

2001 Investigators Annual Report
Point Reyes National Seashore
Research and Collecting Permit Program

Harbor Seal with telemetry radio and flipper tags escaping from researchers at Double Point.



CY2001 PORE Research and Collecting Permit Program

Significant events:

- 55 Researchers were operating in the park under valid permits in calendar year 2001 (53 in 2000).
- 27 Permits were issued in 2001 (24 in 2000)
- 1 temporary permit was issued in 2001 for temporary (1-2 day) research or collection.
- 13 Researchers responded to the request for Investigators Annual Reports (IAR). The IAR request was sent via the national online Research and Reporting System. Although the process significantly reduced the work for the Coordinator, this number is significantly lower than last year when requests were generated in hardcopy from the Seashore. Recommendations for 2002 IAR are to follow up by email (when a valid email address is known) or hardcopy directly.
- The program continues to permit all external research occurring within the Seashore boundaries or utilizing restricted files (such as library materials, curated specimens or photographs). Any internal research that is generated by park staff or contracted by park staff, and which does not have an external research component, currently is not permitted under our system.

One copy of this document to be routed to all Division Chiefs and one to Resource Management Branch Chiefs. Copies of this document to be sent to the library, central files and Pacific Coast Learning Center Director. Originals will remain in the permit files.

Dawn Adams
Inventory and Monitoring Coordinator/Research Permit Coordinator

Researchers in Point Reyes National Seashore in CY2001

Bold type indicates that an IAR was received from the researcher

LAST	FIRST	AGENCY	PROJECT NAME	Person #	Project # (Permit #)	exp date
Adams	Peter	National Marine Fisheries Service	Genetic survey of California steelhead to support Technical Recovery Team activities	271	01-0016	10/31/01
Akins	Leah	Bodega Marine Laboratory	Benthic-Pelagic Coupling: The influence of nearshore oceanographic processes on intertidal community structure and dynamics	273	01-0021	12/31/02
Alpert	Peter	Univ. of Mass. at Amherst	Clonal plant growth in natural resource landscapes	143	95-19	12/31/01
Andrew	Gregory	MMWD	Juvenile salmon survey	171	98-17/98-01	12/31/06
Barr	Camille	UC Irvine	Conditions and Mechanisms for the Evolution of Gynodioecy in <i>Nemophila menziesii</i> (Hydrophyllaceae)	179	98-01/01-02	8/31/01
Beckstead	Julie	UCSC, Dept Ecol & Evol Biol	Invasiveness and impact of <i>Ammophila arenaria</i> : Release from soil-borne pathogens	256	00-24	12/31/02
Briggs	Cheryl	UC Berkeley	Spatial Survey of the Insect Community in Galls of <i>Rhopalomyia californica</i> on <i>Baccharis pilularis</i>	211	99-18/02-07	12/31/02
Brusati	Elizabeth	Bodega Marine Laboratory	Investigating the consequences of a species invasion under global climate change	279	01-0026	12/31/04

LAST	FIRST	AGENCY	PROJECT NAME	Person #	Project # (Permit #)	exp date
Burnham	Kathleen	Stanford University	Mesozoic and Paleogene Conglomerates of the Salinian Block and of Associated Regions, as Indicators of the Paleogeography of the Present	144	00-02	12/31/01
Carlson	Karna	San Jose State Univ	Team Size as a Factor of Data Accuracy and Precision in a Rapid Response Survey	266	01-0009	10/ 1/01
Carlson	Tom	UC Davis, Geog. Graduate Group	Land Use History and Land Cover Change on the Point Reyes Peninsula, California	249	00-17	12/31/01
Carr	David E.	Univ. of Virginia, Blandy Farm	The Effects of Inbreeding on Resistance and Host Plant Quality in Yellow Monkey Flower (<i>Mimulus guttatus</i>)	239	00-06	12/31/02
Castellano	Michael	USFS, PNW Research Sm	Survey for macrofungi listed for protection under the Northwest Forest Plan	71	00-20	12/31/02
Coey	Robert	Calif. Dept. of Fish and Game	Russian River Coho Supplementation Program	275	01-0020	6/30/07
da Silva	Paul	College of Marin, Dept. of Biology	Point Reyes Entomofaunal Survey	241	01-0007	12/31/04
Dubrovski	Neil	USGS-WRD	Fixed Station Monitoring of Coho and Steelhead Restoration Project Streams	194	98-15	12/31/01
Estelle	Veronica	Colorado State University	Assessing the potential for an introduced crab predator to affect migratory and wintering shorebirds: a case of indirect effects?	255	00-23	12/31/03
Fallon-McKn	Maura	Humboldt State Univ	Post-Release Home Ranges, Habitat Use and Diet of a Free-Ranging Herd of Tule Elk at Point Reyes National Seashore	263	00-02	12/31/03

LAST	FIRST	AGENCY	PROJECT NAME	Person #	Project # (Permit #)	exp date
Fisher	Alison	UC Davis, Robbins Hall	Effect of the fungal pathogen, <i>Claviceps purpurea</i> , on the reproductive fitness of <i>Spartina foliosa</i> and systematics of the <i>Claviceps</i> fungus.	248	00-16	12/31/02
Frangos	William	James Madison University	High Frequency Impedance Measurements for Characterization, Monitoring, and Verification: development of non-invasive measurement method	228	00-01	12/31/01
Gennet	Alexandra	UC Berkeley, ESPM Eco.Sciences	Ecology of <i>Alopecurus aequalis</i> var. <i>sonomensis</i>	262	01-0027	12/31/03
Grove	Karen	Dept of Geosciences	The role of contractonal deformation in a transform setting: Pt. Reyes segment of the San Andreas Fault (Objective: to quantify rate of uplift	82	00-09	12/31/02
Grove	Karen	Dept of Geosciences	Measurements of the San Andreas Fault	82	85-401	2/28/02
Grubb	Kasey	Humboldt State Univ	Investigation of trophic conditions and biological resources in Abbotts Lagoon: A fishery inventory	258	01-0003	2/25/02
Harbin	Angelique	UC Davis	The Effects of "Oyster Mariculture on the Diversity and Distribution of Intertidal Invertebrates in Drake's Estero, California"	240	00-07	12/31/01
Hayes	Grey	UC Santa Cruz	Study of Grazing Effects Across Fencelines in Coastal Prairie	236	00-04	12/31/01
Hayes	Sean A.	UC Santa Cruz, Moss Landing ML	Evaluation of Underwater Territory Defense and Display Behaviors of Male Harbor Seals Through Playback Experiments	235	00-03	12/31/01
Hedin	Marshal C.	San Diego State University	Diversification in California species of the salticid genus <i>Habronattus</i> (jumping spider)	243	00-11	12/31/03

LAST	FIRST	AGENCY	PROJECT NAME	Person #	Project # (Permit #)	exp date
Holloran	Pete		Historical Extent and Structure of Coastal Dunes at Point Reyes National Seashore	277	01-0023	12/31/02
Holzman	Barbara	San Francisco S.U., Geology Dept	Post Fire Vegetation Change within Bishop Pine Forest at PRNS	140	95-16/01-0019	12/31/06
Howell	Judd	USGS-BRD	A test of multiscaled vegetation data to predict wildlife species distributions using a wildlife habitat relationship model	105	01-0005	12/31/02
Hughes	A. Randall	UC Davis, Dept Env Sci and Policy	Implications of Genetic Structure in Eelgrass (<i>Zostera marina</i>) Populations for Ecological Processes and Restoration	272	01-0017	12/31/02
Juenger	Tom	UC Berkeley, Integrative Biol Dept	Phenotypic and genetic variation in the floral morphology of <i>Linanthus parviflora</i> (Polemoniaceae)	265	01-0012	12/31/01
Kihlsinger	Rebecca	UC Davis	Orientation by Magnetic Cues in an Elasmobranch Fish	268	01-0013	9/15/01
Klimley	Peter	Dept. of Biology, UC Davis	Population Biology of White Sharks at Point Reyes Headlands	253	00-21	12/15/01
Koenig	Walter	UC Berkeley, Museum of Vert Zool	Cooperation and Conflict within Reproductive Coalitions of Wild Turkeys	257	01-0001	12/31/03
Kratzer	Charles	US Geological Survey - WRD	Investigation of Trophic Conditions and Biological Resources in Abbott's Lagoon	195	98-16	12/31/01
Lane	Robert S.	UC Berkeley-Division of Insect Bio.	Ecological Studies of Lyme Disease at Point Reyes NS	17	84-602	12/31/02

LAST	FIRST	AGENCY	PROJECT NAME	Person #	Project # (Permit #)	exp date
Lenarz	William	College of Marin	College of Marin Aquatic Biology Field Trips	261	01-0011	12/31/01
Love	Michael	For the Sake of Salmon	Fish Passage Field Trip	276	01-0022	12/31/01
Maccheroni	Michael	Univ. of New England	The Changing Pattern of Asian Utilitarian Production and Exchange 1570-1650: Analysis of Stoneware Jars from Shipwrecks	278	01-0025	7/30/01
Manning	Dave	Sonoma County Water Agency	Coho and Steelhead Field Identification and Snorkel Survey Methodology Training	247	00-15/01-18	12/31/04
McCarty	John D.		Identification of the Coleoptera within PRNS	226	99-25	12/31/01
Oates	Stori	Moss Landing Marine Lab	Impacts of dispersal and foraging ecology on the survivorship of Pacific harbor seal (<i>Phoca vitulina richardsi</i>) juveniles in central CA	269	01-0015	12/31/02
Opperman	Jeff	UC Berkeley, ESPM Eco Sciences	The influence of large woody debris on instream habitat in California's Mediterranean climate watersheds	267	01-0014	12/31/01
Parker	Michael	USFWS-San Francisco Bay NWR	Restoration of nearshore breeding seabird colonies on the central California coast	134	95-10	12/31/06
Powell	Jerry	UC Berkeley	Post-fire populations of Lepidoptera in Point Reyes National Seashore	87	95-21	12/31/01
Roberts	Frederick	Summerfield Waldorf School & Farm	Macroscopic Geological Investigation of the Point Reyes Peninsula	259	01-0004	3/31/01

LAST	FIRST	AGENCY	PROJECT NAME	Person #	Project # (Permit #)	exp date
Robertson	Judith	CA Lichen Society	Inventory lichens of Point Reyes National Seashore	274	01-0024	12/31/02
Roletto	Jan	NOAA GFNMS	Beach Watch Baseline Monitoring of Live and Dead Shoreline Resources with an Emphasis on Birds and Marine Mammals	110	93-15/02-14	12/31/07
Soost	Bob	California Native Plant Society	Monitor Rare and Endangered Native Plants (California Native Plant Society Rare Plant Monitorint Program)	225	97-11	12/31/02
Stroud	Ken	CA Air Resource Board	CA ARB Particulate Matter Monitoring Network (PM2.5 Permanent Air Monitoring)	245	00-13	12/31/05
Walmisley	Andrew		The Archaeology of the Coast Miwok and their relationship to the environment of Point Reyes	260	01-0008	12/31/01
White	Richard	Stanford University	The History of Point Reyes	264	01-0010	6/20/01
Zagzebski	Kathryn	The Marine Mammal Center	Rescue of Live Stranded Marine Mammals; Occasional Investigation of Dead Stranded Marine Mammals;	234	90-02/02-02	12/31/07

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public.

Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Ms Leah Akins	Office Phone: (707)875-1921 Email: ljakins@ucdavis.edu
Address: Bodega Marine Laboratory P.O. Box 247 2099 Westside Road Bodega Bay, CA 94923	Office Fax: (707)875-2089
Additional investigators (first name, last name, phone) name:Dr. Steven Morgan phone:(707)875-1920 email:sgmorgan@ucdavis.edu	
Permit# PORE-2001-SCI-0021	
Park-assigned Study Id. # PORE-00273	
Project Title Benthic-pelagic coupling; The influence of nearshore oceanographic processes on intertidal community structure	
Permit Start Date 06-JUL-2001	Permit Expiration Date 01-OCT-2002
Study Starting Date 06-JUL-2001	Estimated Study Ending Date 01-JUN-2005
Study Status Continuing	
Activity Type Research	
Subject/Discipline Coastal/Marine Systems	
Objectives The purpose of this study is to investigate the effect of nearshore oceanography on the structure and dynamics of intertidal communities. The cape at Point Reyes creates a major discontinuity in oceanographic conditions along the northern Californian coast. Past studies in this region have shown that a gyre, or circular current, develops in lee of Point Reyes during upwelling. This gyre may serve as a retention zone for planktonic larvae because crab settlement was found to be higher to the south of Pt Reyes (Wing et al. 1995). These results suggest that larval supply to benthic communities may be higher in the lee of Point Reyes than to communities north of the point. The	

communities may be higher in the lee of Point Reyes than to communities north of the point. The current study is aimed at determining whether this difference in larval supply translates to adult shore crab populations. Intertidal communities around Point Reyes were surveyed to determine whether shore crab abundances are higher at sites to the south of the point than sites north of Point Reyes.

Wing, S.R., L.W. Botsford, J.L. Largier and L.E. Morgan.(1995) Spatial structure of relaxation events and crab settlement in the northern California upwelling system. Marine Ecology Progress Series 128: 199-211.

Findings and Status

In Summer 2001, we surveyed shore crab abundances (*Petrolisthes cinctipes*, *Hemigrapsus nudus*, and *Pachygrapsus crassipes*) in intertidal boulder fields at two sites within Point Reyes National Seashore (PRNS) at Chimney Rock and Abalone Point. We sampled crab abundance under boulders along three transects at these sites. All crabs were caught, measured, and released. The percent cover of algae and sessile invertebrates on the boulders was measured; counts of mobile fauna were also recorded. These sites within PRNS are located to the south of Point Reyes to be compared to sites north of the Point outside PRNS. Our preliminary findings suggest that PRNS sites south of Point Reyes have lower abundance of shore crabs (*P. cinctipes* and *H. nudus*) and higher abundance of a potential predator on settlers (*Pachygrapsus crassipes*) than sites north of Point Reyes. These results are opposite to what we expected based on the spatial pattern of larval settlement in the region. The higher abundance of potential predators to the south of Point Reyes suggests that predation may be limiting the abundance of *P. cinctipes* and *H. nudus* at these sites. We will be investigating whether predation is decoupling the pelagic and benthic processes in this system in Summer 2002.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$600

Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college

Full name of college or university
University of California, Davis

Annual funding provided by NPS to university or college this reporting year
\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public.

Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Dr Cheryl J. Briggs	Office Phone: 510-643-3889 Email: cbriggs@socrates.berkeley.edu
Address: Dept. of Integrative Biology VLSB 3060 University of California Berkeley, CA 94720-3140	Office Fax: 510-643-6264
Additional investigators (first name, last name, phone) name: Martha F. Hoopes phone: 510-643-3890 email: mfhoopes@socrates.berkeley.edu name: John G. Latta phone: 510-643-3890 email: jlatto@socrates.berkeley.edu	
Permit# pore-2001-99-18	
Park-assigned Study Id. # pore-00211	
Project Title Spatial survey of the insect community in galls of <i>Rhopalomyia californica</i> on <i>Baccharis pilularis</i>	
Permit Start Date 26-AUG-1999	Permit Expiration Date 31-DEC-2001
Study Starting Date 26-AUG-1999	Estimated Study Ending Date 31-DEC-2002
Study Status Continuing	
Activity Type Research	
Subject/Discipline Ecology	
Objectives This study uses the natural variation in spatial arrangement of <i>B. pilularis</i> to investigate the effect of patch isolation on midge abundance and parasitoid diversity. At Pt. Reyes we are conducting a census of the gall-forming midge and parasitoid populations over several generations of the insects. We will combine spatial data on plant locations with census information in a spatially explicit model to produce predictions about how midge abundance and parasitoid species diversity may be expected to vary as a function of the dispersion of <i>B. pilularis</i> bushes.	

Findings and Status

This research is ongoing. Gall abundances were very low in 2000 and 2001. There are not yet enough data to correlate insect abundances or diversity with spatial data. We are continuing collections and examining emergence to track seasonal changes in parasitoid diversity.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$2000

Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college

Full name of college or university

Annual funding provided by NPS to university or college this reporting year
\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

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Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Ms Elizabeth Brusati	Office Phone: 530-754-8994 Email: edbrusati@ucdavis.edu
Address: Environmental Science and Policy, UC Davis One Shields Ave. Davis, CA 95616	Office Fax: 530-752-3350
Additional investigators (first name, last name, phone) name:Edwin Grosholz phone:530-753-9151 email:tedgrosholz@ucdavis.edu	
Permit# PORE-2001-SCI-0026	
Park-assigned Study Id. # PORE-00279	
Project Title Investigating the consequences of a species invasion under global climate change	
Permit Start Date 01-SEP-2001	Permit Expiration Date 31-AUG-2004
Study Starting Date 01-SEP-2001	Estimated Study Ending Date 31-AUG-2004
Study Status Continuing	
Activity Type Research	
Subject/Discipline Coastal/Marine Systems	
Objectives To describe possible interactions between introduced invertebrates and introduced cordgrass in salt marshes. To describe the benthic invertebrate fauna of Spartina foliosa marshes. To examine potential changes that may be caused by introduction of Spartina alterniflora into native cordgrass marshes.	
Findings and Status This project is in the early stages of fieldwork. Thus far I have collected invertebrate samples from the marsh at Drakes Estero, as well as Tomales Bay, Bolinas Lagoon, and Bodega Bay. I am	

currently processing these samples in the laboratory and identifying organisms within them. I am also analyzing sediment properties.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

YES

Funding provided this reporting year by NPS
\$12500

Funding provided this reporting year by other sources
\$1010

Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college

Full name of college or university
University of California-Davis

Annual funding provided by NPS to university or college this reporting year
\$12500

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public.

Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Dr Paul da Silva	Office Phone: 415-485-9542 Email: pgsilva@marin.cc.ca.us
Address: Biology Department College of Marin 835 College Avenue Kentfield, CA 94904	Office Fax: 415-485-9543
Additional investigators (first name, last name, phone) name:Dr. Bill Lenarz phone:415-485-9510 email:	
Permit# PORE-2001-SCI-0007	
Park-assigned Study Id. # PORE-00241	
Project Title Pt. Reyes Entomofaunal Survey	
Permit Start Date 15-MAY-2001	Permit Expiration Date 31-DEC-2004
Study Starting Date 01-MAY-2000	Estimated Study Ending Date 31-DEC-2005
Study Status Continuing	
Activity Type Inventory	
Subject/Discipline Entomology	
Objectives The goal of this study is an insect inventory that is ecologically and taxonomically useful. This inventory will provide information on insect flower visitors for one location in the beach and dune habitat. Information will include insect genus and/or species identification, host plant association, date of observation, and ultimately, more precise data on insect activity and behavior as well as impacts on plant fitness.	
Findings and Status During the past year, field sampling and laboratory work have added to both the number of insects	

collected and number identified, resulting in significant database enlargement. Preparation also began for the behavioral phase of the work, set to begin next year.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

YES

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$15000

Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college

Full name of college or university

Annual funding provided by NPS to university or college this reporting year
\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public.

Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Dr Karen Grove	Office Phone: 415-338-2061 Email: kgrove@sfsu.edu
Address: Department of Geosciences San Francisco State University 1600 Holloway Avenue San Francisco, CA 94132	Office Fax: 415-338-7705
Additional investigators (first name, last name, phone)	
Permit# PORE-2000-SCI-0001	
Park-assigned Study Id. # PORE-00082	
Project Title The Role of Contractional Deformation in a Transform Setting: Point Reyes Segment of the San Andreas Fault	
Permit Start Date 01-JUL-2000	Permit Expiration Date 31-DEC-2002
Study Starting Date 01-JUL-2000	Estimated Study Ending Date 31-DEC-2002
Study Status Continuing	
Activity Type Research	
Subject/Discipline Geology - General	
Objectives The purpose of the study is to quantify the rate and style of uplift of the Point Reyes Peninsula by studying marine terraces that were formed by waves at sea level and subsequently deformed by the tectonic processes of faulting and folding. These results will help us to better understand the role of faults, other than the San Andreas fault, that contribute to earthquake hazard in the region.	
Findings and Status We measured elevations of uplifted marine terraces along the flank of Inverness Ridge and at Point Reyes using a Global Positioning System. We collected five samples of sediments on the terrace	

Keyes using a Global Positioning System. We collected five samples of sediments on the terrace surfaces to find out when these terraces were formed. The terraces were uplifted during broad folding that created the peninsula and that including movement on several faults west of the San Andreas. We are still obtaining age data from an analytical laboratory that will allow us to estimate the timing of this tectonic activity.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$10000

Fill out the following ONLY IF the National Park Service supported this project in this reporting year by providing money to a university or college

Full name of college or university

Annual funding provided by NPS to university or college this reporting year
\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public.

Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Dr Karen Grove	Office Phone: 415-338-2061 Email: kgrove@sfsu.edu
Address: Department of Geosciences San Francisco State University 1600 Holloway Avenue San Francisco, CA 94132	Office Fax: 415-338-7705
Additional investigators (first name, last name, phone) name:Stanley John Caskey phone:415-338-2061 email:caskey@sfsu.edu	
Permit# PORE-2001-SCI-0006	
Park-assigned Study Id. # PORE-00012	
Project Title Theodolite and total station measurements of creep rates on San Francisco Bay region faults	
Permit Start Date 01-MAR-2001	Permit Expiration Date 28-FEB-2002
Study Starting Date 01-MAR-2001	Estimated Study Ending Date 31-DEC-2015
Study Status Continuing	
Activity Type Research	
Subject/Discipline Geology - General	
Objectives The purpose of this study is to measure aseismic slip (that is, creep) across active faults in the Bay Area. We have 30 sites in total in the Bay Area. At Point Reyes, our purpose is to measure creep rates across the active trace (last active in 1906) of the San Andreas fault, at the entrance to the National Park Headquarters, where the fault location is precisely identified. We complete measurements at this site once every 4 months.	
Findings and Status	

The San Andreas fault at the Point Reyes continues to be locked; that is, we have measured no detectable amounts of creep across this fault during the past year.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS

\$0

Funding provided this reporting year by other sources

\$60000

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Full name of college or university

Annual funding provided by NPS to university or college this reporting year
\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

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Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Mr Judd Howell	Office Phone: 916-278-3279 Email: judd_howell@usgs.gov
Address: 6000 J Street, Placer Hall Sacramento, CA 95819	Office Fax: 916-278-3101
Additional investigators (first name, last name, phone) name: Monica Parisi phone: 916-327-8822 email: mparisi@dfg.ca.gov name: Todd Keeler-Wolf phone: 916-324-6857 email: tkwolf@dfg.ca.gov name: Jennifer Shulzitski phone: 415-331-0847 email: jshulzitski@usgs.gov name: Erin Boydston phone: 415-331-0639 email: eboydston@usgs.gov	
Permit# PORE-2001-SCI-0005	
Park-assigned Study Id. # PORE-00105	
Project Title A TEST OF MULTI-SCALED VEGETATION DATA TO PREDICT WILDLIFE SPECIES DISTRIBUTIONS USING A WILDLIFE HABITAT RELATIONSHIP MODEL	
Permit Start Date 15-MAY-2001	Permit Expiration Date 31-DEC-2002
Study Starting Date 15-MAY-2001	Estimated Study Ending Date 01-NOV-2001
Study Status Continuing	
Activity Type Research	
Subject/Discipline Ecology	
Objectives Sound conservation planning for plant and animal species is an important, ongoing need in California and such planning depends on accurate biological data and sophisticated tools for analysis. Often critical management decisions must be made with little new data or time to conduct detailed field surveys. Models such as the California Wildlife Habitat Relationships System	

(CWHR) were designed to predict potential for wildlife species occurrence based on a set of habitat conditions. These models, however, assume reliable habitat or vegetation information has been collected. Where this information has been mapped, the actual spatial relationship between a given set of vertebrate species and their habitats has typically not been thoroughly investigated prior to development of the mapping product. Thus the value using such a product is compromised by a lack of understanding its ability to depict a given species' occurrence.

The objective of this project is a field validation of wildlife species prediction from different spatial scales of vegetation/habitat GIS data and different detail levels of vegetation classification information. Spatial scale refers to the size of each classified unit on the ground, such as 1000-square meter blocks or 250-acre minimum polygons. Detail level refers to the classification of floristic and structural attributes of the vegetation community. For example, is the classification only to the dominant life form (e.g. tree-dominated vs. herb-dominated), to habitat level from CWHR (e.g. Sierran Mixed Conifer) or, even finer, to series or association levels from MCV (e.g. Coast Live Oak series, coast live oak/poison oak-California hazel association)? The measure of validity will be the presence or absence of selected species predicted to occur in a given habitat/vegetation type per the CWHR model. Although abundance and frequency data will be collected and these are sometimes used as correlates of habitat suitability, the proposed project is not a habitat suitability validation. To select vertebrate species for comparison, we will consider species of high management concern and representatives of different vertebrate taxa. Species will represent both a variety of home range sizes to test spatial scale and resolution and a range in specificity of habitat use to test appropriate level of detail for attribute information. Detectability in the field will also be taken into account when selecting species, to control for this source of error in model predictions.

Findings and Status

In Point Reyes, we established a total of 121 plots in four habitat types, including Coyote Brush, Coastal Dune Scrub, Coast Live Oak, and California Bay. Specifically, we located 30 Coyote Brush, 26 Coastal Dune Scrub, 19 Coast Live Oak, and 46 California Bay plots. Plots were sampled for 10 day periods, using the following methods at each: small mammal trapping, artificial cover to detect amphibians and reptiles, sooted track plates to detect mammalian carnivores and other vertebrates, incidental observations of wildlife, and variable circular plots to detect birds. During the dry season (May through October) which was the first field season for this study, we conducted wildlife surveys at a total of 72 plot locations in the four habitat types. We also conducted bird surveys at 64 plot locations. During the rainy season (November through April), we conducted wildlife surveys at 113 plot locations in four habitat types. We also conducted bird surveys at 115 plot locations. We have collected vegetation data for all 121 plot locations. In both Point Reyes and also the Golden Gate National Recreation area, we established a total of 148 plots in the four habitat types. To date, we have detected 5 species of amphibians, 6 species of reptiles, and 22 species of mammals. We have not yet summarized any initial findings about birds.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS
\$2000

Funding provided this reporting year by other sources
\$18000

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Full name of college or university

Annual funding provided by NPS to university or college this reporting year

\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

All or some of the information provided may be available to the public.

Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Ms A Randall Hughes	Office Phone: 530 754 8994 Email: arhughes@ucdavis.edu
Address: Dept. of Environmental Science and Policy UC Davis One Shields Avenue Davis, CA 95616	Office Fax: 530 752 3350
Additional investigators (first name, last name, phone)	
Permit# PORE-2001-SCI-0017	
Park-assigned Study Id. # PORE-00272	
Project Title Implications of Genetic Structure in Eelgrass (<i>Zostera marina</i>) Populations for Ecological Processes and Restoration	
Permit Start Date 15-JUL-2001	Permit Expiration Date 31-DEC-2002
Study Starting Date 20-JUL-2001	Estimated Study Ending Date 31-DEC-2002
Study Status Continuing	
Activity Type Research	
Subject/Discipline Ecology	
Objectives The primary objective of this study is to access the genetic diversity of eelgrass (<i>Z. marina</i>) at 3 sites in Point Reyes National Seashore: Marshall Beach, Laird's Landing, and Sacramento Landing. This information will be compared to data on eelgrass shoot density, flowering shoot production, epiphyte biomass, and community composition to determine of genetic diversity influences ecological functions such as primary production.	
Findings and Status This research is currently in progress. I am in the process of analyzing <i>Z. marina</i> samples using	

This research is currently in progress. I am in the process of analyzing *Z. marina* samples using DNA microsatellites to determine levels of genetic diversity. In August of 2001 and January of 2002 I collected data on shoot density, flowering shoot production, and epiphyte biomass at each site. These data have not been completely analyzed, but preliminary results indicated that there are significant differences in epiphyte biomass between sites.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

YES

Funding provided this reporting year by NPS
\$15600

Funding provided this reporting year by other sources
\$0

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Full name of college or university

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\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

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Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Dr Tom Juenger	Office Phone: 510-642-0591 Email: tj@socrates.berkeley.edu
Address: University of California Department of Integrative Biology 3060 Valley Life Science Bldg Berkeley, CA 94720	Office Fax: 510-643-6264
Additional investigators (first name, last name, phone)	
Permit# PORE-2001-SCI-0012	
Park-assigned Study Id. # PORE-00265	
Project Title Phenotypic and genetic variation in the floral morphology of <i>Linanthus parviflora</i> (Polemoniaceae)	
Permit Start Date 01-JUN-2001	Permit Expiration Date 31-DEC-2001
Study Starting Date 01-JUN-2001	Estimated Study Ending Date 31-DEC-2004
Study Status Continuing	
Activity Type Research	
Subject/Discipline Botany	
Objectives The proposed research will focus on evaluating the genetic basis of phenotypic variation in the floral morphology of <i>Linanthus parviflora</i> . In particular, I'm interested in characterizing the genetic mechanisms which stabilize development of flowers.	
Findings and Status Seeds from maternal plants were collected in the field June 2001. We have been working on developing rearing and breeding methods in the greenhouse this fall. We plan on conducting the first breeding crosses in the spring.	

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

YES

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$0

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\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

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Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Ms Rebecca Kihslinger	Office Phone: (530)754-9500 Email: rlkihs@ucdavis.edu
Address: University of California, Davis Department of Neurobiology, Physiology and Behavior Davis, CA 95616 Davis, CA 95616	Office Fax: N/A
Additional investigators (first name, last name, phone) name:Dr. Peter Klimley phone:(707)875-2056 email:apklimley@ucdavis.edu	
Permit# PORE-2001-SCI-0013	
Park-assigned Study Id. # PORE-00268	
Project Title Orientation by Magnetic Cues in an Elasmobranch Fish	
Permit Start Date 15-JUL-2001	Permit Expiration Date 15-SEP-2001
Study Starting Date 01-AUG-2001	Estimated Study Ending Date 15-SEP-2001
Study Status Completed	
Activity Type Research	
Subject/Discipline Zoology	
Objectives Geomagnetic fields are omnipresent sources of information for those animals that have the ability to detect and respond to magnetic stimuli. The use of magnetic fields as a tool for oriented movement and migration has been demonstrated in many species of birds, insects and fish (Wiltschko and Wiltschko, 1995). In the large scale (gradients of 1000 nT) the earth's magnetic field appears to be quite uniform, however on the small scale (gradients of 100 nT) the magnetic	

field appears to be quite uniform, however on the small scale (gradients of 100 nT) the magnetic field becomes spatially and temporally varied (Skiles, 1985). Traditionally, animals have only been assessed for their ability to move directionally in response to the global magnetic field ('a compass sense'). However, the small-scale properties of the magnetic field could also be important to migrating animals. Due to the highly regular nature of the small-scale magnetic fields of the ocean floor and the extreme sensitivity of the elasmobranch (sharks, skates, rays) magnetic sense, it is possible that these fish can orient to the magnetic fields of the seafloor. Results of a study conducted by A.P. Klimley (1993) suggest that small-scale geomagnetic boundaries along the ocean floor may serve as geographic reference roads for diurnally migrating hammerhead sharks. However, this theory is controversial and needs additional support. The objective of the research proposed here is to determine if fine-scale geomagnetic fields can guide the highly directional movements of an elasmobranch fish-the bat ray (*Myliobatis californica*). For this study, five bat rays will be manually tracked in Tomales Bay, California. Each animal will be tracked manually for a period of up to four days. We will use GPS to get positions of the tagged bat ray once per minute and use this data to create point-to-point vectors, which describe the directionality of the ray's swimming movements. In order to determine if the migratory patterns follow geomagnetic pathways we will conduct a magnetometer survey of the local ocean floor. The data from the magnetometer will be entered into a mapping program, which produces a 3-D geomagnetic contour map. The bat ray track can then be compared against the contour map to determine if there is a correlation between the movements of the bat ray and the magnetic delineations of the sea floor. This study will be an important behavioral look at the use of the magnetic sense to guide oriented movements and provide additional insight into the mechanisms of the large-scale migratory movements of marine animals.

Findings and Status

Three bat rays were tagged for this study. The first ray was a female (76.2 cm disc width by 43.2 cm disc length) and was tagged on August 4, 2001. The second ray was a male (76.2 cm disc width by 53.3 cm disc length) and was tagged on August 23, 2001. The final ray was a female (78.7 cm disc width by 45.7 cm disc length) and was tagged on September 6, 2001. All were judged to be adults based on size. The three rays were tracked for a total of 169 hours. Tracking was conducted in twelve-hour shifts over the course of about three 24-hour tracking periods for each ray. The rays were found to move throughout much of the lower bay, however ray 1 spent much of the tracking period near an oyster farm south of Marshall California. Data is currently being analyzed for directionality of movement and differences in movement over the course of the dial cycle.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$2350

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\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

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Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Dr William Lenarz	Office Phone: 415-457-1642 Email: lenarz@earthlink.net
Address: PO Box 251 Kentfield, CA 94914-0251	Office Fax: 415-485-9543
Additional investigators (first name, last name, phone)	
Permit# PORE-2001-SCI-0011	
Park-assigned Study Id. # PORE-00261	
Project Title College of Marin Aquatic Biology Field Trips	
Permit Start Date 01-APR-2001	Permit Expiration Date 31-DEC-2001
Study Starting Date 01-AUG-2001	Estimated Study Ending Date 31-DEC-2001
Study Status Terminated before completed	
Activity Type Education	
Subject/Discipline limnology	
Objectives Provide field experience to students in the collection and identification of aquatic invertebrates and plants, and identification of aquatic vertebrates.	
Findings and Status There were no field trips. Class was cancelled because of low enrollment.	
For this study, were one or more specimens collected and removed from the park but not destroyed during analyses? NO	
Funding provided this reporting year by NPS \$0	Funding provided this reporting year by other sources \$0

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\$0

INVESTIGATOR'S ANNUAL REPORT

National Park Service

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Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Mr Jeff Opperman	Office Phone: 510/527-0253 Email: opperman@nature.berkeley.edu
Address: UC - Berkeley Ecosystem Sciences Div. - ESPM 151 Hilgard Hall no.3110 Berkeley, CA 94720-3110	Office Fax: N/A
Additional investigators (first name, last name, phone)	
Permit# PORE-2001-SCI-0014	
Park-assigned Study Id. # PORE-00267	
Project Title The influence of large woody debris on instream habitat in California's Mediterranean climate watersheds	
Permit Start Date 10-JUN-2001	Permit Expiration Date 31-DEC-2001
Study Starting Date 01-JUN-2001	Estimated Study Ending Date 30-SEP-2002
Study Status Continuing	
Activity Type Research	
Subject/Discipline Ecology	
Objectives The Objectives of my study are to access and quantify the role of Large Woody Debris (LWD) in providing habitat for anadromous fish within hardwood-dominated streams. LWD has been extensively studied in conifer-dominated streams, and had consistently been found to be a primary factor influencing salmonid habitat quality. LWD can induce pool formation, spawning gravel deposition, and provides hydraulic cover during high flows and refuge from predators during summer flows. Generally, LWD from hardwoods has been assumed to be too small and too easily	

decayed to provide the major habitat benefits provided by conifer LWD. However, many streams with anadromous fish have little or no conifers within their riparian corridors or adjacent hillslopes, either because of natural vegetation patterns or human-induced forest conversions. Thus, this study seeks to explore the interactions between LWD and fish habitat within these salmonid-bearing streams that lack a major source of conifer.

Findings and Status

This research has been conducted as part of my dissertation research. In addition to Olema Creek, within Pt. Reyes National Seashore, I have surveyed 25 additional streams. I am currently engaged in data analysis and writing of dissertation chapters. I intend to provide Point Reyes with copies of dissertation chapters that are derived, in part, from work on Olema Creek, as well as drafts of any papers for publication.

Preliminary findings suggest that hardwood LWD can play a major role influencing fish habitat. Olema Creek had among the highest loadings of LWD of all the hardwood streams that I surveyed, and LWD was a primary agent in pool formation and providing cover. Many of the pools formed by debris jams with complex structure that included both living and dead wood material.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$45000

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Annual funding provided by NPS to university or college this reporting year
\$0

INVESTIGATOR'S ANNUAL REPORT

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Reporting Year: 2001	Park: Point Reyes NS
Principal Investigator (first, last) Ms Kathryn Zagzebski	Office Phone: (415) 289-0184 Email: zagzebskik@tmmc.org
Address: The Marine Mammal Center Marin Headlands 1065 Fort Cronkhite Sausalito, CA 94965-2609	Office Fax: (415) 289-7376
Additional investigators (first name, last name, phone) name: Shelbi Stoudt phone: (415) 289-7357 email: stoudts@tmmc.org name: Erin Brodie phone: (415) 289-7371 email: brodiee@tmmc.org name: Frances Gulland phone: (415) 289-7370 email: gullandf@tmmc.org name: Martin Haulena phone: (415) 289-7370 email: haulenam@tmmc.org	
Permit# 90-02	
Park-assigned Study Id. # 234	
Project Title Rescue of Live Stranded Marine Mammals and Sea Turtles; Occasional Investigation of Dead Stranded Marine Mammals; Occasional Release of Rehabilitated Marine Mammals.	
Permit Start Date 01-JAN-2002	Permit Expiration Date 31-DEC-2007
Study Starting Date 01-JAN-1975	Estimated Study Ending Date 31-DEC-2025
Study Status Continuing	
Activity Type Research	
Subject/Discipline Mammalogy	
Objectives Respond to live stranded marine mammals and sea turtles. Occasionally investigate and collect samples from dead stranded marine mammals. Rescue, rehabilitate, and release animals as	

appropriate. Conduct scientific research. Educate the public.

Findings and Status

The Marine Mammal Center

Marine Mammal Strandings within Point Reyes National Seashore in 2001

California sea lion: 3

Northern elephant seal: 1

Pacific harbor seal: 2

Northern right whale dolphin: 1

TOTAL: 7

Marine Mammal Releases within Point Reyes National Seashore in 2001

California sea lion: 95

Northern elephant seal: 73

Pacific harbor seal: 9

TOTAL: 177

Please refer to the "Information on Animals" report, submitted to PRNS via U.S. mail, for further information regarding stranding and disposition of each animal. Information regarding necropsy results is available upon request.

Please refer to "The Marine Mammal Center Scientific Contributions 2001" and "The Marine Mammal Center Conference Proceedings 2001" submitted to PRNS via U.S. mail for a list of our publications and presentations. This information is also available at:
<http://www.marinemammalcenter.org>.

For this study, were one or more specimens collected and removed from the park but not destroyed during analyses?

NO

Funding provided this reporting year by NPS
\$0

Funding provided this reporting year by other sources
\$3700000

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Annual funding provided by NPS to university or college this reporting year
\$0