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Seabird Injury Quantification Plan (Field Data Collection)
Tesoro Hawaii SPM Hose Oil Spill
FPN 148027
20 September 1998

Objectives of plan: To outline the steps necessary to quantify and evaluate the injury to seabirds and shorebirds sustained during the Tesoro Hawaii SPM Hose Oil spill.

A variety of approaches are required to ensure we acquire the best information possible to assess the ~~damage~~^{injury} to birds from this spill. The individual actions proposed below will each provide data for one or more categories of inquiry including 1) documentation of the source of oil contaminating seabirds and shorebirds in the area. 2) estimation of number of seabirds and shorebirds exposed to oil in the area, and the duration of continued exposure, and 3) the effects of those exposures on seabirds and shorebirds.

The following activities and studies will all provide components to be used in the assessment of injury to seabirds and shorebirds. They are listed roughly in order of urgency or time sensitivity. Some of the data may be acquired in the process of response rather than Natural Resource Damage Assessment but the transfer and collation of those data will make them useful for the assessment task as well.

- A. Activity:** Collection or capture of any seabird or shorebird observed with oil or behaving abnormally, documentation of condition and fate of animal, sampling of oiled feathers using standard technique, materials, and chain of custody procedures, collection of entire carcass if animal dies using standard technique, materials, and chain of custody procedures. Site of capture or collection should be mapped as should area and frequency of systematic shoreline searches. Detailed records of the extent of oiling relative to fate of bird will assist in the effects analysis.

Participants: Members of the public, IBRRC bird rescue personnel, clean-up crews, SCAT (sp.) teams, NRDA biologists.

Duration and frequency of activity: indefinite - until no more oiled animals are being found or oil is determined to be from another source. Frequency should be at least one visit per week to all beaches on Kauai and any beaches on Oahu at which oiled birds were recovered. Beach surveys may be suspended after 4 consecutive visits with no oiled wildlife or debris found.

- B Activity:** Daylight surveys of all major colonies of breeding seabirds in spill area[/]for signs of oiling on species visible during the day, capture of any seabird or shorebird observed with oil or behaving abnormally, documentation of condition and fate of any oiled bird, collection of oiled feathers using approved protocol, materials, and chain of custody procedures, collection of carcasses using approved protocol, materials, and chain of custody procedures. Sites identified for survey include Mokapu Peninsula (Red-footed Boobies), Manana Island (Brown Noddies, Red-tailed Tropicbirds) Moku Manu Island (Red-footed Boobies, Brown Boobies, Masked Boobies, Great Frigatebirds, Brown

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Noddies, Black Noddies, and Gray-backed Terns), Kilauea Point (Red-footed Boobies, Red-tailed Tropicbirds, White-tailed Tropicbirds), Lehua Island (Christmas Shearwaters, Red-tailed Tropicbird, Red-footed Boobies, Brown Boobies, Black Noddies), and Kaula Island (Bulwer's Petrels, Christmas Shearwaters, Red-tailed Tropicbirds, Masked Boobies, Brown Boobies, Red-footed Boobies, Great Frigatebirds, Gray-backed Terns, Brown Noddies, Black Noddies, White Terns). All of these sites as well as the beaches in activity A. could have the shorebirds Bristle-thighed Curlews, Wandering Tattlers, Ruddy Turnstones, and Golden Plovers exposed by feeding in the intertidal. Surveys should consist of visual inspection of all birds in the colony from as close a vantage point as is feasible. Late afternoons and early morning timing will increase numbers of individual birds in the colony for most species. For sites where repeated surveys will be conducted suggest mapping location of oiled birds and sketching pattern of staining so bird will not be counted twice if it isn't captured.

Participants: A combination of State of Hawaii biologists, Fish and Wildlife Service biologists, Marine Base Resource management staff, and biologists contracted by Tesoro

Duration and Frequency of Activity: Visits to colonies should begin as soon as possible. Some sites (Mokapu and Kilauea Points) can be monitored at least weekly until oilings cease. Other sites such as Kaula, Lehua, Moku Manu, and Manana are more difficult to visit and the decision to make follow-up visits should come after the first survey is completed).

- C. **Activity:** Nocturnal examination of adult Wedge-tailed Shearwaters for signs of oil exposure. This study should be initiated immediately at Kilauea Point where night-time access to a colony is possible. Biologists should examine adults coming to the colony as pre-breeders or adults feeding chicks with a headlamp by catching them with a dip net as they sit on the surface in the colony or as they emerge from burrows after feeding their chicks. Sample size objectives will be set after a feasibility trial to determine how many pre-breeding age adults are still coming to the colony. If numbers of birds in accessible areas are not limiting, at least 500 birds should be checked. The observer should make a small mark with a permanent sharpie marker on the web of each animal checked to avoid handling the same bird twice. Any band numbers found should be recorded and reported to the refuge biologist.

Participants: Tesoro staff and FWS Refuge Staff as available.

Duration and Frequency: Study should continue until 500 Shearwaters have been checked or until low numbers of adults visiting the colony make the work impractical. If oiled birds are encountered at Kilauea Point the question of checking other colonies can be addressed at that time.

- D. **Activity:** Marine surveys of species composition and density of seabirds in the Kauai channel and along 8 transects radiating out from Kauai. Techniques used should be those of Gould and Forsell (1989) and Spear, Nur, and Ainley (1992) (attached) with allowances made for the use of a smaller vessel than typically used in their studies. Length of the 8

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radial transects will be decided pending more information available about the possible trajectory and extent of movement of the oil. This study is the only way to assess the possible exposure of the Newell's Shearwater and the Dark-rumped Petrel, both protected by the Endangered Species Act of 1973. Both these species tend to leave the area and move south after the breeding season so these surveys should be commenced as soon as possible preferably by the middle of October or done next year at the same time that the spill occurred.. These data will be necessary for any model of spill effects.

Participants: Biologists hired by Tesoro who are experienced in marine bird survey.

Duration and Frequency: A single set of surveys to allow estimation of seabird densities in the spill area at the time of the accident.

E. Activity: Coordination and communication with residents of Niihau in order to get information about oiled birds on beaches or at colonies on that island.

Participants: Tesoro biologists.

Duration and Frequency: Dependent on initial findings.

F. Activity: Collation and analysis of existing population data for colonies surveyed by coordination with state biologists for seabird colonies managed by DOFAW, refuge biologist for Kilauea Point NWR, and resource managers at Kaneohe Marine Air Corps Station.