29/m² on quadrats. Approximately 10% of *S. purpuratus* and a few *S. franciscanus* were observed with wasting disease on August 18th. One *S. franciscanus* was observed with wasting disease on September 21st.

Pisaster giganteus were common and recorded on quadrats and 5 meter quadrats with densities of 0.041/m² and 0.015/m² respectively. *Patiria miniata* were common with a density of 0.13/m². No *Pycnopodia helianthoides* were observed on band transects but one or two were observed at the site. *Parastichopus parvimensis* was present at a density of 0.25/m². Approximately 50% of the *Patiria miniata* were observed with wasting disease on August 18th, but notably fewer were diseased on September 21st when only one was observed. August 18th was just at the end of the anomalously warm water event that was experienced this year.

Large *Megastraea undosa* were common and small/juveniles were relatively abundant (especially compared to other sites this year) over most the transect with a density of 1.5/m². *Tegula regina* were present at a density of 0.083/m² and 24 were found for size frequencies.

Crassadoma giganteum at this site were notably large and found over much of the site with a density of 0.065/m². *Kelletia kelletii* were common with a density of 0.033/m². *Megathura crenulata* were common in the high relief rocky areas with a density of 0.033/m², similar to other sites. *Cypraea Spadicea* density was 0.42/m². *Bursa californica* were relatively common with several observed.

Fish had moderate diversity and abundance. We visited this site two times this field season to conduct fish counts. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. *Coryphopterus nicholsii* were abundant with up to 253 observed and a density of 1.8/m². *Alloclinus holderi* were rare with only two observed and none on quadrats, similar to last year. Up to five *Lythrypnus dalli* were observed and had a density of 0.042/m². Five *Lythrypnus zebra* were present, and most counted were observed in a depression on the onshore side. *Oxylebius pictus* were moderately abundant with up to 12 observed. *Chromis punctipinnis* were the most abundant fish with up to 320 adults and 12 juveniles observed. *Oxyjulis californica* were abundant as well with up to 230 adults and 25 observed. *Semicossyphus pulcher* were present with 16 females, no juveniles, and one male observed. Two female, 19 juvenile and three male *Halichoeres semicinctus* were observed. Up to 27 adult and no juvenile *Paralabrax clathratus* were observed. *Girella nigricans* were common with up to 19 observed. *Hypsypops rubicundus* were common with up to 11 adults observed. Seven adult and no juvenile *Embiotoca jacksoni* were observed. Sixteen adult *Rhacochilus vacca* were observed. Four adult *Sebastes mystinus* were observed. No *Sebastes atrovirens* were observed. Two juvenile and no adult *Sebastes serriceps* were observed. Twelve adult *Medialuna californiensis*, halfmoon, were observed. Two *Scorpaena guttata*, California scorpionfish, were observed. One *Artedius corallinus*, coralline sculpin, was observed. One *Ornothopias triacis*, snubnose sculpin, was observed. Up to six *Caulolatilus princes*, ocean white fish,, were observed. One *Gymnothorax mordax,* California moray eel, was observed. Roving Diver Fish Counts were conducted on August 18th and September 21st by five and four divers counting 21 and 21 species respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on September 21st.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Keyhole, Anacapa Island
Site #31 ANKH
2006 sampling dates: 8/17, 9/7.
2006 status: State of transition.

The site was similar to last year but there was less macroalgae. No *Macrocystis pyrifera* were recorded on any of our methods and were rare at the site. There was one adult *M. pyrifera* individual with the holdfast attached to a small rock that was partially floating, and on top of that were approximately 10 to 15 *Strongylocentrotus purpuratus* consuming the base of the holdfast so its fate was most likely death. Adult and juvenile *Eisenia arborea* were present at densities of 0.042/m² and 0.13/m² and cover was 0.7% respectively. Green algae were present at a cover of 1.2%. Miscellaneous brown algae were abundant at a cover of 16.0% and consisted mainly of

Sargassum muticum. *Dictyota/Pachydictyon* spp. were common. *Colpomenia* spp. were common on top of rocks. Several small unhealthy *Cystoseira* spp. were observed at the site, but none on RPC's. Miscellaneous red algae were abundant at 25% cover and consisted mainly of filamentous red algae. Miscellaneous plants consisting mainly of filamentous diatoms were more abundant than at other sites this year at 76%, similar to last year. Encrusting Coralline Algae cover was 44.8%. Articulated coralline algae cover was 2.8%. Bare substrate cover was 4.2%, less than last year.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, were abundant with a cover of 28.5%. This category consisted mainly of *Eugorgia rubens* and *Spirobranchus Spinosus*. Miscellaneous bryozoans were common at 9.3% cover, similar to last year. *Diaperoecia californica* was common, just not along the main transect with a cover of 0.0%. Sponge cover was 0.5%. *Tethya aurantia* were rare with none observed on band transects this year. *Corynactis californica* was common at a cover of 1.3%. *Astrangia lajollaensis* were rare and patchy with a cover of 0.17%. *Balanophyllia elegans* was rare and not observed on RPCs. *Diopatra ornata* cover was 5.7% and many individuals were large and common in the low-lying areas. The colony of *Parazoanthus lucificum* on a gorgonian skeleton observed last year was again present on the side of a ledge on the offshore side of the transect.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* were similar in distribution and density at this site. *Strongylocentrotus franciscanus* and *S. purpuratus* densities were 3.8/m² and 3.7/m² respectively and similar to last year. *Centrostephanus coronatus* was moderately abundant at 0.46/m². *Lytechinus anamesus* were present at 0.0028/m². Three *S. purpuratus* were observed with wasting disease on August 17th.

Patiria miniata were common with a density of 0.42/m². *Pisaster giganteus* were rare and were counted on quadrats and 5-meter quadrats with densities of 0.042/m² and 0.020/m² respectively and similar to last year. Only three *P. giganteus* were observed for size frequencies and they were large with a mean size of 160 mm. *Pycnopodia helianthoides* were rare with none observed on band transects. *Linkia columbiae* were moderately abundant at this site. *Ophiothrix spiculata* were rare at the site with none observed on RPCs. *Parastichopus parvimensis* were common with a density of 0.46/m² and many small recruits noted, similar to other nearby sites this year. Approximately 50% of all *Patiria miniata* were observed with wasting disease on August 17th and one on September 7th. One *P. parvimensis* was noted with what looked like wasting disease.

Kelletia kelletii were common at 0.0167/m² and several juveniles observed. Fifteen *K. kelletii* were found for size frequencies and these had a mean size of 101mm. *Megathura crenulata* were present at 0.042/m² with several juveniles observed. Thirty eight were found for size frequency measurements and had a mean size of 67 mm. *Crassadoma giganteum* were moderately abundant with both large ones and recent recruits present for a density of 0.081/m². *Panulirus interruptus* were common with a density of 0.0097/m². Most of the *P. interruptus* were small (less than legal size), but several legal sized ones were observed and they were all found in the boulder habitat. *Cypraea Spadicea* were common at a density of 0.083/m². Adult *Megastraea undosa* were common and juveniles were moderately abundant with a density of 0.88/m². *Tegula regina* was present at 0.083/m² and 43 were found for size frequencies. *Aplysia californica* had a uniform distribution throughout the site and a density of 0.031/m². All three Gorgonian species,

Lophogorgia chilensis 0.31/m², *Muricea fruticosa* 0.0069/m², and *Muricea californica* 0.033/m², were present. *Lophogorgia chilensis* had small and large individuals present. Most of the *M. californica* individuals were small and on the offshore side. *Octopus* spp. were common throughout the site and apparent signs of their predation were noted, with numerous freshly cleaned bivalve shells. These bivalve shells consisted mostly of small *Gari californica* and *Ventricolaria fordii*.

Fish were abundant and diverse, similar to other sites nearby. We visited this site two times this field season to conduct fish counts. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. This site is located in the conservation area and reef fish are protected. *Coryphopterus nicholsii* were common at 1.5/m² and up to 246 counted. *Alloclinus holderi* were abundant compared to other sites this year at 1.3/m² and up to 96 observed. Small *A. holderi* juveniles were noted and likely from a recent recruitment event. No *Lythrypnus dalli* were observed on quadrats, but up to 18 were counted. Five *Lythrypnus zebra*, zebra gobies, were observed. *Oxylebius pictus* were moderately abundant with up to 14 counted. *Oxylebius pictus* with mating colors were observed. Up to 13 female, no juvenile, and two male *Semicossyphus pulcher* were observed. Up to 390 adults and 290 juvenile *Oxyjulis californica* were observed. Nine *Halichoeres semicinctus* females, 40 juveniles and 11 males were observed. *Chromis punctipinnis* were the most abundant fish with up to 480 adults and 585 juveniles observed. *Hypsypops rubicundus* were prevalent with up to nine adults observed, and several had nests. Up to 23 adult *Girella nigricans* were observed. *Paralabrax clathratus* were abundant with up to 26 adults and one juvenile observed. Several of the adults were notably large. *Embiotoca jacksoni* were common with up to 31 adults and four juveniles present. Two adult *Rhacochilus vacca* were observed. Four adult *Sebastes mystinus* were observed. *Sebastes atrovirens* were present with two observed. *Sebastes serriceps* were common with up to eight adults and four juveniles observed. One *Sebastes chrysomelas*, black and yellow rockfish, was observed. One *Sebastes auriculatus*, brown rockfish, was observed underneath a large rock. Up to 11 *Medialuna californiensis*, halfmoon, were observed. Three adult *Caulolatilus princeps*, ocean white fish, were observed. Two *Scorpaena guttata*, California scorpionfish, were observed. Two *Gymnothorax mordax*, California moray eel, were observed. One *Myliobatis californica*, California bat ray, was observed. Roving Diver Fish Count was conducted on August 17th and September 7th by six and three divers counting 25 and 19 species, respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on August 25th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: East Fish Camp, Anacapa Island
Site #32 ANEFC
2006 sampling dates: 8/22.
2006 status: Dominated by *Strongylocentrotus purpuratus*, *Strongylocentrotus franciscanus*, and *Ophiothrix spiculata.*

This site is notably dominated by the echinoderms *Strongylocentrotus franciscanus, Strongylocentrotus purpuratus*, and *Ophiothrix spiculata.* This site was completely devoid of brown macroalgae. From what people that dove here prior to the 1980s have told us, this area used to have an abundance of *Macrocystis pyrifera*. However, no *M. pyrifera* was observed this year and from historical verbal reports, this has most likely been the scenario for most of the past two decades. The only brown macroalgae noted was a small amount of *Colpomenia* sp. on tops of large rocks. Green algae and miscellaneous brown algae were both absent for a cover of 0.0%. Miscellaneous red algae decreased to a cover of 8.3%. Most of the red algae in this category were present on the tops of rocks/ridges. There were small patches of filamentous red algae that consisted of one of the three species found in *Hypsypops rubicundus* nests. No articulated coralline algae were observed on RPCs and were rare at the site. Encrusting coralline algae were present at 52.5% cover, similar to last year. Bare substrate covered 28.9% of the bottom, an increase from last year.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, covered 7.0% of the bottom. The most common invertebrates in this category were *Spirobranchus Spinosus. Corynactis californica* was moderately abundant at 5.2% cover, similar to last year. *Balanophyllia elegans* and *Astrangia lajollaensis* were rare with covers of 0.0% and 0.33% respectively. No bryozoans or sponges were observed on RPCs. *Tethya aurantia* density was 0.0125/m², similar to last year. *Diaperoecia californica* was present in small patches on the steep sides of large rocks, but none was observed on RPCs. Tunicates were rare with a cover of 0.17%. *Diopatra ornata* cover was 0.50%.

Strongylocentrotus purpuratus were the most abundant echinoderm with a density of 75/m², similar to last year. Most of the *S. purpuratus* were small with a mean size of 19 mm. *Strongylocentrotus franciscanus* were also abundant at 15/m², similar to last year and most were small with a mean size of 26 mm. Both Juvenile *S. purpuratus* and *S. franciscanus* were common. *Centrostephanus coronatus* were moderately abundant at 1.0/m², slightly less than last year. *Lytechinus anamesus* were moderately abundant in the low lying sandy areas at 0.33/m². On August 22nd approximately 10% of *S. purpuratus* and a few *S. franciscanus* were observed with wasting disease.

Ophiothrix spiculata were abundant but patchy, with a cover of 9.7%, a decline from last year. *Patiria miniata* were common with a density of 0.92/m². *Pisaster giganteum* were common and notably large with a mean size of 180 mm, mainly off the main transect. They were counted on 1 m quadrats and 5 m quadrats with densities of 0.0/m² and 0.010/m² respectively and 20 were found for size frequencies. No *Pycnopodia helianthoides* were observed. *Parastichopus parvimensis* was present at 0.13/m². On August 22nd three *Patiria miniata* were observed with wasting disease.

No live *Haliotis* spp. were found. *Megastraea undosa* were moderately abundant at 0.71/m². Small and large *Megathura crenulata* were abundant at 0.14/m². All three monitored species of Gorgonians were present with *Lophogorgia chilensis* at 0.014/m², *Muricea fruticosa* at 0.0014/m², and *Muricea californica* at 0.0069/m². *Kelletia kelletii* were common with a density of 0.11/m². *Crassadoma giganteum* were common on the large boulders with a density of

0.046/m² and many were large with a mean size of 86 mm. *Aplysia californica* were moderately abundant at 0.079/m².

Overall, fish had low abundance and diversity at this site. *Coryphopterus nicholsii* density was 2.0/m² and up to 470 were observed during the Roving Diver Fish Count, a decrease from last year. Large aggregations of 15-25 *C. nicholsii* schooling in small sand patches were common. The density for *Alloclinus holderi* was 0.29/m² with up to 24 observed. No *Lythrypnus dalli* were observed. *Lythrypnus zebra*, zebra gobies, were common with up to 10 observed. *Oxylebius pictus* were common with up to 27 observed. *Chromis punctipinnis* were common with up to 132 adults and 65 juveniles observed. There were no *Oxyjulis californica* observed. Up to eight *Semicossyphus pulcher* females were observed. One male *Halichoeres semicinctus* was observed. Up to 21 *Hypsypops rubicundus* were observed. Adult *Paralabrax clathratus* were common with up to 10 observed. Up to four adult *Girella nigricans* were observed. Up to four adult *Embiotoca jacksoni* were observed. One adult *Rhacochilus vacca* was observed. Two adult and one juvenile *Sebastes serriceps* were observed. Two adult *Sebastes chrysomelas*, black and yellow rockfish, were observed. No other rockfish were observed at this site, similar to last year. Up to seven *Medialuna californiensis*, halfmoon, were observed. One *Scorpaenichthys marmoratus*, cabezon, was observed. One *Scorpaena guttata*, California scorpion fish, was observed. *Caulolatilus princeps*, Ocean whitefish, were common with up to six adults observed. Roving diver fish counts were conducted on August 22nd by five divers observing 18 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were performed on August 23rd.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Black Sea Bass Reef, Anacapa Island
Site #33 ANBSBR
2006 sampling dates: 6/9, 8/3.
2006 status: Dominated by *Ophiothrix spiculata.*

Overall, there has been little change at this site. *Ophiothrix spiculata* continued to dominate the site, and the site was mostly devoid of other invertebrates and macroalgae. However, on the tops of large rocks or ridges there was an abundance of invertebrates and some algae. There were no *Macrocystis pyrifera*, *Eisenia arborea*, *Pterygophora californica*, *Laminaria farlowii* or *Desmarestia* spp. observed at this site. The only other brown macroalgae were *Colpomenia* sp., *Dictyota/Pachydictyon* and *Sargassum muticum*, which were all rare. Miscellaneous Red Algae cover, mainly on top of rocks, was at 7.8%, and *Laurencia pacifica* was the only red alga that was common. Miscellaneous plants cover was 11.3%. Green algae cover was 0.83% and consisted of *Codium fragile* and *Cladophora* sp. Some *Codium fragile* was present also on top of rocks. Encrusting Coralline algae covered much of the bottom underneath the *O. spiculata* and was recorded at 76%. Articulated Coralline Algae was rare at 0.17%. Bare substrate cover was 6.7%. All of the percent covers mentioned above were similar to last year.

There was an abundance of invertebrates found on top of rocks, as well as under and on ledges. Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, covered 3.5% of the bottom and

most of this category consisted of *Spirobranchus Spinosus* and hydroids respectively. Sponges were present at 2.0%. *Tethya aurantia* were common with a density of 0.021/m^2, these were difficult to see due to a layer of *O. spiculata* that often covered them. *Corynactis californica* were common at 3.2%. Bryozoans were present at 3.2%. *Diaperoecia californica* were common on the steep sides of ledges and had a low cover of 0.17% directly along the transect. Tunicate cover was 0.17%.

Strongylocentrotus franciscanus were moderately abundant at 5.8/m². *Strongylocentrotus purpuratus* were relatively rare with only 54 found for size frequencies and a density of 2.3/m². *Centrostephanus coronatus* were relatively abundant at 0.50/m². *Lytechinus anamesus* were rare and none were observed on band transects for a density of 0.0/m². Sea urchin wasting disease was rare and only observed in two *S. franciscanus* on August 3rd.

Ophiothrix spiculata were extremely abundant with a cover of 80%, similar to last year. *Patiria miniata* were uncommon with a density of 0.042/m² and only nine found for size frequencies. However, most were large. *Pisaster giganteus* were uncommon and counted on 1 m quadrats and 5 m quadrats with densities of 0.0/m² and 0.015/m² respectively, and only 16 were found for size frequency measurements. No *Pycnopodia helianth*oides were observed. No sea star wasting disease was observed. *Parastichopus parvimensis* density was 0.58/m², and small recruits were notably common.

Megastraea undosa were rare with a density of 0.083/m², and only 11 found for size frequencies with most being less than 50 mm. *Tegula regina* were rare with a density of 0.083/m² and four found for size frequencies. *Megathura crenulata* were notably abundant throughout the site with a density of 0.23/m², similar to last year. *Kelletia kelletii* were rare at 0.0014/m² with few observed and only one found for size frequencies. *Panulirus interruptus* were common at 0.017/m² with mainly larger, legal sizes present. The *P. interruptus* observed this year appeared to be larger than in 2005. *Lophogorgia chilensis* were present at 0.0042/m². It appears as though there used to be more live *L. chilensis* at this site since skeletons of old gorgonians covered with *Ophiothrix spiculata*were common. *Muricea fruticosa* and *Muricea californica* were rare at 0.0056/m² and 0.0028/m², respectively**.**

This site had a low diversity of fish with moderate abundance overall. We visited this site two times this field season to conduct fish counts. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. *Coryphopterus nicholsii* were the most abundant fish at this site with a density of 0.83/m² and up to 338 counted. *Alloclinus holderi* were relatively abundant at 1.3/m² and up to 52 counted. *A. holderi* showed up on quadrats with high densities probably because there is more suitable habitat directly along the main transect line. Many of these were small and probably recent recruits, as only four were counted on the first visit. There were eight *Lythrypnus dalli* counted, but none were observed on quadrats. Up to eight *Lythrypnus zebra* were observed. Up to 18 *Oxylebius pictus* were counted. Six females, no juveniles, and one male *Semicossyphus pulcher* were observed. One tagged female *S. pulcher* was observed on June 9th but not during the fish count (we presume this fish was tagged by UCSB researchers coordinated by Dr. Jenn Caselle). Up to five female and seven male *Halichoeres semicinctus* were observed. *Chromis punctipinnis* were moderately abundant throughout the water column with 325 adults and up to 240 juveniles observed. No juveniles

were observed on June 9th, but they were moderately abundant on August 3rd, indicating recruitment between those dates. Adult *Oxyjulis californicus* were present with 75 observed. Up to 12 adult *Hypsypops rubicundus* were observed. Eight *Girella nigricans* were observed. Up to five adult *Embiotoca jacksoni* were observed. One adult *Sebastes atrovirens* was observed. *Sebastes serriceps* were common with up to five adults and 12 juveniles observed. One *Sebastes chrysomelas*, black and yellow rockfish, was observed. One *Sebastes auriculatus*, brown rockfish, was observed. Four *Scorpaena guttata*, California scorpionfish, was observed. There were up to 14 *Caulolatilus princes*, ocean whitefish, observed during the roving diver fish count, and most of these were notably small. *Medialuna californiensis*, halfmoon, were also common with up to 36 adults observed in the midwater. Roving Diver Fish Counts were conducted on June 9th and August 3rd by four and five divers counting 16 and 21 species respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method was performed on August 24th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Lighthouse, Anacapa Island
Site #34 ANLH
2006 sampling dates: 7/21.
2006 status: Dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus.*

This year, Lighthouse was almost completely devoid of *Macrocystis pyrifera* which was a bit surprising since it was a developing kelp forest last year. We believe the moderate densities of adult *Strongylocentrotus* spp. along with an abundance of juveniles at this site last year was near the threshold for switching to an echinoderm dominated area. In addition, we think the high loading of the epiphytic bryozoan, *Membranipora* spp, could have possibly weighed down the kelp fronds to the point where the urchins could graze on them. *Strongylocentrotus* spp. were actively grazing on holdfasts, so it appeared that much of this transition has occurred recently.

There was no adult or subadult *Macrocystis pyrifera* recorded on 1 m quadrats or 5 m quadrats, but there were juveniles present at a density of 0.042/m^2. *M. pyrifera* cover was recorded at 0.33% The site was nearly devoid of macroalgae except for *Eisenia arborea* on top of rocks, but none were recorded on quadrats or RPCs. There were no *Laminaria farlowii* and *Pterygophora californica* recorded. *Cystoseira* spp. notably declined and was uncommon with none observed on RPCs. *Ulva/Enteromorpha* spp. were common and recorded under green algae with a cover of 1.0%. Miscellaneous brown algae cover was less than last year at 1.0%, and mainly comprised of *Dictyota/Pachydictyon* spp. Miscellaneous red algae were present at a cover of 5.7% and mainly consisted of filamentous red algae and *Laurencia pacifica*. Articulated coralline algae were present at a cover of 3.0%. Encrusting coralline algae were present at 34%. Miscellaneous plants increased to cover 12% of the bottom and consisted entirely of filamentous diatoms. Bare substrate cover was 11.8%.

The transition of this site from a kelp forest to an echinoderm-dominated area noticeably lowered the abundance and diversity of invertebrates. Miscellaneous invertebrates, excluding *Ophiothrix*

spiculata, covered 12.8% of the bottom, similar to last year. The most dominant miscellaneous invertebrates in this category were hydroids. Tunicate cover was lower than last year at 1.7%. The social tunicate, *Pycnoclavella stanleyi* was present but not as abundant as last year. Miscellaneous bryozoan cover declined to 2.7% of the bottom and *Bugula* spp. were some of the most abundant in this category. *Diaperoecia californica* were common on the steep sides of large boulders but were rare along the transect with a cover of 0.0%, similar to last year. Sponge cover was low at 0.0%. *Tethya aurantia* were common at 0.049/m². *Phragmatopoma californica* were more abundant at this site than other sites this year; with a cover of 10.5%. *Diopatra ornata* were common in the appropriate habitat with a cover of 12.8%. *Corynactis californica* cover was 0.5%. *Astrangia lajollaensis* were common with a cover of 1.8%. *Balanophyllia elegans* were rare with a cover of 0.17%. All the gorgonian species were notably abundant with *Muricea californica* being the most abundant at 0.29/m², *Muricea fruticosa* at 0.025/m², and *Lophogorgia chilensis* at 0.12/m².

Strongylocentrotus spp. dramatically increased this year, more than at any other site. *Strongylocentrotus franciscanus* were abundant with a density of 13/m², up from 4.4/m² in 2005. There was noticeable recruitment of this species with over 25% of the *S. franciscanus* measured for size frequencies being less than 20mm. *Strongylocentrotus purpuratus* dramatically increased to 56/m², up from 13/m² in 2005. There was also notable recruitment of *S. purpuratus* with over 16% measuring less than 15 mm. *Centrostephanus coronatus* were common at 0.75/m² with smaller juveniles (~20 mm) being relatively abundant and indicative of recent recruitment of this warm water species. One *Lytechinus anamesus* was present on band transects for a density of 0.0014/m². No Urchin wasting disease was observed and all of the urchins appeared very healthy.

Patiria miniata were common at 0.46/m² and most were large with a mean size of 62 mm. *Pisaster giganteus* were counted on both quadrats and 5-meter quadrats with densities of 0.042/m² and 0.010/m² respectively. We were only able to locate 26 *P. giganteus* for size frequency measurements and most were large with a mean size of 166 mm, similar to last year and indicative of little recruitment. *Parastichopus parvimensis* were common with a density of 0.29/m². No sea star wasting disease was observed.

Megathura crenulata were moderately abundant at 0.075/m². *Crassadoma giganteum* were moderately abundant on the larger rocks, with a density of 0.018/m². Some individuals were notably large. *Kelletia kelletii* were uncommon with a density of 0.0069/m². *Megastraea undosa* decreased to a density of 0.25/m² and there were two noticeable size cohorts (see Appendix G). *Cypraea Spadicea* were common at 0.042/m². *Aplysia californica* were present at 0.017/m². No *Aplysia vaccaria* were observed this year. *Conus californica* was abundant with several mating observations. Two fresh *Haliotis corrugata* shells were found and measured at 61 mm and 67 mm.

Fish diversity was lower than last year, but overall abundance was as high. However, there appeared to be a shift to an echinoderm-dominated fish assemblage. *Coryphopterus nicholsii* were abundant with a density of 0.79/m² and up to 142 observed. *Alloclinus holderi* were rare with none observed on quadrats and up to six counted, similar to last year. No *Lythrypnus dalli* were observed. *Oxylebius pictus* were abundant with up to 47 observed. *Chromis punctipinnis*

were the most abundant fish with up to 520 adults and no juveniles observed. *Oxyjulis californica* were common with up to 222 adults observed. Up to 12 female, no juvenile and one male *Semicossyphus pulcher* were observed. Eight female and three male *Halichoeres semicinctus* were observed. Up to 15 adult and no juvenile *Paralabrax clathratus* were observed. *Hypsypops rubicundus* were common with up to 17 adults observed. There were up to 10 adult *Embiotoca jacksoni* observed. Six *Rhacochilus vacca* were observed. No *Embiotoca lateralis* were observed. *Girella nigricans* were present with up to 14 adults counted. Three *Sebastes mystinus* were observed. Two adult *Sebastes atrovirens* were observed. No *Sebastes serranoides* or *Sebastes serriceps* were observed. One *Sebastes chrysomelas*, black and yellow rockfish, was observed. *Medialuna californiensis*, halfmoon, were common with up to 55 adults observed. One KGB was observed. One *Scorpaena guttata* was observed. A school of approximately 128 *Atherinops affinis*, top smelt, was observed. One *Myliobatis californica*, California bat ray, was observed, and are commonly observed at this site. Roving Diver Fish Counts were conducted on July 21st by six divers observing 22 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method were conducted on August 22nd.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Webster's Arch, Santa Barbara Island
Site #35 SBWA
2006 sampling dates: 6/20, 7/24, 7/25.
2006 status: Dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus*.

This site was dominated by *Strongylocentrotus purpuratus* and was almost completely devoid of macroalgae except for on top of large rocks, which serve as refuges from urchins. No *Macrocystis pyrifera*, *Laminaria farlowii*, and *Pterygophora californica* were observed within the transect this year. No *Eisenia arborea* were observed on Quadrats or RPCs, but large adults were present on top of the large rocks around the site. The green algae *Codium setchelli* was abundant, especially on the high relief rocks at the western half of the site. Green algae cover was lower than last year at 1.7%. Miscellaneous red algae cover was 9.0% and consisted mostly of *Laurencia pacifica* and filamentous red algae. Encrusting coralline algae were the most abundant algae with a cover of 56.7%. Articulate coralline algae were present with a cover of 1.2%. Bare substrate cover was 21.0%.

Most of the encrusting invertebrates had similar cover to last year. Miscellaneous invertebrate cover, excluding *Ophiothrix spiculata*, was 5.7% with hydroids and *Spirobranchus Spinosus* being the most dominant invertebrates in that category, similar to other sites at this island. Sponge cover was of 0.17%. *Tethya aurantia* were uncommon with a density of 0.0014/m², similar to last year. Tunicate cover was 0.83%. Miscellaneous bryozoan cover was 3.2%. *Diaperoecia californica* was not observed on RPC's this year and were rare at the site. *Corynactis californica* were common over most of the site with a cover of 4.8%, similar to last year. *Balanophyllia elegans* were moderately abundant and had a cover of 0.17%. *Astrangia lajollaensis* were uncommon and not observed on RPCs this year. *Lophogorgia chilensis*,

Muricea californica, and *Muricea fruticosa* were uncommon with densities of 0.0097/m², 0.0028/m² and 0.0014/m² respectively.

This site continued to be dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus* with high densities similar to last year. *Strongylocentrotus purpuratus* were abundant with a density of 76/m² and dominated the entire site except on top of large rocks. *Strongylocentrotus franciscanus* were also abundant with a density of 11/m². *Centrostephanus coronatus* were relatively abundant at a density of 0.46/m², similar to last year. *Lytechinus anamesus* were present and counted on both quadrats and band transects with densities of 0.33/m² and 0.0014/m² respectively and most were large. On June 20th approximately 10% of *S. franciscanus* and 5% of *S. purpuratus* were observed with sea urchin wasting disease. On a subsequent visit on October 24th after the month long warm water event sea urchin wasting disease was notably more prevalent with up to 100% of *S. purpuratus* being affected in some areas, however only a few *S. franciscanus* showed signs of the wasting disease. *Strongylocentrotus franciscanus* seem to possibly have a higher threshold and better survive these warm water events.

Ophiothrix spiculata was only present on the first 12 m of the transect with a cover of 2.0%, but they were abundant just east of the transect, similar to last year. *Patiria miniata* were relatively abundant for sites at Santa Barbara Island with a density of 1.5/m², similar to last year. *Pisaster giganteus* were also moderately abundant and counted on both quadrats and 5 meter quadrats with densities of 0.42/m² and 0.10/m², respectively. Most of the *P. miniata* and *P. giganteus* were large individuals. One *Pycnopodia helianthoides* was observed during band transects for a density of 0.0014/m², similar to other sites on Santa Barbara Island. *Parastichopus parvimensis* were present at a density of 0.58/m². No sea star wasting disease was observed.

Cypraea Spadicea were present at a density of 0.54/m². *Megastraea undosa* density was 0.50/m². *Tegula regina* were present at a density of 0.33/m². *Lithopoma gibberosa* were observed at a density of 0.042/m². *Megathura crenulata* were moderately abundant with a density of 0.0764/m². *Crassadoma giganteum* were present mainly on the ridges running through the site, their density was 0.016/m². *Aplysia californica* were moderately abundant with a density of 0.10/m². Several *Panulirus interruptus* were observed and had a density of 0.0042/m².

The fish at this site were similar in abundance and diversity to last year. Roving Diver Fish Counts were conducted two times this season. The counts are reported with the highest number recorded. If there is a large discrepancy in the range it is stated accordingly. *Coryphopterus nicholsii* density was 0.17/m² and up to 24 were observed. *Alloclinus holderi* density was 0.13/m² and up to eight were observed. No *Lythrypnus dalli* were observed. *Oxylebius pictus* were common with up to 50 observed. *Chromis punctipinnis* were common with up to 153 adults and two juveniles observed. *Oxyjulis californica* were common with up to 53 adults observed. Eleven female, no juvenile, and four male *Semicossyphus pulcher* were observed. *Hypsypops rubicundus* were also moderately abundant with up to 12 adults observed. One adult *Girella nigricans* was observed. Embiotocidae were rare with only one *Rhacochilus vacca* observed. One juvenile *Sebastes serriceps* was observed. Up to four *Sebastes chrysomelas*, black and yellow rockfish, were observed. Two adult *Caulolatilus princes,* ocean whitefish, were observed. Twelve *Medialuna californiensis* were observed. One *Scorpaenichthys marmoratus,* cabezon,

was observed. Two *Scorpaena guttata*, California scorpionfish, were observed. Two *Artedius corallinus*, coralline sculpin, were observed. One *Ornothopias triacis*, snubnose sculpin, was observed. One *Stereolepis gigas*, black sea bass, was observed. The most abundant fish was *Sardinops sagax*, Pacific sardine, with a large school of approximately 1180 fish observed. Roving Diver Fish Counts were conducted on June 20th and July 25th by four divers each time counting 14 and 19 species, respectively.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method was conducted on October 24th

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Graveyard Canyon, Santa Barbara Island
Site #36 SBGC
2006 sampling dates: 05/22, 10/25.
2006 status: Dominated by *Ophiothrix spiculata, Strongylocentrotus purpuratus*, and *Strongylocentrotus franciscanus.*

This site remained similar to last year and continued to be dominated by echinoderms. The site was nearly devoid of macroalgae. No macroalgae were observed except for a small amount of *Laurencia pacifica* and a small patch of *Dictyota/Pachydictyon s*p. Miscellaneous red algae cover was 3.2% and consisted mainly of filamentous and *L. pacifica,* similar to last year. No green algae were observed this year. Miscellaneous brown algae cover was 1.2%. Similar to last year, encrusting coralline algae was the most abundant cover at 39.0%. Many parts of the reef were covered in a small layer of sand with encrusting coralline algae underneath, so it appears that there is a lot of sand movement in this area. Articulated coralline algae were rare with a cover of 0.17%. Sand covered 31.7% of the bottom, the highest cover of all of our monitoring sites. Bare substrate was abundant as well with a cover of 43.2%.

Miscellaneous invertebrates cover, excluding *Ophiothrix spiculata,* was 7.7%. Hydroids were the most dominant invertebrate in this category. Sponge cover was 0.17%. *Tethya aurantia* were common with a density of 0.047/m². *Corynactis californica* cover increased from 0.0% to 4.7%. *Balanophyllia elegans* and *Astrangia lajollaensis* were both uncommon with none observed on RPC's. *Lophogorgia chilensis, Muricea fruticosa* and *Muricea californica* densities were 0.053/m², 0.011/m² and 0.044/m², respectively.

Strongylocentrotus franciscanus and *Strongylocentrotus purpuratus* were moderately abundant throughout this site and similar to last year with densities of 5.5/m² and 13.3/m², respectively. Juvenile *Strongylocentrotus* spp. were common, similar to other sites on Santa Barbara Island this year. *Strongylocentrotus* spp. were moderately abundant in areas that had high densities of *Ophiothrix spiculata*. Overall, *S. franciscanus* and *S. purpuratus* were small with mean sizes of 29 mm and 18 mm respectively. *Centrostephanus coronatus* was present in low numbers with a density of 0.042/m². *Lytechinus anamesus* were present at 0.13/m² and small juveniles were common like last year. *Lytechinus anamesus* mean size was 14 mm. Approximately five to 10 individual *S. purpuratus* were observed with wasting disease on May 22nd, but this dramatically

increased to approximately 50% of the population on October 25th. No *S. franciscanus* were observed with wasting disease.

Ophiothrix spiculata was the most abundant invertebrate with a cover of 21.3% an increase from last year. *Pisaster giganteus* were counted on 1 m quadrats and 5 m quadrats with densities of 0.083/m² and 0.035/ m² respectively. *Patiria miniata* were moderately abundant at a density of 0.46/m². No *Pycnopodia helianthoides* were observed for a density of 0.0/m². *Parastichopus parvimensis* were present with a density of 0.042/m². No sea star wasting disease was observed.

Megathura crenulata were relatively uncommon with a density of 0.0069/m² and nine were observed for size frequencies. *Megastraea undosa* were present in low numbers, similar to last year with a density of 0.042/m² and 20 were found for size frequencies. No *Cypraea Spadicea* were observed on quadrats, but they were common in the higher relief areas. *Aplysia californica* were abundant and were observed with a density of 0.057/m². *Kelletia kelletii* were rare with a density of 0.0042/m². One large *Crassadoma giganteum* was observed on band transects with a density of 0.0014/m². One 18 mm fresh *Haliotis corrugata* shell was found.

Fish diversity increased but abundance was low at this site. *Coryphopterus nicholsii* were less abundant than last year at 0.29/m² with up to 92 observed. No *Alloclinus holderi* were observed on quadrats and only one was observed during the roving diver fish count. No *Lythrypnus dalli* were observed. Up to eight *Oxylebius pictus* were observed. *Chromis punctipinnis* were rare with two adults and no juveniles observed. *Oxyjulis californicus* were the most abundant fish with up to 175 adults and no juveniles observed. One *Halichoeres semicinctus* female was observed. Two female *Semicossyphus pulcher* were observed. One adult *Hypsypops rubicundus* was observed. One adult *Paralabrax clathratus* was observed. Two adult *Girella nigricans* were observed. One *Rhacochilus vacca* was observed. Similar to last year, *Sebastes* spp. were nearly absent from the site except for One *Sebastes miniatus*, vermillion rockfish, young of the year and three KGB. Even though Santa Barbara Island is traditionally considered a warm water island *Sebastes miniatus* recruits have been observed here in the past. *Caulolatilus princes*, ocean whitefish, were present with up to two adults observed. *Medialuna californiensis* were present with up to three observed. One approximately 50 cm *Paralichthys californicus*, California halibut, was observed. One large *Squatina californica*, Pacific angel shark, was observed. One *Scorpaena guttata*, California scorpionfish, was observed. Roving Diver Fish Count was conducted on May 22nd with five divers observing up to 20 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method was performed on October 24th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

Location: Southeast Reef, Santa Barbara Island
Site #37 SBSER
2006 sampling dates: 5/25, 7/25, 10/25.
2006 status: Mature kelp forest from 0-40 m and dominated by *Strongylocentrotus purpuratus* from about 45-100 m.

The bulk of the *Macrocystis pyrifera* forest directly along the transect receded this year to approximately the 40 m mark, in 2005 it extended to about the 65 m mark. The remainder of the transect is dominated by *Strongylocentrotus purpuratus*. In addition, similar to 2005, the north side of the transect was notably more devoid of *M. pyrifera*. Similar to other sites, there was an abundance of the epiphytic bryozoan, *Membranipora* spp. on the *M. pyrifera* blades early in the summer and many of the plants appeared unhealthy. Adult density and cover of *M. pyrifera* decreased to 0.050/m² and 4.2%. Conversely, *M. pyrifera* subadult and juvenile densities both increased to 0.18/m² and 1.6/m². Adult and juvenile *Eisenia arborea* density was 0.08/m² and 0.0/m², respectively. *Pterygophora californica* were uncommon with adult and juvenile density at 0.0/ m² and 0.083/m² respectively. Adult and juvenile *Laminaria farlowii* densities were 0.0/ m² and 0.042/m², respectively. Green algae cover was 1.3% and consisted mainly of *Codium setchelli* and *C. fragile*. Miscellaneous brown algae cover, mainly consisting of *Dictyota* spp. /*Pachydictyon* spp., was 2.7%. *Desmarestia* spp. cover was 4.2%. *Cystoseira* spp. was uncommon at a cover of 0.33%. Miscellaneous red algae cover was 16.7% and consisted mainly of *Rhodymenia* spp. The most abundant algae at this site were encrusting coralline with 37.7% cover, similar to other sites on Santa Barbara Island. Articulated coralline algae cover was 4.2% and was most abundant where *M. pyrifera* were present. Miscellaneous plants, consisting mostly of filamentous diatoms, were present at a cover of 4.7%. Bare substrate cover was 14.7%.

Miscellaneous invertebrates, excluding *Ophiothrix spiculata*, were abundant with a cover of 23.8%. This category consisted mainly of amphipod tube mats, followed by hydroids. Tunicates were moderately abundant, but cover decreased to 3.8% and consisted mostly of *Aplidium* sp. and *Didemnum/Tridemnum* spp. Sponge cover was 0.33%. *Leucetta losangelensis* was common as well as other sponges. *Tethya aurantia* density was 0.0014/m². Miscellaneous bryozoans cover was 7.5% and consisted mostly of *Bugula* sp. and *Membranipora* sp. *Corynactis californica* and *Astrangia lajollaensis* were present at 0.17% and 0.50% cover respectively. *Muricea fruticosa* and *Muricea californica* were present in small numbers with densities of 0.0014/m² and 0.0056/m² respectively. *Lophogorgia chilensis* was more abundant than *Muricea* spp. and had a density of 0.0069/m². *Diopatra ornata* were present in the low lying areas with a cover of 0.33%.

Strongylocentrotus franciscanus were abundant with a density of 15.6/m² and were along the entire transect, but more abundant along the western half. *Strongylocentrotus purpuratus* were common along the eastern end of the transect and abundant along the western end with an overall density of 11.6/m². Juvenile *S. franciscanus* were more abundant than juvenile *S. purpuratus* and were mainly present in the spine canopy of conspecifics. *Centrostephanus coronatus* were common with a density of 0.50/m². *Lytechinus anamesus* were rare and none were observed on band transects, but they were sampled on quadrats at a density of 0.042/m^2. No sea urchin wasting disease was observed during our June 25th and July 25th visit, but we estimated during our October 25th visit that 30% of the *S. purpuratus* and less than 30% of the *S. franciscanus* showed prominent signs of wasting disease.

Pisaster giganteus were moderately abundant and were recorded on quadrats and 5 meter quadrats with densities of 0.33/m² and 0.12/m² respectively. *Patiria miniata* were moderately abundant on the deeper side of the transect and common elsewhere with a density of 0.25/m². No *Pycnopodia helianthoides* were observed. *Parastichopus parvimensis* were abundant at 1.5/m²,

with several small recruits observed. Several *Linkia columbiae* were observed. One *P. giganteus* was observed with wasting disease on July 25th.

Megastraea undosa density was 0.13/m², and both large and small individuals were present with about 24 total found for size frequency measurements. *Cypraea Spadicea* density was 0.083/m². *Megathura crenulata* and *Aplysia californica* were uncommon with the same density of 0.0056/m². Although *Panulirus interruptus* were not observed on band transects they were common in the crevice habitat, and abundant just outside the transect area on the high relief part of the reef just south of the transect when we visited in October. There were all sizes present with several large (estimated at greater than 2.5 kg) ones observed. One fresh 35 mm *Haliotis corrugata* shell and observed one live *H. corrugata* measuring 20 mm was found under a small rock.

The fish at this site were abundant and diverse compared to other sites at this island. *Coryphopterus nicholsii* were moderately abundant with a density 0.083/m² and up to 35 observed during the roving diver fish count. *Alloclinus holderi* density was 0.083/m² and up to 16 counted. No *Lythrypnus dalli* were observed. *Oxylebius pictus* were moderately abundant with up to 17 observed. *Chromis punctipinnis* were the most abundant fish with up to 711 adults and 178 juveniles observed. *Oxyjulis californica* were the second most abundant fish with up to 310 adults and 92 juveniles observed. Up to nine female *Semicossyphus pulcher* were observed. *Halichoeres semicinctus* were present with up to two females, one male and no juveniles observed. Adult *Hypsypops rubicundus* were abundant with up to 26 counted. A large proportion of the *H. rubicundus* were males guarding turf nests. Up to five adult *Paralabrax clathratus* were observed. Up to 57 adult *Girella nigricans* were observed. Up to three adult and two juvenile *Embiotoca jacksoni* were observed. No *Rhacochilus vacca* were observed. *Brachyistius frenatus*, kelp surfperch, were present with up to six observed. One adult *Rhacochilus toxotes*, rubberlip surfperch, was observed. Two adult and one juvenile *Sebastes serriceps* were observed. One *Sebastes chrysomelas*, black and yellow rockfish, was observed. *Medialuna californiensis*, halfmoon, were common with up to 18 observed. One *Artedius corallinus*, coralline sculpin, was observed. One *Ornothopias triacis*, snubnose sculpin, was observed. *Heterostichus rostratus*, giant kelpfish, adults and juveniles were common with up to four and two observed respectively. One *Gymnothorax mordax*, California moray eel, was observed. One *Scorpaenichthys marmoratus*, cabezon, was observed. One *Caulolatilus princeps*, ocean whitefish, was observed. Roving Diver Fish Counts were conducted on July 25th by six divers counting 25 species.

This is one of the 24 sites where visual fish transects including size is conducted by UCSB/PISCO. The PISCO fish sampling method was conducted on October 25th.

The temperature logger was deployed and retrieved, and all data were downloaded successfully.

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 long term trends, but this is beyond the scope of this annual report.

In 2005 the Kelp Forest Monitoring Program doubled in size, with 16 new sites added to facilitate the evaluation of Marine Protected Areas (MPAs). 2006 isthe first year we will have data to compare with a previous year, but two years of data gives us very limited ability to suggest trends and is insufficient for a trend analysis at these new sites.

Biological Notes

All of the proposed kelp forest monitoring was conducted in 2006. This year a total of 33 sites were monitored, the 16 original sites, one site that was established in 2001 and the 16 new sites that were established in 2005. Of the 33 sites, 12 sites had mature *Macrocystis pyrifera* (giant kelp) forests, one site had a developing kelp forest, three sites were in a state of transition, 16 sites were dominated by echinoderms, and one site was about half kelp forest and half dominated by echinoderms. Of the 16 sites dominated by echinoderms, four were dominated by *Strongylocentrotus purpuratus* (purple sea urchins), seven were dominated by *S. purpuratus* and *S. franciscanus* (red sea urchins), One by *Ophiothrix spiculata*(brittle stars), one by *O. spiculata* and *S. purpuratus*, three by *S. purpuratus, S. franciscanus* and *O. spiculata*., and none by *Pachythyone rubra* (aggregated red sea cucumbers). Mature kelp forests were present at Wyckoff Ledge, Hare Rock, and Miracle Mile on San Miguel Island, at Johnson's Lee North and South, Rodes Reef, Cluster Point, Trancion Canyon, Chickasaw, and South Point on Santa Rosa Island, at Gull Island and Yellow Banks on Santa Cruz Island, at Landing Cove and Cathedral Cove on Anacapa Island and at 0-40m of the site Southeast Reef at Santa Barbara Island, with the remainder of this site dominated by *S. purpuratus*. Similar to 2005, Fry's harbor at Santa Cruz Island maintained its status of a state of transition. Table 4 includes this information and comparisons to the 2005 site status.

At Santa Barbara Island, there was a continued decline of kelp forests at all of the sites as well as the surrounding areas at the island. Nearly all of the kelp observed in 2005 did not persist in 2006 and the few areas where kelp persisted, it appeared less abundant. *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus* densities remained high and were similar to last year. Overall there was a decrease in macroalgae in 2006. Five of the six sites were dominated by *S. purpuratus* and *S. franciscanus* and Southeast Sea Lion continued to have an abundance of *Ophiothrix spiculata*. Southeast Reef was kelp forest from 0-40 meters with the remainder of the transect dominated by *S. purpuratus*. In general we feel that the six KFM sites well represent the overall condition of the kelp forests and there is little indication that kelp forests will recover in the near future at this island.

At Anacapa Island, the four new and three original sites represent the island well and have changed little from last year with the exception of Lighthouse. Lighthouse changed from a mature kelp forest in 2005 to an area dominated by *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus*. *Strongylocentrotus purpuratus* and *S. franciscanus* densities

remained similar at all the sites except for Lighthouse. Algae abundance remained high at Cathedral Cove and Landing Cove, similar to last year. There were notably more algae in other inshore areas around Anacapa this year. However, *S. purpuratus* and *O. spiculata* still appear to dominate many areas along the south side of East Anacapa, and both the south and north sides of middle and West Anacapa Island. Overall, *Strongylocentrotus* spp. abundance slightly increased at Anacapa Island this year.

The kelp forests of Santa Cruz Island remained similar to 2005, but the canopy cover was notably less dense this year. *Strongylocentrotus* spp. increased at Pedro Reef, decreased at Pelican Bay, and remained the same at all the other sites on Santa Cruz Island. Echinoderm densities remained low at Fry's Harbor, which is in a state of transition. Scorpion Anchorage and Pelican Bay both remain dominated by *S. purpuratus*, though their densities are much lower than in recent years. The western third of the island is under-represented by our monitoring program as we don't have any sites west of Gull Island. The kelp forests at that end of the island appeared to remain abundant but seemed less dense, like many other sites this year.

Kelp forests continued to be abundant around Santa Rosa and San Miguel Islands. Mature kelp forests were present at nine of ten sites at these two islands. *Strongylocentrotus franciscanus* densities increased at Hare Rock and *Strongylocentrotus purpuratus* decreased at Miracle Mile. The *Strongylocentrotus* spp. densities remained similar to last year at all Santa Rosa sites.

In general, *Macrocystis pyrifera* was noticeably less abundant than last year. We observed high abundances of epiphytic bryozoans (*Thalamoporella californica* and *Membranipora* sp.) that may have been partially responsible for this decrease in kelp. In addition, there was a month long warm water event from July 19th – August 21st that may have contributed to the thinning of already emaciated kelp forests.

Tethya aurantia densities remained similar to last year at the new and original sites. At the original sites there were two increases, while the remaining 14 sites experienced little or no change. At the new sites there were no increases, 3 decreases and the other 13 sites remained the same. Two of the increases were at Admirals Reef and Landing Cove on Anacapa Island. The three decreases were at Cluster Point, Chickasaw and Devils Peak Member.

Strongylocentrotus franciscanus and *S. purpuratus* increased at several of the sites, but overall remained about the same as last year at most of the sites. *Lytechinus anamesus* densities remained about the same at all 33 sites. *Centrostephanus coronatus* were mostly present at Santa Barbara, Anacapa and the east end of Santa Cruz Island, and remained at low densities or declined slightly.

Strongylocentrotus purpuratus and *Strongylocentrotus franciscanus* recruitment remained low for the fifth consecutive year. There was no significant recruitment of *Centrostephanus coronatus* this year and we expect this warm water species to continue to gradually decline in abundance unless there is another recruitment event typically associated with a significant warm water event. We experienced a unusual but signigicant warm water event this year from July 19th – August 21st and we could expecte to see recruitment of warm water species such as these. However, we would not expect to observe this until next year or the year after in ARMs or 1 m

quadrats respectively. In the past, this species normally recruits at Santa Barbara, Anacapa and Santa Cruz Islands during anomalous warm water events such as El Niño. The most recent "large-scale" recruitment event for this species was observed during the 1997/1998 El Niño and after the subsequent increase in abundance this species has been in gradual decline.

Sea urchin wasting disease (Lafferty and Kushner, 1999, and Richards and Kushner, 1992) was prevalent and more notable later on in the summer this year after the warm water event that began on July 21st. The disease was observed at 16 sites this year compared to 11 in 2005. Diseased *Strongylocentrotus franciscanus* were observed at the following sites: Pelican Bay, Scorpion Anchorage, Potato Pasture, Little Scorpion, Pedro Reef, East Fish Camp, Black Sea Bass Reef, and all six Santa Barbara Island sites. At Scorpion Anchorage and Southeast Sea Lion approximately 5% of the *S. franciscanus* were observed with wasting disease. At Cat Canyon, Little Scorpion, Devil's Peak Member, East Fish Camp and Webster's Arch approximately 10% of the *S. franciscanus* were observed with wasting disease. At Arch Point and Southeast Reef approximately 30% of the *S. franciscanus* were observed with wasting disease. Cat Canyon had the highest prevalence of all the KFM sites this year. During our first visit we observed 10% of the *S. franciscanus* and 25% of the *Strongylocentrotus purpuratus* with wasting disease, and during our second visit on October 26th, we observed 20% of the *S. franciscanus* and 100% of the *S. purpuratus* with wasting disease. Diseased *S. purpuratus* were observed at the following sites: Pelican Bay, Scorpion Anchorage, Devil's Peak Member, Potato Pasture, Little Scorpion, Pedro Reef, Keyhole, East Fish Camp, and all six Santa Barbara Island sites. Approximately one percent of the *S. purpuratus* at Potato Pasture were observed with wasting disease. At Pelican Bay and Webster's Arch approximately 5% of the *S. purpuratus* were observed with wasting disease. At Scorpion Anchorage, Southeast Sea Lion, Devil's Peak Member, Little Scorpion, and Pedro Reef approximately 10% of the *S. purpuratus* were observed with wasting disease. At Arch Point and Southeast Reef approximately 30% of the *S. purpuratus* were observed with wasting disease and 50% At Graveyard Canyon. At East Fish Camp, 10% of the *S. purpuratus* had wasting disease. Diseased *Lytechinus anamesus* were observed at the following sites: Potato Pasture, Yellow Banks, and Pelican Bay. At Landing Cove there was no wasting disease observed, however *S. franciscanus* with Black Spot disease were common similar to recent years. Most of the *S. franciscanus* that were affected with this disease were large (over 100mm) and this disease appears as if it could have a significant impact on this group of long-lived animals.

Pycnopodia helianthoides densities remained relatively high and similar to the past few years. Their densities remained similar at 32 sites and notably decreased at one, Trancion Canyon. *Pycnopodia helianthoides* continues to appear as the key sea urchin predator at the northern Channel Islands.

Similar to last year, *Patiria miniata* densities changed little with an increase at one site, decreases at two sites, and 30 sites remaining about the same. *Pisaster giganteus* densities also remained similar to last year with two increases, two decreases, and 29 sites remaining about the same. Most of the sea star wasting disease mention below occurred after densities were already collected at many of the sites. As a result we did not observed density declines this year and we would expect these to appear in next year's monitoring data if disease mortality was significant.

Sea star wasting disease was common at many of the sites this year, with most of the observed wasting disease appearing during or after the warm water event that began around July 21st. The highest prevalence was observed at Pelican Bay, Pedro Reef, and Keyhole where we estimated 50% of the *Patiria miniata* showed signs of wasting disease. At Potato Pasture approximately 5% of the *A. miniata* were observed with wasting disease. Most of the other sites at Santa Barbara, Anacapa and Santa Cruz Islands were observed with one to three *A. miniata* with wasting disease. Aside from *A. miniata* we also observed *Pycnopodia helianthoides*, *Pisaster giganteus*, and *Astrometis sertulifera* with wasting disease. One *Parastichopus parvimensis* that appeared to have some sort of wasting disease was observed at each Scorpion Anchorage and Yellowbanks. We are unsure if this is actually a disease with this species, but it looks like they are withering and we are not sure how else to describe their condition.

Parastichopus parvimensis densities from 1 m quadrats were similar to recent years. However, juveniles were notably abundant in the ARM's. This was a very notable recruitment event for this species and is described in the ARMs section below.

Overall, *Ophiothrix spiculata* abundance remained similar to last year. At the six sites where *O. spiculata*is common, there was one increase, one decrease and the remaining sites remaining about the same.

Bryozoans were abundant early in the summer, and most notable were *Membranipora* Sp. and *Thalamoporella californica*. *Membranipora* spp. was observed in such abundance growing epiphytically on *Macrocystis pyrifera* plants, which it appeared to weigh down large plants and caused considerable sloughing and possibly mortality. *Hippodiplosia insculpta* was notably more abundant than usual at many of the sites. Overall, miscellaneous bryozoans increased from last year with increases at six sites, decreases at three and the remaining sites having little change. Overall, *Diaperoecia californica* abundance remained about the same with increases at one site decreases at three and little change at the other 29 sites. It should be noted that 18 of the sites were sampled during or after the warm water event that occurred from July 19th – August 21st, after which there was a decline in the high bryozoan cover that had been observed earlier in the summer.

Overall there was little change in *Panulirus interruptus* densities with increases at two sites and the remaining 31 sites similar to last year. However, *P. interruptus* density at Scorpion's Anchorage, one of the sites in a new Marine Reserve was 0.024/m², the highest recorded at this site since monitoring began in 1983.

Megastraea undosa densities remained low relative to the past five years. This year, their densities increased at one site, decreased at three sites and remained about the same at the remaining 29 sites. The pattern in density changes we have recently observed in *L. undosum* of increasing abundance post the 1997/1998 El Niño followed by a decline is similar to what was observed post the 1982/1983 El Niño (Zacharias and Kushner, 2006).

Megathura crenulata densities remained low and there has been little overall change in abundance the past several years. Density increased at one site, decreased at one site and remained about the same at the remaining 31 sites. We continued to observe relatively high

numbers of *Bursa californica* (frog snails) at many of the sites. These were rare prior to 2000. Shane Anderson the marine collector at UCSB has also observed more of this species on the mainland during the past ten years (personal communication).

Similar to recent years, *Haliotis* spp. continued to be rare at most of the monitoring sites. Wyckoff Ledge at San Miguel Island is the only original kelp forest monitoring site that has continued to have substantial numbers of *Haliotis rufescens*. The Miracle Mile site near Wyckoff Ledge that was initially installed in 2001 to monitor *H. rufescens* also continues to have high abundance of this species. These two sites continue to be the only monitoring sites that have a *Haliotis* spp. population that we consider "healthy". Both Wyckoff Ledge and Miracle Mile *H. rufescens* densities remained similar to last year with little or no change. *Haliotis rufescens* recruitment was lower than last year in the ARMs with four less than 51mm observed in the 10 original KFM sites with ARMs. Recruitment at Miracle Mile was also lower with three *H. rufescens* less than 51mm observed in the ARMs compared to 17 found in 2005. A total of four *H. rufescens* less than 51 mm where found during natural habitat size frequencies, two from the original sites and two from the new sites. Of The 16 new KFM sites added to the monitoring program in 2005, only two have moderate number of abalone, these are Chickasaw and South Point at Santa Rosa Island. Densities at these sites were similar to last year.

Similar to recent years, *Haliotis corrugata* continue to be extremely rare at all of five of the park islands. Four *H. corrugata* were observed at Landing Cove, two were located in the ARMs and two during natural habitat size frequencies. No *H. corrugata* were observed on band transects at any of the 33 sites this year. Though recruitment remained low there were two juvenile (<51 mm) *H. corrugata* observed in the ARMs this year and one one found during size frequencies. That one measured 10 mm and was found at Southeast reef on Santa Barbara Island. Fresh small *H. corrugata* shells were extremely rare, further evidence that there is little recruitment of this species.

No *Haliotis fulgens* or *Haliotis sorenseni* were observed this year. Only one live *Haliotis assimilis* was observed this year, and measured 137 mm at Yellowbanks, Santa Cruz Island.

Tunicate abundance remained similar to last year with increases at four sites, decreases at three sites and the remaining 26 sites had little change. *Styela montereyensis* densities decreased at five sites, and remained about the same at the other 28 sites.

Most of the comments below and in the site descriptions section under results regarding fish are garnered from the roving diver fish counts. *Coryphopterus nicholsii* were observed at all 33 sites during the Roving Diver Fish Counts. Overall, densities of *C. nicholsii* decreased with six sites decreasing, no sites increasing and the remaining 27 sites with little change from last year. *Lythrypnus dalli* were notably more abundant this year, and were observed at many sites during the roving diver fish counts, especially the ones that were conducted after the warm water event in July. However, they were not observed at as many sites on quadrats due to the lower sampling area of that protocol. There was little change in the density of this species in quadrats this year. *Alloclinus holderi* densities increased at one site, decreased at four sites, and experienced little or no change at the remaining 29 sites. Both *L. dalli* and *A. holderi* are warm water species that increase in abundance during years of anomalously warm water events such as the month long

warm water event experienced in 2006 and we might expect increases as a result in 2007. However we did observe recruitment of several warm water species this year that may have been a result of that event. We observed moderate recruitment of the warm water species, *Halichoeres semicinctus, Chromis punctipinnis* and *Oxyjulis californica*. Juvenile *C. punctipinnis* were observed at 17 sites compared to one in 2005. We observed juvenile *Hypsypops rubicundus* four sites, more than last year. Juvenile *Semicossyphus pulcher* were slightly less common than last year and were observed at seven sites and had lower abundance overall. Juvenile *Paralabrax clathratus* were relatively common and were observed at eight sites this year. Juvenile *Oxyjulis californica* were noticeably more abundant this year and observed at 15 sites compared to three in 2005. Juvenile *Halichoeres semicinctus* were present for the third consecutive year, and were observed at eight sites. Juvenile *H. semicinctus* were especially abundant at Cathedral Cove with an average of 200 observed among the fish counters. *Ophiodon elongates,* lingcod, were observed at five old and six new sites, similar to recent years. *Scorpaenichthys marmoratus,* cabezon, were observed at five old and six new sites. *Stereolepis gigas,* giant black sea bass, were not observed during the Roving Diver Fish counts but they were observed on several other occasions; most notably at Black Sea Bass Reef. There were several observations in and around Admiral's Reef and on Santa Barbara Island. Juvenile *Sebastes* spp. were relatively uncommon, which is similar to the last two years. We observed *Sebastes auriculatus,* brown rockfish, at eight sites this year with most in 15-20 cm size range. This is suggestive that the brown rockfish, which traditionally prefer rock/sand interface habitat at depths below 50 ft, are part of an ontogenetic movement from a juvenile/sub adult phase to adult. *Sebastes mystinus* juveniles were observed at six sites, but in very low numbers. There were slightly more juvenile *Sebastes atrovirens* observed with eight old and two new sites, yet in low numbers similar to past years. *Sarda chilensis,* pacific bonito, and *Seriola dorsalis,* yellowtail, were observed at many places around most or all of the islands this year. *Sarda chilensis* were relatively abundant compared to recent years along the southeast side of Santa Cruz Island. These were rare the past two years and nearly non-existent around the Channel Islands since the mid 1980's, and appear to be making a comeback. We have made increasing observations of *Squatina californica,* Pacific angel sharks, at Santa Barbara Island over the past several years, indicating a recovery from depressed abundances that were presumably caused by an intensive fishery for this species during the 1980s.

2006 was the third year we collected Counts (numbers of fish) during all of the Roving Diver Fish Counts. We added the Counts data field in the middle of the 2003 field season because it only takes a little extra effort underwater to keep track of whole fish counts and we were losing this information by transferring those numbers to the Abundance codes (S (single) F (few) C (common) and M (many). If an observer did not feel comfortable or we did not consider them an expert, only the abundance codes were used. Where fish Counts were not present nor taken (null) an associated null value (blank) is in the data base.

In the sites descriptions/results we continued to use whole number counts to describe the abundance of fish as we believe they are a more accurate method of describing fish abundances than descriptive words like common, abundant, or rare. Though it is possible for an observer to count a fish more than once during a 30 minute fish count, we have chosen to describe fish counts mostly using the highest number observed at a site. Over time, we believe the Counts data field will prove to be useful in evaluating fish abundance at our sites. In the near future we hope

to add a size component to this methodology and train our core staff divers to collect size information to better evaluate the status of fish at the monitoring sites.

This was the second of three years where PISCO conducted their fish abundance and size frequency monitoring at the 24 sites associated with the proposal "Establish Baseline Ecological Conditions of Newly Established Marine Reserves at the Channel Islands".

Unusual Species / Non-Indicator Species

There were no unusual or non-indicator species noted this year.

Artificial Recruitment Modules (ARMs)

ARMs were present and monitored at 10 of the original kelp forest monitoring sites in 2006. In addition, the ARMs placed at Miracle Mile at San Miguel Island were monitored. The below trends refer to the ten original KFM sites unless otherwise noted.

Haliotis spp. in the ARMs were discussed in the previous paragraph in this section above. Overall, *Cypraea Spadicea* abundance remained similar to last year with increases at two sites, and little or no change at eight sites. Juvenile *C.Spadicea* were observed at Landing Cove. There was little overall change in *Megathura crenulata* densities with no increases, decreases at two sites and little or no change at eight sites. Similar to past years, most are small in the ARMs indicating some recruitment. *Crassadoma giganteum* abundance also had little change from last year with an increased at one site, decrease at one site and little to no changes at the remaining eight sites. *Patiria miniata* densities increased at three sites and had little or no change at seven sites. *Pisaster giganteus* remained the same with increases at two sites, decreases at two sites and six sites experiencing little or no change. There was little change in *Pycnopodia helianthoides* abundance in the ARMs this year. *Strongylocentrotus franciscanus* density in the ARMs increased at more sites this year with increases at three sites and seven that had little or no change. Similarly, densities of *Strongylocentrotus purpuratus* in the ARMs also increased at more sites. Their density increased at three sites, decreased at one site and had little or no change at six sites. *Centrostephanus coronatus* remained in low abundance in the ARMs this year. Very small juvenile *Parastichopus parvimensis* were observed at many of the sites this year, especially at Landing Cove with a mean of 17.8 <10 cm/ARM and Cathedral Cove a mean 10.7 <10 cm/ARM. David Kushner stated that this was the largest recruitment event of this species he has observed in 17 years of observations at the Channel Islands and was the highest number of juveniles observed in the ARMs since this species has been monitored in them. *Parastichopus californica* recruitment was notable inside and outside the ARMs at Yellow Banks. With such high recruitment we would expect to see increases in abundance in the quadrat data in the next several years.

New Projects

No new projects this year but this was the second year of the three year project titled "Establish Baseline Ecological Conditions of Newly Established Marine Reserves at the Channel Islands".

Temperature

In 2006, two Tidbit™ loggers were deployed at most sites. In previous years, a combination of StowAway™ and Tidbit temperature loggers were deployed, and the data were cross-referenced.

We experienced several failures with the StowAway loggers in past years, while the Tidbit™ loggers have proven to be more reliable. This year we converted entirely to the Tidbit™ loggers.

All temperature data were successfully downloaded from all sites in 2006. The most notable temperature event experienced this year was a month long warm water anomaly from July 19th to August 21st.

Protocol Changes

No new protocol changes were implemented this year. This was the second of three years (2005-2007) that the PISCO fish protocol was conducted under a Cooperative Agreement to facilitate the NRPP reserves project, "Establish Baseline Ecological Conditions of Newly Established Marine Reserves at the Channel Islands".

Sampling Difficulties

All proposed data collection was completed this year except Roving Diver Fish Counts and Fish Transects were only performed once due to time constraint of the additional KFM sites and the outsourcing of the fish transects to PISCO at UCSB.

Data Requests

In 2006, we received 13 KFMP data requests and all were fulfilled as follows:

1. Dr. Thomas A. Ebert, courtesy Professor in the Department of Zoology at Oregon State University requested and was sent all of the *Strongylocentrotus purpuratus* and *Strongylocentrotus franciscanus* density and size frequency data. Dr. Ebert and Dr. Mike Russell from Villanova University are working on a NSF proposal linking oceanographic events to sea urchin demography; focus of the proposed research is on intertidal purple sea urchins from Canada to Mexico.

2. *Haliotis assimilis* and other *Haliotis* spp. data from the ARMs were sent to Dr. Laura Rodgers Bennet at Bodega Marine Labs and she is with the California Department of Fish and Game (CDFG).

3. The ARMs and quadrat data were sent to Dr. Mark Page, who was awarded a NPS Learning Center grant to analyze Channel Islands National Park datasets on benthic invertebrate species from inside and outside of selected marine protected areas on Santa Cruz and Santa Rosa Islands

4. Dr. Andy Brooks was sent the quadrat and fish data. He is working on a manuscript with Dr. Sally Holbrook and Dr. Russell Schmitt describing patterns of change seen in species abundances for several species throughout the northern Channel Islands in different trophic levels.

5. The density and size data for *Kelletia kelletii* were sent to Ian Taniguchi at the CDFG.

6. Sea Urchin density and size frequency data were sent to Peter Kalvass at CDFG. He is planning on presenting these data at a CalCOFI meeting.

7. *Haliotis* spp. data were sent to Jim Marshall who is involved with the California Abalone Association.

8. *Megathura crenulata* data were sent to Dr. Carrie Culver at California Sea Grant. A new fishery for this species is being proposed and the product is to be used for the pharmaceuticals industry.

9. KFM temp and all KFM biological data were sent to Jarrett Byrnes for a UC Davis class project that is using new statistical methods to look at food web interactions.

10. RPC, 1 m Quadrat and 5 m Quadrat summary data were sent to Doctoral Student Andrew Rassweiler at UCSB. He is researching *Pachythyone rubra* populations and the mechanisms that allow *P. rubra* to become established in certain areas.

11. All of the KFM temperature data for SMI were sent to CDFG Pathologist Jim Moore, whom is working on abalone withering syndrome.

12. Sent BART and temperature data for BARTS to Tom McCormick

13. All of the *Strongylocentrotus franciscanus* data were sent to Steve Schroeter who is working with David Kushner on long-term changes in this species.

Presentations

A poster titled "Assessment of the Channel Islands' Marine protected Areas using a Long-term Ecological Monitoring Program" was presented at the Southern California Marine Monitoring Conference IV in Long Beach, CA, at the International Temperate Reef Symposium at Santa Barbara, at the 2006 California and World Oceans Conference, and at the Annual Western Society of Naturalists Conference in Redmond, Washington.

Michael Moss presented a talk on a twenty five year review of 1 m quadrat data in relation to *Rhinogobiops nicholsii* and a talk on the Roving Diver Fish count methodology at the Annual Western Society of Naturalist Conference in Redmond, Washington.

Publications

The following publications using KFM data were published in 2006:

Steele, M. A., S. C. Schroeter, R. C. Carpenter, and D. J. Kushner. 2006. Top-down vs. bottom-up effects in kelp forests. Science 313:1738.

Halpern B.S. and K. Cottenie. 2006 Little evidence for climate effects on local-scale structure and dynamics of California kelp forest communities. Global Change Biology, 12: 1-16.

Halpern B.S., Cottenie K, Broitman B.R. 2006 Strong top-down control in Southern California kelp forest ecosytems. Science, 312, 1230-1232.

Zacharias, M.A. and D.J. Kushner. 2006. Sea Temperature and Wave Height as Predictors of Population Size Structure and Density of *Megastraea (Lithopoma) undosa*: Implications for Fishery Management. Bulletin of Marine Science, 79(1): 71-82, 2006.

Byrnes, J., J.J. Stachowicz, K.M. Hultgren, A. R. Hughes, S. V. Olyarnik and C. S. Thornber. 2006. Predator diversity strengthens trophic cascades in kelp forests by modifying herbivore behaviour. Ecology Letters, 9: 61-71.

Information Requests

The kelp forest monitoring handbooks and annual reports are available in PDF format on the web at: http://www.nps.gov/chis/rm/Index.htm.

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

Tables

Table 1. Regularly monitored species 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
Strawberry anemone	*Corynactis californica*	R
Orange cup coral	*Balanophyllia elegans*	R
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	*Lithopoma gibberosa*	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	*Crassadoma giganteum*	B, S
California spiny lobster	*Panulirus interruptus*	B
Tunicates		R
Stalked tunicate	*Styela montereyensis*	Q
Miscellaneous invertebrates		R

Table 2. continued.

FISH		
Bluebanded goby	*Lythrypnus dalli*	Q, F
Blackeye goby	*Coryphopterus nicholsii*	Q, F
Island kelpfish	*Alloclinus holderi*	Q, F
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	9-11	1981
Santa Rosa	Johnson's Lee South	SRJLSO	14-16	1981
Santa Rosa	Rodes Reef	SRRR	13-15	1983
Santa Rosa	Cluster Point	SRCP	12-15	2005
Santa Rosa	Trancion Canyon	SRTC	9-15	2005
Santa Rosa	Chickasaw	SRCSAW	10-13	2005
Santa Rosa	South Point	SRSP	11-13	2005
Santa Cruz	Gull Island South	SCGI	14-16	1981
Santa Cruz	Fry's Harbor	SCFH	12-13	1981
Santa Cruz	Pelican Bay	SCPB	6-8	1981
Santa Cruz	Scorpion Anchorage	SCSA	5-6	1981
Santa Cruz	Yellowbanks	SCYB	14-15	1986
Santa Cruz	Devil's Peak Member	SCDPM	10-13	2005
Santa Cruz	Potato Pasture	SCPP	9-12	2005
Santa Cruz	Cavern Point	SCCVP	12-13	2005
Santa Cruz	Little Scorpion	SCLS	9-14	2005
Santa Cruz	Pedro Reef	SCPRF	7-10	2005
Anacapa	Admiral's Reef	ANAR	13-15	1981
Anacapa	Cathedral Cove	ANCC	6-11	1981
Anacapa	Landing Cove	ANLC	5-12	1981
Anacapa	Keyhole	ANKH	7-10	2005
Anacapa	East Fish Camp	ANEFC	9-14	2005
Anacapa	Black Sea Bass Reef	ANBSBR	15-16	2005
Anacapa	Lighthouse	ANLH	7-9	2005
Santa Barbara	Southeast Sea Lion Rookery	SBSESL	12-14	1981
Santa Barbara	Arch Point	SBAR	7-8	1981
Santa Barbara	Cat Canyon	SBCAT	7-9	1986
Santa Barbara	Webster's Arch	SBWA	14-16	2005
Santa Barbara	Graveyard Canyon	SBGC	10-12	2005
Santa Barbara	Southeast Reef	SBSER	10-15	2005

Table 4. 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
$5m^2$ 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 $2000m^2$ area around transect
Roving Diver Fish Count	30 minute count of $2000m^2$ 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

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 (Astraea) spp.	60	Max. shell diameter, mm
Kelletia kelletia	60	Max. shell length, mm
Crassadoma (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 (Asterina) miniata	60	Length of longest ray, mm
Pisaster giganteus	60	Length of longest ray, mm

Table 5. 2006 Kelp forest monitoring site status with 2005 status for comparison.

Island/Site	2008 Status	2007 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	State of transition	Mature kelp forest
Cluster Point	Developing kelp forest	Mature kelp forest
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	State of transition	State of transition
Pelican Bay	Dominated by *Strongylocentrotus purpuratus*	Dominated by *S. 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*	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*

Table 6. continued**.**

Island/Site	2006 Status	2005 Status
Anacapa Island		
Admiral's Reef	Dominated by *Ophiothrix spiculata* and in some areas *S. purpuratus*.	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	Developing kelp forest
East Fish Camp	Dominated by *S. purpuratus, S. franciscanus* and *O. spiculata*.	Dominated by *S. purpuratus*, *S. franciscanus* and *O. spiculata*.
Black Sea Bass Reef	Dominated by *O. spiculata*	Dominated by *O. spiculata*
Lighthouse	Dominated by *S. purpuratus* and *S. franciscanus*	Mature kelp forest
Santa Barbara Island		
Southeast Sea Lion Rookery	Dominated by *O. spiculata, S. purpuratus and S. franciscanus*	Dominated by *O. spiculata, S. purpuratus and S. franciscanus*
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 *S. purpuratus* from about 45-100m.	Mature kelp forest from 0-50m and dominated by *S. purpuratus* from about 50-100m.

Table 7. 2006 Kelp Forest Monitoring Program participant and cruise list.

Participants	Affiliation	Cruise Participation
Anderson, Shane	UCSB	5
Byrnes, Jarrett	UCD	8
Conti, John	CHIS VIP	6
Davis, Katie	UCSB	12
Gaurdino, Michael	Monterey Bay Aquarium	6
Greenly, Ashley	Moss Landing	4
Griffiths, Ali	CHIS SCA	All Cruises
Gross, George	CDFG	NA
Hott, John	CHIS VIP	NA
Kamps, Kristin	SDSU	9
Kushner, David	CHIS Staff	All Cruises
Langlois, Tim	UA NZ	4,7
Levenbach, Stewart	UCSB	3
Moore, Kelly	CHIS Staff	All Cruises
Moss, Michael	CHIS Staff	All Cruises
Mutz, Stephanie	UCSB	1
Osorio, Dave	CDFG	6
Phillips, Jeff	USFWS	NA
Sanders, Greg	MMS	7,12
Shuman, Craig	Reef Check	13
Sprague, Josh	CHIS Staff	All Cruises
Stein, Derek	CDFG	2,12
Taniguchi, Ian	CDFG	4,14,15,16
Witting Dave	NOAA	15

Cruise Number	2006 Cruise Dates	KFM Sites Visited
1	5/22-5/26	SCGC, SBAP, SBSESL, SBSER
2	6/5-6/9	SCFH, SRSP, SCCVP, ANLC, ANBSBR
3	6/19-6/23	SBCAT, SBWA, SMHR, SMRR,SCGI
4	7/10-7/14	SCGI, SRCSAW, SRTC, SCDPM
5	7/20-7/21	ANLH, SCLS
6	7/24-7/28	SBWA, SBSER, SRCP, SCPB
7	8/3-8/4	ANBSBR, ANCC
8	8/7-8/11	SCPP, ANAR, SRJLNO, SRJLSO, SCYB
9	8/17-8/18	ANKH, SCPRF
10	8/21-8/25	SCYB, ANEFC, ANLC, SCSA, SCPP
11	8/29-8/31	CDFG San Miguel Island Abalone Surveys
12	9/7	ANCC, ANKH
13	9/11-9/15	SRJLSO, SMWL, SMMM, SMHR, SCPB
14	9/20-9/21	SCDPM, SCCVP, SCPRF
15	9/25-9/29	SRJLNO, SCFH, SCPB, ANLC, ANAR
16	10/4-10/5	SCYB
17	10/23-10/27	ANCC, SBAP, SBCAT, SBGC, SBWA, SBSER,SBSEL

Table 6. 2006 Echinoderm wasting disease/syndrome observations.

Island/Site	Sea Star Wasting Syndrome Species Observed	Sea Star Wasting Syndrome Dates(s) of Observation	Sea Urchin Wasting Syndrome Species Observed	Sea Urchin Wasting Syndrome Dates(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	1	9/25	None	
Johnson's Lee South	10	8/9	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	1	9/26	None	
Pelican Bay	1	9/15	2,3,6	7/28, 9/15
Scorpion Anchorage	1,7	8/24	2,6	8/24
Yellow banks	4,7,8	8/21	3	8/21
Devil's Peak Member	None		2,6	9/20
Potato Pasture	1,4,10	8/7	2,3,6	8/7
Cavern Point	None		None	
Little Scorpion	None		2,6	7/20
Pedro Reef	1,5	8/18, 9/21	2,6	8/18,9/21
Anacapa Island				
Admiral's Reef	1	8/8, 8/27	None	
Cathedral Cove	None		None	
Landing Cove	1	8/23	None	
Keyhole	1	8/17, 9/7	2	8/17
East Fish Camp	1	8/22	2,6	8/22
Black Sea Bass Reef	None		6	8/3
Lighthouse	None		None	
Santa Barbara Island				
SE Sea Lion Rookery	None		2,6	10/26
Arch Point	1	10/23	2	10/23
Cat Canyon	None		2,6	6/19, 10/26
Webster's Arch	None		2,6	6/20
Graveyard Canyon	None		2	5/22, 10/25
Southeast Reef	4	7/25	2,6	10/25

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*
2 = *Strongylocentrotus purpuratus*
3 = *Lytechinus anamesus*
4 = *Pisaster giganteus*
5 = *Astrometis sertulifera*
6 = *Strongylocentrotus franciscanus*
7 = *Parastichopus parvimensis*
8 = *Dermasterias imbricata*
9 = *Mediaster aequalis*
10 = *Pycnopodia helianthoides*
11 = *Pisaster ochraceus*

Table 7. 2006 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	Cavern Point
	Devil's Peak Member
	Little Scorpion
	Potato Pasture
	Pedro Reef
	Scorpion
Santa Rosa Island	Chickasaw
	Cluster Point
	Johnson's Lee North
	Johnson's Lee South
	South Point
	Trancion Canyon

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Appendices

Appendix A. 1 Meter Quadrat Data.

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge			
Macrocystis pyrifera Ad.(>1m)	1.1667	1.2492	12
Macrocystis pyrifera Juvenile (<1m)	2.9167	2.9529	12
Eisenia arborea adult	0.1250	0.3108	12
Eisenia arborea juvenile	0.1250	0.4330	12
Pterygophora californica adult	0.6667	0.7177	12
Pterygophora californica juvenile	0.3333	0.3892	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Agarum fimbriatum adult	1.5000	1.9424	12
Cypraea spadicea	0.0000	0.0000	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.8333	1.3371	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	2.2917	1.2515	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	2.2500	5.9525	12
Strongylocentrotus purpuratus	0.0417	0.1443	12
Parastichopus parvimensis	0.1250	0.2261	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.1250	0.2261	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.2083	0.2575	12
Alloclinus holderi	0.0000	0.0000	12
San Miguel Island - Hare Rock			
Macrocystis pyrifera Ad.(>1m)	1.8333	1.2123	12
Macrocystis pyrifera Juvenile (<1m)	4.8750	5.2748	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	0.5417	0.8382	12
Megastraea undosa	0.0833	0.2887	12
Lithopoma gibberosa	0.0833	0.1946	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	3.7500	2.9349	12
Pisaster giganteus	0.4167	0.6337	12
Strongylocentrotus franciscanus	17.1667	17.8419	12
Strongylocentrotus purpuratus	0.4583	0.6895	12
Parastichopus parvimensis	0.0000	0.0000	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0417	0.1443	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Rosa Island - Johnson's Lee North			
Macrocystis pyrifera Ad.(>1m)	0.6250	0.6077	12
Macrocystis pyrifera Juvenile (<1m)	3.7917	3.1222	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.2083	0.4981	12
Pterygophora californica juvenile	0.2917	0.5823	12
Laminaria farlowii adult	0.1250	0.2261	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.7917	1.0326	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.3750	0.3108	12
Pisaster giganteus	0.1667	0.3892	12
Strongylocentrotus franciscanus	1.8333	4.1084	12
Strongylocentrotus purpuratus	0.6667	1.5859	12
Parastichopus parvimensis	0.0833	0.1946	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	3.5833	2.9064	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.1250	0.3108	12
Alloclinus holderi	0.0000	0.0000	12
Santa Rosa Island - Johnson's Lee South			
Macrocystis pyrifera Ad.(>1m)	0.2917	0.5418	12
Macrocystis pyrifera Juvenile (<1m)	12.3750	13.0613	12
Eisenia arborea adult	0.0833	0.2887	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0833	0.1946	12
Pterygophora californica juvenile	0.3333	0.5774	12
Laminaria farlowii adult	0.5833	0.5967	12
Laminaria farlowii juvenile	0.4583	0.5823	12
Agarum fimbriatum adult	0.0000	0.0000	12
Agarum fimbriatum juvenile	0.0000	0.0000	12
Cypraea spadicea	0.2500	0.3371	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	3.0833	1.7299	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	0.5833	0.7930	12
Strongylocentrotus purpuratus	0.5833	1.2216	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.7500	0.6571	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.3750	0.5691	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Rosa Island - Rodes Reef			
Macrocystis pyrifera Ad.(>1m)	0.0417	0.1443	12
Macrocystis pyrifera Juvenile (<1m)	0.5000	1.2968	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	0.1250	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	5.4167	2.5480	12
Pisaster giganteus	0.3750	0.5276	12
Strongylocentrotus franciscanus	3.1250	4.2218	12
Strongylocentrotus purpuratus	0.6667	0.7785	12
Parastichopus parvimensis	0.0000	0.0000	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.4167	0.5573	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.0000	0.0000	12
Santa Cruz Island - Gull Island South			
Macrocystis pyrifera Ad.(>1m)	0.2500	0.3371	12
Macrocystis pyrifera Juvenile (<1m)	1.3750	1.8106	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.1667	0.4438	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	0.4167	0.7930	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	2.5000	1.3817	12
Pisaster giganteus	0.2917	0.4981	12
Strongylocentrotus franciscanus	0.5833	0.9731	12
Strongylocentrotus purpuratus	0.6667	0.7177	12
Parastichopus parvimensis	0.1250	0.3108	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.2917	0.3343	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Cruz Island - Fry's Harbor			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	0.0000	0.0000	12
Eisenia arborea adult	0.5000	1.0660	12
Eisenia arborea juvenile	0.5833	0.7638	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	0.3965	12
Megastraea undosa	0.0417	0.1443	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	1.3750	0.9077	12
Pisaster giganteus	0.2917	0.3343	12
Strongylocentrotus franciscanus	0.1250	0.3108	12
Strongylocentrotus purpuratus	0.1250	0.3108	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	1.2917	1.0104	12
Alloclinus holderi	0.0000	0.0000	12
Santa Cruz Island - Pelican Bay			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	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	0.2500	0.5000	12
Pisaster giganteus	0.1250	0.2261	12
Lytechinus anamesus	3.1250	1.5540	12
Strongylocentrotus franciscanus	0.8333	0.7487	12
Strongylocentrotus purpuratus	12.2083	6.6417	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	5.4167	1.3286	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Cruz Island - Scorpion Anchorage			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	0.1250	0.4330	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	0.1667	0.3257	12
Megastraea undosa	0.3333	0.5774	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.1250	0.2261	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.0000	0.0000	12
Strongylocentrotus franciscanus	2.8750	1.8231	12
Strongylocentrotus purpuratus	40.6667	20.0435	12
Parastichopus parvimensis	0.3333	0.3892	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	2.0000	1.1282	12
Alloclinus holderi	0.1250	0.2261	12
Santa Cruz Island - Yellow Banks			
Macrocystis pyrifera Ad.(>1m)	0.0417	0.1443	12
Macrocystis pyrifera Juvenile (<1m)	6.2083	6.6519	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	0.1667	0.3257	12
Megastraea undosa	0.2500	0.5839	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	1.1667	1.2123	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.2917	0.8649	12
Strongylocentrotus franciscanus	1.2083	2.0611	12
Strongylocentrotus purpuratus	9.5417	9.5357	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	1.0833	0.9252	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Anacapa Island - Admiral's Reef			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	0.0417	0.1443	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	0.0417	0.1443	12
Patiria miniata	1.3333	1.0941	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	10.4583	7.8145	12
Strongylocentrotus purpuratus	6.2083	2.9883	12
Parastichopus parvimensis	0.4167	0.3589	12
Centrostephanus coronatus	0.4583	0.6895	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	1.4167	0.5967	12
Alloclinus holderi	0.1250	0.2261	12
Anacapa Island - Cathedral Cove			
Macrocystis pyrifera Ad.(>1m)	0.5417	0.7217	12
Macrocystis pyrifera Juvenile (<1m)	9.8333	8.2389	12
Eisenia arborea adult	0.2500	0.3989	12
Eisenia arborea juvenile	0.1250	0.2261	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0000	0.0000	12
Laminaria farlowii adult	1.9583	1.6577	12
Laminaria farlowii juvenile	11.7500	6.9298	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	2.9167	2.0542	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	6.2500	5.0204	12
Strongylocentrotus purpuratus	1.3750	1.7468	12
Parastichopus parvimensis	1.5833	1.5201	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	0.2575	12
Alloclinus holderi	0.3750	0.4827	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Anacapa Island - Landing Cove			
Macrocystis pyrifera Ad.(>1m)	0.5833	0.5573	12
Macrocystis pyrifera Juvenile (<1m)	4.8333	4.2122	12
Eisenia arborea adult	1.1667	1.4035	12
Eisenia arborea juvenile	1.6250	1.7726	12
Pterygophora californica adult	0.5000	0.9293	12
Pterygophora californica juvenile	2.0000	2.4402	12
Laminaria farlowii adult	6.2500	7.0855	12
Laminaria farlowii juvenile	26.0417	28.0312	12
Cypraea spadicea	0.0417	0.1443	12
Megastraea undosa	0.5000	1.0660	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.0000	0.0000	12
Pisaster giganteus	0.1250	0.3108	12
Strongylocentrotus franciscanus	3.6250	3.3106	12
Strongylocentrotus purpuratus	2.3750	3.2692	12
Parastichopus parvimensis	0.4583	0.5823	12
Centrostephanus coronatus	0.0417	0.1443	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.0833	0.1946	12
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
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	0.3333	0.4924	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.3333	0.8876	12
Patiria miniata	0.6667	0.7177	12
Pisaster giganteus	0.1667	0.3257	12
Strongylocentrotus franciscanus	11.0417	7.8696	12
Strongylocentrotus purpuratus	1.7500	2.6586	12
Parastichopus parvimensis	0.2917	0.5418	12
Centrostephanus coronatus	0.3333	0.8616	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.5833	0.5149	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

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
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	0.3750	0.7424	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.3750	0.7424	12
Patiria miniata	1.0417	0.6201	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	18.3333	8.4942	12
Strongylocentrotus purpuratus	74.7083	36.9536	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.2500	0.3989	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.1667	0.3257	12
Alloclinus holderi	0.0000	0.0000	12
Santa Barbara Island - Cat Canyon			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	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	0.1250	0.2261	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.4167	1.0188	12
Patiria miniata	0.3333	0.3892	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.0417	0.1443	12
Strongylocentrotus franciscanus	12.7500	8.2833	12
Strongylocentrotus purpuratus	34.4167	7.9454	12
Parastichopus parvimensis	0.8333	0.7177	12
Centrostephanus coronatus	0.0417	0.1443	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0833	0.1946	12
Alloclinus holderi	0.0417	0.1443	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
San Miguel Island - Miracle Mile			
Macrocystis pyrifera Ad.(>1m)	0.5000	1.2792	12
Macrocystis pyrifera Juvenile (<1m)	1.4167	2.3916	12
Eisenia arborea adult	0.9167	1.4899	12
Eisenia arborea juvenile	0.0833	0.1946	12
Pterygophora californica adult	0.9583	1.1373	12
Pterygophora californica juvenile	0.5833	1.5643	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Haliotis rufescens	0.2500	0.3371	12
Cypraea spadicea	0.0000	0.0000	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.1250	0.2261	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	1.7917	1.1766	12
Pisaster giganteus	0.7500	0.9170	12
Strongylocentrotus franciscanus	3.0833	3.9763	12
Strongylocentrotus purpuratus	0.0000	0.0000	12
Parastichopus parvimensis	0.0833	0.2887	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	0.0000	0.0000	12
Santa Rosa Island - Cluster Point			
Macrocystis pyrifera Ad.(>1m)	4.8333	9.2474	12
Macrocystis pyrifera Juvenile (<1m)	7.7500	8.5851	12
Eisenia arborea adult	0.0417	0.1443	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	1.4167	1.2401	12
Pterygophora californica juvenile	5.8333	8.4054	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.1250	0.2261	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	1.4636	12
Pisaster giganteus	0.2083	0.3343	12
Strongylocentrotus franciscanus	1.0417	2.7258	12
Strongylocentrotus purpuratus	0.2917	0.6201	12
Parastichopus parvimensis	0.2500	0.4523	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.3333	0.5365	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Rosa Island - Trancion Canyon			
Macrocystis pyrifera Ad.(>1m)	0.1667	0.2462	12
Macrocystis pyrifera Juvenile (<1m)	4.1667	4.6823	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.2917	0.4502	12
Pterygophora californica juvenile	0.7083	1.7640	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0000	0.0000	12
Cypraea spadicea	0.7917	0.9876	12
Megastraea undosa	0.0000	0.0000	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	1.6667	1.3872	12
Pisaster giganteus	0.0833	0.1946	12
Strongylocentrotus franciscanus	5.0833	4.3266	12
Strongylocentrotus purpuratus	1.9167	2.0319	12
Parastichopus parvimensis	0.5000	0.5641	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.4583	0.4502	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0833	0.1946	12
Alloclinus holderi	0.0000	0.0000	12
Santa Rosa Island - Chickasaw			
Macrocystis pyrifera Ad.(>1m)	0.5833	0.7930	12
Macrocystis pyrifera Juvenile (<1m)	3.9583	3.4076	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	0.2083	0.4502	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0417	0.1443	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	1.0417	1.1172	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	0.5833	1.2216	12
Strongylocentrotus purpuratus	0.0833	0.1946	12
Parastichopus parvimensis	0.0833	0.2887	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.2917	0.6201	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0000	0.0000	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Rosa Island - South Point			
Macrocystis pyrifera Ad.(>1m)	1.2083	1.0104	12
Macrocystis pyrifera Juvenile (<1m)	5.4583	3.5127	12
Eisenia arborea adult	0.0000	0.0000	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.7500	0.7538	12
Pterygophora californica juvenile	0.7917	1.2515	12
Laminaria farlowii adult	0.3333	0.5365	12
Laminaria farlowii juvenile	0.1667	0.3257	12
Cypraea spadicea	0.0833	0.2887	12
Megastraea undosa	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	1.5000	1.6096	12
Pisaster giganteus	0.0833	0.1946	12
Strongylocentrotus franciscanus	0.2083	0.5823	12
Strongylocentrotus purpuratus	0.0000	0.0000	12
Parastichopus parvimensis	0.0000	0.0000	12
Centrostephanus coronatus	0.0000	0.0000	12
Styela montereyensis	0.7083	0.6201	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0417	0.1443	12
Alloclinus holderi	0.0000	0.0000	12
Santa Cruz Island - Devil's Peak Member			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	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	1.0000	1.0225	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.0833	0.1946	12
Strongylocentrotus franciscanus	2.2500	2.2310	12
Strongylocentrotus purpuratus	19.9167	9.4336	12
Parastichopus parvimensis	0.2917	0.4502	12
Centrostephanus coronatus	0.0833	0.1946	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.5000	0.4767	12
Alloclinus holderi	0.0833	0.1946	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

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
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	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.1667	0.3257	12
Patiria miniata	0.4583	0.5418	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.9583	1.9477	12
Strongylocentrotus franciscanus	6.5417	2.8401	12
Strongylocentrotus purpuratus	28.7083	17.9297	12
Parastichopus parvimensis	0.6250	0.3108	12
Centrostephanus coronatus	0.1250	0.2261	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	1.7917	1.2332	12
Alloclinus holderi	0.2917	0.3343	12
Santa Cruz Island - Cavern Point			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	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	0.3965	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.6667	0.8072	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	4.7083	3.3334	12
Strongylocentrotus purpuratus	31.8750	8.1467	12
Parastichopus parvimensis	1.3333	0.8348	12
Centrostephanus coronatus	0.2917	0.3965	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.5833	0.4174	12
Alloclinus holderi	0.1250	0.2261	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

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
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	0.2083	0.4981	12
Megastraea undosa	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.6667	0.6513	12
Pisaster giganteus	0.0833	0.1946	12
Lytechinus anamesus	0.0000	0.0000	12
Strongylocentrotus franciscanus	4.6250	1.7205	12
Strongylocentrotus purpuratus	10.6250	7.6400	12
Parastichopus parvimensis	0.2500	0.3371	12
Centrostephanus coronatus	0.0833	0.1946	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	3.0833	2.2036	12
Alloclinus holderi	0.0833	0.1946	12
Santa Cruz Island - Pedro Reef			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	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	0.4167	0.5967	12
Megastraea undosa	1.5417	1.5733	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0833	0.1946	12
Patiria miniata	0.1250	0.2261	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.2917	0.6201	12
Strongylocentrotus franciscanus	11.4167	4.9856	12
Strongylocentrotus purpuratus	60.0000	23.0858	12
Parastichopus parvimensis	0.2500	0.4523	12
Centrostephanus coronatus	0.0833	0.1946	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0417	0.1443	12
Coryphopterus nicholsii	1.7500	1.2881	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Anacapa Island - Keyhole			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	0.0000	0.0000	12
Eisenia arborea adult	0.0417	0.1443	12
Eisenia arborea juvenile	0.1250	0.2261	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	0.8750	0.6077	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0833	0.1946	12
Patiria miniata	0.4167	0.3589	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	3.8333	3.9505	12
Strongylocentrotus purpuratus	3.7083	2.8481	12
Parastichopus parvimensis	0.4583	0.5823	12
Centrostephanus coronatus	0.4583	0.5418	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	1.5000	1.0660	12
Alloclinus holderi	1.2500	0.8660	12
Anacapa Island - East Fish Camp			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	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	0.3333	0.5774	12
Megastraea undosa	0.7083	0.8107	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0417	0.1443	12
Patiria miniata	0.9167	0.9003	12
Pisaster giganteus	0.0000	0.0000	12
Lytechinus anamesus	0.4167	0.5573	12
Strongylocentrotus franciscanus	15.0833	9.2855	12
Strongylocentrotus purpuratus	75.1667	29.9214	12
Parastichopus parvimensis	0.1250	0.2261	12
Centrostephanus coronatus	1.0000	0.7977	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	2.0417	1.5442	12
Alloclinus holderi	0.2917	0.3343	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Anacapa Island - Black Sea Bass Reef			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	0.0000	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	0.2083	0.3343	12
Megastraea undosa	0.0833	0.1946	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0833	0.1946	12
Patiria miniata	0.0417	0.1443	12
Pisaster giganteus	0.0000	0.0000	12
Strongylocentrotus franciscanus	5.8333	2.4802	12
Strongylocentrotus purpuratus	2.2500	1.8890	12
Parastichopus parvimensis	0.5833	0.2887	12
Centrostephanus coronatus	0.5000	0.5222	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.8333	1.2309	12
Alloclinus holderi	1.2917	0.7217	12
Anacapa Island - Lighthouse			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	0.0417	0.1443	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	0.2500	0.5839	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.4583	0.7525	12
Pisaster giganteus	0.0417	0.1443	12
Strongylocentrotus franciscanus	12.8333	6.1767	12
Strongylocentrotus purpuratus	55.7500	26.9110	12
Parastichopus parvimensis	0.2917	0.4502	12
Centrostephanus coronatus	0.7500	1.5448	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.7917	0.6557	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

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
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	0.5417	0.6895	12
Megastraea undosa	0.5000	0.7385	12
Lithopoma gibberosa	0.0417	0.1443	12
Tegula regina	0.3333	0.5365	12
Patiria miniata	1.5000	1.0225	12
Pisaster giganteus	0.0417	0.1443	12
Lytechinus anamesus	0.3333	0.4438	12
Strongylocentrotus franciscanus	10.5417	4.7695	12
Strongylocentrotus purpuratus	76.0417	29.4182	12
Parastichopus parvimensis	0.5833	0.4687	12
Centrostephanus coronatus	0.4583	0.6895	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.1667	0.4438	12
Alloclinus holderi	0.1250	0.2261	12
Santa Barbara Island - Graveyard Canyon			
Macrocystis pyrifera Ad.(>1m)	0.0000	0.0000	12
Macrocystis pyrifera Juvenile (<1m)	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	0.0417	0.1443	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.0000	0.0000	12
Patiria miniata	0.4583	0.6557	12
Pisaster giganteus	0.0833	0.1946	12
Lytechinus anamesus	0.1250	0.2261	12
Strongylocentrotus franciscanus	5.5417	3.5192	12
Strongylocentrotus purpuratus	13.2917	11.7984	12
Parastichopus parvimensis	0.0417	0.1443	12
Centrostephanus coronatus	0.0417	0.1443	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.2917	0.3965	12
Alloclinus holderi	0.0000	0.0000	12

2006 1 – METER QUADRAT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Barbara Island - Southeast Reef			
Macrocystis pyrifera Ad.(>1m)	0.3333	0.5774	12
Macrocystis pyrifera Juvenile (<1m)	1.6250	2.4875	12
Eisenia arborea adult	0.0833	0.1946	12
Eisenia arborea juvenile	0.0000	0.0000	12
Pterygophora californica adult	0.0000	0.0000	12
Pterygophora californica juvenile	0.0833	0.1946	12
Laminaria farlowii adult	0.0000	0.0000	12
Laminaria farlowii juvenile	0.0417	0.1443	12
Cypraea spadicea	0.0833	0.1946	12
Megastraea undosa	0.1250	0.2261	12
Lithopoma gibberosa	0.0000	0.0000	12
Tegula regina	0.2500	0.7230	12
Patiria miniata	0.2500	0.4523	12
Pisaster giganteus	0.3333	0.5365	12
Lytechinus anamesus	0.0417	0.1443	12
Strongylocentrotus franciscanus	15.5833	9.9996	12
Strongylocentrotus purpuratus	11.5833	10.5504	12
Parastichopus parvimensis	1.4583	1.7511	12
Centrostephanus coronatus	0.5000	0.7385	12
Styela montereyensis	0.0000	0.0000	12
Lythrypnus dalli	0.0000	0.0000	12
Coryphopterus nicholsii	0.0833	0.1946	12
Alloclinus holderi	0.0833	0.1946	12

Appendix B. 5 Meter Quadrat Data.

2006 5-METER QUADRAT DATA: MEAN NUMBER PER M²

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dicotomy
***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary dicotomy**

Species	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge			
Macrocystis pyrifera Adult	0.3750	0.2488	40
Macrocystis pyrifera Subadult	0.6950	0.4641	40
Pisaster giganteus	0.1050	0.2717	40
San Miguel Island - Hare Rock			
Macrocystis pyrifera Adult	0.4800	0.6157	40
Macrocystis pyrifera Subadult	0.5500	0.4894	40
Pisaster giganteus	0.1050	0.2264	40
Santa Rosa Island - Johnson's Lee North			
Macrocystis pyrifera Adult	0.4100	0.3327	40
Macrocystis pyrifera Subadult	0.1300	0.2884	40
Pisaster giganteus	0.1200	0.2066	40
Santa Rosa Island - Johnson's Lee South			
Macrocystis pyrifera Adult	0.1400	0.1823	40
Macrocystis pyrifera Subadult	0.5050	0.6469	40
Pisaster giganteus	0.0200	0.0758	40
Santa Rosa Island - Rodes Reef			
Macrocystis pyrifera Adult	0.0100	0.0632	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.3600	0.3928	40
Santa Cruz Island - Gull Island South			
Macrocystis pyrifera Adult	0.1850	0.2537	40
Macrocystis pyrifera Subadult	0.0250	0.0809	40
Pisaster giganteus	0.2550	0.3537	40
Santa Cruz Island - Fry's Harbor			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.3750	0.3011	40
Santa Cruz Island - Pelican Bay			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.0850	0.1272	40

2006 5-METER QUADRAT DATA: MEAN NUMBER PER M²

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dicotomy
***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary dicotomy**

Species	Mean	Std. Dev.	n
Santa Cruz Island - Scorpion Anchorage			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.0200	0.0608	40
Santa Cruz Island - Yellow Banks			
Macrocystis pyrifera Adult	0.0300	0.0723	40
Macrocystis pyrifera Subadult	0.0200	0.0608	40
Pisaster giganteus	0.0350	0.0893	40
Anacapa Island - Admiral's Reef			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.0500	0.0987	40
Anacapa Island - Cathedral Cove			
Macrocystis pyrifera Adult	0.2350	0.2597	40
Macrocystis pyrifera Subadult	0.6000	0.6043	40
Pisaster giganteus	0.0000	0.0000	40
Anacapa Island - Landing Cove			
Macrocystis pyrifera Adult	0.0300	0.0853	40
Macrocystis pyrifera Subadult	1.4750	1.0453	40
Pisaster giganteus	0.0200	0.0758	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	0.0850	0.1626	40
Santa Barbara Island - Arch Point			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.1200	0.1682	40
Santa Barbara Island - Cat Canyon			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.0800	0.1742	40

2006 5-METER QUADRAT DATA: MEAN NUMBER PER M²

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dicotomy
***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary dicotomy**

Species	Mean	Std. Dev.	n
San Miguel Island - Miracle Mile			
Macrocystis pyrifera Adult	0.1150	0.2304	40
Macrocystis pyrifera Subadult	0.1050	0.1867	40
Pisaster giganteus	0.4000	0.5064	40
Santa Rosa Island - Cluster Point			
Macrocystis pyrifera Adult	0.2400	0.3303	40
Macrocystis pyrifera Subadult	1.0150	0.9958	40
Pisaster giganteus	0.1150	0.1861	40
Santa Rosa Island - Trancion Canyon			
Macrocystis pyrifera Adult	0.1450	0.2562	40
Macrocystis pyrifera Subadult	0.1750	0.3848	40
Pisaster giganteus	0.1350	0.1528	40
Santa Rosa Island - Chickasaw			
Macrocystis pyrifera Adult	0.0950	0.1811	40
Macrocystis pyrifera Subadult	0.2400	0.2799	40
Pisaster giganteus	0.1800	0.3098	40
Santa Rosa Island - South Point			
Macrocystis pyrifera Adult	0.2200	0.1800	40
Macrocystis pyrifera Subadult	0.4950	0.3202	40
Pisaster giganteus	0.0100	0.0441	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	0.0600	0.1297	40
Santa Cruz Island - Cavern Point			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.0650	0.1528	40
Santa Cruz Island - Little Scorpion			
Macrocystis pyrifera Adult	0.0000	0.0000	40
Macrocystis pyrifera Subadult	0.0000	0.0000	40
Pisaster giganteus	0.1100	0.1566	40

2006 5-METER QUADRAT DATA: MEAN NUMBER PER M²

NOTE: *Macrocystis pyrifera* Adult = >1m and haptera above the primary dicotomy
***Macrocystis pyrifera* Subadult = >1m and NO haptera above the primary dicotomy**

Species	Mean	Std. Dev.	n
Santa Cruz Island - Pedro Reef			
Macrocystis pyrifera Adult	**0.0000**	**0.0000**	**40**
Macrocystis pyrifera Subadult	**0.0000**	**0.0000**	**40**
Pisaster giganteus	**0.0150**	**0.0533**	**40**
Anacapa Island - Keyhole			
Macrocystis pyrifera Adult	**0.0000**	**0.0000**	**40**
Macrocystis pyrifera Subadult	**0.0000**	**0.0000**	**40**
Pisaster giganteus	**0.0200**	**0.0608**	**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	**0.0000**	**0.0000**	**40**
Pisaster giganteus	**0.0150**	**0.0700**	**40**
Anacapa Island - Lighthouse			
Macrocystis pyrifera Adult	**0.0000**	**0.0000**	**40**
Macrocystis pyrifera Subadult	**0.0000**	**0.0000**	**40**
Pisaster giganteus	**0.0100**	**0.0441**	**40**
Santa Barbara Island - Webster's Arch			
Macrocystis pyrifera Adult	**0.0000**	**0.0000**	**40**
Macrocystis pyrifera Subadult	**0.0000**	**0.0000**	**40**
Pisaster giganteus	**0.1000**	**0.1198**	**40**
Santa Barbara Island - Graveyard Canyon			
Macrocystis pyrifera Adult	**0.0000**	**0.0000**	**40**
Macrocystis pyrifera Subadult	**0.0000**	**0.0000**	**40**
Pisaster giganteus	**0.0350**	**0.1001**	**40**
Santa Barbara Island - Southeast Reef			
Macrocystis pyrifera Adult	**0.0500**	**0.0987**	**40**
Macrocystis pyrifera Subadult	**0.1800**	**0.2893**	**40**
Pisaster giganteus	**0.1150**	**0.1916**	**40**

Appendix C. Band Transect Data.

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge			
Tethya aurantia	0.1875	0.1270	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.3181	0.2028	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	0.0389	0.0385	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.2847	0.1167	12
Megathura crenulata	0.0042	0.0075	12
Crassadoma giganteum	0.0125	0.0126	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0139	0.0172	12
Lytechinus anamesus	0.0000	0.0000	12
San Miguel Island - Hare Rock			
Tethya aurantia	0.0361	0.0283	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0208	0.0215	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	0.0000	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	0.0000	0.0000	12
Crassadoma giganteum	0.0014	0.0048	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.1347	0.1122	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Johnson's Lee North			
Tethya aurantia	0.1472	0.0846	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0444	0.0726	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	0.0125	0.0161	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0014	0.0048	12
Megathura crenulata	0.0069	0.0132	12
Crassadoma giganteum	0.0292	0.0396	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.1139	0.0507	12
Lytechinus anamesus	0.0000	0.0000	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Rosa Island - Johnson's Lee South			
Tethya aurantia	0.2681	0.1004	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.1583	0.1158	12
Lophogorgia chilensis	0.0569	0.0329	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0014	0.0048	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	0.0139	0.0223	12
Megathura crenulata	0.0028	0.0065	12
Crassadoma giganteum	0.0167	0.0159	12
Aplysia californica	0.0014	0.0048	12
Pycnopodia helianthoides	0.1931	0.1127	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Rodes Reef			
Tethya aurantia	0.1319	0.0520	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0403	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	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0208	0.0176	12
Megathura crenulata	0.0056	0.0109	12
Crassadoma giganteum	0.0069	0.0111	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.1597	0.0773	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Cruz Island - Gull Island South			
Tethya aurantia	0.1681	0.1053	12
Stylaster californica	0.0458	0.0888	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0361	0.0211	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	0.0222	0.0192	12
Megathura crenulata	0.0000	0.0000	12
Crassadoma giganteum	0.0139	0.0139	12
Aplysia californica	0.0111	0.0336	12
Pycnopodia helianthoides	0.0236	0.0241	12
Lytechinus anamesus	0.0000	0.0000	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Cruz Island - Fry's Harbor			
Tethya aurantia	0.0083	0.0167	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.2444	0.2084	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	0.0306	0.0361	12
Megathura crenulata	0.0097	0.0194	12
Crassadoma giganteum	0.0069	0.0111	12
Aplysia californica	0.0014	0.0048	12
Pycnopodia helianthoides	0.0417	0.0417	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Cruz Island - Pelican Bay			
Tethya aurantia	0.0181	0.0166	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1681	0.1503	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	0.0056	0.0148	12
Megathura crenulata	0.0014	0.0048	12
Crassadoma giganteum	0.0472	0.0407	12
Aplysia californica	0.0139	0.0199	12
Pycnopodia helianthoides	0.0014	0.0048	12
Lytechinus anamesus	2.7417	1.0663	12
Santa Cruz Island - Scorpion Anchorage			
Tethya aurantia	0.0361	0.0419	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0028	0.0065	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0236	0.0270	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	0.0861	0.0401	12
Crassadoma giganteum	0.0542	0.0542	12
Aplysia californica	0.0056	0.0082	12
Pycnopodia helianthoides	0.0028	0.0065	12
Lytechinus anamesus	0.0056	0.0109	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Cruz Island - Yellow Banks			
Tethya aurantia	0.0458	0.0237	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0014	0.0048	12
Lophogorgia chilensis	0.0806	0.0681	12
Muricea fruticosa	0.0014	0.0048	12
Muricea californica	0.0111	0.0130	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	0.0778	0.0930	12
Megathura crenulata	0.0028	0.0065	12
Crassadoma giganteum	0.0097	0.0150	12
Aplysia californica	0.0014	0.0048	12
Pycnopodia helianthoides	0.0236	0.0297	12
Lytechinus anamesus	0.4028	0.4523	12
Anacapa Island - Admiral's Reef			
Tethya aurantia	0.0153	0.0219	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0694	0.0437	12
Muricea fruticosa	0.0083	0.0112	12
Muricea californica	0.0208	0.0226	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	0.0583	0.0447	12
Megathura crenulata	0.0694	0.0255	12
Crassadoma giganteum	0.0319	0.0251	12
Aplysia californica	0.0028	0.0096	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
Tealia 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	0.0181	0.0329	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	0.0319	0.0329	12
Crassadoma giganteum	0.0264	0.0379	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Anacapa Island - Landing Cove			
Tethya aurantia	0.0083	0.0133	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0042	0.0104	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0000	0.0000	12
Panulirus interruptus	0.0319	0.0441	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0097	0.0166	12
Megathura crenulata	0.0264	0.0313	12
Crassadoma giganteum	0.3778	0.3691	12
Aplysia californica	0.0014	0.0048	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Barbara Island - SE Sea Lion Rookery			
Tethya aurantia	0.1458	0.0910	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1847	0.0988	12
Muricea fruticosa	0.0014	0.0048	12
Muricea californica	0.0333	0.0188	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	0.0000	0.0000	12
Megathura crenulata	0.0347	0.0337	12
Crassadoma giganteum	0.0167	0.0159	12
Aplysia californica	0.0014	0.0048	12
Pycnopodia helianthoides	0.0014	0.0048	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Barbara Island - Arch Point			
Tethya aurantia	0.0000	0.0000	12
Stylaster californica	0.0000	0.0000	12
Tealia 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	0.0111	0.0179	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	0.0014	0.0048	12
Crassadoma giganteum	0.0222	0.0296	12
Aplysia californica	0.0931	0.0529	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0208	0.0523	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Barbara Island - Cat Canyon			
Tethya aurantia	0.0000	0.0000	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0000	0.0000	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0014	0.0048	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	0.0000	0.0000	12
Megathura crenulata	0.0097	0.0132	12
Crassadoma giganteum	0.0097	0.0132	12
Aplysia californica	0.0486	0.0359	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12
San Miguel Island - Miracle Mile			
Tethya aurantia	0.2292	0.0877	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.2181	0.1031	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	0.5208	0.4233	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0292	0.0257	12
Megathura crenulata	0.0292	0.0334	12
Crassadoma giganteum	0.0014	0.0048	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0389	0.0259	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Cluster Point			
Tethya aurantia	0.2764	0.1067	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0611	0.0468	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	0.0014	0.0048	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0125	0.0190	12
Megathura crenulata	0.0208	0.0247	12
Crassadoma giganteum	0.0278	0.0287	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0653	0.0566	12
Lytechinus anamesus	0.0000	0.0000	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Rosa Island - Trancion Canyon			
Tethya aurantia	0.2111	0.0767	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.1194	0.0274	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	0.0000	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	0.0292	0.0267	12
Crassadoma giganteum	0.0222	0.0164	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0292	0.0190	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - Chickasaw			
Tethya aurantia	0.1125	0.0678	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.1319	0.0691	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	0.0236	0.0452	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0000	0.0000	12
Megathura crenulata	0.0097	0.0150	12
Crassadoma giganteum	0.0181	0.0150	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0389	0.0336	12
Lytechinus anamesus	0.0000	0.0000	12
Santa Rosa Island - South Point			
Tethya aurantia	0.1306	0.0602	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0431	0.0313	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	0.0903	0.0812	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0014	0.0048	12
Megathura crenulata	0.0000	0.0000	12
Crassadoma giganteum	0.0014	0.0048	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0375	0.0342	12
Lytechinus anamesus	0.0000	0.0000	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Cruz Island - Devil's Peak Member			
Tethya aurantia	0.0056	0.0109	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1056	0.1737	12
Muricea fruticosa	0.0028	0.0065	12
Muricea californica	0.0042	0.0075	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	0.1806	0.0758	12
Crassadoma giganteum	0.0347	0.0297	12
Aplysia californica	0.0222	0.0385	12
Pycnopodia helianthoides	0.0069	0.0086	12
Lytechinus anamesus	0.0097	0.0132	12
Santa Cruz Island - Potato Pasture			
Tethya aurantia	0.0222	0.0296	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1694	0.1465	12
Muricea fruticosa	0.0000	0.0000	12
Muricea californica	0.0014	0.0048	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	0.0264	0.0575	12
Megathura crenulata	0.0528	0.0413	12
Crassadoma giganteum	0.1125	0.1092	12
Aplysia californica	0.0111	0.0130	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.4847	0.8673	12
Santa Cruz Island - Cavern Point			
Tethya aurantia	0.0389	0.0428	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.2222	0.1700	12
Muricea fruticosa	0.0014	0.0048	12
Muricea californica	0.0014	0.0048	12
Panulirus interruptus	0.0042	0.0075	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	0.1125	0.0913	12
Crassadoma giganteum	0.2264	0.1530	12
Aplysia californica	0.0056	0.0109	12
Pycnopodia helianthoides	0.0028	0.0065	12
Lytechinus anamesus	0.0000	0.0000	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Cruz Island - Little Scorpion			
Tethya aurantia	0.0125	0.0144	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1319	0.1207	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	0.0583	0.0669	12
Megathura crenulata	0.2278	0.1328	12
Crassadoma giganteum	0.0944	0.0625	12
Aplysia californica	0.0000	0.0000	12
Pycnopodia helianthoides	0.0028	0.0065	12
Lytechinus anamesus	0.2306	0.4001	12
Santa Cruz Island - Pedro Reef			
Tethya aurantia	0.0653	0.0786	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.2931	0.1541	12
Muricea fruticosa	0.0028	0.0065	12
Muricea californica	0.0042	0.0144	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	0.0333	0.0492	12
Megathura crenulata	0.0333	0.0302	12
Crassadoma giganteum	0.0653	0.0760	12
Aplysia californica	0.0403	0.0625	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.2361	0.1881	12
Anacapa Island - Keyhole			
Tethya aurantia	0.0000	0.0000	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.3097	0.1280	12
Muricea fruticosa	0.0069	0.0132	12
Muricea californica	0.0333	0.0302	12
Panulirus interruptus	0.0097	0.0150	12
Haliotis rufescens	0.0000	0.0000	12
Haliotis corrugata	0.0000	0.0000	12
Haliotis fulgens	0.0000	0.0000	12
Kelletia kelletii	0.0167	0.0302	12
Megathura crenulata	0.0417	0.0322	12
Crassadoma giganteum	0.0806	0.0775	12
Aplysia californica	0.0306	0.0431	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0028	0.0065	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Anacapa Island - East Fish Camp			
Tethya aurantia	0.0125	0.0176	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0139	0.0199	12
Muricea fruticosa	0.0014	0.0048	12
Muricea californica	0.0069	0.0150	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	0.1111	0.1250	12
Megathura crenulata	0.1417	0.0405	12
Crassadoma giganteum	0.0458	0.0477	12
Aplysia californica	0.0792	0.0700	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.3264	0.2758	12
Anacapa Island - Black Sea Bass Reef			
Tethya aurantia	0.0208	0.0215	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0042	0.0075	12
Muricea fruticosa	0.0056	0.0082	12
Muricea californica	0.0028	0.0065	12
Panulirus interruptus	0.0167	0.0246	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	0.2333	0.1020	12
Crassadoma giganteum	0.0042	0.0075	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	0.0486	0.0359	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.1181	0.0733	12
Muricea fruticosa	0.0250	0.0151	12
Muricea californica	0.2944	0.0983	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	0.0069	0.0132	12
Megathura crenulata	0.0750	0.0386	12
Crassadoma giganteum	0.0181	0.0150	12
Aplysia californica	0.0167	0.0266	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0014	0.0048	12

2006 BAND TRANSECT DATA: MEAN NUMBER PER M²

Species	Mean	Std. Dev.	n
Santa Barbara Island - Webster's Arch			
Tethya aurantia	0.0014	0.0048	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0097	0.0150	12
Muricea fruticosa	0.0014	0.0048	12
Muricea californica	0.0028	0.0065	12
Panulirus interruptus	0.0042	0.0075	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	0.0148	12
Megathura crenulata	0.0764	0.0770	12
Crassadoma giganteum	0.0167	0.0174	12
Aplysia californica	0.1042	0.0693	12
Pycnopodia helianthoides	0.0014	0.0048	12
Lytechinus anamesus	0.0014	0.0048	12
Santa Barbara Island - Graveyard Canyon			
Tethya aurantia	0.0472	0.0354	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0528	0.0554	12
Muricea fruticosa	0.0111	0.0269	12
Muricea californica	0.0444	0.0529	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	0.0075	12
Megathura crenulata	0.0069	0.0111	12
Crassadoma giganteum	0.0014	0.0048	12
Aplysia californica	0.0569	0.0405	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0222	0.0320	12
Santa Barbara Island - Southeast Reef			
Tethya aurantia	0.0014	0.0048	12
Stylaster californica	0.0000	0.0000	12
Tealia lofotensis	0.0000	0.0000	12
Lophogorgia chilensis	0.0069	0.0111	12
Muricea fruticosa	0.0014	0.0048	12
Muricea californica	0.0056	0.0082	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	0.0000	0.0000	12
Megathura crenulata	0.0056	0.0082	12
Crassadoma giganteum	0.0056	0.0082	12
Aplysia californica	0.0153	0.0305	12
Pycnopodia helianthoides	0.0000	0.0000	12
Lytechinus anamesus	0.0000	0.0000	12

Appendix D. Random Point Contact Data.

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	12.167	16.8466	15
Desmarestia spp.	14.167	16.2202	15
Cystoseira spp.	1.333	4.5185	15
Macrocystis pyrifera All	47.000	14.3987	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	15.000	13.5291	15
Laminaria farlowii All	0.167	0.6455	15
Miscellaneous Red Algae	64.667	12.4236	15
Articulated Coralline Algae	17.833	13.7213	15
Encrusting Coralline Algae	23.167	11.9323	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.500	1.0351	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	0.667	1.4840	15
Corynactis californica	0.333	1.2910	15
Balanophyllia elegans	3.000	5.2780	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	11.667	12.0144	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	9.833	5.1293	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	2.500	3.7796	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	8.833	6.1140	15
Bare Substrate	4.833	7.2866	15
Rock	89.167	14.6588	15
Cobble	2.667	4.1690	15
Sand	8.167	12.5167	15
San Miguel Island - Hare Rock			
Green Algae	20.333	13.5576	15
Miscellaneous Brown Algae	1.500	3.3806	15
Desmarestia spp.	33.500	28.8902	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	14.167	12.1988	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	16.000	9.6732	15
Articulated Coralline Algae	0.500	1.0351	15
Encrusting Coralline Algae	44.667	19.5683	15
Gelidium spp.	0.167	0.6455	15
Gigartina spp.	7.333	7.8755	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	0.000	0.0000	15
Corynactis californica	1.333	2.2887	15
Balanophyllia elegans	0.500	1.9365	15
Astrangia lajollaensis	1.667	2.6163	15
Diopatra ornata	1.333	2.6502	15
Phragmatopoma californica	0.333	1.2910	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	20.333	12.0958	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 excluding *Ophiothrix spiculata*	10.333	8.7048	15
Bare Substrate	9.667	10.0830	15
Rock	85.167	24.9726	15
Cobble	14.667	24.7283	15
Sand	0.167	0.6455	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Rosa Island - Johnson's Lee North			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	3.167	4.5774	15
Macrocystis pyrifera All	10.000	7.4402	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.333	0.8797	15
Laminaria farlowii All	0.333	0.8797	15
Miscellaneous Red Algae	31.167	15.8640	15
Articulated Coralline Algae	2.833	2.8137	15
Encrusting Coralline Algae	12.333	8.0991	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.167	0.6455	15
Miscellaneous Plants (ie: Diatoms)	0.333	0.8797	15
Sponges	1.000	1.5811	15
Corynactis californica	0.667	1.4840	15
Balanophyllia elegans	0.667	1.1443	15
Astrangia lajollaensis	0.667	1.1443	15
Diopatra ornata	0.333	0.8797	15
Phragmatopoma californica	1.667	1.8094	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	18.333	8.2195	15
Diaperoecia californica	1.000	2.8031	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	19.500	9.2678	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	17.167	10.8507	15
Bare Substrate	5.000	5.1755	15
Rock	99.167	1.5430	15
Cobble	0.833	1.5430	15
Sand	0.000	0.0000	15
Santa Rosa Island - Johnson's Lee South			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	0.667	2.5820	15
Desmarestia spp.	2.833	5.4171	15
Cystoseira spp.	0.333	1.2910	15
Macrocystis pyrifera All	18.167	14.4069	15
Eisenia arborea All	1.167	3.8807	15
Pterygophora californica All	0.667	2.5820	15
Laminaria farlowii All	8.500	14.2302	15
Miscellaneous Red Algae	46.500	13.6539	15
Articulated Coralline Algae	3.333	3.3630	15
Encrusting Coralline Algae	11.000	6.6682	15
Gelidium spp.	0.167	0.6455	15
Gigartina spp.	12.500	11.0195	15
Miscellaneous Plants (ie: Diatoms)	0.167	0.6455	15
Sponges	0.500	1.4015	15
Corynactis californica	2.500	3.6596	15
Balanophyllia elegans	2.167	2.2887	15
Astrangia lajollaensis	1.333	2.2887	15
Diopatra ornata	8.333	10.8012	15
Phragmatopoma californica	1.167	2.0845	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	15.833	10.6346	15
Diaperoecia californica	0.500	1.4015	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	4.000	2.6390	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	29.500	6.2106	15
Bare Substrate	17.000	8.9243	15
Rock	81.667	13.1158	15
Cobble	4.500	5.8401	15
Sand	13.833	13.9792	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Rosa Island - Rodes Reef			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	4.500	7.8034	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	2.333	4.8612	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	37.833	13.7213	15
Articulated Coralline Algae	0.167	0.6455	15
Encrusting Coralline Algae	22.000	14.7962	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	7.000	10.8644	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	2.833	2.2887	15
Corynactis californica	0.000	0.0000	15
Balanophyllia elegans	6.667	6.4550	15
Astrangia lajollaensis	10.167	8.5287	15
Diopatra ornata	4.167	6.0994	15
Phragmatopoma californica	1.667	3.4932	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	19.500	8.6706	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	2.333	2.4029	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	13.667	9.2034	15
Bare Substrate	3.833	3.9940	15
Rock	88.667	12.2061	15
Cobble	10.500	11.8849	15
Sand	0.833	1.5430	15
Santa Cruz Island - Gull Island South			
Green Algae	0.667	1.4840	15
Miscellaneous Brown Algae	0.500	1.0351	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	31.000	27.7231	15
Eisenia arborea All	1.500	4.5119	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	44.833	13.5774	15
Articulated Coralline Algae	1.333	1.5999	15
Encrusting Coralline Algae	39.000	14.1042	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	3.667	3.9940	15
Corynactis californica	4.333	4.9522	15
Balanophyllia elegans	3.167	3.0570	15
Astrangia lajollaensis	1.833	2.5820	15
Diopatra ornata	4.167	10.2933	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	19.833	7.2866	15
Diaperoecia californica	5.500	4.6483	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	4.167	2.9378	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	18.667	8.4445	15
Bare Substrate	1.167	2.0845	15
Rock	93.500	7.6649	15
Cobble	3.000	3.4330	15
Sand	3.500	7.7229	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Cruz Island - Fry's Harbor			
Green Algae	0.500	1.0351	15
Miscellaneous Brown Algae	1.167	2.2887	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.833	3.2275	15
Macrocystis pyrifera All	0.500	1.9365	15
Eisenia arborea All	13.500	16.7652	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	25.167	8.6327	15
Articulated Coralline Algae	0.500	1.4015	15
Encrusting Coralline Algae	28.667	12.2790	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	3.167	4.7684	15
Miscellaneous Plants (ie: Diatoms)	1.500	2.2756	15
Sponges	1.333	1.8581	15
Corynactis californica	0.500	1.0351	15
Balanophyllia elegans	1.500	3.3806	15
Astrangia lajollaensis	6.833	3.1997	15
Diopatra ornata	0.833	2.2493	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	18.833	8.7560	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.167	0.6455	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	15.833	5.5635	15
Bare Substrate	10.333	10.6010	15
Rock	85.500	15.1540	15
Cobble	12.000	12.1450	15
Sand	2.500	5.5097	15
Santa Cruz Island - Pelican Bay			
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	1.833	2.4029	15
Articulated Coralline Algae	0.167	0.6455	15
Encrusting Coralline Algae	18.500	7.8944	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	16.833	9.4239	15
Sponges	0.167	0.6455	15
Corynactis californica	0.667	1.9970	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	13.667	8.6016	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.000	0.0000	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	2.167	8.3915	15
Ophiothrix spiculata	0.167	0.6455	15
Tunicates	0.167	0.6455	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	10.833	7.6571	15
Bare Substrate	44.333	18.5035	15
Rock	51.167	18.2215	15
Cobble	13.667	9.5369	15
Sand	35.167	21.2440	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Cruz Island - Scorpion Anchorage			
Green Algae	12.000	13.5686	15
Miscellaneous Brown Algae	3.333	7.4801	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	2.667	7.7613	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	3.667	3.7639	15
Articulated Coralline Algae	1.000	2.0702	15
Encrusting Coralline Algae	46.167	11.7969	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	15.000	8.7627	15
Sponges	0.167	0.6455	15
Corynactis californica	0.333	1.2910	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.333	0.8797	15
Miscellaneous Bryozoans	0.667	1.4840	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 excluding *Ophiothrix spiculata*	16.667	10.7598	15
Bare Substrate	19.167	10.1624	15
Rock	79.833	12.1180	15
Cobble	3.667	3.5187	15
Sand	16.500	13.4894	15
Santa Cruz Island - Yellow Banks			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	0.500	1.0351	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.167	0.6455	15
Macrocystis pyrifera All	14.333	11.4356	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	30.167	10.2846	15
Articulated Coralline Algae	7.333	7.0373	15
Encrusting Coralline Algae	39.833	15.4823	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	26.667	8.5391	15
Sponges	2.833	2.2887	15
Corynactis californica	0.500	1.0351	15
Balanophyllia elegans	1.500	2.4640	15
Astrangia lajollaensis	0.667	1.4840	15
Diopatra ornata	2.000	3.4330	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	9.000	7.7229	15
Diaperoecia californica	0.500	1.0351	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.167	0.6455	15
Tunicates	1.000	1.5811	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	10.000	4.6291	15
Bare Substrate	10.167	11.7817	15
Rock	79.333	20.2323	15
Cobble	14.167	13.9728	15
Sand	6.500	9.4397	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Anacapa Island - Admiral's Reef			
Green Algae	2.833	4.1043	15
Miscellaneous Brown Algae	0.500	1.4015	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.333	1.2910	15
Macrocystis pyrifera All	1.000	3.2459	15
Eisenia arborea All	0.167	0.6455	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	29.333	13.2445	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	46.833	22.9414	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.167	0.6455	15
Miscellaneous Plants (ie: Diatoms)	35.333	22.7931	15
Sponges	0.333	0.8797	15
Corynactis californica	5.000	6.2678	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	5.667	7.9881	15
Diaperoecia californica	0.833	1.2199	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	40.667	39.2049	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	11.833	9.1840	15
Bare Substrate	6.500	12.9146	15
Rock	93.833	12.4952	15
Cobble	0.667	1.9970	15
Sand	5.500	11.5805	15
Anacapa Island - Cathedral Cove			
Green Algae	0.500	1.4015	15
Miscellaneous Brown Algae	11.167	11.3337	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	5.333	6.6054	15
Macrocystis pyrifera All	64.333	27.6533	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	15.667	12.5167	15
Miscellaneous Red Algae	11.833	7.5868	15
Articulated Coralline Algae	10.167	7.2251	15
Encrusting Coralline Algae	38.167	12.3370	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	1.167	2.0845	15
Sponges	2.167	2.8137	15
Corynactis californica	0.167	0.6455	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	1.000	1.5811	15
Diopatra ornata	1.833	2.7495	15
Phragmatopoma californica	0.167	0.6455	15
Serpulorbis squamigerus	1.000	1.5811	15
Miscellaneous Bryozoans	39.667	11.8723	15
Diaperoecia californica	0.333	0.8797	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	3.833	3.1149	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	16.333	8.8068	15
Bare Substrate	10.000	12.3201	15
Rock	76.667	20.0149	15
Cobble	13.833	14.2323	15
Sand	9.167	7.8300	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Anacapa Island - Landing Cove			
Green Algae	1.667	2.7817	15
Miscellaneous Brown Algae	3.500	5.2440	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	7.000	11.5418	15
Macrocystis pyrifera All	40.667	24.3755	15
Eisenia arborea All	15.833	15.5169	15
Pterygophora californica All	5.667	9.5649	15
Laminaria farlowii All	44.333	30.3030	15
Miscellaneous Red Algae	33.333	15.2850	15
Articulated Coralline Algae	17.500	11.9896	15
Encrusting Coralline Algae	39.000	16.8714	15
Gelidium spp.	13.833	23.4114	15
Gigartina spp.	1.833	3.4675	15
Miscellaneous Plants (ie: Diatoms)	3.500	6.0356	15
Sponges	7.667	6.4411	15
Corynactis californica	3.500	5.2440	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.500	1.4015	15
Diopatra ornata	2.333	3.7161	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.500	1.0351	15
Miscellaneous Bryozoans	42.833	18.3436	15
Diaperoecia californica	2.500	5.2610	15
Pachythyone rubra	0.167	0.6455	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	2.667	3.0570	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	16.167	7.1880	15
Bare Substrate	3.833	3.7639	15
Rock	85.667	16.2971	15
Cobble	9.833	12.3008	15
Sand	4.500	5.8401	15
Santa Barbara Island - SE Sea Lion Rookery			
Green Algae	0.500	1.0351	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	1.500	1.2677	15
Articulated Coralline Algae	0.333	0.8797	15
Encrusting Coralline Algae	67.167	16.4715	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	1.667	3.2275	15
Sponges	0.667	1.4840	15
Corynactis californica	1.167	3.2550	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	1.500	2.0702	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	1.000	1.8420	15
Diaperoecia californica	0.500	1.4015	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	43.167	26.2622	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	6.333	4.3164	15
Bare Substrate	20.500	17.7583	15
Rock	82.833	20.5910	15
Cobble	2.833	3.8807	15
Sand	14.333	19.7635	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Barbara Island - Arch Point			
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
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	13.333	6.9864	15
Articulated Coralline Algae	0.667	1.4840	15
Encrusting Coralline Algae	58.167	11.5907	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	0.667	1.1443	15
Sponges	0.167	0.6455	15
Corynactis californica	1.667	2.7817	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.167	0.6455	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.167	0.6455	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	1.000	2.8031	15
Diaperoecia californica	0.167	0.6455	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.167	0.6455	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	6.833	6.0109	15
Bare Substrate	20.833	14.9304	15
Rock	81.000	18.2444	15
Cobble	18.500	18.6318	15
Sand	0.500	1.4015	15
Santa Barbara Island - Cat Canyon			
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	7.500	6.6144	15
Articulated Coralline Algae	1.833	2.4029	15
Encrusting Coralline Algae	71.833	17.1773	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	12.000	10.4881	15
Sponges	0.000	0.0000	15
Corynactis californica	0.000	0.0000	15
Balanophyllia elegans	1.500	2.0702	15
Astrangia lajollaensis	3.167	3.9491	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.000	0.0000	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 excluding *Ophiothrix spiculata*	13.167	12.1548	15
Bare Substrate	21.667	16.1651	15
Rock	86.667	17.5425	15
Cobble	3.667	4.8978	15
Sand	9.667	18.3436	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
San Miguel Island - Miracle Mile			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	1.333	3.3894	15
Desmarestia spp.	1.833	3.8344	15
Cystoseira spp.	3.833	9.0567	15
Macrocystis pyrifera All	18.167	20.4954	15
Eisenia arborea All	42.333	37.1347	15
Pterygophora californica All	14.000	17.3154	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	72.000	25.6209	15
Articulated Coralline Algae	43.833	26.4890	15
Encrusting Coralline Algae	23.167	10.7515	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	7.333	9.7955	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	5.000	6.7480	15
Corynactis californica	0.333	0.8797	15
Balanophyllia elegans	0.333	0.8797	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	0.500	1.0351	15
Phragmatopoma californica	0.167	0.6455	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	5.500	4.4521	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	24.333	17.2033	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	11.000	8.4937	15
Bare Substrate	14.000	24.3266	15
Rock	84.667	25.1578	15
Cobble	8.833	14.8464	15
Sand	6.500	12.6703	15
Santa Rosa Island - Cluster Point			
Green Algae	0.167	0.6455	15
Miscellaneous Brown Algae	3.667	4.1043	15
Desmarestia spp.	8.000	10.0977	15
Cystoseira spp.	0.000	0.0000	15
Macrocystis pyrifera All	22.167	18.5854	15
Eisenia arborea All	0.333	1.2910	15
Pterygophora californica All	9.167	8.1101	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	57.667	22.5489	15
Articulated Coralline Algae	5.167	4.1690	15
Encrusting Coralline Algae	25.167	11.3965	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	2.000	4.1404	15
Miscellaneous Plants (ie: Diatoms)	0.167	0.6455	15
Sponges	6.333	5.5795	15
Corynactis californica	1.000	2.8031	15
Balanophyllia elegans	0.500	1.0351	15
Astrangia lajollaensis	0.500	1.4015	15
Diopatra ornata	1.333	3.3894	15
Phragmatopoma californica	0.500	1.4015	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	12.167	8.1211	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	6.000	5.9612	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	8.333	6.9864	15
Bare Substrate	15.833	27.4621	15
Rock	83.333	33.3497	15
Cobble	10.500	22.7800	15
Sand	6.167	15.6373	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Rosa Island - Trancion Canyon			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	1.333	2.9681	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.167	0.6455	15
Macrocystis pyrifera All	10.833	11.4044	15
Eisenia arborea All	0.167	0.6455	15
Pterygophora californica All	1.667	3.9716	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	45.333	21.2525	15
Articulated Coralline Algae	8.333	10.8836	15
Encrusting Coralline Algae	19.333	7.7613	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	2.833	5.4989	15
Miscellaneous Plants (ie: Diatoms)	0.000	0.0000	15
Sponges	6.333	6.1866	15
Corynactis californica	0.833	1.5430	15
Balanophyllia elegans	1.333	1.5999	15
Astrangia lajollaensis	0.667	1.1443	15
Diopatra ornata	13.667	11.4122	15
Phragmatopoma californica	2.833	3.3894	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	13.500	5.1582	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	8.333	5.0592	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	9.667	5.4171	15
Bare Substrate	11.000	7.7229	15
Rock	80.667	14.3759	15
Cobble	0.500	1.0351	15
Sand	18.833	14.1379	15
Santa Rosa Island - Chickasaw			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	0.000	0.0000	15
Desmarestia spp.	0.500	1.4015	15
Cystoseira spp.	1.000	2.0702	15
Macrocystis pyrifera All	16.000	16.2788	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	1.333	3.1149	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	68.333	21.4365	15
Articulated Coralline Algae	7.000	9.8742	15
Encrusting Coralline Algae	5.833	3.4932	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	8.667	7.5514	15
Miscellaneous Plants (ie: Diatoms)	0.667	1.9970	15
Sponges	5.500	6.5602	15
Corynactis californica	0.833	2.6163	15
Balanophyllia elegans	1.000	2.0702	15
Astrangia lajollaensis	0.333	0.8797	15
Diopatra ornata	10.000	14.4544	15
Phragmatopoma californica	3.167	5.3841	15
Serpulorbis squamigerus	0.333	0.8797	15
Miscellaneous Bryozoans	13.333	8.5912	15
Diaperoecia californica	0.667	1.4840	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	11.000	8.4410	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	34.667	19.3388	15
Bare Substrate	15.000	14.5774	15
Rock	84.833	22.6871	15
Cobble	2.500	6.4087	15
Sand	12.667	18.8856	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Rosa Island - South Point			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	1.167	1.8581	15
Desmarestia spp.	0.333	0.8797	15
Cystoseira spp.	0.833	1.8094	15
Macrocystis pyrifera All	30.500	15.1540	15
Eisenia arborea All	0.333	1.2910	15
Pterygophora californica All	11.167	16.5795	15
Laminaria farlowii All	3.000	5.1927	15
Miscellaneous Red Algae	51.333	17.1617	15
Articulated Coralline Algae	17.833	12.3876	15
Encrusting Coralline Algae	7.833	8.7048	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	5.167	6.7126	15
Miscellaneous Plants (ie: Diatoms)	0.167	0.6455	15
Sponges	11.500	8.0623	15
Corynactis californica	0.000	0.0000	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	2.167	3.6433	15
Phragmatopoma californica	6.667	11.0060	15
Serpulorbis squamigerus	0.833	1.5430	15
Miscellaneous Bryozoans	11.833	6.8444	15
Diaperoecia californica	0.167	0.6455	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	10.500	5.9911	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	35.167	11.5134	15
Bare Substrate	11.667	11.5212	15
Rock	90.500	12.9973	15
Cobble	1.500	3.1053	15
Sand	8.000	11.0680	15
Santa Cruz Island - Devil's Peak Member			
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	0.333	1.2910	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	12.000	7.9732	15
Articulated Coralline Algae	1.000	1.8420	15
Encrusting Coralline Algae	52.833	15.5801	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	0.833	1.5430	15
Sponges	1.500	1.8420	15
Corynactis californica	0.333	0.8797	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	4.667	3.9940	15
Diopatra ornata	0.667	1.4840	15
Phragmatopoma californica	0.500	1.4015	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	12.000	6.2821	15
Diaperoecia californica	2.833	4.6162	15
Pachythyone rubra	13.667	16.7670	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	1.167	1.5999	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	18.167	8.3166	15
Bare Substrate	9.167	8.5391	15
Rock	89.333	9.0862	15
Cobble	2.167	3.1149	15
Sand	8.500	8.7014	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Cruz Island - Potato Pasture			
Green Algae	0.667	1.4840	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	15.000	14.2051	15
Articulated Coralline Algae	0.333	0.8797	15
Encrusting Coralline Algae	44.833	9.4711	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	15.333	8.6016	15
Sponges	1.000	1.2677	15
Corynactis californica	3.167	5.1293	15
Balanophyllia elegans	0.333	1.2910	15
Astrangia lajollaensis	5.333	4.5185	15
Diopatra ornata	0.500	1.9365	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.167	0.6455	15
Miscellaneous Bryozoans	4.833	7.2866	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	1.500	4.5119	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.333	0.8797	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	20.000	11.9149	15
Bare Substrate	16.333	12.2790	15
Rock	85.167	17.2809	15
Cobble	10.167	11.5522	15
Sand	4.667	8.3915	15
Santa Cruz Island - Cavern Point			
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
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	25.667	14.1569	15
Articulated Coralline Algae	1.500	2.0702	15
Encrusting Coralline Algae	70.667	12.0811	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	2.000	2.5355	15
Sponges	2.333	2.5820	15
Corynactis californica	2.167	4.1043	15
Balanophyllia elegans	1.667	2.2493	15
Astrangia lajollaensis	6.167	8.0104	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	4.000	6.1818	15
Diaperoecia californica	1.167	2.2887	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	4.667	4.2117	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	38.167	15.5111	15
Bare Substrate	9.167	7.0500	15
Rock	89.000	10.6821	15
Cobble	10.833	10.5503	15
Sand	0.167	0.6455	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Cruz Island - Little Scorpion			
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
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	9.000	4.5119	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	29.000	24.7812	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	22.667	11.4746	15
Sponges	0.167	0.6455	15
Corynactis californica	0.167	0.6455	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	8.333	8.3808	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	2.333	4.0606	15
Diaperoecia californica	0.167	0.6455	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.167	0.6455	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	21.167	14.0111	15
Bare Substrate	14.833	13.1769	15
Rock	80.167	14.1253	15
Cobble	6.333	5.5795	15
Sand	13.500	13.0863	15
Santa Cruz Island - Pedro Reef			
Green Algae	0.667	1.1443	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	5.500	5.5259	15
Articulated Coralline Algae	0.833	1.5430	15
Encrusting Coralline Algae	24.667	15.6087	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	17.500	9.0633	15
Sponges	0.000	0.0000	15
Corynactis californica	12.167	16.4172	15
Balanophyllia elegans	1.333	2.0845	15
Astrangia lajollaensis	1.167	1.5999	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.000	0.0000	15
Diaperoecia californica	0.500	1.9365	15
Pachythyone rubra	3.000	6.2821	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.000	0.0000	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	13.167	5.9362	15
Bare Substrate	33.333	18.9846	15
Rock	82.833	20.1748	15
Cobble	1.500	2.6390	15
Sand	15.667	19.4447	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Anacapa Island - Keyhole			
Green Algae	1.167	2.0845	15
Miscellaneous Brown Algae	16.000	14.9344	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	0.667	1.7593	15
Pterygophora californica All	0.000	0.0000	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	25.333	13.6233	15
Articulated Coralline Algae	2.833	4.1043	15
Encrusting Coralline Algae	44.833	13.8701	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	75.667	10.2411	15
Sponges	0.500	1.0351	15
Corynactis californica	1.333	2.0845	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.167	0.6455	15
Diopatra ornata	5.667	12.4809	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	9.333	10.6682	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	0.333	0.8797	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	28.500	9.2967	15
Bare Substrate	4.167	3.6187	15
Rock	83.500	17.5204	15
Cobble	5.833	4.4987	15
Sand	10.667	17.2033	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	8.333	5.4006	15
Articulated Coralline Algae	0.000	0.0000	15
Encrusting Coralline Algae	52.500	14.1737	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	5.500	4.7434	15
Sponges	0.000	0.0000	15
Corynactis californica	5.167	4.5774	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.333	1.2910	15
Diopatra ornata	0.500	1.0351	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.000	0.0000	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	9.667	11.8347	15
Tunicates	0.167	0.6455	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	7.000	4.3507	15
Bare Substrate	28.833	17.5730	15
Rock	88.500	18.4391	15
Cobble	3.500	6.3948	15
Sand	8.000	15.2421	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Anacapa Island - Black Sea Bass Reef			
Green Algae	0.417	1.1528	30
Miscellaneous Brown Algae	0.000	0.0000	30
Desmarestia spp.	0.000	0.0000	30
Cystoseira spp.	0.000	0.0000	30
Macrocystis pyrifera All	0.000	0.0000	30
Eisenia arborea All	0.000	0.0000	30
Pterygophora californica All	0.000	0.0000	30
Laminaria farlowii All	0.000	0.0000	30
Miscellaneous Red Algae	3.917	8.5269	30
Articulated Coralline Algae	0.083	0.4564	30
Encrusting Coralline Algae	38.083	39.9983	30
Gelidium spp.	0.000	0.0000	30
Gigartina spp.	0.000	0.0000	30
Miscellaneous Plants (ie: Diatoms)	5.667	6.5631	30
Sponges	1.000	2.5931	30
Corynactis californica	1.583	3.1131	30
Balanophyllia elegans	0.000	0.0000	30
Astrangia lajollaensis	0.000	0.0000	30
Diopatra ornata	0.000	0.0000	30
Phragmatopoma californica	0.000	0.0000	30
Serpulorbis squamigerus	0.000	0.0000	30
Miscellaneous Bryozoans	1.583	2.9714	30
Diaperoecia californica	0.083	0.4564	30
Pachythyone rubra	0.000	0.0000	30
Ophiothrix spiculata	40.000	44.3925	30
Tunicates	0.083	0.4564	30
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	1.750	3.5447	30
Bare Substrate	3.333	5.1417	30
Rock	41.333	43.2053	30
Cobble	6.917	11.1356	30
Sand	1.750	4.1079	30
Anacapa Island - Lighthouse			
Green Algae	1.000	1.5811	15
Miscellaneous Brown Algae	1.000	2.6390	15
Desmarestia spp.	0.000	0.0000	15
Cystoseira spp.	0.000	0.0000	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	5.667	6.2297	15
Articulated Coralline Algae	3.000	2.7058	15
Encrusting Coralline Algae	34.167	14.8404	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	11.500	7.6064	15
Sponges	0.000	0.0000	15
Corynactis californica	0.500	1.9365	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	1.833	2.5820	15
Diopatra ornata	12.833	9.5369	15
Phragmatopoma californica	10.500	11.0276	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	2.667	3.4675	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	1.667	2.0412	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	12.833	5.9662	15
Bare Substrate	11.833	9.6578	15
Rock	73.667	16.9523	15
Cobble	3.000	5.1060	15
Sand	23.333	15.8302	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Barbara Island - Webster's Arch			
Green Algae	1.667	2.6163	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	9.000	8.0623	15
Articulated Coralline Algae	1.167	1.5999	15
Encrusting Coralline Algae	56.667	17.5425	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.000	0.0000	15
Miscellaneous Plants (ie: Diatoms)	3.333	4.6930	15
Sponges	0.167	0.6455	15
Corynactis californica	4.833	6.3714	15
Balanophyllia elegans	0.167	0.6455	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	0.000	0.0000	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	3.167	3.9491	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	2.000	5.7632	15
Tunicates	0.833	2.0412	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	5.667	4.5774	15
Bare Substrate	21.000	10.2557	15
Rock	89.000	16.9769	15
Cobble	10.500	16.3172	15
Sand	0.500	1.4015	15
Santa Barbara Island - Graveyard Canyon			
Green Algae	0.000	0.0000	15
Miscellaneous Brown Algae	1.167	2.8137	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	3.167	3.7161	15
Articulated Coralline Algae	0.167	0.6455	15
Encrusting Coralline Algae	39.000	27.3176	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	0.167	0.6455	15
Corynactis californica	4.667	8.1759	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.000	0.0000	15
Diopatra ornata	0.333	0.8797	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	0.500	1.0351	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	21.333	27.4491	15
Tunicates	0.333	1.2910	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	7.667	8.7355	15
Bare Substrate	43.167	35.8128	15
Rock	67.667	38.2598	15
Cobble	0.667	1.4840	15
Sand	31.667	38.7145	15

2006 RANDOM POINT CONTACT DATA: MEAN PERCENT COVER

Species	Mean	Std. Dev.	n
Santa Barbara Island - Southeast Reef			
Green Algae	1.333	3.3894	15
Miscellaneous Brown Algae	2.667	3.5940	15
Desmarestia spp.	4.167	7.8868	15
Cystoseira spp.	0.333	1.2910	15
Macrocystis pyrifera All	4.167	7.6571	15
Eisenia arborea All	0.000	0.0000	15
Pterygophora californica All	0.333	1.2910	15
Laminaria farlowii All	0.000	0.0000	15
Miscellaneous Red Algae	16.667	12.1988	15
Articulated Coralline Algae	4.167	6.1721	15
Encrusting Coralline Algae	37.667	18.3095	15
Gelidium spp.	0.000	0.0000	15
Gigartina spp.	0.167	0.6455	15
Miscellaneous Plants (ie: Diatoms)	4.667	6.1866	15
Sponges	0.333	1.2910	15
Corynactis californica	0.167	0.6455	15
Balanophyllia elegans	0.000	0.0000	15
Astrangia lajollaensis	0.500	1.0351	15
Diopatra ornata	0.333	0.8797	15
Phragmatopoma californica	0.000	0.0000	15
Serpulorbis squamigerus	0.000	0.0000	15
Miscellaneous Bryozoans	7.500	6.4780	15
Diaperoecia californica	0.000	0.0000	15
Pachythyone rubra	0.000	0.0000	15
Ophiothrix spiculata	0.000	0.0000	15
Tunicates	3.833	4.5185	15
Miscellaneous Invertebrates excluding *Ophiothrix spiculata*	23.833	15.6943	15
Bare Substrate	14.667	15.6658	15
Rock	85.000	23.2609	15
Cobble	10.167	15.0436	15
Sand	4.833	8.7355	15

Appendix E. Fish Transect Data.

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M^3)

	Date	Mean	Std. Dev.	n
San Miguel Island - Wyckoff Ledge				
Chromis punctipinnis Adult	9/12/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/12/2006	0.0000	0.0000	4
Oxyjulis californica Adult	9/12/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/12/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/12/2006	0.5000	1.0000	4
Sebastes mystinus Juvenile	9/12/2006	0.0000	0.0000	4
Sebastes serranoides Adult	9/12/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/12/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/12/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/12/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	9/12/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/12/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/12/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	9/12/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/12/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/12/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/12/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/12/2006	0.2500	0.5000	4
Embiotoca lateralis Juvenile	9/12/2006	0.5000	1.0000	4
Damalichthys vacca Adult	9/12/2006	0.5000	0.5774	4
Damalichthys vacca Juvenile	9/12/2006	0.5000	0.5774	4
Hypsypops rubicundus Adult	9/12/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/12/2006	0.0000	0.0000	4
Girella nigricans Adult	9/12/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/12/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	9/12/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	9/12/2006	0.0000	0.0000	4
San Miguel Island - Hare Rock				
Chromis punctipinnis Adult	6/21/2006	2.0000	4.0000	4
Chromis punctipinnis Juvenile	6/21/2006	0.0000	0.0000	4
Oxyjulis californica Adult	6/21/2006	2.7500	3.4034	4
Oxyjulis californica Juvenile	6/21/2006	0.0000	0.0000	4
Sebastes mystinus Adult	6/21/2006	2.0000	1.6330	4
Sebastes mystinus Juvenile	6/21/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/21/2006	0.2500	0.5000	4
Sebastes serranoides Juvenile	6/21/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/21/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/21/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/21/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/21/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/21/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	6/21/2006	0.7500	0.9574	4
Semicossyphus pulcher Juvenile	6/21/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/21/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	6/21/2006	0.2500	0.5000	4
Embiotoca lateralis Adult	6/21/2006	1.2500	1.2583	4
Embiotoca lateralis Juvenile	6/21/2006	1.0000	1.4142	4
Damalichthys vacca Adult	6/21/2006	1.0000	0.8165	4
Damalichthys vacca Juvenile	6/21/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/21/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	6/21/2006	0.0000	0.0000	4
Girella nigricans Adult	6/21/2006	0.0000	0.0000	4
Girella nigricans Juvenile	6/21/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/21/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	6/21/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Rosa Island - Johnson's Lee North				
Chromis punctipinnis Adult	8/9/2006	1.5000	2.3805	4
Chromis punctipinnis Juvenile	8/9/2006	0.0000	0.0000	4
Oxyjulis californica Adult	8/9/2006	0.7500	0.5000	4
Oxyjulis californica Juvenile	8/9/2006	0.0000	0.0000	4
Sebastes mystinus Adult	8/9/2006	0.2500	0.5000	4
Sebastes mystinus Juvenile	8/9/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/9/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/9/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/9/2006	1.0000	0.8165	4
Sebastes atrovirens Juvenile	8/9/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/9/2006	0.7500	0.5000	4
Paralabrax clathratus Juvenile	8/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	8/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	8/9/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/9/2006	2.0000	1.4142	4
Embiotoca jacksoni Juvenile	8/9/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/9/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/9/2006	0.2500	0.5000	4
Damalichthys vacca Adult	8/9/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/9/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/9/2006	1.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/9/2006	0.0000	0.0000	4
Girella nigricans Adult	8/9/2006	0.0000	0.0000	4
Girella nigricans Juvenile	8/9/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/9/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	8/9/2006	0.0000	0.0000	4
Santa Rosa Island - Johnson's Lee South				
Chromis punctipinnis Adult	8/9/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	8/9/2006	0.0000	0.0000	4
Oxyjulis californica Adult	8/9/2006	4.0000	4.2426	4
Oxyjulis californica Juvenile	8/9/2006	0.5000	1.0000	4
Sebastes mystinus Adult	8/9/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/9/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/9/2006	0.2500	0.5000	4
Sebastes serranoides Juvenile	8/9/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/9/2006	1.5000	1.0000	4
Sebastes atrovirens Juvenile	8/9/2006	0.5000	1.0000	4
Paralabrax clathratus Adult	8/9/2006	0.2500	0.5000	4
Paralabrax clathratus Juvenile	8/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	8/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/9/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	8/9/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/9/2006	1.2500	1.5000	4
Embiotoca jacksoni Juvenile	8/9/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/9/2006	4.0000	2.1602	4
Embiotoca lateralis Juvenile	8/9/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/9/2006	0.7500	0.9574	4
Damalichthys vacca Juvenile	8/9/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/9/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/9/2006	0.0000	0.0000	4
Girella nigricans Adult	8/9/2006	0.7500	0.5000	4
Girella nigricans Juvenile	8/9/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/9/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	8/9/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Rosa Island - Rodes Reef				
Chromis punctipinnis Adult	6/22/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	6/22/2006	0.0000	0.0000	4
Oxyjulis californica Adult	6/22/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	6/22/2006	0.0000	0.0000	4
Sebastes mystinus Adult	6/22/2006	0.2500	0.5000	4
Sebastes mystinus Juvenile	6/22/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/22/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/22/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/22/2006	0.5000	0.5774	4
Sebastes atrovirens Juvenile	6/22/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/22/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/22/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/22/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	6/22/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	6/22/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/22/2006	0.7500	0.9574	4
Embiotoca jacksoni Juvenile	6/22/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	6/22/2006	0.2500	0.5000	4
Embiotoca lateralis Juvenile	6/22/2006	0.0000	0.0000	4
Damalichthys vacca Adult	6/22/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/22/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/22/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	6/22/2006	0.0000	0.0000	4
Girella nigricans Adult	6/22/2006	0.0000	0.0000	4
Girella nigricans Juvenile	6/22/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/22/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	6/22/2006	0.0000	0.0000	4
Santa Cruz Island - Gull Island South				
Chromis punctipinnis Adult	7/10/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	7/10/2006	0.2500	0.5000	4
Oxyjulis californica Adult	7/10/2006	3.5000	7.0000	4
Oxyjulis californica Juvenile	7/10/2006	0.0000	0.0000	4
Sebastes mystinus Adult	7/10/2006	0.2500	0.5000	4
Sebastes mystinus Juvenile	7/10/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/10/2006	0.2500	0.5000	4
Sebastes serranoides Juvenile	7/10/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/10/2006	1.5000	0.5774	4
Sebastes atrovirens Juvenile	7/10/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/10/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/10/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/10/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	7/10/2006	1.2500	0.5000	4
Semicossyphus pulcher Juvenile	7/10/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/10/2006	0.7500	0.9574	4
Embiotoca jacksoni Juvenile	7/10/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/10/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/10/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/10/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	7/10/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/10/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/10/2006	0.0000	0.0000	4
Girella nigricans Adult	7/10/2006	0.0000	0.0000	4
Girella nigricans Juvenile	7/10/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/10/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/10/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Fry's Harbor				
Chromis punctipinnis Adult	6/5/2006	9.0000	10.4243	4
Chromis punctipinnis Juvenile	6/5/2006	0.0000	0.0000	4
Oxyjulis californica Adult	6/5/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	6/5/2006	0.0000	0.0000	4
Sebastes mystinus Adult	6/5/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/5/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/5/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/5/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/5/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/5/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/5/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/5/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/5/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	6/5/2006	0.5000	1.0000	4
Semicossyphus pulcher Juvenile	6/5/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/5/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	6/5/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	6/5/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/5/2006	0.0000	0.0000	4
Damalichthys vacca Adult	6/5/2006	1.5000	2.3805	4
Damalichthys vacca Juvenile	6/5/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/5/2006	0.2500	0.5000	4
Hypsypops rubicundus Juvenile	6/5/2006	0.0000	0.0000	4
Girella nigricans Adult	6/5/2006	0.0000	0.0000	4
Girella nigricans Juvenile	6/5/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/5/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	6/5/2006	0.0000	0.0000	4
Santa Cruz Island - Pelican Bay				
Chromis punctipinnis Adult	7/28/2006	1.0000	1.1547	4
Chromis punctipinnis Adult	9/15/2006	6.2500	6.1818	8
Chromis punctipinnis Juvenile	7/28/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/15/2006	0.0000	0.0000	8
Oxyjulis californica Adult	7/28/2006	0.2500	0.5000	4
Oxyjulis californica Adult	9/15/2006	1.6250	1.5980	8
Oxyjulis californica Juvenile	7/28/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/15/2006	0.0000	0.0000	8
Sebastes mystinus Adult	7/28/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/15/2006	0.0000	0.0000	8
Sebastes mystinus Juvenile	7/28/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/15/2006	0.0000	0.0000	8
Sebastes serranoides Adult	7/28/2006	0.0000	0.0000	4
Sebastes serranoides Adult	9/15/2006	0.0000	0.0000	8
Sebastes serranoides Juvenile	7/28/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/15/2006	0.0000	0.0000	8
Sebastes atrovirens Adult	7/28/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/15/2006	0.1250	0.3536	8
Sebastes atrovirens Juvenile	7/28/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/15/2006	0.0000	0.0000	8
Paralabrax clathratus Adult	7/28/2006	2.0000	1.4142	4
Paralabrax clathratus Adult	9/15/2006	2.1250	1.5526	8
Paralabrax clathratus Juvenile	7/28/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/15/2006	0.1250	0.3536	8
Semicossyphus pulcher Male	7/28/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/15/2006	0.0000	0.0000	8
Semicossyphus pulcher Female	7/28/2006	0.5000	0.5774	4
Semicossyphus pulcher Female	9/15/2006	0.0000	0.0000	8
Semicossyphus pulcher Juvenile	7/28/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/15/2006	0.0000	0.0000	8

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Pelican Bay continued				
Embiotoca jacksoni Adult	7/28/2006	4.0000	2.1602	4
Embiotoca jacksoni Adult	9/15/2006	3.8750	2.8504	8
Embiotoca jacksoni Juvenile	7/28/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/15/2006	0.0000	0.0000	8
Embiotoca lateralis Adult	7/28/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/15/2006	0.0000	0.0000	8
Embiotoca lateralis Juvenile	7/28/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/15/2006	0.0000	0.0000	8
Damalichthys vacca Adult	7/28/2006	0.7500	0.9574	4
Damalichthys vacca Adult	9/15/2006	0.8750	1.3562	8
Damalichthys vacca Juvenile	7/28/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/15/2006	0.0000	0.0000	8
Hypsypops rubicundus Adult	7/28/2006	0.7500	0.9574	4
Hypsypops rubicundus Adult	9/15/2006	1.0000	0.7559	8
Hypsypops rubicundus Juvenile	7/28/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/15/2006	0.0000	0.0000	8
Girella nigricans Adult	7/28/2006	0.0000	0.0000	4
Girella nigricans Adult	9/15/2006	0.0000	0.0000	8
Girella nigricans Juvenile	7/28/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/15/2006	0.0000	0.0000	8
Halichoeres semicinctus Male	7/28/2006	0.7500	0.9574	4
Halichoeres semicinctus Male	9/15/2006	0.7500	0.4629	8
Halichoeres semicinctus Female	7/28/2006	0.2500	0.5000	4
Halichoeres semicinctus Female	9/15/2006	0.1250	0.3536	8
Santa Cruz Island - Scorpion Anchorage				
Chromis punctipinnis Adult	8/24/2006	5.0000	6.0000	4
Chromis punctipinnis Juvenile	8/24/2006	0.0000	0.0000	4
Oxyjulis californica Adult	8/24/2006	9.0000	4.3205	4
Oxyjulis californica Juvenile	8/24/2006	0.0000	0.0000	4
Sebastes mystinus Adult	8/24/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/24/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/24/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/24/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/24/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/24/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/24/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/24/2006	1.0000	1.4142	4
Semicossyphus pulcher Male	8/24/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/24/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	8/24/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/24/2006	1.0000	1.1547	4
Embiotoca jacksoni Juvenile	8/24/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/24/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/24/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/24/2006	0.2500	0.5000	4
Damalichthys vacca Juvenile	8/24/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/24/2006	0.5000	1.0000	4
Hypsypops rubicundus Juvenile	8/24/2006	0.0000	0.0000	4
Girella nigricans Adult	8/24/2006	0.0000	0.0000	4
Girella nigricans Juvenile	8/24/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/24/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	8/24/2006	0.2500	0.5000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Yellow Banks				
Chromis punctipinnis Adult	8/21/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	8/21/2006	0.0000	0.0000	4
Oxyjulis californica Adult	8/21/2006	1.0000	0.8165	4
Oxyjulis californica Juvenile	8/21/2006	0.0000	0.0000	4
Sebastes mystinus Adult	8/21/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/21/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/21/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/21/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/21/2006	0.2500	0.5000	4
Sebastes atrovirens Juvenile	8/21/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/21/2006	1.7500	1.5000	4
Paralabrax clathratus Juvenile	8/21/2006	0.5000	0.5774	4
Semicossyphus pulcher Male	8/21/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/21/2006	2.0000	0.8165	4
Semicossyphus pulcher Juvenile	8/21/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/21/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	8/21/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/21/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/21/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/21/2006	0.2500	0.5000	4
Damalichthys vacca Juvenile	8/21/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/21/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/21/2006	0.0000	0.0000	4
Girella nigricans Adult	8/21/2006	0.0000	0.0000	4
Girella nigricans Juvenile	8/21/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/21/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	8/21/2006	0.2500	0.5000	4
Anacapa Island - Admiral's Reef				
Chromis punctipinnis Adult	8/8/2006	67.0000	57.6021	4
Chromis punctipinnis Adult	9/28/2006	0.7500	0.9574	4
Chromis punctipinnis Juvenile	8/8/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/28/2006	17.7500	20.5000	4
Oxyjulis californica Adult	8/8/2006	27.2500	26.1072	4
Oxyjulis californica Adult	9/28/2006	6.5000	1.2910	4
Oxyjulis californica Juvenile	8/8/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/28/2006	0.5000	1.0000	4
Sebastes mystinus Adult	8/8/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/28/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/8/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/28/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/8/2006	0.0000	0.0000	4
Sebastes serranoides Adult	9/28/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/8/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/28/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/8/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/28/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/8/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/28/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/8/2006	0.7500	0.5000	4
Paralabrax clathratus Adult	9/28/2006	0.2500	0.5000	4
Paralabrax clathratus Juvenile	8/8/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/28/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	8/8/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/28/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/8/2006	1.0000	0.8165	4
Semicossyphus pulcher Female	9/28/2006	1.5000	1.2910	4
Semicossyphus pulcher Juvenile	8/8/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/28/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Anacapa Island - Admiral's Reef continued				
Embiotoca jacksoni Adult	8/8/2006	0.5000	1.0000	4
Embiotoca jacksoni Adult	9/28/2006	0.7500	1.5000	4
Embiotoca jacksoni Juvenile	8/8/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/28/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/8/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/28/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/8/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/28/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/8/2006	0.0000	0.0000	4
Damalichthys vacca Adult	9/28/2006	0.2500	0.5000	4
Damalichthys vacca Juvenile	8/8/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/28/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/8/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	9/28/2006	0.2500	0.5000	4
Hypsypops rubicundus Juvenile	8/8/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/28/2006	0.0000	0.0000	4
Girella nigricans Adult	8/8/2006	1.5000	1.2910	4
Girella nigricans Adult	9/28/2006	0.2500	0.5000	4
Girella nigricans Juvenile	8/8/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/28/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/8/2006	0.7500	0.9574	4
Halichoeres semicinctus Male	9/28/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	8/8/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	9/28/2006	0.2500	0.5000	4
Anacapa Island - Cathedral Cove				
Chromis punctipinnis Adult	8/4/2006	3.2500	3.4034	4
Chromis punctipinnis Juvenile	8/4/2006	12.7500	18.8922	4
Oxyjulis californica Adult	8/4/2006	0.7500	0.9574	4
Oxyjulis californica Juvenile	8/4/2006	0.0000	0.0000	4
Sebastes mystinus Adult	8/4/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/4/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/4/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/4/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/4/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/4/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/4/2006	0.7500	0.5000	4
Paralabrax clathratus Juvenile	8/4/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	8/4/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/4/2006	0.5000	0.5774	4
Semicossyphus pulcher Juvenile	8/4/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/4/2006	0.7500	0.9574	4
Embiotoca jacksoni Juvenile	8/4/2006	1.2500	1.8930	4
Embiotoca lateralis Adult	8/4/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/4/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/4/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/4/2006	0.2500	0.5000	4
Hypsypops rubicundus Adult	8/4/2006	0.5000	0.5774	4
Hypsypops rubicundus Juvenile	8/4/2006	0.0000	0.0000	4
Girella nigricans Adult	8/4/2006	0.0000	0.0000	4
Girella nigricans Juvenile	8/4/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/4/2006	0.2500	0.5000	4
Halichoeres semicinctus Female	8/4/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Anacapa Island - Landing Cove				
Chromis punctipinnis Adult	6/9/2006	13.7500	17.8955	4
Chromis punctipinnis Adult	9/27/2006	0.5000	0.5774	4
Chromis punctipinnis Juvenile	6/9/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/27/2006	2.5000	5.0000	4
Oxyjulis californica Adult	6/9/2006	15.2500	11.2361	4
Oxyjulis californica Adult	9/27/2006	8.0000	7.9582	4
Oxyjulis californica Juvenile	6/9/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/27/2006	1.2500	2.5000	4
Sebastes mystinus Adult	6/9/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/27/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/9/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/27/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/9/2006	0.0000	0.0000	4
Sebastes serranoides Adult	9/27/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/9/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/27/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/9/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/27/2006	0.2500	0.5000	4
Sebastes atrovirens Juvenile	6/9/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/27/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/9/2006	0.2500	0.5000	4
Paralabrax clathratus Adult	9/27/2006	0.5000	0.5774	4
Paralabrax clathratus Juvenile	6/9/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/27/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/27/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	6/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	9/27/2006	0.7500	0.9574	4
Semicossyphus pulcher Juvenile	6/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/27/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/9/2006	0.7500	0.9574	4
Embiotoca jacksoni Adult	9/27/2006	1.2500	1.5000	4
Embiotoca jacksoni Juvenile	6/9/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/27/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	6/9/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/27/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/9/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/27/2006	0.0000	0.0000	4
Damalichthys vacca Adult	6/9/2006	0.0000	0.0000	4
Damalichthys vacca Adult	9/27/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/9/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/27/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/9/2006	0.7500	0.9574	4
Hypsypops rubicundus Adult	9/27/2006	1.0000	0.8165	4
Hypsypops rubicundus Juvenile	6/9/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/27/2006	0.0000	0.0000	4
Girella nigricans Adult	6/9/2006	1.2500	2.5000	4
Girella nigricans Adult	9/27/2006	3.0000	3.5590	4
Girella nigricans Juvenile	6/9/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/27/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/9/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	9/27/2006	0.7500	0.5000	4
Halichoeres semicinctus Female	6/9/2006	0.5000	0.5774	4
Halichoeres semicinctus Female	9/27/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Barbara Island - SE Sea Lion Rookery				
Chromis punctipinnis Adult	5/24/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	5/24/2006	0.0000	0.0000	4
Oxyjulis californica Adult	5/24/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	5/24/2006	0.0000	0.0000	4
Sebastes mystinus Adult	5/24/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	5/24/2006	0.0000	0.0000	4
Sebastes serranoides Adult	5/24/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	5/24/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	5/24/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	5/24/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	5/24/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	5/24/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	5/24/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	5/24/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	5/24/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	5/24/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	5/24/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	5/24/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	5/24/2006	0.0000	0.0000	4
Damalichthys vacca Adult	5/24/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	5/24/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	5/24/2006	0.5000	1.0000	4
Hypsypops rubicundus Juvenile	5/24/2006	0.0000	0.0000	4
Girella nigricans Adult	5/24/2006	0.0000	0.0000	4
Girella nigricans Juvenile	5/24/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	5/24/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	5/24/2006	0.0000	0.0000	4
Santa Barbara Island - Arch Point				
Chromis punctipinnis Adult	5/23/2006	22.2500	17.8582	4
Chromis punctipinnis Juvenile	5/23/2006	0.0000	0.0000	4
Oxyjulis californica Adult	5/23/2006	3.0000	3.1623	4
Oxyjulis californica Juvenile	5/23/2006	0.0000	0.0000	4
Sebastes mystinus Adult	5/23/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	5/23/2006	0.0000	0.0000	4
Sebastes serranoides Adult	5/23/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	5/23/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	5/23/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	5/23/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	5/23/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	5/23/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	5/23/2006	0.2500	0.5000	4
Semicossyphus pulcher Female	5/23/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	5/23/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	5/23/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	5/23/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	5/23/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	5/23/2006	0.0000	0.0000	4
Damalichthys vacca Adult	5/23/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	5/23/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	5/23/2006	2.2500	2.2174	4
Hypsypops rubicundus Juvenile	5/23/2006	0.0000	0.0000	4
Girella nigricans Adult	5/23/2006	0.2500	0.5000	4
Girella nigricans Juvenile	5/23/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	5/23/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	5/23/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Barbara Island - Cat Canyon				
Chromis punctipinnis Adult	6/19/2006	25.7500	14.1038	4
Chromis punctipinnis Juvenile	6/19/2006	0.0000	0.0000	4
Oxyjulis californica Adult	6/19/2006	10.5000	7.6811	4
Oxyjulis californica Juvenile	6/19/2006	0.0000	0.0000	4
Sebastes mystinus Adult	6/19/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/19/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/19/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/19/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/19/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/19/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/19/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/19/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/19/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	6/19/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	6/19/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/19/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	6/19/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	6/19/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/19/2006	0.0000	0.0000	4
Damalichthys vacca Adult	6/19/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/19/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/19/2006	0.5000	1.0000	4
Hypsypops rubicundus Juvenile	6/19/2006	0.0000	0.0000	4
Girella nigricans Adult	6/19/2006	0.2500	0.5000	4
Girella nigricans Juvenile	6/19/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/19/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	6/19/2006	0.0000	0.0000	4
San Miguel Island - Miracle Mile				
Chromis punctipinnis Adult	9/13/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/13/2006	0.0000	0.0000	4
Oxyjulis californica Adult	9/13/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/13/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/13/2006	0.7500	0.9574	4
Sebastes mystinus Juvenile	9/13/2006	0.0000	0.0000	4
Sebastes serranoides Adult	9/13/2006	0.2500	0.5000	4
Sebastes serranoides Juvenile	9/13/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/13/2006	0.2500	0.5000	4
Sebastes atrovirens Juvenile	9/13/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	9/13/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/13/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/13/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	9/13/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	9/13/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/13/2006	1.2500	0.9574	4
Embiotoca jacksoni Juvenile	9/13/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/13/2006	2.0000	1.6330	4
Embiotoca lateralis Juvenile	9/13/2006	0.2500	0.5000	4
Damalichthys vacca Adult	9/13/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/13/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	9/13/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/13/2006	0.0000	0.0000	4
Girella nigricans Adult	9/13/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/13/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	9/13/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	9/13/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Rosa Island - Cluster Point				
Chromis punctipinnis Adult	7/26/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	7/26/2006	0.0000	0.0000	4
Oxyjulis californica Adult	7/26/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	7/26/2006	0.0000	0.0000	4
Sebastes mystinus Adult	7/26/2006	1.0000	1.1547	4
Sebastes mystinus Juvenile	7/26/2006	0.2500	0.5000	4
Sebastes serranoides Adult	7/26/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/26/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/26/2006	0.2500	0.5000	4
Sebastes atrovirens Juvenile	7/26/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/26/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/26/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/26/2006	0.2500	0.5000	4
Semicossyphus pulcher Female	7/26/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	7/26/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/26/2006	0.5000	0.5774	4
Embiotoca jacksoni Juvenile	7/26/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/26/2006	2.0000	1.8257	4
Embiotoca lateralis Juvenile	7/26/2006	0.5000	0.5774	4
Damalichthys vacca Adult	7/26/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	7/26/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/26/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/26/2006	0.0000	0.0000	4
Girella nigricans Adult	7/26/2006	0.0000	0.0000	4
Girella nigricans Juvenile	7/26/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/26/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/26/2006	0.0000	0.0000	4
Santa Rosa Island - Trancion Canyon				
Chromis punctipinnis Adult	7/13/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	7/13/2006	0.0000	0.0000	4
Oxyjulis californica Adult	7/13/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	7/13/2006	0.0000	0.0000	4
Sebastes mystinus Adult	7/13/2006	0.2500	0.5000	4
Sebastes mystinus Juvenile	7/13/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/13/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/13/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/13/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	7/13/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/13/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/13/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/13/2006	0.5000	0.5774	4
Semicossyphus pulcher Female	7/13/2006	0.7500	0.9574	4
Semicossyphus pulcher Juvenile	7/13/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/13/2006	3.2500	4.0311	4
Embiotoca jacksoni Juvenile	7/13/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/13/2006	1.5000	1.2910	4
Embiotoca lateralis Juvenile	7/13/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/13/2006	0.5000	0.5774	4
Damalichthys vacca Juvenile	7/13/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/13/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/13/2006	0.0000	0.0000	4
Girella nigricans Adult	7/13/2006	0.0000	0.0000	4
Girella nigricans Juvenile	7/13/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/13/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/13/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Rosa Island - Chickasaw				
Chromis punctipinnis Adult	7/12/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	7/12/2006	0.0000	0.0000	4
Oxyjulis californica Adult	7/12/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	7/12/2006	0.0000	0.0000	4
Sebastes mystinus Adult	7/12/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	7/12/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/12/2006	0.2500	0.5000	4
Sebastes serranoides Juvenile	7/12/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/12/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	7/12/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/12/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/12/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/12/2006	0.2500	0.5000	4
Semicossyphus pulcher Female	7/12/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	7/12/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/12/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	7/12/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/12/2006	0.2500	0.5000	4
Embiotoca lateralis Juvenile	7/12/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/12/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	7/12/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/12/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/12/2006	0.0000	0.0000	4
Girella nigricans Adult	7/12/2006	0.0000	0.0000	4
Girella nigricans Juvenile	7/12/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/12/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/12/2006	0.0000	0.0000	4
Santa Rosa Island - South Point				
Chromis punctipinnis Adult	6/6/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	6/6/2006	0.0000	0.0000	4
Oxyjulis californica Adult	6/6/2006	1.2500	1.5000	4
Oxyjulis californica Juvenile	6/6/2006	0.0000	0.0000	4
Sebastes mystinus Adult	6/6/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/6/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/6/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/6/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/6/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/6/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/6/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/6/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/6/2006	0.2500	0.5000	4
Semicossyphus pulcher Female	6/6/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	6/6/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/6/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	6/6/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	6/6/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/6/2006	0.0000	0.0000	4
Damalichthys vacca Adult	6/6/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/6/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/6/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	6/6/2006	0.0000	0.0000	4
Girella nigricans Adult	6/6/2006	0.0000	0.0000	4
Girella nigricans Juvenile	6/6/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/6/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	6/6/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Devil's Peak Member				
Chromis punctipinnis Adult	7/14/2006	105.7500	58.2316	4
Chromis punctipinnis Adult	9/20/2006	4.2500	4.3493	4
Chromis punctipinnis Juvenile	7/14/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/20/2006	0.7500	1.5000	4
Oxyjulis californica Adult	7/14/2006	2.7500	3.0957	4
Oxyjulis californica Adult	9/20/2006	11.5000	3.0000	4
Oxyjulis californica Juvenile	7/14/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/20/2006	0.5000	1.0000	4
Sebastes mystinus Adult	7/14/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/20/2006	0.2500	0.5000	4
Sebastes mystinus Juvenile	7/14/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/20/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/14/2006	0.2500	0.5000	4
Sebastes serranoides Adult	9/20/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/14/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/20/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/14/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/20/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	7/14/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/20/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/14/2006	1.0000	1.1547	4
Paralabrax clathratus Adult	9/20/2006	1.2500	0.5000	4
Paralabrax clathratus Juvenile	7/14/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/20/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/14/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/20/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	7/14/2006	0.5000	0.5774	4
Semicossyphus pulcher Female	9/20/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	7/14/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/20/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/14/2006	0.7500	0.5000	4
Embiotoca jacksoni Adult	9/20/2006	2.0000	1.6330	4
Embiotoca jacksoni Juvenile	7/14/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/20/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/14/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/20/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/14/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/20/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/14/2006	0.5000	0.5774	4
Damalichthys vacca Adult	9/20/2006	0.7500	0.9574	4
Damalichthys vacca Juvenile	7/14/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/20/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/14/2006	0.5000	0.5774	4
Hypsypops rubicundus Adult	9/20/2006	1.5000	1.0000	4
Hypsypops rubicundus Juvenile	7/14/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/20/2006	0.0000	0.0000	4
Girella nigricans Adult	7/14/2006	0.0000	0.0000	4
Girella nigricans Adult	9/20/2006	0.0000	0.0000	4
Girella nigricans Juvenile	7/14/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/20/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/14/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	9/20/2006	0.5000	0.5774	4
Halichoeres semicinctus Female	7/14/2006	0.2500	0.5000	4
Halichoeres semicinctus Female	9/20/2006	0.7500	0.5000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Potato Pasture				
Chromis punctipinnis Adult	8/7/2006	**0.7500**	**1.5000**	**4**
Chromis punctipinnis Adult	8/25/2006	**29.3750**	**35.6889**	**8**
Chromis punctipinnis Juvenile	8/7/2006	**4.5000**	**9.0000**	**4**
Chromis punctipinnis Juvenile	8/25/2006	**7.5000**	**14.8805**	**8**
Oxyjulis californica Adult	8/7/2006	**0.2500**	**0.5000**	**4**
Oxyjulis californica Adult	8/25/2006	**0.0000**	**0.0000**	**8**
Oxyjulis californica Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Oxyjulis californica Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Sebastes mystinus Adult	8/7/2006	**0.0000**	**0.0000**	**4**
Sebastes mystinus Adult	8/25/2006	**0.0000**	**0.0000**	**8**
Sebastes mystinus Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Sebastes mystinus Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Sebastes serranoides Adult	8/7/2006	**0.0000**	**0.0000**	**4**
Sebastes serranoides Adult	8/25/2006	**0.2500**	**0.4629**	**8**
Sebastes serranoides Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Sebastes serranoides Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Sebastes atrovirens Adult	8/7/2006	**0.0000**	**0.0000**	**4**
Sebastes atrovirens Adult	8/25/2006	**0.0000**	**0.0000**	**8**
Sebastes atrovirens Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Sebastes atrovirens Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Paralabrax clathratus Adult	8/7/2006	**2.2500**	**1.2583**	**4**
Paralabrax clathratus Adult	8/25/2006	**1.6250**	**1.1877**	**8**
Paralabrax clathratus Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Paralabrax clathratus Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Semicossyphus pulcher Male	8/7/2006	**0.0000**	**0.0000**	**4**
Semicossyphus pulcher Male	8/25/2006	**0.0000**	**0.0000**	**8**
Semicossyphus pulcher Female	8/7/2006	**0.7500**	**0.9574**	**4**
Semicossyphus pulcher Female	8/25/2006	**0.0000**	**0.0000**	**8**
Semicossyphus pulcher Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Semicossyphus pulcher Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Embiotoca jacksoni Adult	8/7/2006	**2.2500**	**2.8723**	**4**
Embiotoca jacksoni Adult	8/25/2006	**0.3750**	**1.0607**	**8**
Embiotoca jacksoni Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Embiotoca jacksoni Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Embiotoca lateralis Adult	8/7/2006	**0.0000**	**0.0000**	**4**
Embiotoca lateralis Adult	8/25/2006	**0.0000**	**0.0000**	**8**
Embiotoca lateralis Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Embiotoca lateralis Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Damalichthys vacca Adult	8/7/2006	**1.5000**	**1.7321**	**4**
Damalichthys vacca Adult	8/25/2006	**1.7500**	**1.2817**	**8**
Damalichthys vacca Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Damalichthys vacca Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Hypsypops rubicundus Adult	8/7/2006	**1.2500**	**1.5000**	**4**
Hypsypops rubicundus Adult	8/25/2006	**1.5000**	**1.4142**	**8**
Hypsypops rubicundus Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Hypsypops rubicundus Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Girella nigricans Adult	8/7/2006	**0.0000**	**0.0000**	**4**
Girella nigricans Adult	8/25/2006	**0.8750**	**1.3562**	**8**
Girella nigricans Juvenile	8/7/2006	**0.0000**	**0.0000**	**4**
Girella nigricans Juvenile	8/25/2006	**0.0000**	**0.0000**	**8**
Halichoeres semicinctus Male	8/7/2006	**0.0000**	**0.0000**	**4**
Halichoeres semicinctus Male	8/25/2006	**0.1250**	**0.3536**	**8**
Halichoeres semicinctus Female	8/7/2006	**0.7500**	**0.5000**	**4**
Halichoeres semicinctus Female	8/25/2006	**0.5000**	**0.7559**	**8**

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Cavern Point				
Chromis punctipinnis Adult	6/8/2006	**3.7500**	**3.4034**	**4**
Chromis punctipinnis Adult	9/20/2006	**6.7500**	**5.7373**	**4**
Chromis punctipinnis Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Chromis punctipinnis Juvenile	9/20/2006	**5.0000**	**3.6515**	**4**
Oxyjulis californica Adult	6/8/2006	**0.2500**	**0.5000**	**4**
Oxyjulis californica Adult	9/20/2006	**9.2500**	**6.6521**	**4**
Oxyjulis californica Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Oxyjulis californica Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Sebastes mystinus Adult	6/8/2006	**0.0000**	**0.0000**	**4**
Sebastes mystinus Adult	9/20/2006	**0.0000**	**0.0000**	**4**
Sebastes mystinus Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Sebastes mystinus Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Sebastes serranoides Adult	6/8/2006	**0.0000**	**0.0000**	**4**
Sebastes serranoides Adult	9/20/2006	**0.0000**	**0.0000**	**4**
Sebastes serranoides Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Sebastes serranoides Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Sebastes atrovirens Adult	6/8/2006	**0.0000**	**0.0000**	**4**
Sebastes atrovirens Adult	9/20/2006	**0.0000**	**0.0000**	**4**
Sebastes atrovirens Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Sebastes atrovirens Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Paralabrax clathratus Adult	6/8/2006	**1.5000**	**0.5774**	**4**
Paralabrax clathratus Adult	9/20/2006	**2.0000**	**0.8165**	**4**
Paralabrax clathratus Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Paralabrax clathratus Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Semicossyphus pulcher Male	6/8/2006	**0.0000**	**0.0000**	**4**
Semicossyphus pulcher Male	9/20/2006	**0.0000**	**0.0000**	**4**
Semicossyphus pulcher Female	6/8/2006	**1.2500**	**0.5000**	**4**
Semicossyphus pulcher Female	9/20/2006	**0.5000**	**0.5774**	**4**
Semicossyphus pulcher Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Semicossyphus pulcher Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Embiotoca jacksoni Adult	6/8/2006	**1.5000**	**1.2910**	**4**
Embiotoca jacksoni Adult	9/20/2006	**0.7500**	**0.5000**	**4**
Embiotoca jacksoni Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Embiotoca jacksoni Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Embiotoca lateralis Adult	6/8/2006	**0.0000**	**0.0000**	**4**
Embiotoca lateralis Adult	9/20/2006	**0.0000**	**0.0000**	**4**
Embiotoca lateralis Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Embiotoca lateralis Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Damalichthys vacca Adult	6/8/2006	**1.5000**	**2.3805**	**4**
Damalichthys vacca Adult	9/20/2006	**0.5000**	**0.5774**	**4**
Damalichthys vacca Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Damalichthys vacca Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Hypsypops rubicundus Adult	6/8/2006	**0.7500**	**0.9574**	**4**
Hypsypops rubicundus Adult	9/20/2006	**1.2500**	**1.5000**	**4**
Hypsypops rubicundus Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Hypsypops rubicundus Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Girella nigricans Adult	6/8/2006	**0.0000**	**0.0000**	**4**
Girella nigricans Adult	9/20/2006	**0.2500**	**0.5000**	**4**
Girella nigricans Juvenile	6/8/2006	**0.0000**	**0.0000**	**4**
Girella nigricans Juvenile	9/20/2006	**0.0000**	**0.0000**	**4**
Halichoeres semicinctus Male	6/8/2006	**0.2500**	**0.5000**	**4**
Halichoeres semicinctus Male	9/20/2006	**0.2500**	**0.5000**	**4**
Halichoeres semicinctus Female	6/8/2006	**0.2500**	**0.5000**	**4**
Halichoeres semicinctus Female	9/20/2006	**0.5000**	**1.0000**	**4**

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Little Scorpion				
Chromis punctipinnis Adult	7/20/2006	8.2500	4.5000	4
Chromis punctipinnis Juvenile	7/20/2006	0.2500	0.5000	4
Oxyjulis californica Adult	7/20/2006	1.2500	0.5000	4
Oxyjulis californica Juvenile	7/20/2006	0.0000	0.0000	4
Sebastes mystinus Adult	7/20/2006	0.5000	0.5774	4
Sebastes mystinus Juvenile	7/20/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/20/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/20/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/20/2006	1.2500	1.8930	4
Sebastes atrovirens Juvenile	7/20/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/20/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/20/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/20/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	7/20/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	7/20/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/20/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	7/20/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/20/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/20/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/20/2006	1.2500	0.9574	4
Damalichthys vacca Juvenile	7/20/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/20/2006	1.5000	0.5774	4
Hypsypops rubicundus Juvenile	7/20/2006	0.0000	0.0000	4
Girella nigricans Adult	7/20/2006	0.0000	0.0000	4
Girella nigricans Juvenile	7/20/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/20/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/20/2006	0.0000	0.0000	4
Santa Cruz Island - Pedro Reef				
Chromis punctipinnis Adult	8/18/2006	11.5000	13.0000	4
Chromis punctipinnis Adult	9/21/2006	12.2500	7.3655	4
Chromis punctipinnis Juvenile	8/18/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	9/21/2006	1.2500	2.5000	4
Oxyjulis californica Adult	8/18/2006	15.5000	17.6352	4
Oxyjulis californica Adult	9/21/2006	7.2500	4.9917	4
Oxyjulis californica Juvenile	8/18/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	9/21/2006	0.0000	0.0000	4
Sebastes mystinus Adult	8/18/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/21/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/18/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/21/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/18/2006	0.0000	0.0000	4
Sebastes serranoides Adult	9/21/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/18/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/21/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/18/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/21/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/18/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/21/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/18/2006	1.2500	1.5000	4
Paralabrax clathratus Adult	9/21/2006	1.0000	1.4142	4
Paralabrax clathratus Juvenile	8/18/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/21/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	8/18/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/21/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/18/2006	0.7500	0.9574	4
Semicossyphus pulcher Female	9/21/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	8/18/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/21/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Cruz Island - Pedro Reef continued				
Embiotoca jacksoni Adult	8/18/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	9/21/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/18/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	9/21/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/18/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/21/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/18/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/21/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/18/2006	0.2500	0.5000	4
Damalichthys vacca Adult	9/21/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/18/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/21/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/18/2006	0.5000	0.5774	4
Hypsypops rubicundus Adult	9/21/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/18/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/21/2006	0.0000	0.0000	4
Girella nigricans Adult	8/18/2006	0.5000	1.0000	4
Girella nigricans Adult	9/21/2006	0.0000	0.0000	4
Girella nigricans Juvenile	8/18/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/21/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/18/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	9/21/2006	0.2500	0.5000	4
Halichoeres semicinctus Female	8/18/2006	0.5000	0.5774	4
Halichoeres semicinctus Female	9/21/2006	0.0000	0.0000	4
Anacapa Island - Keyhole				
Chromis punctipinnis Adult	8/17/2006	4.7500	4.5735	4
Chromis punctipinnis Adult	9/7/2006	40.7500	12.0934	4
Chromis punctipinnis Juvenile	8/17/2006	18.2500	26.8126	4
Chromis punctipinnis Juvenile	9/7/2006	2.5000	2.8868	4
Oxyjulis californica Adult	8/17/2006	5.5000	7.0475	4
Oxyjulis californica Adult	9/7/2006	18.2500	6.1847	4
Oxyjulis californica Juvenile	8/17/2006	20.2500	16.3376	4
Oxyjulis californica Juvenile	9/7/2006	9.2500	10.6888	4
Sebastes mystinus Adult	8/17/2006	0.0000	0.0000	4
Sebastes mystinus Adult	9/7/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/17/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	9/7/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/17/2006	0.0000	0.0000	4
Sebastes serranoides Adult	9/7/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/17/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	9/7/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/17/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	9/7/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/17/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	9/7/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/17/2006	2.0000	0.8165	4
Paralabrax clathratus Adult	9/7/2006	2.7500	1.2583	4
Paralabrax clathratus Juvenile	8/17/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	9/7/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	8/17/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	9/7/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/17/2006	1.0000	0.8165	4
Semicossyphus pulcher Female	9/7/2006	1.2500	0.9574	4
Semicossyphus pulcher Juvenile	8/17/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	9/7/2006	0.5000	1.0000	4
Embiotoca jacksoni Adult	8/17/2006	1.0000	0.8165	4
Embiotoca jacksoni Adult	9/7/2006	3.0000	1.6330	4
Embiotoca jacksoni Juvenile	8/17/2006	0.5000	1.0000	4
Embiotoca jacksoni Juvenile	9/7/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Anacapa Island – Keyhole continued				
Embiotoca lateralis Adult	8/17/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	9/7/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/17/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	9/7/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/17/2006	0.0000	0.0000	4
Damalichthys vacca Adult	9/7/2006	0.5000	0.5774	4
Damalichthys vacca Juvenile	8/17/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	9/7/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/17/2006	0.7500	0.5000	4
Hypsypops rubicundus Adult	9/7/2006	1.5000	0.5774	4
Hypsypops rubicundus Juvenile	8/17/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	9/7/2006	0.0000	0.0000	4
Girella nigricans Adult	8/17/2006	0.0000	0.0000	4
Girella nigricans Adult	9/7/2006	1.7500	1.2583	4
Girella nigricans Juvenile	8/17/2006	0.0000	0.0000	4
Girella nigricans Juvenile	9/7/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/17/2006	0.7500	1.5000	4
Halichoeres semicinctus Male	9/7/2006	0.5000	0.5774	4
Halichoeres semicinctus Female	8/17/2006	2.0000	1.4142	4
Halichoeres semicinctus Female	9/7/2006	0.7500	1.5000	4
Anacapa Island - East Fish Camp				
Chromis punctipinnis Adult	8/22/2006	0.5000	1.0000	4
Chromis punctipinnis Juvenile	8/22/2006	0.0000	0.0000	4
Oxyjulis californica Adult	8/22/2006	0.2500	0.5000	4
Oxyjulis californica Juvenile	8/22/2006	0.0000	0.0000	4
Sebastes mystinus Adult	8/22/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/22/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/22/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/22/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/22/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/22/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	8/22/2006	0.2500	0.5000	4
Paralabrax clathratus Juvenile	8/22/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	8/22/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	8/22/2006	1.5000	1.2910	4
Semicossyphus pulcher Juvenile	8/22/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/22/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/22/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/22/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/22/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/22/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/22/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	8/22/2006	1.7500	1.2583	4
Hypsypops rubicundus Juvenile	8/22/2006	0.0000	0.0000	4
Girella nigricans Adult	8/22/2006	0.0000	0.0000	4
Girella nigricans Juvenile	8/22/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/22/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	8/22/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Anacapa Island - Black Sea Bass Reef				
Chromis punctipinnis Adult	6/9/2006	2.2500	2.0616	4
Chromis punctipinnis Adult	8/3/2006	8.0000	5.7735	4
Chromis punctipinnis Juvenile	6/9/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	8/3/2006	21.5000	21.0634	4
Oxyjulis californica Adult	6/9/2006	0.0000	0.0000	4
Oxyjulis californica Adult	8/3/2006	1.5000	1.2910	4
Oxyjulis californica Juvenile	6/9/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	8/3/2006	0.0000	0.0000	4
Sebastes mystinus Adult	6/9/2006	0.0000	0.0000	4
Sebastes mystinus Adult	8/3/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/9/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	8/3/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/9/2006	0.0000	0.0000	4
Sebastes serranoides Adult	8/3/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/9/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	8/3/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/9/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	8/3/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/9/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	8/3/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/9/2006	3.0000	4.2426	4
Paralabrax clathratus Adult	8/3/2006	0.7500	0.5000	4
Paralabrax clathratus Juvenile	6/9/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	8/3/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/9/2006	0.2500	0.5000	4
Semicossyphus pulcher Male	8/3/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	6/9/2006	0.5000	0.5774	4
Semicossyphus pulcher Female	8/3/2006	0.2500	0.5000	4
Semicossyphus pulcher Juvenile	6/9/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	8/3/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/9/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	8/3/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	6/9/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	8/3/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	6/9/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	8/3/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/9/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	8/3/2006	0.0000	0.0000	4
Damalichthys vacca Adult	6/9/2006	0.0000	0.0000	4
Damalichthys vacca Adult	8/3/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/9/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	8/3/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/9/2006	1.0000	1.1547	4
Hypsypops rubicundus Adult	8/3/2006	0.5000	1.0000	4
Hypsypops rubicundus Juvenile	6/9/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	8/3/2006	0.0000	0.0000	4
Girella nigricans Adult	6/9/2006	0.7500	1.5000	4
Girella nigricans Adult	8/3/2006	0.0000	0.0000	4
Girella nigricans Juvenile	6/9/2006	0.0000	0.0000	4
Girella nigricans Juvenile	8/3/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/9/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	8/3/2006	1.0000	0.0000	4
Halichoeres semicinctus Female	6/9/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	8/3/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Anacapa Island - Lighthouse				
Chromis punctipinnis Adult	7/21/2006	30.0000	33.8132	4
Chromis punctipinnis Juvenile	7/21/2006	0.0000	0.0000	4
Oxyjulis californica Adult	7/21/2006	1.5000	1.9149	4
Oxyjulis californica Juvenile	7/21/2006	0.0000	0.0000	4
Sebastes mystinus Adult	7/21/2006	0.2500	0.5000	4
Sebastes mystinus Juvenile	7/21/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/21/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/21/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/21/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	7/21/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/21/2006	0.5000	0.5774	4
Paralabrax clathratus Juvenile	7/21/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/21/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	7/21/2006	2.0000	1.6330	4
Semicossyphus pulcher Juvenile	7/21/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/21/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	7/21/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/21/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/21/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/21/2006	1.2500	2.5000	4
Damalichthys vacca Juvenile	7/21/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/21/2006	1.5000	1.2910	4
Hypsypops rubicundus Juvenile	7/21/2006	0.0000	0.0000	4
Girella nigricans Adult	7/21/2006	0.5000	0.5774	4
Girella nigricans Juvenile	7/21/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/21/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/21/2006	0.7500	0.9574	4
Santa Barbara Island - Webster's Arch				
Chromis punctipinnis Adult	6/20/2006	11.0000	14.2829	4
Chromis punctipinnis Adult	7/25/2006	18.2500	13.0990	4
Chromis punctipinnis Juvenile	6/20/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	7/25/2006	0.0000	0.0000	4
Oxyjulis californica Adult	6/20/2006	0.5000	0.5774	4
Oxyjulis californica Adult	7/25/2006	0.2500	0.5000	4
Oxyjulis californica Juvenile	6/20/2006	0.0000	0.0000	4
Oxyjulis californica Juvenile	7/25/2006	0.0000	0.0000	4
Sebastes mystinus Adult	6/20/2006	0.0000	0.0000	4
Sebastes mystinus Adult	7/25/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	6/20/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	7/25/2006	0.0000	0.0000	4
Sebastes serranoides Adult	6/20/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/25/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	6/20/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/25/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	6/20/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/25/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	6/20/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	7/25/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	6/20/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/25/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	6/20/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/25/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	6/20/2006	0.7500	0.5000	4
Semicossyphus pulcher Male	7/25/2006	0.2500	0.5000	4
Semicossyphus pulcher Female	6/20/2006	1.0000	0.8165	4
Semicossyphus pulcher Female	7/25/2006	1.0000	0.8165	4
Semicossyphus pulcher Juvenile	6/20/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Barbara Island - Webster's Arch continued				
Semicossyphus pulcher Juvenile	7/25/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	6/20/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/25/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	6/20/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	7/25/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	6/20/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	7/25/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	6/20/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/25/2006	0.0000	0.0000	4
Damalichthys vacca Adult	6/20/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/25/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	6/20/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	7/25/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	6/20/2006	0.7500	0.9574	4
Hypsypops rubicundus Adult	7/25/2006	1.2500	0.9574	4
Hypsypops rubicundus Juvenile	6/20/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	7/25/2006	0.0000	0.0000	4
Girella nigricans Adult	6/20/2006	0.0000	0.0000	4
Girella nigricans Adult	7/25/2006	0.0000	0.0000	4
Girella nigricans Juvenile	6/20/2006	0.0000	0.0000	4
Girella nigricans Juvenile	7/25/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	6/20/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/25/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	6/20/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/25/2006	0.0000	0.0000	4
Santa Barbara Island - Graveyard Canyon				
Chromis punctipinnis Adult	5/22/2006	0.0000	0.0000	4
Chromis punctipinnis Juvenile	5/22/2006	0.0000	0.0000	4
Oxyjulis californica Adult	5/22/2006	4.0000	6.7330	4
Oxyjulis californica Juvenile	5/22/2006	0.0000	0.0000	4
Sebastes mystinus Adult	5/22/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	5/22/2006	0.0000	0.0000	4
Sebastes serranoides Adult	5/22/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	5/22/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	5/22/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	5/22/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	5/22/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	5/22/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	5/22/2006	0.2500	0.5000	4
Semicossyphus pulcher Female	5/22/2006	0.0000	0.0000	4
Semicossyphus pulcher Juvenile	5/22/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	5/22/2006	0.0000	0.0000	4
Embiotoca jacksoni Juvenile	5/22/2006	0.0000	0.0000	4
Embiotoca lateralis Adult	5/22/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	5/22/2006	0.0000	0.0000	4
Damalichthys vacca Adult	5/22/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	5/22/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	5/22/2006	0.0000	0.0000	4
Hypsypops rubicundus Juvenile	5/22/2006	0.0000	0.0000	4
Girella nigricans Adult	5/22/2006	0.0000	0.0000	4
Girella nigricans Juvenile	5/22/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	5/22/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	5/22/2006	0.0000	0.0000	4

2006 FISH TRANSECT DATA: MEAN NUMBER PER TRANSECT (300 M³)

	Date	Mean	Std. Dev.	n
Santa Barbara Island - Southeast Reef				
Chromis punctipinnis Adult	7/25/2006	26.0000	11.8322	4
Chromis punctipinnis Juvenile	7/25/2006	0.0000	0.0000	4
Oxyjulis californica Adult	7/25/2006	20.7500	14.6600	4
Oxyjulis californica Juvenile	7/25/2006	0.7500	1.5000	4
Sebastes mystinus Adult	7/25/2006	0.0000	0.0000	4
Sebastes mystinus Juvenile	7/25/2006	0.0000	0.0000	4
Sebastes serranoides Adult	7/25/2006	0.0000	0.0000	4
Sebastes serranoides Juvenile	7/25/2006	0.0000	0.0000	4
Sebastes atrovirens Adult	7/25/2006	0.0000	0.0000	4
Sebastes atrovirens Juvenile	7/25/2006	0.0000	0.0000	4
Paralabrax clathratus Adult	7/25/2006	0.0000	0.0000	4
Paralabrax clathratus Juvenile	7/25/2006	0.0000	0.0000	4
Semicossyphus pulcher Male	7/25/2006	0.0000	0.0000	4
Semicossyphus pulcher Female	7/25/2006	1.5000	1.0000	4
Semicossyphus pulcher Juvenile	7/25/2006	0.0000	0.0000	4
Embiotoca jacksoni Adult	7/25/2006	0.2500	0.5000	4
Embiotoca jacksoni Juvenile	7/25/2006	0.2500	0.5000	4
Embiotoca lateralis Adult	7/25/2006	0.0000	0.0000	4
Embiotoca lateralis Juvenile	7/25/2006	0.0000	0.0000	4
Damalichthys vacca Adult	7/25/2006	0.0000	0.0000	4
Damalichthys vacca Juvenile	7/25/2006	0.0000	0.0000	4
Hypsypops rubicundus Adult	7/25/2006	2.0000	0.8165	4
Hypsypops rubicundus Juvenile	7/25/2006	0.0000	0.0000	4
Girella nigricans Adult	7/25/2006	0.7500	0.9574	4
Girella nigricans Juvenile	7/25/2006	0.0000	0.0000	4
Halichoeres semicinctus Male	7/25/2006	0.0000	0.0000	4
Halichoeres semicinctus Female	7/25/2006	0.0000	0.0000	4

Appendix F. Roving Diver Fish Count.

2006 ROVING DIVER FISH COUNT:

Island:	Site Name:	Date:	Number of Observers:	Number of species observed:
San Miguel	Wyckoff Ledge	9/12/2006	4	22
San Miguel	Hare Rock	6/21/2006	3	22
Santa Rosa	Johnson's Lee North	8/9/2006	5	29
Santa Rosa	Johnson's Lee South	8/9/2006	4	25
Santa Rosa	Rodes Reef	6/22/2006	4	20
Santa Cruz	Gull Island South	7/10/2006	5	21
Santa Cruz	Fry's Harbor	6/5/2006	5	26
Santa Cruz	Fry's Harbor	9/26/2006	5	32
Santa Cruz	Pelican Bay	7/28/2006	6	26
Santa Cruz	Pelican Bay	9/15/2006	6	24
Santa Cruz	Scorpion Anchorage	8/24/2006	6	24
Santa Cruz	Yellow Banks	8/21/2006	5	17
Anacapa	Admiral's Reef	8/8/2006	5	25
Anacapa	Admiral's Reef	9/28/2006	7	24
Anacapa	Cathedral Cove	8/4/2006	4	30
Anacapa	Landing Cove	6/9/2006	6	24
Anacapa	Landing Cove	9/27/2006	7	27
Santa Barbara	SE Sea Lion Rookery	5/24/2006	3	10
Santa Barbara	Arch Point	5/23/2006	4	17
Santa Barbara	Cat Canyon	6/19/2006	5	18
San Miguel	Miracle Mile	9/13/2006	5	27
Santa Rosa	Cluster Point	7/26/2006	6	21
Santa Rosa	Trancion Canyon	7/13/2006	5	22
Santa Rosa	Chickasaw	7/11/2006	5	28
Santa Rosa	South Point	6/6/2006	5	20
Santa Cruz	Devil's Peak Member	9/20/2006	5	29
Santa Cruz	Potato Pasture	8/7/2006	6	23
Santa Cruz	Potato Pasture	8/25/2006	5	26
Santa Cruz	Cavern Point	6/8/2006	5	25
Santa Cruz	Cavern Point	9/20/2006	4	21
Santa Cruz	Little Scorpion	7/20/2006	5	28
Santa Cruz	Little Scorpion	9/20/2006	4	26
Santa Cruz	Pedro Reef	8/18/2006	5	21
Santa Cruz	Pedro Reef	9/21/2006	4	21
Anacapa	Keyhole	8/17/2006	6	25
Anacapa	Keyhole	9/7/2006	3	19
Anacapa	East Fish Camp	8/22/2006	5	18
Anacapa	Black Sea Bass Reef	6/9/2006	4	16
Anacapa	Black Sea Bass Reef	8/3/2006	5	21
Anacapa	Lighthouse	7/21/2006	6	22
Santa Barbara	Webster's Arch	6/20/2006	4	14
Santa Barbara	Webster's Arch	7/25/2006	4	19
Santa Barbara	Graveyard Canyon	5/22/2006	5	20
Santa Barbara	Southeast Reef	7/25/2006	6	25

2006 ROVING DIVER FISH COUNT:
San Miguel Island - Wyckoff Ledge

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	9/12/2006	4	4	8.75	1.89	2.00	0.00	7.67	1.53
black surfperch, adult	9/12/2006	4	3	8.67	0.58	2.00	0.00	3.67	1.53
black surfperch, all	9/12/2006	4	4	8.25	0.96	1.75	0.50	6.33	3.79
black surfperch, juvenile	9/12/2006	4	3	6.00	5.20	1.33	1.15	2.67	2.52
blackeye goby	9/12/2006	4	4	6.00	4.24	1.50	1.00	6.00	1.73
blacksmith, adult	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, all	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/12/2006	4	3	7.33	0.58	2.33	0.58	13.00	9.85
blue rockfish, all	9/12/2006	4	4	7.75	0.96	2.25	0.50	13.00	9.85
blue rockfish, juvenile	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
brown rockfish	9/12/2006	4	3	8.33	2.08	1.33	0.58	1.50	0.71
California sheephead, fem	9/12/2006	4	4	4.25	4.92	0.50	0.58	0.33	0.58
California sheephead, juv	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/12/2006	4	4	2.25	4.50	0.25	0.50	0.33	0.58
copper rockfish	9/12/2006	4	4	7.75	2.63	2.00	0.00	2.67	1.15
garibaldi, adult	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	9/12/2006	4	1	10.00		1.00			
island kelpfish	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/12/2006	4	3	9.00	1.00	2.00	0.00	6.33	1.53
kelp rockfish, all	9/12/2006	4	4	9.25	0.96	2.25	0.50	8.67	5.51
kelp rockfish, juvenile	9/12/2006	4	3	2.33	4.04	0.67	1.15	2.33	4.04
kelp surfperch	9/12/2006	4	3	9.67	0.58	2.00	0.00	7.50	0.71
lavender sculpin	9/12/2006	4	1	7.00		1.00		1.00	
lingcod	9/12/2006	4	4	7.50	0.58	1.25	0.50	1.00	0.00
olive rockfish, adult	9/12/2006	4	3	4.67	4.04	0.67	0.58	0.67	0.58
olive rockfish, all	9/12/2006	4	4	5.50	3.70	0.75	0.50	0.67	0.58
olive/yellowtail rockfish, juv	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	9/12/2006	4	4	8.50	0.58	2.00	0.00	4.00	1.00
pile surfperch, adult	9/12/2006	4	3	6.33	5.51	0.67	0.58	0.67	0.58
pile surfperch, all	9/12/2006	4	4	7.50	2.38	1.50	0.58	1.33	0.58
pile surfperch, juvenile	9/12/2006	4	3	4.33	4.04	0.67	0.58	0.67	0.58
rainbow surfperch	9/12/2006	4	3	7.67	1.53	1.67	0.58	3.00	0.00
rock wrasse, female	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/12/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
speckled sanddab	9/12/2006	4	1	6.00		2.00		3.00	
striped surfperch, adult	9/12/2006	4	3	8.00	1.00	2.33	0.58	9.67	6.43
striped surfperch, all	9/12/2006	4	4	8.50	1.00	2.50	0.58	13.00	8.00
striped surfperch, juvenile	9/12/2006	4	3	6.00	5.20	1.33	1.15	3.00	3.00
top smelt	9/12/2006	4	1	10.00		3.00		11.00	
treefish, adult	9/12/2006	4	4	5.00	5.77	0.50	0.58	0.33	0.58
treefish, juvenile	9/12/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	9/12/2006	4	3	10.00	0.00	4.00	0.00	325.00	45.83
vermillion rockfish	9/12/2006	4	3	6.67	1.15	1.33	0.58	1.50	0.71

2006 ROVING DIVER FISH COUNT:
San Miguel Island - Hare Rock

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	6/21/2006	3	3	8.00	1.73	2.00	0.00	5.33	3.51
black surfperch, adult	6/21/2006	3	3	8.00	1.73	2.00	0.00	3.67	1.53
black surfperch, all	6/21/2006	3	3	8.00	1.73	2.00	0.00	3.67	1.53
black surfperch, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/21/2006	3	3	9.33	0.58	3.00	0.00	17.00	4.58
blacksmith, adult	6/21/2006	3	3	8.00	1.73	2.67	0.58	14.67	10.41
blacksmith, all	6/21/2006	3	3	8.00	1.73	2.67	0.58	14.67	10.41
blacksmith, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/21/2006	3	3	10.00	0.00	3.00	0.00	23.67	11.15
blue rockfish, all	6/21/2006	3	3	10.00	0.00	3.00	0.00	23.67	11.15
blue rockfish, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	6/21/2006	3	2	8.50	2.12	1.00	0.00	1.00	0.00
California sheephead, fem	6/21/2006	3	3	8.33	1.15	1.67	0.58	3.00	1.73
California sheephead, juv	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/21/2006	3	3	8.67	0.58	1.33	0.58	1.33	0.58
copper rockfish	6/21/2006	3	2	5.00	0.00	1.00	0.00	1.00	0.00
coralline sculpin	6/21/2006	3	1	10.00		2.00		5.00	
garibaldi, adult	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/21/2006	3	3	8.33	2.08	2.33	0.58	8.67	3.06
kelp rockfish, all	6/21/2006	3	3	8.33	2.08	2.33	0.58	8.67	3.06
kelp rockfish, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	6/21/2006	3	3	7.33	2.08	2.33	0.58	5.67	5.51
kelpfish spp.	6/21/2006	3	1	7.00		1.00		1.00	
lingcod	6/21/2006	3	2	8.00	2.83	1.50	0.71	1.50	0.71
olive rockfish, adult	6/21/2006	3	3	5.33	4.73	1.00	1.00	1.00	1.00
olive rockfish, all	6/21/2006	3	3	5.33	4.73	1.00	1.00	1.00	1.00
olive/yellowtail rockfish, juv	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/21/2006	3	3	9.33	1.15	2.67	0.58	14.67	7.02
pile surfperch, adult	6/21/2006	3	3	9.67	0.58	2.33	0.58	7.00	4.00
pile surfperch, all	6/21/2006	3	3	9.67	0.58	2.33	0.58	8.00	4.36
pile surfperch, juvenile	6/21/2006	3	3	1.67	2.89	0.67	1.15	1.00	1.73
rainbow surfperch	6/21/2006	3	3	7.67	1.53	2.00	0.00	4.67	1.15
rock wrasse, female	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	6/21/2006	3	1	7.00		1.00		1.00	
senorita, adult	6/21/2006	3	3	8.33	0.58	2.67	0.58	31.67	24.44
senorita, all	6/21/2006	3	3	8.33	0.58	2.67	0.58	31.67	24.44
senorita, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	6/21/2006	3	3	8.33	0.58	1.67	0.58	2.00	1.00
striped surfperch, adult	6/21/2006	3	3	10.00	0.00	3.00	0.00	18.33	3.51
striped surfperch, all	6/21/2006	3	3	10.00	0.00	3.00	0.00	30.67	2.08
striped surfperch, juvenile	6/21/2006	3	3	10.00	0.00	3.00	0.00	12.33	2.31
treefish, adult	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	6/21/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	6/21/2006	3	3	6.67	2.08	3.67	0.58	396.67	554.08

2006 ROVING DIVER FISH COUNT:
Santa Rosa Island - Johnson's Lee North

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	8/9/2006	5	5	9.00	1.41	2.20	0.45	8.20	4.09
black surfperch, adult	8/9/2006	5	5	10.00	0.00	2.40	0.55	11.20	4.82
black surfperch, all	8/9/2006	5	5	10.00	0.00	2.80	0.45	12.80	3.27
black surfperch, juvenile	8/9/2006	5	5	4.00	5.48	0.80	1.10	1.60	2.30
blackeye goby	8/9/2006	5	5	9.80	0.45	2.20	0.45	8.40	4.83
blacksmith, adult	8/9/2006	5	5	10.00	0.00	2.80	0.45	22.20	16.53
blacksmith, all	8/9/2006	5	5	10.00	0.00	2.80	0.45	32.60	19.92
blacksmith, juvenile	8/9/2006	5	5	6.20	3.90	1.80	1.10	10.40	15.65
blue rockfish, adult	8/9/2006	5	5	3.20	4.38	0.40	0.55	0.40	0.55
blue rockfish, all	8/9/2006	5	5	3.20	4.38	0.40	0.55	0.40	0.55
blue rockfish, juvenile	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, fem	8/9/2006	5	5	4.40	4.28	1.00	1.00	1.20	1.30
California sheephead, juv	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/9/2006	5	5	1.00	2.24	0.20	0.45	0.20	0.45
garibaldi, adult	8/9/2006	5	5	9.80	0.45	2.00	0.00	4.40	1.52
garibaldi, juvenile	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish, juvenile	8/9/2006	5	1	5.00		3.00		11.00	
gopher rockfish	8/9/2006	5	4	7.25	2.06	1.50	0.58	1.75	0.96
gopher/copper rockfish, juv	8/9/2006	5	2	8.00	0.00	2.00	0.00	4.00	0.00
halfmoon	8/9/2006	5	4	7.25	2.63	1.50	0.58	2.00	1.41
island kelpfish	8/9/2006	5	5	1.20	2.68	0.20	0.45	0.20	0.45
kelp bass, adult	8/9/2006	5	5	8.40	1.67	2.00	0.00	4.60	2.30
kelp bass, calico bass, all	8/9/2006	5	5	8.40	1.67	2.00	0.00	4.60	2.30
kelp bass, juvenile	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/9/2006	5	5	10.00	0.00	3.00	0.00	47.40	12.64
kelp rockfish, all	8/9/2006	5	5	10.00	0.00	3.00	0.00	50.40	15.29
kelp rockfish, juvenile	8/9/2006	5	5	5.00	4.58	1.20	1.10	3.00	3.08
kelp surfperch	8/9/2006	5	4	9.00	1.15	2.25	0.50	8.00	6.68
kelpfish spp.	8/9/2006	5	1	10.00		1.00		1.00	
lavender sculpin	8/9/2006	5	2	8.50	2.12	1.00	0.00	1.00	0.00
olive rockfish, adult	8/9/2006	5	5	6.40	3.91	1.40	0.89	2.80	3.11
olive rockfish, all	8/9/2006	5	5	7.00	4.06	1.40	0.89	3.40	3.91
olive/yellowtail rockfish, juv	8/9/2006	5	5	3.00	4.24	0.60	0.89	0.60	0.89
opaleye, adult	8/9/2006	5	5	8.80	2.17	1.80	0.45	1.80	0.45
opaleye, all	8/9/2006	5	5	8.80	2.17	1.80	0.45	1.80	0.45
opaleye, juvenile	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/9/2006	5	5	9.80	0.45	2.80	0.45	20.00	9.75
pile surfperch, adult	8/9/2006	5	5	9.40	0.89	2.00	0.00	4.00	0.71
pile surfperch, all	8/9/2006	5	5	9.40	0.89	2.00	0.00	4.00	0.71
pile surfperch, juvenile	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rainbow surfperch	8/9/2006	5	3	9.67	0.58	2.00	0.00	5.00	2.65
rock wrasse, female	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
scalyhead sculpin	8/9/2006	5	1	9.00		2.00		2.00	
senorita, adult	8/9/2006	5	5	9.60	0.89	3.00	0.00	19.00	5.24
senorita, all	8/9/2006	5	5	10.00	0.00	3.00	0.00	34.00	13.45
senorita, juvenile	8/9/2006	5	5	7.00	4.06	2.00	1.41	15.00	15.89
snubnose sculpin	8/9/2006	5	1	10.00		1.00		1.00	
striped surfperch, adult	8/9/2006	5	5	7.00	4.06	1.60	0.89	7.20	4.09
striped surfperch, all	8/9/2006	5	5	7.60	4.28	2.00	1.22	8.60	5.32
striped surfperch, juvenile	8/9/2006	5	5	3.80	5.22	0.80	1.10	1.40	1.95
top smelt	8/9/2006	5	3	10.00	0.00	3.00	0.00	50.00	13.23
treefish, adult	8/9/2006	5	5	5.20	4.87	1.20	1.10	2.40	2.51
treefish, juvenile	8/9/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Rosa Island - Johnson's Lee South

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	8/9/2006	4	4	8.75	1.50	2.00	0.82	7.50	6.81
black surfperch, adult	8/9/2006	4	4	9.50	0.58	2.25	0.50	7.25	3.50
black surfperch, all	8/9/2006	4	4	9.50	0.58	2.25	0.50	8.00	4.69
black surfperch, juvenile	8/9/2006	4	4	2.50	5.00	0.50	1.00	0.75	1.50
blackeye goby	8/9/2006	4	4	9.75	0.50	2.50	0.58	11.25	5.74
blacksmith, adult	8/9/2006	4	4	6.50	4.51	2.25	1.50	15.00	10.03
blacksmith, all	8/9/2006	4	4	6.50	4.51	2.25	1.50	15.00	10.03
blacksmith, juvenile	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/9/2006	4	4	4.50	5.26	1.00	1.15	2.25	2.63
blue rockfish, all	8/9/2006	4	4	4.50	5.26	1.00	1.15	2.25	2.63
blue rockfish, juvenile	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, fem	8/9/2006	4	4	10.00	0.00	2.25	0.50	8.00	2.94
California sheephead, juv	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/9/2006	4	4	6.75	4.72	1.25	0.96	2.00	1.83
coralline sculpin	8/9/2006	4	1	10.00		1.00		1.00	
garibaldi, adult	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	8/9/2006	4	1	9.00		1.00		1.00	
gopher/copper rockfish, juv	8/9/2006	4	3	9.33	1.15	1.33	0.58	4.00	5.20
halfmoon	8/9/2006	4	4	9.25	0.96	2.50	0.58	14.75	6.70
island kelpfish	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	8/9/2006	4	4	3.00	3.46	0.50	0.58	0.50	0.58
kelp bass, calico bass, all	8/9/2006	4	4	3.00	3.46	0.50	0.58	0.50	0.58
kelp bass, juvenile	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/9/2006	4	4	9.75	0.50	2.75	0.50	23.00	17.57
kelp rockfish, all	8/9/2006	4	4	9.75	0.50	3.00	0.00	24.75	18.63
kelp rockfish, juvenile	8/9/2006	4	4	3.75	4.35	1.00	1.15	1.75	2.06
kelp surfperch	8/9/2006	4	3	8.33	1.53	1.67	0.58	4.33	3.06
ocean whitefish	8/9/2006	4	2	9.00	1.41	1.00	0.00	1.00	0.00
olive rockfish, adult	8/9/2006	4	4	8.75	1.89	1.50	0.58	1.75	0.96
olive rockfish, all	8/9/2006	4	4	8.75	1.89	1.75	0.50	2.00	0.82
olive/yellowtail rockfish, juv	8/9/2006	4	4	1.50	3.00	0.25	0.50	0.25	0.50
opaleye, adult	8/9/2006	4	4	6.25	4.19	1.25	0.96	1.75	1.71
opaleye, all	8/9/2006	4	4	6.25	4.19	1.25	0.96	1.75	1.71
opaleye, juvenile	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/9/2006	4	4	10.00	0.00	2.25	0.50	7.25	3.30
pile surfperch, adult	8/9/2006	4	4	9.75	0.50	2.00	0.00	5.75	2.63
pile surfperch, all	8/9/2006	4	4	9.75	0.50	2.00	0.00	6.00	2.71
pile surfperch, juvenile	8/9/2006	4	4	1.75	3.50	0.25	0.50	0.25	0.50
rainbow surfperch	8/9/2006	4	1	9.00		1.00		1.00	
rock wrasse, female	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	8/9/2006	4	4	9.00	1.15	2.50	0.58	10.25	6.08
senorita, adult	8/9/2006	4	4	9.50	0.58	3.25	0.50	68.00	36.85
senorita, all	8/9/2006	4	4	9.50	0.58	3.25	0.50	69.50	39.79
senorita, juvenile	8/9/2006	4	4	2.25	4.50	0.50	1.00	1.50	3.00
snubnose sculpin	8/9/2006	4	1	6.00		1.00		1.00	
striped surfperch, adult	8/9/2006	4	4	10.00	0.00	3.00	0.00	21.00	3.74
striped surfperch, all	8/9/2006	4	4	10.00	0.00	3.00	0.00	23.75	6.34
striped surfperch, juvenile	8/9/2006	4	4	4.25	4.92	0.75	0.96	2.75	4.86
treefish, adult	8/9/2006	4	4	5.00	3.56	1.25	0.96	1.50	1.29
treefish, juvenile	8/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Rosa Island - Rodes Reef

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	6/22/2006	4	3	8.00	2.00	1.33	0.58	1.67	1.15
black rockfish	6/22/2006	4	2	9.00	0.00	1.50	0.71	2.50	2.12
black surfperch, adult	6/22/2006	4	3	9.67	0.58	1.67	0.58	3.00	2.00
black surfperch, all	6/22/2006	4	4	7.25	4.86	1.25	0.96	2.25	2.22
black surfperch, juvenile	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/22/2006	4	4	8.25	1.71	2.00	0.82	6.00	4.97
blacksmith, adult	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, all	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/22/2006	4	3	8.00	1.00	2.67	0.58	13.00	10.15
blue rockfish, all	6/22/2006	4	4	7.50	1.29	2.75	0.50	14.75	9.00
blue rockfish, juvenile	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	6/22/2006	4	4	8.75	1.50	1.25	0.50	1.25	0.50
California sheephead, fem	6/22/2006	4	4	9.50	1.00	1.75	0.50	2.75	1.26
California sheephead, juv	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/22/2006	4	4	10.00	0.00	1.75	0.50	1.75	0.50
copper rockfish	6/22/2006	4	2	8.00	0.00	1.50	0.71	2.50	2.12
coralline sculpin	6/22/2006	4	1	9.00		2.00		2.00	
garibaldi, adult	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	6/22/2006	4	1	9.00		1.00		1.00	
gopher/copper rockfish, juv	6/22/2006	4	1	5.00		1.00		1.00	
island kelpfish	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	6/22/2006	4	3	5.33	5.03	1.00	1.00	1.33	1.53
kelp bass, calico bass, all	6/22/2006	4	4	6.00	4.32	1.00	0.82	1.25	1.26
kelp bass, juvenile	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/22/2006	4	3	10.00	0.00	2.33	0.58	11.67	7.37
kelp rockfish, all	6/22/2006	4	4	10.00	0.00	2.25	0.50	10.75	6.95
kelp rockfish, juvenile	6/22/2006	4	3	1.67	2.89	0.33	0.58	0.33	0.58
lingcod	6/22/2006	4	2	8.00	1.41	1.50	0.71	1.50	0.71
ocean whitefish	6/22/2006	4	1	10.00		2.00		2.00	
olive rockfish, adult	6/22/2006	4	3	2.00	3.46	0.33	0.58	0.33	0.58
olive rockfish, all	6/22/2006	4	4	3.00	3.46	0.50	0.58	0.50	0.58
olive/yellowtail rockfish, juv	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/22/2006	4	4	10.00	0.00	3.00	0.00	17.50	4.51
pile surfperch, adult	6/22/2006	4	3	6.67	5.77	1.00	1.00	1.00	1.00
pile surfperch, all	6/22/2006	4	4	6.50	4.73	1.00	0.82	1.00	0.82
pile surfperch, juvenile	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
ronquil spp.	6/22/2006	4	1	6.00		1.00		1.00	
senorita, adult	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	6/22/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	6/22/2006	4	3	9.33	0.58	1.67	0.58	4.33	4.93
striped surfperch, all	6/22/2006	4	4	9.25	0.50	2.00	0.00	6.75	2.99
striped surfperch, juvenile	6/22/2006	4	3	4.67	4.16	1.33	1.15	2.00	2.00
treefish, adult	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	6/22/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Gull Island South

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	7/10/2006	5	3	8.33	2.08	2.00	0.00	3.67	2.08
black surfperch, adult	7/10/2006	5	5	9.40	0.89	2.00	0.00	6.20	1.79
black surfperch, all	7/10/2006	5	5	9.40	0.89	2.00	0.00	6.80	1.64
black surfperch, juvenile	7/10/2006	5	5	5.00	4.80	0.60	0.55	0.60	0.55
blackeye goby	7/10/2006	5	5	9.40	0.55	2.60	0.55	17.40	11.72
blacksmith, adult	7/10/2006	5	5	10.00	0.00	3.00	0.00	57.60	30.32
blacksmith, all	7/10/2006	5	5	10.00	0.00	3.00	0.00	57.60	30.32
blacksmith, juvenile	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/10/2006	5	5	10.00	0.00	2.80	0.45	16.80	8.07
blue rockfish, all	7/10/2006	5	5	10.00	0.00	2.80	0.45	19.20	9.58
blue rockfish, juvenile	7/10/2006	5	5	6.80	3.96	1.40	0.89	2.40	2.30
blue-banded goby	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, fem	7/10/2006	5	5	9.60	0.89	2.20	0.45	9.20	5.81
California sheephead, juv	7/10/2006	5	5	1.40	3.13	0.20	0.45	0.20	0.45
California sheephead, male	7/10/2006	5	5	8.20	1.79	1.80	0.45	3.20	1.92
garibaldi, adult	7/10/2006	5	5	4.00	3.67	0.80	0.84	0.80	0.84
garibaldi, juvenile	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	7/10/2006	5	2	8.50	0.71	1.50	0.71	2.50	2.12
island kelpfish	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/10/2006	5	5	5.80	3.49	0.80	0.45	0.80	0.45
kelp bass, calico bass, all	7/10/2006	5	5	5.80	3.49	0.80	0.45	0.80	0.45
kelp bass, juvenile	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/10/2006	5	5	9.40	0.89	2.60	0.55	9.60	5.94
kelp rockfish, all	7/10/2006	5	5	9.40	0.89	2.60	0.55	10.40	6.88
kelp rockfish, juvenile	7/10/2006	5	5	3.00	4.24	0.60	0.89	0.80	1.30
kelp surfperch	7/10/2006	5	3	9.00	1.00	2.00	1.00	5.33	5.86
lingcod	7/10/2006	5	1	5.00		1.00		1.00	
olive rockfish, adult	7/10/2006	5	5	8.20	1.48	2.00	0.00	4.20	2.17
olive rockfish, all	7/10/2006	5	5	8.20	1.48	2.00	0.00	4.20	2.17
olive/yellowtail rockfish, juv	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/10/2006	5	5	3.20	4.44	0.60	0.89	0.60	0.89
opaleye, all	7/10/2006	5	5	3.20	4.44	0.60	0.89	0.60	0.89
opaleye, juvenile	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/10/2006	5	5	9.80	0.45	3.00	0.00	32.20	7.60
pile surfperch, adult	7/10/2006	5	5	5.00	4.80	1.20	1.10	1.60	1.52
pile surfperch, all	7/10/2006	5	5	5.00	4.80	1.20	1.10	1.60	1.52
pile surfperch, juvenile	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	7/10/2006	5	1	8.00		1.00		1.00	
senorita, adult	7/10/2006	5	5	9.80	0.45	3.20	0.45	66.00	26.55
senorita, all	7/10/2006	5	5	9.80	0.45	3.20	0.45	66.00	26.55
senorita, juvenile	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	7/10/2006	5	5	9.60	0.55	1.60	0.55	2.20	1.30
striped surfperch, all	7/10/2006	5	5	9.80	0.45	1.60	0.55	2.60	1.67
striped surfperch, juvenile	7/10/2006	5	5	3.80	5.22	0.40	0.55	0.40	0.55
top smelt	7/10/2006	5	3	10.00	0.00	3.33	0.58	66.67	42.52
treefish, adult	7/10/2006	5	5	4.60	2.70	1.40	0.89	1.40	0.89
treefish, juvenile	7/10/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Fry's Harbor

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	9/26/2006	5	3	6.33	2.31	1.00	0.00	1.00	0.00
black and yellow rockfish	6/5/2006	5	4	7.00	1.41	1.50	0.58	1.50	0.58
black and yellow rockfish	9/26/2006	5	3	6.33	1.15	1.00	0.00	1.00	0.00
black surfperch, adult	6/5/2006	5	5	8.60	0.55	1.80	0.45	3.40	2.19
black surfperch, adult	9/26/2006	5	5	9.60	0.55	2.60	0.55	12.80	4.49
black surfperch, all	6/5/2006	5	5	8.60	0.55	1.80	0.45	3.40	2.19
black surfperch, all	9/26/2006	5	5	9.60	0.55	2.80	0.45	17.00	5.70
black surfperch, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/26/2006	5	5	6.60	3.78	1.60	0.89	4.20	2.95
blackeye goby	6/5/2006	5	5	9.80	0.45	3.40	0.55	104.00	59.41
blackeye goby	9/26/2006	5	5	10.00	0.00	4.00	0.00	206.20	86.15
blacksmith, adult	6/5/2006	5	5	9.40	0.55	3.80	0.45	216.80	136.86
blacksmith, adult	9/26/2006	5	5	10.00	0.00	4.00	0.00	328.00	133.73
blacksmith, all	6/5/2006	5	5	9.40	0.55	3.80	0.45	216.80	136.86
blacksmith, all	9/26/2006	5	5	10.00	0.00	4.00	0.00	600.00	81.55
blacksmith, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/26/2006	5	5	10.00	0.00	4.00	0.00	252.00	86.21
blue rockfish, adult	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/26/2006	5	5	2.40	3.29	0.60	0.89	0.60	0.89
blue rockfish, all	6/5/2006	5	5	6.20	3.56	1.40	0.89	3.80	3.11
blue rockfish, all	9/26/2006	5	5	2.40	3.29	0.60	0.89	0.60	0.89
blue rockfish, juvenile	6/5/2006	5	5	6.20	3.56	1.40	0.89	3.80	3.11
blue rockfish, juvenile	9/26/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/26/2006	5	5	10.00	0.00	4.00	0.00	234.80	87.51
bonita	9/26/2006	5	3	9.33	1.15	4.00	0.00	161.67	16.07
brown rockfish	6/5/2006	5	2	5.00	0.00	1.00	0.00	1.00	0.00
brown rockfish	9/26/2006	5	2	9.50	0.71	1.00	0.00	1.00	0.00
cabezon	6/5/2006	5	1	7.00		1.00		1.00	
California moray	9/26/2006	5	2	7.00	0.00	1.00	0.00	1.00	0.00
California sheephead, fem	6/5/2006	5	5	4.40	4.04	0.80	0.84	0.80	0.84
California sheephead, fem	9/26/2006	5	5	5.60	3.36	1.40	0.89	2.40	2.07
California sheephead, juv	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	9/26/2006	5	5	3.40	4.77	0.40	0.55	0.40	0.55
California sheephead, male	6/5/2006	5	5	5.60	5.13	0.80	0.84	0.80	0.84
California sheephead, male	9/26/2006	5	5	1.20	2.68	0.20	0.45	0.20	0.45
c-o turbot	9/26/2006	5	1	8.00		1.00		1.00	
copper rockfish	6/5/2006	5	3	9.00	0.00	1.00	0.00	1.00	0.00
copper rockfish	9/26/2006	5	1	5.00		1.00		1.00	
coralline sculpin	9/26/2006	5	1	9.00		1.00		1.00	
garibaldi, adult	6/5/2006	5	5	5.80	3.49	1.60	0.89	2.20	1.48
garibaldi, adult	9/26/2006	5	5	9.20	0.45	2.00	0.00	6.00	3.00
garibaldi, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/26/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	6/5/2006	5	1	7.00		1.00		1.00	
giant kelpfish, juvenile	9/26/2006	5	1	9.00		1.00		1.00	
gopher rockfish	6/5/2006	5	5	8.80	1.30	2.00	0.00	4.20	1.79
gopher rockfish	9/26/2006	5	5	8.60	0.89	2.00	0.00	5.20	1.48
halfmoon	9/26/2006	5	5	7.60	1.82	1.80	0.45	2.00	0.71
island kelpfish	6/5/2006	5	5	6.20	3.96	1.40	0.89	2.60	2.41
island kelpfish	9/26/2006	5	5	9.00	0.71	2.80	0.45	11.40	2.07
kelp bass, adult	6/5/2006	5	5	9.80	0.45	2.00	0.00	5.40	2.41
kelp bass, adult	9/26/2006	5	5	10.00	0.00	3.00	0.00	33.60	9.69
kelp bass, calico bass, all	6/5/2006	5	5	9.80	0.45	2.00	0.00	5.60	2.07
kelp bass, calico bass, all	9/26/2006	5	5	10.00	0.00	3.00	0.00	45.40	12.28
kelp bass, juvenile	6/5/2006	5	5	1.40	3.13	0.20	0.45	0.20	0.45
kelp bass, juvenile	9/26/2006	**5**	**5**	**9.60**	**0.55**	**2.60**	**0.55**	**12.00**	**6.20**
kelp rockfish, adult	6/5/2006	**5**	**5**	**2.80**	**3.83**	**0.40**	**0.55**	**0.40**	**0.55**

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Fry's Harbor continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
kelp rockfish, adult	9/26/2006	5	5	6.40	3.78	1.40	0.89	2.60	2.07
kelp rockfish, all	6/5/2006	5	5	2.80	3.83	0.40	0.55	0.40	0.55
kelp rockfish, all	9/26/2006	5	5	8.00	1.22	2.00	0.00	4.00	1.58
kelp rockfish, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/26/2006	5	5	4.40	4.10	1.20	1.10	1.40	1.34
ocean whitefish	6/5/2006	5	1	8.00		1.00		1.00	
ocean whitefish	9/26/2006	5	5	7.40	1.34	1.80	0.45	3.40	2.79
olive rockfish, adult	6/5/2006	5	5	2.60	3.71	0.60	0.89	1.20	2.17
olive rockfish, adult	9/26/2006	5	5	4.80	4.55	0.80	0.84	0.80	0.84
olive rockfish, all	6/5/2006	5	5	2.60	3.71	0.60	0.89	1.20	2.17
olive rockfish, all	9/26/2006	5	5	4.80	4.55	0.80	0.84	0.80	0.84
olive/yellowtail rockfish, juv	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	9/26/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/26/2006	5	5	7.60	1.34	1.80	0.45	4.40	3.44
opaleye, all	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	9/26/2006	5	5	7.60	1.34	1.80	0.45	4.40	3.44
opaleye, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/26/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/5/2006	5	5	10.00	0.00	3.00	0.00	17.20	5.40
painted greenling	9/26/2006	5	5	9.80	0.45	2.60	0.55	14.60	7.40
pile surfperch, adult	6/5/2006	5	5	9.80	0.45	2.60	0.55	11.80	5.45
pile surfperch, adult	9/26/2006	5	5	9.80	0.45	2.60	0.55	15.40	7.09
pile surfperch, all	6/5/2006	5	5	9.80	0.45	2.60	0.55	11.80	5.45
pile surfperch, all	9/26/2006	5	5	9.80	0.45	2.80	0.45	16.40	7.64
pile surfperch, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/26/2006	5	5	5.20	4.87	1.00	1.00	1.00	1.00
rock wrasse, female	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	9/26/2006	5	5	5.20	3.35	0.80	0.45	0.80	0.45
rock wrasse, juvenile	9/26/2006	5	4	8.50	1.73	2.00	0.00	4.00	1.41
rock wrasse, male	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	9/26/2006	5	5	4.20	3.83	1.20	1.10	1.60	1.52
ronquil spp.	6/5/2006	5	1	6.00		1.00		1.00	
rubberlip surfperch	6/5/2006	5	3	8.67	1.53	2.00	0.00	5.33	4.16
rubberlip surfperch	9/26/2006	5	4	8.25	0.96	1.75	0.50	2.50	1.29
senorita, adult	6/5/2006	5	5	9.60	0.89	2.20	0.45	6.80	5.02
senorita, adult	9/26/2006	5	5	10.00	0.00	3.20	0.45	62.80	34.29
senorita, all	6/5/2006	5	5	9.60	0.89	2.20	0.45	6.80	5.02
senorita, all	9/26/2006	5	5	10.00	0.00	3.40	0.55	95.20	53.90
senorita, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/26/2006	5	5	8.40	1.95	2.60	0.55	32.40	28.81
snubnose sculpin	6/5/2006	5	2	6.00	0.00	1.00	0.00	1.00	0.00
striped surfperch, adult	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/26/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/26/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/26/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
swell shark	6/5/2006	5	1	7.00		1.00		1.00	
treefish, adult	6/5/2006	5	5	8.00	2.00	1.80	0.45	2.20	0.84
treefish, adult	9/26/2006	5	5	8.40	0.89	2.00	0.00	8.20	2.95
treefish, juvenile	6/5/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	9/26/2006	5	5	1.80	4.02	0.20	0.45	0.20	0.45
yellowfin fringehead	9/26/2006	5	2	6.00	0.00	1.00	0.00	1.00	0.00
zebra goby	6/5/2006	5	1	10.00		2.00		2.00	
zebra goby	9/26/2006	5	2	6.00	1.41	2.00	0.00	2.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Pelican Bay

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	7/28/2006	6	3	7.33	1.53	1.00	0.00	1.00	0.00
black croaker	7/28/2006	6	1	5.00		1.00		1.00	
black surfperch, adult	7/28/2006	6	5	10.00	0.00	3.00	0.00	24.20	8.90
black surfperch, adult	9/15/2006	6	6	10.00	0.00	3.00	0.00	29.50	13.16
black surfperch, all	7/28/2006	6	6	10.00	0.00	3.00	0.00	24.20	8.90
black surfperch, all	9/15/2006	6	6	10.00	0.00	3.00	0.00	29.50	13.16
black surfperch, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	7/28/2006	6	6	10.00	0.00	3.83	0.41	286.00	153.60
blackeye goby	9/15/2006	6	6	10.00	0.00	3.83	0.41	206.33	105.39
blacksmith, adult	7/28/2006	6	5	9.60	0.89	2.80	0.45	52.60	38.62
blacksmith, adult	9/15/2006	6	6	9.50	1.22	3.33	0.52	99.17	39.55
blacksmith, all	7/28/2006	6	6	9.67	0.82	2.83	0.41	52.60	38.62
blacksmith, all	9/15/2006	6	6	9.50	1.22	3.33	0.52	101.33	40.75
blacksmith, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/15/2006	6	6	4.00	4.69	1.00	1.10	2.17	2.71
blue rockfish, adult	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	7/28/2006	6	6	9.17	1.60	1.83	0.41	6.20	3.49
blue-banded goby	9/15/2006	6	6	9.83	0.41	3.17	0.41	87.50	55.52
brown rockfish	7/28/2006	6	1	5.00		1.00		1.00	
cabezon	7/28/2006	6	5	8.00	1.41	1.20	0.45	1.20	0.45
California moray	7/28/2006	6	1	7.00		2.00		2.00	
California scorpionfish	9/15/2006	6	1	5.00		1.00		1.00	
California sheephead, fem	7/28/2006	6	6	9.33	1.63	1.67	0.52	2.20	0.84
California sheephead, fem	9/15/2006	6	6	7.83	3.92	1.67	0.82	2.00	1.10
California sheephead, juv	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	9/15/2006	6	6	1.50	3.67	0.17	0.41	0.17	0.41
California sheephead, male	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
c-o turbot	7/28/2006	6	5	9.00	1.22	1.40	0.55	2.00	1.41
garibaldi, adult	7/28/2006	6	6	10.00	0.00	2.50	0.55	9.20	1.79
garibaldi, adult	9/15/2006	6	6	10.00	0.00	2.67	0.52	12.67	3.20
garibaldi, juvenile	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	9/15/2006	6	1	9.00		1.00		1.00	
halfmoon	7/28/2006	6	2	5.50	0.71	1.00	0.00	1.00	0.00
halfmoon	9/15/2006	6	5	8.20	1.79	2.20	0.84	7.20	5.26
island kelpfish	7/28/2006	6	6	5.00	2.53	1.50	0.84	3.20	1.92
island kelpfish	9/15/2006	6	6	5.33	4.27	1.33	1.03	3.83	3.06
kelp bass, adult	7/28/2006	6	5	10.00	0.00	3.00	0.00	24.80	8.04
kelp bass, adult	9/15/2006	6	6	10.00	0.00	3.00	0.00	30.83	9.60
kelp bass, calico bass, all	7/28/2006	6	6	10.00	0.00	3.00	0.00	24.80	8.04
kelp bass, calico bass, all	9/15/2006	6	6	10.00	0.00	3.00	0.00	32.17	9.87
kelp bass, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/15/2006	6	6	5.67	4.50	1.17	0.98	1.33	1.21
kelp rockfish, adult	7/28/2006	6	5	9.20	0.84	1.80	0.45	2.20	0.84
kelp rockfish, adult	9/15/2006	6	6	7.17	1.72	1.67	0.52	2.67	1.51
kelp rockfish, all	7/28/2006	6	6	9.33	0.82	1.83	0.41	2.20	0.84
kelp rockfish, all	9/15/2006	6	6	7.17	1.72	1.67	0.52	2.67	1.51
kelp rockfish, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelpfish spp.	9/15/2006	6	1	7.00		2.00		3.00	
ocean whitefish	7/28/2006	6	5	9.60	0.55	2.00	0.00	3.00	1.00

2006 ROVING DIVER FISH COUNT:

Santa Cruz Island - Pelican Bay continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
ocean whitefish	9/15/2006	6	6	9.17	0.98	2.50	0.55	10.17	3.82
olive rockfish, adult	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/15/2006	6	6	1.67	4.08	0.17	0.41	0.17	0.41
opaleye, all	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	9/15/2006	6	6	1.67	4.08	0.17	0.41	0.17	0.41
opaleye, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/28/2006	6	6	7.83	1.60	2.00	0.00	4.20	2.49
painted greenling	9/15/2006	6	6	8.00	1.67	2.00	0.00	2.50	1.22
pile surfperch, adult	7/28/2006	6	5	8.00	1.41	1.60	0.55	2.40	1.34
pile surfperch, adult	9/15/2006	6	6	9.17	1.17	2.33	0.52	10.83	4.71
pile surfperch, all	7/28/2006	6	6	7.50	1.76	1.67	0.52	2.40	1.34
pile surfperch, all	9/15/2006	6	6	9.17	1.17	2.33	0.52	10.83	4.71
pile surfperch, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/28/2006	6	6	7.17	1.17	1.67	0.52	1.80	0.84
rock wrasse, female	9/15/2006	6	6	8.33	1.37	2.00	0.00	2.83	0.75
rock wrasse, juvenile	9/15/2006	6	3	10.00	0.00	1.67	0.58	4.00	3.00
rock wrasse, male	7/28/2006	6	6	5.50	4.42	1.17	0.98	1.40	1.67
rock wrasse, male	9/15/2006	6	6	8.83	1.17	2.00	0.00	4.17	0.75
rubberlip surfperch	7/28/2006	6	1	5.00		2.00		4.00	
rubberlip surfperch	9/15/2006	6	6	9.00	1.10	2.67	0.82	29.00	15.50
senorita, adult	7/28/2006	6	5	10.00	0.00	2.40	0.55	12.20	5.45
senorita, adult	9/15/2006	6	6	10.00	0.00	3.00	0.00	18.67	7.74
senorita, all	7/28/2006	6	6	10.00	0.00	2.50	0.55	12.20	5.45
senorita, all	9/15/2006	6	6	10.00	0.00	3.00	0.00	18.67	7.74
senorita, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	9/15/2006	6	2	8.00	2.83	1.00	0.00	1.00	0.00
striped surfperch, adult	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	7/28/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
swell shark	7/28/2006	6	1	9.00		1.00		1.00	
treefish, adult	7/28/2006	6	6	4.50	4.97	0.67	0.82	0.80	0.84
treefish, adult	9/15/2006	6	6	5.17	4.31	0.83	0.75	1.00	1.10
treefish, juvenile	7/28/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	9/15/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
yellowfin fringehead	7/28/2006	6	3	7.33	1.53	2.00	0.00	4.33	2.52
yellowfin fringehead	9/15/2006	6	3	6.00	1.00	1.67	0.58	1.67	0.58
zebra goby	7/28/2006	6	4	9.00	0.82	1.75	0.50	2.50	1.29
zebra goby	9/15/2006	6	1	8.00		2.00		3.00	

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Scorpion Anchorage

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	8/24/2006	6	5	7.80	1.64	1.60	0.55	2.20	1.64
black surfperch, adult	8/24/2006	6	6	10.00	0.00	3.00	0.00	23.17	7.81
black surfperch, all	8/24/2006	6	6	10.00	0.00	3.00	0.00	23.17	7.81
black surfperch, juvenile	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/24/2006	6	6	10.00	0.00	3.67	0.52	170.83	88.51
blacksmith, adult	8/24/2006	6	6	10.00	0.00	3.17	0.41	60.83	47.23
blacksmith, all	8/24/2006	6	6	10.00	0.00	3.67	0.52	165.00	118.70
blacksmith, juvenile	8/24/2006	6	6	8.50	1.22	3.50	0.55	104.17	107.86
blue rockfish, adult	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
brown rockfish	8/24/2006	6	4	7.75	2.06	1.00	0.00	1.00	0.00
cabezon	8/24/2006	6	4	7.00	1.15	1.25	0.50	1.25	0.50
California sheephead, fem	8/24/2006	6	6	9.00	1.26	1.83	0.41	2.17	0.75
California sheephead, juv	8/24/2006	6	6	1.33	3.27	0.33	0.82	0.50	1.22
California sheephead, male	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	8/24/2006	6	6	10.00	0.00	2.17	0.41	8.83	3.19
garibaldi, juvenile	8/24/2006	6	6	1.67	4.08	0.17	0.41	0.17	0.41
giant kelpfish	8/24/2006	6	1	7.00		1.00		1.00	
giant kelpfish, juvenile	8/24/2006	6	3	6.00	1.00	2.00	0.00	5.00	3.00
gopher rockfish	8/24/2006	6	1	5.00		1.00		1.00	
halfmoon	8/24/2006	6	6	9.67	0.82	2.00	0.00	3.33	1.21
horn shark	8/24/2006	6	2	7.50	3.54	1.00	0.00	1.00	0.00
island kelpfish	8/24/2006	6	6	8.50	1.38	1.83	0.41	4.33	2.94
kelp bass, adult	8/24/2006	6	6	10.00	0.00	3.00	0.00	23.17	3.37
kelp bass, calico bass, all	8/24/2006	6	6	10.00	0.00	3.00	0.00	23.50	3.56
kelp bass, juvenile	8/24/2006	6	6	1.17	2.86	0.33	0.82	0.33	0.82
kelp rockfish, adult	8/24/2006	6	6	3.00	3.35	1.00	1.10	1.00	1.10
kelp rockfish, all	8/24/2006	6	6	3.00	3.35	1.00	1.10	0.67	1.03
kelp rockfish, juvenile	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	8/24/2006	6	2	5.50	0.71	3.50	0.71	90.00	56.57
olive rockfish, adult	8/24/2006	6	6	5.50	3.21	1.00	0.63	1.00	0.63
olive rockfish, all	8/24/2006	6	6	5.50	3.21	1.00	0.63	1.00	0.63
olive/yellowtail rockfish, juv	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
onespot fringehead	8/24/2006	6	1	5.00		1.00		1.00	
opaleye, adult	8/24/2006	6	6	9.50	1.22	1.83	0.41	5.33	2.88
opaleye, all	8/24/2006	6	6	9.50	1.22	1.83	0.41	5.33	2.88
opaleye, juvenile	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/24/2006	6	6	9.33	0.82	2.33	0.52	7.50	4.85
pile surfperch, adult	8/24/2006	6	6	8.00	1.90	2.17	0.41	6.17	3.31
pile surfperch, all	8/24/2006	6	6	8.00	1.90	2.17	0.41	6.17	3.31
pile surfperch, juvenile	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/24/2006	6	6	9.00	1.26	1.17	0.41	1.00	0.00
rock wrasse, juvenile	8/24/2006	6	3	7.67	2.08	1.67	0.58	3.67	3.06
rock wrasse, male	8/24/2006	6	6	1.00	2.45	0.33	0.82	0.33	0.82
senorita, adult	8/24/2006	6	6	10.00	0.00	3.00	0.00	62.17	27.69
senorita, all	8/24/2006	6	6	10.00	0.00	3.50	0.55	112.33	52.79
senorita, juvenile	8/24/2006	6	6	5.83	0.75	3.00	0.00	51.83	29.90
striped surfperch, adult	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/24/2006	6	6	4.00	4.69	0.67	0.82	0.67	0.82
treefish, juvenile	8/24/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Yellow Banks

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	8/21/2006	5	4	8.75	0.50	1.25	0.50	1.25	0.50
black surfperch, adult	8/21/2006	5	5	7.40	1.34	2.00	0.00	2.40	0.55
black surfperch, all	8/21/2006	5	5	7.40	1.34	2.00	0.00	2.40	0.55
black surfperch, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/21/2006	5	5	10.00	0.00	3.80	0.45	112.20	33.19
blacksmith, adult	8/21/2006	5	5	5.40	4.93	1.80	1.64	21.00	19.17
blacksmith, all	8/21/2006	5	5	5.40	4.93	1.80	1.64	85.60	153.28
blacksmith, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California scorpionfish	8/21/2006	5	1	5.00		1.00		1.00	
California sheephead, fem	8/21/2006	5	5	10.00	0.00	2.20	0.45	7.40	4.83
California sheephead, juv	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
copper rockfish	8/21/2006	5	3	7.33	1.53	1.00	0.00	1.00	0.00
coralline sculpin	8/21/2006	5	1	10.00		1.00		1.00	
garibaldi, adult	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
jack mackerel	8/21/2006	5	1	9.00		1.00		1.00	
kelp bass, adult	8/21/2006	5	5	10.00	0.00	3.00	0.00	26.00	13.06
kelp bass, calico bass, all	8/21/2006	5	5	10.00	0.00	3.00	0.00	26.20	13.50
kelp bass, juvenile	8/21/2006	5	5	1.80	4.02	0.20	0.45	0.20	0.45
kelp rockfish, adult	8/21/2006	5	5	8.80	0.45	1.80	0.45	5.00	2.92
kelp rockfish, all	8/21/2006	5	5	8.80	0.45	1.80	0.45	5.00	2.92
kelp rockfish, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/21/2006	5	5	10.00	0.00	2.80	0.45	16.00	4.64
pile surfperch, adult	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/21/2006	5	5	2.60	3.71	0.40	0.55	0.40	0.55
rock wrasse, male	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	8/21/2006	5	5	7.60	1.82	2.20	0.45	9.00	15.10
senorita, all	8/21/2006	5	5	7.60	1.82	2.20	0.45	9.00	15.10
senorita, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/21/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
swell shark	8/21/2006	5	1	6.00		1.00		1.00	
treefish, adult	8/21/2006	5	5	4.00	5.48	0.60	0.89	0.60	0.89
treefish, juvenile	8/21/2006	5	5	5.00	4.58	0.80	0.84	0.80	0.84
vermillion rockfish, juvenile	8/21/2006	5	4	8.75	0.96	1.50	0.58	2.25	1.50

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Admiral's Reef

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	8/8/2006	5	1	8.00		2.00		2.00	
black and yellow rockfish	8/8/2006	5	3	8.67	1.53	1.67	0.58	2.00	1.00
black and yellow rockfish	9/28/2006	7	5	9.20	0.45	1.80	0.45	3.80	2.59
black surfperch, adult	8/8/2006	5	5	9.20	0.84	2.20	0.45	7.20	3.70
black surfperch, adult	9/28/2006	7	7	9.29	1.11	2.14	0.38	7.14	4.02
black surfperch, all	8/8/2006	5	5	9.20	0.84	2.20	0.45	7.20	3.70
black surfperch, all	9/28/2006	7	7	9.29	1.11	2.14	0.38	7.43	4.24
black surfperch, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/28/2006	7	7	1.86	3.18	0.29	0.49	0.29	0.49
blackeye goby	8/8/2006	5	5	10.00	0.00	3.60	0.55	105.80	66.71
blackeye goby	9/28/2006	7	7	10.00	0.00	3.57	0.53	136.29	71.97
blacksmith, adult	8/8/2006	5	5	10.00	0.00	4.00	0.00	417.60	172.68
blacksmith, adult	9/28/2006	7	7	10.00	0.00	3.86	0.38	288.29	104.77
blacksmith, all	8/8/2006	5	5	10.00	0.00	4.00	0.00	672.40	226.75
blacksmith, all	9/28/2006	7	7	10.00	0.00	4.00	0.00	643.86	190.09
blacksmith, juvenile	8/8/2006	5	5	9.00	1.22	4.00	0.00	254.80	97.33
blacksmith, juvenile	9/28/2006	7	7	9.86	0.38	4.00	0.00	355.57	129.18
blue rockfish, adult	8/8/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
blue rockfish, adult	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/8/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
blue rockfish, all	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/28/2006	7	7	2.29	4.07	0.43	0.79	0.57	1.13
California barracuda	8/8/2006	5	1	7.00		2.00		9.00	
California moray	8/8/2006	5	1	9.00		1.00		1.00	
California scorpionfish	8/8/2006	5	1	5.00		1.00		1.00	
California scorpionfish	9/28/2006	7	5	8.60	1.14	2.00	0.00	3.00	1.22
California sheephead, fem	8/8/2006	5	5	9.80	0.45	2.00	0.00	7.80	1.79
California sheephead, fem	9/28/2006	7	7	10.00	0.00	2.14	0.38	10.14	4.02
California sheephead, juv	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
copper rockfish	9/28/2006	7	3	7.67	1.15	1.33	0.58	1.33	0.58
garibaldi, adult	8/8/2006	5	5	9.80	0.45	2.40	0.55	9.00	3.08
garibaldi, adult	9/28/2006	7	7	10.00	0.00	2.14	0.38	7.00	2.52
garibaldi, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
giant black sea bass	8/8/2006	5	1	9.00		2.00		2.00	
giant kelpfish	9/28/2006	7	1	10.00		1.00		1.00	
gopher rockfish	8/8/2006	5	4	9.00	0.82	1.00	0.00	1.00	0.00
gopher rockfish	9/28/2006	7	3	7.00	1.00	1.00	0.00	1.00	0.00
halfmoon	8/8/2006	5	4	9.50	1.00	2.00	0.00	4.25	2.63
Halfmoon	9/28/2006	7	6	9.17	1.17	2.33	0.52	9.83	8.64
island kelpfish	8/8/2006	5	5	7.00	3.94	1.60	0.89	5.00	3.74
island kelpfish	9/28/2006	7	7	9.57	1.13	2.57	0.53	10.14	5.30
kelp bass, adult	8/8/2006	5	5	8.40	1.82	2.00	0.00	4.80	2.95
kelp bass, adult	9/28/2006	7	7	8.71	1.38	2.14	0.38	5.29	2.93
kelp bass, calico bass, all	8/8/2006	5	5	8.40	1.82	2.00	0.00	4.80	2.95
kelp bass, calico bass, all	9/28/2006	7	7	8.71	1.38	2.14	0.38	5.29	2.93
kelp bass, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/8/2006	5	5	2.80	4.09	0.40	0.55	0.40	0.55
kelp rockfish, adult	9/28/2006	7	7	5.43	3.74	0.86	0.69	1.29	1.70
kelp rockfish, all	8/8/2006	5	5	2.80	4.09	0.40	0.55	0.40	0.55
kelp rockfish, all	9/28/2006	7	7	5.43	3.74	0.86	0.69	1.29	1.70

2006 ROVING DIVER FISH COUNT:

Anacapa Island - Admiral's Reef continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
kelp rockfish, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
kelpfish spp.	9/28/2006	7	2	8.50	0.71	1.00	0.00	1.00	0.00
lingcod	9/28/2006	7	3	8.00	0.00	1.00	0.00	1.00	0.00
olive rockfish, adult	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/8/2006	5	5	10.00	0.00	2.80	0.45	13.60	4.56
opaleye, adult	9/28/2006	7	7	10.00	0.00	3.00	0.00	20.29	9.03
opaleye, all	8/8/2006	5	5	10.00	0.00	2.80	0.45	13.60	4.56
opaleye, all	9/28/2006	7	7	10.00	0.00	3.00	0.00	20.29	9.03
opaleye, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/8/2006	5	5	10.00	0.00	2.80	0.45	23.20	10.26
painted greenling	9/28/2006	7	7	10.00	0.00	3.00	0.00	35.86	18.37
pile surfperch, adult	8/8/2006	5	5	1.00	2.24	0.20	0.45	0.20	0.45
pile surfperch, adult	9/28/2006	7	7	9.00	1.00	2.00	0.00	4.29	1.80
pile surfperch, all	8/8/2006	5	5	1.00	2.24	0.20	0.45	0.20	0.45
pile surfperch, all	9/28/2006	7	7	9.00	1.00	2.00	0.00	4.29	1.80
pile surfperch, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/8/2006	5	5	6.80	4.15	1.00	0.71	1.00	0.71
rock wrasse, female	9/28/2006	7	7	7.43	3.74	1.57	0.79	1.86	1.21
rock wrasse, male	8/8/2006	5	5	8.60	1.14	1.80	0.45	2.20	0.84
rock wrasse, male	9/28/2006	7	7	8.86	1.57	2.00	0.00	2.57	0.79
rockfish spp., juvenile	8/8/2006	5	2	7.50	3.54	1.50	0.71	1.50	0.71
senorita, adult	8/8/2006	5	5	10.00	0.00	3.60	0.55	226.60	99.21
senorita, adult	9/28/2006	7	7	10.00	0.00	3.00	0.00	77.00	21.09
senorita, all	8/8/2006	5	5	10.00	0.00	3.60	0.55	227.20	99.28
senorita, all	9/28/2006	7	7	10.00	0.00	3.43	0.53	87.29	21.48
senorita, juvenile	8/8/2006	5	5	3.00	4.47	0.60	0.89	0.60	0.89
senorita, juvenile	9/28/2006	7	7	8.29	1.70	2.14	0.69	10.29	9.57
striped surfperch, adult	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/28/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/8/2006	5	5	9.20	0.84	1.80	0.45	3.80	2.39
treefish, adult	9/28/2006	7	7	9.00	1.41	1.86	0.69	4.71	4.19
treefish, juvenile	8/8/2006	5	5	2.80	3.90	0.40	0.55	0.40	0.55
treefish, juvenile	9/28/2006	7	7	5.57	5.22	0.86	0.90	1.00	1.15
white surfperch	9/28/2006	7	2	5.50	0.71	1.50	0.71	5.50	6.36
yellowtail	8/8/2006	5	2	6.00	0.00	1.50	0.71	1.50	0.71

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Cathedral Cove

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black surfperch, adult	8/4/2006	4	3	10.00	0.00	3.00	0.00	25.00	7.21
black surfperch, all	8/4/2006	4	4	10.00	0.00	3.00	0.00	35.33	9.07
black surfperch, juvenile	8/4/2006	4	3	9.33	0.58	2.33	0.58	10.33	3.51
blackeye goby	8/4/2006	4	4	8.25	1.71	2.50	0.58	10.33	5.69
blacksmith, adult	8/4/2006	4	3	10.00	0.00	3.33	0.58	99.00	40.04
blacksmith, all	8/4/2006	4	4	10.00	0.00	3.75	0.50	214.00	152.39
blacksmith, juvenile	8/4/2006	4	3	4.67	4.51	2.33	2.08	116.67	156.87
blue rockfish, adult	8/4/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/4/2006	4	4	2.50	5.00	0.25	0.50	0.00	0.00
blue rockfish, juvenile	8/4/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/4/2006	4	4	1.75	3.50	0.25	0.50	0.33	0.58
calico rockfish, juvenile	8/4/2006	4	1	10.00		1.00		1.00	
California moray	8/4/2006	4	1	7.00		1.00		1.00	
California sheephead, fem	8/4/2006	4	4	8.00	1.15	2.00	0.00	4.00	2.00
California sheephead, juv	8/4/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/4/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	8/4/2006	4	4	9.50	0.58	2.25	0.50	6.67	1.15
garibaldi, juvenile	8/4/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	8/4/2006	4	3	9.00	1.00	1.33	0.58	1.00	0.00
giant kelpfish, juvenile	8/4/2006	4	4	10.00	0.00	3.50	0.58	202.67	318.15
halfmoon	8/4/2006	4	2	10.00	0.00	2.00	0.00	2.50	0.71
island kelpfish	8/4/2006	4	4	7.00	4.69	1.75	1.26	14.00	7.81
kelp bass, adult	8/4/2006	4	3	10.00	0.00	2.00	0.00	8.33	0.58
kelp bass, calico bass, all	8/4/2006	4	4	10.00	0.00	2.25	0.50	12.33	6.66
kelp bass, juvenile	8/4/2006	4	3	2.67	4.62	1.00	1.73	4.00	6.93
kelp rockfish, adult	8/4/2006	4	3	8.00	1.73	2.00	1.00	5.33	6.66
kelp rockfish, all	8/4/2006	4	4	8.25	1.50	2.25	0.96	6.00	7.81
kelp rockfish, juvenile	8/4/2006	4	3	2.33	4.04	0.67	1.15	0.67	1.15
kelp surfperch	8/4/2006	4	4	9.25	1.50	3.00	0.00	37.67	34.08
kelpfish spp.	8/4/2006	4	3	7.33	2.08	1.00	0.00	1.00	0.00
olive rockfish, adult	8/4/2006	4	3	2.67	4.62	0.33	0.58	0.33	0.58
olive rockfish, all	8/4/2006	4	4	4.25	4.92	0.75	0.96	0.33	0.58
olive/yellowtail rockfish, juv	8/4/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/4/2006	4	3	8.00	1.73	2.00	0.00	3.00	1.00
opaleye, all	8/4/2006	4	4	8.50	1.73	2.00	0.00	3.00	1.00
opaleye, juvenile	8/4/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/4/2006	4	4	8.50	1.91	2.25	0.50	9.67	1.53
pile surfperch, adult	8/4/2006	4	3	2.00	3.46	0.33	0.58	0.33	0.58
pile surfperch, all	8/4/2006	4	4	8.25	1.50	1.75	0.50	2.67	2.08
pile surfperch, juvenile	8/4/2006	4	3	7.67	1.15	1.67	0.58	2.33	1.53
rock wrasse, female	8/4/2006	4	4	6.00	4.08	1.25	0.96	1.67	0.58
rock wrasse, male	8/4/2006	4	4	5.75	3.86	1.00	0.82	0.67	0.58
rockfish spp., juvenile	8/4/2006	4	1	10.00		2.00			
scalyhead sculpin	8/4/2006	4	1	8.00		1.00		1.00	
senorita, adult	8/4/2006	4	3	10.00	0.00	3.00	0.00	21.33	2.31
senorita, all	8/4/2006	4	4	10.00	0.00	2.75	0.50	24.67	8.08
senorita, juvenile	8/4/2006	4	3	2.00	3.46	0.67	1.15	3.33	5.77
shiner surfperch	8/4/2006	4	4	9.50	0.58	4.00	0.00	527.00	187.29
speckled sanddab	8/4/2006	4	1	8.00		1.00		1.00	
splitnose rockfish	8/4/2006	4	1	7.00		1.00		1.00	
striped surfperch, adult	8/4/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/4/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/4/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
top smelt	8/4/2006	4	1	10.00		4.00		337.00	
treefish, adult	8/4/2006	4	4	3.75	4.50	0.75	0.96	1.00	1.00
treefish, juvenile	8/4/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
zebra goby	8/4/2006	4	2	6.00	1.41	1.00	0.00	1.00	0.00

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Landing Cove

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	9/27/2006	7	1	10.00		1.00		1.00	
black and yellow rockfish	9/27/2006	7	4	6.75	0.50	1.50	0.58	1.50	0.58
black surfperch, adult	6/9/2006	6	5	9.40	0.89	2.80	0.45	12.40	5.86
black surfperch, adult	9/27/2006	7	7	10.00	0.00	2.71	0.49	14.14	6.94
black surfperch, all	6/9/2006	6	6	9.50	0.84	2.67	0.52	12.40	5.86
black surfperch, all	9/27/2006	7	7	10.00	0.00	3.00	0.00	20.57	8.70
black surfperch, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/27/2006	7	7	8.29	3.73	2.00	1.00	6.43	5.44
blackeye goby	6/9/2006	6	6	8.00	1.90	2.17	0.98	17.60	12.26
blackeye goby	9/27/2006	7	7	8.86	1.07	2.43	0.79	16.71	16.44
blacksmith, adult	6/9/2006	6	5	9.80	0.45	4.00	0.00	173.20	36.49
blacksmith, adult	9/27/2006	7	7	9.71	0.76	3.29	0.76	107.14	97.57
blacksmith, all	6/9/2006	6	6	9.83	0.41	4.00	0.00	173.20	36.49
blacksmith, all	9/27/2006	7	7	10.00	0.00	4.00	0.00	416.00	175.89
blacksmith, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/27/2006	7	7	10.00	0.00	4.00	0.00	308.86	172.82
blue rockfish, adult	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/9/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/9/2006	6	6	2.33	3.83	0.33	0.52	0.40	0.55
blue-banded goby	9/27/2006	7	7	5.29	4.99	1.71	1.60	16.86	16.42
California moray	6/9/2006	6	1	8.00		1.00		1.00	
California scorpionfish	6/9/2006	6	1	7.00		2.00		2.00	
California scorpionfish	9/27/2006	7	2	8.50	0.71	1.00	0.00	1.00	0.00
California sheephead, fem	6/9/2006	6	6	9.67	0.82	2.17	0.41	6.80	3.27
California sheephead, fem	9/27/2006	7	7	9.86	0.38	2.00	0.00	5.14	1.35
California sheephead, juv	6/9/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	9/27/2006	7	7	2.14	3.93	0.29	0.49	0.29	0.49
California sheephead, male	6/9/2006	6	6	9.50	0.84	1.67	0.52	2.00	1.22
California sheephead, male	9/27/2006	7	7	5.86	4.34	1.14	0.90	1.14	0.90
garibaldi, adult	6/9/2006	6	6	9.50	1.22	2.17	0.41	8.20	2.77
garibaldi, adult	9/27/2006	7	7	10.00	0.00	2.43	0.53	10.57	4.16
garibaldi, juvenile	6/9/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/27/2006	7	7	1.29	3.40	0.29	0.76	0.29	0.76
giant kelpfish	6/9/2006	6	2	7.50	3.54	1.50	0.71	1.50	0.71
giant kelpfish	9/27/2006	7	5	8.60	1.67	1.80	0.45	2.00	0.71
giant kelpfish, juvenile	9/27/2006	7	3	8.67	0.58	1.67	0.58	2.67	2.08
gopher rockfish	9/27/2006	7	2	5.50	0.71	1.00	0.00	1.00	0.00
halfmoon	6/9/2006	6	6	9.00	1.67	2.00	0.63	6.80	4.76
halfmoon	9/27/2006	7	7	9.43	1.51	2.57	0.53	12.29	3.99
island kelpfish	6/9/2006	6	6	4.67	3.67	1.33	1.03	3.20	2.17
island kelpfish	9/27/2006	7	7	9.00	0.82	2.00	0.58	7.00	4.08
kelp bass, adult	6/9/2006	6	5	10.00	0.00	2.60	0.55	9.80	4.44
kelp bass, adult	9/27/2006	7	7	10.00	0.00	2.86	0.38	20.86	11.63
kelp bass, calico bass, all	6/9/2006	6	6	10.00	0.00	2.50	0.55	9.80	4.44
kelp bass, calico bass, all	9/27/2006	7	7	10.00	0.00	2.86	0.38	24.43	13.33
kelp bass, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/27/2006	7	7	7.00	3.27	1.71	0.76	3.57	2.57
kelp rockfish, adult	6/9/2006	6	5	7.20	4.15	1.60	0.89	3.60	2.30
kelp rockfish, adult	9/27/2006	7	7	4.86	4.60	1.14	1.07	3.14	3.08
kelp rockfish, all	6/9/2006	6	6	7.50	3.78	1.67	0.82	3.60	2.30
kelp rockfish, all	9/27/2006	7	7	4.86	4.60	1.29	1.25	4.86	5.96
kelp rockfish, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/27/2006	7	7	1.57	2.70	0.57	0.98	1.71	3.73
kelp surfperch	6/9/2006	6	6	8.83	0.75	1.83	0.75	4.40	4.98

2006 ROVING DIVER FISH COUNT:

Anacapa Island - Landing Cove continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
kelp surfperch	9/27/2006	7	7	9.86	0.38	2.86	0.38	25.71	14.38
lavender sculpin	9/27/2006	7	4	7.75	1.89	1.25	0.50	1.25	0.50
olive rockfish, adult	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/9/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/9/2006	6	5	9.40	0.89	2.60	0.55	21.60	17.42
opaleye, adult	9/27/2006	7	7	9.86	0.38	3.00	0.00	15.71	1.70
opaleye, all	6/9/2006	6	6	8.83	1.60	2.50	0.55	21.60	17.42
opaleye, all	9/27/2006	7	7	9.86	0.38	3.00	0.00	15.71	1.70
opaleye, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/9/2006	6	6	9.33	0.82	2.17	0.41	6.40	3.65
painted greenling	9/27/2006	7	7	9.43	1.13	2.29	0.49	7.43	3.95
pile surfperch, adult	6/9/2006	6	5	6.60	4.16	1.60	0.89	2.20	1.48
pile surfperch, adult	9/27/2006	7	7	4.43	4.24	0.71	0.76	0.86	1.07
pile surfperch, all	6/9/2006	6	6	7.00	3.85	1.50	0.84	2.20	1.48
pile surfperch, all	9/27/2006	7	7	4.43	4.24	0.71	0.76	0.86	1.07
pile surfperch, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/9/2006	6	6	4.00	4.43	0.83	0.98	1.20	1.64
rock wrasse, female	9/27/2006	7	7	4.29	4.23	0.71	0.76	0.71	0.76
rock wrasse, juvenile	9/27/2006	7	5	7.80	0.84	1.60	0.55	2.60	1.67
rock wrasse, male	6/9/2006	6	6	8.33	4.08	1.17	0.75	1.40	1.14
rock wrasse, male	9/27/2006	7	7	5.57	3.95	1.29	0.95	2.00	1.91
rubberlip surfperch	9/27/2006	7	1	9.00		2.00		4.00	
senorita, adult	6/9/2006	6	5	10.00	0.00	3.40	0.55	108.60	98.43
senorita, adult	9/27/2006	7	7	10.00	0.00	3.43	0.79	92.71	66.55
senorita, all	6/9/2006	6	6	10.00	0.00	3.33	0.52	108.60	98.43
senorita, all	9/27/2006	7	7	10.00	0.00	3.57	0.53	106.29	68.54
senorita, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/27/2006	7	7	7.14	4.88	2.00	1.41	13.57	11.70
snubnose sculpin	6/9/2006	6	1	8.00		1.00		1.00	
striped surfperch, adult	6/9/2006	6	5	2.00	4.47	0.20	0.45	0.20	0.45
striped surfperch, adult	9/27/2006	7	7	5.00	5.00	0.71	0.76	1.00	1.41
striped surfperch, all	6/9/2006	6	6	1.67	4.08	0.17	0.41	0.20	0.45
striped surfperch, all	9/27/2006	7	7	5.00	5.00	0.71	0.76	1.00	1.41
striped surfperch, juvenile	6/9/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/27/2006	7	7	0.00	0.00	0.00	0.00	0.00	0.00
swell shark	6/9/2006	6	5	5.80	0.84	1.40	0.55	1.60	0.89
treefish, adult	6/9/2006	6	6	7.33	1.03	1.83	0.41	2.40	1.14
treefish, adult	9/27/2006	7	7	5.86	4.06	1.29	0.95	1.57	1.27
treefish, juvenile	6/9/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	9/27/2006	7	7	2.14	3.76	0.29	0.49	0.29	0.49
two spotted kelpfish	9/27/2006	7	2	8.00	0.00	1.00	0.00	1.00	0.00
zebra goby	6/9/2006	6	3	7.33	1.53	2.00	0.00	3.67	2.89
zebra goby	9/27/2006	7	2	9.00	1.41	1.50	0.71	2.50	2.12

2006 ROVING DIVER FISH COUNT:
Santa Barbara Island - SE Sea Lion Rookery

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black surfperch, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	5/24/2006	3	3	10.00	0.00	3.00	0.00	54.67	1.15
blacksmith, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California halibut	5/24/2006	3	1	7.00		1.00		1.00	
California scorpionfish	5/24/2006	3	1	7.00		1.00		1.00	
California sheephead, fem	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	5/24/2006	3	3	8.00	2.00	1.00	0.00	1.00	0.00
garibaldi, adult	5/24/2006	3	3	7.00	1.00	2.00	0.00	2.33	0.58
garibaldi, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish, juv	5/24/2006	3	2	7.50	0.71	2.00	0.00	2.00	0.00
island kelpfish	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pacific angel shark	5/24/2006	3	1	6.00		1.00		1.00	
painted greenling	5/24/2006	3	3	4.67	4.04	1.00	1.00	1.33	1.53
pile surfperch, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rockfish spp.	5/24/2006	3	2	6.00	1.41	1.00	0.00	1.00	0.00
senorita, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	5/24/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	5/24/2006	3	1	6.00		3.00		11.00	

2006 ROVING DIVER FISH COUNT:
Santa Barbara Island - Arch Point

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black surfperch, adult	5/23/2006	4	4	3.00	3.46	0.75	0.96	0.75	0.96
black surfperch, all	5/23/2006	4	4	3.00	3.46	0.75	0.96	1.00	1.41
black surfperch, juvenile	5/23/2006	4	4	1.50	3.00	0.25	0.50	0.25	0.50
blackeye goby	5/23/2006	4	4	10.00	0.00	3.00	0.00	36.00	8.25
blacksmith, adult	5/23/2006	4	4	10.00	0.00	4.00	0.00	160.00	34.69
blacksmith, all	5/23/2006	4	4	10.00	0.00	4.00	0.00	160.00	34.69
blacksmith, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, fem	5/23/2006	4	4	9.00	2.00	2.00	0.00	3.50	1.00
California sheephead, juv	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	5/23/2006	4	4	1.50	3.00	0.25	0.50	0.25	0.50
coralline sculpin	5/23/2006	4	2	9.50	0.71	1.50	0.71	1.50	0.71
garibaldi, adult	5/23/2006	4	4	10.00	0.00	3.00	0.00	34.00	17.49
garibaldi, juvenile	5/23/2006	4	4	1.50	3.00	0.25	0.50	0.25	0.50
gopher/copper rockfish, juv	5/23/2006	4	1	5.00		1.00		1.00	
grass rockfish	5/23/2006	4	1	8.00		1.00		1.00	
Halfmoon	5/23/2006	4	4	10.00	0.00	1.50	0.58	1.75	0.96
island kelpfish	5/23/2006	4	4	9.00	0.82	1.75	0.50	3.75	2.50
kelp bass, adult	5/23/2006	4	4	8.25	1.50	1.00	0.00	1.00	0.00
kelp bass, calico bass, all	5/23/2006	4	4	8.25	1.50	1.00	0.00	1.00	0.00
kelp bass, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	5/23/2006	4	4	7.50	2.38	2.00	0.82	8.00	8.76
opaleye, all	5/23/2006	4	4	7.50	2.38	2.00	0.82	8.00	8.76
opaleye, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	5/23/2006	4	4	10.00	0.00	3.00	0.00	25.50	7.77
pile surfperch, adult	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	5/23/2006	4	4	2.25	4.50	0.25	0.50	0.25	0.50
rock wrasse, male	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	5/23/2006	4	4	10.00	0.00	2.75	0.50	18.75	10.87
senorita, all	5/23/2006	4	4	10.00	0.00	2.75	0.50	18.75	10.87
senorita, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	5/23/2006	4	1	8.00		1.00		1.00	
striped surfperch, adult	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	5/23/2006	4	4	3.75	4.79	0.50	0.58	0.50	0.58
treefish, juvenile	5/23/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Barbara Island - Cat Canyon

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black surfperch, adult	6/19/2006	5	3	10.00	0.00	1.33	0.58	1.33	0.58
black surfperch, all	6/19/2006	5	5	10.00	0.00	1.40	0.55	1.50	0.58
black surfperch, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/19/2006	5	5	4.40	4.28	1.20	1.10	4.00	3.16
blacksmith, adult	6/19/2006	5	3	10.00	0.00	4.00	0.00	314.00	53.23
blacksmith, all	6/19/2006	5	5	10.00	0.00	4.00	0.00	322.50	46.67
blacksmith, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, fem	6/19/2006	5	5	6.00	3.94	1.40	0.89	1.75	0.50
California sheephead, juv	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	6/19/2006	5	2	6.00	1.41	1.00	0.00	1.00	0.00
garibaldi, adult	6/19/2006	5	5	10.00	0.00	2.80	0.45	13.25	3.40
garibaldi, juvenile	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
grass rockfish	6/19/2006	5	1	8.00		1.00		1.00	
halfmoon	6/19/2006	5	5	9.80	0.45	3.00	0.00	26.00	10.23
island kelpfish	6/19/2006	5	5	5.40	3.29	1.80	1.10	5.50	6.35
kelp bass, adult	6/19/2006	5	3	8.67	1.15	1.67	0.58	2.33	1.15
kelp bass, calico bass, all	6/19/2006	5	5	8.80	1.10	1.60	0.55	2.25	0.96
kelp bass, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/19/2006	5	3	3.00	5.20	0.33	0.58	0.33	0.58
kelp rockfish, all	6/19/2006	5	5	1.80	4.02	0.20	0.45	0.25	0.50
kelp rockfish, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	6/19/2006	5	1	8.00		1.00		1.00	
olive rockfish, adult	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/19/2006	5	3	9.33	1.15	1.67	0.58	2.67	1.53
opaleye, all	6/19/2006	5	5	9.20	0.84	1.60	0.55	2.50	1.29
opaleye, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/19/2006	5	5	9.20	0.84	2.00	0.00	5.25	2.06
pile surfperch, adult	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/19/2006	5	5	2.00	4.47	0.20	0.45	0.25	0.50
rock wrasse, male	6/19/2006	5	5	1.80	4.02	0.20	0.45	0.25	0.50
senorita, adult	6/19/2006	5	3	10.00	0.00	3.33	0.58	84.33	56.98
senorita, all	6/19/2006	5	5	10.00	0.00	3.40	0.55	82.50	47.11
senorita, juvenile	6/19/2006	5	3	3.00	5.20	1.00	1.73	10.33	17.90
striped surfperch, adult	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/19/2006	5	3	0.00	0.00	0.00	0.00	0.00	0.00
top smelt	6/19/2006	5	2	8.00	2.83	2.50	0.71	15.00	7.07
treefish, adult	6/19/2006	5	5	6.80	3.96	0.80	0.45	0.75	0.50
treefish, juvenile	6/19/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.0

2006 ROVING DIVER FISH COUNT:
San Miguel Island - Miracle Mile

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	9/13/2006	5	4	9.75	0.50	2.00	0.00	4.75	2.22
black rockfish	9/13/2006	5	5	7.80	2.59	1.80	0.45	2.00	0.71
black surfperch, adult	9/13/2006	5	5	9.60	0.55	2.00	0.00	5.20	0.84
black surfperch, all	9/13/2006	5	5	9.60	0.55	2.00	0.00	6.40	1.14
black surfperch, juvenile	9/13/2006	5	5	6.60	4.16	1.00	0.71	1.20	1.10
blackeye goby	9/13/2006	5	5	4.20	4.02	1.00	1.00	1.20	1.30
blacksmith, adult	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, all	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	9/13/2006	5	5	9.00	1.00	2.20	0.45	10.20	6.69
blue rockfish, all	9/13/2006	5	5	9.00	1.00	2.20	0.45	10.20	6.69
blue rockfish, juvenile	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	9/13/2006	5	4	9.25	0.50	1.25	0.50	1.25	0.50
California sheephead, fem	9/13/2006	5	5	4.20	4.27	0.60	0.55	0.60	0.55
California sheephead, juv	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	9/13/2006	5	2	8.50	2.12	1.00	0.00	1.00	0.00
garibaldi, adult	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	9/13/2006	5	1	5.00		1.00		1.00	
giant kelpfish, juvenile	9/13/2006	5	1	10.00		1.00		1.00	
Gobiidae	9/13/2006	5	1	5.00		3.00		20.00	
gopher/copper rockfish, juv	9/13/2006	5	3	7.33	2.52	1.33	0.58	2.00	1.73
grass rockfish	9/13/2006	5	2	7.00	2.83	1.50	0.71	1.50	0.71
island kelpfish	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/13/2006	5	5	9.60	0.89	2.80	0.45	16.60	5.13
kelp rockfish, all	9/13/2006	5	5	10.00	0.00	2.80	0.45	19.60	6.27
kelp rockfish, juvenile	9/13/2006	5	5	6.40	4.10	1.20	0.84	3.00	3.24
kelp surfperch	9/13/2006	5	5	8.80	2.17	2.20	0.45	4.80	4.15
kelpfish spp.	9/13/2006	5	2	8.00	1.41	1.50	0.71	1.50	0.71
lingcod	9/13/2006	5	2	8.00	1.41	1.00	0.00	1.00	0.00
olive rockfish, adult	9/13/2006	5	5	7.60	0.89	2.00	0.00	6.00	1.87
olive rockfish, all	9/13/2006	5	5	7.60	0.89	2.00	0.00	6.00	1.87
olive/yellowtail rockfish, juv	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	9/13/2006	5	5	9.80	0.45	2.80	0.45	13.80	6.72
pile surfperch, adult	9/13/2006	5	5	6.00	3.74	1.00	0.71	1.00	0.71
pile surfperch, all	9/13/2006	5	5	6.00	3.74	1.00	0.71	1.00	0.71
pile surfperch, juvenile	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	9/13/2006	5	1	5.00		2.00		2.00	
senorita, adult	9/13/2006	5	5	6.60	4.22	1.80	1.10	4.80	4.21
senorita, all	9/13/2006	5	5	8.60	2.19	2.20	0.45	5.80	3.35
senorita, juvenile	9/13/2006	5	5	5.00	5.00	1.00	1.00	1.00	1.00
snubnose sculpin	9/13/2006	5	1	7.00		1.00		1.00	
striped surfperch, adult	9/13/2006	5	5	9.60	0.55	3.00	0.00	14.80	4.76
striped surfperch, all	9/13/2006	5	5	9.60	0.55	3.00	0.00	16.00	3.94
striped surfperch, juvenile	9/13/2006	5	5	4.40	4.34	1.00	1.00	1.20	1.30
treefish, adult	9/13/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
treefish, juvenile	9/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
San Miguel Island - Miracle Mile continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
tubesnout	9/13/2006	5	3	9.33	1.15	1.67	0.58	4.33	4.93
vermillion rockfish	9/13/2006	5	1	6.00		1.00		1.00	
wolf eel	9/13/2006	5	1	7.00		1.00		1.00	

2006 ROVING DIVER FISH COUNT:
Santa Rosa Island - Cluster Point

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	7/26/2006	6	4	9.00	1.15	2.00	0.00	2.33	0.58
black rockfish	7/26/2006	6	2	8.00	2.83	1.00	0.00	1.00	0.00
black surfperch, adult	7/26/2006	6	5	9.80	0.45	2.20	0.45	8.60	5.27
black surfperch, all	7/26/2006	6	6	9.83	0.41	2.33	0.52	8.80	5.36
black surfperch, juvenile	7/26/2006	6	5	2.00	4.47	0.20	0.45	0.20	0.45
blackeye goby	7/26/2006	6	6	5.00	5.48	0.83	0.98	1.40	1.67
blacksmith, adult	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, all	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/26/2006	6	5	10.00	0.00	3.00	0.00	22.20	6.76
blue rockfish, all	7/26/2006	6	6	10.00	0.00	3.00	0.00	22.80	6.98
blue rockfish, juvenile	7/26/2006	6	5	5.00	4.69	0.60	0.55	0.60	0.55
blue-banded goby	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	7/26/2006	6	1	7.00		1.00		1.00	
California sheephead, fem	7/26/2006	6	6	8.83	1.83	2.00	0.00	3.60	1.52
California sheephead, juv	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/26/2006	6	6	9.33	1.21	2.00	0.00	3.00	1.00
copper rockfish	7/26/2006	6	3	7.00	1.00	1.00	0.00	1.00	0.00
garibaldi, adult	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/26/2006	6	5	8.20	1.10	2.00	0.00	5.00	2.35
kelp rockfish, all	7/26/2006	6	6	8.50	1.22	2.00	0.00	5.00	2.35
kelp rockfish, juvenile	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	7/26/2006	6	4	9.25	0.96	2.00	0.00	4.00	1.15
lingcod	7/26/2006	6	6	7.83	0.75	1.83	0.41	2.20	0.45
olive rockfish, adult	7/26/2006	6	5	9.00	1.41	1.80	0.45	2.40	1.14
olive rockfish, all	7/26/2006	6	6	9.17	1.33	1.83	0.41	2.40	1.14
olive/yellowtail rockfish, juv	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/26/2006	6	6	10.00	0.00	2.67	0.52	13.00	4.85
pile surfperch, adult	7/26/2006	6	5	6.20	3.70	1.20	0.84	1.60	1.34
pile surfperch, all	7/26/2006	6	6	5.17	4.17	1.00	0.89	1.60	1.34
pile surfperch, juvenile	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
rainbow surfperch	7/26/2006	6	5	9.00	1.00	2.00	0.00	4.60	1.67
rock wrasse, female	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	7/26/2006	6	5	7.40	4.22	1.40	0.89	3.40	3.13
senorita, all	7/26/2006	6	6	6.17	4.83	1.17	0.98	3.40	3.13
senorita, juvenile	7/26/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	7/26/2006	6	5	10.00	0.00	3.00	0.00	30.40	7.06
striped surfperch, all	7/26/2006	6	6	10.00	0.00	3.00	0.00	31.60	8.11
striped surfperch, juvenile	7/26/2006	6	5	4.00	5.48	0.60	0.89	1.20	2.17
surfperch, juv	7/26/2006	6	2	6.50	0.71	2.50	0.71	8.50	9.19
treefish, adult	7/26/2006	6	6	3.50	4.18	0.50	0.55	0.40	0.55
treefish, juvenile	7/26/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	7/26/2006	6	4	7.00	1.41	2.50	0.58	29.33	26.86
vermillion rockfish	7/26/2006	6	3	7.00	2.00	1.33	0.58	1.33	0.58

2006 ROVING DIVER FISH COUNT:
Santa Rosa Island - Trancion Canyon

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	7/13/2006	5	3	8.00	1.00	2.00	0.00	2.67	0.58
black rockfish	7/13/2006	5	4	9.00	0.82	1.75	0.50	2.75	2.22
black surfperch, adult	7/13/2006	5	5	9.80	0.45	2.80	0.45	13.20	3.83
black surfperch, all	7/13/2006	5	5	9.80	0.45	2.80	0.45	13.20	3.83
black surfperch, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	7/13/2006	5	5	8.00	2.12	1.80	0.84	4.40	4.51
blacksmith, adult	7/13/2006	5	5	7.00	4.06	1.80	1.30	5.60	6.35
blacksmith, all	7/13/2006	5	5	7.00	4.06	1.80	1.30	5.60	6.35
blacksmith, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/13/2006	5	5	10.00	0.00	3.20	0.45	58.20	30.80
blue rockfish, all	7/13/2006	5	5	10.00	0.00	3.20	0.45	58.40	30.66
blue rockfish, juvenile	7/13/2006	5	5	1.80	4.02	0.20	0.45	0.20	0.45
blue-banded goby	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	7/13/2006	5	4	6.50	1.91	1.25	0.50	1.50	1.00
California sheephead, fem	7/13/2006	5	5	9.80	0.45	2.00	0.00	6.00	3.32
California sheephead, juv	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/13/2006	5	5	7.20	4.38	1.20	0.84	1.60	1.34
coralline sculpin	7/13/2006	5	1	7.00		1.00		1.00	
garibaldi, adult	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	7/13/2006	5	2	10.00	0.00	1.50	0.71	2.00	1.41
gopher/copper rockfish, juv	7/13/2006	5	1	6.00		1.00		1.00	
island kelpfish	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/13/2006	5	5	9.60	0.55	2.40	0.55	10.20	5.36
kelp rockfish, all	7/13/2006	5	5	9.60	0.55	2.40	0.55	10.20	5.36
kelp rockfish, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	7/13/2006	5	2	6.00	1.41	2.00	0.00	3.00	0.00
lingcod	7/13/2006	5	3	7.67	1.53	1.33	0.58	1.33	0.58
olive rockfish, adult	7/13/2006	5	5	9.40	1.34	2.00	0.00	5.80	1.92
olive rockfish, all	7/13/2006	5	5	9.40	1.34	2.00	0.00	5.80	1.92
olive/yellowtail rockfish, juv	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/13/2006	5	5	9.80	0.45	2.40	0.55	10.60	6.02
pile surfperch, adult	7/13/2006	5	5	8.20	1.64	1.80	0.45	2.80	1.48
pile surfperch, all	7/13/2006	5	5	8.20	1.64	1.80	0.45	2.80	1.48
pile surfperch, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rockfish spp.	7/13/2006	5	1	8.00		1.00		1.00	
rockfish spp., juvenile	7/13/2006	5	1	10.00		1.00		1.00	
rubberlip surfperch	7/13/2006	5	2	7.50	2.12	1.00	0.00	1.00	0.00
senorita, adult	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	7/13/2006	5	5	9.40	0.55	2.80	0.45	12.20	1.64
striped surfperch, all	7/13/2006	5	5	9.40	0.55	3.00	0.00	12.60	1.52
striped surfperch, juvenile	7/13/2006	5	5	3.60	4.93	0.40	0.55	0.40	0.55
treefish, adult	7/13/2006	5	5	1.00	2.24	0.20	0.45	0.20	0.45
treefish, juvenile	7/13/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
tubesnout	7/13/2006	5	2	6.50	0.71	3.00	0.00	20.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Rosa Island - Chickasaw

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	7/11/2006	5	5	9.60	0.55	2.00	0.00	4.80	2.59
black rockfish	7/11/2006	5	1	9.00		1.00		1.00	
black surfperch, adult	7/11/2006	5	5	9.80	0.45	2.20	0.45	8.40	3.05
black surfperch, all	7/11/2006	5	5	9.80	0.45	2.20	0.45	8.40	3.05
black surfperch, juvenile	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	7/11/2006	5	5	8.60	0.89	1.60	0.55	2.40	1.52
blacksmith, adult	7/11/2006	5	5	6.00	5.48	1.00	1.00	1.20	1.30
blacksmith, all	7/11/2006	5	5	6.00	5.48	1.00	1.00	1.20	1.30
blacksmith, juvenile	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/11/2006	5	5	10.00	0.00	2.80	0.45	17.20	7.26
blue rockfish, all	7/11/2006	5	5	10.00	0.00	2.80	0.45	19.20	8.35
blue rockfish, juvenile	7/11/2006	5	5	5.00	4.80	1.00	1.00	2.00	2.55
blue-banded goby	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	7/11/2006	5	3	7.67	2.08	1.67	0.58	1.67	0.58
California sheephead, fem	7/11/2006	5	5	8.60	1.67	1.80	0.45	2.40	1.14
California sheephead, juv	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/11/2006	5	5	9.40	0.55	2.00	0.00	3.60	1.34
coralline sculpin	7/11/2006	5	1	10.00		2.00		2.00	
garibaldi, adult	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	7/11/2006	5	1	7.00		1.00		1.00	
gopher rockfish	7/11/2006	5	2	9.50	0.71	1.00	0.00	1.50	0.71
gopher/copper rockfish, juv	7/11/2006	5	1	10.00		2.00		10.00	
island kelpfish	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/11/2006	5	5	10.00	0.00	2.20	0.45	9.00	3.94
kelp rockfish, all	7/11/2006	5	5	10.00	0.00	2.20	0.45	9.20	3.96
kelp rockfish, juvenile	7/11/2006	5	5	1.80	4.02	0.20	0.45	0.20	0.45
kelp surfperch	7/11/2006	5	3	9.67	0.58	2.00	0.00	3.67	2.89
lingcod	7/11/2006	5	4	8.50	0.58	1.75	0.50	2.50	1.29
olive rockfish, adult	7/11/2006	5	5	8.80	2.17	2.20	0.84	8.60	4.39
olive rockfish, all	7/11/2006	5	5	8.80	2.17	2.20	0.84	8.60	4.39
olive/yellowtail rockfish, juv	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/11/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
opaleye, all	7/11/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
opaleye, juvenile	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/11/2006	5	5	9.40	0.89	2.60	0.55	14.80	9.63
pile surfperch, adult	7/11/2006	5	5	8.20	1.48	2.00	0.00	4.00	2.00
pile surfperch, all	7/11/2006	5	5	8.20	1.48	2.00	0.00	4.20	1.92
pile surfperch, juvenile	7/11/2006	5	5	1.60	3.58	0.20	0.45	0.20	0.45
rainbow surfperch	7/11/2006	5	4	9.25	0.96	2.00	0.82	5.50	7.05
rock wrasse, female	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rockfish spp., juvenile	7/11/2006	5	1	9.00		2.00		3.00	
rubberlip surfperch	7/11/2006	5	3	9.00	1.00	1.67	0.58	2.00	1.00
senorita, adult	7/11/2006	5	5	10.00	0.00	2.80	0.45	29.80	15.59
senorita, all	7/11/2006	5	5	10.00	0.00	2.80	0.45	29.80	15.59
senorita, juvenile	7/11/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	7/11/2006	5	2	8.00	1.41	1.50	0.71	1.50	0.71
striped surfperch, adult	7/11/2006	5	5	9.00	1.73	2.00	0.71	7.40	4.67
striped surfperch, all	7/11/2006	5	5	9.00	1.73	2.40	0.89	8.60	5.77
striped surfperch, juvenile	7/11/2006	5	5	5.20	4.87	1.00	1.00	1.20	1.30
top smelt	7/11/2006	5	4	10.00	0.00	2.75	0.50	30.75	16.40
treefish, adult	7/11/2006	5	5	2.80	3.90	0.60	0.89	0.60	0.89
treefish, juvenile	7/11/2006	5	5	2.60	3.71	0.60	0.89	0.60	0.89
tubesnout	7/11/2006	5	4	8.25	0.96	2.75	0.50	23.25	15.73

2006 ROVING DIVER FISH COUNT:
Santa Rosa Island - South Point

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	6/6/2006	5	2	8.50	0.71	2.00	0.00	2.50	0.71
black surfperch, adult	6/6/2006	5	4	9.25	0.96	2.25	0.50	10.50	5.20
black surfperch, all	6/6/2006	5	5	9.00	1.00	2.20	0.45	10.50	5.20
black surfperch, juvenile	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/6/2006	5	5	1.60	3.58	0.20	0.45	0.25	0.50
blacksmith, adult	6/6/2006	5	4	7.25	4.86	2.25	1.50	27.25	26.30
blacksmith, all	6/6/2006	5	5	5.80	5.31	1.80	1.64	27.25	26.30
blacksmith, juvenile	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	6/6/2006	5	4	10.00	0.00	2.75	0.50	11.25	4.11
blue rockfish, all	6/6/2006	5	5	10.00	0.00	2.80	0.45	11.50	4.51
blue rockfish, juvenile	6/6/2006	5	4	2.25	4.50	0.25	0.50	0.25	0.50
blue-banded goby	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	6/6/2006	5	1	8.00		1.00		1.00	
California sheephead, fem	6/6/2006	5	5	9.60	0.55	2.20	0.45	8.25	3.10
California sheephead, juv	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/6/2006	5	5	9.40	0.89	1.20	0.45	1.25	0.50
garibaldi, adult	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
island kelpfish	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/6/2006	5	4	7.00	4.69	1.25	0.96	1.75	1.71
kelp rockfish, all	6/6/2006	5	5	5.60	5.13	1.00	1.00	1.75	1.71
kelp rockfish, juvenile	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	6/6/2006	5	3	9.67	0.58	2.00	0.00	6.00	0.00
lingcod	6/6/2006	5	2	6.50	2.12	1.00	0.00	1.00	
olive rockfish, adult	6/6/2006	5	4	10.00	0.00	2.25	0.50	8.75	2.50
olive rockfish, all	6/6/2006	5	5	10.00	0.00	2.40	0.55	9.00	2.45
olive/yellowtail rockfish, juv	6/6/2006	5	4	2.50	5.00	0.25	0.50	0.25	0.50
opaleye, adult	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/6/2006	5	5	6.00	3.67	1.20	0.84	2.25	2.22
pile surfperch, adult	6/6/2006	5	4	5.75	3.86	1.00	0.82	1.25	1.26
pile surfperch, all	6/6/2006	5	5	4.60	4.22	0.80	0.84	1.25	1.26
pile surfperch, juvenile	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
rainbow surfperch	6/6/2006	5	3	7.00	1.00	1.67	0.58	1.67	0.58
rock wrasse, female	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rubberlip surfperch	6/6/2006	5	1	8.00		2.00		3.00	
senorita, adult	6/6/2006	5	4	10.00	0.00	3.00	0.00	54.75	30.63
senorita, all	6/6/2006	5	5	10.00	0.00	3.00	0.00	54.75	30.63
senorita, juvenile	6/6/2006	5	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	6/6/2006	5	4	8.25	1.50	2.25	0.96	7.75	6.24
striped surfperch, all	6/6/2006	5	5	8.20	1.30	2.20	0.84	9.00	7.53
striped surfperch, juvenile	6/6/2006	5	4	3.50	4.36	0.75	0.96	1.25	1.89
top smelt	6/6/2006	5	2	10.00	0.00	2.00	0.00	2.50	0.71
treefish, adult	6/6/2006	5	5	3.20	4.38	0.60	0.89	0.75	0.96
treefish, juvenile	6/6/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Devil's Peak Member

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	9/20/2006	5	1	6.00		1.00		1.00	
black rockfish	9/20/2006	5	1	8.00		1.00		1.00	
black surfperch, adult	9/20/2006	5	5	10.00	0.00	3.00	0.00	20.80	2.95
black surfperch, all	9/20/2006	5	5	10.00	0.00	3.00	0.00	21.00	3.00
black surfperch, juvenile	9/20/2006	5	5	1.40	3.13	0.20	0.45	0.20	0.45
blackeye goby	9/20/2006	5	5	9.80	0.45	2.80	0.45	43.80	23.47
blacksmith, adult	9/20/2006	5	5	10.00	0.00	4.00	0.00	301.20	147.56
blacksmith, all	9/20/2006	5	5	10.00	0.00	4.00	0.00	337.40	160.82
blacksmith, juvenile	9/20/2006	5	5	7.60	4.34	2.60	1.52	36.20	39.21
blue rockfish, adult	9/20/2006	5	5	7.40	4.34	1.20	0.84	1.20	0.84
blue rockfish, all	9/20/2006	5	5	7.40	4.34	1.20	0.84	1.20	0.84
blue rockfish, juvenile	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/20/2006	5	5	6.00	5.48	1.20	1.10	3.60	4.10
California scorpionfish	9/20/2006	5	2	8.00	1.41	1.50	0.71	2.00	1.41
California sheephead, fem	9/20/2006	5	5	10.00	0.00	2.00	0.00	5.40	1.67
California sheephead, juv	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/20/2006	5	5	9.20	1.30	1.40	0.55	1.60	0.89
garibaldi, adult	9/20/2006	5	5	10.00	0.00	3.00	0.00	19.40	2.70
garibaldi, juvenile	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	9/20/2006	5	3	7.67	1.53	1.33	0.58	1.67	1.15
halfmoon	9/20/2006	5	5	9.80	0.45	2.20	0.45	13.00	12.88
island kelpfish	9/20/2006	5	5	6.80	4.09	2.00	1.22	7.20	5.54
jack mackerel	9/20/2006	5	2	10.00	0.00	3.50	0.71	120.00	113.14
kelp bass, adult	9/20/2006	5	5	10.00	0.00	3.00	0.00	21.00	3.39
kelp bass, calico bass, all	9/20/2006	5	5	10.00	0.00	3.00	0.00	21.20	3.63
kelp bass, juvenile	9/20/2006	5	5	1.60	3.58	0.20	0.45	0.20	0.45
kelp rockfish, adult	9/20/2006	5	5	7.20	4.21	1.40	0.89	3.40	3.05
kelp rockfish, all	9/20/2006	5	5	7.20	4.21	1.40	0.89	3.40	3.05
kelp rockfish, juvenile	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
lingcod	9/20/2006	5	1	9.00		1.00		1.00	
olive rockfish, adult	9/20/2006	5	5	9.60	0.55	1.80	0.45	2.20	0.84
olive rockfish, all	9/20/2006	5	5	9.60	0.55	1.80	0.45	2.20	0.84
olive/yellowtail rockfish, juv	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/20/2006	5	5	9.20	0.84	2.40	0.55	8.20	2.59
opaleye, all	9/20/2006	5	5	9.20	0.84	2.40	0.55	8.20	2.59
opaleye, juvenile	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	9/20/2006	5	5	9.40	0.55	2.20	0.45	8.00	3.74
pile surfperch, adult	9/20/2006	5	5	9.80	0.45	2.40	0.55	12.60	5.50
pile surfperch, all	9/20/2006	5	5	9.80	0.45	2.40	0.55	12.60	5.50
pile surfperch, juvenile	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	9/20/2006	5	5	7.20	4.38	1.60	0.89	2.20	1.48
rock wrasse, juvenile	9/20/2006	5	3	8.67	1.15	2.00	0.00	7.00	1.00
rock wrasse, male	9/20/2006	5	5	7.40	4.22	1.60	0.89	2.40	1.67
rubberlip surfperch	9/20/2006	5	1	6.00		1.00		1.00	
sarcastic fringehead	9/20/2006	5	1	8.00		1.00		1.00	
sculpin spp.	9/20/2006	5	1	7.00		2.00		2.00	
senorita, adult	9/20/2006	5	5	10.00	0.00	4.00	0.00	150.60	57.30
senorita, all	9/20/2006	5	5	10.00	0.00	4.00	0.00	159.00	60.82
senorita, juvenile	9/20/2006	5	5	4.00	3.94	1.60	1.52	8.40	7.89
snubnose sculpin	9/20/2006	5	1	8.00		1.00		1.00	
striped surfperch, adult	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
top smelt	9/20/2006	5	1	6.00		3.00		50.00	
treefish, adult	9/20/2006	5	5	4.80	4.44	1.00	1.00	1.20	1.30
treefish, juvenile	9/20/2006	5	5	1.80	4.02	0.20	0.45	0.20	0.45

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Potato Pasture

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	8/7/2006	6	2	6.50	0.71	1.00	0.00	1.00	0.00
bat ray	8/25/2006	5	1	5.00		1.00		1.00	
black and yellow rockfish	8/7/2006	6	3	8.33	1.15	2.00	0.00	2.00	0.00
black and yellow rockfish	8/25/2006	5	3	7.33	0.58	1.33	0.58	1.67	1.15
black surfperch, adult	8/7/2006	6	6	8.17	1.33	2.33	0.82	9.50	4.64
black surfperch, adult	8/25/2006	5	5	8.80	0.84	2.20	0.45	6.00	3.54
black surfperch, all	8/7/2006	6	6	8.17	1.33	2.33	0.82	9.50	4.64
black surfperch, all	8/25/2006	5	5	8.80	0.84	2.20	0.45	6.00	3.54
black surfperch, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/7/2006	6	6	10.00	0.00	3.67	0.52	105.33	69.58
blackeye goby	8/25/2006	5	5	10.00	0.00	3.80	0.45	178.20	94.00
blacksmith, adult	8/7/2006	6	6	9.67	0.52	3.83	0.41	184.00	87.01
blacksmith, adult	8/25/2006	5	5	10.00	0.00	3.60	0.55	266.20	307.22
blacksmith, all	8/7/2006	6	6	9.83	0.41	3.83	0.41	209.00	92.87
blacksmith, all	8/25/2006	5	5	10.00	0.00	3.60	0.55	306.40	325.77
blacksmith, juvenile	8/7/2006	6	6	9.17	0.75	2.67	0.52	25.00	16.37
blacksmith, juvenile	8/25/2006	5	5	8.60	2.07	2.60	0.55	40.20	36.85
blue rockfish, adult	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/25/2006	5	5	9.20	0.84	1.80	0.45	1.80	0.45
blue rockfish, all	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/25/2006	5	5	9.20	0.84	1.80	0.45	1.80	0.45
blue rockfish, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/7/2006	6	6	2.83	4.40	0.67	1.21	2.33	5.24
blue-banded goby	8/25/2006	5	5	7.20	4.02	2.00	1.22	16.00	19.74
cabezon	8/7/2006	6	1	8.00		1.00		1.00	
California scorpionfish	8/7/2006	6	1	10.00		1.00		1.00	
California sheephead, fem	8/7/2006	6	6	9.00	1.26	2.00	0.00	5.83	1.60
California sheephead, fem	8/25/2006	5	5	9.20	1.79	2.00	0.00	4.20	1.30
California sheephead, juv	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/7/2006	6	6	2.00	3.10	0.33	0.52	0.33	0.52
California sheephead, male	8/25/2006	5	5	4.00	5.48	0.60	0.89	0.60	0.89
garibaldi, adult	8/7/2006	6	6	9.67	0.52	2.67	0.52	11.50	4.59
garibaldi, adult	8/25/2006	5	5	10.00	0.00	2.80	0.45	15.20	3.42
garibaldi, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/25/2006	5	5	1.80	4.02	0.20	0.45	0.20	0.45
giant black sea bass	8/7/2006	6	1	8.00		1.00		1.00	
gopher rockfish	8/7/2006	6	3	7.33	0.58	1.67	0.58	1.67	0.58
gopher rockfish	8/25/2006	5	1	6.00		1.00		1.00	
halfmoon	8/7/2006	6	6	9.00	0.89	2.00	0.00	6.50	2.17
halfmoon	8/25/2006	5	5	9.80	0.45	2.20	0.45	6.00	3.39
island kelpfish	8/7/2006	6	6	7.17	3.92	1.50	0.84	2.50	1.87
island kelpfish	8/25/2006	5	5	8.40	1.82	1.80	0.45	3.20	1.92
kelp bass, adult	8/7/2006	6	6	10.00	0.00	3.00	0.00	28.00	9.27
kelp bass, adult	8/25/2006	5	5	10.00	0.00	3.00	0.00	23.40	5.13
kelp bass, calico bass, all	8/7/2006	6	6	10.00	0.00	3.00	0.00	28.00	9.27
kelp bass, calico bass, all	8/25/2006	5	5	10.00	0.00	3.00	0.00	23.40	5.13
kelp bass, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	8/25/2006	5	4	6.75	1.50	1.75	0.50	2.50	1.00

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Potato Pasture continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
olive rockfish, adult	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	8/25/2006	5	5	7.60	4.28	1.40	0.89	1.40	0.89
olive rockfish, all	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/25/2006	5	5	7.60	4.28	1.40	0.89	1.40	0.89
olive/yellowtail rockfish, juv	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/7/2006	6	6	9.67	0.52	2.50	0.55	11.00	5.83
opaleye, adult	8/25/2006	5	5	9.80	0.45	3.00	0.00	17.40	8.38
opaleye, all	8/7/2006	6	6	9.67	0.52	2.50	0.55	11.00	5.83
opaleye, all	8/25/2006	5	5	9.80	0.45	3.00	0.00	17.40	8.38
opaleye, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/7/2006	6	6	8.83	1.94	1.83	0.41	3.83	3.06
painted greenling	8/25/2006	5	5	8.20	1.48	2.00	0.00	6.00	2.55
pile surfperch, adult	8/7/2006	6	6	9.83	0.41	3.00	0.00	34.50	8.02
pile surfperch, adult	8/25/2006	5	5	9.40	0.89	2.80	0.45	15.20	5.50
pile surfperch, all	8/7/2006	6	6	9.83	0.41	3.00	0.00	34.50	8.02
pile surfperch, all	8/25/2006	5	5	9.40	0.89	2.80	0.45	15.20	5.50
pile surfperch, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/7/2006	6	6	8.83	1.17	2.00	0.00	3.83	1.94
rock wrasse, female	8/25/2006	5	5	8.20	1.30	1.60	0.55	1.80	0.84
rock wrasse, male	8/7/2006	6	6	8.17	1.33	2.17	0.41	4.00	3.52
rock wrasse, male	8/25/2006	5	5	7.80	2.59	1.40	0.55	2.40	2.61
rubberlip surfperch	8/7/2006	6	6	7.67	1.03	2.17	0.75	6.83	8.28
rubberlip surfperch	8/25/2006	5	5	8.60	1.14	2.20	0.84	7.60	5.59
senorita, adult	8/7/2006	6	6	9.67	0.52	2.83	0.41	48.00	35.88
senorita, adult	8/25/2006	5	5	9.60	0.55	2.80	0.45	15.80	7.85
senorita, all	8/7/2006	6	6	9.83	0.41	2.83	0.41	48.17	35.65
senorita, all	8/25/2006	5	5	9.60	0.55	2.80	0.45	18.00	10.44
senorita, juvenile	8/7/2006	6	6	1.67	4.08	0.17	0.41	0.17	0.41
senorita, juvenile	8/25/2006	5	5	1.80	4.02	0.60	1.34	2.20	4.92
snubnose sculpin	8/7/2006	6	1	5.00		1.00		1.00	
snubnose sculpin	8/25/2006	5	1	5.00		1.00		1.00	
striped surfperch, adult	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/7/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/25/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
swell shark	8/25/2006	5	1	6.00		1.00		1.00	
treefish, adult	8/7/2006	6	6	6.33	4.93	1.17	0.98	2.00	2.00
treefish, adult	8/25/2006	5	5	8.00	1.58	1.40	0.55	2.20	2.17
treefish, juvenile	8/7/2006	6	6	1.50	3.67	0.17	0.41	0.17	0.41
treefish, juvenile	8/25/2006	5	5	4.20	4.27	0.60	0.55	0.60	0.55
yellowtail	8/25/2006	5	1	6.00		2.00		10.00	
zebra goby	8/25/2006	5	3	9.67	0.58	2.00	0.00	2.67	0.58

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Cavern Point

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	6/8/2006	5	1	10.00		1.00		1.00	
black and yellow rockfish	6/8/2006	5	1	9.00		1.00		1.00	
black surfperch, adult	6/8/2006	5	5	9.80	0.45	2.20	0.45	8.40	4.34
black surfperch, adult	9/20/2006	4	4	10.00	0.00	2.75	0.50	14.25	4.57
black surfperch, all	6/8/2006	5	5	9.80	0.45	2.20	0.45	8.40	4.34
black surfperch, all	9/20/2006	4	4	10.00	0.00	2.75	0.50	14.50	4.20
black surfperch, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/20/2006	4	4	2.25	4.50	0.25	0.50	0.25	0.50
blackeye goby	6/8/2006	5	5	10.00	0.00	3.60	0.55	107.80	42.45
blackeye goby	9/20/2006	4	4	10.00	0.00	3.25	0.50	65.00	55.37
blacksmith, adult	6/8/2006	5	5	9.20	1.30	2.80	0.84	69.00	107.35
blacksmith, adult	9/20/2006	4	4	10.00	0.00	4.00	0.00	161.00	40.93
blacksmith, all	6/8/2006	5	5	9.20	1.30	2.80	0.84	69.00	107.35
blacksmith, all	9/20/2006	4	4	10.00	0.00	4.00	0.00	338.25	111.11
blacksmith, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	9/20/2006	4	4	9.50	0.58	3.75	0.50	177.25	117.19
blue rockfish, adult	6/8/2006	5	5	7.00	4.00	1.40	0.89	1.40	0.89
blue rockfish, adult	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/8/2006	5	5	7.00	4.00	1.40	0.89	1.40	0.89
blue rockfish, all	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	9/20/2006	4	4	3.50	4.12	1.00	1.15	2.00	2.31
brown rockfish	6/8/2006	5	1	8.00		1.00		1.00	
cabezon	9/20/2006	4	3	8.33	1.53	1.67	0.58	1.67	0.58
California scorpionfish	9/20/2006	4	1	5.00		1.00		1.00	
California sheephead, fem	6/8/2006	5	5	9.20	0.84	2.00	0.00	5.60	3.05
California sheephead, fem	9/20/2006	4	4	8.75	0.96	2.00	0.00	3.50	1.29
California sheephead, juv	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	9/20/2006	4	4	1.75	3.50	0.50	1.00	0.75	1.50
California sheephead, male	6/8/2006	5	5	3.80	5.22	0.40	0.55	0.40	0.55
California sheephead, male	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
c-o turbot	6/8/2006	5	1	10.00		1.00		1.00	
garibaldi, adult	6/8/2006	5	5	9.60	0.55	2.80	0.45	13.20	3.11
garibaldi, adult	9/20/2006	4	4	10.00	0.00	2.75	0.50	15.75	4.03
garibaldi, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	6/8/2006	5	5	9.00	1.00	1.80	0.45	3.60	1.67
gopher rockfish	9/20/2006	4	4	6.50	0.58	1.75	0.50	2.00	0.82
halfmoon	6/8/2006	5	1	7.00		1.00		1.00	
halfmoon	9/20/2006	4	4	9.00	1.15	2.00	0.00	4.00	2.16
island kelpfish	6/8/2006	5	5	9.80	0.45	2.00	0.00	6.40	2.30
island kelpfish	9/20/2006	4	4	9.25	0.96	2.00	0.00	5.25	3.40
kelp bass, adult	6/8/2006	5	5	10.00	0.00	2.80	0.45	15.20	7.05
kelp bass, adult	9/20/2006	4	4	10.00	0.00	3.00	0.00	19.00	6.06
kelp bass, calico bass, all	6/8/2006	5	5	10.00	0.00	2.80	0.45	15.20	7.05
kelp bass, calico bass, all	9/20/2006	4	4	10.00	0.00	3.00	0.00	19.00	6.06
kelp bass, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/20/2006	4	4	2.50	5.00	0.25	0.50	0.25	0.50
kelp rockfish, all	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	9/20/2006	4	4	2.50	5.00	0.25	0.50	0.25	0.50
kelp rockfish, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	6/8/2006	5	4	7.25	1.71	1.50	0.58	2.75	2.06
olive rockfish, adult	6/8/2006	5	5	5.20	5.02	0.60	0.55	0.60	0.55

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Cavern Point continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
olive rockfish, adult	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/8/2006	5	5	5.20	5.02	0.60	0.55	0.60	0.55
olive rockfish, all	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/8/2006	5	5	8.00	4.47	1.20	0.84	2.00	2.00
opaleye, adult	9/20/2006	4	4	9.25	0.96	2.50	0.58	7.75	4.35
opaleye, all	6/8/2006	5	5	8.00	4.47	1.20	0.84	2.00	2.00
opaleye, all	9/20/2006	4	4	9.25	0.96	2.50	0.58	7.75	4.35
opaleye, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/8/2006	5	5	10.00	0.00	2.80	0.45	23.60	11.80
painted greenling	9/20/2006	4	4	9.75	0.50	2.50	0.58	7.75	3.95
pile surfperch, adult	6/8/2006	5	5	9.60	0.89	2.80	0.45	22.80	17.09
pile surfperch, adult	9/20/2006	4	4	9.25	0.50	2.25	0.50	10.50	7.55
pile surfperch, all	6/8/2006	5	5	9.60	0.89	2.80	0.45	22.80	17.09
pile surfperch, all	9/20/2006	4	4	9.25	0.50	2.25	0.50	10.50	7.55
pile surfperch, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/8/2006	5	5	7.60	1.14	1.80	0.45	2.60	1.14
rock wrasse, female	9/20/2006	4	4	6.75	4.57	1.50	1.00	2.50	2.08
rock wrasse, juvenile	9/20/2006	4	1	6.00		1.00		1.00	
rock wrasse, male	6/8/2006	5	5	4.40	4.04	0.80	0.84	0.80	0.84
rock wrasse, male	9/20/2006	4	4	6.50	4.36	1.25	0.96	1.75	1.50
rubberlip surfperch	6/8/2006	5	5	8.20	1.10	1.80	0.84	4.80	6.87
rubberlip surfperch	9/20/2006	4	4	7.00	1.83	1.50	0.58	4.00	4.24
senorita, adult	6/8/2006	5	5	9.80	0.45	3.20	0.45	50.60	41.51
senorita, adult	9/20/2006	4	4	10.00	0.00	3.00	0.00	61.50	15.50
senorita, all	6/8/2006	5	5	9.80	0.45	3.20	0.45	50.60	41.51
senorita, all	9/20/2006	4	4	10.00	0.00	3.00	0.00	61.50	15.50
senorita, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	9/20/2006	4	2	8.00	0.00	1.00	0.00	1.00	0.00
striped surfperch, adult	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/8/2006	5	5	8.40	2.07	1.80	0.45	2.60	1.95
treefish, adult	9/20/2006	4	4	3.25	3.95	0.75	0.96	0.75	0.96
treefish, juvenile	6/8/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	9/20/2006	4	4	1.25	2.50	0.25	0.50	0.25	0.50
white surfperch	6/8/2006	5	1	9.00		1.00		1.00	
yellowfin fringehead	6/8/2006	5	2	7.00	0.00	1.50	0.71	3.00	2.83

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Little Scorpion

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	9/20/2006	4	2	5.00	0.00	1.50	0.71	1.50	0.71
black and yellow rockfish	7/20/2006	5	5	7.20	1.10	1.80	0.45	4.40	2.30
black and yellow rockfish	9/20/2006	4	1	6.00		1.00		1.00	
black rockfish	7/20/2006	5	2	8.50	0.71	1.00	0.00	1.00	0.00
black rockfish	9/20/2006	4	1	9.00		1.00		1.00	
black surfperch, adult	7/20/2006	5	5	9.80	0.45	2.20	0.45	8.20	4.32
black surfperch, adult	9/20/2006	4	4	10.00	0.00	3.00	0.00	19.75	3.50
black surfperch, all	7/20/2006	5	5	9.80	0.45	2.20	0.45	8.20	4.32
black surfperch, all	9/20/2006	4	4	10.00	0.00	3.00	0.00	20.00	3.37
black surfperch, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/20/2006	4	4	2.50	5.00	0.25	0.50	0.25	0.50
blackeye goby	7/20/2006	5	5	10.00	0.00	3.80	0.45	200.80	87.46
blackeye goby	9/20/2006	4	4	9.75	0.50	3.00	0.00	31.00	22.32
blacksmith, adult	7/20/2006	5	5	10.00	0.00	3.60	0.55	111.60	59.25
blacksmith, adult	9/20/2006	4	4	10.00	0.00	3.75	0.50	171.50	136.40
blacksmith, all	7/20/2006	5	5	10.00	0.00	3.60	0.55	116.40	58.66
blacksmith, all	9/20/2006	4	4	10.00	0.00	4.00	0.00	420.25	179.32
blacksmith, juvenile	7/20/2006	5	5	9.00	1.00	1.80	0.45	4.80	3.27
blacksmith, juvenile	9/20/2006	4	4	8.75	1.26	4.00	0.00	248.75	82.78
blue rockfish, adult	7/20/2006	5	5	10.00	0.00	2.00	0.00	4.20	1.64
blue rockfish, adult	9/20/2006	4	4	8.75	2.50	1.75	0.50	5.50	3.70
blue rockfish, all	7/20/2006	5	5	10.00	0.00	2.00	0.00	4.20	1.64
blue rockfish, all	9/20/2006	4	4	8.75	2.50	1.75	0.50	5.50	3.70
blue rockfish, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	7/20/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
blue-banded goby	9/20/2006	4	4	6.25	4.50	1.75	1.26	5.25	7.27
brown rockfish	7/20/2006	5	3	7.33	0.58	1.00	0.00	1.00	0.00
brown rockfish	9/20/2006	4	1	8.00		1.00		1.00	
cabezon	7/20/2006	5	1	8.00		1.00		1.00	
California moray	7/20/2006	5	1	5.00		1.00		1.00	
California scorpionfish	7/20/2006	5	2	8.00	0.00	1.00	0.00	1.00	0.00
California scorpionfish	9/20/2006	4	3	6.67	2.08	1.33	0.58	1.33	0.58
California sheephead, fem	7/20/2006	5	5	7.40	4.16	1.40	0.89	2.80	2.39
California sheephead, fem	9/20/2006	4	4	9.50	0.58	2.00	0.00	5.00	0.82
California sheephead, juv	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	9/20/2006	4	4	5.00	5.77	0.50	0.58	0.50	0.58
California sheephead, male	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	7/20/2006	5	5	9.60	0.89	3.00	0.00	14.00	2.35
garibaldi, adult	9/20/2006	4	4	10.00	0.00	3.00	0.00	15.00	3.16
garibaldi, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
gopher rockfish	9/20/2006	4	2	7.50	0.71	1.50	0.71	2.00	1.41
halfmoon	7/20/2006	5	2	5.50	0.71	1.50	0.71	2.00	1.41
halfmoon	9/20/2006	4	4	9.50	1.00	2.00	0.00	6.25	2.75
island kelpfish	7/20/2006	5	5	8.80	1.64	1.80	0.45	3.60	1.82
island kelpfish	9/20/2006	4	4	4.00	4.69	0.75	0.96	1.00	1.41
kelp bass, adult	7/20/2006	5	5	8.80	1.64	1.80	0.45	7.00	3.54
kelp bass, adult	9/20/2006	4	4	10.00	0.00	2.75	0.50	15.00	7.44
kelp bass, calico bass, all	7/20/2006	5	5	8.80	1.64	1.80	0.45	7.00	3.54
kelp bass, calico bass, all	9/20/2006	4	4	10.00	0.00	2.75	0.50	15.00	7.44
kelp bass, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/20/2006	5	5	9.60	0.55	2.60	0.55	13.00	7.18
kelp rockfish, adult	9/20/2006	4	4	9.25	0.96	2.25	0.50	6.75	4.86
kelp rockfish, all	7/20/2006	5	5	9.60	0.55	2.60	0.55	13.00	7.18
kelp rockfish, all	9/20/2006	4	4	9.25	0.96	2.25	0.50	6.75	4.86

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Little Scorpion continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
kelp rockfish, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	7/20/2006	5	4	8.50	0.58	1.75	0.50	2.00	0.82
ocean whitefish	9/20/2006	4	1	9.00		2.00		3.00	
olive rockfish, adult	7/20/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
olive rockfish, adult	9/20/2006	4	4	6.25	4.35	1.25	0.96	1.50	1.29
olive rockfish, all	7/20/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
olive rockfish, all	9/20/2006	4	4	6.25	4.35	1.25	0.96	1.50	1.29
olive/yellowtail rockfish, juv	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/20/2006	5	5	2.60	3.58	0.60	0.89	0.60	0.89
opaleye, adult	9/20/2006	4	4	9.75	0.50	2.00	0.00	5.00	1.41
opaleye, all	7/20/2006	5	5	2.60	3.58	0.60	0.89	0.60	0.89
opaleye, all	9/20/2006	4	4	9.75	0.50	2.00	0.00	5.00	1.41
opaleye, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/20/2006	5	5	10.00	0.00	3.00	0.00	32.20	14.60
painted greenling	9/20/2006	4	4	9.75	0.50	2.00	0.00	6.50	2.38
pile surfperch, adult	7/20/2006	5	5	9.20	0.84	2.00	0.71	16.00	31.31
pile surfperch, adult	9/20/2006	4	4	7.75	1.26	2.00	0.00	4.50	1.29
pile surfperch, all	7/20/2006	5	5	9.20	0.84	2.00	0.71	16.00	31.31
pile surfperch, all	9/20/2006	4	4	7.75	1.26	2.00	0.00	4.50	1.29
pile surfperch, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/20/2006	5	5	5.00	2.83	1.20	0.84	1.20	0.84
rock wrasse, female	9/20/2006	4	4	8.00	2.00	2.00	0.00	3.25	0.96
rock wrasse, juvenile	9/20/2006	4	2	7.00	0.00	2.00	0.00	3.00	1.41
rock wrasse, male	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	9/20/2006	4	4	6.25	4.27	0.75	0.50	0.75	0.50
ronquil spp.	7/20/2006	5	1	6.00		1.00		1.00	
rubberlip surfperch	9/20/2006	4	1	10.00		2.00		2.00	
senorita, adult	7/20/2006	5	5	9.60	0.55	3.00	0.00	20.80	9.44
senorita, adult	9/20/2006	4	4	10.00	0.00	3.25	0.50	62.75	28.51
senorita, all	7/20/2006	5	5	9.60	0.55	3.00	0.00	20.80	9.44
senorita, all	9/20/2006	4	4	10.00	0.00	4.00	0.00	168.25	55.88
senorita, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	9/20/2006	4	4	9.00	2.00	3.50	0.58	105.50	33.32
striped surfperch, adult	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	7/20/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	7/20/2006	5	5	7.60	4.28	1.60	0.89	4.00	2.45
treefish, adult	9/20/2006	4	4	6.00	4.08	1.00	0.82	1.00	0.82
treefish, juvenile	7/20/2006	5	5	6.00	3.67	1.00	0.71	1.20	1.10
treefish, juvenile	9/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
white surfperch	7/20/2006	5	1	8.00		1.00		1.00	
zebra goby	7/20/2006	5	2	6.50	0.71	1.50	0.71	1.50	0.71

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Pedro Reef

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black surfperch, adult	8/18/2006	5	5	4.80	4.60	1.00	1.00	2.00	2.92
black surfperch, adult	9/21/2006	4	4	3.00	3.46	0.50	0.58	0.50	0.58
black surfperch, all	8/18/2006	5	5	4.80	4.60	1.00	1.00	2.00	2.92
black surfperch, all	9/21/2006	4	4	3.00	3.46	0.50	0.58	0.50	0.58
black surfperch, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/18/2006	5	5	10.00	0.00	4.00	0.00	200.40	58.51
blackeye goby	9/21/2006	4	4	10.00	0.00	3.75	0.50	147.25	66.38
blacksmith, adult	8/18/2006	5	5	9.20	1.79	3.80	0.45	183.60	150.22
blacksmith, adult	9/21/2006	4	4	9.25	0.96	3.25	0.96	85.50	78.47
blacksmith, all	8/18/2006	5	5	9.20	1.79	3.80	0.45	208.40	123.80
blacksmith, all	9/21/2006	4	4	10.00	0.00	3.50	0.58	92.50	75.50
blacksmith, juvenile	8/18/2006	5	5	4.60	2.70	1.40	0.89	5.00	4.18
blacksmith, juvenile	9/21/2006	4	4	9.25	0.96	2.25	0.50	7.00	3.56
blue rockfish, adult	8/18/2006	5	5	6.40	3.78	1.60	0.89	1.80	1.10
blue rockfish, adult	9/21/2006	4	4	8.50	0.58	2.00	0.00	2.75	0.96
blue rockfish, all	8/18/2006	5	5	6.40	3.78	1.60	0.89	1.80	1.10
blue rockfish, all	9/21/2006	4	4	8.50	0.58	2.00	0.00	2.75	0.96
blue rockfish, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/18/2006	5	5	5.20	2.95	1.60	0.89	2.00	1.22
blue-banded goby	9/21/2006	4	4	7.00	4.69	1.50	1.00	3.50	2.38
California moray	8/18/2006	5	2	7.00	0.00	1.00	0.00	1.00	0.00
California moray	9/21/2006	4	1	8.00		1.00		1.00	
California scorpionfish	8/18/2006	5	1	8.00		2.00		2.00	
California scorpionfish	9/21/2006	4	2	7.50	3.54	1.00	0.00	1.00	0.00
California sheephead, fem	8/18/2006	5	5	9.60	0.55	2.00	0.00	4.20	1.92
California sheephead, fem	9/21/2006	4	4	9.25	0.96	2.25	0.50	7.50	5.69
California sheephead, juv	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/18/2006	5	5	1.60	3.58	0.20	0.45	0.20	0.45
California sheephead, male	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	8/18/2006	5	1	7.00		1.00		1.00	
garibaldi, adult	8/18/2006	5	5	9.40	0.55	2.20	0.45	8.40	1.95
garibaldi, adult	9/21/2006	4	4	9.75	0.50	2.00	0.00	6.50	2.08
garibaldi, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	8/18/2006	5	2	6.50	0.71	1.00	0.00	1.00	0.00
halfmoon	9/21/2006	4	4	9.75	0.50	2.25	0.50	7.50	3.32
island kelpfish	8/18/2006	5	5	1.60	3.58	0.40	0.89	0.40	0.89
island kelpfish	9/21/2006	4	4	4.50	5.20	0.50	0.58	0.50	0.58
kelp bass, adult	8/18/2006	5	5	10.00	0.00	3.00	0.00	20.40	1.34
kelp bass, adult	9/21/2006	4	4	10.00	0.00	3.00	0.00	22.75	4.99
kelp bass, calico bass, all	8/18/2006	5	5	10.00	0.00	3.00	0.00	20.40	1.34
kelp bass, calico bass, all	9/21/2006	4	4	10.00	0.00	3.00	0.00	22.75	4.99
kelp bass, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	8/18/2006	5	3	9.00	1.00	2.00	0.00	3.67	1.53
ocean whitefish	9/21/2006	4	4	9.25	0.96	2.00	0.00	4.00	1.63
olive rockfish, adult	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Cruz Island - Pedro Reef continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
olive rockfish, all	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/18/2006	5	5	9.20	1.10	2.60	0.55	12.80	5.40
opaleye, adult	9/21/2006	4	4	9.50	0.58	2.00	0.00	5.75	1.50
opaleye, all	8/18/2006	5	5	9.20	1.10	2.60	0.55	12.80	5.40
opaleye, all	9/21/2006	4	4	9.50	0.58	2.00	0.00	5.75	1.50
opaleye, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/18/2006	5	5	9.40	0.55	2.20	0.45	7.60	3.91
painted greenling	9/21/2006	4	4	9.75	0.50	2.00	0.00	7.25	2.50
pile surfperch, adult	8/18/2006	5	5	7.60	4.34	1.60	0.89	2.00	1.41
pile surfperch, adult	9/21/2006	4	4	7.25	1.89	2.00	0.82	5.25	7.18
pile surfperch, all	8/18/2006	5	5	7.60	4.34	1.60	0.89	2.00	1.41
pile surfperch, all	9/21/2006	4	4	7.25	1.89	2.00	0.82	5.25	7.18
pile surfperch, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/18/2006	5	5	6.80	3.96	1.40	0.89	1.40	0.89
rock wrasse, female	9/21/2006	4	4	2.50	5.00	0.25	0.50	0.25	0.50
rock wrasse, juvenile	8/18/2006	5	4	8.25	1.71	2.00	0.82	6.25	8.54
rock wrasse, juvenile	9/21/2006	4	4	9.00	0.82	2.75	0.50	14.25	3.30
rock wrasse, male	8/18/2006	5	5	7.40	2.30	1.40	0.55	1.80	1.10
rock wrasse, male	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	8/18/2006	5	5	9.80	0.45	3.80	0.45	172.80	63.56
senorita, adult	9/21/2006	4	4	10.00	0.00	3.25	0.50	74.75	44.99
senorita, all	8/18/2006	5	5	9.80	0.45	4.00	0.00	179.60	54.39
senorita, all	9/21/2006	4	4	10.00	0.00	3.25	0.50	77.75	48.03
senorita, juvenile	8/18/2006	5	5	4.60	4.45	1.40	1.34	6.80	10.47
senorita, juvenile	9/21/2006	4	4	4.25	4.92	1.00	1.15	3.00	3.56
snubnose sculpin	9/21/2006	4	1	6.00		1.00		1.00	
striped surfperch, adult	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/18/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	9/21/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	8/18/2006	5	5	3.40	4.77	0.60	0.89	0.60	0.89
treefish, juvenile	9/21/2006	4	4	2.25	4.50	0.25	0.50	0.25	0.50
zebra goby	8/18/2006	5	3	6.67	0.58	2.00	0.00	3.67	1.53
zebra goby	9/21/2006	4	2	10.00	0.00	1.50	0.71	2.00	1.41

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Keyhole

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	8/17/2006	6	4	8.00	1.41	1.00	0.00	1.00	0.00
black and yellow rockfish	8/17/2006	6	2	5.00	0.00	1.00	0.00	1.00	0.00
black and yellow rockfish	9/7/2006	3	1	10.00		1.00		1.00	
black surfperch, adult	8/17/2006	6	5	10.00	0.00	2.80	0.45	15.80	5.12
black surfperch, adult	9/7/2006	3	3	10.00	0.00	3.00	0.00	21.33	8.39
black surfperch, all	8/17/2006	6	6	10.00	0.00	2.83	0.41	17.40	4.45
black surfperch, all	9/7/2006	3	3	10.00	0.00	3.00	0.00	23.00	7.00
black surfperch, juvenile	8/17/2006	6	5	4.20	4.27	1.20	1.10	1.60	1.67
black surfperch, juvenile	9/7/2006	3	3	6.67	5.77	1.00	1.00	1.67	2.08
blackeye goby	8/17/2006	6	6	10.00	0.00	3.50	0.55	156.60	73.51
blackeye goby	9/7/2006	3	3	10.00	0.00	4.00	0.00	168.33	14.57
blacksmith, adult	8/17/2006	6	5	10.00	0.00	3.40	0.55	145.00	102.16
blacksmith, adult	9/7/2006	3	3	10.00	0.00	4.00	0.00	350.00	112.69
blacksmith, all	8/17/2006	6	6	10.00	0.00	4.00	0.00	510.40	225.43
blacksmith, all	9/7/2006	3	3	10.00	0.00	4.00	0.00	395.00	128.64
blacksmith, juvenile	8/17/2006	6	5	10.00	0.00	4.00	0.00	365.40	152.64
blacksmith, juvenile	9/7/2006	3	3	8.33	2.89	3.00	0.00	45.00	22.34
blue rockfish, adult	8/17/2006	6	5	7.00	4.47	1.00	0.71	1.40	1.52
blue rockfish, adult	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/17/2006	6	6	5.83	4.92	0.83	0.75	1.40	1.52
blue rockfish, all	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/17/2006	6	6	5.33	4.23	1.33	1.03	1.60	1.52
blue-banded goby	9/7/2006	3	3	8.33	1.53	2.67	0.58	11.67	7.09
brown rockfish	8/17/2006	6	1	7.00		1.00			
California moray	8/17/2006	6	2	8.00	1.41	1.50	0.71	1.50	0.71
California scorpionfish	8/17/2006	6	1	5.00		2.00		2.00	
California scorpionfish	9/7/2006	3	3	9.33	0.58	1.67	0.58	1.67	0.58
California sheephead,	8/17/2006	6	6	10.00	0.00	2.17	0.41	7.60	3.58
California sheephead,	9/7/2006	3	3	9.33	0.58	2.00	0.00	4.67	2.89
California sheephead,	8/17/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead,	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/17/2006	6	6	2.83	4.49	0.50	0.84	0.60	0.89
California sheephead, male	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	8/17/2006	6	6	9.67	0.52	2.00	0.00	7.80	0.84
garibaldi, adult	9/7/2006	3	3	10.00	0.00	2.00	0.00	5.67	0.58
garibaldi, juvenile	8/17/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish, juvenile	8/17/2006	6	2	6.50	0.71	1.50	0.71	2.00	1.41
halfmoon	8/17/2006	6	2	6.50	0.71	1.00	0.00	1.00	0.00
halfmoon	9/7/2006	3	3	10.00	0.00	2.67	0.58	10.67	0.58
island kelpfish	8/17/2006	6	6	9.50	0.84	3.00	0.00	58.80	30.23
island kelpfish	9/7/2006	3	3	10.00	0.00	3.00	0.00	62.00	8.89
kelp bass, adult	8/17/2006	6	5	10.00	0.00	3.00	0.00	18.00	7.00
kelp bass, adult	9/7/2006	3	3	10.00	0.00	3.00	0.00	14.00	3.00
kelp bass, calico bass, all	8/17/2006	6	6	10.00	0.00	2.83	0.41	18.20	6.91
kelp bass, calico bass, all	9/7/2006	3	3	10.00	0.00	3.00	0.00	14.33	3.51
kelp bass, juvenile	8/17/2006	6	5	1.20	2.68	0.20	0.45	0.20	0.45

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Keyhole continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
kelp bass, juvenile	9/7/2006	3	3	3.33	5.77	0.33	0.58	0.33	0.58
kelp rockfish, adult	8/17/2006	6	5	5.80	3.77	1.40	0.89	1.40	0.89
kelp rockfish, adult	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/17/2006	6	6	6.00	3.41	1.33	0.82	1.40	0.89
kelp rockfish, all	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	8/17/2006	6	5	8.20	0.45	1.40	0.55	1.75	0.96
ocean whitefish	9/7/2006	3	3	10.00	0.00	2.00	0.00	3.00	0.00
olive rockfish, adult	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/17/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish,	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	9/7/2006	3	3	10.00	0.00	2.33	0.58	13.67	8.14
opaleye, all	8/17/2006	6	6	1.17	2.86	0.17	0.41	0.00	0.00
opaleye, all	9/7/2006	3	3	10.00	0.00	2.33	0.58	13.67	8.14
opaleye, juvenile	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/17/2006	6	6	8.67	1.51	2.17	0.41	7.60	3.65
painted greenling	9/7/2006	3	3	8.33	2.08	2.00	0.00	6.33	3.21
pile surfperch, adult	8/17/2006	6	5	3.20	4.44	0.40	0.55	0.40	0.55
pile surfperch, adult	9/7/2006	3	3	9.00	1.73	1.67	0.58	1.67	0.58
pile surfperch, all	8/17/2006	6	6	4.33	4.84	0.50	0.55	0.40	0.55
pile surfperch, all	9/7/2006	3	3	9.00	1.73	1.67	0.58	1.67	0.58
pile surfperch, juvenile	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/17/2006	6	6	9.17	1.60	2.00	0.00	4.80	2.49
rock wrasse, female	9/7/2006	3	3	7.67	1.53	1.67	0.58	3.33	2.08
rock wrasse, juvenile	8/17/2006	6	2	7.50	2.12	2.00	0.00	4.00	2.83
rock wrasse, juvenile	9/7/2006	3	3	9.33	0.58	2.67	0.58	21.67	17.16
rock wrasse, male	8/17/2006	6	6	9.83	0.41	2.17	0.41	9.40	1.52
rock wrasse, male	9/7/2006	3	3	9.00	0.00	2.00	0.00	3.00	1.00
senorita, adult	8/17/2006	6	5	10.00	0.00	3.80	0.45	204.00	125.47
senorita, adult	9/7/2006	3	3	9.67	0.58	4.00	0.00	335.67	41.05
senorita, all	8/17/2006	6	6	10.00	0.00	4.00	0.00	397.00	188.44
senorita, all	9/7/2006	3	3	9.67	0.58	4.00	0.00	375.33	33.53
senorita, juvenile	8/17/2006	6	5	9.60	0.55	3.80	0.45	193.00	79.45
senorita, juvenile	9/7/2006	3	3	8.00	1.00	3.00	0.00	39.67	12.50
striped surfperch, adult	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/17/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/17/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	9/7/2006	3	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/17/2006	6	6	8.17	1.60	1.83	0.41	3.80	2.59
treefish, adult	9/7/2006	3	3	10.00	0.00	2.00	0.00	3.00	1.73
treefish, juvenile	8/17/2006	6	6	5.83	4.67	1.00	0.89	1.60	1.52
treefish, juvenile	9/7/2006	3	3	3.00	5.20	0.67	1.15	0.67	1.15
zebra goby	8/17/2006	6	4	8.50	1.29	1.25	0.50	2.25	1.50
zebra goby	9/7/2006	3	3	7.67	0.58	2.00	0.00	3.33	1.53

2006 ROVING DIVER FISH COUNT:
Anacapa Island - East Fish Camp

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	8/22/2006	5	4	8.75	2.50	1.50	0.58	1.50	0.58
black surfperch, adult	8/22/2006	5	5	5.80	5.31	1.00	1.00	1.40	1.67
black surfperch, all	8/22/2006	5	5	5.80	5.31	1.00	1.00	1.40	1.67
black surfperch, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	8/22/2006	5	5	10.00	0.00	4.00	0.00	294.00	138.77
blacksmith, adult	8/22/2006	5	5	9.80	0.45	3.40	0.55	95.80	42.25
blacksmith, all	8/22/2006	5	5	9.80	0.45	3.80	0.45	167.80	69.77
blacksmith, juvenile	8/22/2006	5	5	9.40	0.55	3.20	0.45	72.00	31.81
blue rockfish, adult	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	8/22/2006	5	1	7.00		1.00		1.00	
California scorpionfish	8/22/2006	5	3	6.67	0.58	1.00	0.00	1.00	0.00
California sheephead, fem	8/22/2006	5	5	9.20	0.45	2.00	0.00	5.20	1.79
California sheephead, juv	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	8/22/2006	5	5	10.00	0.00	2.80	0.45	13.60	4.56
garibaldi, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	8/22/2006	5	5	9.00	0.00	2.00	0.00	4.40	1.67
island kelpfish	8/22/2006	5	5	10.00	0.00	2.80	0.45	14.60	7.50
kelp bass, adult	8/22/2006	5	5	9.80	0.45	2.00	0.00	6.60	2.97
kelp bass, calico bass, all	8/22/2006	5	5	9.80	0.45	2.00	0.00	6.60	2.97
kelp bass, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	8/22/2006	5	4	9.50	0.58	2.00	0.00	3.75	1.71
olive rockfish, adult	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	8/22/2006	5	5	5.80	3.49	1.60	0.89	2.40	1.52
opaleye, all	8/22/2006	5	5	5.80	3.49	1.60	0.89	2.40	1.52
opaleye, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	8/22/2006	5	5	10.00	0.00	3.00	0.00	21.60	4.93
pile surfperch, adult	8/22/2006	5	5	2.00	2.74	0.40	0.55	0.40	0.55
pile surfperch, all	8/22/2006	5	5	2.00	2.74	0.40	0.55	0.40	0.55
pile surfperch, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	8/22/2006	5	5	1.80	4.02	0.20	0.45	0.20	0.45
senorita, adult	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, all	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	8/22/2006	5	5	5.00	4.58	1.00	1.00	1.00	1.00
treefish, juvenile	8/22/2006	5	5	1.00	2.24	0.20	0.45	0.20	0.45
zebra goby	8/22/2006	5	3	9.33	1.15	2.00	0.00	8.33	2.89

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Black Sea Bass Reef

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	8/3/2006	5	3	9.67	0.58	1.00	0.00	1.00	0.00
black surfperch, adult	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, adult	8/3/2006	5	5	7.60	4.28	1.60	0.89	3.20	2.39
black surfperch, all	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	8/3/2006	5	5	7.60	4.28	1.60	0.89	3.20	2.39
black surfperch, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/9/2006	4	4	10.00	0.00	4.00	0.00	240.50	35.74
blackeye goby	8/3/2006	5	5	10.00	0.00	3.80	0.45	201.40	102.66
blacksmith, adult	6/9/2006	4	4	10.00	0.00	4.00	0.00	262.75	43.60
blacksmith, adult	8/3/2006	5	5	10.00	0.00	4.00	0.00	192.00	50.56
blacksmith, all	6/9/2006	4	4	10.00	0.00	4.00	0.00	262.75	43.60
blacksmith, all	8/3/2006	5	5	10.00	0.00	4.00	0.00	333.80	65.72
blacksmith, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	8/3/2006	5	5	10.00	0.00	3.60	0.55	141.80	69.59
blue rockfish, adult	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/9/2006	4	4	4.25	5.06	0.50	0.58	0.50	0.58
blue-banded goby	8/3/2006	5	5	5.40	5.08	1.20	1.10	3.60	3.78
brown rockfish	6/9/2006	4	1	5.00		1.00		1.00	
brown rockfish	8/3/2006	5	1	9.00		1.00		1.00	
California scorpionfish	6/9/2006	4	1	9.00		1.00		1.00	
California scorpionfish	8/3/2006	5	4	7.75	1.50	1.50	0.58	2.00	1.41
California sheephead, fem	6/9/2006	4	4	8.00	1.63	2.00	0.00	4.25	1.71
California sheephead, fem	8/3/2006	5	5	9.00	0.71	1.80	0.45	2.00	0.71
California sheephead, juv	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/9/2006	4	4	3.00	3.56	0.50	0.58	0.50	0.58
California sheephead, male	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	6/9/2006	4	4	9.50	1.00	2.00	0.00	6.00	1.63
garibaldi, adult	8/3/2006	5	5	10.00	0.00	2.20	0.45	7.00	3.00
garibaldi, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
halfmoon	6/9/2006	4	4	7.75	1.50	1.50	0.58	2.50	1.91
halfmoon	8/3/2006	5	5	10.00	0.00	2.60	0.55	19.20	12.44
island kelpfish	6/9/2006	4	4	6.50	1.29	1.50	0.58	2.00	1.41
island kelpfish	8/3/2006	5	5	10.00	0.00	3.00	0.00	38.60	16.49
kelp bass, adult	6/9/2006	4	4	7.75	1.26	2.75	0.50	13.25	4.79
kelp bass, adult	8/3/2006	5	5	9.80	0.45	2.40	0.55	11.00	2.92
kelp bass, calico bass, all	6/9/2006	4	4	7.75	1.26	2.75	0.50	13.25	4.79
kelp bass, calico bass, all	8/3/2006	5	5	9.80	0.45	2.40	0.55	11.00	2.92
kelp bass, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	8/3/2006	5	5	2.80	3.90	0.40	0.55	0.40	0.55
kelp rockfish, all	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	8/3/2006	5	5	2.80	3.90	0.40	0.55	0.40	0.55
kelp rockfish, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelpfish spp.	8/3/2006	5	1	7.00		1.00		1.00	
ocean whitefish	8/3/2006	5	5	8.60	1.52	2.20	0.45	9.60	2.70
olive rockfish, adult	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Black Sea Bass Reef continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
olive rockfish, all	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/9/2006	4	4	8.25	1.50	1.75	0.50	2.50	1.29
opaleye, adult	8/3/2006	5	5	9.80	0.45	2.00	0.00	4.60	2.07
opaleye, all	6/9/2006	4	4	8.25	1.50	1.75	0.50	2.50	1.29
opaleye, all	8/3/2006	5	5	9.80	0.45	2.00	0.00	4.60	2.07
opaleye, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	6/9/2006	4	4	7.75	1.89	2.00	0.00	3.25	0.50
painted greenling	8/3/2006	5	5	9.80	0.45	2.40	0.55	9.00	5.79
pile surfperch, adult	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, adult	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/9/2006	4	4	2.00	4.00	0.50	1.00	0.75	1.50
rock wrasse, female	8/3/2006	5	5	7.40	2.07	1.80	0.45	3.20	1.48
rock wrasse, male	6/9/2006	4	4	2.00	4.00	0.25	0.50	0.25	0.50
rock wrasse, male	8/3/2006	5	5	9.80	0.45	2.00	0.00	6.60	2.19
senorita, adult	6/9/2006	4	4	1.75	3.50	0.75	1.50	18.75	37.50
senorita, adult	8/3/2006	5	5	8.20	1.79	2.60	0.55	15.40	8.08
senorita, all	6/9/2006	4	4	1.75	3.50	0.75	1.50	18.75	37.50
senorita, all	8/3/2006	5	5	8.20	1.79	2.60	0.55	15.40	8.08
senorita, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/9/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	8/3/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/9/2006	4	4	5.75	4.35	1.25	0.96	1.50	1.29
treefish, adult	8/3/2006	5	5	6.40	3.85	1.40	0.89	2.20	1.92
treefish, juvenile	6/9/2006	4	4	4.00	4.62	0.50	0.58	0.50	0.58
treefish, juvenile	8/3/2006	5	5	9.60	0.55	2.20	0.45	6.80	3.56
zebra goby	6/9/2006	4	3	9.00	1.00	1.67	0.58	1.67	0.58
zebra goby	8/3/2006	5	4	9.25	0.50	1.75	0.50	4.50	2.65

2006 ROVING DIVER FISH COUNT:
Anacapa Island - Lighthouse

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
bat ray	7/21/2006	6	1	6.00		1.00		1.00	
black and yellow rockfish	7/21/2006	6	1	6.00		1.00		1.00	
black surfperch, adult	7/21/2006	6	6	9.50	0.84	2.00	0.00	5.00	3.10
black surfperch, all	7/21/2006	6	6	9.50	0.84	2.00	0.00	5.00	3.10
black surfperch, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	7/21/2006	6	6	10.00	0.00	3.33	0.52	76.00	45.53
blacksmith, adult	7/21/2006	6	6	10.00	0.00	4.00	0.00	264.17	150.99
blacksmith, all	7/21/2006	6	6	10.00	0.00	4.00	0.00	264.17	150.99
blacksmith, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/21/2006	6	6	9.33	0.52	2.00	0.00	2.67	0.52
blue rockfish, all	7/21/2006	6	6	9.33	0.52	2.00	0.00	2.67	0.52
blue rockfish, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California scorpionfish	7/21/2006	6	1	10.00		1.00		1.00	
California sheephead, fem	7/21/2006	6	6	9.83	0.41	2.17	0.41	7.50	2.74
California sheephead, juv	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/21/2006	6	6	2.83	4.49	0.33	0.52	0.33	0.52
garibaldi, adult	7/21/2006	6	6	9.83	0.41	2.83	0.41	12.17	3.25
garibaldi, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish, juv	7/21/2006	6	1	7.00		1.00		1.00	
halfmoon	7/21/2006	6	6	10.00	0.00	3.00	0.00	35.33	12.24
island kelpfish	7/21/2006	6	6	5.17	4.02	1.17	0.98	2.00	2.28
kelp bass, adult	7/21/2006	6	6	10.00	0.00	2.33	0.52	9.83	3.66
kelp bass, calico bass, all	7/21/2006	6	6	10.00	0.00	2.33	0.52	9.83	3.66
kelp bass, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/21/2006	6	6	5.00	2.61	1.17	0.75	1.17	0.75
kelp rockfish, all	7/21/2006	6	6	5.00	2.61	1.17	0.75	1.17	0.75
kelp rockfish, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
kelpfish spp.	7/21/2006	6	1	5.00		1.00		1.00	
ocean whitefish	7/21/2006	6	1	7.00		1.00		1.00	
olive rockfish, adult	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/21/2006	6	6	9.33	1.03	2.17	0.41	6.67	4.63
opaleye, all	7/21/2006	6	6	9.33	1.03	2.17	0.41	6.67	4.63
opaleye, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/21/2006	6	6	9.67	0.52	3.00	0.00	25.50	12.00
pile surfperch, adult	7/21/2006	6	6	9.33	0.52	1.83	0.41	3.67	2.07
pile surfperch, all	7/21/2006	6	6	9.33	0.52	1.83	0.41	3.67	2.07
pile surfperch, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/21/2006	6	6	8.67	1.37	1.83	0.41	4.00	2.53
rock wrasse, male	7/21/2006	6	6	8.33	1.21	1.67	0.52	1.83	0.75
senorita, adult	7/21/2006	6	6	10.00	0.00	3.67	0.52	137.83	68.55
senorita, all	7/21/2006	6	6	10.00	0.00	3.67	0.52	137.83	68.55
senorita, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
top smelt	7/21/2006	6	4	9.00	0.82	3.25	0.50	64.50	48.28
treefish, adult	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	7/21/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00

2006 ROVING DIVER FISH COUNT:
Santa Barbara Island - Webster's Arch

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	6/20/2006	4	2	7.50	2.12	1.50	0.71	1.50	0.71
black and yellow rockfish	7/25/2006	4	4	9.75	0.50	1.75	0.50	2.33	1.53
black surfperch, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, adult	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	6/20/2006	4	4	8.00	1.41	1.75	0.50	2.50	1.29
blackeye goby	7/25/2006	4	4	10.00	0.00	3.00	0.00	20.33	6.35
blacksmith, adult	6/20/2006	4	3	9.67	0.58	2.33	0.58	11.67	10.97
blacksmith, adult	7/25/2006	4	3	10.00	0.00	4.00	0.00	141.00	18.25
blacksmith, all	6/20/2006	4	4	7.25	4.86	1.75	1.26	8.75	10.69
blacksmith, all	7/25/2006	4	4	10.00	0.00	4.00	0.00	142.33	17.62
blacksmith, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blacksmith, juvenile	7/25/2006	4	3	5.67	5.13	1.33	1.15	1.33	1.15
blue rockfish, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	6/20/2006	4	2	8.00	2.83	1.00	0.00	1.00	0.00
California moray	7/25/2006	4	2	8.50	0.71	1.00	0.00	1.00	0.00
California scorpionfish	6/20/2006	4	2	7.00	1.41	1.50	0.71	1.50	0.71
California scorpionfish	7/25/2006	4	1	10.00		1.00		1.00	
California sheephead, fem	6/20/2006	4	4	10.00	0.00	2.25	0.50	7.50	4.36
California sheephead, fem	7/25/2006	4	4	10.00	0.00	2.50	0.58	8.00	2.65
California sheephead, juv	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, juv	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	6/20/2006	4	4	8.50	1.73	1.25	0.50	1.50	1.00
California sheephead, male	7/25/2006	4	4	8.00	1.83	1.75	0.50	2.33	1.53
coralline sculpin	6/20/2006	4	4	8.25	1.50	1.25	0.50	1.25	0.50
coralline sculpin	7/25/2006	4	2	7.50	0.71	1.00	0.00	1.00	0.00
garibaldi, adult	6/20/2006	4	4	10.00	0.00	2.00	0.00	7.50	1.00
garibaldi, adult	7/25/2006	4	4	10.00	0.00	2.25	0.50	9.33	2.52
garibaldi, juvenile	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, juvenile	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
giant black sea bass	6/20/2006	4	2	6.50	0.71	1.00	0.00	1.00	0.00
halfmoon	6/20/2006	4	1	7.00		3.00		12.00	
halfmoon	7/25/2006	4	4	8.75	1.26	2.25	0.50	8.00	1.73
island kelpfish	6/20/2006	4	4	2.25	4.50	0.25	0.50	0.25	0.50
island kelpfish	7/25/2006	4	4	9.00	1.41	2.00	0.00	4.00	3.46
kelp bass, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, adult	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, calico bass, all	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp bass, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	7/25/2006	4	1	9.00		2.00		2.00	

2006 ROVING DIVER FISH COUNT:

Santa Barbara Island - Webster's Arch continued

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
olive rockfish, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, adult	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/25/2006	4	3	2.00	3.46	0.33	0.58	0.33	0.58
opaleye, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, all	7/25/2006	4	4	1.50	3.00	0.25	0.50	0.33	0.58
opaleye, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
Pacific sardine	7/25/2006	4	3	7.00	1.00	4.00	0.00	1090.00	127.28
painted greenling	6/20/2006	4	4	10.00	0.00	3.00	0.00	13.50	2.08
painted greenling	7/25/2006	4	4	10.00	0.00	3.00	0.00	32.33	15.37
pile surfperch, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, adult	7/25/2006	4	3	4.00	3.46	0.67	0.58	0.67	0.58
pile surfperch, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	7/25/2006	4	4	5.25	3.77	0.75	0.50	0.67	0.58
pile surfperch, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, male	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
sculpin spp.	7/25/2006	4	1	10.00		1.00			
senorita, adult	6/20/2006	4	3	5.33	4.62	1.00	1.00	1.33	1.53
senorita, adult	7/25/2006	4	3	10.00	0.00	3.00	0.00	39.67	20.55
senorita, all	6/20/2006	4	4	4.00	4.62	0.75	0.96	1.00	1.41
senorita, all	7/25/2006	4	4	10.00	0.00	3.00	0.00	39.67	20.55
senorita, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
senorita, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	6/20/2006	4	1	8.00		1.00		1.00	
snubnose sculpin	7/25/2006	4	2	5.50	0.71	1.00	0.00	1.00	0.00
striped surfperch, adult	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, adult	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	6/20/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	7/25/2006	4	3	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	7/25/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	6/20/2006	4	4	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	7/25/2006	4	4	1.50	3.00	0.25	0.50	0.33	0.58

2006 ROVING DIVER FISH COUNT:
Santa Barbara Island - Graveyard Canyon

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black surfperch, adult	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, all	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
black surfperch, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blackeye goby	5/22/2006	5	5	10.00	0.00	3.00	0.00	68.20	19.23
blacksmith, adult	5/22/2006	5	5	1.60	3.58	0.40	0.89	0.40	0.89
blacksmith, all	5/22/2006	5	5	1.60	3.58	0.40	0.89	0.40	0.89
blacksmith, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, adult	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California halibut	5/22/2006	5	1	5.00		1.00		1.00	
California scorpionfish	5/22/2006	5	1	10.00		1.00		1.00	
California sheephead, fem	5/22/2006	5	5	7.80	4.38	1.20	0.84	1.20	0.84
California sheephead, juv	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
garibaldi, adult	5/22/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
garibaldi, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
gopher/copper rockfish, juv	5/22/2006	5	2	10.00	0.00	1.50	0.71	2.00	1.41
halfmoon	5/22/2006	5	2	7.50	2.12	1.50	0.71	2.00	1.41
island kelpfish	5/22/2006	5	5	3.00	4.47	0.40	0.55	0.40	0.55
kelp bass, adult	5/22/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
kelp bass, calico bass, all	5/22/2006	5	5	2.00	4.47	0.20	0.45	0.20	0.45
kelp bass, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, adult	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, all	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp rockfish, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
ocean whitefish	5/22/2006	5	1	9.00		2.00		2.00	
olive rockfish, adult	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	5/22/2006	5	5	1.60	3.58	0.40	0.89	0.40	0.89
opaleye, all	5/22/2006	5	5	1.60	3.58	0.40	0.89	0.40	0.89
opaleye, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
pacific angel shark	5/22/2006	5	2	10.00	0.00	1.00	0.00	1.00	0.00
painted greenling	5/22/2006	5	5	5.40	4.98	1.00	1.00	2.20	3.35
pile surfperch, adult	5/22/2006	5	5	5.80	5.31	0.60	0.55	0.60	0.55
pile surfperch, all	5/22/2006	5	5	5.80	5.31	0.60	0.55	0.60	0.55
pile surfperch, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	5/22/2006	5	5	1.40	3.13	0.20	0.45	0.20	0.45
rock wrasse, male	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
senorita, adult	5/22/2006	5	5	9.80	0.45	3.40	0.89	101.20	83.28
senorita, all	5/22/2006	5	5	9.80	0.45	3.40	0.89	101.20	83.28
senorita, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
snubnose sculpin	5/22/2006	5	1	10.00		2.00		2.00	
speckled sanddab	5/22/2006	5	1	6.00		1.00		1.00	
striped surfperch, adult	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, juvenile	5/22/2006	5	5	0.00	0.00	0.00	0.00	0.00	0.00
vermillion rockfish, juvenile	5/22/2006	5	1	6.00		1.00		1.00	

2006 ROVING DIVER FISH COUNT:
Santa Barbara Island - Southeast Reef

Common Name:	Date:	Maximum # of Observers:	# of Observations:	Avg Score:	StDev Score:	Av Abundance:	StDev Abundance:	Avg Count:	StDev Count:
black and yellow rockfish	7/25/2006	6	3	8.00	0.00	1.00	0.00	1.00	0.00
black surfperch, adult	7/25/2006	6	5	6.60	3.97	1.60	0.89	1.80	1.10
black surfperch, all	7/25/2006	6	6	6.83	3.60	1.50	0.84	2.20	1.79
black surfperch, juvenile	7/25/2006	6	5	1.60	3.58	0.40	0.89	0.40	0.89
blackeye goby	7/25/2006	6	6	9.67	0.82	2.83	0.41	17.40	11.15
blacksmith, adult	7/25/2006	6	5	10.00	0.00	4.00	0.00	503.20	188.79
blacksmith, all	7/25/2006	6	6	10.00	0.00	4.00	0.00	615.80	237.41
blacksmith, juvenile	7/25/2006	6	5	9.40	0.55	3.60	0.55	112.60	52.00
blue rockfish, adult	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, all	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
blue rockfish, juvenile	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
blue-banded goby	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
cabezon	7/25/2006	6	1	5.00		1.00		1.00	
California moray	7/25/2006	6	4	7.75	1.26	1.00	0.00	1.00	0.00
California sheephead, fem	7/25/2006	6	6	9.17	1.17	2.00	0.00	6.20	1.92
California sheephead, juv	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
California sheephead, male	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
coralline sculpin	7/25/2006	6	3	7.67	2.08	1.00	0.00	1.00	0.00
garibaldi, adult	7/25/2006	6	6	10.00	0.00	3.00	0.00	21.20	4.21
garibaldi, juvenile	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
giant kelpfish	7/25/2006	6	4	6.50	1.29	1.50	0.58	2.50	1.73
giant kelpfish, juvenile	7/25/2006	6	1	7.00		2.00		2.00	
halfmoon	7/25/2006	6	6	9.33	0.82	2.83	0.41	12.20	5.26
island kelpfish	7/25/2006	6	6	9.17	0.98	2.33	0.52	10.60	4.98
kelp bass, adult	7/25/2006	6	5	5.40	5.08	1.20	1.10	2.00	2.12
kelp bass, calico bass, all	7/25/2006	6	6	6.17	4.92	1.17	0.98	2.00	2.12
kelp bass, juvenile	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp greenling	7/25/2006	6	1	7.00		2.00		4.00	
kelp rockfish, adult	7/25/2006	6	5	3.60	4.93	0.60	0.89	0.60	0.89
kelp rockfish, all	7/25/2006	6	6	3.00	4.65	0.50	0.84	0.60	0.89
kelp rockfish, juvenile	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
kelp surfperch	7/25/2006	6	6	7.50	1.38	2.00	0.00	3.80	1.48
kelpfish spp.	7/25/2006	6	2	7.00	1.41	1.00	0.00	1.00	0.00
ocean whitefish	7/25/2006	6	1	6.00		1.00		1.00	
olive rockfish, adult	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
olive rockfish, all	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
olive/yellowtail rockfish, juv	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
opaleye, adult	7/25/2006	6	5	9.60	0.55	3.00	0.00	36.00	16.96
opaleye, all	7/25/2006	6	6	9.67	0.52	3.00	0.00	36.00	16.96
opaleye, juvenile	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
painted greenling	7/25/2006	6	6	9.67	0.82	2.83	0.41	11.40	5.13
pile surfperch, adult	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, all	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
pile surfperch, juvenile	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
rock wrasse, female	7/25/2006	6	6	4.50	3.56	1.00	0.89	1.20	0.84
rock wrasse, male	7/25/2006	6	6	5.17	4.22	0.67	0.52	0.80	0.45
rubberlip surfperch	7/25/2006	6	1	10.00		1.00		1.00	
senorita, adult	7/25/2006	6	5	9.80	0.45	3.40	0.55	127.20	108.36
senorita, all	7/25/2006	6	6	9.83	0.41	3.83	0.41	184.00	107.19
senorita, juvenile	7/25/2006	6	5	8.80	0.84	3.00	0.00	53.20	30.78
snubnose sculpin	7/25/2006	6	1	6.00		1.00		1.00	
striped surfperch, adult	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, all	7/25/2006	6	6	0.00	0.00	0.00	0.00	0.00	0.00
striped surfperch, juvenile	7/25/2006	6	5	0.00	0.00	0.00	0.00	0.00	0.00
treefish, adult	7/25/2006	6	6	5.33	4.41	1.00	0.89	1.20	0.84
treefish, juvenile	7/25/2006	6	6	2.17	3.37	0.33	0.52	0.40	0.55

Appendix G. Natural Habitat Size Frequency Distributions.

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Wyckoff Ledge

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	6.5%
40 - 49	3.2%
50 - 59	9.7%
60 - 69	19.4%
70 - 79	19.4%
80 - 89	22.6%
90 - 99	9.7%
> 99	9.7%
(Cases) N=	31
mean	74
min size (mm)	36
max size (mm)	120

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	0.0%
85 - 94	0.9%
95 - 104	1.7%
105 - 114	2.6%
115 - 124	2.6%
125 - 134	0.9%
135 - 144	4.3%
145 - 154	4.3%
155 - 164	10.4%
165 - 174	10.4%
175 - 184	12.2%
185 - 194	20.0%
>195	27.8%
(Cases) N=	115
mean	176
min size (mm)	73
max size (mm)	243

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	1.1%
70 - 79	9.1%
80 - 89	27.3%
90 - 99	47.7%
100 - 109	14.8%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	88
mean	91
min size (mm)	67
max size (mm)	109

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	2.7%
30 - 39	12.3%
40 - 49	17.8%
50 - 59	54.8%
60 - 69	12.3%
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=	73
mean	50
min size (mm)	27
max size (mm)	63

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	119
min size (mm)	119
max size (mm)	119

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	16.7%
90 - 99	16.7%
100 - 109	16.7%
110 - 119	33.3%
120 - 129	0.0%
130 - 139	16.7%
> 139	0.0%
(Cases) N=	6
mean	105
min size (mm)	82
max size (mm)	130

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Wyckoff Ledge

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.6%
40 - 49	6.5%
50 - 59	6.5%
60 - 69	37.7%
70 - 79	39.0%
80 - 89	6.5%
90 - 99	1.3%
> 99	0.0%
(Cases) N=	77
mean	67
min size (mm)	36
max size (mm)	90

Pisaster giganteus	
< 20	0.0%
20 - 39	8.6%
40 - 59	34.6%
60 - 79	32.1%
80 - 99	18.5%
100 - 119	1.2%
120 - 139	2.5%
140 - 159	1.2%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	1.2%
(Cases) N=	81
mean	68
min size (mm)	32
max size (mm)	283

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	14.3%
80 - 99	42.9%
100 - 119	28.6%
120 - 139	14.3%
140 - 159	0.0%
160 - 179	0.0%
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=	7
mean	95
min size (mm)	75
max size (mm)	120

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.5%
10 - 14	2.6%
15 - 19	4.2%
20 - 24	4.2%
25 - 29	4.2%
30 - 34	3.2%
35 - 39	2.6%
40 - 44	3.2%
45 - 49	0.5%
50 - 54	3.7%
55 - 59	1.6%
60 - 64	3.7%
65 - 69	2.6%
70 - 74	7.4%
75 - 79	3.7%
80 - 84	3.7%
85 - 89	8.9%
90 - 94	15.3%
95 - 99	9.5%
100 - 104	5.8%
105 - 109	5.3%
> 109	3.7%
(Cases) N=	190
mean	71
min size (mm)	9
max size (mm)	120

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Wyckoff Ledge

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.0%
10 - 14	14.3%
15 - 19	14.3%
20 - 24	14.3%
25 - 29	0.0%
30 - 34	0.0%
35 - 39	14.3%
40 - 44	0.0%
45 - 49	0.0%
50 - 54	28.6%
55 - 59	0.0%
60 - 64	14.3%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	7
mean	36
min size (mm)	14
max size (mm)	63

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	5.9%
30 - 39	35.3%
40 - 49	5.9%
50 - 59	23.5%
60 - 69	5.9%
70 - 79	17.6%
80 - 89	5.9%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	17
mean	51
min size (mm)	25
max size (mm)	89

Haliotis rufescens

<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	13
min size (mm)	13
max size (mm)	13

Cypraea spadicea

<30	0.0%
30 - 32	5.3%
33 - 35	0.0%
36 - 38	5.3%
39 - 41	21.1%
42 - 44	31.6%
45 - 47	21.1%
48 - 50	5.3%
51 - 53	10.5%
54 - 56	0.0%
>56	0.0%
(Cases) N=	19
mean	43
min size (mm)	31
max size (mm)	52

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	25.0%
100 - 109	50.0%
110 - 119	25.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	4
mean	103
min size (mm)	97
max size (mm)	112

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Hare Rock

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	0.0%
110 - 119	0.0%
120 - 129	50.0%
130 - 139	50.0%
> 139	0.0%
(Cases) N=	2
mean	129
min size (mm)	120
max size (mm)	137

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	3.0%
30 - 39	1.5%
40 - 49	4.5%
50 - 59	13.6%
60 - 69	15.2%
70 - 79	31.8%
80 - 89	19.7%
90 - 99	9.1%
> 99	1.5%
(Cases) N=	66
mean	70
min size (mm)	22
max size (mm)	104

Pisaster giganteus

< 20	0.0%
20 - 39	4.5%
40 - 59	34.3%
60 - 79	28.4%
80 - 99	23.9%
100 - 119	4.5%
120 - 139	0.0%
140 - 159	4.5%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	67
mean	71
min size (mm)	30
max size (mm)	150

Pycnopodia helianthoides

< 20	0.0%
20 - 39	6.1%
40 - 59	22.7%
60 - 79	39.4%
80 - 99	19.7%
100 - 119	3.0%
120 - 139	3.0%
140 - 159	3.0%
160 - 179	0.0%
180 - 199	1.5%
200 - 219	0.0%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	1.5%
(Cases) N=	66
mean	77
min size (mm)	30
max size (mm)	324

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	2.1%
15 - 19	1.7%
20 - 24	2.5%
25 - 29	1.7%
30 - 34	3.0%
35 - 39	5.1%
40 - 44	8.1%
45 - 49	6.4%
50 - 54	3.8%
55 - 59	5.5%
60 - 64	5.1%
65 - 69	3.8%
70 - 74	6.4%
75 - 79	5.9%
80 - 84	7.6%
85 - 89	9.7%
90 - 94	8.9%
95 - 99	5.9%
100 - 104	4.2%
105 - 109	0.8%
> 109	1.7%
(Cases) N=	236
mean	66
min size (mm)	12
max size (mm)	120

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Hare Rock

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.0%
10 - 14	5.0%
15 - 19	10.0%
20 - 24	7.5%
25 - 29	22.5%
30 - 34	17.5%
35 - 39	20.0%
40 - 44	5.0%
45 - 49	10.0%
50 - 54	2.5%
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=	40
mean	31
min size (mm)	13
max size (mm)	52

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	3.7%
30 - 39	7.4%
40 - 49	7.4%
50 - 59	11.1%
60 - 69	25.9%
70 - 79	18.5%
80 - 89	11.1%
90 - 99	13.0%
> 99	1.9%
(Cases) N=	54
mean	67
min size (mm)	27
max size (mm)	107

Haliotis rufescens

<25	0.0%
25 - 34	0.0%
35 - 44	4.0%
45 - 54	4.0%
55 - 64	0.0%
65 - 74	0.0%
75 - 84	4.0%
85 - 94	8.0%
95 - 104	0.0%
105 - 114	8.0%
115 - 124	4.0%
125 - 134	16.0%
135 - 144	8.0%
145 - 154	12.0%
155 - 164	4.0%
165 - 174	12.0%
175 - 184	8.0%
185 - 194	0.0%
>195	4.0%
(Cases) N=	25
mean	134
min size (mm)	44
max size (mm)	209

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	16.7%
60 - 69	0.0%
70 - 79	16.7%
80 - 89	16.7%
90 - 99	16.7%
100 - 109	33.3%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	6
mean	88
min size (mm)	58
max size (mm)	104

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	3.2%
40 - 49	12.9%
50 - 59	32.3%
60 - 69	16.1%
70 - 79	6.5%
80 - 89	6.5%
90 - 99	9.7%
100 - 109	6.5%
110 - 119	3.2%
120 - 129	0.0%
130 - 139	3.2%
> 139	0.0%
(Cases) N=	31
mean	68
min size (mm)	34
max size (mm)	137

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee North

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	1.1%
30 - 39	5.6%
40 - 49	5.6%
50 - 59	20.0%
60 - 69	23.3%
70 - 79	28.9%
80 - 89	13.3%
90 - 99	2.2%
> 99	0.0%
(Cases) N=	90
mean	65
min size (mm)	22
max size (mm)	94

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	6.2%
60 - 79	38.3%
80 - 99	44.4%
100 - 119	8.6%
120 - 139	2.5%
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=	81
mean	82
min size (mm)	42
max size (mm)	126

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	3.0%
60 - 79	9.1%
80 - 99	30.3%
100 - 119	19.7%
120 - 139	18.2%
140 - 159	7.6%
160 - 179	6.1%
180 - 199	1.5%
200 - 219	0.0%
220 - 239	1.5%
240 - 259	3.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	66
mean	115
min size (mm)	45
max size (mm)	250

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	2.2%
15 - 19	2.7%
20 - 24	7.6%
25 - 29	5.4%
30 - 34	7.1%
35 - 39	6.3%
40 - 44	3.6%
45 - 49	3.1%
50 - 54	4.5%
55 - 59	1.3%
60 - 64	4.0%
65 - 69	4.5%
70 - 74	3.6%
75 - 79	3.1%
80 - 84	4.0%
85 - 89	6.7%
90 - 94	8.9%
95 - 99	7.6%
100 - 104	8.0%
105 - 109	4.0%
> 109	1.8%
(Cases) N=	224
mean	64
min size (mm)	10
max size (mm)	113

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee North

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	2.8%
10 - 14	8.4%
15 - 19	9.1%
20 - 24	15.4%
25 - 29	9.8%
30 - 34	9.1%
35 - 39	9.8%
40 - 44	13.3%
45 - 49	9.8%
50 - 54	5.6%
55 - 59	6.3%
60 - 64	0.7%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	143
mean	33
min size (mm)	8
max size (mm)	64

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	4.5%
40 - 49	18.2%
50 - 59	13.6%
60 - 69	22.7%
70 - 79	13.6%
80 - 89	13.6%
90 - 99	4.5%
> 99	9.1%
(Cases) N=	22
mean	67
min size (mm)	38
max size (mm)	109

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	25.0%
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	75.0%
(Cases) N=	4
mean	182
min size (mm)	94
max size (mm)	217

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	100.0%
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	96
min size (mm)	96
max size (mm)	96

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	50.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	50.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	2
mean	88
min size (mm)	73
max size (mm)	102

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee South

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	100.0%
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	62
min size (mm)	62
max size (mm)	62

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	3.6%
30 - 39	1.2%
40 - 49	7.1%
50 - 59	21.4%
60 - 69	33.3%
70 - 79	22.6%
80 - 89	10.7%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	84
mean	63
min size (mm)	21
max size (mm)	88

Pisaster giganteus

< 20	0.0%
20 - 39	10.5%
40 - 59	36.8%
60 - 79	39.5%
80 - 99	13.2%
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=	38
mean	59
min size (mm)	25
max size (mm)	90

Pycnopodia helianthoides

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	10.4%
80 - 99	20.8%
100 - 119	27.1%
120 - 139	16.7%
140 - 159	14.6%
160 - 179	6.3%
180 - 199	2.1%
200 - 219	2.1%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	48
mean	117
min size (mm)	68
max size (mm)	200

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	2.5%
20 - 24	6.5%
25 - 29	12.1%
30 - 34	9.5%
35 - 39	7.0%
40 - 44	3.0%
45 - 49	2.5%
50 - 54	2.0%
55 - 59	2.5%
60 - 64	3.0%
65 - 69	2.0%
70 - 74	2.5%
75 - 79	4.5%
80 - 84	4.0%
85 - 89	9.0%
90 - 94	9.5%
95 - 99	5.0%
100 - 104	5.5%
105 - 109	3.0%
> 109	4.0%
(Cases) N=	199
mean	62
min size (mm)	17
max size (mm)	116

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee South

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.0%
10 - 14	1.3%
15 - 19	8.9%
20 - 24	18.5%
25 - 29	15.3%
30 - 34	22.3%
35 - 39	9.6%
40 - 44	11.5%
45 - 49	5.1%
50 - 54	3.2%
55 - 59	2.5%
60 - 64	1.9%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	157
mean	32
min size (mm)	11
max size (mm)	64

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	4.4%
30 - 39	13.2%
40 - 49	7.4%
50 - 59	13.2%
60 - 69	10.3%
70 - 79	13.2%
80 - 89	16.2%
90 - 99	11.8%
> 99	10.3%
(Cases) N=	68
mean	68
min size (mm)	22
max size (mm)	122

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	0.0%
115 - 124	0.0%
125 - 134	0.0%
135 - 144	0.0%
145 - 154	0.0%
155 - 164	100.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	155
min size (mm)	155
max size (mm)	155

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	6.3%
60 - 69	3.1%
70 - 79	6.3%
80 - 89	12.5%
90 - 99	3.1%
100 - 109	18.8%
110 - 119	25.0%
120 - 129	12.5%
130 - 139	12.5%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	32
mean	104
min size (mm)	52
max size (mm)	139

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	16.7%
40 - 49	16.7%
50 - 59	50.0%
60 - 69	16.7%
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	51
min size (mm)	38
max size (mm)	62

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Rodes Reef

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	46.7%
100 - 109	53.3%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	15
mean	99
min size (mm)	90
max size (mm)	107

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	20.0%
60 - 69	40.0%
70 - 79	0.0%
80 - 89	0.0%
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	85
min size (mm)	58
max size (mm)	121

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	9.0%
30 - 39	21.3%
40 - 49	20.2%
50 - 59	29.2%
60 - 69	14.6%
70 - 79	5.6%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	89
mean	48
min size (mm)	24
max size (mm)	76

Pisaster giganteus

< 20	0.0%
20 - 39	1.3%
40 - 59	17.9%
60 - 79	42.3%
80 - 99	12.8%
100 - 119	14.1%
120 - 139	5.1%
140 - 159	3.8%
160 - 179	1.3%
180 - 199	1.3%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	78
mean	83
min size (mm)	37
max size (mm)	185

Pycnopodia helianthoides

< 20	0.0%
20 - 39	0.0%
40 - 59	4.1%
60 - 79	6.8%
80 - 99	1.4%
100 - 119	5.5%
120 - 139	12.3%
140 - 159	17.8%
160 - 179	15.1%
180 - 199	12.3%
200 - 219	19.2%
220 - 239	4.1%
240 - 259	1.4%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	73
mean	158
min size (mm)	41
max size (mm)	244

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Rodes Reef

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.5%
15 - 19	0.5%
20 - 24	1.5%
25 - 29	2.5%
30 - 34	4.1%
35 - 39	0.5%
40 - 44	2.5%
45 - 49	2.5%
50 - 54	4.6%
55 - 59	3.6%
60 - 64	3.0%
65 - 69	4.1%
70 - 74	3.0%
75 - 79	3.6%
80 - 84	13.2%
85 - 89	10.7%
90 - 94	13.2%
95 - 99	11.7%
100 - 104	6.6%
105 - 109	4.6%
> 109	2.5%
(Cases) N=	197
mean	77
min size (mm)	13
max size (mm)	118

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	2.9%
20 - 24	5.7%
25 - 29	5.7%
30 - 34	11.5%
35 - 39	14.9%
40 - 44	22.4%
45 - 49	16.1%
50 - 54	10.3%
55 - 59	8.6%
60 - 64	1.7%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	174
mean	41
min size (mm)	16
max size (mm)	62

Tethya aurantia	
<10	0.0%
10 - 19	5.7%
20 - 29	25.3%
30 - 39	21.8%
40 - 49	20.7%
50 - 59	13.8%
60 - 69	4.6%
70 - 79	1.1%
80 - 89	1.1%
90 - 99	3.4%
> 99	2.3%
(Cases) N=	87
mean	41
min size (mm)	10
max size (mm)	104

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	40.0%
90 - 99	10.0%
100 - 109	30.0%
110 - 119	20.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	10
mean	97
min size (mm)	82
max size (mm)	111

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Gull Island South

Lithopoma undosa

<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	46
min size (mm)	46
max size (mm)	46

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	22.2%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	11.1%
60 - 69	11.1%
70 - 79	0.0%
80 - 89	22.2%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	22.2%
130 - 139	0.0%
> 139	11.1%
(Cases) N=	9
mean	82
min size (mm)	26
max size (mm)	160

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	50.0%
50 - 54	50.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	8
mean	49
min size (mm)	45
max size (mm)	53

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	6.1%
50 - 59	16.7%
60 - 69	39.4%
70 - 79	25.8%
80 - 89	10.6%
90 - 99	1.5%
> 99	0.0%
(Cases) N=	66
mean	66
min size (mm)	41
max size (mm)	93

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	1.4%
60 - 79	11.3%
80 - 99	33.8%
100 - 119	39.4%
120 - 139	11.3%
140 - 159	1.4%
160 - 179	1.4%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	71
mean	101
min size (mm)	56
max size (mm)	161

Pycnopodia helianthoides

< 20	46.9%
20 - 39	53.1%
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%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	32
mean	21
min size (mm)	11
max size (mm)	32

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Gull Island South

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.9%
15 - 19	0.0%
20 - 24	3.6%
25 - 29	10.8%
30 - 34	2.7%
35 - 39	1.8%
40 - 44	6.3%
45 - 49	2.7%
50 - 54	5.4%
55 - 59	2.7%
60 - 64	5.4%
65 - 69	4.5%
70 - 74	2.7%
75 - 79	1.8%
80 - 84	11.7%
85 - 89	3.6%
90 - 94	11.7%
95 - 99	7.2%
100 - 104	2.7%
105 - 109	5.4%
> 109	6.3%
(Cases) N=	111
mean	70
min size (mm)	12
max size (mm)	129

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	7.1%
20 - 24	0.0%
25 - 29	17.9%
30 - 34	10.7%
35 - 39	14.3%
40 - 44	32.1%
45 - 49	7.1%
50 - 54	10.7%
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=	28
mean	37
min size (mm)	16
max size (mm)	54

Tethya aurantia	
<10	0.0%
10 - 19	7.1%
20 - 29	35.7%
30 - 39	14.3%
40 - 49	35.7%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	7.1%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	14
mean	35
min size (mm)	12
max size (mm)	71

Kelletia kelletii	
< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	50.0%
90 - 99	16.7%
100 - 109	0.0%
110 - 119	33.3%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	6
mean	95
min size (mm)	80
max size (mm)	117

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Fry's Harbor

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	25.0%
30 - 39	25.0%
40 - 49	50.0%
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=	8
mean	37
min size (mm)	21
max size (mm)	48

Megathura crenulata

<10	0.0%
10 - 19	7.7%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	7.7%
60 - 69	38.5%
70 - 79	7.7%
80 - 89	30.8%
90 - 99	7.7%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	13
mean	69
min size (mm)	10
max size (mm)	90

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	44.4%
50 - 59	0.0%
60 - 69	11.1%
70 - 79	11.1%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	22.2%
110 - 119	11.1%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	9
mean	71
min size (mm)	43
max size (mm)	114

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	10.0%
35 - 39	0.0%
40 - 44	10.0%
45 - 49	30.0%
50 - 54	50.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	10
mean	48
min size (mm)	33
max size (mm)	53

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	3.3%
40 - 49	1.7%
50 - 59	10.0%
60 - 69	23.3%
70 - 79	46.7%
80 - 89	15.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	60
mean	69
min size (mm)	32
max size (mm)	86

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	3.2%
80 - 99	14.3%
100 - 119	49.2%
120 - 139	22.2%
140 - 159	7.9%
160 - 179	1.6%
180 - 199	0.0%
200 - 219	1.6%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	63
mean	115
min size (mm)	72
max size (mm)	205

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Fry's Harbor

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	0.0%	10 - 14	7.0%	10 - 14	4.8%
60 - 79	0.0%	15 - 19	19.7%	15 - 19	9.5%
80 - 99	0.0%	20 - 24	19.7%	20 - 24	38.1%
100 - 119	0.0%	25 - 29	2.8%	25 - 29	28.6%
120 - 139	0.0%	30 - 34	2.8%	30 - 34	19.0%
140 - 159	0.0%	35 - 39	5.6%	35 - 39	0.0%
160 - 179	4.9%	40 - 44	5.6%	40 - 44	0.0%
180 - 199	24.4%	45 - 49	2.8%	45 - 49	0.0%
200 - 219	36.6%	50 - 54	5.6%	50 - 54	0.0%
220 - 239	19.5%	55 - 59	5.6%	55 - 59	0.0%
240 - 259	12.2%	60 - 64	2.8%	60 - 64	0.0%
260 - 279	2.4%	65 - 69	0.0%	65 - 69	0.0%
280 - 299	0.0%	70 - 74	8.5%	70 - 74	0.0%
> 299	0.0%	75 - 79	1.4%	75 - 79	0.0%
(Cases) N=	41	80 - 84	4.2%	> 79	0.0%
mean	210	85 - 89	1.4%	(Cases) N=	21
min size (mm)	170	90 - 94	0.0%	mean	24
max size (mm)	260	95 - 99	0.0%	min size (mm)	13
		100 - 104	1.4%	max size (mm)	33
		105 - 109	0.0%		
		> 109	2.8%		
		(Cases) N=	71		
		mean	40		
		min size (mm)	11		
		max size (mm)	111		

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pelican Bay

Tethya aurantia

<10	0.0%
10 - 19	25.0%
20 - 29	12.5%
30 - 39	41.7%
40 - 49	20.8%
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=	24
mean	30
min size (mm)	11
max size (mm)	48

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	16.7%
30 - 39	16.7%
40 - 49	8.3%
50 - 59	16.7%
60 - 69	33.3%
70 - 79	0.0%
80 - 89	8.3%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	12
mean	51
min size (mm)	23
max size (mm)	82

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	40.0%
50 - 59	60.0%
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	50
min size (mm)	47
max size (mm)	54

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	100.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	1
mean	73
min size (mm)	73
max size (mm)	73

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	2.9%
30 - 39	8.6%
40 - 49	20.0%
50 - 59	22.9%
60 - 69	11.4%
70 - 79	4.3%
80 - 89	5.7%
90 - 99	2.9%
100 - 109	8.6%
110 - 119	1.4%
120 - 129	7.1%
130 - 139	1.4%
> 139	2.9%
(Cases) N=	70
mean	69
min size (mm)	22
max size (mm)	159

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	37.5%
50 - 54	37.5%
55 - 59	25.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	8
mean	51
min size (mm)	46
max size (mm)	57

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pelican Bay

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.0%
40 - 49	6.0%
50 - 59	14.0%
60 - 69	32.0%
70 - 79	22.0%
80 - 89	22.0%
90 - 99	2.0%
> 99	0.0%
(Cases) N=	50
mean	68
min size (mm)	39
max size (mm)	93

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	1.7%
100 - 119	16.9%
120 - 139	37.3%
140 - 159	35.6%
160 - 179	8.5%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	59
mean	135
min size (mm)	96
max size (mm)	167

Pycnopodia helianthoides

< 20	0.0%
20 - 39	100.0%
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%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	1
mean	30
min size (mm)	30
max size (mm)	30

Lytechinus anamesus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.9%
20 - 24	9.6%
25 - 29	67.9%
30 - 34	21.6%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	218
mean	28
min size (mm)	18
max size (mm)	34

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	3.2%
15 - 19	10.6%
20 - 24	8.0%
25 - 29	4.3%
30 - 34	5.3%
35 - 39	7.4%
40 - 44	9.0%
45 - 49	14.9%
50 - 54	13.3%
55 - 59	12.2%
60 - 64	6.4%
65 - 69	3.7%
70 - 74	1.1%
75 - 79	0.5%
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=	188
mean	42
min size (mm)	13
max size (mm)	78

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pelican Bay

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	2.1%
20 - 24	6.9%
25 - 29	42.4%
30 - 34	34.0%
35 - 39	12.5%
40 - 44	1.4%
45 - 49	0.7%
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=	144
mean	30
min size (mm)	15
max size (mm)	46

Tethya aurantia

<10	0.0%
10 - 19	7.1%
20 - 29	14.3%
30 - 39	21.4%
40 - 49	23.8%
50 - 59	19.0%
60 - 69	7.1%
70 - 79	7.1%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	42
mean	43
min size (mm)	14
max size (mm)	72

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	2.4%
30 - 39	7.2%
40 - 49	33.7%
50 - 59	14.5%
60 - 69	0.0%
70 - 79	8.4%
80 - 89	26.5%
90 - 99	7.2%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	83
mean	61
min size (mm)	20
max size (mm)	99

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	1.2%
30 - 39	2.4%
40 - 49	2.4%
50 - 59	7.3%
60 - 69	40.2%
70 - 79	39.0%
80 - 89	7.3%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	82
mean	68
min size (mm)	26
max size (mm)	84

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	6.8%
40 - 49	6.8%
50 - 59	10.2%
60 - 69	1.7%
70 - 79	5.1%
80 - 89	8.5%
90 - 99	16.9%
100 - 109	5.1%
110 - 119	11.9%
120 - 129	10.2%
130 - 139	11.9%
> 139	5.1%
(Cases) N=	59
mean	94
min size (mm)	36
max size (mm)	157

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Scorpion Anchorage

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	10.0%
50 - 54	40.0%
55 - 59	40.0%
60 - 64	10.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	10
mean	55
min size (mm)	47
max size (mm)	60

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	1.8%
30 - 39	0.0%
40 - 49	1.8%
50 - 59	5.4%
60 - 69	25.0%
70 - 79	39.3%
80 - 89	25.0%
90 - 99	1.8%
> 99	0.0%
(Cases) N=	56
mean	72
min size (mm)	27
max size (mm)	90

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	2.6%
80 - 99	2.6%
100 - 119	36.8%
120 - 139	15.8%
140 - 159	28.9%
160 - 179	7.9%
180 - 199	5.3%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	38
mean	130
min size (mm)	77
max size (mm)	195

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
mean	235
min size (mm)	235
max size (mm)	235

Lytechinus anamesus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	66.7%
25 - 29	16.7%
30 - 34	16.7%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	6
mean	24
min size (mm)	20
max size (mm)	31

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	1.6%
25 - 29	1.6%
30 - 34	0.5%
35 - 39	10.1%
40 - 44	28.6%
45 - 49	39.2%
50 - 54	15.3%
55 - 59	2.6%
60 - 64	0.5%
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	45
min size (mm)	22
max size (mm)	60

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Scorpion Anchorage

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	1.9%
20 - 24	27.3%
25 - 29	65.3%
30 - 34	5.1%
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	26
min size (mm)	17
max size (mm)	36

Tethya aurantia

<10	0.0%
10 - 19	3.6%
20 - 29	18.2%
30 - 39	14.5%
40 - 49	20.0%
50 - 59	16.4%
60 - 69	14.5%
70 - 79	7.3%
80 - 89	3.6%
90 - 99	0.0%
> 99	1.8%
(Cases) N=	55
mean	48
min size (mm)	18
max size (mm)	108

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	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	100.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	1
mean	183
min size (mm)	183
max size (mm)	183

Kelletia kelletii

< 40	10.3%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	2.6%
80 - 89	7.7%
90 - 99	25.6%
100 - 109	35.9%
110 - 119	15.4%
120 - 129	2.6%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	39
mean	94
min size (mm)	17
max size (mm)	120

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.6%
40 - 49	1.6%
50 - 59	1.6%
60 - 69	0.0%
70 - 79	1.6%
80 - 89	1.6%
90 - 99	7.8%
100 - 109	34.4%
110 - 119	39.1%
> 119	10.9%
(Cases) N=	64
mean	106
min size (mm)	36
max size (mm)	126

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Yellow Banks

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	80.0%
50 - 59	20.0%
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	47
min size (mm)	43
max size (mm)	52

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	12.5%
30 - 39	0.0%
40 - 49	12.5%
50 - 59	12.5%
60 - 69	0.0%
70 - 79	12.5%
80 - 89	37.5%
90 - 99	12.5%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	8
mean	67
min size (mm)	24
max size (mm)	90

Crassedoma giganteum

<10	0.0%
10 - 19	12.5%
20 - 29	12.5%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	12.5%
60 - 69	0.0%
70 - 79	12.5%
80 - 89	0.0%
90 - 99	12.5%
100 - 109	12.5%
110 - 119	12.5%
120 - 129	0.0%
130 - 139	12.5%
> 139	0.0%
(Cases) N=	8
mean	76
min size (mm)	14
max size (mm)	133

Haliotis assimilis

<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	100.0%
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	137
min size (mm)	137
max size (mm)	137

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	20.0%
45 - 49	40.0%
50 - 54	40.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	10
mean	49
min size (mm)	42
max size (mm)	54

Asterina miniata

<10	0.0%
10 - 19	2.3%
20 - 29	6.9%
30 - 39	12.6%
40 - 49	18.4%
50 - 59	25.3%
60 - 69	18.4%
70 - 79	11.5%
80 - 89	4.6%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	87
mean	53
min size (mm)	18
max size (mm)	88

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Yellow Banks

Pisaster giganteus

< 20	0.0%
20 - 39	12.5%
40 - 59	6.3%
60 - 79	12.5%
80 - 99	31.3%
100 - 119	12.5%
120 - 139	18.8%
140 - 159	0.0%
160 - 179	6.3%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	16
mean	92
min size (mm)	35
max size (mm)	169

Pycnopodia helianthoides

< 20	0.0%
20 - 39	3.1%
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	3.1%
200 - 219	6.3%
220 - 239	18.8%
240 - 259	21.9%
260 - 279	21.9%
280 - 299	9.4%
> 299	15.6%
(Cases) N=	32
mean	249
min size (mm)	22
max size (mm)	320

Lytechinus anamesus

< 5	0.0%
5 - 9	2.5%
10 - 14	42.2%
15 - 19	29.1%
20 - 24	19.1%
25 - 29	6.5%
30 - 34	0.5%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	199
mean	16
min size (mm)	5
max size (mm)	31

Strongylocentrotus franciscanus

< 5	0.8%
5 - 9	4.7%
10 - 14	10.2%
15 - 19	3.1%
20 - 24	15.0%
25 - 29	16.5%
30 - 34	17.3%
35 - 39	9.4%
40 - 44	8.7%
45 - 49	4.7%
50 - 54	1.6%
55 - 59	0.8%
60 - 64	0.0%
65 - 69	0.8%
70 - 74	0.0%
75 - 79	0.8%
80 - 84	0.8%
85 - 89	0.8%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.8%
> 109	3.1%
(Cases) N=	127
mean	33
min size (mm)	3
max size (mm)	139

Strongylocentrotus purpuratus

< 5	2.2%
5 - 9	8.4%
10 - 14	7.5%
15 - 19	7.5%
20 - 24	16.3%
25 - 29	17.6%
30 - 34	15.4%
35 - 39	8.8%
40 - 44	6.6%
45 - 49	4.8%
50 - 54	3.1%
55 - 59	0.9%
60 - 64	0.9%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	227
mean	27
min size (mm)	4
max size (mm)	61

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Admiral's Reef

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	11.5%
30 - 39	11.5%
40 - 49	26.9%
50 - 59	3.8%
60 - 69	11.5%
70 - 79	26.9%
80 - 89	3.8%
90 - 99	3.8%
> 99	0.0%
(Cases) N=	26
mean	55
min size (mm)	25
max size (mm)	92

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	2.7%
80 - 89	18.9%
90 - 99	18.9%
100 - 109	37.8%
110 - 119	13.5%
120 - 129	8.1%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	37
mean	100
min size (mm)	76
max size (mm)	124

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	6.7%
30 - 39	0.0%
40 - 49	6.7%
50 - 59	13.3%
60 - 69	6.7%
70 - 79	33.3%
80 - 89	0.0%
90 - 99	26.7%
100 - 109	6.7%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	15
mean	72
min size (mm)	22
max size (mm)	107

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.7%
40 - 49	3.4%
50 - 59	31.0%
60 - 69	50.0%
70 - 79	8.6%
80 - 89	0.0%
90 - 99	3.4%
100 - 109	0.0%
110 - 119	1.7%
> 119	0.0%
(Cases) N=	58
mean	63
min size (mm)	35
max size (mm)	118

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	14.3%
40 - 49	0.0%
50 - 59	14.3%
60 - 69	7.1%
70 - 79	7.1%
80 - 89	14.3%
90 - 99	7.1%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	7.1%
130 - 139	21.4%
> 139	7.1%
(Cases) N=	14
mean	89
min size (mm)	32
max size (mm)	140

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	38.9%
50 - 54	44.4%
55 - 59	16.7%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	18
mean	51
min size (mm)	46
max size (mm)	57

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Admiral's Reef

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	45.0%
70 - 79	18.3%
80 - 89	10.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	60
mean	65
min size (mm)	42
max size (mm)	89

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	5.0%
140 - 159	25.0%
160 - 179	35.0%
180 - 199	20.0%
200 - 219	15.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	20
mean	173
min size (mm)	131
max size (mm)	207

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	3.8%
10 - 14	2.7%
15 - 19	5.5%
20 - 24	14.8%
25 - 29	9.3%
30 - 34	10.4%
35 - 39	7.1%
40 - 44	4.4%
45 - 49	2.7%
50 - 54	3.3%
55 - 59	6.0%
60 - 64	7.7%
65 - 69	8.8%
70 - 74	8.8%
75 - 79	3.8%
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=	182
mean	42
min size (mm)	6
max size (mm)	85

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	4.9%
10 - 14	3.9%
15 - 19	8.8%
20 - 24	23.4%
25 - 29	16.6%
30 - 34	11.2%
35 - 39	11.7%
40 - 44	16.1%
45 - 49	2.9%
50 - 54	0.5%
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=	205
mean	28
min size (mm)	5
max size (mm)	50

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Cathedral Cove

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	50.0%
50 - 59	50.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	2
mean	51
min size (mm)	47
max size (mm)	55

Kelletia kelletii

< 40	50.0%
40 - 49	50.0%
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	39
min size (mm)	37
max size (mm)	40

Lithopoma undosa

<10	0.0%
10 - 19	4.4%
20 - 29	2.2%
30 - 39	13.3%
40 - 49	18.9%
50 - 59	4.4%
60 - 69	5.6%
70 - 79	6.7%
80 - 89	24.4%
90 - 99	17.8%
100 - 109	2.2%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	90
mean	65
min size (mm)	14
max size (mm)	109

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	3.8%
40 - 49	34.6%
50 - 59	19.2%
60 - 69	19.2%
70 - 79	7.7%
80 - 89	0.0%
90 - 99	15.4%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	26
mean	60
min size (mm)	39
max size (mm)	96

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	1.4%
30 - 39	4.3%
40 - 49	4.3%
50 - 59	15.7%
60 - 69	17.1%
70 - 79	21.4%
80 - 89	4.3%
90 - 99	12.9%
100 - 109	12.9%
110 - 119	5.7%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	70
mean	74
min size (mm)	26
max size (mm)	118

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	100.0%
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	42
min size (mm)	41
max size (mm)	43

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Cathedral Cove

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%
160 - 179	33.3%
180 - 199	33.3%
200 - 219	0.0%
220 - 239	0.0%
> 239	33.3%
(Cases) N=	3
mean	201
min size (mm)	169
max size (mm)	240

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	1.8%
10 - 14	3.9%
15 - 19	6.6%
20 - 24	11.0%
25 - 29	6.1%
30 - 34	1.3%
35 - 39	3.5%
40 - 44	2.2%
45 - 49	0.9%
50 - 54	0.4%
55 - 59	0.4%
60 - 64	1.3%
65 - 69	1.3%
70 - 74	2.6%
75 - 79	2.2%
80 - 84	4.8%
85 - 89	3.5%
90 - 94	12.7%
95 - 99	8.3%
100 - 104	10.5%
105 - 109	6.1%
> 109	8.3%
(Cases) N=	228
mean	68
min size (mm)	6
max size (mm)	130

Strongylocentrotus purpuratus

< 5	0.5%
5 - 9	19.4%
10 - 14	14.7%
15 - 19	6.8%
20 - 24	8.9%
25 - 29	8.9%
30 - 34	8.4%
35 - 39	3.7%
40 - 44	5.8%
45 - 49	6.8%
50 - 54	7.3%
55 - 59	4.2%
60 - 64	3.1%
65 - 69	0.5%
70 - 74	1.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	191
mean	27
min size (mm)	4
max size (mm)	71

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	25.0%
30 - 39	0.0%
40 - 49	25.0%
50 - 59	50.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	4
mean	44
min size (mm)	20
max size (mm)	59

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	100.0%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	2
mean	162
min size (mm)	161
max size (mm)	162

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Landing Cove

Kelletia kelletii

< 40	25.0%
40 - 49	25.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	25.0%
110 - 119	25.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	4
mean	74
min size (mm)	37
max size (mm)	110

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	40
min size (mm)	40
max size (mm)	40

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	3.1%
30 - 39	7.3%
40 - 49	15.6%
50 - 59	18.8%
60 - 69	11.5%
70 - 79	7.3%
80 - 89	7.3%
90 - 99	7.3%
100 - 109	5.2%
110 - 119	4.2%
120 - 129	5.2%
130 - 139	4.2%
> 139	3.1%
(Cases) N=	96
mean	73
min size (mm)	23
max size (mm)	153

Lithopoma undosa

<10	0.0%
10 - 19	3.4%
20 - 29	6.9%
30 - 39	10.3%
40 - 49	22.4%
50 - 59	10.3%
60 - 69	3.4%
70 - 79	19.0%
80 - 89	19.0%
90 - 99	3.4%
100 - 109	1.7%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	58
mean	59
min size (mm)	17
max size (mm)	106

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	50.0%
70 - 79	0.0%
80 - 89	50.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	4
mean	74
min size (mm)	60
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	100.0%
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	46
min size (mm)	46
max size (mm)	46

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Landing Cove

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	3.4%
80 - 99	0.0%
100 - 119	10.3%
120 - 139	6.9%
140 - 159	13.8%
160 - 179	17.2%
180 - 199	31.0%
200 - 219	6.9%
220 - 239	0.0%
> 239	10.3%
(Cases) N=	29
mean	172
min size (mm)	75
max size (mm)	270

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	1.1%
10 - 14	6.5%
15 - 19	6.1%
20 - 24	3.4%
25 - 29	1.9%
30 - 34	1.9%
35 - 39	2.7%
40 - 44	1.5%
45 - 49	1.5%
50 - 54	0.4%
55 - 59	1.9%
60 - 64	1.9%
65 - 69	0.0%
70 - 74	4.6%
75 - 79	2.7%
80 - 84	8.0%
85 - 89	6.9%
90 - 94	8.8%
95 - 99	11.5%
100 - 104	8.4%
105 - 109	8.8%
> 109	9.5%
(Cases) N=	262
mean	75
min size (mm)	8
max size (mm)	132

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	7.8%
10 - 14	6.2%
15 - 19	4.7%
20 - 24	12.4%
25 - 29	3.1%
30 - 34	5.4%
35 - 39	11.6%
40 - 44	14.7%
45 - 49	10.1%
50 - 54	11.6%
55 - 59	7.0%
60 - 64	3.1%
65 - 69	1.6%
70 - 74	0.8%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	129
mean	36
min size (mm)	6
max size (mm)	71

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	5.9%
30 - 39	5.9%
40 - 49	11.8%
50 - 59	17.6%
60 - 69	17.6%
70 - 79	25.0%
80 - 89	7.4%
90 - 99	5.9%
> 99	2.9%
(Cases) N=	68
mean	62
min size (mm)	23
max size (mm)	101

Lithopoma undosa

<10	0.0%
10 - 19	1.7%
20 - 29	1.7%
30 - 39	10.0%
40 - 49	8.3%
50 - 59	25.0%
60 - 69	31.7%
70 - 79	15.0%
80 - 89	6.7%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	60
mean	58
min size (mm)	18
max size (mm)	83

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - SE Sea Lion Rookery

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=	8
mean	47
min size (mm)	46
max size (mm)	49

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	3.8%
50 - 59	19.2%
60 - 69	7.7%
70 - 79	34.6%
80 - 89	19.2%
90 - 99	11.5%
100 - 109	0.0%
110 - 119	0.0%
> 119	3.8%
(Cases) N=	26
mean	74
min size (mm)	43
max size (mm)	130

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	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
> 139	100.0%
(Cases) N=	1
mean	150
min size (mm)	150
max size (mm)	150

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	2.4%
35 - 39	2.4%
40 - 44	11.9%
45 - 49	52.4%
50 - 54	31.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	42
mean	47
min size (mm)	33
max size (mm)	53

Asterina miniata

<10	0.0%
10 - 19	1.4%
20 - 29	1.4%
30 - 39	1.4%
40 - 49	12.2%
50 - 59	20.3%
60 - 69	31.1%
70 - 79	24.3%
80 - 89	5.4%
90 - 99	2.7%
> 99	0.0%
(Cases) N=	74
mean	62
min size (mm)	11
max size (mm)	98

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	5.6%
60 - 79	33.3%
80 - 99	16.7%
100 - 119	11.1%
120 - 139	16.7%
140 - 159	11.1%
160 - 179	5.6%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	18
mean	100
min size (mm)	57
max size (mm)	160

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - SE Sea Lion Rookery

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	50.0%
240 - 259	50.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	2
mean	240
min size (mm)	230
max size (mm)	250

Lytechinus anamesus	
< 5	0.0%
5 - 9	8.3%
10 - 14	50.0%
15 - 19	25.0%
20 - 24	16.7%
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=	12
mean	14
min size (mm)	6
max size (mm)	20

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	1.1%
20 - 24	8.7%
25 - 29	8.3%
30 - 34	34.1%
35 - 39	35.2%
40 - 44	8.3%
45 - 49	0.8%
50 - 54	0.0%
55 - 59	0.4%
60 - 64	0.4%
65 - 69	0.8%
70 - 74	0.8%
75 - 79	0.4%
80 - 84	0.4%
85 - 89	0.4%
90 - 94	0.0%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	264
mean	35
min size (mm)	15
max size (mm)	86

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.5%
10 - 14	0.5%
15 - 19	11.5%
20 - 24	39.9%
25 - 29	29.8%
30 - 34	13.3%
35 - 39	4.6%
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=	218
mean	25
min size (mm)	6
max size (mm)	38

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Arch Point

Lithopoma undosa

<10	0.0%
10 - 19	1.1%
20 - 29	4.4%
30 - 39	13.2%
40 - 49	2.2%
50 - 59	14.3%
60 - 69	30.8%
70 - 79	28.6%
80 - 89	3.3%
90 - 99	0.0%
100 - 109	2.2%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	91
mean	61
min size (mm)	17
max size (mm)	108

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	100.0%
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	60
min size (mm)	60
max size (mm)	60

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	6.3%
30 - 39	12.5%
40 - 49	6.3%
50 - 59	12.5%
60 - 69	18.8%
70 - 79	0.0%
80 - 89	6.3%
90 - 99	12.5%
100 - 109	12.5%
110 - 119	6.3%
120 - 129	6.3%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	16
mean	72
min size (mm)	22
max size (mm)	121

Tegula regina

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	1.0%
20 - 24	0.0%
25 - 29	2.0%
30 - 34	2.0%
35 - 39	9.1%
40 - 44	34.3%
45 - 49	38.4%
50 - 54	11.1%
55 - 59	2.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	99
mean	44
min size (mm)	19
max size (mm)	59

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	6.1%
30 - 39	27.3%
40 - 49	25.8%
50 - 59	18.2%
60 - 69	13.6%
70 - 79	9.1%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	66
mean	48
min size (mm)	23
max size (mm)	77

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	2.1%
60 - 79	2.1%
80 - 99	12.5%
100 - 119	29.2%
120 - 139	41.7%
140 - 159	12.5%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	48
mean	118
min size (mm)	59
max size (mm)	157

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Arch Point

Lytechinus anamesus

< 5	0.0%
5 - 9	100.0%
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%
> 49	0.0%
(Cases) N=	1
mean	9
min size (mm)	9
max size (mm)	9

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	2.3%
10 - 14	12.0%
15 - 19	8.8%
20 - 24	24.1%
25 - 29	18.1%
30 - 34	14.8%
35 - 39	3.2%
40 - 44	4.2%
45 - 49	1.4%
50 - 54	1.9%
55 - 59	1.4%
60 - 64	0.9%
65 - 69	2.3%
70 - 74	0.5%
75 - 79	0.5%
80 - 84	0.9%
85 - 89	0.5%
90 - 94	1.4%
95 - 99	0.0%
100 - 104	0.5%
105 - 109	0.5%
> 109	0.0%
(Cases) N=	216
mean	29
min size (mm)	7
max size (mm)	106

Strongylocentrotus purpuratus

< 5	10.7%
5 - 9	2.9%
10 - 14	11.2%
15 - 19	20.0%
20 - 24	29.8%
25 - 29	21.0%
30 - 34	3.4%
35 - 39	1.0%
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=	205
mean	19
min size (mm)	2
max size (mm)	37

Tethya aurantia

<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%
> 99	0.0%
(Cases) N=	1
mean	45
min size (mm)	45
max size (mm)	45

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	1.7%
30 - 39	3.3%
40 - 49	8.3%
50 - 59	33.3%
60 - 69	16.7%
70 - 79	18.3%
80 - 89	13.3%
90 - 99	5.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	60
mean	63
min size (mm)	28
max size (mm)	93

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Cat Canyon

Megathura crenulata

<10	0.0%
10 - 19	16.7%
20 - 29	0.0%
30 - 39	16.7%
40 - 49	0.0%
50 - 59	33.3%
60 - 69	16.7%
70 - 79	16.7%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	6
mean	50
min size (mm)	17
max size (mm)	71

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	16.7%
45 - 49	70.0%
50 - 54	13.3%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	30
mean	47
min size (mm)	40
max size (mm)	52

Asterina miniata

<10	0.0%
10 - 19	3.3%
20 - 29	5.0%
30 - 39	10.0%
40 - 49	15.0%
50 - 59	31.7%
60 - 69	30.0%
70 - 79	5.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	60
mean	52
min size (mm)	19
max size (mm)	76

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	5.5%
60 - 79	49.1%
80 - 99	40.0%
100 - 119	5.5%
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=	55
mean	78
min size (mm)	49
max size (mm)	104

Lytechinus anamesus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	100.0%
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=	2
mean	21
min size (mm)	20
max size (mm)	22

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.5%
15 - 19	3.0%
20 - 24	21.9%
25 - 29	36.8%
30 - 34	15.9%
35 - 39	7.0%
40 - 44	3.0%
45 - 49	1.0%
50 - 54	0.0%
55 - 59	0.5%
60 - 64	3.5%
65 - 69	1.0%
70 - 74	1.5%
75 - 79	2.5%
80 - 84	2.0%
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=	201
mean	32
min size (mm)	14
max size (mm)	82

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Cat Canyon

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.9%
10 - 14	0.9%
15 - 19	8.0%
20 - 24	46.2%
25 - 29	33.3%
30 - 34	8.9%
35 - 39	1.8%
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=	225
mean	24
min size (mm)	6
max size (mm)	39

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	1.6%
30 - 39	8.2%
40 - 49	1.6%
50 - 59	8.2%
60 - 69	23.0%
70 - 79	6.6%
80 - 89	21.3%
90 - 99	18.0%
> 99	11.5%
(Cases) N=	61
mean	76
min size (mm)	20
max size (mm)	150

Haliotis rufescens

<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	0.0%
65 - 74	0.8%
75 - 84	0.0%
85 - 94	0.0%
95 - 104	2.5%
105 - 114	1.7%
115 - 124	2.5%
125 - 134	0.8%
135 - 144	4.1%
145 - 154	3.3%
155 - 164	4.1%
165 - 174	11.6%
175 - 184	20.7%
185 - 194	23.1%
>195	23.1%
(Cases) N=	121
mean	177
min size (mm)	67
max size (mm)	223

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	5.0%
80 - 89	30.0%
90 - 99	20.0%
100 - 109	40.0%
110 - 119	5.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	20
mean	96
min size (mm)	77
max size (mm)	112

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	5.3%
40 - 49	5.3%
50 - 59	47.4%
60 - 69	42.1%
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=	19
mean	57
min size (mm)	35
max size (mm)	65

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Miracle Mile

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	4.0%
80 - 89	44.0%
90 - 99	36.0%
100 - 109	8.0%
110 - 119	8.0%
> 119	0.0%
(Cases) N=	25
mean	92
min size (mm)	79
max size (mm)	118

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	42.9%
50 - 59	42.9%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	14.3%
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=	7
mean	53
min size (mm)	42
max size (mm)	86

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	4.2%
30 - 39	9.9%
40 - 49	19.7%
50 - 59	35.2%
60 - 69	18.3%
70 - 79	11.3%
80 - 89	1.4%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	71
mean	54
min size (mm)	22
max size (mm)	80

Pisaster giganteus

< 20	0.0%
20 - 39	1.4%
40 - 59	12.7%
60 - 79	62.0%
80 - 99	22.5%
100 - 119	1.4%
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=	71
mean	71
min size (mm)	38
max size (mm)	106

Pycnopodia helianthoides

< 20	0.0%
20 - 39	0.0%
40 - 59	22.2%
60 - 79	50.0%
80 - 99	16.7%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	5.6%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	5.6%
> 299	0.0%
(Cases) N=	18
mean	88
min size (mm)	48
max size (mm)	290

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Miracle Mile

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.4%
15 - 19	0.4%
20 - 24	2.5%
25 - 29	2.5%
30 - 34	1.8%
35 - 39	1.4%
40 - 44	0.7%
45 - 49	0.7%
50 - 54	1.1%
55 - 59	0.7%
60 - 64	3.2%
65 - 69	1.8%
70 - 74	3.6%
75 - 79	3.6%
80 - 84	5.1%
85 - 89	13.7%
90 - 94	14.1%
95 - 99	15.5%
100 - 104	15.5%
105 - 109	5.8%
> 109	5.8%
(Cases) N=	277
mean	85
min size (mm)	12
max size (mm)	126

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	3.4%
20 - 24	3.4%
25 - 29	24.1%
30 - 34	10.3%
35 - 39	0.0%
40 - 44	3.4%
45 - 49	6.9%
50 - 54	24.1%
55 - 59	6.9%
60 - 64	6.9%
65 - 69	3.4%
70 - 74	3.4%
75 - 79	3.4%
> 79	0.0%
(Cases) N=	29
mean	44
min size (mm)	19
max size (mm)	75

Tethya aurantia	
<10	0.0%
10 - 19	5.9%
20 - 29	2.9%
30 - 39	5.9%
40 - 49	1.5%
50 - 59	10.3%
60 - 69	5.9%
70 - 79	16.2%
80 - 89	20.6%
90 - 99	10.3%
> 99	20.6%
(Cases) N=	68
mean	76
min size (mm)	11
max size (mm)	131

Haliotis rufescens	
<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
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	50.0%
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	95
min size (mm)	65
max size (mm)	124

2006 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	105
min size (mm)	92
max size (mm)	123

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	5.0%
70 - 79	0.0%
80 - 89	5.0%
90 - 99	25.0%
100 - 109	10.0%
110 - 119	35.0%
> 119	20.0%
(Cases) N=	20
mean	106
min size (mm)	63
max size (mm)	126

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	4.0%
30 - 39	6.9%
40 - 49	20.8%
50 - 59	28.7%
60 - 69	28.7%
70 - 79	8.9%
80 - 89	2.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	101
mean	55
min size (mm)	22
max size (mm)	82

Lithopoma gibberosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	50.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	50.0%
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	48
min size (mm)	34
max size (mm)	61

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	7.4%
40 - 49	3.7%
50 - 59	25.9%
60 - 69	25.9%
70 - 79	14.8%
80 - 89	3.7%
90 - 99	3.7%
100 - 109	0.0%
110 - 119	3.7%
120 - 129	7.4%
130 - 139	0.0%
> 139	3.7%
(Cases) N=	27
mean	71
min size (mm)	36
max size (mm)	146

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	10.9%
60 - 79	32.8%
80 - 99	29.7%
100 - 119	17.2%
120 - 139	6.3%
140 - 159	1.6%
160 - 179	1.6%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	64
mean	87
min size (mm)	44
max size (mm)	168

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Cluster Point

Pycnopodia helianthoides		*Strongylocentrotus franciscanus*		*Strongylocentrotus purpuratus*	
< 20	2.4%	< 5	0.0%	< 5	0.0%
20 - 39	4.8%	5 - 9	0.0%	5 - 9	1.1%
40 - 59	7.1%	10 - 14	1.3%	10 - 14	1.1%
60 - 79	28.6%	15 - 19	3.6%	15 - 19	2.2%
80 - 99	19.0%	20 - 24	1.8%	20 - 24	5.6%
100 - 119	2.4%	25 - 29	2.7%	25 - 29	11.2%
120 - 139	2.4%	30 - 34	2.2%	30 - 34	9.0%
140 - 159	11.9%	35 - 39	1.3%	35 - 39	19.1%
160 - 179	4.8%	40 - 44	3.1%	40 - 44	21.3%
180 - 199	9.5%	45 - 49	1.8%	45 - 49	16.9%
200 - 219	2.4%	50 - 54	3.1%	50 - 54	6.7%
220 - 239	0.0%	55 - 59	1.3%	55 - 59	3.4%
240 - 259	2.4%	60 - 64	6.2%	60 - 64	2.2%
260 - 279	0.0%	65 - 69	3.1%	65 - 69	0.0%
280 - 299	0.0%	70 - 74	6.7%	70 - 74	0.0%
> 299	2.4%	75 - 79	8.0%	75 - 79	0.0%
(Cases) N=	42	80 - 84	15.6%	> 79	0.0%
mean	110	85 - 89	12.0%	(Cases) N=	89
min size (mm)	16	90 - 94	6.2%	mean	38
max size (mm)	314	95 - 99	9.3%	min size (mm)	9
		100 - 104	4.4%	max size (mm)	62
		105 - 109	3.6%		
		> 109	2.7%		
		(Cases) N=	225		
		mean	74		
		min size (mm)	13		
		max size (mm)	112		

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Trancion Canyon

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	2.7%
50 - 59	6.8%
60 - 69	13.7%
70 - 79	13.7%
80 - 89	20.5%
90 - 99	16.4%
> 99	26.0%
(Cases) N=	73
mean	86
min size (mm)	41
max size (mm)	132

Haliotis rufescens

<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	30
min size (mm)	30
max size (mm)	30

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	0.0%
> 119	100.0%
(Cases) N=	1
mean	133
min size (mm)	133
max size (mm)	133

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	3.0%
70 - 79	0.0%
80 - 89	3.0%
90 - 99	12.1%
100 - 109	30.3%
110 - 119	15.2%
> 119	36.4%
(Cases) N=	33
mean	117
min size (mm)	67
max size (mm)	187

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	3.6%
30 - 39	10.7%
40 - 49	17.9%
50 - 59	25.0%
60 - 69	17.9%
70 - 79	7.1%
80 - 89	3.6%
90 - 99	0.0%
100 - 109	3.6%
110 - 119	3.6%
120 - 129	3.6%
130 - 139	3.6%
> 139	0.0%
(Cases) N=	28
mean	63
min size (mm)	29
max size (mm)	130

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	3.3%
30 - 39	1.7%
40 - 49	11.7%
50 - 59	20.0%
60 - 69	40.0%
70 - 79	21.7%
80 - 89	1.7%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	60
mean	61
min size (mm)	24
max size (mm)	88

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Trancion Canyon

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	10.0%
60 - 79	58.3%
80 - 99	21.7%
100 - 119	3.3%
120 - 139	3.3%
140 - 159	1.7%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	1.7%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	60
mean	78
min size (mm)	44
max size (mm)	202

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	2.4%
60 - 79	2.4%
80 - 99	16.7%
100 - 119	11.9%
120 - 139	21.4%
140 - 159	26.2%
160 - 179	7.1%
180 - 199	4.8%
200 - 219	4.8%
220 - 239	0.0%
240 - 259	2.4%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	42
mean	133
min size (mm)	44
max size (mm)	250

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.5%
10 - 14	6.4%
15 - 19	6.4%
20 - 24	5.4%
25 - 29	3.9%
30 - 34	7.9%
35 - 39	3.0%
40 - 44	3.0%
45 - 49	3.0%
50 - 54	3.0%
55 - 59	1.5%
60 - 64	2.5%
65 - 69	2.5%
70 - 74	2.5%
75 - 79	2.0%
80 - 84	3.4%
85 - 89	7.4%
90 - 94	7.9%
95 - 99	6.9%
100 - 104	11.3%
105 - 109	4.9%
> 109	4.9%
(Cases) N=	203
mean	65
min size (mm)	9
max size (mm)	120

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.9%
10 - 14	7.0%
15 - 19	7.0%
20 - 24	13.2%
25 - 29	18.4%
30 - 34	21.9%
35 - 39	12.3%
40 - 44	5.3%
45 - 49	1.8%
50 - 54	5.3%
55 - 59	3.5%
60 - 64	1.8%
65 - 69	0.9%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.9%
(Cases) N=	114
mean	32
min size (mm)	9
max size (mm)	106

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Chickasaw

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	1.0%
30 - 39	0.0%
40 - 49	3.1%
50 - 59	3.1%
60 - 69	9.4%
70 - 79	17.7%
80 - 89	24.0%
90 - 99	10.4%
> 99	31.3%
(Cases) N=	96
mean	87
min size (mm)	25
max size (mm)	140

Haliotis rufescens

<25	0.0%
25 - 34	0.0%
35 - 44	0.0%
45 - 54	0.0%
55 - 64	2.9%
65 - 74	0.0%
75 - 84	2.9%
85 - 94	0.0%
95 - 104	0.0%
105 - 114	5.9%
115 - 124	0.0%
125 - 134	2.9%
135 - 144	11.8%
145 - 154	0.0%
155 - 164	2.9%
165 - 174	8.8%
175 - 184	5.9%
185 - 194	14.7%
>195	38.2%
(Cases) N=	34
mean	177
min size (mm)	58
max size (mm)	235

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	16.7%
100 - 109	0.0%
110 - 119	66.7%
> 119	16.7%
(Cases) N=	6
mean	112
min size (mm)	94
max size (mm)	122

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	9.1%
50 - 59	9.1%
60 - 69	9.1%
70 - 79	18.2%
80 - 89	9.1%
90 - 99	9.1%
100 - 109	0.0%
110 - 119	18.2%
120 - 129	18.2%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	11
mean	89
min size (mm)	45
max size (mm)	122

Asterina miniata

<10	0.0%
10 - 19	2.2%
20 - 29	3.3%
30 - 39	1.1%
40 - 49	6.5%
50 - 59	16.3%
60 - 69	30.4%
70 - 79	31.5%
80 - 89	7.6%
90 - 99	1.1%
> 99	0.0%
(Cases) N=	92
mean	64
min size (mm)	18
max size (mm)	90

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	5.9%
60 - 79	26.5%
80 - 99	26.5%
100 - 119	14.7%
120 - 139	20.6%
140 - 159	2.9%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	2.9%
> 239	0.0%
(Cases) N=	34
mean	98
min size (mm)	42
max size (mm)	220

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Chickasaw

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	2.9%	10 - 14	1.5%	10 - 14	11.1%
60 - 79	0.0%	15 - 19	1.9%	15 - 19	11.1%
80 - 99	20.6%	20 - 24	3.9%	20 - 24	25.0%
100 - 119	20.6%	25 - 29	0.5%	25 - 29	11.1%
120 - 139	26.5%	30 - 34	1.5%	30 - 34	8.3%
140 - 159	11.8%	35 - 39	2.4%	35 - 39	16.7%
160 - 179	11.8%	40 - 44	0.5%	40 - 44	11.1%
180 - 199	5.9%	45 - 49	1.9%	45 - 49	2.8%
200 - 219	0.0%	50 - 54	1.9%	50 - 54	0.0%
220 - 239	0.0%	55 - 59	2.9%	55 - 59	2.8%
240 - 259	0.0%	60 - 64	4.4%	60 - 64	0.0%
260 - 279	0.0%	65 - 69	3.9%	65 - 69	0.0%
280 - 299	0.0%	70 - 74	4.4%	70 - 74	0.0%
> 299	0.0%	75 - 79	4.9%	75 - 79	0.0%
(Cases) N=	34	80 - 84	6.3%	> 79	0.0%
mean	125	85 - 89	5.3%	(Cases) N=	36
min size (mm)	54	90 - 94	15.0%	mean	29
max size (mm)	186	95 - 99	11.7%	min size (mm)	11
		100 - 104	14.1%	max size (mm)	56
		105 - 109	5.3%		
		> 109	5.8%		
		(Cases) N=	206		
		mean	81		
		min size (mm)	13		
		max size (mm)	121		

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - South Point

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	5.0%
40 - 49	8.3%
50 - 59	3.3%
60 - 69	8.3%
70 - 79	3.3%
80 - 89	16.7%
90 - 99	21.7%
> 99	33.3%
(Cases) N=	60
mean	86
min size (mm)	34
max size (mm)	126

Haliotis rufescens

<25	1.1%
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	1.1%
95 - 104	2.2%
105 - 114	0.0%
115 - 124	2.2%
125 - 134	4.4%
135 - 144	3.3%
145 - 154	5.6%
155 - 164	6.7%
165 - 174	11.1%
175 - 184	14.4%
185 - 194	23.3%
>195	21.1%
(Cases) N=	90
mean	176
min size (mm)	19
max size (mm)	230

Cypraea spadicea

<30	0.0%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	50.0%
39 - 41	0.0%
42 - 44	0.0%
45 - 47	0.0%
48 - 50	50.0%
51 - 53	0.0%
54 - 56	0.0%
>56	0.0%
(Cases) N=	2
mean	43
min size (mm)	38
max size (mm)	48

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	100.0%
> 119	0.0%
(Cases) N=	1
mean	119
min size (mm)	119
max size (mm)	119

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	116
min size (mm)	116
max size (mm)	116

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	6.3%
40 - 49	8.8%
50 - 59	15.0%
60 - 69	27.5%
70 - 79	33.8%
80 - 89	8.8%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	80
mean	65
min size (mm)	32
max size (mm)	86

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - South Point

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	40.0%
80 - 99	30.0%
100 - 119	10.0%
120 - 139	20.0%
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=	10
mean	94
min size (mm)	63
max size (mm)	130

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	6.4%
80 - 99	4.3%
100 - 119	2.1%
120 - 139	12.8%
140 - 159	14.9%
160 - 179	27.7%
180 - 199	23.4%
200 - 219	4.3%
220 - 239	2.1%
240 - 259	2.1%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	47
mean	158
min size (mm)	73
max size (mm)	240

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.9%
15 - 19	6.6%
20 - 24	2.8%
25 - 29	6.1%
30 - 34	4.7%
35 - 39	2.8%
40 - 44	2.3%
45 - 49	1.9%
50 - 54	1.4%
55 - 59	2.3%
60 - 64	1.4%
65 - 69	2.3%
70 - 74	0.9%
75 - 79	2.8%
80 - 84	3.3%
85 - 89	2.8%
90 - 94	7.0%
95 - 99	6.1%
100 - 104	9.9%
105 - 109	8.5%
> 109	22.1%
(Cases) N=	213
mean	78
min size (mm)	11
max size (mm)	127

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	2.8%
10 - 14	11.1%
15 - 19	11.1%
20 - 24	11.1%
25 - 29	8.3%
30 - 34	11.1%
35 - 39	11.1%
40 - 44	8.3%
45 - 49	11.1%
50 - 54	2.8%
55 - 59	2.8%
60 - 64	2.8%
65 - 69	2.8%
70 - 74	0.0%
75 - 79	2.8%
> 79	0.0%
(Cases) N=	36
mean	33
min size (mm)	9
max size (mm)	75

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Devil's Peak Member

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	14.3%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	42.9%
60 - 69	0.0%
70 - 79	28.6%
80 - 89	14.3%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	7
mean	60
min size (mm)	25
max size (mm)	82

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	9.1%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	36.4%
80 - 89	36.4%
90 - 99	9.1%
100 - 109	9.1%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	11
mean	78
min size (mm)	33
max size (mm)	104

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.7%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	25.0%
70 - 79	56.7%
80 - 89	15.0%
90 - 99	1.7%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	60
mean	72
min size (mm)	36
max size (mm)	90

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	5.1%
50 - 59	7.6%
60 - 69	3.8%
70 - 79	11.4%
80 - 89	15.2%
90 - 99	10.1%
100 - 109	15.2%
110 - 119	12.7%
120 - 129	12.7%
130 - 139	3.8%
> 139	2.5%
(Cases) N=	79
mean	95
min size (mm)	41
max size (mm)	147

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	20.0%
50 - 54	80.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	5
mean	50
min size (mm)	48
max size (mm)	51

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	1.1%
30 - 39	9.8%
40 - 49	7.6%
50 - 59	16.3%
60 - 69	20.7%
70 - 79	28.3%
80 - 89	14.1%
90 - 99	2.2%
> 99	0.0%
(Cases) N=	92
mean	64
min size (mm)	29
max size (mm)	94

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Devil's Peak Member

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	11.4%
100 - 119	42.9%
120 - 139	28.6%
140 - 159	7.1%
160 - 179	5.7%
180 - 199	1.4%
200 - 219	1.4%
220 - 239	0.0%
> 239	1.4%
(Cases) N=	70
mean	124
min size (mm)	87
max size (mm)	252

Pycnopodia helianthoides	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	6.7%
80 - 99	6.7%
100 - 119	0.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	6.7%
200 - 219	13.3%
220 - 239	20.0%
240 - 259	26.7%
260 - 279	13.3%
280 - 299	0.0%
> 299	6.7%
(Cases) N=	15
mean	221
min size (mm)	73
max size (mm)	305

Lytechinus anamesus	
< 5	0.0%
5 - 9	0.0%
10 - 14	66.7%
15 - 19	0.0%
20 - 24	33.3%
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	16
min size (mm)	11
max size (mm)	23

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.6%
15 - 19	13.5%
20 - 24	12.4%
25 - 29	14.1%
30 - 34	10.8%
35 - 39	9.7%
40 - 44	7.0%
45 - 49	8.6%
50 - 54	8.1%
55 - 59	6.5%
60 - 64	2.7%
65 - 69	2.7%
70 - 74	1.6%
75 - 79	0.5%
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=	185
mean	36
min size (mm)	12
max size (mm)	78

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.5%
10 - 14	2.1%
15 - 19	1.1%
20 - 24	10.0%
25 - 29	42.6%
30 - 34	36.3%
35 - 39	7.4%
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=	190
mean	29
min size (mm)	9
max size (mm)	39

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Potato Pasture

Tethya aurantia

<10	0.0%
10 - 19	11.1%
20 - 29	33.3%
30 - 39	0.0%
40 - 49	22.2%
50 - 59	33.3%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	9
mean	38
min size (mm)	14
max size (mm)	55

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	16.7%
110 - 119	33.3%
120 - 129	25.0%
130 - 139	8.3%
140 - 149	8.3%
> 149	8.3%
(Cases) N=	12
mean	123
min size (mm)	104
max size (mm)	155

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	5.7%
30 - 39	20.8%
40 - 49	52.8%
50 - 59	17.0%
60 - 69	1.9%
70 - 79	1.9%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	53
mean	43
min size (mm)	22
max size (mm)	76

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	6.4%
60 - 69	29.8%
70 - 79	48.9%
80 - 89	14.9%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	47
mean	72
min size (mm)	53
max size (mm)	86

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.8%
40 - 49	0.0%
50 - 59	1.8%
60 - 69	3.6%
70 - 79	7.3%
80 - 89	3.6%
90 - 99	3.6%
100 - 109	7.3%
110 - 119	9.1%
120 - 129	18.2%
130 - 139	10.9%
> 139	32.7%
(Cases) N=	55
mean	119
min size (mm)	36
max size (mm)	160

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	14.1%
45 - 49	51.6%
50 - 54	31.3%
55 - 59	3.1%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	64
mean	48
min size (mm)	41
max size (mm)	55

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Potato Pasture

Asterina miniata	
<10	0.0%
10 - 19	0.0%
20 - 29	1.7%
30 - 39	3.4%
40 - 49	3.4%
50 - 59	22.4%
60 - 69	34.5%
70 - 79	22.4%
80 - 89	8.6%
90 - 99	1.7%
> 99	1.7%
(Cases) N=	58
mean	65
min size (mm)	27
max size (mm)	104

Lytechinus anamesus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.3%
15 - 19	10.3%
20 - 24	71.8%
25 - 29	16.6%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	319
mean	22
min size (mm)	12
max size (mm)	29

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.0%
10 - 14	10.0%
15 - 19	10.8%
20 - 24	33.3%
25 - 29	36.7%
30 - 34	9.2%
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=	240
mean	23
min size (mm)	10
max size (mm)	34

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	6.1%
120 - 139	12.1%
140 - 159	15.2%
160 - 179	24.2%
180 - 199	15.2%
200 - 219	9.1%
220 - 239	6.1%
> 239	12.1%
(Cases) N=	33
mean	179
min size (mm)	116
max size (mm)	261

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	4.6%
15 - 19	14.2%
20 - 24	10.7%
25 - 29	4.6%
30 - 34	7.1%
35 - 39	10.2%
40 - 44	19.8%
45 - 49	19.3%
50 - 54	8.1%
55 - 59	1.0%
60 - 64	0.5%
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=	197
mean	35
min size (mm)	11
max size (mm)	61

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Cavern Point

Tethya aurantia

<10	0.0%
10 - 19	11.5%
20 - 29	9.6%
30 - 39	17.3%
40 - 49	7.7%
50 - 59	23.1%
60 - 69	15.4%
70 - 79	7.7%
80 - 89	1.9%
90 - 99	3.8%
> 99	1.9%
(Cases) N=	52
mean	49
min size (mm)	12
max size (mm)	108

Lithopoma undosa

<10	0.0%
10 - 19	2.0%
20 - 29	7.8%
30 - 39	45.1%
40 - 49	37.3%
50 - 59	2.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	2.0%
90 - 99	3.9%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	51
mean	41
min size (mm)	16
max size (mm)	98

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	1.0%
30 - 39	0.0%
40 - 49	1.0%
50 - 59	8.9%
60 - 69	9.9%
70 - 79	34.7%
80 - 89	37.6%
90 - 99	4.0%
100 - 109	2.0%
110 - 119	1.0%
> 119	0.0%
(Cases) N=	101
mean	76
min size (mm)	22
max size (mm)	111

Crassedoma giganteum

<10	0.7%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.7%
40 - 49	3.4%
50 - 59	8.8%
60 - 69	12.2%
70 - 79	11.6%
80 - 89	7.5%
90 - 99	6.8%
100 - 109	10.9%
110 - 119	15.6%
120 - 129	8.2%
130 - 139	6.8%
> 139	6.8%
(Cases) N=	147
mean	94
min size (mm)	6
max size (mm)	170

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	4.9%
40 - 44	0.0%
45 - 49	14.6%
50 - 54	63.4%
55 - 59	17.1%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	41
mean	52
min size (mm)	35
max size (mm)	58

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	4.5%
30 - 39	2.3%
40 - 49	4.5%
50 - 59	12.5%
60 - 69	19.3%
70 - 79	27.3%
80 - 89	23.9%
90 - 99	5.7%
> 99	0.0%
(Cases) N=	88
mean	69
min size (mm)	22
max size (mm)	98

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Cavern Point

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	2.4%
100 - 119	4.9%
120 - 139	29.3%
140 - 159	24.4%
160 - 179	24.4%
180 - 199	7.3%
200 - 219	4.9%
220 - 239	2.4%
> 239	0.0%
(Cases) N=	41
mean	153
min size (mm)	90
max size (mm)	225

Lytechinus anamesus	
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	66.7%
20 - 24	33.3%
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	19
min size (mm)	16
max size (mm)	23

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.4%
15 - 19	1.9%
20 - 24	1.0%
25 - 29	1.9%
30 - 34	5.2%
35 - 39	15.7%
40 - 44	30.0%
45 - 49	18.6%
50 - 54	13.8%
55 - 59	5.2%
60 - 64	2.9%
65 - 69	1.4%
70 - 74	0.5%
75 - 79	0.5%
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=	210
mean	44
min size (mm)	12
max size (mm)	75

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	0.3%
10 - 14	1.7%
15 - 19	4.2%
20 - 24	41.1%
25 - 29	35.9%
30 - 34	14.3%
35 - 39	2.1%
40 - 44	0.3%
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=	287
mean	25
min size (mm)	7
max size (mm)	42

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Little Scorpion

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	11.1%
30 - 39	11.1%
40 - 49	11.1%
50 - 59	11.1%
60 - 69	33.3%
70 - 79	16.7%
80 - 89	5.6%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	18
mean	56
min size (mm)	21
max size (mm)	86

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	3.9%
90 - 99	15.7%
100 - 109	47.1%
110 - 119	27.5%
120 - 129	5.9%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	51
mean	105
min size (mm)	81
max size (mm)	125

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	8.5%
30 - 39	42.6%
40 - 49	25.5%
50 - 59	12.8%
60 - 69	6.4%
70 - 79	0.0%
80 - 89	2.1%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	2.1%
> 119	0.0%
(Cases) N=	47
mean	43
min size (mm)	20
max size (mm)	110

Megathura crenulata

<10	0.0%
10 - 19	2.5%
20 - 29	2.5%
30 - 39	2.5%
40 - 49	2.5%
50 - 59	5.0%
60 - 69	17.5%
70 - 79	20.0%
80 - 89	30.0%
90 - 99	15.0%
100 - 109	2.5%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	40
mean	73
min size (mm)	14
max size (mm)	105

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	1.5%
30 - 39	3.0%
40 - 49	9.0%
50 - 59	9.0%
60 - 69	16.4%
70 - 79	9.0%
80 - 89	11.9%
90 - 99	13.4%
100 - 109	9.0%
110 - 119	6.0%
120 - 129	4.5%
130 - 139	6.0%
> 139	1.5%
(Cases) N=	67
mean	82
min size (mm)	22
max size (mm)	155

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	6.3%
45 - 49	28.1%
50 - 54	62.5%
55 - 59	3.1%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	32
mean	50
min size (mm)	43
max size (mm)	56

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Little Scorpion

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	1.5%
30 - 39	6.2%
40 - 49	10.8%
50 - 59	32.3%
60 - 69	16.9%
70 - 79	23.1%
80 - 89	7.7%
90 - 99	0.0%
> 99	1.5%
(Cases) N=	65
mean	61
min size (mm)	26
max size (mm)	102

Lytechinus anamesus

< 5	7.4%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	11.6%
20 - 24	55.8%
25 - 29	25.3%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	95
mean	21
min size (mm)	1
max size (mm)	28

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	3.5%
30 - 34	2.0%
35 - 39	8.4%
40 - 44	25.7%
45 - 49	21.8%
50 - 54	16.3%
55 - 59	13.9%
60 - 64	6.4%
65 - 69	1.5%
70 - 74	0.5%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	202
mean	47
min size (mm)	27
max size (mm)	71

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	1.6%
100 - 119	1.6%
120 - 139	9.7%
140 - 159	17.7%
160 - 179	29.0%
180 - 199	21.0%
200 - 219	8.1%
220 - 239	3.2%
> 239	8.1%
(Cases) N=	62
mean	175
min size (mm)	93
max size (mm)	253

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.5%
20 - 24	1.6%
25 - 29	0.5%
30 - 34	0.5%
35 - 39	1.1%
40 - 44	2.2%
45 - 49	4.4%
50 - 54	9.3%
55 - 59	14.3%
60 - 64	17.6%
65 - 69	13.2%
70 - 74	11.5%
75 - 79	9.9%
80 - 84	4.4%
85 - 89	4.4%
90 - 94	3.3%
95 - 99	0.0%
100 - 104	0.5%
105 - 109	0.5%
> 109	0.0%
(Cases) N=	182
mean	64
min size (mm)	16
max size (mm)	107

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pedro Reef

Tethya aurantia

<10	0.0%
10 - 19	14.8%
20 - 29	27.9%
30 - 39	23.0%
40 - 49	16.4%
50 - 59	3.3%
60 - 69	8.2%
70 - 79	4.9%
80 - 89	1.6%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	61
mean	36
min size (mm)	11
max size (mm)	80

Kelletia kelletii

< 40	1.8%
40 - 49	17.9%
50 - 59	8.9%
60 - 69	3.6%
70 - 79	5.4%
80 - 89	23.2%
90 - 99	14.3%
100 - 109	8.9%
110 - 119	10.7%
120 - 129	3.6%
130 - 139	1.8%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	56
mean	81
min size (mm)	36
max size (mm)	133

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	2.8%
30 - 39	8.3%
40 - 49	56.9%
50 - 59	22.0%
60 - 69	2.8%
70 - 79	0.0%
80 - 89	5.5%
90 - 99	1.8%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	109
mean	49
min size (mm)	23
max size (mm)	94

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	4.0%
50 - 59	8.0%
60 - 69	24.0%
70 - 79	36.0%
80 - 89	24.0%
90 - 99	4.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	25
mean	72
min size (mm)	46
max size (mm)	90

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.7%
40 - 49	0.0%
50 - 59	1.7%
60 - 69	10.3%
70 - 79	12.1%
80 - 89	5.2%
90 - 99	6.9%
100 - 109	8.6%
110 - 119	22.4%
120 - 129	6.9%
130 - 139	10.3%
> 139	13.8%
(Cases) N=	58
mean	106
min size (mm)	35
max size (mm)	168

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	12.5%
50 - 54	62.5%
55 - 59	25.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	24
mean	52
min size (mm)	46
max size (mm)	57

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pedro Reef

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	2.8%
30 - 39	12.5%
40 - 49	5.6%
50 - 59	5.6%
60 - 69	25.0%
70 - 79	23.6%
80 - 89	18.1%
90 - 99	6.9%
> 99	0.0%
(Cases) N=	72
mean	66
min size (mm)	21
max size (mm)	96

Lytechinus anamesus

< 5	0.0%
5 - 9	0.0%
10 - 14	1.7%
15 - 19	21.4%
20 - 24	13.9%
25 - 29	46.8%
30 - 34	15.6%
35 - 39	0.6%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	173
mean	25
min size (mm)	12
max size (mm)	35

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.0%
10 - 14	12.5%
15 - 19	33.7%
20 - 24	44.7%
25 - 29	8.7%
30 - 34	0.5%
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=	208
mean	20
min size (mm)	11
max size (mm)	30

Pisaster giganteus

< 20	0.0%
20 - 39	3.8%
40 - 59	3.8%
60 - 79	7.7%
80 - 99	3.8%
100 - 119	15.4%
120 - 139	23.1%
140 - 159	19.2%
160 - 179	11.5%
180 - 199	3.8%
200 - 219	3.8%
220 - 239	3.8%
> 239	0.0%
(Cases) N=	26
mean	131
min size (mm)	29
max size (mm)	222

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.5%
10 - 14	6.1%
15 - 19	20.2%
20 - 24	10.1%
25 - 29	16.2%
30 - 34	13.1%
35 - 39	19.2%
40 - 44	9.1%
45 - 49	3.5%
50 - 54	1.5%
55 - 59	0.5%
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=	198
mean	29
min size (mm)	9
max size (mm)	59

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Keyhole

Kelletia kelletii

< 40	0.0%
40 - 49	13.3%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	13.3%
80 - 89	0.0%
90 - 99	13.3%
100 - 109	0.0%
110 - 119	33.3%
120 - 129	13.3%
130 - 139	13.3%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	15
mean	101
min size (mm)	40
max size (mm)	138

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.6%
40 - 49	2.6%
50 - 59	23.7%
60 - 69	23.7%
70 - 79	15.8%
80 - 89	21.1%
90 - 99	10.5%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	38
mean	69
min size (mm)	35
max size (mm)	94

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	2.3%
40 - 44	2.3%
45 - 49	72.1%
50 - 54	23.3%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	43
mean	48
min size (mm)	39
max size (mm)	53

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	8.2%
30 - 39	15.3%
40 - 49	46.9%
50 - 59	20.4%
60 - 69	0.0%
70 - 79	1.0%
80 - 89	2.0%
90 - 99	3.1%
100 - 109	3.1%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	98
mean	48
min size (mm)	20
max size (mm)	107

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	6.3%
50 - 59	9.4%
60 - 69	17.2%
70 - 79	3.1%
80 - 89	9.4%
90 - 99	9.4%
100 - 109	12.5%
110 - 119	10.9%
120 - 129	9.4%
130 - 139	3.1%
> 139	9.4%
(Cases) N=	64
mean	94
min size (mm)	42
max size (mm)	161

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	4.4%
50 - 59	20.0%
60 - 69	33.3%
70 - 79	24.4%
80 - 89	6.7%
90 - 99	2.2%
> 99	8.9%
(Cases) N=	45
mean	70
min size (mm)	46
max size (mm)	111

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Keyhole

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	33.3%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	66.7%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	3
mean	176
min size (mm)	109
max size (mm)	210

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	0.9%
10 - 14	5.1%
15 - 19	25.1%
20 - 24	25.1%
25 - 29	3.8%
30 - 34	2.1%
35 - 39	2.1%
40 - 44	3.0%
45 - 49	3.4%
50 - 54	3.4%
55 - 59	7.2%
60 - 64	6.8%
65 - 69	2.1%
70 - 74	3.4%
75 - 79	2.6%
80 - 84	2.1%
85 - 89	1.3%
90 - 94	0.4%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	235
mean	35
min size (mm)	8
max size (mm)	93

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	0.5%
10 - 14	3.2%
15 - 19	11.3%
20 - 24	10.4%
25 - 29	4.5%
30 - 34	17.6%
35 - 39	29.0%
40 - 44	18.6%
45 - 49	3.2%
50 - 54	1.8%
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=	221
mean	33
min size (mm)	9
max size (mm)	53

Tethya aurantia

<10	0.0%
10 - 19	33.3%
20 - 29	16.7%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	16.7%
60 - 69	16.7%
70 - 79	16.7%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	6
mean	41
min size (mm)	17
max size (mm)	72

Kelletia kelletii

< 40	0.0%
40 - 49	0.0%
50 - 59	1.8%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	1.8%
90 - 99	14.3%
100 - 109	51.8%
110 - 119	21.4%
120 - 129	8.9%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	56
mean	106
min size (mm)	58
max size (mm)	129

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - East Fish Camp

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	8.6%
30 - 39	27.1%
40 - 49	50.0%
50 - 59	4.3%
60 - 69	1.4%
70 - 79	5.7%
80 - 89	1.4%
90 - 99	1.4%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	70
mean	43
min size (mm)	22
max size (mm)	93

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	1.7%
30 - 39	3.3%
40 - 49	11.7%
50 - 59	15.0%
60 - 69	31.7%
70 - 79	30.0%
80 - 89	6.7%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	60
mean	63
min size (mm)	27
max size (mm)	81

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	5.0%
40 - 49	10.0%
50 - 59	10.0%
60 - 69	10.0%
70 - 79	15.0%
80 - 89	10.0%
90 - 99	5.0%
100 - 109	0.0%
110 - 119	15.0%
120 - 129	10.0%
130 - 139	10.0%
> 139	0.0%
(Cases) N=	20
mean	86
min size (mm)	39
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	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	9.1%
50 - 54	45.5%
55 - 59	45.5%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	11
mean	54
min size (mm)	47
max size (mm)	57

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	1.3%
30 - 39	6.3%
40 - 49	2.5%
50 - 59	12.5%
60 - 69	31.3%
70 - 79	21.3%
80 - 89	17.5%
90 - 99	7.5%
> 99	0.0%
(Cases) N=	80
mean	68
min size (mm)	28
max size (mm)	97

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	5.0%
120 - 139	5.0%
140 - 159	15.0%
160 - 179	25.0%
180 - 199	25.0%
200 - 219	10.0%
220 - 239	0.0%
> 239	15.0%
(Cases) N=	20
mean	179
min size (mm)	112
max size (mm)	250

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - East Fish Camp

Lytechinus anamesus

< 5	0.0%
5 - 9	0.0%
10 - 14	2.8%
15 - 19	25.7%
20 - 24	19.4%
25 - 29	48.6%
30 - 34	3.5%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	144
mean	23
min size (mm)	12
max size (mm)	31

Strongylocentrotus franciscanus

< 5	0.0%
5 - 9	1.4%
10 - 14	6.6%
15 - 19	16.0%
20 - 24	20.7%
25 - 29	23.0%
30 - 34	15.5%
35 - 39	12.7%
40 - 44	2.3%
45 - 49	1.4%
50 - 54	0.5%
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=	213
mean	26
min size (mm)	7
max size (mm)	53

Strongylocentrotus purpuratus

< 5	0.0%
5 - 9	1.8%
10 - 14	10.1%
15 - 19	40.1%
20 - 24	41.0%
25 - 29	6.5%
30 - 34	0.5%
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=	217
mean	19
min size (mm)	5
max size (mm)	30

Tethya aurantia

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	50.0%
40 - 49	0.0%
50 - 59	25.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	25.0%
> 99	0.0%
(Cases) N=	4
mean	54
min size (mm)	34
max size (mm)	90

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	100.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	1
mean	116
min size (mm)	116
max size (mm)	116

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Black Sea Bass Reef

Lithopoma undosa

<10	0.0%
10 - 19	9.1%
20 - 29	18.2%
30 - 39	18.2%
40 - 49	36.4%
50 - 59	9.1%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	9.1%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	11
mean	41
min size (mm)	14
max size (mm)	81

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	2.8%
40 - 49	2.8%
50 - 59	11.3%
60 - 69	26.8%
70 - 79	47.9%
80 - 89	7.0%
90 - 99	1.4%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	71
mean	68
min size (mm)	39
max size (mm)	96

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	14.3%
80 - 89	14.3%
90 - 99	0.0%
100 - 109	28.6%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	14.3%
> 139	28.6%
(Cases) N=	7
mean	113
min size (mm)	70
max size (mm)	155

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	25.0%
40 - 44	0.0%
45 - 49	25.0%
50 - 54	50.0%
55 - 59	0.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	4
mean	47
min size (mm)	38
max size (mm)	51

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	11.1%
30 - 39	0.0%
40 - 49	11.1%
50 - 59	11.1%
60 - 69	55.6%
70 - 79	11.1%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	9
mean	57
min size (mm)	26
max size (mm)	72

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	6.3%
100 - 119	6.3%
120 - 139	37.5%
140 - 159	25.0%
160 - 179	18.8%
180 - 199	6.3%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	16
mean	145
min size (mm)	99
max size (mm)	189

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Black Sea Bass Reef

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.0%
15 - 19	0.0%
20 - 24	10.9%
25 - 29	14.9%
30 - 34	9.0%
35 - 39	12.9%
40 - 44	13.9%
45 - 49	20.4%
50 - 54	13.9%
55 - 59	2.0%
60 - 64	1.0%
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=	201
mean	39
min size (mm)	10
max size (mm)	61

Strongylocentrotus purpuratus	
< 5	0.0%
5 - 9	3.7%
10 - 14	1.9%
15 - 19	1.9%
20 - 24	38.9%
25 - 29	31.5%
30 - 34	13.0%
35 - 39	9.3%
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=	54
mean	25
min size (mm)	9
max size (mm)	37

Tethya aurantia	
<10	1.7%
10 - 19	10.3%
20 - 29	5.2%
30 - 39	5.2%
40 - 49	20.7%
50 - 59	13.8%
60 - 69	24.1%
70 - 79	13.8%
80 - 89	5.2%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	58
mean	53
min size (mm)	5
max size (mm)	89

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	14.3%
120 - 129	57.1%
130 - 139	21.4%
140 - 149	7.1%
> 149	0.0%
(Cases) N=	14
mean	126
min size (mm)	111
max size (mm)	141

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Lighthouse

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	1.2%
40 - 49	10.6%
50 - 59	8.2%
60 - 69	0.0%
70 - 79	1.2%
80 - 89	30.6%
90 - 99	34.1%
100 - 109	12.9%
110 - 119	1.2%
> 119	0.0%
(Cases) N=	85
mean	83
min size (mm)	36
max size (mm)	112

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	5.5%
40 - 49	1.8%
50 - 59	9.1%
60 - 69	16.4%
70 - 79	38.2%
80 - 89	23.6%
90 - 99	5.5%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	55
mean	71
min size (mm)	35
max size (mm)	94

Crassedoma giganteum

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	5.9%
40 - 49	14.7%
50 - 59	11.8%
60 - 69	11.8%
70 - 79	5.9%
80 - 89	2.9%
90 - 99	5.9%
100 - 109	11.8%
110 - 119	8.8%
120 - 129	2.9%
130 - 139	14.7%
> 139	2.9%
(Cases) N=	34
mean	84
min size (mm)	30
max size (mm)	142

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	23.1%
50 - 54	61.5%
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)	48
max size (mm)	56

Asterina miniata

<10	0.0%
10 - 19	1.5%
20 - 29	1.5%
30 - 39	6.2%
40 - 49	4.6%
50 - 59	27.7%
60 - 69	21.5%
70 - 79	15.4%
80 - 89	15.4%
90 - 99	6.2%
> 99	0.0%
(Cases) N=	65
mean	63
min size (mm)	14
max size (mm)	97

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	14.3%
120 - 139	14.3%
140 - 159	28.6%
160 - 179	0.0%
180 - 199	23.8%
200 - 219	0.0%
220 - 239	4.8%
> 239	14.3%
(Cases) N=	21
mean	169
min size (mm)	100
max size (mm)	295

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Lighthouse

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.5%
10 - 14	5.9%
15 - 19	15.1%
20 - 24	13.2%
25 - 29	7.3%
30 - 34	6.8%
35 - 39	14.6%
40 - 44	8.8%
45 - 49	3.9%
50 - 54	5.4%
55 - 59	4.4%
60 - 64	5.4%
65 - 69	3.4%
70 - 74	2.0%
75 - 79	1.0%
80 - 84	0.0%
85 - 89	0.0%
90 - 94	0.5%
95 - 99	1.5%
100 - 104	0.5%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	205
mean	37
min size (mm)	7
max size (mm)	103

Strongylocentrotus purpuratus	
< 5	0.9%
5 - 9	7.4%
10 - 14	5.2%
15 - 19	11.4%
20 - 24	12.7%
25 - 29	14.4%
30 - 34	12.7%
35 - 39	12.7%
40 - 44	9.2%
45 - 49	4.8%
50 - 54	6.6%
55 - 59	1.7%
60 - 64	0.0%
65 - 69	0.4%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	229
mean	29
min size (mm)	4
max size (mm)	66

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	100.0%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	1
mean	115
min size (mm)	115
max size (mm)	115

Lithopoma undosa	
<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	18.3%
40 - 49	8.5%
50 - 59	32.4%
60 - 69	11.3%
70 - 79	14.1%
80 - 89	8.5%
90 - 99	5.6%
100 - 109	1.4%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	71
mean	59
min size (mm)	32
max size (mm)	100

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Webster's Arch

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	1.7%
50 - 59	12.1%
60 - 69	24.1%
70 - 79	24.1%
80 - 89	22.4%
90 - 99	12.1%
100 - 109	1.7%
110 - 119	1.7%
> 119	0.0%
(Cases) N=	58
mean	75
min size (mm)	45
max size (mm)	110

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	0.0%
110 - 119	0.0%
120 - 129	25.0%
130 - 139	0.0%
> 139	75.0%
(Cases) N=	4
mean	143
min size (mm)	128
max size (mm)	150

Tegula regina

< 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	4.1%
35 - 39	12.2%
40 - 44	52.7%
45 - 49	24.3%
50 - 54	1.4%
55 - 59	1.4%
60 - 64	1.4%
65 - 69	0.0%
70 - 74	0.0%
> 75	1.4%
(Cases) N=	74
mean	43
min size (mm)	28
max size (mm)	80

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	10.2%
50 - 59	40.7%
60 - 69	32.2%
70 - 79	13.6%
80 - 89	3.4%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	59
mean	60
min size (mm)	42
max size (mm)	83

Pisaster giganteus

< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	7.5%
80 - 99	15.1%
100 - 119	43.4%
120 - 139	26.4%
140 - 159	3.8%
160 - 179	3.8%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	53
mean	112
min size (mm)	65
max size (mm)	163

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	0.0%
240 - 259	0.0%
260 - 279	100.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	1
mean	270
min size (mm)	270
max size (mm)	270

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Webster's Arch

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	0.0%
10 - 14	1.5%
15 - 19	13.3%
20 - 24	15.9%
25 - 29	12.3%
30 - 34	13.3%
35 - 39	8.7%
40 - 44	12.3%
45 - 49	10.3%
50 - 54	3.6%
55 - 59	2.6%
60 - 64	1.5%
65 - 69	2.1%
70 - 74	2.1%
75 - 79	0.0%
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=	195
mean	34
min size (mm)	11
max size (mm)	82

Strongylocentrotus purpuratus	
< 5	0.5%
5 - 9	12.1%
10 - 14	6.0%
15 - 19	23.6%
20 - 24	35.2%
25 - 29	17.1%
30 - 34	4.5%
35 - 39	0.5%
40 - 44	0.5%
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=	199
mean	20
min size (mm)	3
max size (mm)	42

Tethya aurantia	
<10	0.0%
10 - 19	3.6%
20 - 29	3.6%
30 - 39	5.5%
40 - 49	14.5%
50 - 59	10.9%
60 - 69	14.5%
70 - 79	30.9%
80 - 89	10.9%
90 - 99	3.6%
> 99	1.8%
(Cases) N=	55
mean	63
min size (mm)	18
max size (mm)	103

Cypraea spadicea	
<30	0.0%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	0.0%
39 - 41	60.0%
42 - 44	20.0%
45 - 47	20.0%
48 - 50	0.0%
51 - 53	0.0%
54 - 56	0.0%
>56	0.0%
(Cases) N=	5
mean	42
min size (mm)	39
max size (mm)	45

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Graveyard Canyon

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	33.3%
130 - 139	66.7%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	3
mean	130
min size (mm)	123
max size (mm)	136

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	11.1%
70 - 79	22.2%
80 - 89	22.2%
90 - 99	33.3%
100 - 109	11.1%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	9
mean	84
min size (mm)	66
max size (mm)	102

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	0.0%
55 - 59	100.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	1
mean	56
min size (mm)	56
max size (mm)	56

Lithopoma undosa

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	20.0%
50 - 59	10.0%
60 - 69	10.0%
70 - 79	25.0%
80 - 89	15.0%
90 - 99	15.0%
100 - 109	5.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	20
mean	70
min size (mm)	42
max size (mm)	100

Crassedoma giganteum

<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	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	20.0%
120 - 129	0.0%
130 - 139	20.0%
> 139	40.0%
(Cases) N=	5
mean	116
min size (mm)	47
max size (mm)	146

Asterina miniata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	3.9%
40 - 49	9.1%
50 - 59	11.7%
60 - 69	22.1%
70 - 79	29.9%
80 - 89	18.2%
90 - 99	5.2%
> 99	0.0%
(Cases) N=	77
mean	68
min size (mm)	36
max size (mm)	95

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Graveyard Canyon

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	5.0%
60 - 79	35.0%
80 - 99	20.0%
100 - 119	35.0%
120 - 139	5.0%
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=	20
mean	88
min size (mm)	58
max size (mm)	121

Lytechinus anamesus	
< 5	6.7%
5 - 9	31.9%
10 - 14	14.3%
15 - 19	14.3%
20 - 24	29.4%
25 - 29	3.4%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	0.0%
> 49	0.0%
(Cases) N=	119
mean	14
min size (mm)	2
max size (mm)	27

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	1.2%
10 - 14	7.3%
15 - 19	11.9%
20 - 24	20.8%
25 - 29	23.5%
30 - 34	9.6%
35 - 39	8.8%
40 - 44	4.6%
45 - 49	4.2%
50 - 54	1.9%
55 - 59	1.2%
60 - 64	1.5%
65 - 69	1.2%
70 - 74	1.2%
75 - 79	0.8%
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	0.4%
(Cases) N=	260
mean	29
min size (mm)	9
max size (mm)	115

Strongylocentrotus purpuratus	
< 5	1.4%
5 - 9	4.3%
10 - 14	18.3%
15 - 19	43.2%
20 - 24	21.6%
25 - 29	9.4%
30 - 34	1.1%
35 - 39	0.7%
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=	278
mean	18
min size (mm)	3
max size (mm)	36

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Southeast Reef

Haliotis corrugata

<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	10
min size (mm)	10
max size (mm)	10

Lithopoma undosa

<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	16.7%
70 - 79	20.8%
80 - 89	29.2%
90 - 99	16.7%
100 - 109	4.2%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	24
mean	78
min size (mm)	54
max size (mm)	102

Megathura crenulata

<10	0.0%
10 - 19	0.0%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	16.7%
50 - 59	33.3%
60 - 69	33.3%
70 - 79	0.0%
80 - 89	16.7%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	12
mean	61
min size (mm)	47
max size (mm)	86

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	100.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	1
mean	95
min size (mm)	95
max size (mm)	95

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	2.1%
35 - 39	8.3%
40 - 44	20.8%
45 - 49	47.9%
50 - 54	19.8%
55 - 59	1.0%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
> 75	0.0%
(Cases) N=	96
mean	46
min size (mm)	32
max size (mm)	58

Asterina miniata

<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	100.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	1
mean	68
min size (mm)	68
max size (mm)	68

2006 NATURAL HABITAT SIZE FREQUENCY DISTRIBUTIONS

Santa Barbara Island - Southeast Reef

Pisaster giganteus	
< 20	0.0%
20 - 39	0.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	3.1%
100 - 119	28.1%
120 - 139	48.4%
140 - 159	12.5%
160 - 179	6.3%
180 - 199	0.0%
200 - 219	1.6%
220 - 239	0.0%
> 239	0.0%
(Cases) N=	64
mean	129
min size (mm)	93
max size (mm)	204

Strongylocentrotus franciscanus	
< 5	0.0%
5 - 9	2.2%
10 - 14	15.2%
15 - 19	12.6%
20 - 24	9.4%
25 - 29	3.6%
30 - 34	4.0%
35 - 39	3.6%
40 - 44	1.3%
45 - 49	3.1%
50 - 54	3.6%
55 - 59	1.8%
60 - 64	4.0%
65 - 69	1.8%
70 - 74	5.8%
75 - 79	6.7%
80 - 84	4.9%
85 - 89	9.0%
90 - 94	5.4%
95 - 99	1.3%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.4%
(Cases) N=	223
mean	46
min size (mm)	6
max size (mm)	120

Strongylocentrotus purpuratus	
< 5	1.0%
5 - 9	4.7%
10 - 14	13.0%
15 - 19	11.9%
20 - 24	11.4%
25 - 29	11.4%
30 - 34	16.1%
35 - 39	17.6%
40 - 44	7.8%
45 - 49	4.7%
50 - 54	0.5%
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=	193
mean	27
min size (mm)	3
max size (mm)	53

Appendix H: Macrocystis pyrifera Size Frequency Distributions.

2006 Macrocystis pyrifera Size Frequency Distributions

San Miguel Island - Wyckoff Ledge

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		***Macrocystis pyrifera Ad.(>1m) holdfast***	
< 3	7.8%	< 6	1.0%
3 - 5	31.1%	6 - 11	22.3%
6 - 8	28.2%	12 - 17	25.2%
9 - 11	21.4%	18 - 23	23.3%
12 - 14	2.9%	24 - 29	16.5%
15 - 17	0.0%	30 - 35	4.9%
18 - 20	4.9%	36 - 41	1.9%
21 - 23	1.0%	42 - 47	1.0%
24 - 26	1.9%	48 - 53	1.0%
27 - 29	1.0%	54 - 59	1.0%
30 - 32	0.0%	60 - 65	1.0%
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	1.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	103	(Cases) N=	103
mean	8	mean	20
min number	1	min width (cm)	5
max number	29	max width (cm)	86

San Miguel Island - Hare Rock

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		***Macrocystis pyrifera Ad.(>1m) holdfast***	
< 3	56.0%	< 6	19.3%
3 - 5	18.0%	6 - 11	28.7%
6 - 8	18.0%	12 - 17	22.7%
9 - 11	6.0%	18 - 23	14.0%
12 - 14	1.3%	24 - 29	7.3%
15 - 17	0.0%	30 - 35	4.0%
18 - 20	0.7%	36 - 41	2.7%
21 - 23	0.0%	42 - 47	0.7%
24 - 26	0.0%	48 - 53	0.0%
27 - 29	0.0%	54 - 59	0.7%
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=	150	(Cases) N=	150
mean	4	mean	14
min number	1	min width (cm)	2
max number	18	max width (cm)	54

2006 Macrocystis pyrifera Size Frequency Distributions

Santa Rosa Island - Johnson's Lee North

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	1.4%	< 6	0.0%
3 - 5	14.2%	6 - 11	1.4%
6 - 8	23.4%	12 - 17	0.7%
9 - 11	27.0%	18 - 23	5.0%
12 - 14	25.5%	24 - 29	9.9%
15 - 17	5.0%	30 - 35	17.0%
18 - 20	2.1%	36 - 41	27.7%
21 - 23	0.7%	42 - 47	26.2%
24 - 26	0.0%	48 - 53	9.2%
27 - 29	0.7%	54 - 59	1.4%
30 - 32	0.0%	60 - 65	0.7%
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	0.7%
(Cases) N=	141	(Cases) N=	141
mean	10	mean	38
min number	1	min width (cm)	6
max number	28	max width (cm)	92

Santa Rosa Island - Johnson's Lee South

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	39.8%	< 6	1.1%
3 - 5	24.7%	6 - 11	19.4%
6 - 8	25.8%	12 - 17	28.0%
9 - 11	7.5%	18 - 23	22.6%
12 - 14	2.2%	24 - 29	16.1%
15 - 17	0.0%	30 - 35	9.7%
18 - 20	0.0%	36 - 41	3.2%
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=	93	(Cases) N=	93
mean	4	mean	19
min number	1	min width (cm)	5
max number	12	max width (cm)	39

2006 Macrocystis pyrifera Size Frequency Distributions

Santa Rosa Island - Rodes Reef

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	14.3%	< 6	0.0%
3 - 5	52.4%	6 - 11	0.0%
6 - 8	9.5%	12 - 17	0.0%
9 - 11	19.0%	18 - 23	4.8%
12 - 14	0.0%	24 - 29	19.0%
15 - 17	0.0%	30 - 35	9.5%
18 - 20	0.0%	36 - 41	14.3%
21 - 23	4.8%	42 - 47	33.3%
24 - 26	0.0%	48 - 53	9.5%
27 - 29	0.0%	54 - 59	9.5%
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=	21	(Cases) N=	21
mean	6	mean	40
min number	2	min width (cm)	21
max number	21	max width (cm)	57

Santa Cruz Island - Gull Island South

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	1.3%	< 6	0.0%
3 - 5	4.0%	6 - 11	2.7%
6 - 8	16.0%	12 - 17	0.0%
9 - 11	17.3%	18 - 23	1.3%
12 - 14	12.0%	24 - 29	6.7%
15 - 17	18.7%	30 - 35	9.3%
18 - 20	16.0%	36 - 41	10.7%
21 - 23	8.0%	42 - 47	18.7%
24 - 26	2.7%	48 - 53	18.7%
27 - 29	4.0%	54 - 59	13.3%
30 - 32	0.0%	60 - 65	10.7%
33 - 35	0.0%	66 - 71	6.7%
36 - 38	0.0%	72 - 77	1.3%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.0%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	75	(Cases) N=	75
mean	14	mean	47
min number	1	min width (cm)	8
max number	29	max width (cm)	74

2006 Macrocystis pyrifera Size Frequency Distributions

Santa Cruz Island - Fry's Harbor

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	50.0%	< 6	25.0%
3 - 5	12.5%	6 - 11	12.5%
6 - 8	25.0%	12 - 17	12.5%
9 - 11	12.5%	18 - 23	37.5%
12 - 14	0.0%	24 - 29	12.5%
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=	8	(Cases) N=	8
mean	4	mean	14
min number	1	min width (cm)	5
max number	9	max width (cm)	26

Santa Cruz Island - Scorpion Anchorage

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	55.8%	< 6	9.3%
3 - 5	30.2%	6 - 11	53.5%
6 - 8	14.0%	12 - 17	32.6%
9 - 11	0.0%	18 - 23	4.7%
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=	43	(Cases) N=	43
mean	3	mean	11
min number	1	min width (cm)	4
max number	8	max width (cm)	21

2006 Macrocystis pyrifera Size Frequency Distributions

Santa Cruz Island - Yellow Banks

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	61.1%	< 6	5.3%
3 - 5	15.9%	6 - 11	31.0%
6 - 8	5.3%	12 - 17	9.7%
9 - 11	5.3%	18 - 23	1.8%
12 - 14	2.7%	24 - 29	0.0%
15 - 17	4.4%	30 - 35	0.9%
18 - 20	3.5%	36 - 41	0.9%
21 - 23	0.9%	42 - 47	7.1%
24 - 26	0.0%	48 - 53	9.7%
27 - 29	0.0%	54 - 59	9.7%
30 - 32	0.0%	60 - 65	4.4%
33 - 35	0.0%	66 - 71	4.4%
36 - 38	0.0%	72 - 77	8.0%
39 - 41	0.0%	78 - 83	1.8%
42 - 44	0.0%	84 - 89	4.4%
> 44	0.9%	> 89	0.9%
(Cases) N=	113	(Cases) N=	113
mean	5	mean	37
min number	1	min width (cm)	5
max number	67	max width (cm)	95

Anacapa Island - Cathedral Cove

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	41.3%	< 6	8.7%
3 - 5	30.2%	6 - 11	44.4%
6 - 8	13.5%	12 - 17	21.4%
9 - 11	9.5%	18 - 23	11.9%
12 - 14	5.6%	24 - 29	10.3%
15 - 17	0.0%	30 - 35	1.6%
18 - 20	0.0%	36 - 41	0.8%
21 - 23	0.0%	42 - 47	0.8%
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=	126	(Cases) N=	126
mean	5	mean	13
min number	1	min width (cm)	4
max number	14	max width (cm)	45

2006 Macrocystis pyrifera Size Frequency Distributions

Anacapa Island - Landing Cove

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	43.9%	< 6	8.4%
3 - 5	39.3%	6 - 11	57.9%
6 - 8	10.3%	12 - 17	23.4%
9 - 11	2.8%	18 - 23	7.5%
12 - 14	2.8%	24 - 29	0.9%
15 - 17	0.9%	30 - 35	0.9%
18 - 20	0.0%	36 - 41	0.9%
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=	107	(Cases) N=	107
mean	4	mean	11
min number	1	min width (cm)	4
max number	17	max width (cm)	36

San Miguel Island - Miracle Mile

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	15.7%	< 6	0.0%
3 - 5	23.5%	6 - 11	13.7%
6 - 8	8.8%	12 - 17	16.7%
9 - 11	13.7%	18 - 23	25.5%
12 - 14	7.8%	24 - 29	16.7%
15 - 17	6.9%	30 - 35	9.8%
18 - 20	9.8%	36 - 41	2.0%
21 - 23	0.0%	42 - 47	2.9%
24 - 26	2.9%	48 - 53	3.9%
27 - 29	2.0%	54 - 59	2.0%
30 - 32	3.9%	60 - 65	4.9%
33 - 35	1.0%	66 - 71	0.0%
36 - 38	1.0%	72 - 77	1.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	1.0%	84 - 89	0.0%
> 44	2.0%	> 89	1.0%
(Cases) N=	102	(Cases) N=	102
mean	12	mean	26
min number	1	min width (cm)	6
max number	50	max width (cm)	99

2006 Macrocystis pyrifera Size Frequency Distributions

Santa Rosa Island - Cluster Point

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	40.1%	< 6	5.4%
3 - 5	40.8%	6 - 11	31.3%
6 - 8	12.2%	12 - 17	44.2%
9 - 11	4.1%	18 - 23	13.6%
12 - 14	0.7%	24 - 29	4.1%
15 - 17	0.7%	30 - 35	0.0%
18 - 20	0.7%	36 - 41	0.0%
21 - 23	0.0%	42 - 47	0.7%
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	0.7%
36 - 38	0.0%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.7%	84 - 89	0.0%
> 44	0.0%	> 89	0.0%
(Cases) N=	147	(Cases) N=	147
mean	4	mean	14
min number	1	min width (cm)	4
max number	44	max width (cm)	70

Santa Rosa Island - Trancion Canyon

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	25.0%	< 6	3.1%
3 - 5	15.6%	6 - 11	19.5%
6 - 8	7.0%	12 - 17	14.1%
9 - 11	8.6%	18 - 23	7.0%
12 - 14	6.3%	24 - 29	10.9%
15 - 17	8.6%	30 - 35	11.7%
18 - 20	5.5%	36 - 41	9.4%
21 - 23	9.4%	42 - 47	8.6%
24 - 26	3.1%	48 - 53	5.5%
27 - 29	2.3%	54 - 59	4.7%
30 - 32	0.0%	60 - 65	0.8%
33 - 35	1.6%	66 - 71	2.3%
36 - 38	2.3%	72 - 77	0.0%
39 - 41	0.0%	78 - 83	1.6%
42 - 44	0.0%	84 - 89	0.8%
> 44	4.7%	> 89	0.0%
(Cases) N=	128	(Cases) N=	128
mean	13	mean	29
min number	1	min width (cm)	4
max number	56	max width (cm)	89

2006 Macrocystis pyrifera Size Frequency Distributions

Santa Rosa Island - Chickasaw

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	33.9%	< 6	8.1%
3 - 5	29.8%	6 - 11	29.0%
6 - 8	10.5%	12 - 17	24.2%
9 - 11	3.2%	18 - 23	8.9%
12 - 14	1.6%	24 - 29	3.2%
15 - 17	4.0%	30 - 35	1.6%
18 - 20	2.4%	36 - 41	6.5%
21 - 23	4.0%	42 - 47	6.5%
24 - 26	0.0%	48 - 53	3.2%
27 - 29	4.8%	54 - 59	2.4%
30 - 32	0.0%	60 - 65	1.6%
33 - 35	0.0%	66 - 71	2.4%
36 - 38	4.0%	72 - 77	2.4%
39 - 41	0.0%	78 - 83	0.0%
42 - 44	0.8%	84 - 89	0.0%
> 44	0.8%	> 89	0.0%
(Cases) N=	124	(Cases) N=	124
mean	9	mean	22
min number	1	min width (cm)	3
max number	49	max width (cm)	77

Santa Rosa Island - South Point

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	23.2%	< 6	29.3%
3 - 5	34.3%	6 - 11	32.3%
6 - 8	18.2%	12 - 17	16.2%
9 - 11	8.1%	18 - 23	13.1%
12 - 14	6.1%	24 - 29	3.0%
15 - 17	2.0%	30 - 35	2.0%
18 - 20	2.0%	36 - 41	2.0%
21 - 23	0.0%	42 - 47	1.0%
24 - 26	1.0%	48 - 53	1.0%
27 - 29	1.0%	54 - 59	0.0%
30 - 32	1.0%	60 - 65	0.0%
33 - 35	3.0%	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=	99	(Cases) N=	99
mean	7	mean	12
min number	1	min width (cm)	1
max number	35	max width (cm)	50

2006 Macrocystis pyrifera Size Frequency Distributions

Anacapa Island - Lighthouse

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	50.0%	< 6	0.0%
3 - 5	50.0%	6 - 11	0.0%
6 - 8	0.0%	12 - 17	0.0%
9 - 11	0.0%	18 - 23	50.0%
12 - 14	0.0%	24 - 29	0.0%
15 - 17	0.0%	30 - 35	50.0%
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	3	mean	26
min number	1	min width (cm)	18
max number	4	max width (cm)	33

Santa Barbara Island - Southeast Reef

Macrocystis pyrifera Ad.(>1m) number of stipes diameters		*Macrocystis pyrifera Ad.(>1m) holdfast*	
< 3	16.3%	< 6	2.0%
3 - 5	41.8%	6 - 11	16.3%
6 - 8	24.5%	12 - 17	40.8%
9 - 11	12.2%	18 - 23	16.3%
12 - 14	3.1%	24 - 29	15.3%
15 - 17	1.0%	30 - 35	3.1%
18 - 20	0.0%	36 - 41	2.0%
21 - 23	1.0%	42 - 47	2.0%
24 - 26	0.0%	48 - 53	2.0%
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=	98	(Cases) N=	98
mean	6	mean	19
min number	2	min width (cm)	3
max number	21	max width (cm)	48

Appendix I. Gorgonian/Stylaster californica Size Frequency Distributions.

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Santa Cruz Island - Gull Island South

Stylaster californica heights

< 3	**9.5%**
3 - 4	37.8%
5 - 6	20.3%
7 - 8	14.9%
9 - 10	6.8%
11 - 12	1.4%
13 - 14	5.4%
15 - 16	0.0%
17 - 18	1.4%
19 - 20	1.4%
21 - 22	0.0%
23 - 24	0.0%
25 - 26	1.4%
27 - 28	0.0%
29 - 30	0.0%
> 30	0.0%
(Cases) N=	74
mean	6
min height (cm)	1
max height (cm)	25

Stylaster californica widths

< 3	**9.5%**
3 - 4	8.1%
5 - 6	16.2%
7 - 8	18.9%
9 - 10	12.2%
1 - 12	8.1%
13 - 14	5.4%
15 - 16	2.7%
17 - 18	1.4%
19 - 20	5.4%
21 - 22	1.4%
23 - 24	2.7%
25 - 26	0.0%
27 - 28	0.0%
29 - 30	2.7%
> 30	5.4%
(Cases) N=	74
mean	11
min width (cm)	1
max width (cm)	46

Lophogorgia chilensis heights

< 5	0.0%
5 - 8	0.0%
9 - 12	4.2%
13 - 16	6.3%
17 - 20	16.7%
21 - 24	12.5%
25 - 28	31.3%
29 - 32	8.3%
33 - 36	12.5%
37 - 40	6.3%
41 - 44	0.0%
45 - 48	2.1%
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=	48
mean	26
min height (cm)	11
max height (cm)	45

Lophogorgia chilensis widths

< 5	2.1%
5 - 8	12.5%
9 - 12	18.8%
13 - 16	18.8%
17 - 20	20.8%
21 - 24	12.5%
24 - 28	4.2%
29 - 32	8.3%
33 - 36	2.1%
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=	48
mean	17
min width (cm)	3
max width (cm)	34

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Santa Cruz Island - Fry's Harbor

Lophogorgia chilensis heights		*Lophogorgia chilensis widths*	
< 5	0.0%	< 5	1.5%
5 - 8	1.5%	5 - 8	1.5%
9 - 12	2.9%	9 - 12	0.0%
13 - 16	1.5%	13 - 16	5.9%
17 - 20	1.5%	17 - 20	4.4%
21 - 24	1.5%	21 - 24	7.4%
25 - 28	5.9%	24 - 28	11.8%
29 - 32	8.8%	29 - 32	13.2%
33 - 36	11.8%	33 - 36	10.3%
37 - 40	14.7%	37 - 40	17.6%
41 - 44	8.8%	41 - 44	5.9%
45 - 48	13.2%	45 - 48	5.9%
49 - 52	7.4%	49 - 52	4.4%
53 - 56	5.9%	53 - 56	2.9%
57 - 60	5.9%	57 - 60	1.5%
61 - 64	1.5%	61 - 64	1.5%
65 - 68	1.5%	65 - 68	0.0%
69 - 72	1.5%	69 - 72	0.0%
73 - 76	2.9%	73 - 76	1.5%
77 - 80	1.5%	77 - 80	2.9%
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=	68	(Cases) N=	68
mean	42	mean	35
min height (cm)	5	min width (cm)	3
max height (cm)	80	max width (cm)	77

Santa Cruz Island - Pelican Bay

Lophogorgia chilensis heights		*Lophogorgia chilensis widths*	
< 5	0.6%	< 5	0.6%
5 - 8	0.0%	5 - 8	2.4%
9 - 12	1.2%	9 - 12	6.0%
13 - 16	3.6%	13 - 16	10.2%
17 - 20	6.0%	17 - 20	10.2%
21 - 24	11.4%	21 - 24	4.8%
25 - 28	6.0%	24 - 28	7.2%
29 - 32	7.2%	29 - 32	8.4%
33 - 36	12.6%	33 - 36	4.2%
37 - 40	8.4%	37 - 40	10.8%
41 - 44	15.0%	41 - 44	7.8%
45 - 48	9.0%	45 - 48	4.8%
49 - 52	9.0%	49 - 52	7.8%
53 - 56	5.4%	53 - 56	6.6%
57 - 60	3.0%	57 - 60	1.8%
61 - 64	1.2%	61 - 64	3.0%
65 - 68	0.6%	65 - 68	1.2%
69 - 72	0.0%	69 - 72	1.2%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	0.6%
81 - 84	0.0%	81 - 84	0.6%
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=	167	(Cases) N=	167
mean	37	mean	34
min height (cm)	2	min width (cm)	3
max height (cm)	65	max width (cm)	82

2006 Gorgonian/Stylaster californica Size Frequency Distributions

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	0.0%
41 - 44	100.0%
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=	1
mean	42
min height (cm)	42
max height (cm)	42

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	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	100.0%
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=	1
mean	63
min width (cm)	63
max width (cm)	63

Santa Cruz Island - Scorpion Anchorage

Lophogorgia chilensis heights	
< 5	**0.0%**
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	50.0%
21 - 24	0.0%
25 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	50.0%
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=	2
mean	28
min height (cm)	17
max height (cm)	39

Lophogorgia chilensis widths	
< 5	**0.0%**
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	50.0%
24 - 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%
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=	2
mean	26
min width (cm)	24
max width (cm)	28

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Santa Cruz Island - Yellow Banks

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	10.2%
17 - 20	3.4%
21 - 24	11.9%
25 - 28	22.0%
29 - 32	20.3%
33 - 36	8.5%
37 - 40	11.9%
41 - 44	3.4%
45 - 48	5.1%
49 - 52	3.4%
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=	59
mean	30
min height (cm)	14
max height (cm)	50

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	3.4%
9 - 12	18.6%
13 - 16	15.3%
17 - 20	27.1%
21 - 24	15.3%
24 - 28	5.1%
29 - 32	3.4%
33 - 36	5.1%
37 - 40	3.4%
41 - 44	1.7%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	0.0%
61 - 64	1.7%
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=	59
mean	20
min width (cm)	6
max width (cm)	62

Muricea fruticosa heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	33.3%
21 - 24	16.7%
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%
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	23
min height (cm)	18
max height (cm)	28

Muricea fruticosa widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	16.7%
21 - 24	33.3%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	16.7%
37 - 40	16.7%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	16.7%
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	31
min width (cm)	17
max width (cm)	50

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea californica heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	8.3%
25 - 28	16.7%
29 - 32	16.7%
33 - 36	12.5%
37 - 40	0.0%
41 - 44	8.3%
45 - 48	8.3%
49 - 52	12.5%
53 - 56	12.5%
57 - 60	0.0%
61 - 64	4.2%
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=	24
mean	39
min height (cm)	24
max height (cm)	64

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	4.2%
29 - 32	4.2%
33 - 36	12.5%
37 - 40	8.3%
41 - 44	4.2%
45 - 48	8.3%
49 - 52	4.2%
53 - 56	8.3%
57 - 60	4.2%
61 - 64	8.3%
65 - 68	4.2%
69 - 72	0.0%
73 - 76	4.2%
77 - 80	0.0%
81 - 84	12.5%
85 - 88	8.3%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	4.2%
(Cases) N=	24
mean	57
min width (cm)	26
max width (cm)	102

Anacapa Island - Admiral's Reef

Lophogorgia chilensis heights	
< 5	**0.0%**
5 - 8	0.0%
9 - 12	0.0%
13 - 16	1.4%
17 - 20	1.4%
21 - 24	2.9%
25 - 28	2.9%
29 - 32	7.1%
33 - 36	15.7%
37 - 40	5.7%
41 - 44	10.0%
45 - 48	11.4%
49 - 52	11.4%
53 - 56	1.4%
57 - 60	4.3%
61 - 64	11.4%
65 - 68	7.1%
69 - 72	4.3%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	1.4%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	70
mean	46
min height (cm)	16
max height (cm)	90

Lophogorgia chilensis widths	
< 5	**0.0%**
5 - 8	0.0%
9 - 12	0.0%
13 - 16	7.1%
17 - 20	2.9%
21 - 24	5.7%
24 - 28	8.6%
29 - 32	7.1%
33 - 36	5.7%
37 - 40	5.7%
41 - 44	2.9%
45 - 48	7.1%
49 - 52	8.6%
53 - 56	8.6%
57 - 60	4.3%
61 - 64	4.3%
65 - 68	4.3%
69 - 72	7.1%
73 - 76	2.9%
77 - 80	1.4%
81 - 84	1.4%
85 - 88	1.4%
89 - 92	2.9%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	70
mean	46
min width (cm)	14
max width (cm)	92

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	16.7%
17 - 20	0.0%
21 - 24	16.7%
25 - 28	50.0%
29 - 32	0.0%
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	26
min height (cm)	16
max height (cm)	34

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	16.7%
29 - 32	16.7%
33 - 36	33.3%
37 - 40	16.7%
41 - 44	0.0%
45 - 48	16.7%
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	35
min width (cm)	26
max width (cm)	45

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	7.5%
25 - 28	5.0%
29 - 32	5.0%
33 - 36	5.0%
37 - 40	12.5%
41 - 44	10.0%
45 - 48	7.5%
49 - 52	12.5%
53 - 56	12.5%
57 - 60	12.5%
61 - 64	5.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	5.0%
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=	40
mean	46
min height (cm)	21
max height (cm)	80

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	2.5%
13 - 16	2.5%
17 - 20	2.5%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	2.5%
37 - 40	2.5%
41 - 44	2.5%
45 - 48	2.5%
49 - 52	5.0%
53 - 56	5.0%
57 - 60	5.0%
61 - 64	10.0%
65 - 68	15.0%
69 - 72	7.5%
73 - 76	10.0%
77 - 80	0.0%
81 - 84	7.5%
85 - 88	5.0%
89 - 92	0.0%
93 - 96	5.0%
97 - 100	0.0%
> 100	7.5%
(Cases) N=	40
mean	66
min width (cm)	9
max width (cm)	127

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Santa Barbara Island - SE Sea Lion Rookery

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	5.4%
13 - 16	2.7%
17 - 20	2.7%
21 - 24	2.7%
25 - 28	5.4%
29 - 32	10.8%
33 - 36	10.8%
37 - 40	21.6%
41 - 44	13.5%
45 - 48	16.2%
49 - 52	5.4%
53 - 56	2.7%
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=	37
mean	36
min height (cm)	10
max height (cm)	52

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	10.8%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	10.8%
21 - 24	18.9%
24 - 28	5.4%
29 - 32	16.2%
33 - 36	13.5%
37 - 40	10.8%
41 - 44	2.7%
45 - 48	5.4%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	2.7%
61 - 64	2.7%
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=	37
mean	29
min width (cm)	5
max width (cm)	62

Muricea fruticosa heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	20.0%
17 - 20	0.0%
21 - 24	0.0%
25 - 28	20.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	60.0%
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=	5
mean	31
min height (cm)	13
max height (cm)	39

Muricea fruticosa widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	20.0%
17 - 20	20.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	60.0%
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%
> 100	0.0%
(Cases) N=	5
mean	25
min width (cm)	13
max width (cm)	31

2006 Gorgonian/Stylaster californica Size Frequency Distributions

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	5.9%
29 - 32	0.0%
33 - 36	11.8%
37 - 40	0.0%
41 - 44	11.8%
45 - 48	29.4%
49 - 52	11.8%
53 - 56	17.6%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	5.9%
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	5.9%
> 100	0.0%
(Cases) N=	17
mean	50
min height (cm)	28
max height (cm)	100

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	0.0%
49 - 52	5.9%
53 - 56	11.8%
57 - 60	0.0%
61 - 64	5.9%
65 - 68	5.9%
69 - 72	0.0%
73 - 76	5.9%
77 - 80	11.8%
81 - 84	23.5%
85 - 88	5.9%
89 - 92	11.8%
93 - 96	0.0%
97 - 100	5.9%
> 100	5.9%
(Cases) N=	17
mean	78
min width (cm)	50
max width (cm)	115

Santa Cruz Island - Devil's Peak Member

***Lophogorgia chilensis* heights**	
< 5	**0.0%**
5 - 8	0.0%
9 - 12	2.9%
13 - 16	2.9%
17 - 20	2.9%
21 - 24	5.9%
25 - 28	10.8%
29 - 32	12.7%
33 - 36	12.7%
37 - 40	15.7%
41 - 44	12.7%
45 - 48	7.8%
49 - 52	4.9%
53 - 56	3.9%
57 - 60	1.0%
61 - 64	2.0%
65 - 68	0.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	0.0%
81 - 84	0.0%
85 - 88	1.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	102
mean	36
min height (cm)	10
max height (cm)	85

***Lophogorgia chilensis* widths**	
< 5	**0.0%**
5 - 8	2.9%
9 - 12	4.9%
13 - 16	6.9%
17 - 20	6.9%
21 - 24	14.7%
24 - 28	12.7%
29 - 32	14.7%
33 - 36	7.8%
37 - 40	5.9%
41 - 44	4.9%
45 - 48	3.9%
49 - 52	4.9%
53 - 56	2.9%
57 - 60	1.0%
61 - 64	1.0%
65 - 68	2.0%
69 - 72	0.0%
73 - 76	0.0%
77 - 80	1.0%
81 - 84	0.0%
85 - 88	1.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	102
mean	31
min width (cm)	7
max width (cm)	87

2006 Gorgonian/Stylaster californica Size Frequency Distributions

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	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	100.0%
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=	1
mean	56
min height (cm)	56
max height (cm)	56

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	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	100.0%
> 100	0.0%
(Cases) N=	1
mean	100
min width (cm)	100
max width (cm)	100

Santa Cruz Island - Potato Pasture

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	1.3%
9 - 12	4.0%
13 - 16	6.7%
17 - 20	1.3%
21 - 24	5.3%
25 - 28	6.7%
29 - 32	6.7%
33 - 36	13.3%
37 - 40	14.7%
41 - 44	12.0%
45 - 48	8.0%
49 - 52	13.3%
53 - 56	0.0%
57 - 60	4.0%
61 - 64	1.3%
65 - 68	1.3%
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=	75
mean	36
min height (cm)	8
max height (cm)	67

Lophogorgia chilensis widths	
< 5	2.7%
5 - 8	8.0%
9 - 12	9.3%
13 - 16	5.3%
17 - 20	4.0%
21 - 24	8.0%
24 - 28	12.0%
29 - 32	9.3%
33 - 36	8.0%
37 - 40	5.3%
41 - 44	2.7%
45 - 48	4.0%
49 - 52	4.0%
53 - 56	8.0%
57 - 60	2.7%
61 - 64	2.7%
65 - 68	2.7%
69 - 72	1.3%
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=	75
mean	31
min width (cm)	1
max width (cm)	71

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea californica heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	33.3%
25 - 28	0.0%
29 - 32	0.0%
33 - 36	33.3%
37 - 40	33.3%
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=	3
mean	31
min height (cm)	21
max height (cm)	37

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	0.0%
33 - 36	0.0%
37 - 40	0.0%
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	33.3%
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=	3
mean	46
min width (cm)	28
max width (cm)	65

Santa Cruz Island - Cavern Point

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	1.4%
17 - 20	4.2%
21 - 24	5.6%
25 - 28	8.3%
29 - 32	11.1%
33 - 36	4.2%
37 - 40	13.9%
41 - 44	11.1%
45 - 48	13.9%
49 - 52	12.5%
53 - 56	8.3%
57 - 60	2.8%
61 - 64	0.0%
65 - 68	2.8%
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	40
min height (cm)	13
max height (cm)	68

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	1.4%
9 - 12	2.8%
13 - 16	5.6%
17 - 20	6.9%
21 - 24	4.2%
24 - 28	5.6%
29 - 32	9.7%
33 - 36	11.1%
37 - 40	11.1%
41 - 44	18.1%
45 - 48	9.7%
49 - 52	4.2%
53 - 56	8.3%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	1.4%
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	36
min width (cm)	6
max width (cm)	67

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea fruticosa 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	100.0%
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%
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=	1
mean	25
min height (cm)	25
max height (cm)	25

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	100.0%
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%
> 100	0.0%
(Cases) N=	1
mean	31
min width (cm)	31
max width (cm)	31

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	25.0%
29 - 32	0.0%
33 - 36	25.0%
37 - 40	25.0%
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%
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	35
min height (cm)	26
max height (cm)	42

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	25.0%
33 - 36	25.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
53 - 56	0.0%
57 - 60	25.0%
61 - 64	25.0%
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=	4
mean	48
min width (cm)	30
max width (cm)	64

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Santa Cruz Island - Little Scorpion

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	2.8%
13 - 16	0.0%	13 - 16	1.4%
17 - 20	0.0%	17 - 20	1.4%
21 - 24	4.2%	21 - 24	7.0%
25 - 28	4.2%	24 - 28	8.5%
29 - 32	5.6%	29 - 32	5.6%
33 - 36	9.9%	33 - 36	7.0%
37 - 40	12.7%	37 - 40	11.3%
41 - 44	11.3%	41 - 44	9.9%
45 - 48	11.3%	45 - 48	8.5%
49 - 52	9.9%	49 - 52	4.2%
53 - 56	15.5%	53 - 56	8.5%
57 - 60	0.0%	57 - 60	7.0%
61 - 64	4.2%	61 - 64	4.2%
65 - 68	4.2%	65 - 68	7.0%
69 - 72	2.8%	69 - 72	2.8%
73 - 76	2.8%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	2.8%
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	1.4%	97 - 100	0.0%
> 100	0.0%	> 100	0.0%
(Cases) N=	71	(Cases) N=	71
mean	46	mean	43
min height (cm)	22	min width (cm)	12
max height (cm)	97	max width (cm)	79

Santa Cruz Island - Pedro 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	1.1%
13 - 16	2.2%	13 - 16	4.3%
17 - 20	0.0%	17 - 20	3.2%
21 - 24	1.1%	21 - 24	6.5%
25 - 28	5.4%	24 - 28	6.5%
29 - 32	6.5%	29 - 32	12.9%
33 - 36	19.4%	33 - 36	10.8%
37 - 40	15.1%	37 - 40	16.1%
41 - 44	14.0%	41 - 44	4.3%
45 - 48	6.5%	45 - 48	7.5%
49 - 52	14.0%	49 - 52	14.0%
53 - 56	10.8%	53 - 56	4.3%
57 - 60	4.3%	57 - 60	5.4%
61 - 64	1.1%	61 - 64	0.0%
65 - 68	0.0%	65 - 68	1.1%
69 - 72	0.0%	69 - 72	1.1%
73 - 76	0.0%	73 - 76	0.0%
77 - 80	0.0%	77 - 80	1.1%
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=	93	(Cases) N=	93
mean	42	mean	38
min height (cm)	13	min width (cm)	11
max height (cm)	63	max width (cm)	77

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea californica heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	9.1%
21 - 24	0.0%
25 - 28	0.0%
29 - 32	18.2%
33 - 36	9.1%
37 - 40	27.3%
41 - 44	9.1%
45 - 48	9.1%
49 - 52	18.2%
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=	11
mean	39
min height (cm)	20
max height (cm)	50

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	9.1%
45 - 48	18.2%
49 - 52	0.0%
53 - 56	9.1%
57 - 60	18.2%
61 - 64	9.1%
65 - 68	18.2%
69 - 72	0.0%
73 - 76	9.1%
77 - 80	9.1%
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=	11
mean	60
min width (cm)	41
max width (cm)	80

Anacapa Island - Keyhole

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	2.7%
13 - 16	5.3%
17 - 20	5.3%
21 - 24	9.3%
25 - 28	8.0%
29 - 32	9.3%
33 - 36	13.3%
37 - 40	9.3%
41 - 44	13.3%
45 - 48	12.0%
49 - 52	4.0%
53 - 56	6.7%
57 - 60	1.3%
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=	75
mean	35
min height (cm)	10
max height (cm)	57

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	4.0%
9 - 12	10.7%
13 - 16	13.3%
17 - 20	2.7%
21 - 24	8.0%
24 - 28	6.7%
29 - 32	5.3%
33 - 36	17.3%
37 - 40	10.7%
41 - 44	9.3%
45 - 48	4.0%
49 - 52	2.7%
53 - 56	2.7%
57 - 60	0.0%
61 - 64	2.7%
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=	75
mean	29
min width (cm)	6
max width (cm)	62

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	100.0%
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%
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=	2
mean	23
min height (cm)	21
max height (cm)	24

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	50.0%
24 - 28	0.0%
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%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	2
mean	28
min width (cm)	23
max width (cm)	33

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	2.6%
17 - 20	0.0%
21 - 24	5.1%
25 - 28	15.4%
29 - 32	20.5%
33 - 36	25.6%
37 - 40	12.8%
41 - 44	7.7%
45 - 48	7.7%
49 - 52	0.0%
53 - 56	2.6%
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=	39
mean	34
min height (cm)	16
max height (cm)	52

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	2.6%
21 - 24	0.0%
24 - 28	2.6%
29 - 32	2.6%
33 - 36	5.1%
37 - 40	15.4%
41 - 44	10.3%
45 - 48	12.8%
49 - 52	10.3%
53 - 56	17.9%
57 - 60	5.1%
61 - 64	5.1%
65 - 68	2.6%
69 - 72	5.1%
73 - 76	2.6%
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=	39
mean	48
min width (cm)	17
max width (cm)	73

2006 Gorgonian/Stylaster californica Size Frequency Distributions

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	0.0%
29 - 32	0.0%
33 - 36	20.0%
37 - 40	16.0%
41 - 44	12.0%
45 - 48	24.0%
49 - 52	8.0%
53 - 56	12.0%
57 - 60	8.0%
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=	25
mean	44
min height (cm)	35
max height (cm)	58

Lophogorgia chilensis widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	4.0%
21 - 24	4.0%
24 - 28	8.0%
29 - 32	8.0%
33 - 36	16.0%
37 - 40	8.0%
41 - 44	8.0%
45 - 48	24.0%
49 - 52	8.0%
53 - 56	8.0%
57 - 60	4.0%
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=	25
mean	40
min width (cm)	18
max width (cm)	60

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	25.0%
33 - 36	0.0%
37 - 40	25.0%
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=	4
mean	28
min height (cm)	17
max height (cm)	39

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	25.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	0.0%
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	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%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	4
mean	39
min width (cm)	18
max width (cm)	60

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea californica heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	4.3%
21 - 24	0.0%
25 - 28	4.3%
29 - 32	13.0%
33 - 36	8.7%
37 - 40	21.7%
41 - 44	17.4%
45 - 48	8.7%
49 - 52	8.7%
53 - 56	4.3%
57 - 60	4.3%
61 - 64	0.0%
65 - 68	4.3%
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=	23
mean	41
min height (cm)	18
max height (cm)	66

Muricea californica widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	4.3%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	4.3%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	8.7%
45 - 48	8.7%
49 - 52	4.3%
53 - 56	13.0%
57 - 60	8.7%
61 - 64	8.7%
65 - 68	4.3%
69 - 72	8.7%
73 - 76	4.3%
77 - 80	0.0%
81 - 84	4.3%
85 - 88	4.3%
89 - 92	0.0%
93 - 96	4.3%
97 - 100	4.3%
> 100	4.3%
(Cases) N=	23
mean	62
min width (cm)	19
max width (cm)	110

Anacapa Island - Black Sea Bass Reef

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	0.0%
29 - 32	6.7%
33 - 36	6.7%
37 - 40	13.3%
41 - 44	20.0%
45 - 48	13.3%
49 - 52	33.3%
53 - 56	6.7%
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=	15
mean	44
min height (cm)	29
max height (cm)	52

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	6.7%
24 - 28	20.0%
29 - 32	0.0%
33 - 36	6.7%
37 - 40	13.3%
41 - 44	6.7%
45 - 48	0.0%
49 - 52	20.0%
53 - 56	20.0%
57 - 60	0.0%
61 - 64	6.7%
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=	15
mean	42
min width (cm)	24
max width (cm)	64

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea fruticosa 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	40.0%
29 - 32	20.0%
33 - 36	20.0%
37 - 40	0.0%
41 - 44	20.0%
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=	5
mean	32
min height (cm)	25
max height (cm)	41

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	0.0%
49 - 52	20.0%
53 - 56	40.0%
57 - 60	20.0%
61 - 64	20.0%
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=	5
mean	56
min width (cm)	50
max width (cm)	62

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	50.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	50.0%
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=	2
mean	38
min height (cm)	31
max height (cm)	44

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	0.0%
49 - 52	100.0%
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=	2
mean	50
min width (cm)	50
max width (cm)	50

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Anacapa Island - Lighthouse

Lophogorgia chilensis heights		*Lophogorgia chilensis widths*	
< 5	1.6%	< 5	3.3%
5 - 8	1.6%	5 - 8	3.3%
9 - 12	1.6%	9 - 12	6.6%
13 - 16	0.0%	13 - 16	21.3%
17 - 20	18.0%	17 - 20	19.7%
21 - 24	23.0%	21 - 24	8.2%
25 - 28	13.1%	24 - 28	9.8%
29 - 32	23.0%	29 - 32	9.8%
33 - 36	4.9%	33 - 36	11.5%
37 - 40	8.2%	37 - 40	4.9%
41 - 44	3.3%	41 - 44	0.0%
45 - 48	1.6%	45 - 48	1.6%
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=	61	(Cases) N=	61
mean	26	mean	22
min height (cm)	3	min width (cm)	1
max height (cm)	47	max width (cm)	47

Muricea fruticosa heights		*Muricea fruticosa widths*	
< 5	0.0%	< 5	0.0%
5 - 8	0.0%	5 - 8	0.0%
9 - 12	9.1%	9 - 12	9.1%
13 - 16	54.5%	13 - 16	0.0%
17 - 20	18.2%	17 - 20	0.0%
21 - 24	9.1%	21 - 24	27.3%
25 - 28	0.0%	24 - 28	9.1%
29 - 32	0.0%	29 - 32	9.1%
33 - 36	9.1%	33 - 36	27.3%
37 - 40	0.0%	37 - 40	9.1%
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	9.1%
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=	11	(Cases) N=	11
mean	17	mean	31
min height (cm)	10	min width (cm)	12
max height (cm)	33	max width (cm)	65

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea californica heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	6.6%
13 - 16	13.1%
17 - 20	0.0%
21 - 24	6.6%
25 - 28	18.0%
29 - 32	6.6%
33 - 36	13.1%
37 - 40	11.5%
41 - 44	9.8%
45 - 48	4.9%
49 - 52	6.6%
53 - 56	1.6%
57 - 60	0.0%
61 - 64	0.0%
65 - 68	1.6%
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=	61
mean	31
min height (cm)	9
max height (cm)	66

Muricea californica widths	
< 5	0.0%
5 - 8	3.3%
9 - 12	4.9%
13 - 16	4.9%
17 - 20	3.3%
21 - 24	3.3%
24 - 28	3.3%
29 - 32	1.6%
33 - 36	3.3%
37 - 40	9.8%
41 - 44	3.3%
45 - 48	6.6%
49 - 52	4.9%
53 - 56	11.5%
57 - 60	8.2%
61 - 64	1.6%
65 - 68	8.2%
69 - 72	4.9%
73 - 76	3.3%
77 - 80	8.2%
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=	61
mean	47
min width (cm)	7
max width (cm)	85

Santa Barbara Island - Webster's Arch

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	50.0%
29 - 32	0.0%
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%
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 height (cm)	25
max height (cm)	41

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	25.0%
21 - 24	0.0%
24 - 28	0.0%
29 - 32	25.0%
33 - 36	25.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	0.0%
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%
> 100	0.0%
(Cases) N=	4
mean	34
min width (cm)	18
max width (cm)	52

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Muricea fruticosa heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	33.3%
17 - 20	0.0%
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%
> 100	0.0%
(Cases) N=	3
mean	21
min height (cm)	16
max height (cm)	25

Muricea fruticosa widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	33.3%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
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%
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	35
min width (cm)	23
max width (cm)	42

Muricea californica heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	11.1%
21 - 24	0.0%
25 - 28	11.1%
29 - 32	22.2%
33 - 36	0.0%
37 - 40	11.1%
41 - 44	11.1%
45 - 48	11.1%
49 - 52	0.0%
53 - 56	11.1%
57 - 60	11.1%
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=	9
mean	39
min height (cm)	18
max height (cm)	60

Muricea californica widths

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
21 - 24	11.1%
24 - 28	0.0%
29 - 32	0.0%
33 - 36	0.0%
37 - 40	0.0%
41 - 44	0.0%
45 - 48	22.2%
49 - 52	11.1%
53 - 56	0.0%
57 - 60	11.1%
61 - 64	0.0%
65 - 68	0.0%
69 - 72	11.1%
73 - 76	0.0%
77 - 80	11.1%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	11.1%
93 - 96	0.0%
97 - 100	0.0%
> 100	11.1%
(Cases) N=	9
mean	64
min width (cm)	21
max width (cm)	120

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Santa Barbara Island - Graveyard Canyon

Lophogorgia chilensis heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	1.4%
17 - 20	2.8%
21 - 24	0.0%
25 - 28	11.1%
29 - 32	15.3%
33 - 36	25.0%
37 - 40	22.2%
41 - 44	8.3%
45 - 48	4.2%
49 - 52	5.6%
53 - 56	1.4%
57 - 60	1.4%
61 - 64	1.4%
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	36
min height (cm)	16
max height (cm)	64

Lophogorgia chilensis widths	
< 5	0.0%
5 - 8	2.8%
9 - 12	4.2%
13 - 16	0.0%
17 - 20	9.7%
21 - 24	15.3%
24 - 28	18.1%
29 - 32	16.7%
33 - 36	5.6%
37 - 40	2.8%
41 - 44	5.6%
45 - 48	2.8%
49 - 52	2.8%
53 - 56	5.6%
57 - 60	2.8%
61 - 64	0.0%
65 - 68	2.8%
69 - 72	1.4%
73 - 76	0.0%
77 - 80	1.4%
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	32
min width (cm)	8
max width (cm)	79

Muricea californica heights	
< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	3.8%
21 - 24	3.8%
25 - 28	7.7%
29 - 32	7.7%
33 - 36	11.5%
37 - 40	15.4%
41 - 44	11.5%
45 - 48	3.8%
49 - 52	19.2%
53 - 56	7.7%
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	3.8%
89 - 92	0.0%
93 - 96	3.8%
97 - 100	0.0%
> 100	0.0%
(Cases) N=	26
mean	43
min height (cm)	20
max height (cm)	95

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	7.7%
37 - 40	7.7%
41 - 44	3.8%
45 - 48	3.8%
49 - 52	3.8%
53 - 56	7.7%
57 - 60	0.0%
61 - 64	7.7%
65 - 68	7.7%
69 - 72	19.2%
73 - 76	3.8%
77 - 80	19.2%
81 - 84	0.0%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	3.8%
97 - 100	0.0%
> 100	3.8%
(Cases) N=	26
mean	64
min width (cm)	35
max width (cm)	110

2006 Gorgonian/Stylaster californica Size Frequency Distributions

Santa Barbara Island - Southeast Reef

Lophogorgia chilensis heights

< 5	0.0%
5 - 8	0.0%
9 - 12	0.0%
13 - 16	4.8%
17 - 20	9.5%
21 - 24	28.6%
25 - 28	4.8%
29 - 32	33.3%
33 - 36	4.8%
37 - 40	4.8%
41 - 44	4.8%
45 - 48	0.0%
49 - 52	4.8%
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=	21
mean	29
min height (cm)	16
max height (cm)	50

Lophogorgia chilensis widths

< 5	0.0%
5 - 8	0.0%
9 - 12	9.5%
13 - 16	9.5%
17 - 20	14.3%
21 - 24	14.3%
24 - 28	9.5%
29 - 32	14.3%
33 - 36	14.3%
37 - 40	4.8%
41 - 44	0.0%
45 - 48	0.0%
49 - 52	4.8%
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	4.8%
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=	21
mean	29
min width (cm)	11
max width (cm)	80

Muricea fruticosa heights

< 5	**0.0%**
5 - 8	50.0%
9 - 12	0.0%
13 - 16	0.0%
17 - 20	0.0%
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%
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=	2
mean	15
min height (cm)	7
max height (cm)	22

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	50.0%
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=	2
mean	34
min width (cm)	27
max width (cm)	41

2006 Gorgonian/Stylaster californica Size Frequency Distributions

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	8.3%
29 - 32	33.3%
33 - 36	8.3%
37 - 40	8.3%
41 - 44	8.3%
45 - 48	8.3%
49 - 52	25.0%
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=	12
mean	38
min height (cm)	26
max height (cm)	50

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	8.3%
29 - 32	8.3%
33 - 36	0.0%
37 - 40	8.3%
41 - 44	8.3%
45 - 48	0.0%
49 - 52	8.3%
53 - 56	16.7%
57 - 60	8.3%
61 - 64	0.0%
65 - 68	8.3%
69 - 72	0.0%
73 - 76	8.3%
77 - 80	0.0%
81 - 84	8.3%
85 - 88	0.0%
89 - 92	0.0%
93 - 96	0.0%
97 - 100	8.3%
> 100	0.0%
(Cases) N=	12
mean	57
min width (cm)	28
max width (cm)	100

Appendix J. Artificial Recruitment Modules Size Frequencies Distributions.

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee North

Cypraea spadicea	
Number of ARMs	9
<30	1.3%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	1.3%
39 - 41	9.3%
42 - 44	18.7%
45 - 47	25.3%
48 - 50	22.7%
51 - 53	10.7%
54 - 56	10.7%
>56	0.0%
(Cases) N=	75
mean	47
min size (mm)	17
max size (mm)	55

Patiria miniata	
Number of ARMs	9
<10	0.0%
10 - 19	14.7%
20 - 29	23.5%
30 - 39	26.5%
40 - 49	20.6%
50 - 59	11.8%
60 - 69	2.9%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	34
mean	35
min size (mm)	10
max size (mm)	64

Pycnopodia helianthoides	
Number of ARMs	9
< 20	0.0%
20 - 39	0.0%
40 - 59	22.2%
60 - 79	44.4%
80 - 99	11.1%
100 - 119	11.1%
120 - 139	11.1%
140 - 159	0.0%
160 - 179	0.0%
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=	9
mean	73
min size (mm)	42
max size (mm)	121

Crassadoma giganteum	
Number of ARMs	9
<10	4.3%
10 - 19	43.5%
20 - 29	17.4%
30 - 39	4.3%
40 - 49	4.3%
50 - 59	4.3%
60 - 69	0.0%
70 - 79	4.3%
80 - 89	4.3%
90 - 99	8.7%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	4.3%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	23
mean	37
min size (mm)	7
max size (mm)	120

Pisaster giganteus	
Number of ARMs	9
< 20	0.0%
20 - 39	37.5%
40 - 59	50.0%
60 - 79	12.5%
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=	8
mean	45
min size (mm)	22
max size (mm)	71

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee North

Strongylocentrotus franciscanus	
Number of ARMs	9
< 5	0.0%
5 - 9	0.8%
10 - 14	0.8%
15 - 19	1.7%
20 - 24	3.8%
25 - 29	8.5%
30 - 34	9.7%
35 - 39	5.9%
40 - 44	5.1%
45 - 49	10.2%
50 - 54	5.1%
55 - 59	6.4%
60 - 64	5.9%
65 - 69	8.9%
70 - 74	7.2%
75 - 79	5.9%
80 - 84	4.2%
85 - 89	3.4%
90 - 94	3.8%
95 - 99	0.8%
100 - 104	0.8%
105 - 109	0.8%
> 109	0.0%
(Cases) N=	236
mean	54
min size (mm)	7
max size (mm)	107

Strongylocentrotus purpuratus	
Number of ARMs	9
< 5	0.0%
5 - 9	7.5%
10 - 14	45.3%
15 - 19	20.8%
20 - 24	5.7%
25 - 29	7.5%
30 - 34	5.7%
35 - 39	3.8%
40 - 44	0.0%
45 - 49	1.9%
50 - 54	1.9%
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=	53
mean	17
min size (mm)	6
max size (mm)	50

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee South

Haliotis rufescens

Number of ARMs	6
<25	0.0%
25 - 34	0.0%
35 - 44	33.3%
45 - 54	33.3%
55 - 64	0.0%
65 - 74	33.3%
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=	3
mean	54
min size (mm)	40
max size (mm)	71

Cypraea spadicea

Number of ARMs	6
<30	0.0%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	0.0%
39 - 41	11.1%
42 - 44	18.5%
45 - 47	40.7%
48 - 50	22.2%
51 - 53	7.4%
54 - 56	0.0%
>56	0.0%
(Cases) N=	27
mean	46
min size (mm)	41
max size (mm)	51

Kelletia kelletii

Number of ARMs	6
< 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	26
min size (mm)	26
max size (mm)	26

Megathura crenulata

Number of ARMs	6
<10	0.0%
10 - 19	66.7%
20 - 29	0.0%
30 - 39	0.0%
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	0.0%
> 119	0.0%
(Cases) N=	3
mean	28
min size (mm)	15
max size (mm)	51

Crassadoma giganteum

Number of ARMs	6
<10	7.1%
10 - 19	57.1%
20 - 29	7.1%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	7.1%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	7.1%
110 - 119	7.1%
120 - 129	0.0%
130 - 139	7.1%
> 139	0.0%
(Cases) N=	14
mean	40
min size (mm)	9
max size (mm)	132

Patiria miniata

Number of ARMs	6
<10	0.0%
10 - 19	4.7%
20 - 29	7.8%
30 - 39	10.9%
40 - 49	20.3%
50 - 59	14.1%
60 - 69	29.7%
70 - 79	9.4%
80 - 89	3.1%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	64
mean	51
min size (mm)	17
max size (mm)	84

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Rosa Island - Johnson's Lee South

Pisaster giganteus	
Number of ARMs	6
< 20	30.8%
20 - 39	30.8%
40 - 59	38.5%
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=	13
mean	31
min size (mm)	10
max size (mm)	56

Pycnopodia helianthoides	
Number of ARMs	6
< 20	0.0%
20 - 39	11.1%
40 - 59	0.0%
60 - 79	11.1%
80 - 99	22.2%
100 - 119	22.2%
120 - 139	22.2%
140 - 159	5.6%
160 - 179	0.0%
180 - 199	5.6%
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=	18
mean	101
min size (mm)	25
max size (mm)	192

Strongylocentrotus franciscanus	
Number of ARMs	6
< 5	0.0%
5 - 9	0.0%
10 - 14	0.4%
15 - 19	3.0%
20 - 24	7.6%
25 - 29	8.5%
30 - 34	11.4%
35 - 39	6.4%
40 - 44	8.9%
45 - 49	6.4%
50 - 54	3.4%
55 - 59	5.1%
60 - 64	3.0%
65 - 69	3.4%
70 - 74	3.4%
75 - 79	3.4%
80 - 84	6.4%
85 - 89	7.2%
90 - 94	4.7%
95 - 99	3.0%
100 - 104	3.4%
105 - 109	0.4%
> 109	0.8%
(Cases) N=	236
mean	54
min size (mm)	14
max size (mm)	118

Strongylocentrotus purpuratus	
Number of ARMs	6
< 5	0.0%
5 - 9	1.4%
10 - 14	0.0%
15 - 19	10.1%
20 - 24	17.4%
25 - 29	24.6%
30 - 34	14.5%
35 - 39	11.6%
40 - 44	4.3%
45 - 49	7.2%
50 - 54	4.3%
55 - 59	2.9%
60 - 64	1.4%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	69
mean	32
min size (mm)	7
max size (mm)	63
max size (mm)	63

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Gull Island South

Cypraea spadicea

Number of ARMs	14
<30	0.0%
30 - 32	0.0%
33 - 35	2.5%
36 - 38	9.4%
39 - 41	17.8%
42 - 44	26.2%
45 - 47	27.2%
48 - 50	10.4%
51 - 53	5.9%
54 - 56	0.5%
>56	0.0%
(Cases) N=	202
mean	44
min size (mm)	33
max size (mm)	55

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%
90 - 99	100.0%
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	95
min size (mm)	90
max size (mm)	99

Megathura crenulata

Number of ARMs	14
<10	0.0%
10 - 19	50.0%
20 - 29	50.0%
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	0.0%
> 119	0.0%
(Cases) N=	2
mean	20
min size (mm)	19
max size (mm)	20

Crassadoma giganteum

Number of ARMs	14
<10	0.0%
10 - 19	11.1%
20 - 29	11.1%
30 - 39	11.1%
40 - 49	11.1%
50 - 59	11.1%
60 - 69	0.0%
70 - 79	11.1%
80 - 89	0.0%
90 - 99	11.1%
100 - 109	0.0%
110 - 119	11.1%
120 - 129	11.1%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	9
mean	64
min size (mm)	14
max size (mm)	124

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	50.0%
30 - 34	0.0%
35 - 39	25.0%
40 - 44	25.0%
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=	4
mean	32
min size (mm)	25
max size (mm)	41

Patiria miniata

Number of ARMs	14
<10	12.9%
10 - 19	36.6%
20 - 29	18.3%
30 - 39	16.1%
40 - 49	7.5%
50 - 59	3.2%
60 - 69	5.4%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	93
mean	25
min size (mm)	6
max size (mm)	67

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Gull Island South

Pisaster giganteus	
Number of ARMs	14
< 20	13.0%
20 - 39	52.2%
40 - 59	17.4%
60 - 79	8.7%
80 - 99	4.3%
100 - 119	4.3%
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=	23
mean	38
min size (mm)	13
max size (mm)	105

Pycnopodia helianthoides	
Number of ARMs	14
< 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	100.0%
140 - 159	0.0%
160 - 179	0.0%
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	133
min size (mm)	126
max size (mm)	136

Strongylocentrotus franciscanus	
Number of ARMs	14
< 5	0.0%
5 - 9	0.2%
10 - 14	8.8%
15 - 19	18.1%
20 - 24	13.4%
25 - 29	12.0%
30 - 34	6.8%
35 - 39	6.6%
40 - 44	6.6%
45 - 49	6.4%
50 - 54	7.8%
55 - 59	7.3%
60 - 64	3.7%
65 - 69	1.2%
70 - 74	0.5%
75 - 79	0.0%
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=	409
mean	33
min size (mm)	9
max size (mm)	84

Strongylocentrotus purpuratus	
Number of ARMs	14
< 5	0.0%
5 - 9	2.3%
10 - 14	8.1%
15 - 19	39.5%
20 - 24	24.4%
25 - 29	17.4%
30 - 34	7.0%
35 - 39	1.2%
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=	86
mean	21
min size (mm)	8
max size (mm)	36
max size (mm)	36

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Fry's Harbor

Cypraea spadicea

Number of ARMs	5
<30	0.0%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	6.8%
39 - 41	15.1%
42 - 44	32.9%
45 - 47	26.0%
48 - 50	11.0%
51 - 53	6.8%
54 - 56	1.4%
>56	0.0%
(Cases) N=	73
mean	44
min size (mm)	36
max size (mm)	54

Megastraea undosa

Number of ARMs	5
<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	33
min size (mm)	33
max size (mm)	33

Crassadoma giganteum

Number of ARMs	5
<10	0.0%
10 - 19	15.0%
20 - 29	15.0%
30 - 39	25.0%
40 - 49	25.0%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	5.0%
90 - 99	0.0%
100 - 109	5.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	0.0%
> 139	10.0%
(Cases) N=	20
mean	51
min size (mm)	14
max size (mm)	156

Patiria miniata

Number of ARMs	5
<10	1.7%
10 - 19	11.7%
20 - 29	23.3%
30 - 39	30.0%
40 - 49	23.3%
50 - 59	6.7%
60 - 69	3.3%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	60
mean	34
min size (mm)	9
max size (mm)	63

Pisaster giganteus

Number of ARMs	5
< 20	0.0%
20 - 39	66.7%
40 - 59	0.0%
60 - 79	33.3%
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=	3
mean	37
min size (mm)	23
max size (mm)	61

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Fry's Harbor

Strongylocentrotus franciscanus	
Number of ARMs	5
< 5	0.0%
5 - 9	0.0%
10 - 14	3.8%
15 - 19	17.5%
20 - 24	25.0%
25 - 29	13.8%
30 - 34	10.0%
35 - 39	7.5%
40 - 44	5.0%
45 - 49	3.8%
50 - 54	7.5%
55 - 59	5.0%
60 - 64	1.3%
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=	80
mean	30
min size (mm)	13
max size (mm)	63

Strongylocentrotus purpuratus	
Number of ARMs	5
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	37.5%
20 - 24	25.0%
25 - 29	12.5%
30 - 34	0.0%
35 - 39	0.0%
40 - 44	0.0%
45 - 49	25.0%
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=	8
mean	27
min size (mm)	17
max size (mm)	49

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pelican Bay

Cypraea spadicea

Number of ARMs	6
<30	0.0%
30 - 32	0.0%
33 - 35	0.0%
36 - 38	10.3%
39 - 41	35.9%
42 - 44	33.3%
45 - 47	10.3%
48 - 50	2.6%
51 - 53	5.1%
54 - 56	2.6%
>56	0.0%
(Cases) N=	39
mean	42
min size (mm)	37
max size (mm)	55

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	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	100.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	1
mean	99
min size (mm)	99
max size (mm)	99

Crassadoma giganteum

Number of ARMs	6
<10	0.0%
10 - 19	46.2%
20 - 29	7.7%
30 - 39	0.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	15.4%
70 - 79	7.7%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	7.7%
110 - 119	7.7%
120 - 129	7.7%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	13
mean	50
min size (mm)	10
max size (mm)	125

Patiria miniata

Number of ARMs	6
<10	1.8%
10 - 19	17.5%
20 - 29	38.6%
30 - 39	19.3%
40 - 49	12.3%
50 - 59	7.0%
60 - 69	3.5%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	57
mean	29
min size (mm)	8
max size (mm)	65

Pisaster giganteus

Number of ARMs	6
< 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	100.0%
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=	1
mean	137
min size (mm)	137
max size (mm)	137

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Pelican Bay

Strongylocentrotus franciscanus	
Number of ARMs	6
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	11.9%
20 - 24	15.3%
25 - 29	10.2%
30 - 34	20.3%
35 - 39	8.5%
40 - 44	15.3%
45 - 49	10.2%
50 - 54	5.1%
55 - 59	1.7%
60 - 64	1.7%
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=	59
mean	33
min size (mm)	15
max size (mm)	60

Strongylocentrotus purpuratus	
Number of ARMs	6
< 5	0.0%
5 - 9	0.0%
10 - 14	1.7%
15 - 19	3.4%
20 - 24	3.4%
25 - 29	47.5%
30 - 34	39.0%
35 - 39	5.1%
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=	59
mean	28
min size (mm)	11
max size (mm)	38

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Scorpion Anchorage

Haliotis rufescens

Number of ARMs	7
<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	11
min size (mm)	11
max size (mm)	11

Cypraea spadicea

Number of ARMs	7
<30	1.9%
30 - 32	9.4%
33 - 35	13.2%
36 - 38	23.6%
39 - 41	26.4%
42 - 44	14.2%
45 - 47	9.4%
48 - 50	0.9%
51 - 53	0.9%
54 - 56	0.0%
>56	0.0%
(Cases) N=	106
mean	39
min size (mm)	28
max size (mm)	51

Megastraea undosa

Number of ARMs	7
<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%
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	24
min size (mm)	21
max size (mm)	26

Megathura crenulata

Number of ARMs	7
<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	66.7%
70 - 79	33.3%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	3
mean	68
min size (mm)	62
max size (mm)	73

Crassadoma giganteum

Number of ARMs	7
<10	19.1%
10 - 19	42.6%
20 - 29	0.0%
30 - 39	0.0%
40 - 49	4.3%
50 - 59	6.4%
60 - 69	10.6%
70 - 79	4.3%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	6.4%
> 139	6.4%
(Cases) N=	47
mean	41
min size (mm)	6
max size (mm)	170

Patiria miniata

Number of ARMs	7
<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	33.3%
70 - 79	66.7%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	3
mean	72
min size (mm)	67
max size (mm)	76

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Scorpion Anchorage

Pisaster giganteus	
Number of ARMs	7
< 20	0.0%
20 - 39	50.0%
40 - 59	0.0%
60 - 79	0.0%
80 - 99	0.0%
100 - 119	25.0%
120 - 139	25.0%
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=	4
mean	82
min size (mm)	36
max size (mm)	134

Pycnopodia helianthoides	
Number of ARMs	7
< 20	0.0%
20 - 39	100.0%
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%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	1
mean	21
min size (mm)	21
max size (mm)	21

Strongylocentrotus franciscanus	
Number of ARMs	7
< 5	0.0%
5 - 9	4.0%
10 - 14	8.0%
15 - 19	6.0%
20 - 24	4.0%
25 - 29	8.0%
30 - 34	12.0%
35 - 39	28.0%
40 - 44	12.0%
45 - 49	6.0%
50 - 54	2.0%
55 - 59	0.0%
60 - 64	10.0%
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=	50
mean	34
min size (mm)	5
max size (mm)	64

Strongylocentrotus purpuratus	
Number of ARMs	7
< 5	1.9%
5 - 9	7.5%
10 - 14	6.4%
15 - 19	4.9%
20 - 24	3.8%
25 - 29	3.8%
30 - 34	8.3%
35 - 39	8.6%
40 - 44	25.6%
45 - 49	24.4%
50 - 54	3.4%
55 - 59	1.5%
60 - 64	0.0%
65 - 69	0.0%
70 - 74	0.0%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	266
mean	35
min size (mm)	2
max size (mm)	56
max size (mm)	56

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Yellow Banks

Cypraea spadicea

Number of ARMs	15
<30	0.0%
30 - 32	2.2%
33 - 35	16.3%
36 - 38	27.2%
39 - 41	21.7%
42 - 44	18.5%
45 - 47	5.4%
48 - 50	7.6%
51 - 53	1.1%
54 - 56	0.0%
>56	0.0%
(Cases) N=	92
mean	40
min size (mm)	32
max size (mm)	51

Megathura crenulata

Number of ARMs	15
<10	0.0%
10 - 19	33.3%
20 - 29	0.0%
30 - 39	33.3%
40 - 49	33.3%
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=	3
mean	31
min size (mm)	15
max size (mm)	46

Crassadoma giganteum

Number of ARMs	15
<10	6.3%
10 - 19	25.0%
20 - 29	6.3%
30 - 39	18.8%
40 - 49	0.0%
50 - 59	6.3%
60 - 69	18.8%
70 - 79	6.3%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	12.5%
120 - 129	0.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	16
mean	46
min size (mm)	9
max size (mm)	112

Tegula regina

Number of ARMs	15
< 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	52
min size (mm)	52
max size (mm)	52

Patiria miniata

Number of ARMs	15
<10	10.1%
10 - 19	44.6%
20 - 29	23.6%
30 - 39	12.2%
40 - 49	5.4%
50 - 59	1.4%
60 - 69	2.0%
70 - 79	0.7%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	148
mean	22
min size (mm)	4
max size (mm)	71

Pisaster giganteus

Number of ARMs	15
< 20	53.0%
20 - 39	47.0%
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=	66
mean	19
min size (mm)	5
max size (mm)	37

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Santa Cruz Island - Yellow Banks

Pycnopodia helianthoides	
Number of ARMs	15
< 20	0.0%
20 - 39	50.0%
40 - 59	0.0%
60 - 79	25.0%
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%
240 - 259	25.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	4
mean	99
min size (mm)	29
max size (mm)	255

Strongylocentrotus franciscanus	
Number of ARMs	9
< 5	0.0%
5 - 9	8.1%
10 - 14	20.8%
15 - 19	10.6%
20 - 24	15.4%
25 - 29	14.7%
30 - 34	7.6%
35 - 39	3.6%
40 - 44	2.8%
45 - 49	1.7%
50 - 54	1.1%
55 - 59	1.1%
60 - 64	0.8%
65 - 69	0.7%
70 - 74	3.3%
75 - 79	2.5%
80 - 84	2.2%
85 - 89	1.1%
90 - 94	1.0%
95 - 99	0.8%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	824
mean	29
min size (mm)	5
max size (mm)	98

Strongylocentrotus purpuratus	
Number of ARMs	9
< 5	1.1%
5 - 9	11.9%
10 - 14	4.0%
15 - 19	4.2%
20 - 24	6.1%
25 - 29	9.7%
30 - 34	11.2%
35 - 39	8.9%
40 - 44	11.2%
45 - 49	11.2%
50 - 54	11.7%
55 - 59	6.4%
60 - 64	2.0%
65 - 69	0.2%
70 - 74	0.1%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	1366
mean	34
min size (mm)	3
max size (mm)	72

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Admiral's Reef

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	0.0%
48 - 50	100.0%
51 - 53	0.0%
54 - 56	0.0%
>56	0.0%
(Cases) N=	5
mean	49
min size (mm)	48
max size (mm)	50

Megathura crenulata

Number of ARMs	6
<10	0.0%
10 - 19	0.0%
20 - 29	50.0%
30 - 39	25.0%
40 - 49	0.0%
50 - 59	25.0%
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=	4
mean	35
min size (mm)	26
max size (mm)	54

Crassadoma giganteum

Number of ARMs	6
<10	0.0%
10 - 19	22.2%
20 - 29	22.2%
30 - 39	0.0%
40 - 49	22.2%
50 - 59	11.1%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
100 - 109	11.1%
110 - 119	0.0%
120 - 129	0.0%
130 - 139	11.1%
> 139	0.0%
(Cases) N=	9
mean	52
min size (mm)	15
max size (mm)	130

Tegula regina

Number of ARMs	6
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	13.3%
20 - 24	40.0%
25 - 29	13.3%
30 - 34	20.0%
35 - 39	13.3%
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=	15
mean	26
min size (mm)	15
max size (mm)	37

Patiria miniata

Number of ARMs	6
<10	7.2%
10 - 19	19.4%
20 - 29	30.9%
30 - 39	28.1%
40 - 49	4.3%
50 - 59	6.5%
60 - 69	2.2%
70 - 79	1.4%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	139
mean	29
min size (mm)	5
max size (mm)	79

Pisaster giganteus

Number of ARMs	6
< 20	0.0%
20 - 39	50.0%
40 - 59	50.0%
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=	4
mean	37
min size (mm)	31
max size (mm)	44

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Admiral's Reef

Strongylocentrotus franciscanus	
Number of ARMs	6
< 5	0.0%
5 - 9	0.0%
10 - 14	3.0%
15 - 19	1.2%
20 - 24	10.3%
25 - 29	24.2%
30 - 34	23.0%
35 - 39	9.7%
40 - 44	4.8%
45 - 49	6.1%
50 - 54	4.8%
55 - 59	2.4%
60 - 64	8.5%
65 - 69	1.8%
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=	165
mean	36
min size (mm)	11
max size (mm)	67

Strongylocentrotus purpuratus	
Number of ARMs	6
< 5	0.0%
5 - 9	9.1%
10 - 14	15.4%
15 - 19	2.8%
20 - 24	7.7%
25 - 29	20.3%
30 - 34	23.8%
35 - 39	7.7%
40 - 44	6.3%
45 - 49	4.9%
50 - 54	2.1%
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=	143
mean	27
min size (mm)	5
max size (mm)	53

Centrostephanus coronatus	
Number of ARMs	6
< 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	100.0%
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	49
min size (mm)	49
max size (mm)	49

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Cathedral Cove

Haliotis rufescens

Number of ARMs	5
<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	28
min size (mm)	28
max size (mm)	28

Haliotis corrugata

Number of ARMs	5
<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	27
min size (mm)	27
max size (mm)	27

Cypraea spadicea

Number of ARMs	5
<30	1.2%
30 - 32	7.0%
33 - 35	17.4%
36 - 38	23.3%
39 - 41	19.8%
42 - 44	15.1%
45 - 47	14.0%
48 - 50	2.3%
51 - 53	0.0%
54 - 56	0.0%
>56	0.0%
(Cases) N=	86
mean	39
min size (mm)	29
max size (mm)	48

Kelletia kelletii

Number of ARMs	5
< 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=	3
mean	21
min size (mm)	18
max size (mm)	23

Megastraea undosa

Number of ARMs	5
<10	0.0%
10 - 19	0.0%
20 - 29	33.3%
30 - 39	25.0%
40 - 49	16.7%
50 - 59	8.3%
60 - 69	0.0%
70 - 79	8.3%
80 - 89	0.0%
90 - 99	8.3%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	12
mean	43
min size (mm)	24
max size (mm)	94

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Cathedral Cove

Megathura crenulata

Number of ARMs	5
<10	0.0%
10 - 19	0.0%
20 - 29	25.0%
30 - 39	50.0%
40 - 49	0.0%
50 - 59	0.0%
60 - 69	25.0%
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=	4
mean	40
min size (mm)	24
max size (mm)	64

Crassadoma giganteum

Number of ARMs	5
<10	4.5%
10 - 19	18.2%
20 - 29	4.5%
30 - 39	18.2%
40 - 49	4.5%
50 - 59	4.5%
60 - 69	4.5%
70 - 79	4.5%
80 - 89	13.6%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	9.1%
120 - 129	9.1%
130 - 139	4.5%
> 139	0.0%
(Cases) N=	22
mean	61
min size (mm)	9
max size (mm)	134

Patiria miniata

Number of ARMs	5
<10	26.6%
10 - 19	26.6%
20 - 29	18.8%
30 - 39	18.8%
40 - 49	7.8%
50 - 59	1.6%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	64
mean	21
min size (mm)	4
max size (mm)	52

Pisaster giganteus

Number of ARMs	5
< 20	21.4%
20 - 39	50.0%
40 - 59	28.6%
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=	14
mean	30
min size (mm)	13
max size (mm)	57

Strongylocentrotus franciscanus

Number of ARMs	5
< 5	0.0%
5 - 9	11.9%
10 - 14	19.0%
15 - 19	8.2%
20 - 24	15.3%
25 - 29	9.1%
30 - 34	7.6%
35 - 39	5.4%
40 - 44	4.2%
45 - 49	1.2%
50 - 54	2.7%
55 - 59	2.5%
60 - 64	1.2%
65 - 69	2.8%
70 - 74	3.1%
75 - 79	1.8%
80 - 84	0.9%
85 - 89	0.7%
90 - 94	0.0%
95 - 99	0.6%
100 - 104	0.1%
105 - 109	0.7%
> 109	0.9%
(Cases) N=	672
mean	30
min size (mm)	5
max size (mm)	123

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Cathedral Cove

Strongylocentrotus purpuratus

Number of ARMs	5
< 5	0.3%
5 - 9	33.6%
10 - 14	16.9%
15 - 19	7.9%
20 - 24	7.4%
25 - 29	6.6%
30 - 34	4.2%
35 - 39	2.6%
40 - 44	3.0%
45 - 49	4.1%
50 - 54	3.6%
55 - 59	4.8%
60 - 64	3.4%
65 - 69	1.4%
70 - 74	0.3%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	732
mean	22
min size (mm)	4
max size (mm)	71

Centrostephanus coronatus

Number of ARMs	5
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	0.0%
25 - 29	50.0%
30 - 34	0.0%
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 - 79	0.0%
> 79	0.0%
(Cases) N=	2
mean	35
min size (mm)	25
max size (mm)	44

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Landing Cove

Haliotis corrugata

Number of ARMs	6
<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	60
min size (mm)	49
max size (mm)	70

Cypraea spadicea

Number of ARMs	6
<30	34.7%
30 - 32	2.0%
33 - 35	6.1%
36 - 38	8.2%
39 - 41	12.2%
42 - 44	18.4%
45 - 47	14.3%
48 - 50	4.1%
51 - 53	0.0%
54 - 56	0.0%
>56	0.0%
(Cases) N=	49
mean	31
min size (mm)	8
max size (mm)	50

Kelletia kelletii

Number of ARMs	6
< 40	58.8%
40 - 49	23.5%
50 - 59	0.0%
60 - 69	0.0%
70 - 79	0.0%
80 - 89	5.9%
90 - 99	0.0%
100 - 109	5.9%
110 - 119	5.9%
120 - 129	0.0%
130 - 139	0.0%
140 - 149	0.0%
> 149	0.0%
(Cases) N=	17
mean	46
min size (mm)	19
max size (mm)	113

Megastraea undosa

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	0.0%
60 - 69	0.0%
70 - 79	33.3%
80 - 89	66.7%
90 - 99	0.0%
100 - 109	0.0%
110 - 119	0.0%
> 119	0.0%
(Cases) N=	3
mean	79
min size (mm)	73
max size (mm)	84

Megathura crenulata

Number of ARMs	6
<10	0.0%
10 - 19	57.1%
20 - 29	0.0%
30 - 39	28.6%
40 - 49	0.0%
50 - 59	14.3%
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	27
min size (mm)	12
max size (mm)	53

Crassadoma giganteum

Number of ARMs	6
<10	0.0%
10 - 19	25.0%
20 - 29	0.0%
30 - 39	12.5%
40 - 49	8.3%
50 - 59	4.2%
60 - 69	4.2%
70 - 79	4.2%
80 - 89	8.3%
90 - 99	0.0%
100 - 109	16.7%
110 - 119	8.3%
120 - 129	0.0%
130 - 139	8.3%
> 139	0.0%
(Cases) N=	24
mean	65
min size (mm)	10
max size (mm)	132

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Landing Cove

Tegula regina	
Number of ARMs	6
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	50.0%
20 - 24	0.0%
25 - 29	25.0%
30 - 34	25.0%
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	0.0%
(Cases) N=	4
mean	23
min size (mm)	16
max size (mm)	32

Patiria miniata	
Number of ARMs	6
<10	19.2%
10 - 19	38.5%
20 - 29	30.8%
30 - 39	7.7%
40 - 49	3.8%
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=	26
mean	18
min size (mm)	6
max size (mm)	47

Pisaster giganteus	
Number of ARMs	6
< 20	50.0%
20 - 39	8.3%
40 - 59	33.3%
60 - 79	8.3%
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=	12
mean	28
min size (mm)	3
max size (mm)	62

Strongylocentrotus franciscanus	
Number of ARMs	6
< 5	0.5%
5 - 9	12.3%
10 - 14	23.7%
15 - 19	7.4%
20 - 24	10.5%
25 - 29	10.5%
30 - 34	6.4%
35 - 39	4.1%
40 - 44	3.0%
45 - 49	2.6%
50 - 54	2.7%
55 - 59	3.8%
60 - 64	2.3%
65 - 69	2.3%
70 - 74	2.3%
75 - 79	2.1%
80 - 84	1.5%
85 - 89	1.5%
90 - 94	0.5%
95 - 99	0.0%
100 - 104	0.0%
105 - 109	0.0%
> 109	0.0%
(Cases) N=	658
mean	29
min size (mm)	4
max size (mm)	93

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

Anacapa Island - Landing Cove

Strongylocentrotus purpuratus

Number of ARMs	6
< 5	0.2%
5 - 9	25.3%
10 - 14	35.2%
15 - 19	7.1%
20 - 24	3.3%
25 - 29	5.3%
30 - 34	4.1%
35 - 39	2.2%
40 - 44	2.0%
45 - 49	2.5%
50 - 54	4.4%
55 - 59	3.7%
60 - 64	3.2%
65 - 69	1.2%
70 - 74	0.2%
75 - 79	0.0%
> 79	0.0%
(Cases) N=	1216
mean	21
min size (mm)	4
max size (mm)	72

Centrostephanus coronatus

Number of ARMs	6
< 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 - 79	0.0%
> 79	0.0%
(Cases) N=	1
mean	37
min size (mm)	37
max size (mm)	37

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Miracle Mile

Haliotis rufescens

Number of ARMs	7
<25	7.7%
25 - 34	0.0%
35 - 44	15.4%
45 - 54	7.7%
55 - 64	7.7%
65 - 74	7.7%
75 - 84	7.7%
85 - 94	7.7%
95 - 104	7.7%
105 - 114	7.7%
115 - 124	7.7%
125 - 134	0.0%
135 - 144	7.7%
145 - 154	0.0%
155 - 164	7.7%
165 - 174	0.0%
175 - 184	0.0%
185 - 194	0.0%
>195	0.0%
(Cases) N=	13
mean	84
min size (mm)	22
max size (mm)	160

Crassadoma giganteum

Number of ARMs	7
<10	0.0%
10 - 19	0.0%
20 - 29	50.0%
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	25.0%
110 - 119	0.0%
120 - 129	25.0%
130 - 139	0.0%
> 139	0.0%
(Cases) N=	4
mean	71
min size (mm)	26
max size (mm)	122

Patiria miniata

Number of ARMs	7
<10	0.0%
10 - 19	17.7%
20 - 29	30.6%
30 - 39	19.4%
40 - 49	14.5%
50 - 59	12.9%
60 - 69	3.2%
70 - 79	1.6%
80 - 89	0.0%
90 - 99	0.0%
> 99	0.0%
(Cases) N=	62
mean	33
min size (mm)	10
max size (mm)	71

Pisaster giganteus

Number of ARMs	7
< 20	20.0%
20 - 39	20.0%
40 - 59	20.0%
60 - 79	20.0%
80 - 99	20.0%
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	48
min size (mm)	16
max size (mm)	85

Pycnopodia helianthoides

Number of ARMs	7
< 20	0.0%
20 - 39	0.0%
40 - 59	20.0%
60 - 79	60.0%
80 - 99	0.0%
100 - 119	20.0%
120 - 139	0.0%
140 - 159	0.0%
160 - 179	0.0%
180 - 199	0.0%
200 - 219	0.0%
220 - 239	0.0%
240 - 259	0.0%
260 - 279	0.0%
280 - 299	0.0%
> 299	0.0%
(Cases) N=	5
mean	68
min size (mm)	42
min size (mm)	42
max size (mm)	100

2006 ARTIFICIAL RECRUITMENT MODULES SIZE FREQUENCY DISTRIBUTIONS

San Miguel Island - Miracle Mile

Strongylocentrotus franciscanus	
Number of ARMs	7
< 5	0.0%
5 - 9	0.0%
10 - 14	0.0%
15 - 19	0.0%
20 - 24	2.3%
25 - 29	2.3%
30 - 34	2.3%
35 - 39	7.0%
40 - 44	14.0%
45 - 49	0.0%
50 - 54	2.3%
55 - 59	2.3%
60 - 64	4.7%
65 - 69	2.3%
70 - 74	0.0%
75 - 79	2.3%
80 - 84	4.7%
85 - 89	11.6%
90 - 94	11.6%
95 - 99	18.6%
100 - 104	7.0%
105 - 109	4.7%
> 109	0.0%
(Cases) N=	43
mean	74
min size (mm)	23
max size (mm)	107

Strongylocentrotus purpuratus	
Number of ARMs	7
< 5	0.0%
5 - 9	20.0%
10 - 14	40.0%
15 - 19	20.0%
20 - 24	20.0%
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=	5
mean	14
min size (mm)	8
max size (mm)	23

Appendix K. Species List for Channel Islands National Park's Kelp Forest Monitoring Stations.

Introduction

The species list contains presence/absence and relative abundance data for all species that could be found and identified during the site visits between June and September. Generally at least one dive is made by an experienced biologist strictly for species list observations. The overall effort varies from station to station with the water conditions and available time. Relative abundance values are subjective, and generally based on opinions of several divers viewing the overall site. Some species assemblages are more difficult to identify than others and may be lumped into general categories. Organisms were generally not collected for additional taxonomic work. When identification is tentative we either do not mark it or place a question mark on the list. Some categories, (e.g. sponges or tunicates) may be much more diverse than it would appear from the list. In 2006 the NRPP new sites species list is listed separately due to formatting limitations. Sites #21-22 can be found listed beginning on page 370.

Abundance Ratings

X - present, no relative abundance rating given
4 - abundant, organism present in higher than normal densities
3 - common, organism found over most of site or in high density patches
2 - present, organism found in moderate numbers
1 - rare, few organisms found
0 - noticeably absent, an effort was made to look for an organism that was not found.

Notes

e	- eggs
j or jvs	- juvenile
s	- shell only
int	- intertidal
d	- drift
PM or night	- seen only on night dive
JX	- juveniles present and adults present
#/J#	- (e.g. 2/J3 - adult abundance 2, juvenile abundance 3)
nests	- *Hypsypops* nest turf
dis	- diseased

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
CHLOROPHYTA									2							
CHAETOMORPHA SP.		X														
CLADOPHORA GRAMINEA													X			
CLADOPHORA SP.									X							
CODIUM CUNEATUM							2						X			
CODIUM FRAGILE		1					2		1						1	
CODIUM HUBBSII/SETCHELLII				X		2					2				2	
CODIUM SETCHELLII							2						X			
DERBESIA MARINA							2		X				X			
FILAMENTOUS GREEN ALGAE									X	X						
HALICYSTIS OVALIS						X								X		
ULVA SP.	X	3					1		1							
PHAEOPHYTA															1	
AGARUM FIMBRIATUM						1										
COILODESME SP.													X			
COLPOMENIA SP.								2	2		2	2			1	
COLPOMENIA/HYDROCLATHRUS									2							
CYSTOSEIRA SP.	3	2	3	X	0	1		0	1	1	1	3			0	
CYSTOSEIRA OSMUNDACEA							2						X			
DESMARESTIA SP.	3		2	2	2	0	0	0	0	0	0	0			0	
DESMARESTIA LATIFRONS	3	4														
DICTYONEUROPSIS RETICULATA	2															
DICTYOPTERIS UNDULATA													X			
DICTYOTA FLABELLATA													X			
DICTYOTA/PACHYDICTYON							1		2		X	2				
EISENIA ARBOREA	1	0	1	1	0	2/J2	3	0	0	1	2/J1	2	X	0	0	
LAMINARIA FARLOWII	2	0	2/J2	3	0	0		0	0	1	0	2/J2	3	0	0	
LAMINARIA SETCHELLII	2															
LEATHESIA DIFFORMIS																
MACROCYSTIS PYRIFERA	3/J3	4/J4	3/J3	4/J3	1/J2	2/J2	1	0/J1	2/J2	2/J2	1/J1	4/J3	3	1	0	
PTERYGOPHORA CALIFORNICA	3/J2	0	2/J2	2	0	2		0	0	1/J2	0			0	0	

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SARGASSUM MUTICUM															1	
RHODOPHYTA	3	4	3	4	3	3		1		2	2	1		1	2	
BOTRYOCLADIA SP.			X	X						X						
CALLIARTHRON CHEILOSPORIOIDES							1						X			
CALLIARTHRON TUBERCULOSUM							1									
CALLOPHYLLIS SP.	X		X	2									X			
CALLOPHYLLIS FIRMA							2									
CARPOPELTIS BUSHIAE							3						X			
CORALLINA OFFICINALIS													X			
CORALLINA VANCOUVERIENSIS													X			
CORALLINES - ENCRUSTING	2	1	2	2	1	2	2	3	3	3	3	2	2		4	3
CORALLINES - ERECT	2	3	2	2	3	2	1	1	1	1	1	2	1		1	1
FAUCHEA SP.							1						X			
GELIDIUM SP.								1	1		0					
GELIDIUM PURPURASCENS													X			
GELIDIUM ROBUSTUM													3			
GIGARTINA SP.								0	1		1			0	0	
GIGARTINA CANALICULATA																
GIGARTINA CORYMBIFERA	2	4	2	4	2		2		1	1	1		X			
HALYMENIA/SCHIZYMENIA							2			X						
LAURENCIA PACIFICA		3	X				2	2	1	X	X			X	3	2
LAURENCIA SPECTABILIS													X			
LITHOTHAMNION/LITHOPHYLUM							2									
MICROCLADIA SP.			X	X												
PLOCAMIUM CARTILAGINEUM													X			
PLOCAMIUM VIOLACEUM												1				
RHODOPTILUM PLUMOSUM							2									
RHODYMENIA SP.	2	2	X	2	2	2									1	
RHODYMENIA CALIFORNICA							2						X			
RHODYMENIA CALLOPHYLLIDOIDES													X			
RHODYMENIA PACIFICA							2						X			

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SCHIZYMENIA SP.				X		X				2						
SCIADOPHYCUS STELLATUS													2			
FILAMENTOUS RED ALGAE		X						X	2	X	2	X		X	X	X
HYPSYPOPS TURF NEST	0	0	1	0	0		2	1	2	0	X		X	1	4	3
DIATOM FILM									3	2	3	X	X	1	1	2
HOMOTREMA RUBRUM						X	X									
PORIFERA	2	2	3	3	3	3					2	3		1		1
LEUCILLA NUTTINGI	X				X	2				X	X		X			
LEUCOSOLENIA ELEANOR						2										
YELLOW SPONGE W/TALL PORES			X	X												
ACARNUS SP.			X		X					X						
CLIONA SP.			X	X	X	X										
CLIONA CELATA	X															
HALICLONA SP.	X				X	X					X	X				
HYMENAMPHIASTRA CYANOCRYPTA	X		3	3	2	2				2	X		X			
LISSODENDORYX TOPSENTI							2						X			
OPHALITASPONGIA PENNATA													X			
PENARES CORTIUS													X			
RED SPONGES - ENCRUSTING	X	X	X	X	X	X	2	X	X	X	X	X			1	X
TETHYA AURANTIA	3	2	3	3	3	4	1	1	1	2	2	1	1	3	0	
TETILLA ARB	2				4											
VERONGIA AUREA											X		X			X
APLYSINA FISTULARIS												X				
XESTOSPONGIA TRINDINAEA	X		X	X		2				X						
HYDROZOA				3						2	2	2			2	
AGLAOPHENIA SP.	X	2			X	2				X		X	X			
AGLAOPHENIA LATIROSTRIS			2	2												
ALLOPORA CALIFORNICA (STYLASTER CALIFORNICUS)	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0
GARVEIA ANNULATA						2										
HYDRACTINIA SP.													X			
OBELIA SP.	X		X	2		X		X	X	X	X	X		X	2	

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PLUMULARIA SP.						3	3		1				X		1	1
SERTULARELLA SP./SERTULARIA SP.	X					X	2				X	X	X			
TUBULARIA SP.															X	
CLAVULARIA SP.							4	X	X			X				2
PACHYCERIANTHUS FIMBRIATUS		X		X		X	2	2	X	3	1	1			X	
HYDRACTINIA MILLERI		X	X	X		2	3		X		2	X		X	X	
EUGORGIA RUBENS							2				3		1			
LOPHOGORGIA CHILENSIS	1	0	1	2	1	2	4	3	1	3/J2	2	1	1		0	
MURICEA CALIFORNICA	0	0				0	2	2	0	2	2	0	0		1	
MURICEA FRUTICOSA	0	0	0	0	0	0			0	1	1	0	0		1	
PARAZOANTHUS LUCIFICUM									X		2					
CORYNACTIS CALIFORNICA	2	4	2	3	3	3	2	2	2	1	2	1	2	2	3	
ANTHOPLEURA SOLA															2	
ANTHOPLEURA XANTHOGRAMMICA	X	2			X				X	X						
CACTOSOMA/SAGARTIA					X			X	X	X			X			
EPIACTIS PROLIFERA	X	X	3	X	3				X	X		X				
HALCAMPA DECEMTENTACULATA	2	X								2						
MANANIA HANDI		3														
METRIDIUM SENILE		X														
PHYLACTIS SP.					X											
TEALIA COLUMBIANA					X											
TEALIA CORIACEA	X		2	2	2	X	2	X		3	2		X	X	X	
TEALIA LOFOTENSIS	3	2	2	3	2	0	0	0	0	1	0			0	0	
ZAOLUTUS ACTIUS							1									
ASTRANGIA LAJOLLENSIS (=A. HAIMEI)	2	3	3	3	3	2	3	3	2	2	2	2	X	2	2	3
BALANOPHYLLIA ELEGANS	2	3	3	3	3	3	1	1	2	2	1	0		1	1	2
COENOCYATHUS BOWERSI							1				X		X			
PARACYATHUS STEARNSI (=P. STEARNSII)		X		X	X	3	2	X	X	X	2	X	X		X	
PLATYHELMINTHES								X			X		X			

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NEMERTEA				X	X											
TUBULANUS SEXLINEATUS		X														
POLYCHAETA									2							
ARCTONOE PULCHRA													X			
ARCTONOE VITTATA													X			
CHAETOPTERUS VARIOPEDATUS	X	X		2	2	2	2	3	2	X	X	X	X	X	X	2
DIOPATRA ORNATA	3	2		3	3	4		1		3	1	2	2	1		1
DODECACERIA FEWKESI	2	3	2	X	X		1		2		2			X	X	
EUDISTYLIA SP.									X							
EUDISTYLIA POLYMORPHA	X	2	X	2	X	X	2			X			X			
FLABELLIGERA COMMENSALIS				X								3				
MESOCHAETOPTERUS SP.					X											
MYXICOLA INFUNDIBULUM					2	X	3	3	X	X			X			
OPHIODROMUS PUGETTENSIS							3									
PHRAGMATOPOMA CALIFORNICA	1	2	2	2	2	0		0	2	1	0	2	X	0	1	X
PISTA ELONGATA	X		2	2	2	2	2	X	X	X	X	2	X	X	X	1
POLYNOID							X									
SABELLID							X									
SALMACINA TRIBRANCHIATA		X	X	X	X	2	1	X	3		X	X	X		X	
SPIROBRANCHUS SPINOSUS		X	X			1	2	3	4	1	3	2	X	X	2	3
SPIROBRANCHUS SPIONID													X			
SPIRORBID		2														
TEREBELLID		2		X	X		2	X		X	X					
BALANUS SP.	X	X	X	X	3	X		X		X	X				3	X
BALANUS NUBILUS		X														
MYSIDS		4			3											
MYSIDS (brown canopy dwellers)						3										
MYSIDS (clear bottom dwellers)		4	3	3	3	2										
COLIDOTEA SP.												3				
IDOTEA RESECATA	2	2	3	3		2									1	
AMPHIPOD TUBE MASSES	2		3	3	3	3			X	1		X				X

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
GAMMARIDEA							X								X	
CAPRELLIDEA							X									
COPEPODS ON MEGATHURA CRENULATA			X		X	0					X					
COPEPODS ON FISH	X	X	X	X	X	X			X	X						
ALPHEUS CLAMATOR								X								
BETAEUS SP.							X									
BETAEUS MACGINITIEAE	1	2	3	2	3					X		2	3		1	
LYSMATA CALIFORNICA												X				
PANDALUS DANAE	2	X	2	2	2	2	2	X	2	2	X	X	X			
PANULIRUS INTERRUPTUS	0	0	1	0	0	0	1	0	2	1	2	4	2	0	2	1
CRYPTOLITHODES SITCHENSIS			X				1									
HAPALOGASTER CAVICAUDA	X		X	X	X											
ISOCHELES PILOSUS							X									
PAGURISTES SP.		X			X	X	X			X	X	X				
PAGURUS SP.										X		X				
PETROLISTHES SP.					X											
PHIMOCHIRUS CALIFORNIENSIS													X			
CANCER SP.							X								S	
CANCER ANTENNARIUS		X		X	X	X										
HERBSTIA PARVIFRONS							3	X	X		2	2	X	X	X	
LOXORHYNCHUS CRISPATUS	X	X		X			1	X								
LOXORHYNCHUS GRANDIS			X		1				X						1	
PARAXANTHIAS TAYLORI		X		2	X		1	X	2		X	2	X	X	X	
PHYLLOLITHODES PAPILLOSUS				2												
PODOCHELA HEMPHILLI							2						X			
PUGETTIA PRODUCTA										X						
PUGETTIA RICHII				X												
ACMAEA MITRA	X	X	X	X								X				
ALIA CARINATA																
AMPHISSA VERSICOLOR			X	2			X	X	X	X	X	3	X			

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
LITHOPOMA GIBBEROSUM (=Astraea gibberosa)	4	1	0	1	1	0		0		1	0	0	1	1	J/	3/J1
LITHOPOMA UNDOSUM (=Astraea undosa)	0	0	0	0	0	1	2	1/J1	3/J2	3/J1	1	3/J3	3/J2	2/J1	2	
BURSA CALIFORNICA (=Crossata californica)	2					1	1	1		1	2					1
CALLIOSTOMA SP.	X	X	X	X	X						X					
CALLIOSTOMA SUPRAGRANOSUM							2									
CERATOSTOMA FOLIATUM	X	2			X											
CERATOSTOMA NUTTALLI								2	X		X	X	X		X	
CONUS CALIFORNICUS	3			X		X		X	X	X	X	X	X		X	
CREPIDULA SP.		X				X		X	X	X	X	X	X		X	X
CREPIPATELLA LINGULATA							2						X			
CYPRAEA SPADICEA	2	3	2	3	2	3	3	2	3	1	1	3	2/J2		1	2
DIODORA SP.	X		X		X						X					
FUSINUS KOBELTI			X				2									
HALIOTIS CORRUGATA	0	0	0	0	0	0	0	0	0	0	0	0/J1	0	0	0	0
HALIOTIS CRACHERODII	0	0	0	0	0	0	0	0	0	0	0	0	1/J1	0	0	0
HALIOTIS FULGENS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HALIOTIS RUFESCENS	3/J1	J1	2/J1	1	1	0	0	0	0/J1	1	0	0/J1	0	0	0	0
HALIOTIS SORENSENI	0	0	0	0	0	S	0	0	0	0	0	0	0	0	0	0
HALIOTIS WALALLENSIS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HALIOTIS ASSIMILIS	0	0	0	S	0	0	0	0	0	1	0	0	0	0	0	0
HOMALOPOMA SP.		X								X		X				
KELLETIA KELLETII	3	1	0	1	2	2	2	1	0	3/J2	3	2/J1	1/J1		0	0
MAXWELLIA GEMMA							3						X			
MEGATHURA CRENULATA	1		1	2	2	0	2	1	2	1/J1	2	2/J1	X	2	1	1/J1
MITRA IDAE					3		2	X		X		X				
NORRISIA NORRISI	X		2	X	2	X			1	2	1		X	0	0	3
POLINICES SP.							E			E						
SERPULORBIS SQUAMIGERUS		1		X	2	2	X	2	2	1	2	X	X	0	1	1
TEGULA SP.								2			X					
TEGULA AUREOTINCTA													S		X	2

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TEGULA EISENI							2		2			3	X		3	3
TEGULA REGINA	0		0	0		1	2	1	1	2	2/J2	1	1		3	3/J0
TRIVIA SP.				X												
TRIVIA CALIFORNIANA												X				
TRIVIA SOLANDRI												X				
VOLVARINA TAENIOLATA							1					X	X			
APLYSIA CALIFORNICA	0	1	1	1	0	2	1	0	2	1	2	2		2	2	3
APLYSIA VACCARIA												1				X
BERTHELLA CALIFORNICA											X					
BULLA SP.														S		
NAVANAX INERMIS		X	X		X		E		2	3	X	3/E	X			
RICTAXIS SP.										S						
TYLODINA FUNGINA													4			
ACANTHODORIS SP.												3				
ANISODORIS NOBILIS			X	X		X			X							
CADLINA SP.			X													
CADLINA LUTEOMARGINATA													X			
DENDRODORIS N.SP.		3			X											
DIAULULA SANDIEGENSIS						X				X			X			
DORIOPSILLA ALBOPUNCTATA													X			
FLABELLINOPSIS IODINEA (=Coryphella iodinea)				X		X	2	X	2			2			1	
HERMISSENDA CRASSICORNIS	X	2			X	X				X		X				
LAILA COCKERELLI											X		X			
MELIBE LEONINA	4															
MEXICHROMIS PORTERAE									X	X	X		X			
PHIDIANA PUGNAX					X											
TRITONIA FESTIVA							3									
POLYPLACOPHORA	3						1		X							
CRYPTOCHITON STELLERI	2															
TONICELLA LINEATA	X	2	X	X	X											
AMERICARDIA BIANGULATA								S		X						
CHAMA ARCANA			X			X	S	2	2	X	X	X	X		X	

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FLORIMETIS OBESA								S								
GARI CALIFORNICA					S		2S	S	S			X				
CRASSEDOMA GIGANTEUM (=Hinnites giganteus)	1	1	2/J2	2	1	2	1	2/J2	2/J2	1/J2	1	3/J2	3	2	1	1
LIMA HEMPHILLI					S		2	3	2	X		X	X			
PANOPEA GENEROSA (=PANOPEA ABRUPTA)							X									
PHOLAD	X	X	X	X	X	X		X	2	X	X		X			
PITAR NEWCOMBIANUS								S								
PODODESMUS CEPIO		2	2	3	X	2	3	X	X	X	X	2	X		X	X
SAXIDOMUS NUTTALLI								S								
SEMELE SP.					X		S2									
SEMELE DECISA								X								
TAGELUS SP.								S								
VENTRICOLARIA FORDII					X	X	SX	2		X	X		X		S	
OCTOPUS BIMACULATUS													X			
OCTOPUS BIMACULATUS/BIMACULOIDES			3	2		1	3	4	3	3	3	2	2	X	3	3
OCTOPUS RUBESCENS										X		2				
AETEA SP.							X						X			
ANTROPORA TINCTA							3		X	X			X			
BUGULA SP.		1	X	X	1			2	X		X	X			X	
BUGULA CALIFORNICA	2		X				2			1			X			
BUGULA NERITINA							2						X			
COSTAZIA ROBERTSONIAE	X		X	X	4		4	1		X			X		1	
CRISIA SP.							X									
DIAPEROECIA CALIFORNICA	1	1	2	1	2	3	2	2	1	1	2	1	2	1	2	1
HETEROPORA MAGNA	2			X												
HIPPODIPLOSIA INSCULPTA	X	2		X	2	3	1			X	X				1	
LICHENOPORA NOVAE-ZELANDIAE						2			1					X	X	
MEMBRANIPORA SP.	X	4	2	3	2	3		X	2	2	X	2	X	X	1	1
MEMBRANIPORA MEMBRANACEA							4									
PHIDOLOPORA SP.							1									

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
PHIDOLOPORA PACIFICA		X	2	2		2				X		X	X			
THALAMOPORELLA CALIFORNICA	2	2	3	2			4	2	3	3	2	3	4		2	
PHORONIS SP.							2	2		X						
PHORONIS VANCOUVERENSIS													X			
ASTROMETIS SERTULIFERA											X			1		
DERMASTERIAS IMBRICATA	3		2	2			1			2/J1						
HENRICIA SP.			X	X	3	3		2	X	2						
HENRICIA LEVIUSCULA							2									
HENRICIA N.SP.	X															
LINCKIA COLUMBIAE	0	0	0	0				1	2		2	X	X	1		
MEDIASTER AEQUALIS						2	2									
ORTHASTERIAS KOEHLERI	1	1			X		1			1						1
ASTERINA MINIATA (=Patiria miniata)	3	4	3	4	4	3	4	2	2	3	3	2	X	3	2	3
PISASTER BREVISPINUS										1						
PISASTER GIGANTEUS	2	2	3	3	3	3	2	2	2	2	2	2	X	2	2	3
PISASTER OCHRACEUS														0	1	0
PYCNOPODIA HELIANTHOIDES	1	4	3	3	4/J3	3	3	1	1	3		0		1	0	
diseased seastars	0		1		0	0		2	1	1	1	0		0	0	0
ARBACIA INCISA														0		
CENTROSTEPHANUS CORONATUS	0	0	0	0	0			2	2	1	2	2	X	2	2	2
LYTECHINUS ANAMESUS		0	0	0	0	S		3	1	2	1	0	0	1	1	1
LYTECHINUS ANAMESUS JUVENILES		0	0	0	0	0		0	0	2	0	0	0			0
STRONGYLOCENTROTUS FRANCISCANUS	3	4	3	3	3	2	2	3	3	2	3	3	3	3	3	4
S. FRANCISCANUS JUV.	1	1	2	2	1	1		1	1	1	1	3	2	1	1	1
STRONGYLOCENTROTUS PURPURATUS	1	1	2	2	2	1	1	3	4	2	3	2	2	2	4	4
S. PURPURATUS JUV.	1	1	2	2	1	1		1	2	2	1	3	1	2	3	1
diseased urchins	0	0	0		0	0		2	2	1	0	1		0	0	3
OPHIACTIS SIMPLEX							2						X		X	
OPHIODERMA PANAMENSE		X			X	X		X	X		X	X	X	X	X	

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
OPHIOPLOCUS ESMARKI							3									
OPHIOPSILLA CALIFORNICA					X	X	2	X	3		X	X	X			
OPHIOPTERIS PAPILLOSA	X		X	X	X	X	2	X	X		X	2	X		X	
OPHIOTHRIX SPICULATA					1	1	1	1		2	4	1		4	1	
CUCUMARIA SP.	2	2	3	4	3	X	2	X	2	2	X	2	X	X	X	
CUCUMARIA PIPERATA							2									
CUCUMARIA SALMA							3	X					X			
EUPENTACTA QUINQUESEMITA	X					X	2	X		2						
PACHYTHYONE RUBRA							2								1	
PARASTICHOPUS CALIFORNICUS		1		1		1			0	1/J3						
PARASTICHOPUS PARVIMENSIS	1	2	2	2	2	2	3	2	2	1/J3	2	2/J4	X	2	2	3
UROCHORDATA (TUNICATA)			3	3											1	1
APLIDIUM SP.	X	X	X	X		X		X				X			X	X
ARCHIDISTOMA SP.													X			
BOLTENIA VILLOSA	2	2		X	2					1						
CLAVELINA HUNTSMANI	X			X	2	3	1	X					X			
CYSTODYTES LOBATUS	X		X	X	2	2										
DIDEMNUM/TRIDIDEMNUM	X	X	3	2	X	2	2	X	X	X	X	2	2		1	
DIDEMNUM CARNULENTUM			3	2												
DISTAPLIA OCCIDENTALIS	X	X	X	X		X		X	1	X	X		X			
EUHERDMANIA CLAVIFORMIS													X			
METANDROCARPA TAYLORI												X	X			
PEROPHORA ANNECTENS													X			
PYCNOCLAVELLA STANLEYI	3		2	X	2			X		X		2	X		2	2
PYURA HAUSTOR					X		X			X						
STYELA MONTEREYENSIS	2	1	3	2	2	0	0	0	0	0	0	0	0	0	0	0
TRIDIDEMNUM OPACUM			3	2												
BRIGHT ORANGE ENCRUSTING TUNICATE					X	X										
SALPS					2											
CEPHALOSCYLLIUM VENTRIOSUM			X				1	1		1			1			

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
MYLIOBATIS CALIFORNICA							1									
SQUATINA CALIFORNICA														2		
GYMNOTHORAX MORDAX							1	2	1		1	1	1	1	1	
GOBIESOX SP.		3							X							
SARDINOPS SAGAX										X						
ATHERINOPS AFFINIS	X		3			3										1
AULORHYNCHUS FLAVIDUS	4	4				1								X		
SYNGNATHUS SP.			2													
RATHBUNELLA / RONQUILUS			X	X												
RATHBUNELLA HYPOPLECTA					X	X	2									
TRACHURUS SYMMETRICUS	X															
ALLOCLINUS HOLDERI	0		0	X	1	0	2	2	2/J3	0/J1	2	3/J3	2/J2	2	2	
GIBBONSIA SP.		3													X	
GIBBONSIA ELEGANS	X		X			X										
HETEROSTICHUS ROSTRATUS							1					X	2			
H. ROSTRATUS (JUVENILES)												4				
NEOCLINUS STEPHANSAE								2	2						X	
ARTEDIUS CORALLINUS	4	2	3		2	X		0		1				2	2	2
ARTEDIUS CREASERI							2									
ORTHONOPIAS TRIACIS	4	3	2		X	X	2	0					X		1	
SCORPAENICHTHYS MARMORATUS		2	X	X	X	1	1	1	1				1		1J	X
BRACHYISTIUS FRENATUS	2	2	3/J2	2	0	2		0	3	0		2	2	0	0	0
CYMATOGASTER AGGREGATA														0	0	0
RHACOCHILUS VACCA	1/J1		2	2	1	1	2	2	2	1	2	2	2	0	0	1
EMBIOTOCA JACKSONI	2/J1	1	3/J1	2/J2	1	2	2	3	3	1	2	3	2	0	1	2
EMBIOTOCA LATERALIS	3/J2	3	3/J1	2/J2	1	2/J1		0	0	0	0	0	1	0	0	0
HYPSURUS CARYI	2	2	2	0		X										
PHANERODON FURCATUS											X					
RHACOCHILUS TOXOTES			1	2		1	2	2	1			X				
CORYPHOPTERUS NICHOLSI		2	2	2	1	2	4	4	3	3	3	3	1	0	3	1
LYTHRYPNUS DALLI	0	0	0	0	0	0	1	3	0	0	1		2/J2		0	0
LYTHRYPNUS ZEBRA							1		1				1			

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
OPHIODON ELONGATUS	1	2	1	2	X	2	1	0			1					
OXYLEBIUS PICTUS	2/J1	2	2	2	3	3	3	2	2	3/J1	3	2	2	2	2	1
GIRELLA NIGRICANS						1	0	0	2	0	3	2	3	0	2	1
MEDIALUNA CALIFORNIENSIS			1	1		0	1	1	1	0	2	X	2	X	1	1
MEDIALUNA (JUVENILES)										1						
HALICHOERES SEMICINCTUS	0		0	0		0	1	2	1	1		2				
H. SEMICINCTUS (FEMALES)	0		0	0		0		2	1	1	1	2	2	0	0	1
H. SEMICINCTUS (MALES)	0		0	0		0		2	1	1	2	2	1	0	0	1
H. SEMICINCTUS (JUVENILES)	0		0	0		0		0	1	0	0	2	2	0	0	0
OXYJULIS CALIFORNICA	3	2	2	2	1	3	1	2	2	1	2	2	3	1	1	2
O. CALIFORNICA (JUVENILES)	0					0		0	2	0	1	2	1	0	0	1
SEMICOSSYPHUS PULCHER	2					3	1	1		2						
S. PULCHER (FEMALES)	2	2	2	2	2	3	1	1	1	2	3	2	3	2	2	1
S. PULCHER (MALES)	2	1	0	1	4	2	1	0	0	0	0	1	2	1	1	0
S. PULCHER (JUVENILES)	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0
CAULOLATILUS PRINCEPS			0	2	1		1	2			1					
CHROMIS PUNCTIPINNIS	0	2	2	2	0	2	3	2	2	1	3	3	2	2	2	2
CHROMIS PUNCTIPINNIS (JUVENILES)	0	0	2	0	0	0		0	2	0	3	2		0	0	0
HYPSYPOPS RUBICUNDUS	0		0	0		1	2	2	2	0	2	2	3	1	4	3
HYPSOPOPS RUBICUNDUS (JUVENILES)	0		0	0	0	0	0	0	1		0	1	1	0	1	0
CHEILOTREMA SATURNUM								1								
SARDA CHILIENSIS							3									
SCORPAENA GUTTATA			0	0			1	2	1	1	2		2			
SEBASTES AURICULATUS							1	1								
SEBASTES ATROVIRENS	2	2	4/J3	4/J3	3	3	1	1	1	2	2	2	2/J2		1	1
S. ATROVIRENS (JUVENILES)			3	3		1			2	1		1			0	0
SEBASTES CARNATUS			1	1		1	2	0	1		1					
SEBASTES CAURINUS	2	1	1	1	1		1	0		1						

Kelp Forest Monitoring Stations.
Sites #1-16

LOCATION:	SMWL	SMHR	SRJLNO	SRJLSO	SRRR	SCGI	SCFH	SCPB	SCSA	SCYB	ANAR	ANCC	ANLC	SBSESL	SBAP	SBCAT
SPECIES: **SITE#:**	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
S. CARNATUS/CAURINUS (JUVENILES)			2	2		1									1	
SEBASTES CHRYSOMELAS	3	3	3	3	1	2	2	0	2	1	2		X			
SEBASTES DALLI												0/J1				
SEBASTES MELANOPS			0	0	2											
SEBASTES MINIATUS	1	1														
S. MINIATUS (JUVENILES)										2						
SEBASTES MYSTINUS	3	2	2	2	1	2	1	0	0	0	0		0	0	0	0
S. MYSTINUS (JUVENILES)	0		0	0		1	1	0	0	0	0		0	0	0	0
SEBASTES PAUCISPINIS		0	0	0		1										
S. PAUCISPINIS (JUVENILES)			0	0												
SEBASTES RASTRELLIGER															1	1
SEBASTES SERRANOIDES	1	2	2	2	1	2	1	0	1	0				0	0	0
S. SERRAN./S. FLAVIDUS (JUVENILES)		0	1	0	0	0		0	0	0		1				
SEBASTES SERRICEPS	1	0	1	1	0	1	2	2	1	1	2	2	2		1	1
S. SERRICEPS (JUVENILES)			1	0		1		0	0	1	1	1	1			0
PARALABRAX CLATHRATUS	0	0	2	2	1	1	2	3	3	3	1	3	2	1	1	1
P. CLATHRATUS (JUVENILES)	0		0	0		0	1	0	1	0	0	3	2	0		0
SPHYRAENA ARGENTEA			0	0												
CITHARICHTHYS (JUVENILES)	X															
PLEURONICHTHYS COENOSUS	X							2								

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
CHLOROPHYTA	1												1				
BRYOPSIS SP.					1		2										
CLADOPHORA GRAMINEA				1													
CODIUM CUNEATUM							1										
CODIUM FRAGILE	X					1	1		2	2		X		2			
CODIUM HUBBSII/SETCHELLII					2		3			X				2		X	
DERBESIA MARINA					1		3						1				
FILAMENTOUS GREEN ALGAE					2	2			1	1	X						
ULVA SP.													1				
ULVA CALIFORNICA																	X
PHAEOPHYTA													2		1		
COLPOMENIA SP.					1	1			2		1		1	2			
CYSTOSEIRA SP.	2		2		1	0		0	X	0	0	0	2	2	0	0	3
CYSTOSEIRA OSMUNDACEA				3													
DESMARESTIA SP.	3		1		0	0		0	X		0	0	0	3	0	0	2
DICTYOTA/PACHYDICTYON			1		1	0	1		2	2	0	1	2	3	1		
EISENIA ARBOREA	2	0	1	0	1	0	0	0	1	2	0	0	1	3/J2	0	1/J1	4
LAMINARIA FARLOWII	0	1	0/J1	2	0	0	0	0	0	0	0	0	1/J1	0	0	0	0
MACROCYSTIS PYRIFERA	4/J4	3/J3	3/J3	4	0	0	0	0/J1	0	1	0	0	1/J2	3/J3	0	0	3/J2
PTERYGOPHORA CALIFORNICA	3/J3	3	2/J2	4	0	0	0	0	0	0	0	0	0	0	0	0	3/J2
SARGASSUM MUTICUM										3							
RHODOPHYTA	4	4	4		1	1		2	1	1			1		1		4
BOTRYOCLADIA SP.	X											X					X
BOTRYOCLADIA PSEUDODICHOTOMA		X	X	2													
CALLIARTHRON CHEILOSPORIOIDES				2													
CALLIARTHRON TUBERCULOSUM				2													

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
CALLOPHYLLIS SP.	4	3	3		1					2							4
CALLOPHYLLIS FLABELLULATA				3													
CALLOPHYLLIS VIOLACEA		X	X	2													
CERAMIACEAE		X	X	X													
CERAMIUM SP.										2							
CORALLINES - ENCRUSTING	2	2	2	2	2	3	4	2	3	3	3	3	3	2	1	4	2
CORALLINES - ERECT	2	2	2	2	3	1	1	1	2	1	1	1	1	3	3	1	3
CRYPTOPLEURA SP.				X													
FARLOWIA MOLLIS				2													
FAUCHEA SP.	X																
FAUCHEA LACINIATA				X			2										
FAUCHEA N.SP.				X			1										
FRYEELLA GARDNERI				X													
GELIDIUM SP.								0		1				2	0	1	
GELIDIUM ROBUSTUM					2	2											
GIGARTINA SP.								0							0		
GIGARTINA CORYMBIFERA	2	4	4	2	0	0			0	0			1	2			4
LAURENCIA SP.			2														
LAURENCIA PACIFICA					1	0	3	3	1	2	1		2	X	1	X	
LITHOTHAMNION/LITHOPHYLUM				X													
MICROCLADIA COULTERI	X	3	3	2													3
NIENBURGIA ANDERSONIANA				2													
PHYCODRYS SP.				1													
PLOCAMIUM SP.										X							
PLOCAMIUM VIOLACEUM				X										X			
POLYSIPHONIA SP.	X	X	1														
POLYNEURA LATISSIMA				1													
PRIONITIS LANCEOLATA		X	X			X				X							
PTEROSIPHONIA SP.		X	X	X						X							

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
RHODOPTILUM PLUMOSUM				X													
RHODYMENIA SP.	X	3	2			1		1		1				X		X	X
RHODYMENIA CALIFORNICA				X			2										
RHODYMENIA CALLOPHYLLIDOIDES				X													
RHODYMENIA PACIFICA		2	2	2													
SCHIZYMENIA SP.	2	X	X														
SCIADOPHYCUS STELLATUS							1										
FILAMENTOUS RED ALGAE		X	X	X	2	2	2	X	3		3	X	X			X	X
HYPSYPOPS TURF NEST	0	0	0	0	1	2	X	3	2	2	2	1		4	0	1	6
DIATOM FILM		0	2		1	3			3	4	2	1		2	1	3	
HOMOTREMA RUBRUM				X			X										
PORIFERA	3					2		2						3		2	4
LEUCILLA NUTTINGI		X	X		X												X
YELLOW SPONGE W/TALL PORES	X	X	X		0	0	X		X		X						X
ACARNUS SP.				3													X
ACARNUS ERITHACUS					2	2			X	X							
CLIONA SP.	X	X	X										X				3
HALICHONDRIA							X										
HALICLONA SP.	X	X	X						X				X	X			3
HYMENAMPHIASTRA CYANOCRYPTA	X	2	3	1													X
OPHALITASPONGIA PENNATA				2			X										
PENARES CORTIUS							1						X				
POLYMASTIA PACHYMASTIA			X	4													
RED SPONGES - ENCRUSTING	X	X	X	3	2	1	2	X	X	X		X	X	X		X	3
SPHECIOSPONGIA CONFOEDERATA	2	X	2	2									1				2
SUBERITES SP.							X										

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
TETHYA AURANTIA	4	3	3	3		2	2	1				2	2	1	3	1	4
TETILLA SP.				3			1										
TETILLA ARB	3	X	1														X
VERONGIA AUREA							2										
XESTOSPONGIA TRINDINAEA	2	X		2													X
HYDROZOA	3														2		
ABIETINARIA SP.				2													
AGLAOPHENIA SP.				3	3	3	3		X	2	2				1		
AGLAOPHENIA LATIROSTRIS	2	3	3														X
ALLOPORA CALIFORNICA (STYLASTER CALIFORNICUS)		0	0														
ANTENELLA AVALONIA							3										
EUDENDRIUM SP.													X				
HYDRACTINIA SP.										3							
OBELIA SP.	X	X	4		X	X		X	X		X		X	X		X	X
PHYSOPHORA HYDROSTATICA																	
PLUMULARIA SP.				2			2						2				
SERTULARELLA SP./SERTULARIA SP.	X	2	3	2										X		X	
CLAVULARIA SP.		X		3	2	2	2	4		2	1		2	2		X	
PACHYCERIANTHUS FIMBRIATUS				2	2	1	2						2		X		
HYDRACTINIA MILLERI	X		X			2	2	2					X		X		
EUGORGIA RUBENS				0		0					0	0	1				
LOPHOGORGIA CHILENSIS	0	1	0	0	3	3	4	3	2	3	2	1	2/J2	1	2	1	0
MURICEA CALIFORNICA	0	0	0	0	2	1	2	1	1	2	3	1	3/J2	2	2	1	0
MURICEA FRUTICOSA	0	0	0	0	1	0	1	0	0	1	2	1	2	1	1	1	0
CORYNACTIS CALIFORNICA	2	2	2	2	2	3	2	2	3	2	4	1	2	2	2	3	2
ANTHOPLEURA ARTEMISIA				X			1										
ANTHOPLEURA SOLA		X	2	2	1		1		X				X	X	X		2
ANTHOPLEURA									X								

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
XANTHOGRAMMICA																	
CACTOSOMA/SAGARTIA														X			
EPIACTIS PROLIFERA			3	1		3										1	2
HALCAMPA DECEMTENTACULATA		X	X	1									X				
METRIDIUM EXILIS							2										
TEALIA CORIACEA	X	X	X	2	0								X		3	1	
TEALIA LOFOTENSIS	2	3	2	2				0						0	0	0	4
ZAOLUTUS ACTIUS				2													
ASTRANGIA LAJOLLENSIS (=A. HAIMEI)	2	2	2		1	2	3	2	2	1	1	2	2	2	2	1	1
BALANOPHYLLIA ELEGANS	2	3	3	2	2	3	2	2	2	1	1	1	1	1	1	2	2
COENOCYATHUS BOWERSI									1	2							
PARACYATHUS STEARNSI (=P. STEARNSII)		X	X		1	X	2	X	X		X	X	X		X		
NEMERTEA			X	1					X		X					1	
TUBULANUS SEXLINEATUS	X															X	
ARCTONOE PULCHRA				X			X										
CHAETOPTERUS VARIOPEDATUS	X						2	2					3				
DIOPATRA ORNATA	2	4	4	3	2	1		1	2	2	0		2	2	1	1	2
DODECACERIA FEWKESI	X				1	0	1		X	2	1		2	X	2		2
EUDISTYLIA SP.	2	2	2					2		1				1		X	2
EUDISTYLIA POLYMORPHA				1	2	2	3						X				
HALOSYDNA BREVISETOSA									X								
FLABELLIGERA COMMENSALIS							X										
MYXICOLA INFUNDIBULUM	X	X	2		X		3			2			2				
OPHIODROMUS PUGETTENSIS				2			X										
PHRAGMATOPOMA CALIFORNICA	2	2	2	2	1		0						3	2		0	2
PISTA ELONGATA	X	X	X	2			2						2		2		2
SALMACINA TRIBRANCHIATA	X	X	X		X	X	3	X	X	0							

Kelp Forest Monitoring Stations.
Sites #21-37

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SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
SPIROBRANCHUS SPINOSUS			X	1	3	3	4	3	2	1	2	2	2	2	X	2	
SPIRORBID				2	2												
TEREBELLID							2	X									
POLYCHAETE "BALLOONS"								X									
BALANUS SP.	X	X			3	X		X		X	X		X	X		X	X
MEMBRANOBALANUS ORCUTTI				X													
MYSIDS		3															3
MYSIDS (brown canopy dwellers)	3	3	3														
MYSIDS (clear bottom dwellers)	3	3	3	3													
CIROLANA SP.			X														
IDOTEA SP.				3						2							
IDOTEA RESECATA	3	3	3														X
AMPHIPOD TUBE MASSES	3	2	2	X										2	2		2
COPEPODS			X													X	
COPEPODS ON MEGATHURA CRENULATA								4									
COPEPODS ON FISH	4	X	X	X	X	X							2				X
BETAEUS MACGINITIEAE	3	3	2	X	2		X	1	2	2	0		1	X			X
HEPTACARPUS SP.		X							X		X						
LYSMATA CALIFORNICA							1	3									
PANDALUS DANAE	2	3	3				2	2	2				X				
SPIRONTOCARIS PRIONATA			X														
PANULIRUS INTERRUPTUS	0	0	0		M	2	2	1	2		0	2	0	2	0	2	0
HAPALOGASTER CAVICAUDA		2	2														2
PAGURISTES SP.	X	X	X	X			X	X				X					X
PAGURUS SP.	X	X	X	X	X	X	X	X	X	X	X	X			2		X
PETROLISTHES SP.		X															X
CANCER ANTENNARIUS	X	X	2	2													3
CANCER PRODUCTUS																	2

Kelp Forest Monitoring Stations.
Sites #21-37

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SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
HERBSTIA PARVIFRONS				X	2		1	2									
LOXORHYNCHUS GRANDIS							1						1				
MIMULUS FOLIATUS					X												
PARAXANTHIAS TAYLORI							X							X			
PELIA TUMIDA								X									
PODOCHELA HEMPHILLI				X			X										
PUGETTIA SP.										X							
PUGETTIA PRODUCTA	X	X	2														2
PUGETTIA RICHII					X												2
PYROMAIA TUBERCULATA					1								1				
ACMAEA MITRA	X				X	X							X				2
ALIA CARINATA																	
AMPHISSA VERSICOLOR	X	X	X		X	X											3
LITHOPOMA GIBBEROSUM (=Astraea gibberosa)	1	0	1		0	0		0	0	0	0	0	0	0	0	1	2/J1
LITHOPOMA UNDOSUM (=Astraea undosa)	S	1	1	2	1	2/J1	2	2/J2	3/J2	4/J2	3	1	2/J1	2	1	3/J2	0
BURSA CALIFORNICA (=Crossata californica)								X								1	
CALLIOSTOMA SP.																	3
CALLIOSTOMA ANNULATUM		3	3	1		0			X	X							
CALLIOSTOMA SUPRAGRANOSUM				1													
CERATOSTOMA FOLIATUM	3	X	2							X							X
CERATOSTOMA NUTTALLI							3E	2					X	2			
CONUS CALIFORNICUS	X						X	2		X	X	X	3	X	2	X	X
CRASSISPIRA SEMIINFLATA																	
CREPIDULA SP.	X	X				X		3	X				X	X		X	
CREPIPATELLA LINGULATA							3										

Kelp Forest Monitoring Stations.
Sites #21-37

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CYPRAEA SPADICEA	2	3	2	X	2	2	2	2	2	2	2	2	2	2	2	2	2
DIODORA SP.																	X
DIODORA ARNOLDI							1										
EPITONIUM SP.	X				X						X						
FUSINUS LUTEOPICTUS							2										
HALIOTIS CORRUGATA	0	0	0		0	0		0	0/S	0/S	0	0	S	0	S	0	0
HALIOTIS CRACHERODII	0	0	0		0	0	S	0	0	0	0	0	0	0	0	0	0
HALIOTIS FULGENS	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0
HALIOTIS RUFESCENS	1	1/S1	2/J0	3	0	0		0	0	0	0	0	0	0	0	0	4/J2
HALIOTIS SORENSENI	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0
HALIOTIS WALALLENSIS	S	0	0		0	0		0	0	0	0	0	0	0	0	0	0
HALIOTIS ASSIMILIS	0	0	0		0	0		0	0	0	0	0	0	0	0	0	0
KELLETIA KELLETII	2	0	0	1	0	1	1	3	2	3/J2	2	1	2		1	1	2
MAXWELLIA GEMMA							2						X				
MEGATHURA CRENULATA	2	2	1	1	4	3/J1	3	4/J3	3/J2	3/J3	3/J2		3/J1	1	1	2	2
MITRA IDAE	X	X		2	X		2			0		0					
NORRISIA NORRISI		X	X	X			S				X		1	3		1	
OCENEBRA SP.										X							
OLIVELLA BIPLICATA				S													
PETALOCONCHUS SP.									S								
POLINICES SP.						X											
SERPULORBIS SQUAMIGERUS	2	2	2	2	2	2	2	1	1	2	1	1	1	2			
TEGULA EISENI							3	3	1	2		1	2	2		X	
TEGULA REGINA	0	0	0	0	3	3	2		2	2	2	1	2	3	1	X	0
TRIVIA SP.	X		X														
TRIVIA CALIFORNIANA							S										
VOLVARINA TAENIOLATA													X				
APLYSIA CALIFORNICA	0	2	2		2/J1	3/J0	3	0	3	3	3	0	2	2	3	2	0
APLYSIA VACCARIA										X							
BULLA SP.															S		
NAVANAX INERMIS						1	2		3	4/J3		1	3		X		

Kelp Forest Monitoring Stations.
Sites #21-37

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HAMINOEA VIRESCENS EGGS															X		
ANISODORIS NOBILIS	X	X	X					2			X						
ARCHIDORIS MONTEREYENSIS				3			X										
CHROMODORIS PORTERAE							X										
CORYPHELLA TRILINEATA							XE										
DIAULULA SANDIEGENSIS							X		X		X						
DIRONA PICTA															X		
DORIOPSILLA ALBOPUNCTATA							X						X				
FLABELLINOPSIS IODINEA (=Coryphella iodinea)					3	2	XE	3		2		X	2	X	X		
HERMISSENDA CRASSICORNIS	X	2	X	3	0				X		2		1				
HOPKINSIA ROSACEA	X																
LAILA COCKERELLI							X										
MEXICHROMIS PORTERAE								X	X	2	X	X	X		X	X	
POLYCERA ATRA							X										
THORDISA BIMACULATA							X										
TRIOPHA CATALINAE		X	X		2		X						X				
TRITONIA FESTIVA															X		
CRYPTOCHITON STELLERI																	3
PLACIPHORELLA VELATA				1													
TONICELLA LINEATA	X																4
CHAMA ARCANA		X	X					2					X				
GARI CALIFORNICA					S		S										
CRASSEDOMA GIGANTEUM (=Hinnites giganteus)	2/J3	1/J2	1/J1	1	3	3/J2	4	2/J2	3/J1	3/J2	2/J2	2	2/J2	2	1	1	1/J1
LIMA HEMPHILLI					S	S	S	S	S					S			
MYTILUS GALLOPROVENCIALIS							1										
PHOLAD	X	X		X	X	X		X	X	2			X	X			X
PODODESMUS CEPIO	2	X	X	X			X							X	X		

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PTERIA STERNA											1		1				
VENTRICOLARIA FORDII							3	S									
OCTOPUS SP.						3				3							
OCTOPUS BIMACULATUS				1		DENS	DENS										
OCTOPUS BIMACULATUS/BIMACULOIDES	X							3	2		2	2	3	X		2	
OCTOPUS RUBESCENS									2		1						X
ECTOPROCTA	3																
AETEA SP.							X										
ANTROPORA TINCTA							3	3									
BUGULA SP.	1	X	1					3					2	2	X	X	X
BUGULA CALIFORNICA					3	0	2			3							
BUGULA NERITINA							1										
COSTAZIA ROBERTSONIAE	3	2	2	2	1		1	X		1		X					X
CRISIA SP.							1										
DIAPEROECIA CALIFORNICA	1	2	2	1	2		2	2		2		1	2	1		1	1
HETEROPORA MAGNA																	X
HIPPODIPLOSIA INSCULPTA		X	2	1													
LICHENOPORA NOVAE-ZELANDIAE	X	X			X		1	X						X			
MEMBRANIPORA SP.	3									X				2	X	2	2
MEMBRANIPORA MEMBRANACEA		3	3	4				2					X				
PHIDOLOPORA SP.				1			1										
PHIDOLOPORA PACIFICA	2	X	X											X		X	
SCHIZOPORELLA SP.				X													
THALAMOPORELLA CALIFORNICA		X	1			0	4	1	2	1		1	3	2			
PHORONIS SP.					1		1										

Kelp Forest Monitoring Stations.
Sites #21-37

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ASTROPECTEN ARMATUS															X		
DERMASTERIAS IMBRICATA				2						0							X
HENRICIA SP.	2	3	3	2					X		2		X	X		X	
HENRICIA LEVIUSCULA				1													2
LEPTASTERIAS SP.		2	2														
LINCKIA COLUMBIAE					2	0	2	4		3				2			0
ORTHASTERIAS KOEHLERI													1	1			2
ASTERINA MINIATA (=Patiria miniata)	3	2	2	2	3	2	3	3	3	3	3	1	2/2J	1	3	2	3
PISASTER BREVISPINUS													2				
PISASTER GIGANTEUS	2	3	2	2	2	2	2	2	2/J1	2	1	2	2	2	2	2	3
PISASTER OCHRACEUS						0	1		0	0	0		1				
PYCNOPODIA HELIANTHOIDES	4	2	2	2	1	1	1	1	1	1	0		0	0	1	1	2
diseased seastars	0	0	0			4		0			1		0	1		0	0
CENTROSTEPHANUS CORONATUS	0	0	0	0			2						3	2	2	0	
DENDRASTER EXCENTRICUS																	
LOVENIA CORDIFORMIS																	
LYTECHINUS ANAMESUS	0	0	0		1	2	1	2	2	1	3	0	1	1	1	0	
LYTECHINUS ANAMESUS JUVENILES	0	0	0		0	1		0	1	0	1	0	0	0	2	0	0
STRONGYLOCENTROTUS FRANCISCANUS	3	3	3	2	2	2	4	3	3	3	2	2	4	3	3	3	3
S. FRANCISCANUS JUV.	2	1	1	1	1	1		0	2	2	1	1	3	2	1	1	1
STRONGYLOCENTROTUS PURPURATUS	2	2	1	2	3	3	4	3	3	2	3	2	4	2	3	4	2
S. PURPURATUS JUV.	1	1	1	0	2	1		0	2	3	1	1	2	2	2	3	1
diseased urchins	0	0	0		1	1	1	0		1	0	1	1	0	1	0	0
OPHIACTIS SIMPLEX						2	3				X						
OPHIODERMA PANAMENSE							2	X								X	

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
OPHIOPHOLIS SP.						2											
OPHIOPLOCUS ESMARKI				2			2		X	2		1					
OPHIOPSILLA CALIFORNICA							3	X					2			X	
OPHIOPTERIS PAPILLOSA	X	X					2	X						X			X
OPHIOTHRIX SPICULATA									2	1	3	4	2	0		2	
CUCUMARIA SP.	X	2		3	2	4	2	3					2	2	X	2	2
CUCUMARIA PIPERATA				2	X												
CUCUMARIA SALMA				2			3	X	X								
EUPENTACTA QUINQUESEMITA			X	1	X	1	1	X	X				X				
PACHYTHYONE RUBRA						2											
PARASTICHOPUS CALIFORNICUS	1								X								1
PARASTICHOPUS PARVIMENSIS	2	2	2	2	3/J1	3	2	2/J2	3/J2	3/J3	2	3	2	3	2	2	2
UROCHORDATA (TUNICATA)		2	3											3		2	
APLIDIUM SP.	X	X	X	2									2	3			2
ARCHIDISTOMA PSAMMION		3															
ARCHIDISTOMA RITTERI		2															
BOLTENIA VILLOSA	X		X	1													X
BOTRYLLOIDES DIEGENSIS							X										
CLAVELINA HUNTSMANI		X	X	2	2		1						X	2		1	X
CYSTODYTES LOBATUS	3	2	2		2											X	2
DIDEMNUM SP.				2													
DIDEMNUM/TRIDIDEMNUM	3	X	3		2			1		1			1	2		X	3
DISTAPLIA OCCIDENTALIS	X	X	2	2				2					2	2			2
LARVACEANS										2		3					
METANDROCARPA TAYLORI								X									
UNID. WHITE TUNICATE					X												
POLYCLINUM PLANUM			X	4													
PYCNOCLAVELLA STANLEYI	2	3	3	2	3		3					0	2	2			
PYURA HAUSTOR		X	X														

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
STYELA MONTEREYENSIS	2	2	2	2				0				0	0	0	0	0	1
TRIDIDEMNUM OPACUM				3													
CEPHALOSCYLLIUM VENTRIOSUM							1	E	1				E				
HETERODONTUS FRANCISCI							1										
MYLIOBATIS CALIFORNICA			X			2	1		2	2			2				
SQUATINA CALIFORNICA															1		
GYMNOTHORAX MORDAX						1			2	J/1				2		1	
GOBIESOX SP.																	X
GOBIESOX MAEANDRICUS																	X
SARDINOPS SAGAX								4						0		3	
ATHERINOPS AFFINIS		2	2	2	2	0	2	0	2	0	0	0	2	0		0	
AULORHYNCHUS FLAVIDUS	2	1	2														2
RATHBUNELLA / RONQUILUS						X		X									
HYPSOBLENNIUS SP.						X											
ALLOCLINUS HOLDERI	0	0	0	0	2/J2	2/J1	2	2/J2	3/J2	4/J3	3/J3	4	2	2	1	2	0
GIBBONSIA SP.				2	J1												
GIBBONSIA ELEGANS	X	X	X						X	2/J2			X	X			3
GIBBONSIA MONTEREYENSIS	X																
HETEROSTICHUS ROSTRATUS		0	2														X
H. ROSTRATUS (JUVENILES)		0	0					2	1								
NEOCLINUS SP.											X						
NEOCLINUS BLANCHARDI					X												
NEOCLINUS STEPHANSAE					X	X	2						X				
ARTEDIUS CORALLINUS	1	2	3					X	X		1		X	2		2/J3	2
ARTEDIUS HARRINGTONI								X					X				
ORTHONOPIAS TRIACIS	2	2	2	2	2	1	2	X	X	0	0		1	2		2	2
SCORPAENICHTHYS MARMORATUS	2/J2	2	3	2	0	1			0	0	2						
BRACHYISTIUS FRENATUS	3			3													
RHACOCHILUS VACCA	1	1	1	1	3	3	2	2	2	1	2	0	2	0	1	1	1
EMBIOTOCA JACKSONI	2	2	3	2	3	3	3	2	1	2	1	2	2	2/J1	0	0	2/J1

Kelp Forest Monitoring Stations.
Sites #21-37

LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
EMBIOTOCA LATERALIS	3	2	3	2	0	0	0	0	0	0	0	0	0	0	0	0	3/J1
HYPSURUS CARYI	2	1	2	1													2
PHANERODON FURCATUS							2										
RHACOCHILUS TOXOTES	0	1	1	2	1	3	3	1	0		0	0	0				
CORYPHOPTERUS NICHOLSI	1	1	1	1	2	3	4	4/J3	3	4	4	4	0	2	2	3	1
LYTHRYPNUS DALLI	0	0	0	0	1	2	0	1	2	2	0	2	0	0	0	0	0
LYTHRYPNUS ZEBRA					0	1	1	1	1	2	3	3	0				
OPHIODON ELONGATUS	2	2	3	2	1	0			0	0	0						
OXYLEBIUS PICTUS	3/J1	2	2	2	2	2	3	3/J1	3	2	2/J2	3	3	3	1	3	2
GIRELLA NIGRICANS	0	1	1	0	2	3	2	1	2	2	2	2	3	1	1	4	0
HERMOSILLA AZUREA																	
MEDIALUNA CALIFORNIENSIS				0	3	2	1		2	1	1	3	3	3	2	3	0
MEDIALUNA (JUVENILES)								1									
HALICHOERES SEMICINCTUS	0	0	0	0							2	2		1	1	0	0
H. SEMICINCTUS (FEMALES)	0	0	0	0	3	2	2	1	2	3	1	2	2	1	1	0	0
H. SEMICINCTUS (MALES)	0	0	0	0	3	2	2	0	2	3	2	2	1	1	0	0	0
H. SEMICINCTUS (JUVENILES)					2	0		0	1	2	0	0	0	0	0	0	0
OXYJULIS CALIFORNICA	2	2	2	3	3	2	3	2	3	3	0	2	3	2	2	3	2
O. CALIFORNICA (JUVENILES)					2	2		0	1	4	0			0	0	2	1
SEMICOSSYPHUS PULCHER	2	2	2	2	2	3	2	1	2	3	2	2	2	2	1	2	1
S. PULCHER (FEMALES)	2	3	2	2	2	3	2	1	3	3	2	2	3	2	1	2	1
S. PULCHER (MALES)	2	1	2	2	3	2	1	0	1	2	0	2	2	0	0	1	1
S. PULCHER (JUVENILES)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
CAULOLATILUS PRINCEPS					0	3	2	1	2	2	2	2	1	1	2	2	
CHROMIS PUNCTIPINNIS	0	1	1	3	3	3	2	3	3	3	3	3	3	2	1	3	0
CHROMIS PUNCTIPINNIS (JUVENILES)					2	3		1	3	4	2	3	0	1	0	3	0
HYPSYPOPS RUBICUNDUS	0	0	0	0	3	3	3	3	3	2	2	2	3	3	0	4	0
HYPSOPOPS RUBICUNDUS (JUVENILES)					0	1		0	0	0	0	0		0	0	0	0
SCORPAENA GUTTATA					2	X		1	2	2	2	3	2	0	1	1	
SEBASTES SP. (JUVS.)												0		0	1	0	1

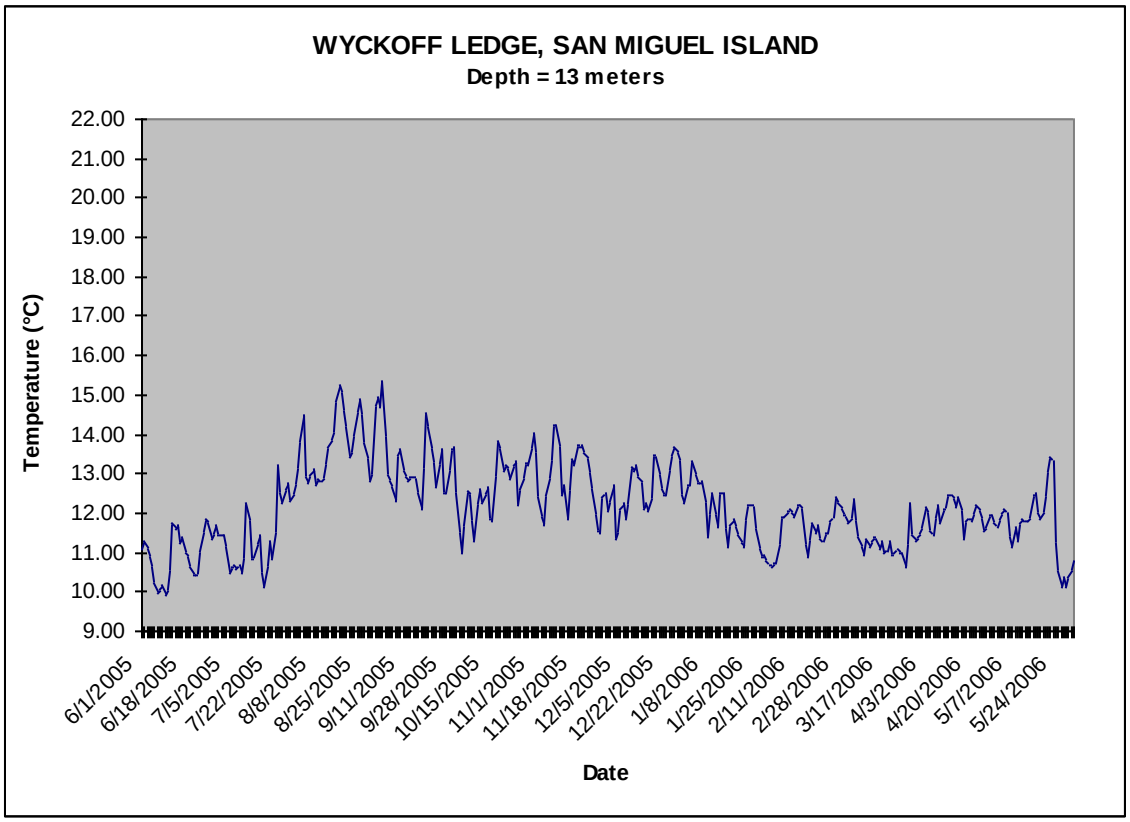
Kelp Forest Monitoring Stations.
Sites #21-37

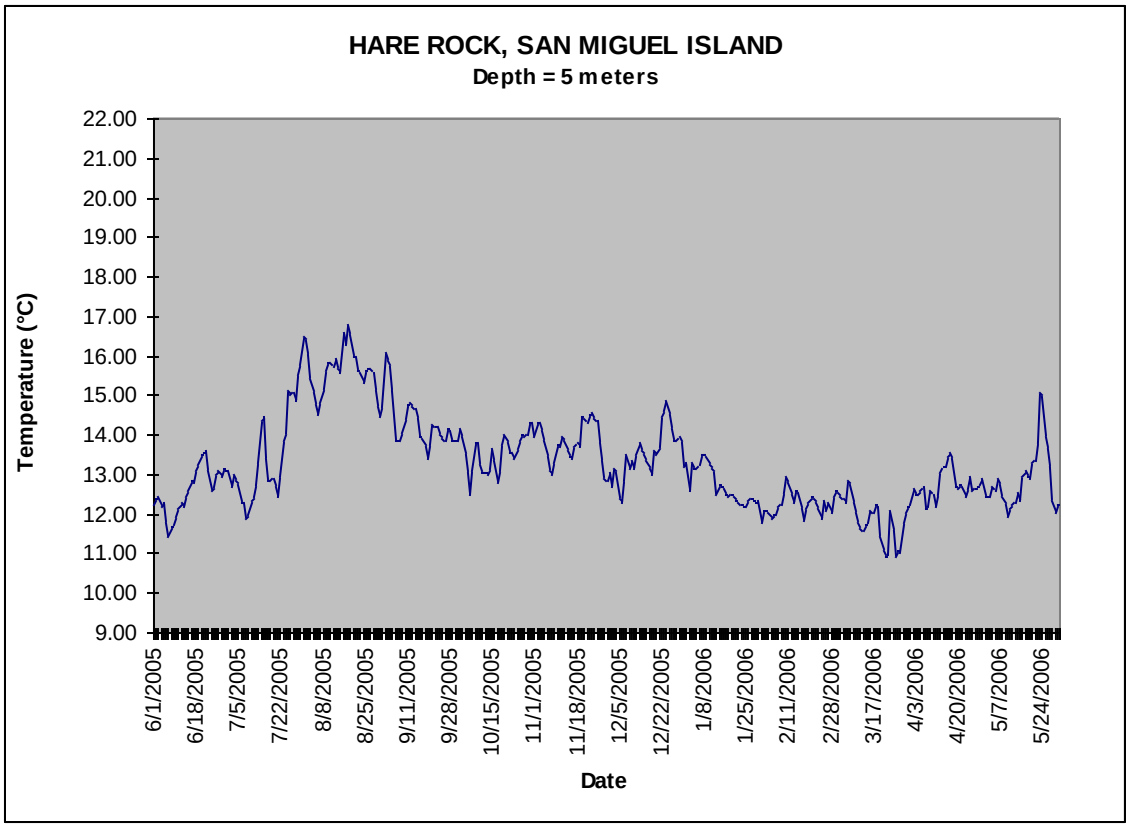
LOCATION:	SRCP	SRTC	SRCSAW	SRSP	SCDPM	SCPP	SCCVP	SCLS	SCPRF	ANKH	ANEFC	ANBSBR	ANLH	SBSER	SBGC	SBWA	SMMM
SPECIES: SITE#:	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**	**36**	**37**	**21**
SEBASTES AURICULATUS								1	0	1							
SEBASTES ATROVIRENS	3	3	3	2	2	X	1	3	0	1	0	1	2	1	0	0	3
S. ATROVIRENS (JUVENILES)	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
SEBASTES CARNATUS	1	2	1	2	2	X	2		0	0	0						
SEBASTES CAURINUS	2	0	0														2
S. CARNATUS/CAURINUS (JUVENILES)	1	1	3						0				1	0		0	
SEBASTES CHRYSOMELAS	2	2/J1	3/J2			2			1	1	2	1					3
SEBASTES MELANOPS	2	3	X		1			1									2
SEBASTES MINIATUS	2																2
S. MINIATUS (JUVENILES)															1		
SEBASTES MYSTINUS	3	2	3	2	0	0	2	2	1	1	0		2	0	0	0	2
S. MYSTINUS (JUVENILES)	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEBASTES PAUCISPINIS	0																
S. PAUCISPINIS (JUVENILES)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SEBASTES RASTRELLIGER	1																
SEBASTES SERRANOIDES	3	2	3	2	2	2	2	0	0	0	0		0	0	0	0	2
S. SERRAN./S. FLAVIDUS (JUVENILES)								0		0	0			0	0		
SEBASTES SERRICEPS	2	1	2	2	2	2	2	3	2	3	2	2	2	2	0	2	1
S. SERRICEPS (JUVENILES)	1	0	2		1	1		2	1	2	1	3	0	1	0	2	0
PARALABRAX CLATHRATUS	0	0	0	1	3	3	2	2	3	3	2	2	3	2	1	2	0
P. CLATHRATUS (JUVENILES)	0	0	0	0	1	1	0	1	2	0	0	0	0	0	0	0	0
CITHARICHTHYS STIGMAEUS									0						X		
XYSTREURYS LIOLEPIS															1		
PLEURONICHTHYS COENOSUS									1				X			X	

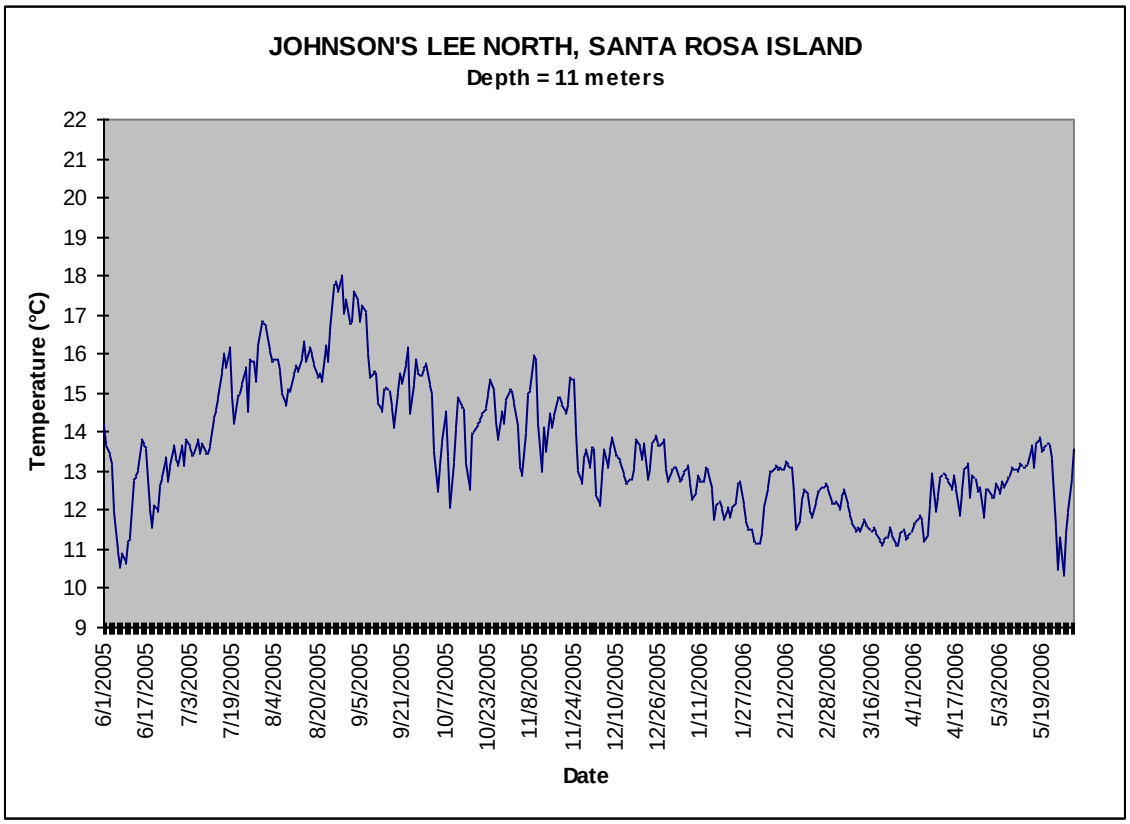
Appendix L. 2006 Temperature data collected at Channel Islands National Park Kelp Forest Monitoring Stations.

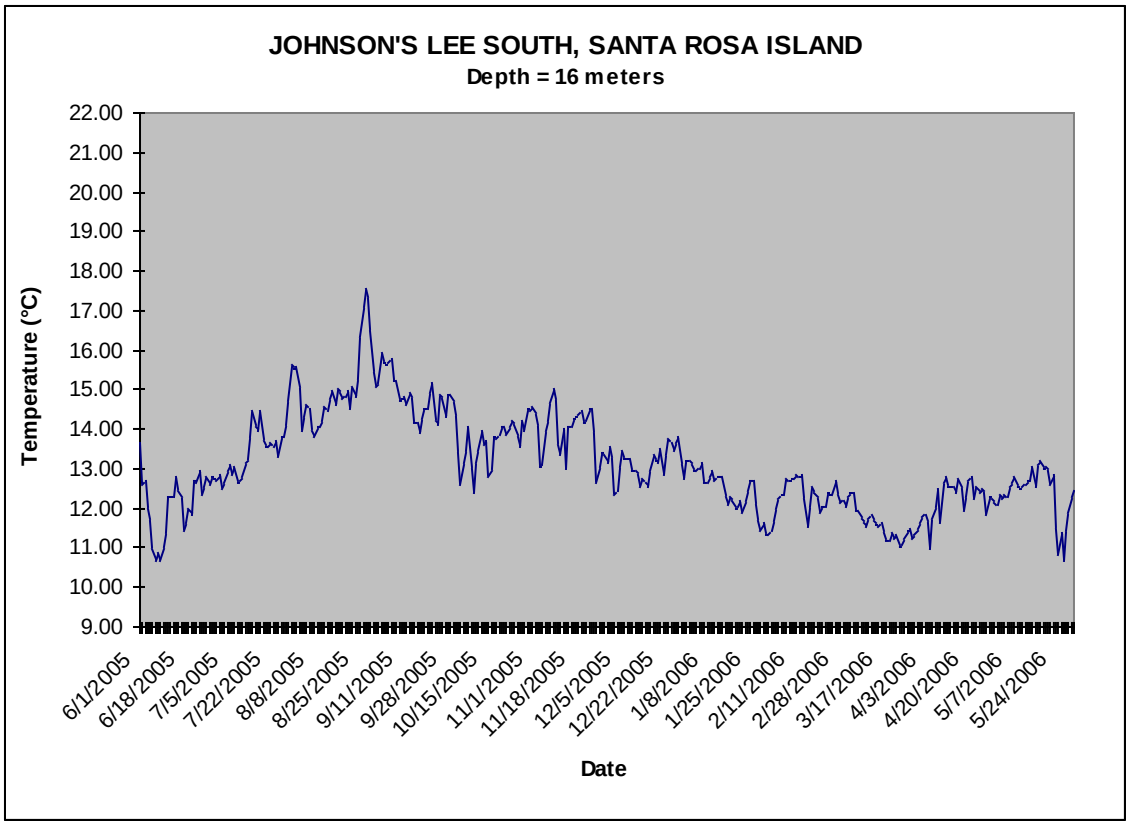
Introduction

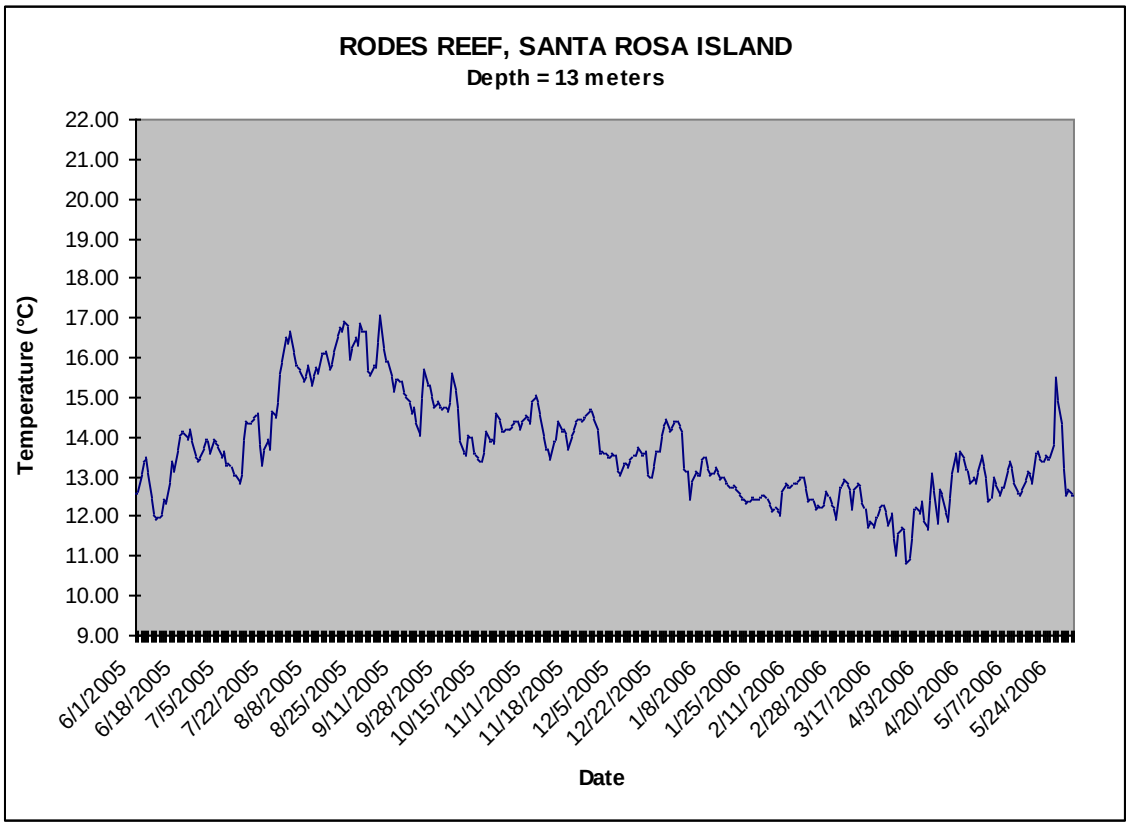
This appendix contains the temperature data (presented graphically) collected by remote TIDBIT™ temperature loggers that were deployed at all 33 Kelp Forest Monitoring sites. Missing data at some sites is the result of technical problems or loss of temperature logger. Temperature loggers were not deployed until the first date of sampling at the 16 new sites this year as noted in the graphs.

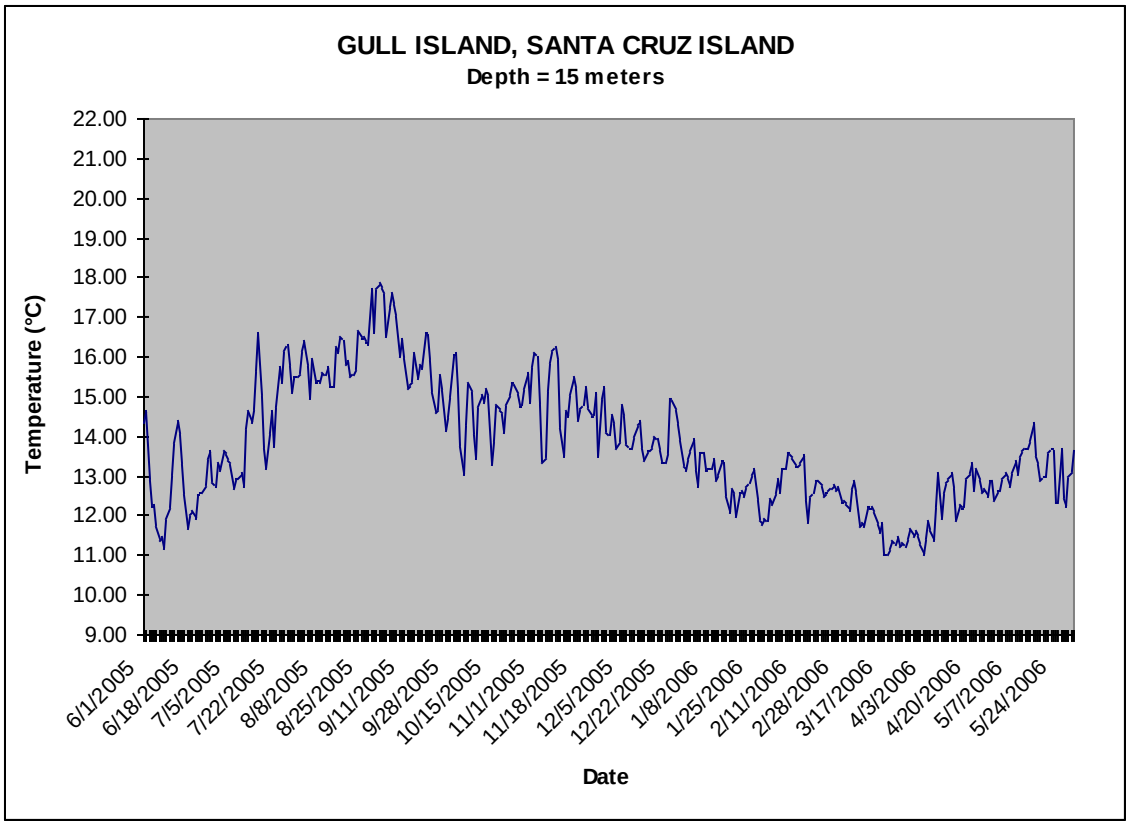


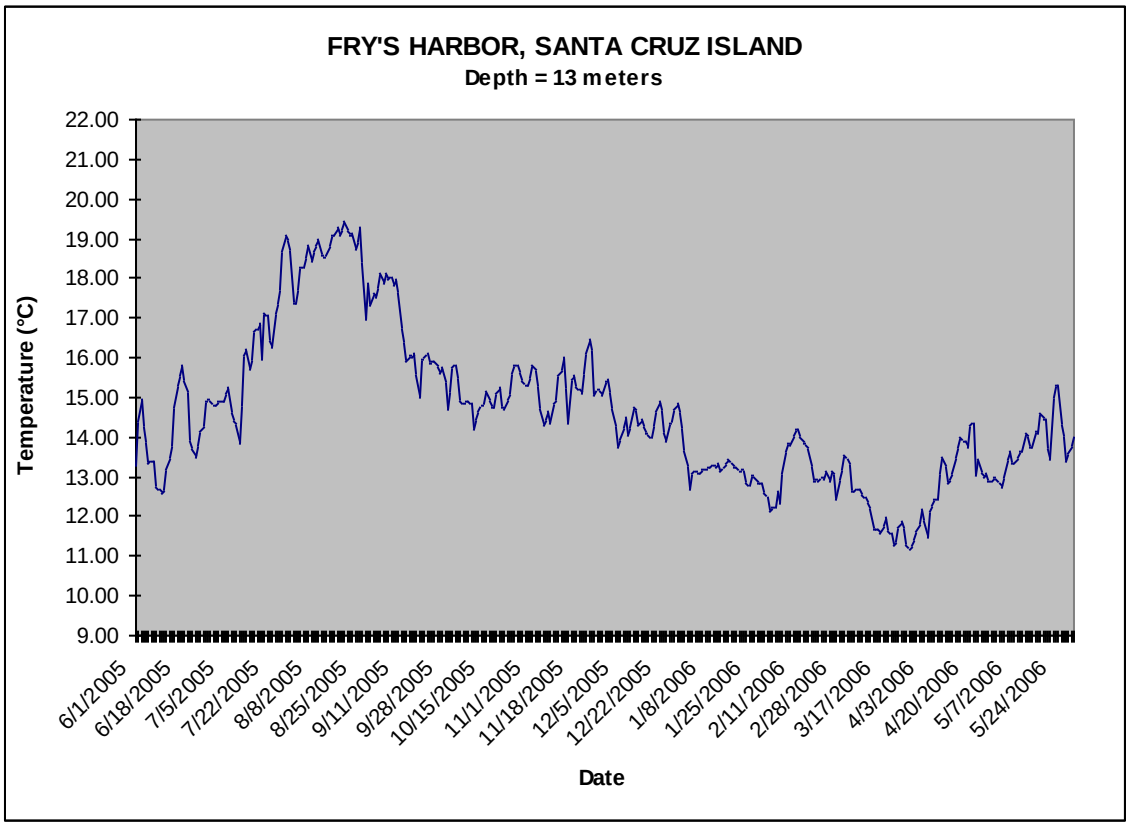

HARE ROCK, SAN MIGUEL ISLAND
Depth = 5 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

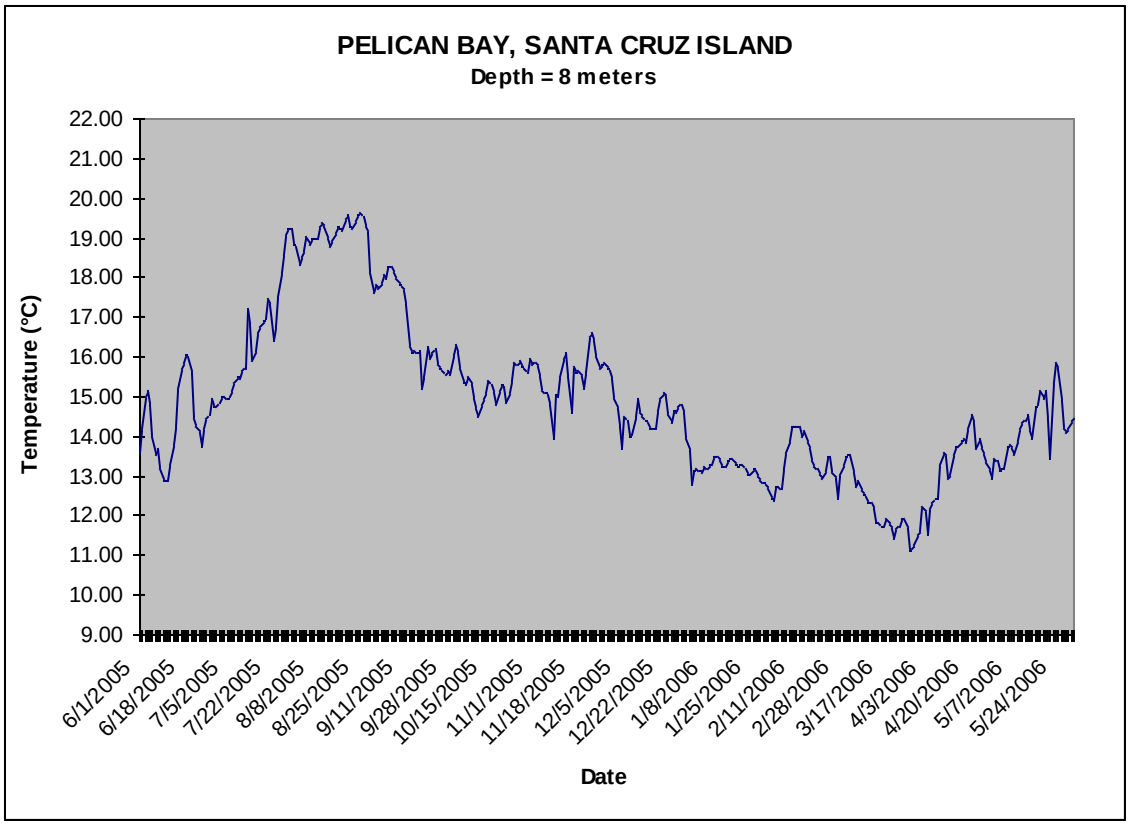

JOHNSON'S LEE NORTH, SANTA ROSA ISLAND
Depth = 11 meters
Temperature (°C)
22
21
20
19
18
17
16
15
14
13
12
11
10
9
6/1/2005
6/17/2005
7/3/2005
7/19/2005
8/4/2005
8/20/2005
9/5/2005
9/21/2005
10/7/2005
10/23/2005
11/8/2005
11/24/2005
12/10/2005
12/26/2005
1/11/2006
1/27/2006
2/12/2006
2/28/2006
3/16/2006
4/1/2006
4/17/2006
5/3/2006
5/19/2006
Date

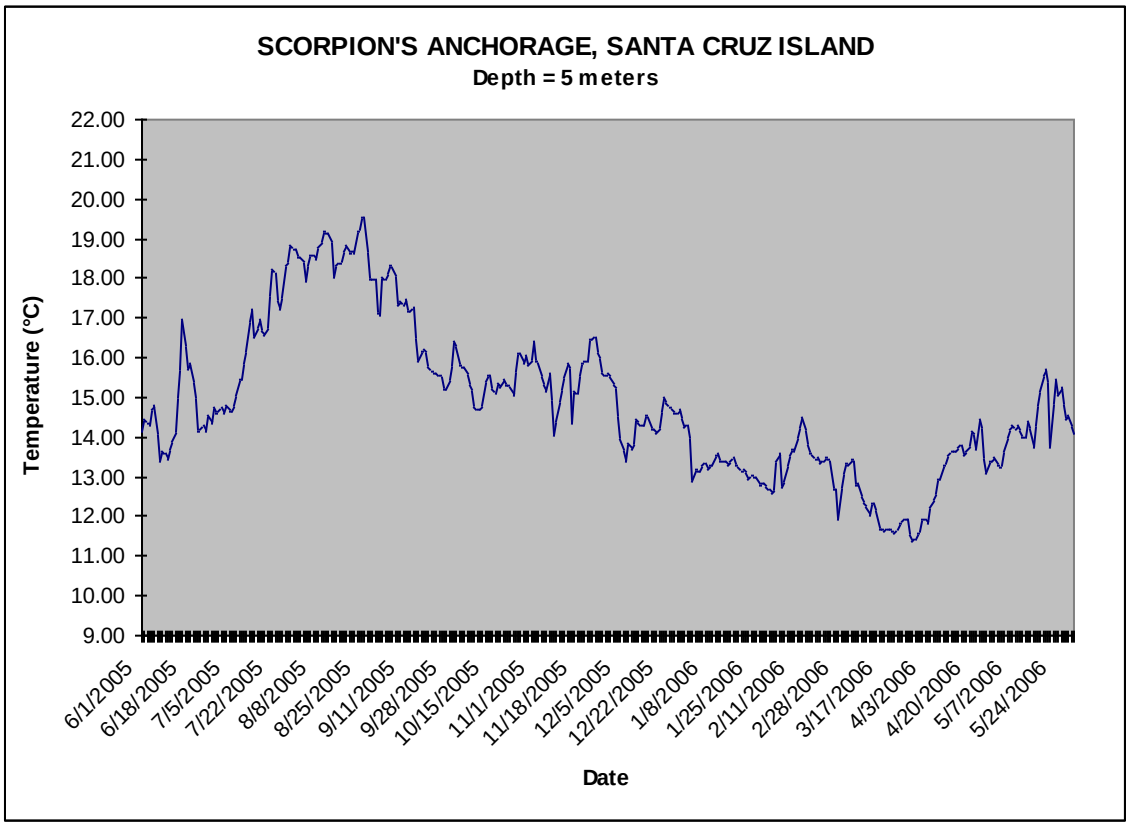

JOHNSON'S LEE SOUTH, SANTA ROSA ISLAND
Depth = 16 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

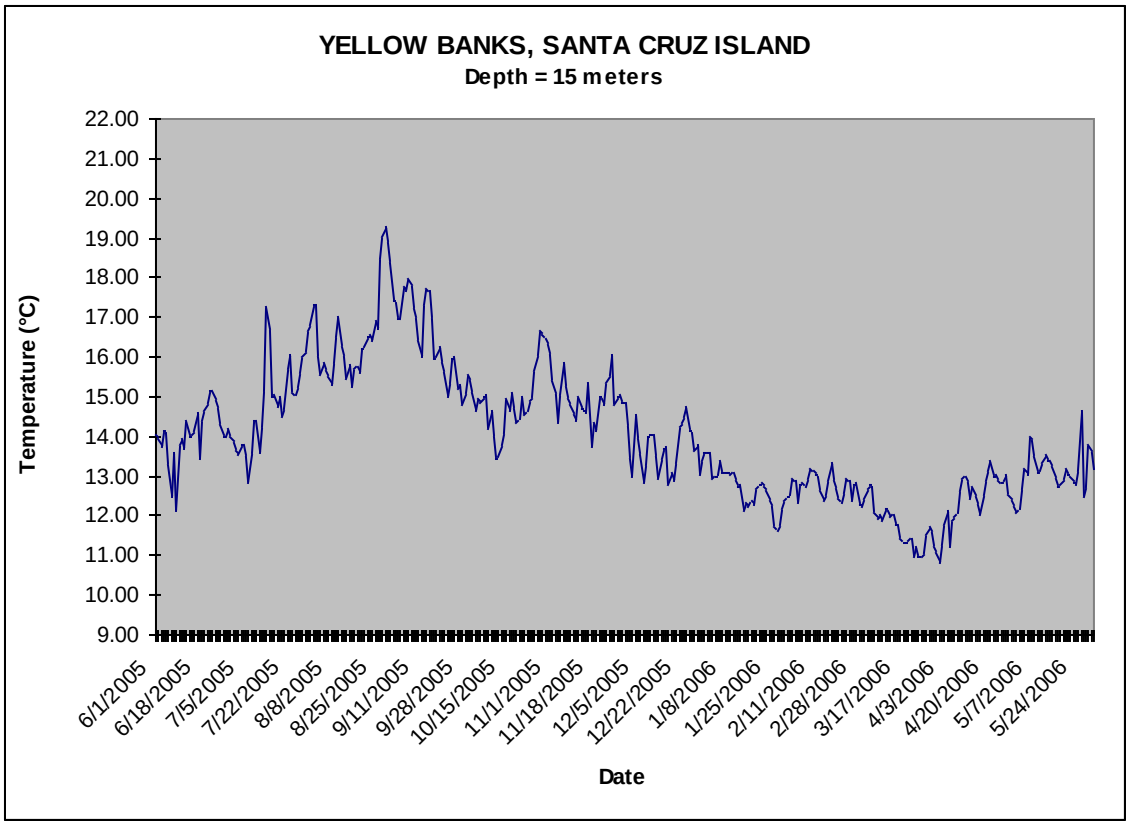

RODES REEF, SANTA ROSA ISLAND
Depth = 13 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

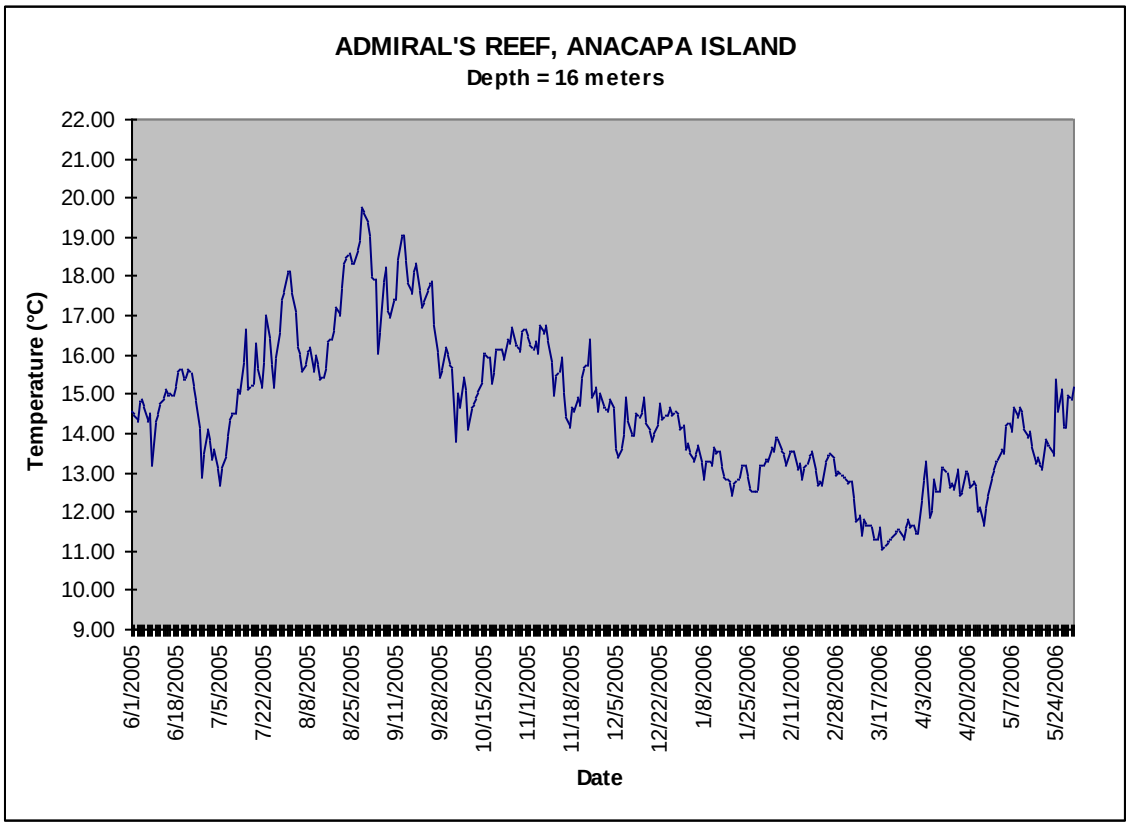

GULL ISLAND, SANTA CRUZ ISLAND
Depth = 15 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

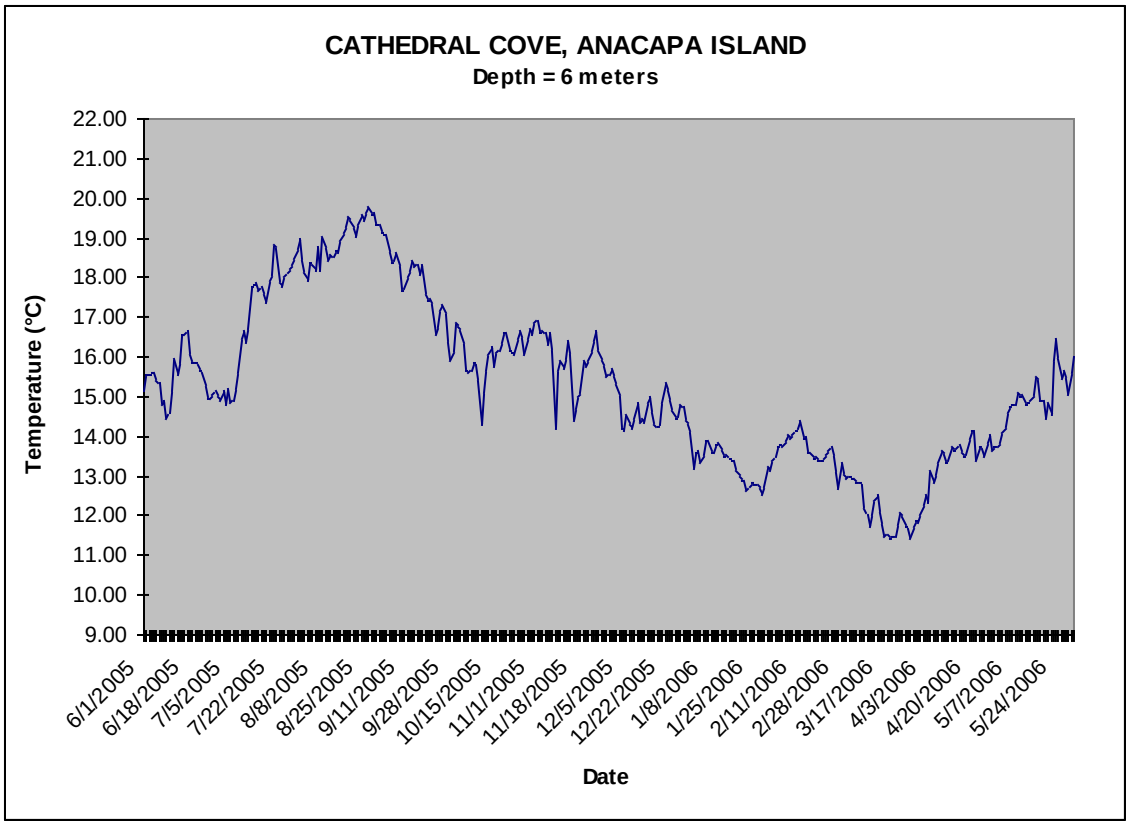

FRY'S HARBOR, SANTA CRUZ ISLAND
Depth = 13 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

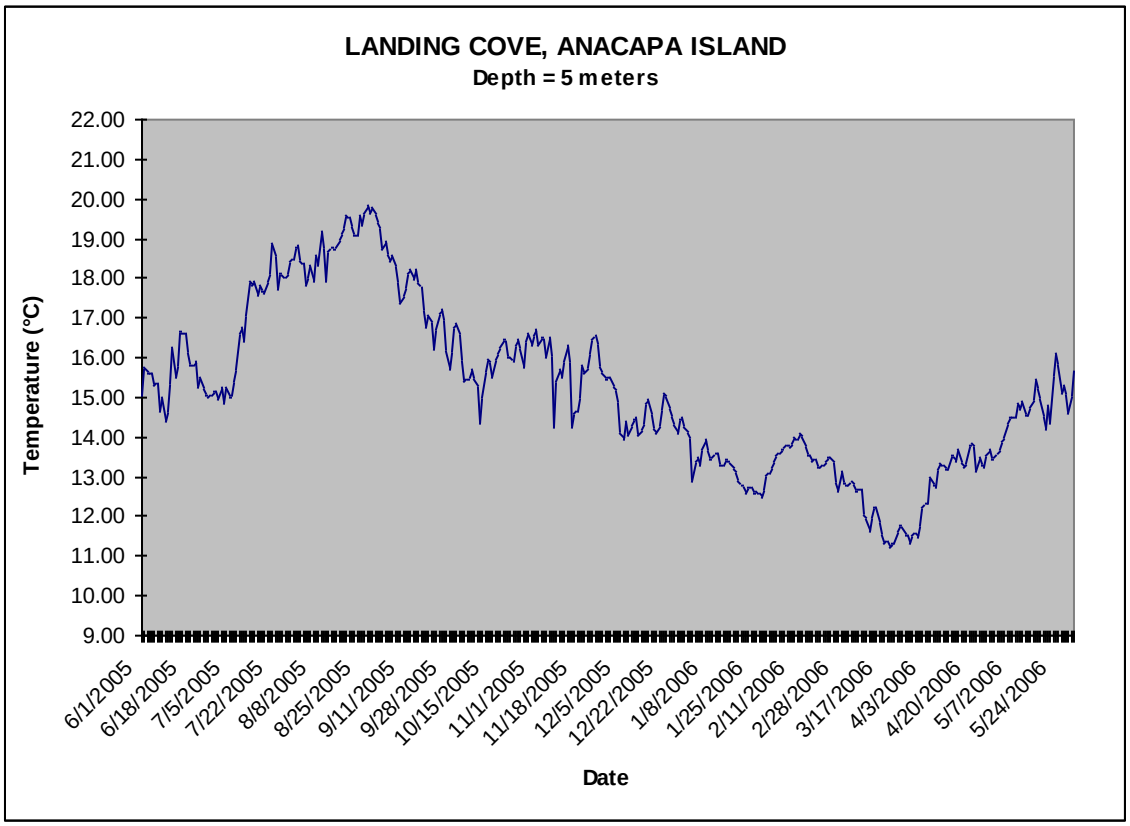

PELICAN BAY, SANTA CRUZ ISLAND
Depth = 8 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

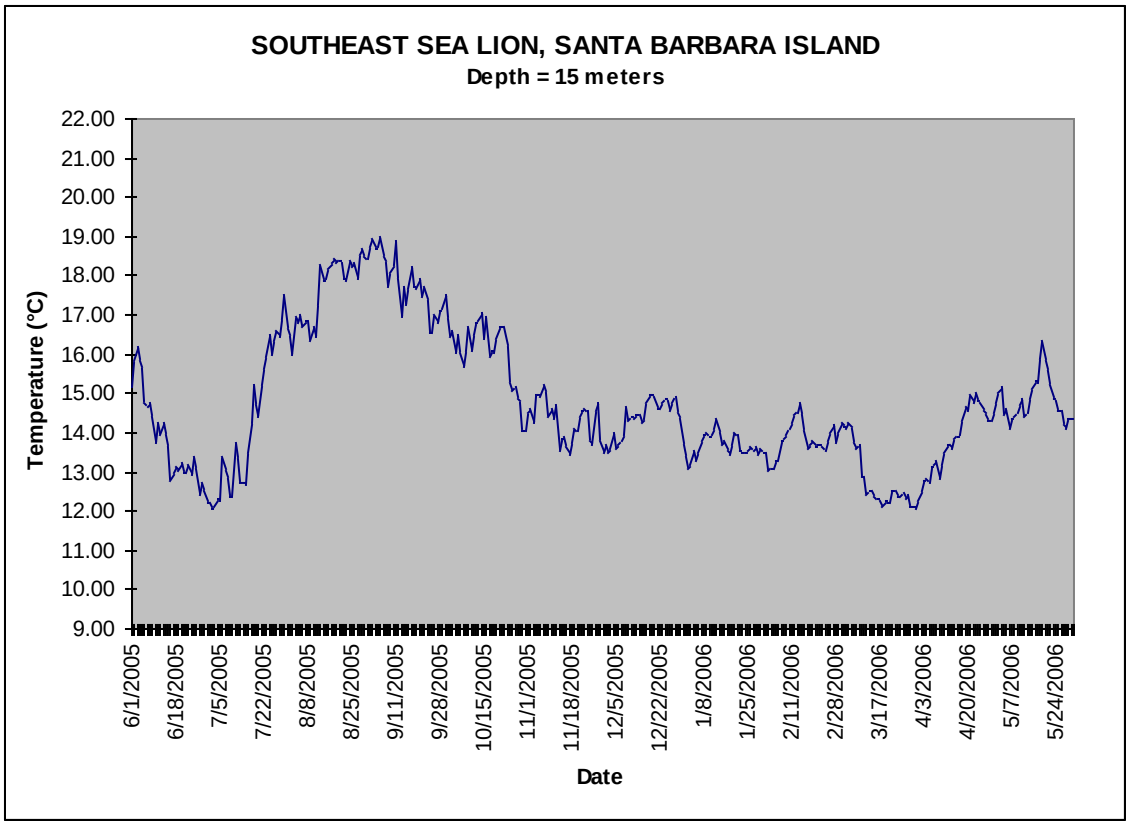

SCORPION'S ANCHORAGE, SANTA CRUZ ISLAND
Depth = 5 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

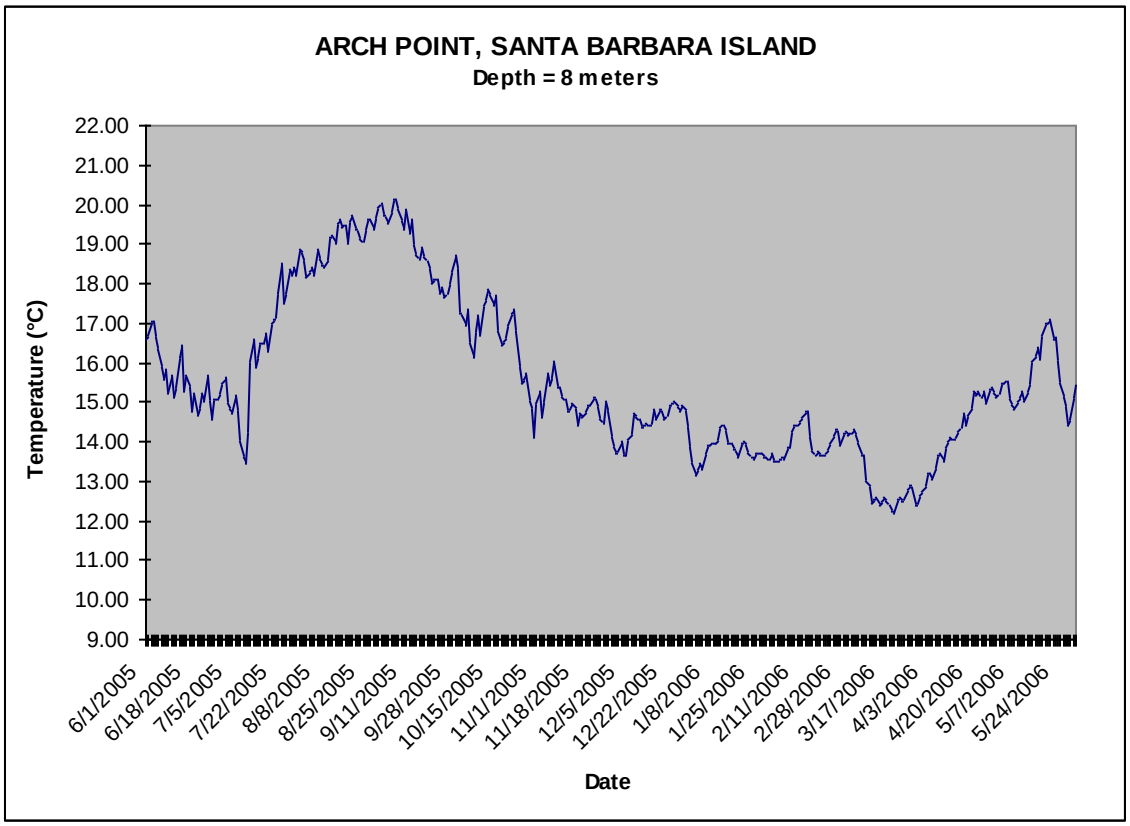

YELLOW BANKS, SANTA CRUZ ISLAND
Depth = 15 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

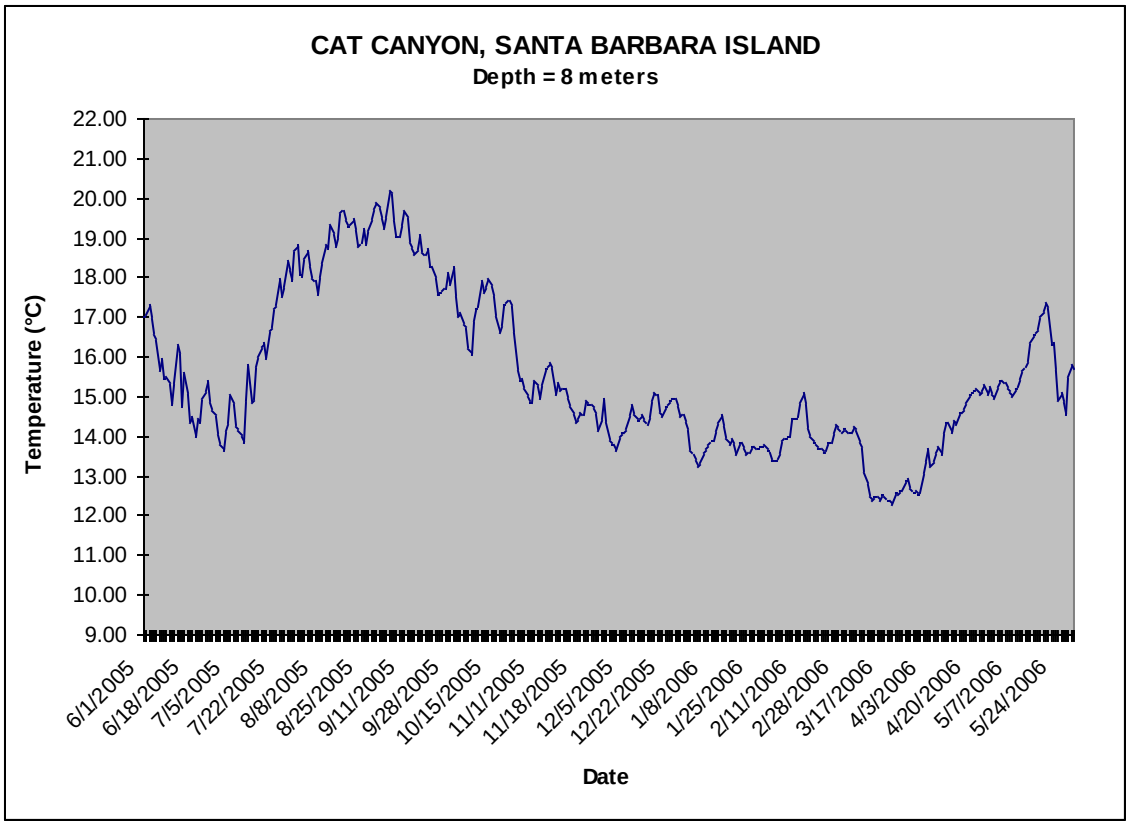

ADMIRAL'S REEF, ANACAPA ISLAND
Depth = 16 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

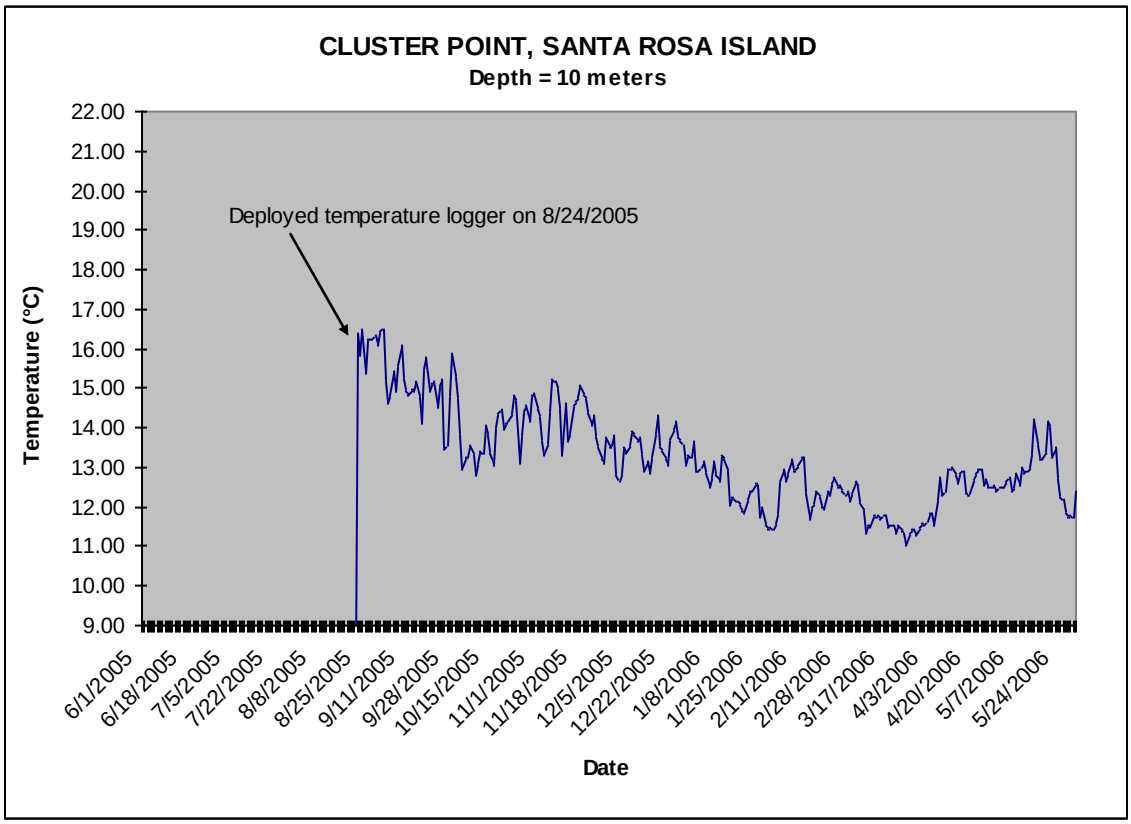

CATHEDRAL COVE, ANACAPA ISLAND
Depth = 6 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

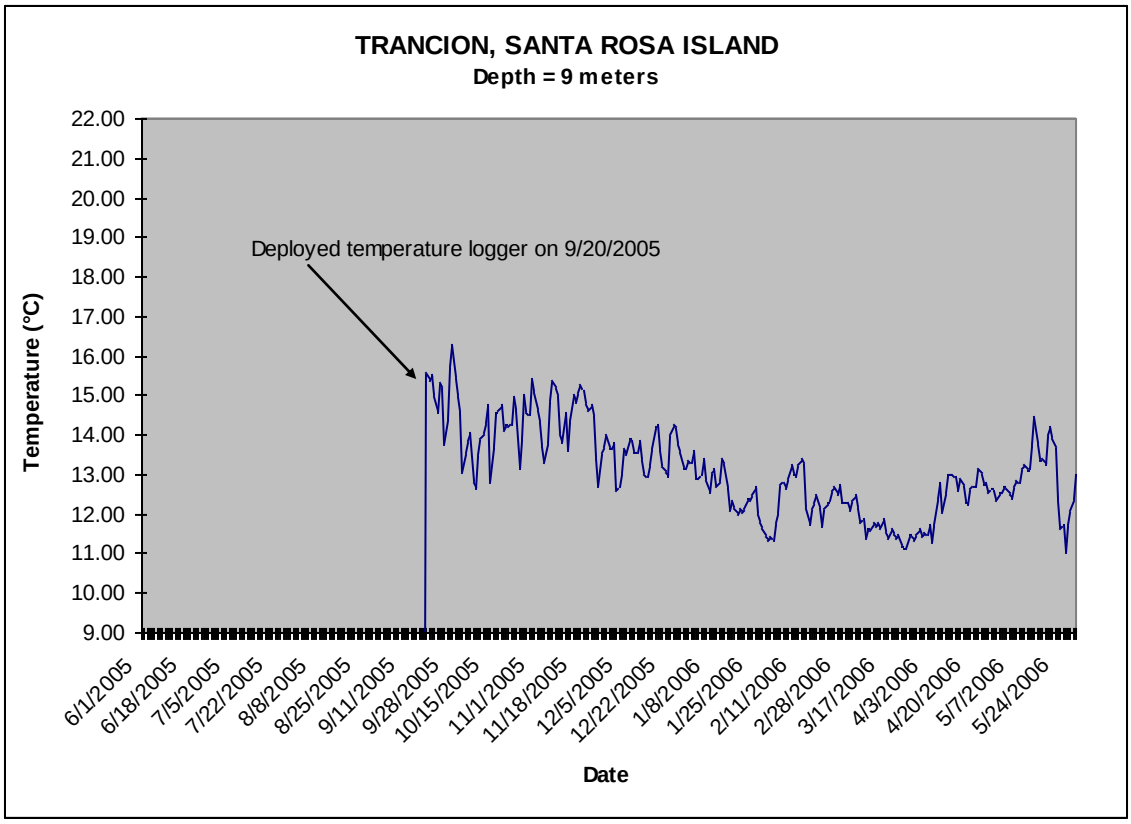

LANDING COVE, ANACAPA ISLAND
Depth = 5 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

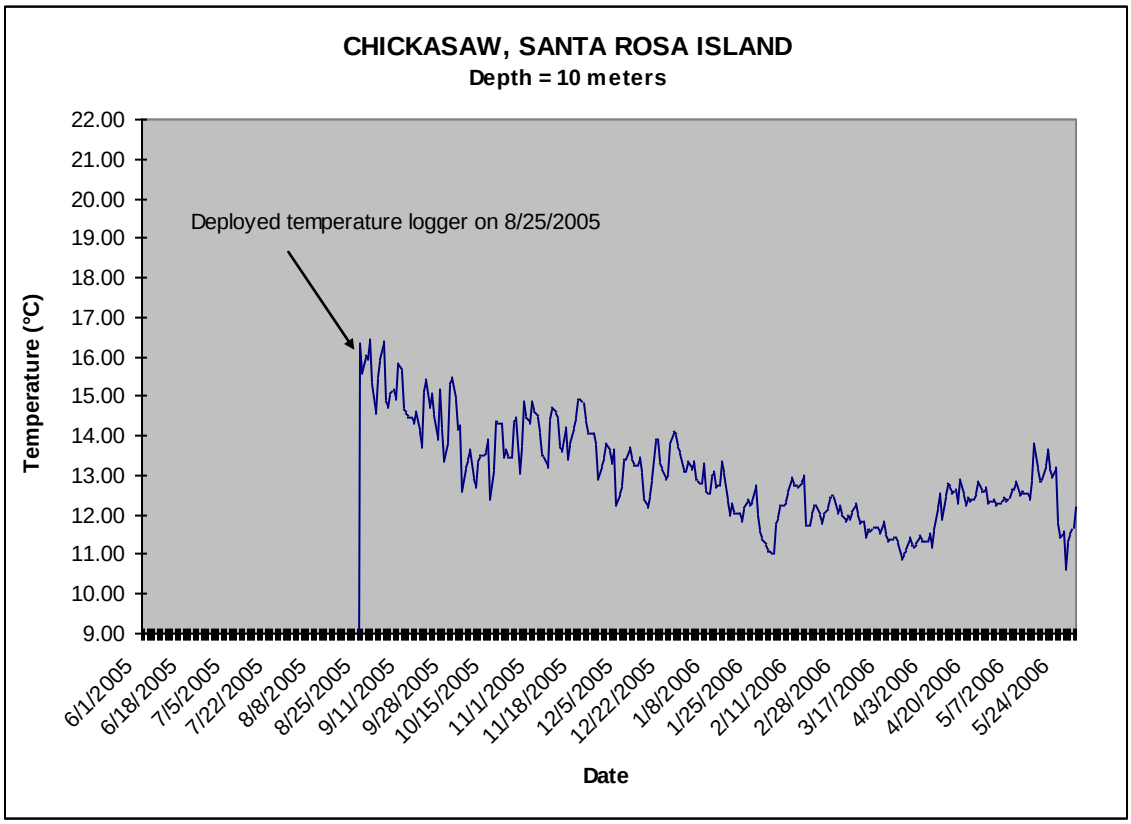

SOUTHEAST SEA LION, SANTA BARBARA ISLAND
Depth = 15 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

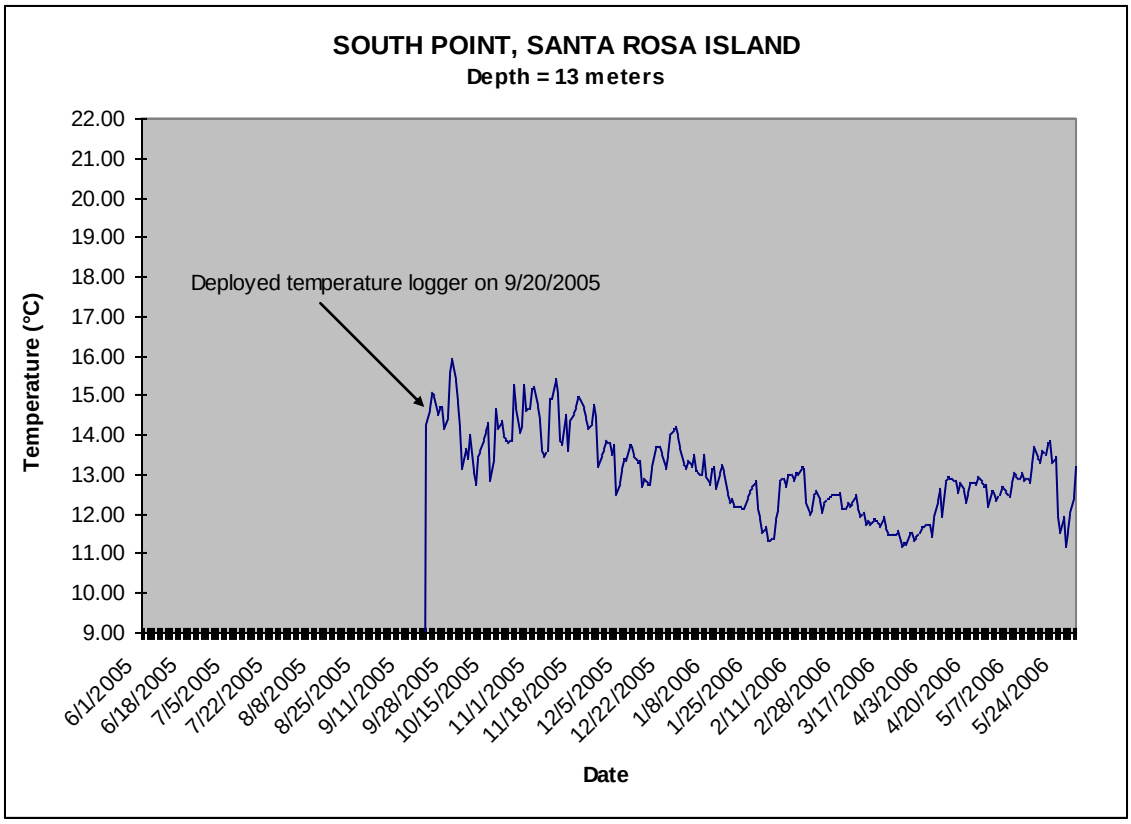

ARCH POINT, SANTA BARBARA ISLAND
Depth = 8 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

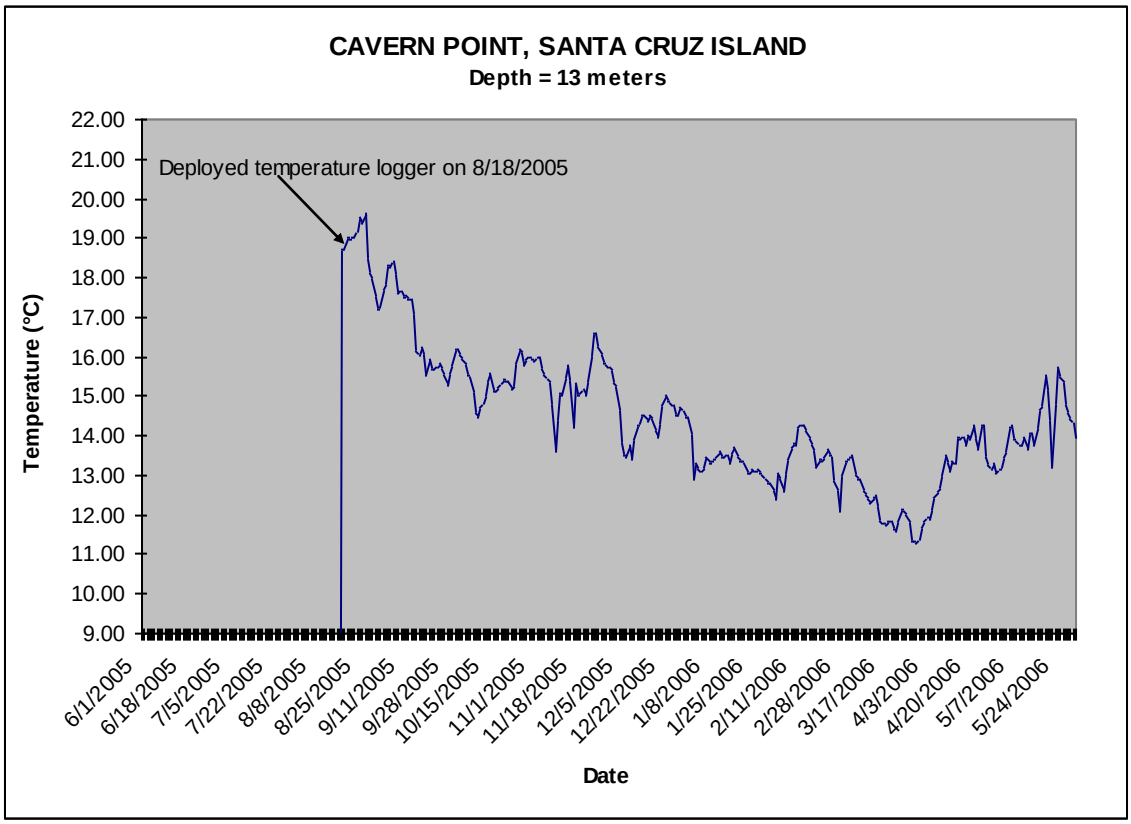

CAT CANYON, SANTA BARBARA ISLAND
Depth = 8 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

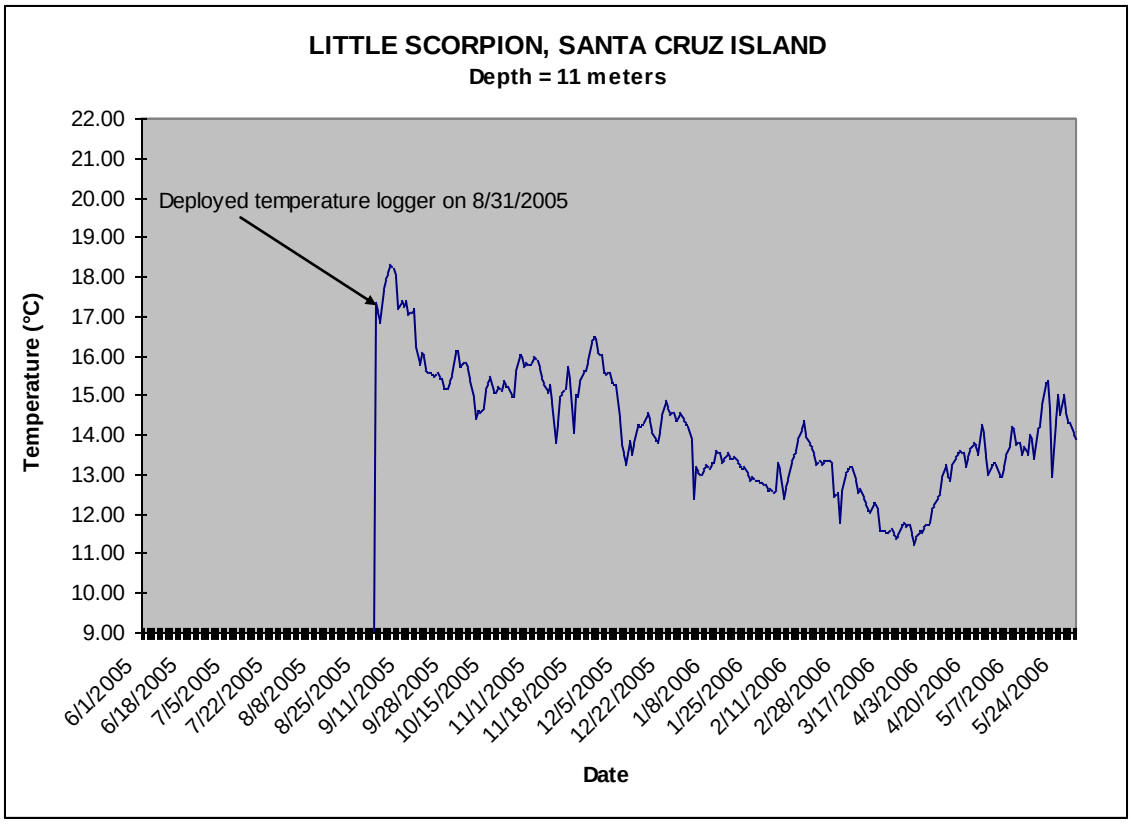

CLUSTER POINT, SANTA ROSA ISLAND
Depth = 10 meters
Deployed temperature logger on 8/24/2005
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

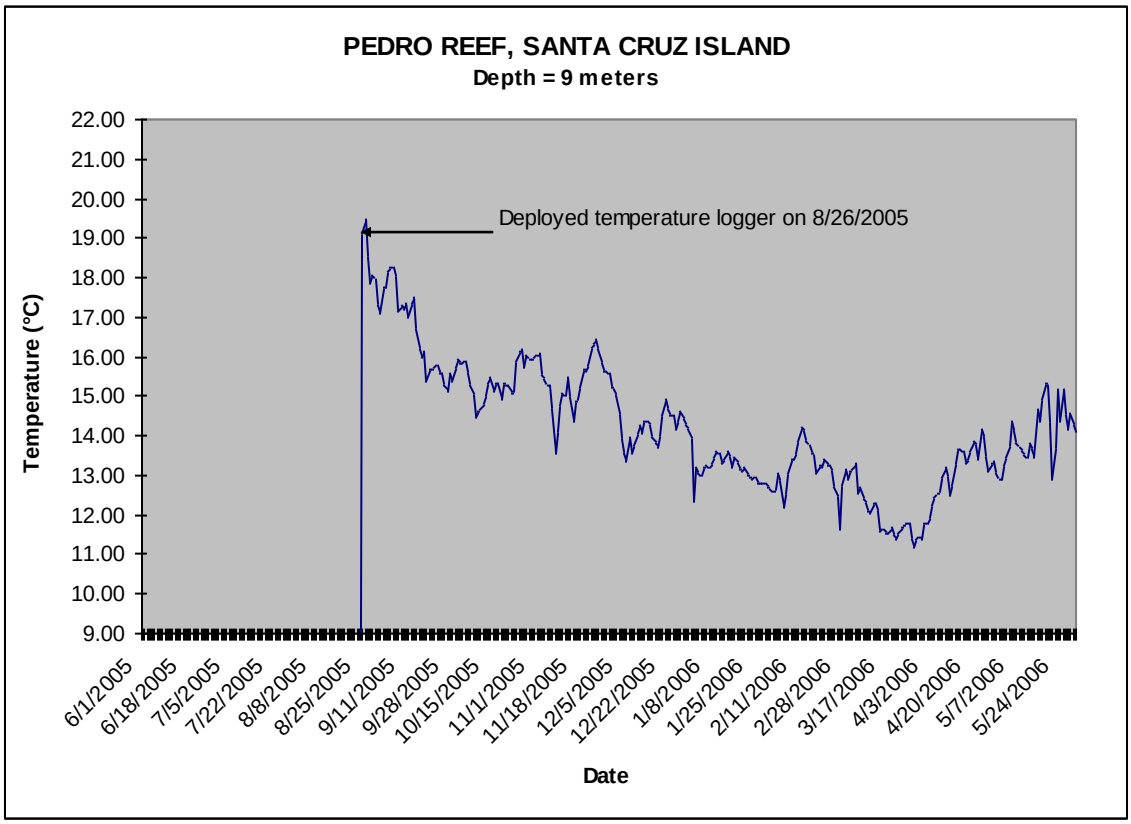

TRANCION, SANTA ROSA ISLAND
Depth = 9 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 9/20/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

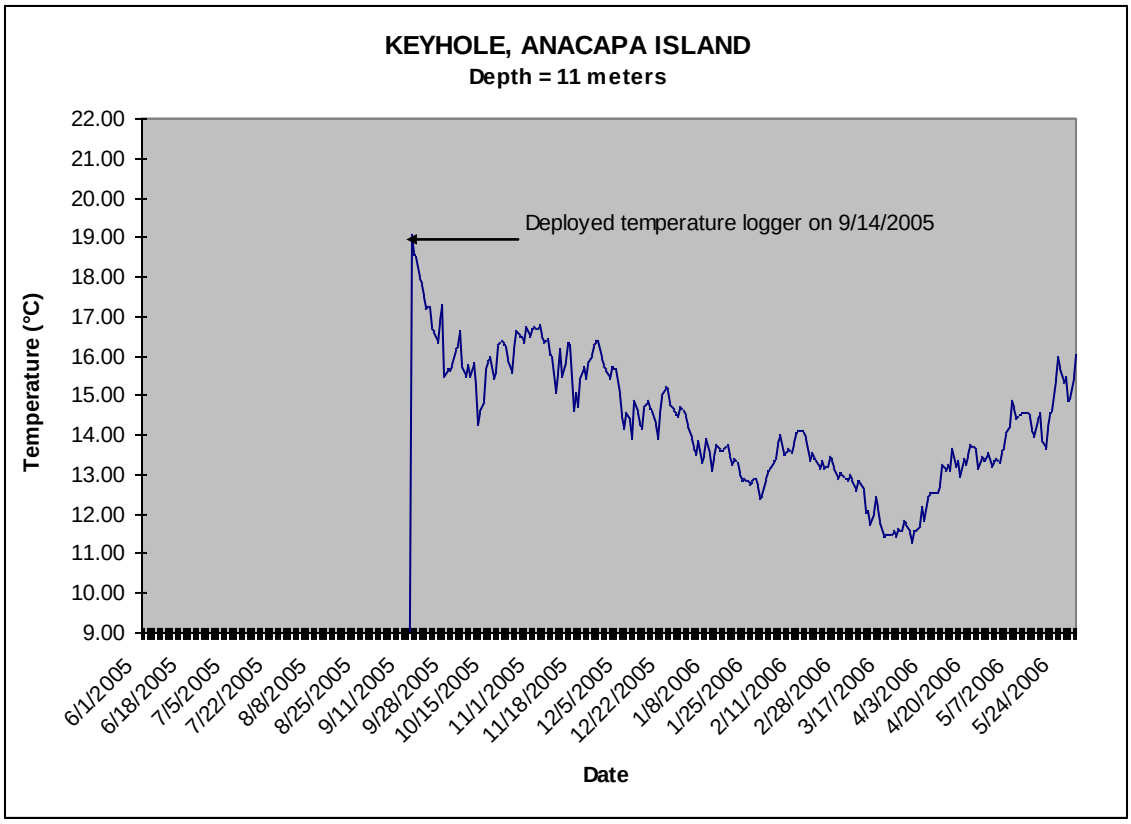

CHICKASAW, SANTA ROSA ISLAND
Depth = 10 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 8/25/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

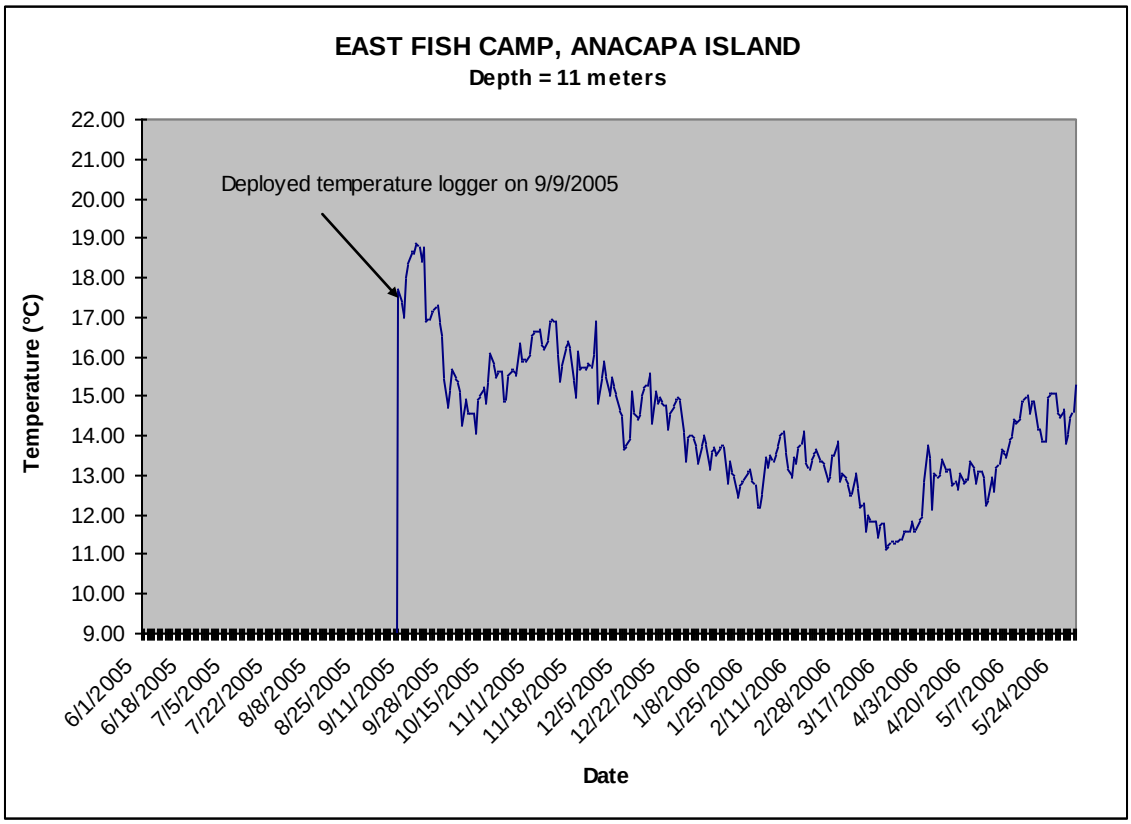

SOUTH POINT, SANTA ROSA ISLAND
Depth = 13 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 9/20/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

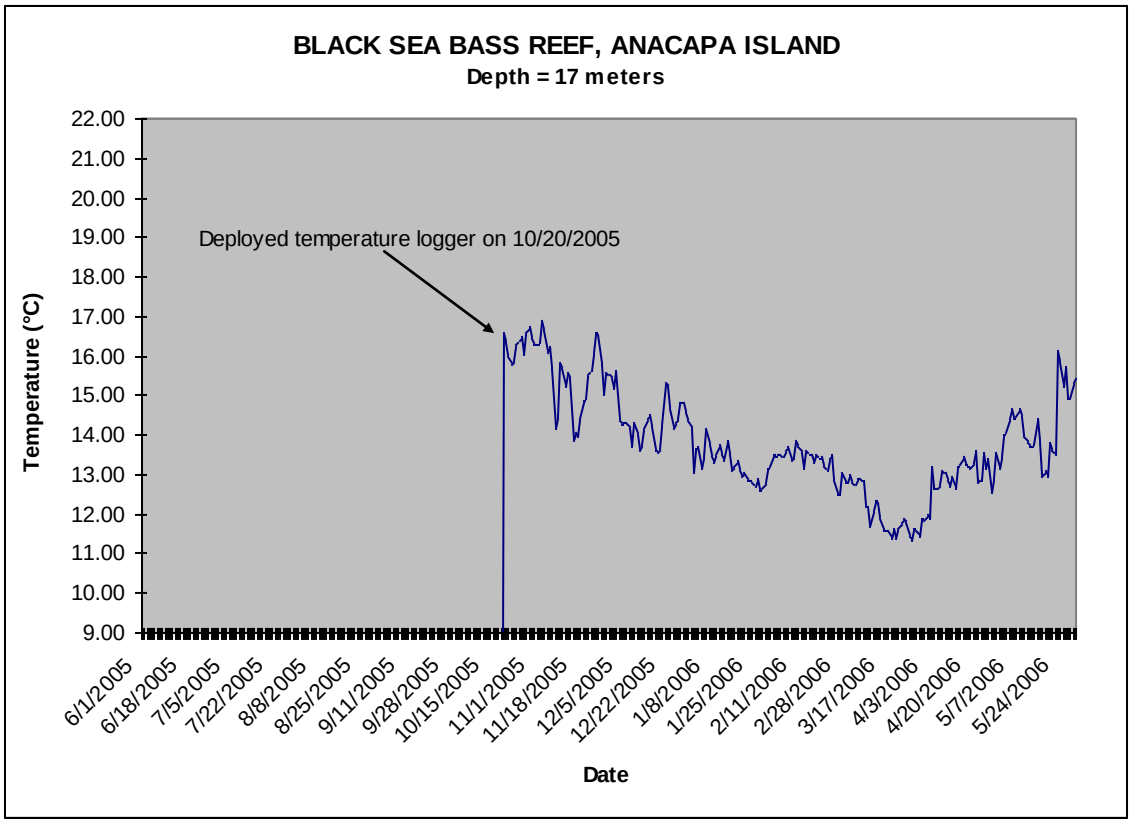

CAVERN POINT, SANTA CRUZ ISLAND
Depth = 13 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 8/18/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

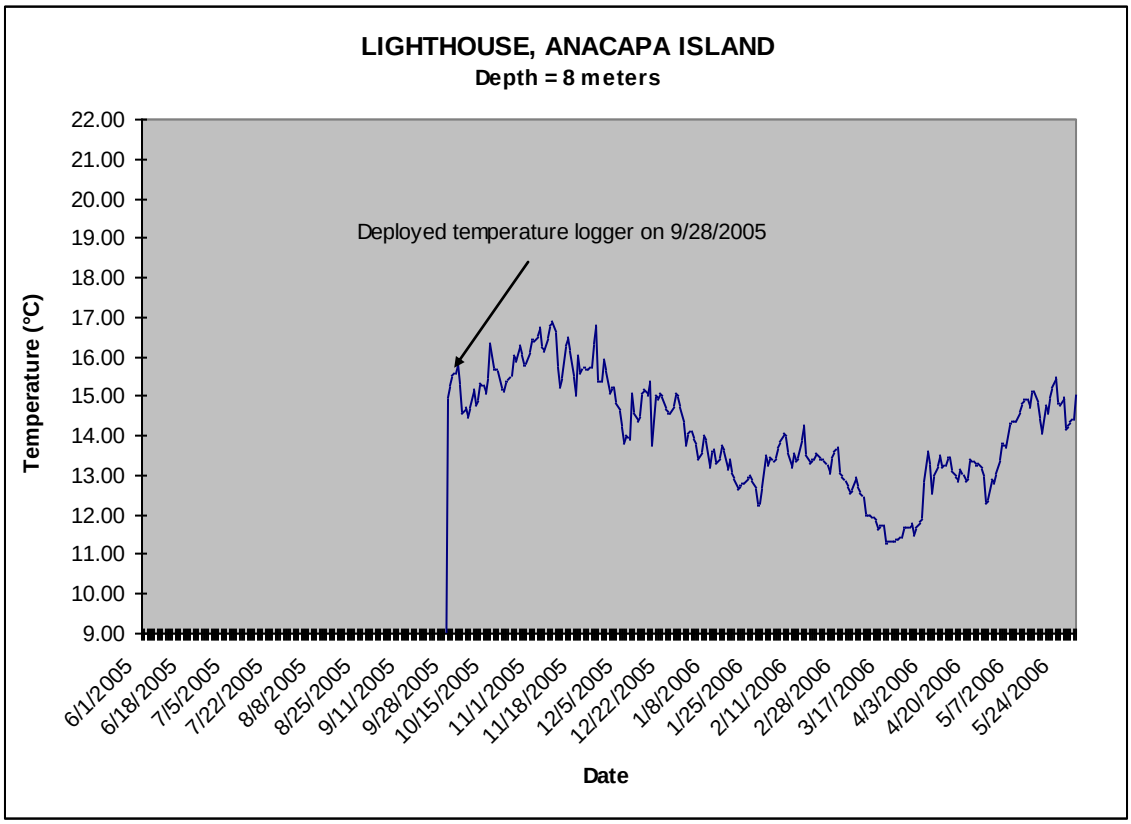

LITTLE SCORPION, SANTA CRUZ ISLAND
Depth = 11 meters
Deployed temperature logger on 8/31/2005
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

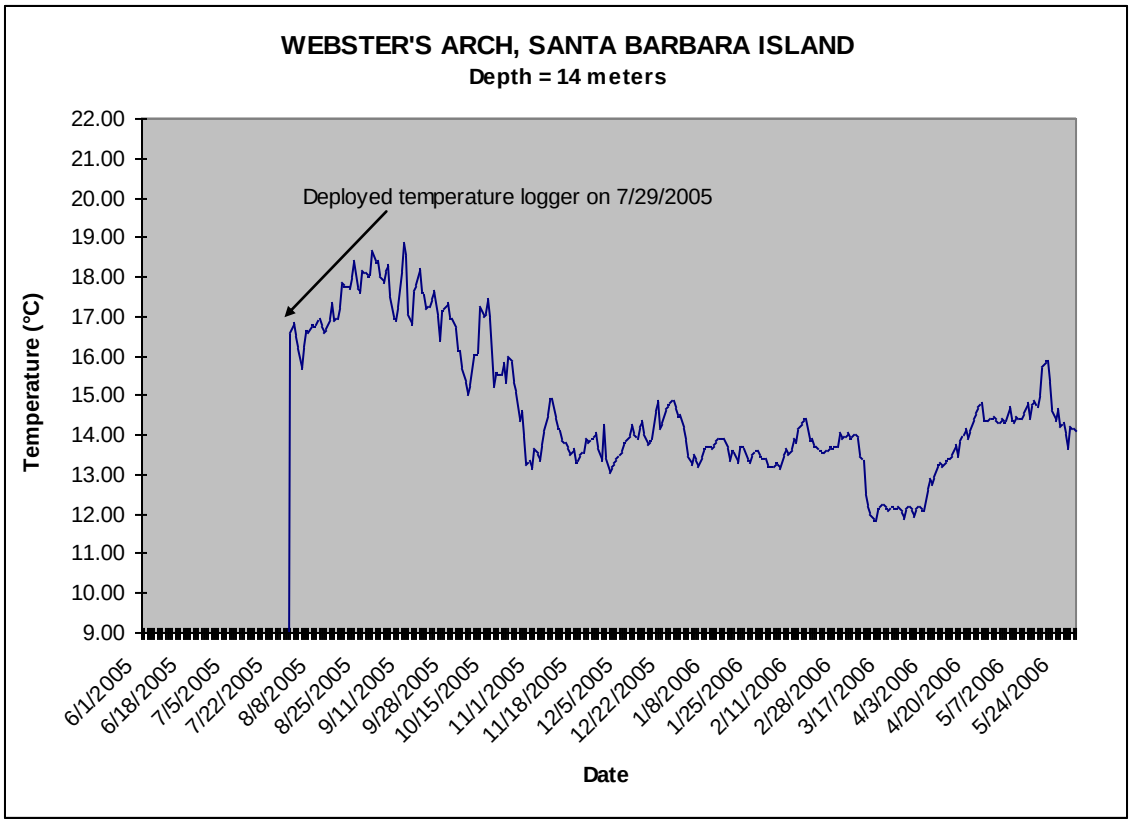

PEDRO REEF, SANTA CRUZ ISLAND
Depth = 9 meters
Deployed temperature logger on 8/26/2005
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

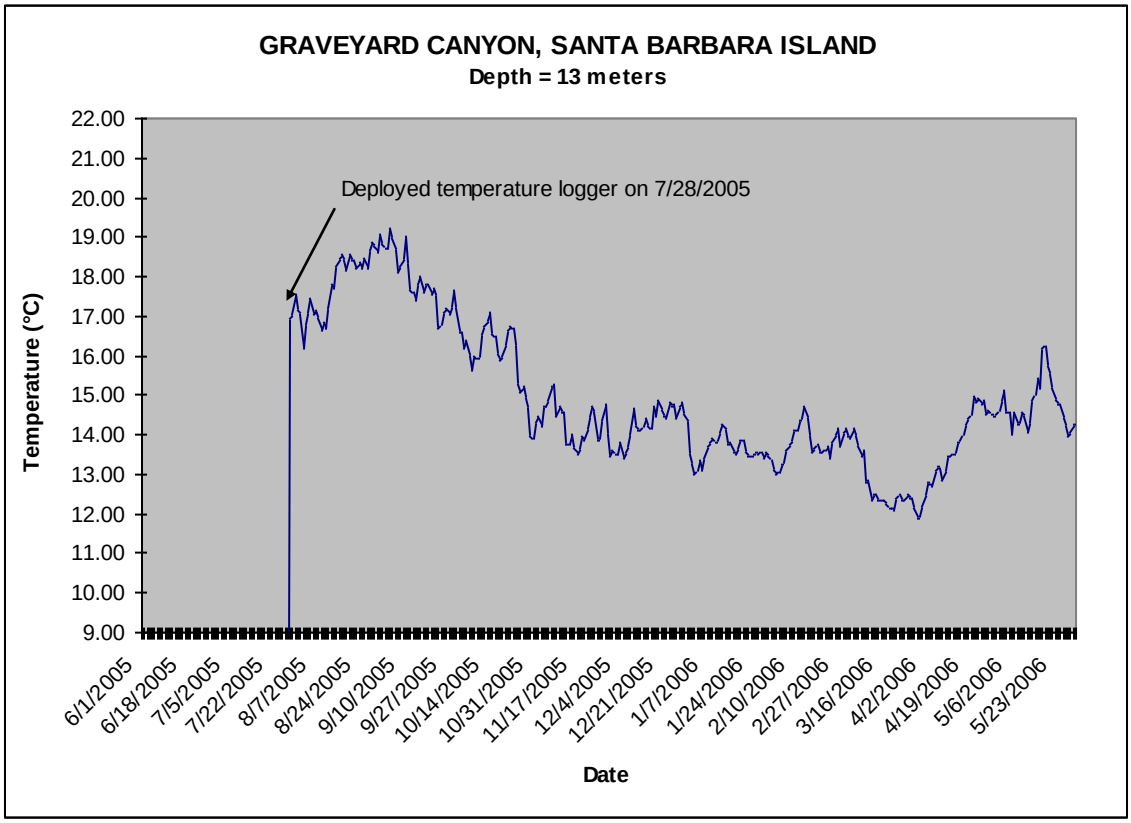

KEYHOLE, ANACAPA ISLAND
Depth = 11 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 9/14/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date

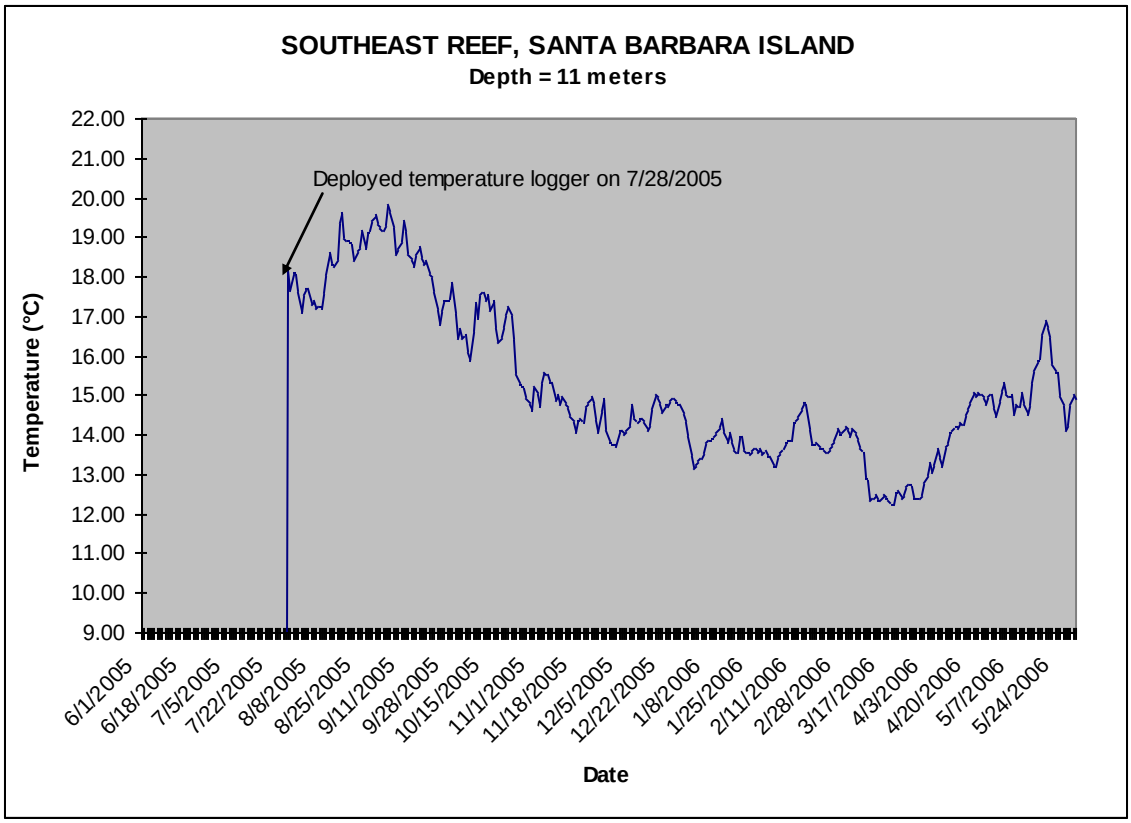

EAST FISH CAMP, ANACAPA ISLAND
Depth = 11 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 9/9/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date


BLACK SEA BASS REEF, ANACAPA ISLAND
Depth = 17 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 10/20/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date


LIGHTHOUSE, ANACAPA ISLAND
Depth = 8 meters
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
Deployed temperature logger on 9/28/2005
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date


WEBSTER'S ARCH, SANTA BARBARA ISLAND
Depth = 14 meters
Deployed temperature logger on 7/29/2005
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date


GRAVEYARD CANYON, SANTA BARBARA ISLAND
Depth = 13 meters
Deployed temperature logger on 7/28/2005
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/7/2005
8/24/2005
9/10/2005
9/27/2005
10/14/2005
10/31/2005
11/17/2005
12/4/2005
12/21/2005
1/7/2006
1/24/2006
2/10/2006
2/27/2006
3/16/2006
4/2/2006
4/19/2006
5/6/2006
5/23/2006
Date


SOUTHEAST REEF, SANTA BARBARA ISLAND
Depth = 11 meters
Deployed temperature logger on 7/28/2005
Temperature (°C)
22.00
21.00
20.00
19.00
18.00
17.00
16.00
15.00
14.00
13.00
12.00
11.00
10.00
9.00
6/1/2005
6/18/2005
7/5/2005
7/22/2005
8/8/2005
8/25/2005
9/11/2005
9/28/2005
10/15/2005
11/1/2005
11/18/2005
12/5/2005
12/22/2005
1/8/2006
1/25/2006
2/11/2006
2/28/2006
3/17/2006
4/3/2006
4/20/2006
5/7/2006
5/24/2006
Date