

Prepared for: Wildlife Management Institute (WMI)

Progress Report: South Chapter BeachCOMBERS

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Program Background

Beach monitoring programs are able to detect unusual seabird mortalities, assist in understanding whether the observed mortality is within the typical range for the affected species, 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).

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, allows for the comparison of relative changes in the deposition rate of marine birds and provides a monthly index of ecosystem health in the survey area.

In the 2012, a south chapter of BeachCOMBERS was created due to a notable lack of a beached bird monitoring in Santa Barbara, Ventura, and Los Angeles counties. 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 expansion of the BeachCOMBERS program via the south chapter has added approximately 200 miles of shoreline along the coast from Morro Bay in San Luis Obispo County, south to Santa Monica in Los Angeles County (Fig. 1). Trained, citizen scientists surveyed the beaches within this focal area and the data was extrapolated to provide an adequate baseline for the entire focal area.

Methods - Data Collection

All citizen scientists and agency staff participating in the BeachCOMBERS program were required to attend a 6-8 hr. training session prior to beginning surveys. Citizen scientists and staff from the partner agencies have been conducting standardized surveys since January 2013 following the BeachCOMBERS protocol developed in 1996 and implemented successfully for fourteen years in the Monterey Bay National Marine Sanctuary (see Nevins et al. 2011). The protocol involves teams of two that: 1) survey the same beach segment the first week of each month at low tide, 2) walk in a zigzag fashion centered on the wrack like of the previous high tide, 3) take standardized data on carcass and tar ball deposition, 4) mark carcasses encountered, and 5) collect carcasses of target species if requested via program coordinators and participating agencies. The surveys serve as 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.

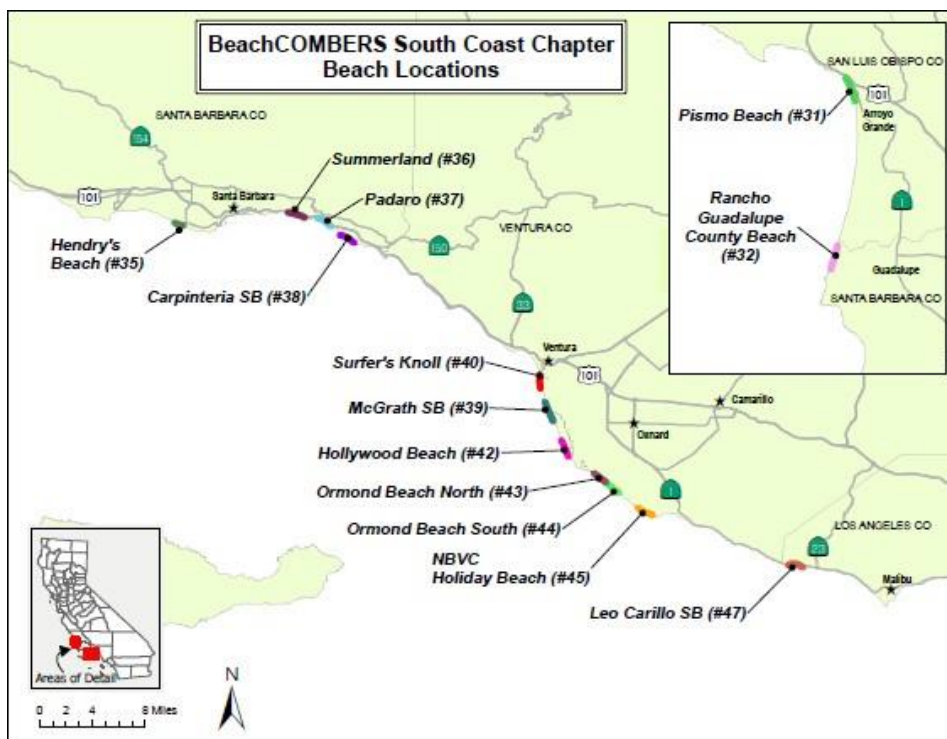


Figure 1. Map of the BeachCOMBER South Coast Chapter beach locations and associated beach number.

Standardized data is 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 protocol for collecting information pertaining to beach oiling in the South Coast Chapter has been modified from Nevins et al. (2011) due to high natural seepage in the southern area. The method for recording the extent of oiling observed on South Coast Chapter beaches has been modeled after a modified Shoreline Cleanup Assessment Technique (SCAT), which is commonly used to determine the extent of oiling following an oil spill. Surveyors record percent and description of tar ball coverage, occurrence of fresh tar balls, in addition to average diameter.

Each month, the collected data was returned to MLML (via email or mail) where it was entered and stored in a database by a BeachCOMBER coordinator.

Scope of work and tasks completed as of April 2013:

Task 1: Provide training to citizen scientists for conducting BeachCOMBERS surveys

On November 3rd and 10th of 2012, Hannah Nevins (BeachCOMBER project leader) and Erica Donnelly-Greenan (BeachCOMBER coordinator) conducted two training sessions (Cambria and Ventura, California) to train volunteers to take standardized data as citizen scientists for the BeachCOMBER South Coast Chapter. Volunteers participated in full day of training that included how to: 1) identify local marine birds, turtles, and mammals; 2) record standardized data during surveys; 3) conduct tar and oil sampling from beach sources and oiled carcasses; and 4) collect specimens/carcasses during unusual mortality events (UMEs) or special calls. Hands-on experience was provided for volunteers through dry-mounted seabird specimens (from the MLML museum) of common species found during beach surveys. Volunteers were provided with binders (containing the training presentations, sampling protocol, and other information supplements) and backpacks with beach survey supplies (data sheets, gloves, oil sampling kits, clippers, twine, measuring tape, and bird field guides). Volunteers that participated were paired up, assigned a beach location to conduct monthly surveys, and were added to the BeachCOMBER Listserv. The Listserv is maintained by BeachCOMBER coordinators; it provides monthly survey reminders, tide charts, as well as announcements and other on-goings related to the BeachCOMBERS program.

Task 2: Compile data from citizen scientists and manage the BeachCOMBERS database

Official surveys for the Southern BeachCOMBERS chapter began the first week of January 2013 and have continued thereafter. Volunteers note species, mark carcasses to keep track of new versus old deposition, and check for oiling, entanglement, or scientific tags. In the event that volunteers encounter a rare species or a carcass they cannot identify, photographs are taken and included with the survey data. Data sheets and photos are mailed to MLML or emailed to the BeachCOMBER coordinator each month where the data is proofed, entered, and saved in the MLML database and backed up via the Cloud (Dropbox). Finally, the data from the 12 beaches are compiled and examined for trends in carcass deposition (signaling a UME) and tar ball deposition.

Task 3: Coordinate with USFWS and other partners when usual mortality events are detected through BeachCOMBERS surveys

As of early April 2013, no UMEs have been reflected in the Southern BeachCOMBER deposition of dead animal data. However, southern wildlife rehabilitation centers have reported an influx of live Common Murres and California Sea lion pups to northern in the early spring. In March 2013, approximately 80 oiled Common Murres were admitted to the International Bird Rescue Center in San Pedro, Los Angeles County, California¹ and > 517 hypothermic, dehydrated, and underweight sea lion pups had been admitted to five Southern California marine mammal rescue centers². With the recent influx of live contaminated and/or starving wildlife into these centers, BeachCOMBER coordinators and partners will be watching the data rigorously to track any UMEs that may be beginning.

¹ <http://blog.bird-rescue.org/index.php/2013/02/southern-california-media-reports-on-oiled-seabirds-at-international-bird-rescue/>

² <http://www.wired.com/wiredscience/2013/03/sea-lion-pup-stranding/>

Task 4: Prepare BeachCOMBERS annual reports (In progress).

Results and Discussion

Carcass Deposition

BeachCOMBER survey data from the South Chapter has been tallied for January-April 2013 to examine early trends in oiled carcasses and species deposition (Figs. 2, 3). Here, we report seabird deposition by the first two letters of the common name (e.g. Common Murre, COMU), whereas marine mammals are reported by the first two letters of the genus and species name (e.g. *Zalophus californianus*, ZACA). January revealed the overall trends in species deposition that would be reflected throughout the four survey months, where the greatest deposition was found for Western and Clarks Grebes (WEGR, CWGR), Brandt’s Cormorants (BRAC), and Brown Pelicans (BRPE; Fig. 2). Reported deposition for these species decreased dramatically for the April surveys where less than 10 individuals were reported for each species category (Fig. 2). Because we are in the early stages of collecting baseline data, it is unclear if the rate of species deposition for Western and Clarks Grebes reflects an Unusual Mortality Event (UME) or if this rate of deposition is considered normal for the surveyed Southern California beaches. Additional surveys will reveal patterns of deposition on these surveyed beaches and provide us with adequate information to detect large-scale and small-scale mortality events that may not be apparent with the short-term sampling conducted thus far.

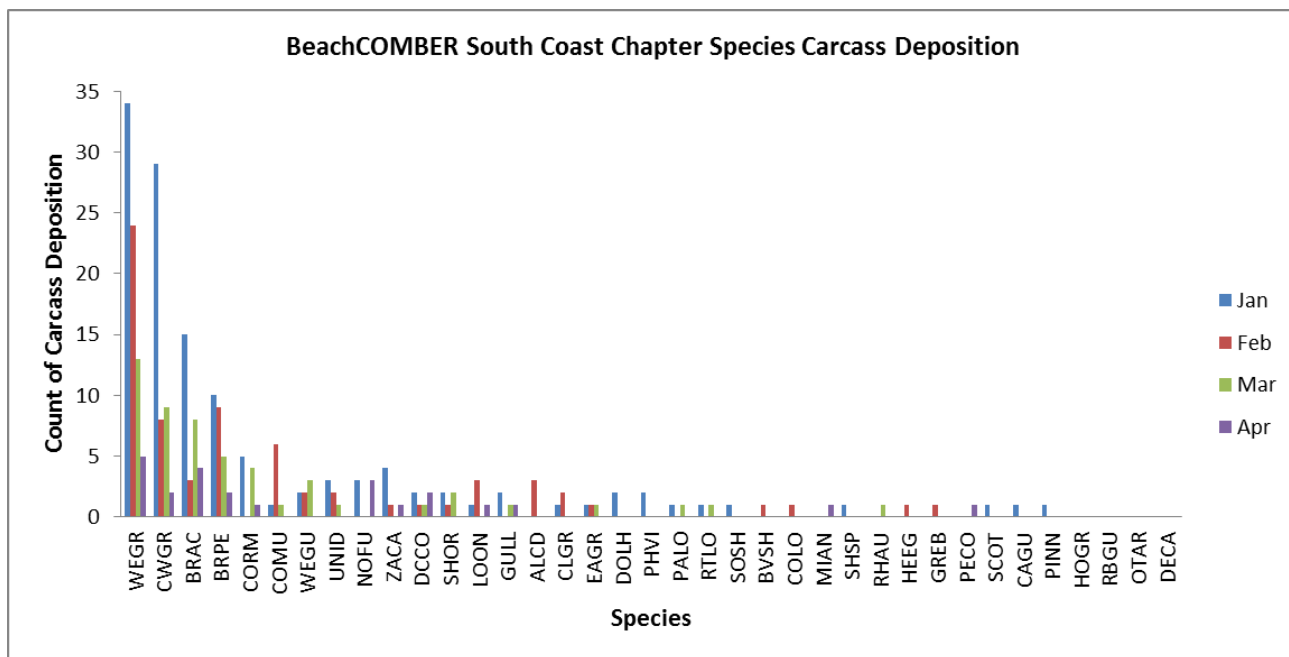


Figure 2. BeachCOMBER South Coast Chapter Carcass Deposition exhibiting counts of species identified and recorded for January – April surveys. Species are recorded using four letter codes where seabirds are reported using the first two letters of the common name and marine mammals are reported by the first two letters of the genus and species name (see Appendix A: species codes).

Oiled Carcasses and Beach Tar balls

During January to April 2013, BeachCOMBERS reported 36 oiled seabird carcasses comprised of eight species (Fig. 3). Western and Clarks Grebes (17 WEGR, 5 CWGR, 1 CLGR) and Common Murres (6 COMU) were the most commonly oiled birds reported between January and April (Fig. 3). The greatest deposition occurred in February, when three Western Grebes carcasses were recorded at Padaro (Beach 37) and Hollywood (Beach 42; Fig. 3). Other reported oiled carcasses included two Eared Grebes, a Brown Pelican, a Northern Fulmar, a Rhinoceros Auklet, a Loon, and an unidentified bird carcass.

Citizen scientists also record percent and description of tar ball coverage, occurrence of fresh tar, and the average diameter or range of tar ball sizes for their monthly surveys (Table 1). When tar was encountered on the beach, tar balls were commonly reported as isolated patches along the tideline.

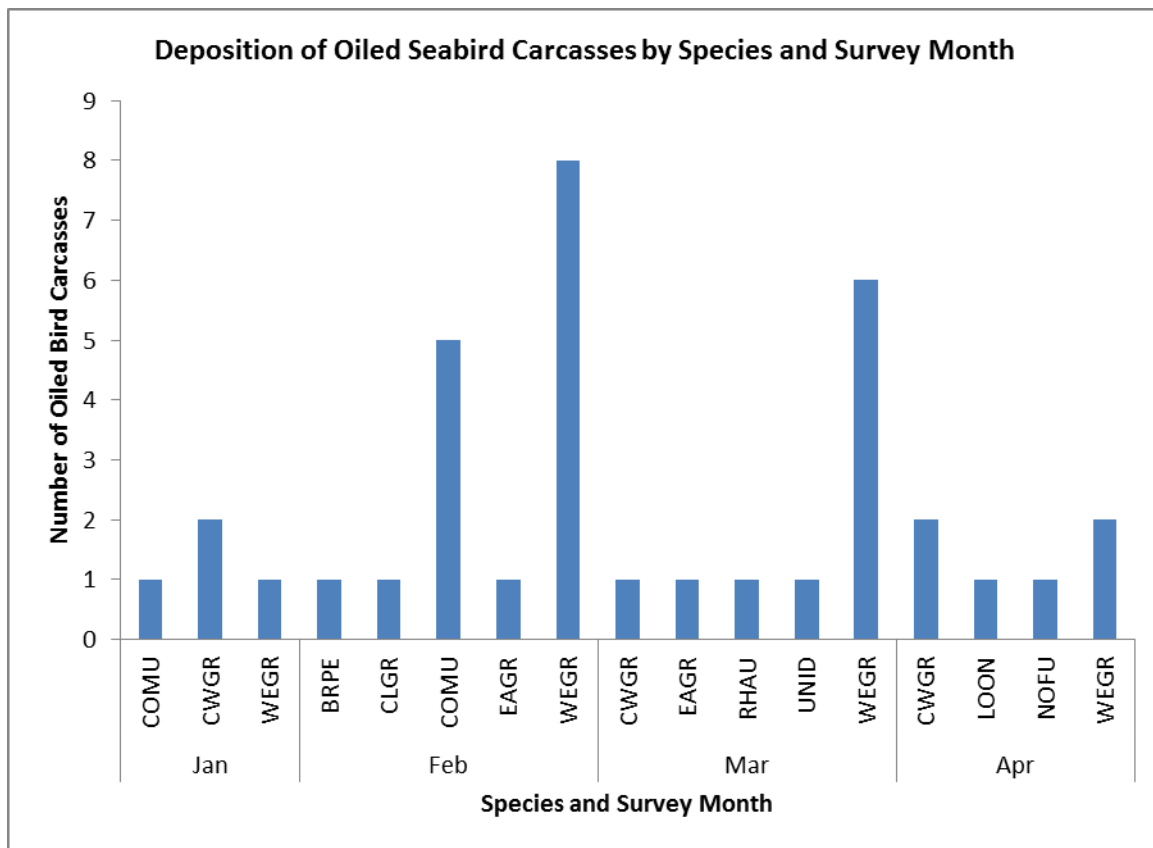


Figure 3. BeachCOMBER South Coast Chapter oiled carcass deposition by species and survey month. Species are recorded using four letter codes where seabirds are reported using the first two letters of the common name and marine mammals are reported by the first two letters of the genus and species name (Appendix A: species code list). Not all data for April are complete.

Table 1. Monthly reports in 2013 of tar ball percent coverage, number of beaches that reported fresh tar on beaches, and the tar ball diameter range (in). Beaches (n) reflects the total number of beaches for which a report of oiling was received.

Survey Month	Beaches (n)	Tarball Percent Coverage			Fresh tar	Tarball Diameter Range (in)
		0%	<1%	1-10%		
January	11	2	5	4	2	0-5
February	11	0	7	4	3	0-3
March	11	0	8	3	1	0-3
April	5	2	4	1	3	0-5*

*one reported highly variable

Entanglement and Other Special Case Mortality

At times, cause of death can be determined or predicted for particular carcasses encountered during a survey. A Western Grebe and Long beaked Common Dolphin were reported as entangled on Hollywood (Beach 42) in February and March 2013, respectively. A fishing lure with multiple hooks was removed from a Brown Pelican carcass on Holiday (Beach 45) in April 2013 (Fig. 4a), and an Elephant Seal with noticeable shark wounds was reported during the same survey (Fig. 4b).



(A)



(B)

Figure 4. Two interesting cases were encountered by beach surveyors on Holiday Beach in Ventura County, during the April 2013 survey. (A) A large fishing lure was removed from a Brown Pelican carcass and (B) an Elephant Seal carcass was found with multiple shark bites. Note that bites could be cause of death or from post-mortem scavenging.

Literature Cited

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- Roletto, J., J. Mortenson, I.Harrald, J. Hall, and L. Grella. 2003. Beached bird surveys and chronic oil pollution in central California. *Marine Ornithology* 31:21-28.

APPENDIX A : Species Code List

Marine birds	Code	Marine birds (cont.)	Code	Marine Mammals	Code	Other Vertebrates	Code
Loons - Gaviidae				Baleen Whales - Mysticetes		Sea Turtles	
Arctic Loon	ARLO	Brown Pelican	BRPE	Blue Whale	BAMU	Eastern Pacific Green Turtle	PGTR
Common Loon	COLO	White Pelican	WHPE	Fin Whale	BAPH	Hawksbill Turtle	HBTR
Pacific Loon	PALO			Gray Whale	ESRO	Leatherback Turtle	LBTR
Red-throated Loon	RTLO	Scoters		Humpback Whale	MENO	Loggerhead Turtle	LHTR
Yellow-billed Loon	YBLO	Black Scoter	BLSC	Minke Whale	BAAC	Pacific (Olive) Ridley Turtle	PRTR
Unidentified Loon	LOON	Surf Scoter	SUSC	Sei Whale	BABO	Unidentified Turtle	UNTR
		White-winged Scoter	WWSC	Unidentified Whale	WHAL		
		Unidentified Scoter	SCOT			Unidentified & Others	
Grebes - Podicipedidae				Toothed Whales - Odontocetes		Unid. Not marine mammal	NNMM
Clark's Grebe	CLGR	Phalaropes		Bottlenose Dolphin	TUTR	No birds or mammals on survey	NNNN
Western Grebe	WEGR	Red Phalarope	REPH	Long-beaked Common Dolphin	DECA	Fish or Shark	FISH
Clark's/Western Grebe	CWGR	Red-necked Phalarope	RNPH	Short-beaked Common Dolphin	LIBO		
Eared Grebe	EAGR	Unidentified Phalarope	PHAL	Unidentified Common Dolphin	UNDE		
Horned Grebe	HOGR			Northern Right Whale Dolphin	LAOB		
Pied-billed Grebe	PIGR	Gulls, Terns, Jaegers - Lariidae		Pacific White-sided Dolphin	KOBR		
Red-necked Grebe	RNGR	Bonaparte's Gull	BOGU	Risso's Dolphin	DEDE		
Unidentified Grebe	GREB	California Gull	CAGU	Killer Whale	OROR		
		Glaucous Gull	GLGU	False Killer Whale	PSCR		
Tubenoses - Procellariidae		Glaucous-winged Gull	GWGU	Unidentified Dolphin	DOLH		
Black-footed Albatross	BFAL	Heerman's Gull	HEEG	Harbor Porpoise	PHPH		
Laysan Albatross	LAAL	Herring Gull	HERG	Dall's Porpoise	PHDA		
Black-vented Shearwater	BVSH	Laughing Gull	LAGU	Unidentified Porpoise	PORP		
Buller's Shearwater	BUSH	Mew Gull	MEGU	Baird's Beaked Whale	BEBA		
Flesh-footed Shearwater	FFSH	Ring-billed Gull	RBGU	Cuvier's Beaked Whale	ZICA		
Pink-footed Shearwater	PFSH	Sabine's Gull	SAGU	Hubb's Beaked Whale	MECA		
Short-tailed Shearwater	SHOS	Thayer's Gull	THGU	Unidentified Beaked Whale	BEAK		
Sooty Shearwater	SOSH	Western Gull	WEGU	Sperm Whale	PHMA		
Unidentified Shearwater	SHSP	Black-legged Kittiwake	BLKI	Unidentified Toothed Whale	ODON		
Northern Fulmar	NOFU	Unidentified Gull	GULL				
Ashy Storm-petrel	ASSP	Caspian Tern	CATE	Seals and Sea Lions - Pinnipedia			
Black Storm-petrel	BLSP	Elegant Tern	ELTE	California Sea Lion	ZACA		
Fork-tailed Storm-petrel	FTSP	Forester's Tern	FOTE	Guadalupe Fur Seal	ARTO		
Leach's Storm-petrel	LHSP	Common Tern	COTE	Steller's Sea Lion	EUJU		
Least Storm-petrel	LTSP	Royal Tern	ROTE	Northern Fur Seal	CAUR		
Unidentified Storm-petrel	SPSP	Least Tern	LETE	Unidentified Otariid	OTAR		
Unidentified Procellariid	PROC	Unidentified Tern	TERN	Elephant Seal	MIAN		
		Parasitic Jaeger	PAJA	Harbor Seal	PHVI		
Auks - Alcidae		Pomarine Jaeger	POJA	Unidentified Phocid	PHOC		
Cassin's Auklet	CAAU	Long-tailed Jaeger	LTJA	Unidentified Pinniped	PINN		
Ancient Murrelet	ANMU	South Polar Skua	SPSK				
Marbled Murrelet**	MAMU	Unidentified Jaeger	UNJA	Otters - Mustelidae			
Xantus's Murrelet	XAMU			Sea Otter***	ENLU		
Craveri's Murrelet	CRMU	Unidentified/Others		River Otter***	LUCA		
Common Murre	COMU	Unidentified non-marine	NPSS				
Horned Puffin	HOPU	Unidentified bird	UNID				
Tufted Puffin	TUPU	Unidentified dove/pigeon	DOVE				
Rhinoceros Auklet	RHAU	Unidentified raptor	RAPT				
Pigeon Guillemot	PIGU	Unidentified shorebird	SHOR				
Unidentified Alcid	ALCD	Unidentified duck/goose	DUCK				
Cormorants & Pelicans - Pelicaniformes							
Brandt's Cormorant	BRAC						
Double-crested Cormorant	DCCO						
Pelagic Cormorant	PECO						
Unidentified Cormorant	CORM						

* If not on list, please spell out name in notes

** Please collect all Marbled Murrelets, even if you are not sure of ID

*** Report dead otters CDF&G 831-469-1719

SPCA Monterey Bay 831-373-2631
 Marine Mammal Center 831-633-6298
 State Park Dispatch 831-429-2851