

SCIENTIFIC RESEARCH AND COLLECTING PERMIT



Grants permission in accordance with the attached general and special conditions

United States Department of the Interior
National Park Service

Point Reyes NS

Study#: PORE-00511

Permit#: PORE-2010-SCI-0019

Start Date: Feb 01, 2010

Expiration Date: Dec 31, 2011

Coop Agreement#: n/a

Optional Park Code: n/a

Name of principal investigator:

Name: Andrea Dransfield Phone: (b) (6) Email: (b) (6)

Name of institution represented:

San Francisco State University

Co-Investigators:

No co-investigators

Project title:

Monitoring Possible Effects of Disturbance on Pacific Harbor Seals in Drakes Estero, CA.

Purpose of study:

The harbor seal is the dominant pinniped and only year-round resident in the San Francisco Bay Area. The colony at Point Reyes National Seashore represents the second largest concentration of harbor seals in California and accounts for 20% of the mainland population. Most of the Point Reyes coastline remains relatively pristine and provides important marine and terrestrial habitat for seals to rest, molt, feed, and breed where human encroachment is minimal. Further studies are needed to investigate pinniped behavioral response to disturbance. Recent pinniped research shows the importance of spatial and temporal scales in habitat selection. While the life history of pinnipeds is generally understood, further research is needed on pinniped habitat requirements and the effects of disturbance on pinnipeds.

Disturbance is defined as any activity that alters normal behavior, and in many locations, disturbance is an important factor affecting the haul-out patterns of pinnipeds. Examples of disturbance include aircraft, boats, seismic activities, pedestrians, kayakers, and natural predators. Disturbance can be anthropogenic or non-anthropogenic and both can be detrimental to pinniped populations. Anthropogenic disturbance is seen to affect haul-out site choice, breeding behaviors, feeding, and in result may cause population declines. In some situations, pinnipeds have become accustomed to disturbance, while in other situations disturbance has led to the eventual abandonment of haul-out sites. Disturbance can cause separation of mothers and pups and can be a significant source of pup mortality. Wildlife oriented recreation may also be considered a disturbance. Studies assessing the potential impact of fisheries have pointed to declines in marine mammal populations due to anthropogenic interactions and recommend comprehensive monitoring of population trends and improved regulations to minimize impacts on local pinniped population. In regards to mariculture, previous research has shown that seal disturbance rates increased with increases in oyster harvest, and that haul-out site choice can be best explained by mariculture activities. Research projects have shown the value of using video cameras to capture rare behavioral characteristics, identify critical habitat types including important foraging areas, determine local preferred prey species, and examine dive times of pinnipeds. Valuable information can be obtained on habitat use, prey species, behaviors, abundance, distribution, physiology, disturbance and foraging ecology. Many conservation and management issues can be clarified and ameliorated using video camera techniques. In the context of disturbance, video cameras are an effective tool to monitor population dynamics in the hopes of improving regulations in order to minimize impacts on local pinniped populations.

Harbor seal haul-out site use may be affected by both natural and anthropogenic factors. This project will investigate the effects of disturbance on the Pacific harbor seal (*Phoca vitulina richardii*) populations at Drakes Estero located near a mariculture operation at Point Reyes National Seashore, California. The hypothesis is that there are no observable effects of anthropogenic or non-anthropogenic disturbance on the harbor seal populations. The alternative hypothesis is that the harbor seal populations are subject to disturbance effects.

Long term effects of disturbance are difficult to assess but the application of video cameras strategically positioned at haul-out sites in these areas that may be affected by disturbance will provide insight into pinniped response and the resulting population dynamics. Since minimizing disturbance effect and protecting haul-out sites is crucial to conserving populations, this project will have important implications for the management and conservation of harbor seals at Point Reyes National Seashore.

Subject/Discipline:

Animal Communities / Wildlife

Locations authorized:

The location of my research site is along the Drakes Estero trail, overlooking OB and UEF harbor seal haul-out sites.

Transportation method to research site(s):

Personal vehicle and rental vehicles

Collection of the following specimens or materials, quantities, and any limitations on collecting:

No Collection

Name of repository for specimens or sample materials if applicable:

n/a

Specific conditions or restrictions (also see attached conditions):

No disturbance of Marine Mammals. Remain > 100 m away.

CARRY PERMIT WHILE WORKING AND LEAVE RESEARCH PLACARD ON DASHBOARD OF VEHICLE. ALL COLLECTIONS MUST BE MADE WITH MINIMAL IMPACT TO THE PARK'S RESOURCES AND VISITORS. Collect as few specimens as practical; in no case should the continued survival of a population of any species be jeopardized by your activities.

ALL TRAPS, TAGS, ETC., WHICH ARE TEMPORARILY LEFT IN THE FIELD MUST BE MARKED WITH YOUR PERMANENT STUDY NUMBER (for example: PORE-0019). They must be as unobtrusive as possible and must not interfere with visitor enjoyment of the park as a natural area.

PLASTIC FLAGGING SHOULD BE USED SPARINGLY AND MUST BE MARKED WITH YOUR STUDY NUMBER. It must be out of sight of trails and roads during all seasons, and it must be removed upon completion of your research project.

PLEASE CONDUCT YOUR ACTIVITIES OUT OF SIGHT OF HEAVILY USED VISITOR AREAS. Please work on weekdays when possible.

YOU ARE REQUIRED TO SUBMIT AN ONLINE REPORT OF YOUR RESEARCH ACTIVITIES EACH YEAR, and you must mail two copies of your final research report and any publications to our office upon completion of your project.

YOU MUST DELIVER GPS POINTS (NAD83 UTM Zone 10) of any permanent or temporary research plots to ben_becker@nps.gov within 7 days of establishing plots. Please include your permit number and name with the email. AVOID introducing weed seeds and propagules.

Recommended by park staff(name and title):

Reviewed by Collections Manager:

Yes _____ No _____

Approved by park official:

Date Approved:

Title:

Superintendent

I Agree To All Conditions And Restrictions Of this Permit As Specified
(Not valid unless signed and dated by the principal investigator)

(Principal investigator's signature)

(Date)

**THIS PERMIT AND ATTACHED CONDITIONS AND RESTRICTIONS MUST BE CARRIED AT ALL TIMES
WHILE CONDUCTING RESEARCH ACTIVITIES IN THE DESIGNATED PARK(S)**



Andrea Dransfield

(b) (6)

09/29/2010 10:44 AM

To Sarah Codde <sarah_codde@nps.gov>, Ben Becker
<ben_becker@nps.gov>

cc

bcc

Subject Thesis

Hi Sarah and Ben,

I am sure by now you know that I am no longer working on a thesis with the harbor seals in Drakes Estero due to this topic being too political and controversial. I am very sorry about this and I really wish it could have worked out. I really enjoyed working with you both and hope to work with you again sometime in the near future. Please keep me updated on any volunteer opportunities, internships, or other ways I can help out at the park. Thank you for all of your time and for always helping with my project.

Sincerely,

Andrea Dransfield
San Francisco State University