

**BEACHCOMBERS:**  
COASTAL OCEAN MAMMAL AND BIRD EDUCATION AND RESEARCH SURVEYS  
SOUTH COAST CHAPTER

PREPARED BY:

Robert McMorran  
Ventura Fish and Wildlife Office  
U.S. Fish and Wildlife Service  
2493 Portola Road, Suite B  
Ventura, California 93003  
805-644-1766 ext. 232  
Robert\_McMorran@fws.gov

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**INTRODUCTION**

**A. *Background and Justification***

To efficiently detect an unusual seabird mortality event and understand whether the observed mortality is within the typical range for the affected species, a program must be in place to routinely survey coastal areas and generate baseline data on beached birds. Site-specific baselines are needed to determine normal species mortality range and deposition, and detect anomalies. Newman et al. (2006) evaluated the benefits of beached bird monitoring programs world-wide and proposed the development of an international seabird surveillance network that would benefit seabird conservation by increasing our awareness of emerging infectious diseases, ecotoxins, and other health threats. Such programs exist in central California, including the Gulf of the Farallones “Beach Watch” program in San Mateo, San Francisco and Marin Counties (1993 to present; Roletto and Grella 1995); and the Coastal Ocean Mammal and Bird Education and Research Surveys (BeachCOMBERS) which extend through the Monterey Bay National Marine Sanctuary from San Mateo to San Luis Obispo Counties (Nevins et al. 2011a).

Currently, there is a notable lack of a beached bird monitoring in Santa Barbara, Ventura, and Los Angeles counties, despite the proximity of the area to the Santa Barbara Channel. This area is rich in seabird diversity with a history of events mortality affecting marine birds (e.g. 2009-2010 Brown Pelican Mortality Events; Nevins et al. 2011b).

The BeachCOMBERS program was established in 1997 to monitor natural and human-related mortality of marine birds, mammals, and turtles. This program involves the use of highly trained citizen scientists to conduct surveys using standardized effort, frequency, and search areas, allowing for the comparison of relative changes in the deposition rate of marine birds and providing a monthly index of ecosystem health in the survey area. In 2012, The U.S. Fish and Wildlife Service funded the expansion of the BeachCOMBERS program to cover approximately 200 miles of shoreline between Morro Bay, in San Luis Obispo County, south to Santa Monica, in Los Angeles County (Figure 1). Representative beaches within this focal area will be selected to be surveyed once a month by citizen scientists so that the data can be extrapolated to provide an adequate baseline for the entire focal area.

Well-designed long-term beach monitoring programs provide consistent, reliable baseline data that can detect large-scale catastrophic events such as oil-spills, but also can detect more subtle changes in environmental quality including increased frequency of harmful algal blooms and long-term chronic oiling, which may not be apparent with a short-term sampling design (Nur et al. 1997, Shumway et al. 2003, Jessup et al. 2009). Additionally, resource agencies can use baseline data from long-term monitoring programs to quantify natural resource damages and estimate restoration compensation following large-scale oil spills (Luckenbach Trustee Council 2006).

During the past four years, the focal area of this proposal has experienced three significant avian mortality events. During the winters of 2008/2009 and 2009/2010 dead and live, stranded, brown pelicans (*Pelecanus occidentalis californicus*) were found along the shores of California, Oregon and Washington beaches in abnormally high numbers. Postmortem examinations revealed starvation/malnutrition and anemia were major factors contributing to the death of examined birds (Nevins et al. 2011b). In the following winter (2011/2012) hundreds of dead Clark's and Western grebes (*Aechmophorus clarkii*, *A. occidentalis*) were reported along the shores of Ventura and Santa Barbara Counties. Understanding the magnitude and cause of these events within the South Coast Area has been hampered by the lack of baseline mortality data in the vicinity. Establishing a BeachCOMBERS program in the South Coast Chapter would facilitate the efficient identification of mortality events in the future and would trigger the partner agencies to initiation investigation protocols.

This project contributes to the Seabird Protection Network by allowing for avian mortality events to be detected, and for baseline beached bird data to be established within the Point Sur to Point Mugu Chapter. Human-caused mortalities will be documented and may be addressed through law enforcement or public outreach and education components of the Seabird Protection Network.



Figure 1. Existing coastline that have beached bird monitoring programs in place, and the focal area for the proposed BeachCOMBERS South Coast Chapter.

## **B. Objectives**

The goal of this project is to extend the existing BeachCOMBERS program to monitor beaches between Morro Bay and Santa Monica. The objectives of the BeachCOMBERS South Coast Chapter are:

1. Work with partners to obtain baseline information on rates of beach deposition of marine birds and marine mammals;
2. Assess causes of seabird and marine mammal mortality;
3. Assist the partner agencies in this study in early detection of unusual rates of natural and anthropogenic mortality;
4. Assess abundance of tar balls (oil patches) on beaches;
5. Build a network of interacting citizens, scientists, and resource managers; and
6. Disseminate information to the partner agencies, the public, and educational institutions.

## **METHODS**

### **A. Data Collection**

Survey teams comprised of well-trained citizen scientists and staff from the partner agencies will conduct standardized beach surveys on beach segments within the South Coast Chapter each month. Prior to the initiation of surveys, the partner agencies will select representative beaches to be surveyed within the focal area. Surveys will be conducted following the BeachCOMBERS protocol developed in 1996 and implemented successfully for fourteen years in the Monterey Bay National Marine Sanctuary. The protocol involves teams of two surveyors conducting surveys once a month at low tide and walking in a zigzag fashion centered on the wrack like of the previous high tide. The survey is an estimate of deposition rather than a total census because not all animals will be visible to the observers (i.e., buried, missed) and the number of animals found will increase with effort, experience, beach type and frequency of surveys (Byrd et al. 2009). Each time a carcass is encountered it will be photographed and marked to avoid double-counting carcasses when determining the number of newly beached individuals. Surveyors will not collect dead carcasses unless a mortality event is occurring and collection of carcasses has been requested by one of the participating agencies.

Standardized data will be recorded, including: date of survey, names of surveyors, beach name and segment number, northern and southern boundaries, duration of survey (begin and end times), weather conditions, and presence or absence of tar balls, number collected, and size range. For each carcass encountered, the following data are recorded: species code, decomposition state, age and sex, number of previous marks, scavenging, cause of death (when evident), presence of oil, photograph number, and presence of research identification tags or bands. The forms used by the existing BeachCOMBRES program to record these data are attached in Appendix A. The protocol for collecting information about beach oiling will be modified for the South Coast Chapter due to high natural seepage. The method for recording the extent of oiling observed on South Coast Chapter beaches will be modeled after a modified Shoreline Cleanup Assessment Technique (SCAT), which is commonly used to determine the extent of oiling following an oil spill.

All citizen scientists and agency staff participating in BeachCOMBER surveys will be required to attend a training session prior to beginning surveys. The Service would act as the lead agency coordinating surveyors within the South Coast Chapter during the start-up phase of the program and will ensure that all segments are routinely covered and survey results are uploaded into a centralized database at Moss Landing Marine Laboratories.

During mass mortality events, a subset of fresh carcasses can be sent to veterinary and pathology experts at the Department of Fish and Game, Marine Wildlife Veterinary Care and Research Center or the National Wildlife Health Center for examination and final determination of cause of mortality.

The project will be managed in two phases:

Phase 1: Establishment of a BeachCOMNERS South Coast Chapter (2012 - 2015)

- Identify at least 10 areas that are representative of the various onshore and offshore conditions throughout the chapter to be routinely surveyed;
- Recruit and train citizen scientist volunteers to survey the selected areas one time each month for 3 years;
- Establish a 3-year baseline; and
- Coordinate among partner agencies to share information about existing and emerging avian and mammal health threats, and plan for coordinated response to large scale mortality events.

Phase 2: long term implementation (2016 and on)

- Managing the citizen scientists to ensure consistent survey coverage for all designated beaches;
- Provide refresher trainings as needed;
- Develop annual reports of survey results and deliver to each partner agency;
- Continue coordination with partner agencies to share information about existing and emerging avian health threats; and
- Utilize baseline data to identify and respond to above-normal avian mortality events.

This proposal requests funding to implement year 2 of Phase 1 only. During this phase, the partners will seek out additional funding sources to maintain the program through Phase 2. Examples of funding sources that could potentially provide ongoing support include oil production companies that would benefit from better documentation of the background oiling rate due to natural seepage in the area, natural resource damage settlements within the South Coast Chapter, internal funding from the partner agencies, and/or external funding for granting programs outside of the partner agencies. During Phase 1 the partner agencies will also work towards reducing the ongoing cost of managing the program by evaluating options for reducing the workload involved in transcribing datasheets from citizen scientists for input into the master database. The partners will explore the potential for developing a mobile phone application that would allow users to directly upload survey results into the master database thereby reducing the amount of time required to manually transcribe datasheets.

During the start-up phase, partnerships will also be established with non-government organizations such as the Audubon Society, Santa Barbara Wildlife Care Network, Surfrider

Foundation, Santa Barbara Channelkeeper, Santa Barbara Zoo, and others that will likely provide a significant volunteer base for the program. If one of these non-government agencies is interested in, and capable of, assuming management of the South Coast Chapter in perpetuity, the partner agencies will consider such a management shift as the program enters Phase 2.

### **B. Analysis**

Survey data collected by BeachCOMBERS participants will be entered into an existing centralized database managed by Moss Landing Marine Laboratories. A summary report at the end of the 3-year pilot period will be delivered to participating agencies and posted on the Service's webpage and BeachCOMBERS webpage.

## **PARTNERSHIPS**

The BeachCOMBERS South Coast Chapter is a collaboration of multiple agencies and organizations. The roles and responsibilities of each collaborating entity are listed below:

<b>U.S. Fish and Wildlife Service</b>	<u><b>South Coast Chapter coordinator</b></u> <ul style="list-style-type: none"> <li>• Coordinate the selection of beaches to be surveyed with input from all partner agencies</li> <li>• Coordinate training for citizen scientists, including recruitment of volunteers</li> <li>• Manage citizen scientists to ensure consistent coverage for all South Coast Chapter beaches</li> <li>• Utilize survey results to inform management actions</li> <li>• Provide survey coverage for local beaches when a volunteer isn't able to conduct the survey during the scheduled time and a trained replacement cannot be found</li> </ul>
<b>Moss Landing Marine Laboratories</b>	<u><b>Training and Data Management lead organization</b></u> <ul style="list-style-type: none"> <li>• Conduct 20-hr training for citizen scientists</li> <li>• Manage data produced by the South Coast Chapter in existing database</li> <li>• Provide technical assistance to support the management of the South Coast Chapter</li> </ul>
<b>California Department of Fish and Game</b>	<u><b>Avian mortality investigation lead agency</b></u> <ul style="list-style-type: none"> <li>• Investigate avian mortality</li> <li>• Conduct analysis of oil during mystery spill events</li> <li>• Contribute local staff to participate in surveys</li> <li>• Utilize survey results to inform management actions</li> </ul>

<b>Torch/Platform Irene Trustee Council</b>	<ul style="list-style-type: none"> <li>• Contribute funding toward the establishment of the South Coast Chapter</li> <li>• Utilize survey results to make the Seabird Protection Network more effective</li> </ul>
<b>Bureau of Ocean Energy Management</b>	<ul style="list-style-type: none"> <li>• Potentially contribute in-kind funding toward the establishment of the South Coast Chapter</li> </ul>
	<ul style="list-style-type: none"> <li>• Utilize survey results to inform management actions</li> </ul>
<b>California State Parks</b>	<ul style="list-style-type: none"> <li>• Utilize survey results to inform management actions</li> </ul>
<b>Vandenberg Air Force Base</b>	<ul style="list-style-type: none"> <li>• Utilize survey results to inform management actions</li> </ul>
<b>Naval Base Ventura County</b>	<ul style="list-style-type: none"> <li>• Utilize survey results to inform management actions</li> </ul>
<b>Channel Islands National Marine Sanctuary</b>	<ul style="list-style-type: none"> <li>• Provide input on the BeachCOMBERS protocol for marine mammals in the South Coast Chapter.</li> <li>• Assist in recruiting and training citizen scientists</li> <li>• Utilize survey results to inform management actions</li> </ul>
<b>National Marine Fisheries Service</b>	<ul style="list-style-type: none"> <li>• Provide input on the BeachCOMBERS protocol for marine mammals in the South Coast Chapter.</li> <li>• Assist in recruiting and training citizen scientists</li> <li>• Utilize survey results to inform management actions</li> </ul>

## BUDGET

The budget for Phase 1 (program establishment and three year baseline data collection) is shown in Table 1 below. The U.S. Fish and Wildlife Service, Region 8 migratory birds program funded year 1 of this program (\$51,473). The Torch/Platform Irene Trustee Council committed to funding year 2 (\$27,388) of the program contingent upon funding being secured for the entire three-year start up phase (see letter of commitment in Appendix B). Funding for Year 3 will be provided through the U.S. Fish and Wildlife Service through recovered oil spill response costs. Additional in-kind contributions estimated to total \$146,400 over the three-year start-up phase are provided by Moss Landing Marine Laboratories and the citizen scientists that will be conducting the surveys.

**Table 1. BeachCOMBERS South Coast Chapter Phase 1 Budget**

	Year 1	Year 2	Year 3	In-kind
	FWS R8 Mig Birds	Torch Funds	FWS Ventura	
<i>Personnel</i>				
Citizen Science coordinator - FWS (year 1 = 125 hrs; Year 2 & 3 = 104 hrs)	\$ 16,152.50	\$ 13,438.88	\$ 13,438.88	
Training manager - Moss Landing (year 1 = 120 hrs)	\$			\$

	6,600. 00			12,000.00
Database management and report preparation - Moss Landing (160 hrs/year)	\$ 8,800. 00	\$ 8,800.00	\$ 8,800. 00	\$ 26,400.00
Project administration - FWS (year 1 = 40 hrs; Year 2 & 3 = 15 hrs)	\$ 5,168. 80	\$ 1,938.30	\$ 1,938. 30	
Survey participation - Volunteers (12 surveys per year @ 10 locations)				\$ 108,000.00
<u>Supplies</u>				
Field supplies (Guides, clipboards, pencils, etc.)	\$ 800. 00			
Workshop supplies (T-shirts, refreshments, etc.)	\$ 1,000. 00			
<u>Equipment</u>				
Development of mobile phone application to allow users to upload survey data directly into the BeachCOMBERS database	\$ 8,000 .00			
<u>Travel</u>				
550 miles @ \$0.55/miles (Moss Landing/Ventura RT)	\$ 302. 50			
Lodging - 3 nights @ \$150/night (Moss Landing)	\$ 450. 00			
<u>Indirect</u>				
Moss Landing (26%)	\$ 4,199. 65	\$ 2,288.00	\$ 2,288. 00	
FWS (6%)		\$ 922. 63	\$ 922. 63	
<b>Sub-total</b>	<b>\$ 51,473</b>	<b>\$ 27,388</b>	<b>\$ 27,388</b>	
<b>TOTAL</b>	<b>\$ 9</b>		<b>106,24</b>	<b>\$ 146,400</b>



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## BeachCOMBERS General Data Form South Coast Chapter

(Please use pencil)

<b>Date</b> _____ <b>Surveyor Names</b> _____ _____	<b>Time dedicated to the survey (h:mm)</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Survey</td> <td style="width: 25%; text-align: center;">Travel</td> <td style="width: 25%; text-align: center;">Online Data entry</td> <td style="width: 25%; text-align: center;">Other</td> </tr> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> <tr> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> <td style="text-align: center;">_____</td> </tr> </table>	Survey	Travel	Online Data entry	Other	_____	_____	_____	_____	_____	_____	_____	_____
Survey	Travel	Online Data entry	Other										
_____	_____	_____	_____										
_____	_____	_____	_____										
<b>Beach segment:</b> _____ <b>Segment number</b> _____ <b>Segment name</b> _____ <b>Northern boundary</b> _____ <b>Southern boundary</b> _____ <b>Start time</b> _____ <b>End time</b> _____													
<b>Weather:</b> sunny__ overcast__ drizzle__ rain__ <b>Wind:</b> calm__ light__ moderate__ strong__	<b>Shoreline Oil/Tarball Observations:</b> <b>Percent Cover:</b> < 1%   1-10%   11-50%   > 50% <small>(Circle One)</small> <b>Description of coverage:</b> _____ <small>e.g. 2m along the wreck line; Isolated patches</small> <b>Average Diameter (inches):</b> _____ <b>Did you observe fresh tarballs:</b> Yes __ No __												
<b>Marine mammals called in:</b> Yes __ No __	<b>Data entered on-line:</b> Yes __ No __												
<b>General comments</b> (oiled wildlife, sampled collected, unusual sighting, additional surveyors, etc.): _____ _____ _____ _____ _____ _____ _____ _____ _____													

**Return to:** Beach COMBERS-MLML, 8272 Moss Landing Road, Moss Landing, Ca 95039  
**Telephone:** (831) 771-4422

South Coast Chapter Version. October 2012



Name: \_\_\_\_\_

Page 2 of \_\_\_\_

Date: \_\_\_\_\_

**Beach COMBERS Data Form** (please use pencil)

Species	Condition	Sex	Age	Toe Clipping		Scavenged	Cause of Death	Oiled	Oil Extend	Where Oiled	Photo	Tag	Comments
				previous	post								

**Codes for Beached Organisms Categories**

<b>Condition:</b>	1 (live dying), 2 (fresh dead), 3 (decomposing), 4 (dried, mummified), U (unknown)
<b>Sex:</b>	F (female), M (male), U (unknown)
<b>Age:</b>	HY (hatch year), AHY (after hatch year), FY (1 <sup>st</sup> year), SY (2 <sup>nd</sup> year), TY (3 <sup>rd</sup> year), IM (immature), AD (adult), PC (pup, newly hatched chick/egg, or calf), U (unknown)
<b>Toe Clipping:</b>	<u>Previous</u> indicates number of toes clipped or twine for marine mammals when you encountered animal. Leave blank if one foot is missing and note in comments. <u>Post</u> indicates number of toes clipped when you left. Leave blank if no toe to clip. Indicate "6" if all toes have been clipped on bird with two feet. Indicate "8" if all toes have been clipped on bird with one foot. Indicate "9" if animal removed from beach. Use comments if necessary.
<b>Scavenged:</b>	Y (yes), N (no), U (unknown)
<b>Cause of Death:</b>	1 (shot), 2 (tangled in fishing net/line), 3 (tangled in plastic), 4 (unknown)
<b>Oiled:</b>	Y (yes), N (no), U (unknown)
<b>Oil Extend:</b>	1 (small globule, <2% of body), 2 (2-33% of body), 3 (34-36% of body), 4 (67-100% of body)
<b>Where Oiled:</b>	1 (dorsal only), 2 (ventral only), 3 (entire body), 4 (head only), 5 (feet only), 6 (wings/flippers only), 7 (other)
<b>Photo:</b>	Y (yes), N (no)
<b>Tag:</b>	Y (yes), N (no)
<b>Comments:</b>	Indicate number, color, and location of any tag present; photo information; and bird with any missing feet. If marine mammal include length measurements, location and if called in. Note disposition and label of removed animal.

Return to: Beach COMBERS-MLM, 8272 Moss Landing Road, Moss Landing, Ca 95035

Telephone: (831) 771-4422

Version 2. May 2010

## Appendix B. Torch/Platform Irene Trustee Council Letter of Commitment

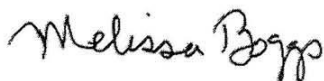
### Statement of Commitment

February 23, 2012

The U.S. Fish and Wildlife Service, the U.S. Air Force, the California Department of Fish and Game, and the California State Lands Commission are the Natural Resource Trustees (Trustees) for the natural resources injured by the 1997 Torch/Platform Irene oil spill along the Santa Barbara County coastline. The Trustees developed a restoration plan that includes a Seabird Colony Enhancement project that would restore injured seabird resources to pre-spill (i.e., baseline) conditions, and to compensate for interim ecological losses pending full recovery. The establishment of a beached bird monitoring program, BeachCOMBERS, in Santa Barbara, Ventura, and a portion of Los Angeles Counties (South Coast Chapter), would supplement the Seabird Colony Enhancement Project by enhancing the ability of the Trustees to detect and respond to avian mortality events, thereby improving the overall management of these resources.

The Trustees hereby commit to provide \$27,388 toward the establishment of the BeachCOMBERS South Coast Chapter, contingent upon the receipt of funding from other sources to fully implement the 3-year start-up phase of the program. If other funding is not received, the Trustees are not obligated to provide these funds. A scope of work will be submitted to the Trustees after all funding for the 3-year start-up has been secured and a Trustee Council Resolution will be issued to authorize the funds.

This statement of commitment is unanimously agreed to by the duly authorized Trustees listed below.



February 23, 2012

Melissa Boggs (Co-Lead Trustee)      Date  
California Department of Fish and Game  
Office of Spill Prevention and Response

 2/23/12

Jenny Marek (Co-Lead Trustee)      Date  
U.S. Fish and Wildlife Service  
Ventura Fish and Wildlife Office

 2/24/12

Samantha Kaisersatt (Trustee)      Date  
U.S. Air Force

 2/23/12

Sarah Mongano (Trustee)      Date  
State Lands Commission