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### **Oiled Wildlife Care for Sea Otters and Other Marine Animals in California: A Government, University, Private Sector, Non-Profit Cooperative**

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The draft revised southern sea otter recovery plan released by the U.S. Fish and Wildlife Service (FWS) for public review and comment of June 1996 states that "...the likelihood of sea otters persisting in California is currently determined by whether a major oil spill occurs within the sea otters range...." (U.S. Fish and Wildlife Service 1996. p. vii). It further states that "...two approaches have been identified that would lead to delisting the southern sea otter under the Endangered Species Act (ESA): (1) increasing the range of otters in California to reduce the risk of a single oil spill event reducing the otter population below a level that is viable, and (2) decreasing the risk to otters that a major oil spill event within their range will occur" (U.S. Fish and Wildlife Service 1996. p. vii).

Efforts to increase the range of the southern sea otter (the first approach) have met with limited success. Reasons for this, for the slow rate of expansion of the sea otter population, and for the apparently high rate of mortalities in adults, are poorly understood. Efforts to decrease the risk of a major oil spill (the second approach) include moving all Trans-Alaska Pipeline System tanker traffic (but not all non-oil carrying vessels and barges) beyond 50 miles off the coast. These efforts are under the leadership of the California Department of Fish and Game-Office of Oil Spill Prevention and Response (CDFG-OSPR) and the U.S. Coast Guard.

A third approach toward improving the likelihood that sea otters would survive a major oil spill, the development of state-of-the-art centers for sea otter care and research, is not mentioned in the draft revised southern sea otter recovery plan. That may be because, given the relatively high costs and mortality rates for oiled sea otters in Alaska following the Exxon Valdez incident, this approach to sea otter management is somewhat controversial. However, while treatment and recovery programs for the non-threatened, expanding sea otter population in Alaska may be controversial, the California situation is very different indeed. California sea otters are state and federally listed, the population is only slowly recovering, and a single large oil tanker spill could contaminate a major portion of the entire sea otter range.

This paper will discuss the Oiled Wildlife Veterinary Care and Research Center (OWVCRC) in Santa Cruz, California, that will serve as a focus for oil spill response and sea otter biomedical research, and a larger Oiled Wildlife Care Network (OWCN) that serves all species along the California coast, including its development, current status, and potential contributions to species conservation.

Although the plight of the southern sea otter was not the driving force behind the development of an Oiled Wildlife Care Network (described below) in California (see Figure 1), it was certainly a major consideration. Every effort has been made in the development of the OWCN, and OSPR's other programs, to identify methods by which impacts of oil spills in the sea otter range can be reduced. In addition, the OWCN will ensure that any sea otters that do become oiled will receive the best achievable treatment and that their potential for survival and release will be maximized. Thus, the OWCN and associated monitoring, research and management efforts by the CDFG and cooperating agencies and organizations may hasten the recovery of the southern sea otter and may help document their health and status in support of federal delisting.



Figure 1. Location and focus of oiled wildlife care network (OWCN) facilities.

### The Oiled Wildlife Care Network

Although state wildlife agencies are trustees for wildlife resources, few wildlife agencies actually provide care for wildlife compromised by oil spills or other human activities. The establishment of a large and complex network for the care of oiled wildlife before a major oil spill is unprecedented. But, the spectacle of dead and dying Alaskan sea otters repeatedly shown on national television throughout the spring of 1989 subsequent to the Exxon Valdez spill, followed shortly by the American Trader spill off Huntington Beach near Los Angeles, California, galvanized public and political support in California for action. In 1990 the legislature of California enacted the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (SB 2040), which established the OSPR within the CDFG, and placed a \$.04 per barrel fee on oil transported or processed in California, the proceeds of which are to be used, among many other things, for care of wildlife affected by oil spills. SB 2040 requires that oiled wildlife receive "best achievable treatment" and "the establishment of rescue and rehabilitation stations for sea birds, sea otters, and other marine mammals." The first of these stations was to be built within the range of the southern sea otter.

OSPR is currently building this station (OWVCRC) at the University of California, Santa Cruz (UCSC). When completed in the summer of 1997 at a cost of approximately \$5 million dollars, it will be capable of caring for 125 sea otters, but flexible enough to care for other species of marine animals and house ongoing joint and cooperative research projects. By locating this facility adjacent to California's premier marine ecotoxicology laboratory (the Joseph L. Long Marine Laboratory on the UCSC campus), and by committing to support appropriate research, OSPR has assured that its OWVCRC will play a prominent role in sea otter and marine mammal research and management when not being used for oil spill response.

In 1993, a second piece of legislation, SB 775, which was amended by AB 1549 in 1995, allowed OSPR approximately \$9 million dollars over a 4 year period to help build the other mandated "rescue and rehabilitation stations" in the OWCN, and allow the OWCN to serve all marine species along the entire California coast. These additional centers are being developed in San Diego, Orange County, Los Angeles, Santa Barbara, the San Francisco Bay Area and Humboldt County. Most of these centers should be completed by the end of 1997. Each of these centers is being developed in conjunction with an existing marine park, wildlife rehabilitation program, educational institution, or combination of compatible programs. The programs at each center have separate and additional sources of financial, political, and personnel support. This approach again assures that all OWCN centers will provide useful and appreciated services to the people of California when not in use for oil spill response (see current programs section below). Two centers, one at Sea World in San Diego and one at The Marine Mammal Center in Sausalito, are being designed and built to provide additional facilities for the care of oiled sea otters should the capacity of the Santa Cruz OWVCRC be exceeded or should it be medically expedient to treat oiled sea otters at separate locations.

To assure that oiled wildlife would immediately begin receiving "best achievable treatment," OSPR developed working relationships assured by a Memoranda of Understanding with 15 existing private non-profit wildlife rehabilitation organizations in 1995 and incorporated them into the OWCN. These organizations have agreed to assist OSPR with personnel and small facilities to respond to the needs of oiled wildlife. Essentially all of the organizations that currently provide care for marine mammals as part of the California Marine Mammal Stranding Network under the jurisdiction of the National Marine Fisheries Service (NMFS) are part of the OWCN. OSPR and NMFS have negotiated a Memorandum of Agreement to confirm this state and federal agency cooperation during and between oil spills. OSPR has, in turn, equipped and supplied these 15 additional existing organizations with whatever they have needed to deliver "best achievable treatment" to oiled wildlife and has conducted, and will continue to conduct, training courses and symposia on state-of-the-art medical care and washing procedures, sample collection, record keeping, etc. In some cases the physical facilities have been improved or expanded at these existing private wildlife rehabilitation centers.

These smaller wildlife rehabilitation organizations can provide a pool of trained volunteers for oiled animal care that may be utilized at more distant locations in the event of a catastrophic spill requiring large amounts of person power. The cooperation and mutual respect that develops when private, community-supported organizations and government work together results in community (thus political) support for the overall program. It is also hoped that this type of cooperation and assistance will encourage the continued improvement and professionalization of wildlife rehabilitation organizations.

### **Current program status**

To meet the mandate for immediate veterinary response capabilities for oiled wildlife, the OWCN has developed a veterinary team that includes individuals from government agencies, private practice, universities, research institutes, wildlife rehabilitation centers, and marine parks. Participants share pertinent information, improve and standardize treatment protocols, and cooperate in research. OSPR has built and outfitted a pair of mobile veterinary laboratories and animal transport, washing, and care trailers that can be mobilized to reach anywhere in California within 24 hours. A trailer specifically designed to rapidly transport large numbers of oiled birds to or between centers has been designed and built. Small trailers which contain hazing equipment and supplies needed during the first few hours following an oil spill and which can transport all-terrain vehicles needed for wildlife surveillance and pickup have been constructed and deployed. The large "18 wheeler" mobile oily bird care and washing trailer (MOBCART), which was designed by International Bird Rescue and Research Center (IBRRC) and built by Chevron and Clean Seas, will soon be available for response in California as well. The development of regional OWCN facilities will substantially improve local wildlife veterinary care capability as well as reduce the cost of oiled wildlife rehabilitation, which has traditionally included the development of interim facilities (see Williams and Williams, this issue).

A third piece of legislation introduced in 1995, AB 1549, expanded the OWCN mandate to include operations and maintenance of the OWCN, and support of appropriate technology development and research allows OSPR to accomplish these aspects of the program through the Wildlife Health Center at the University of California, Davis. After 1998, U.C. Davis will be the principal operator of the OWCN. The OWCN program clearly provides a service to the State and its wildlife resources and is supported by top university administration at three campuses. The program represents a unique collaboration between scientific, educational, non-profit, and government organizations, and has attracted some of the nation's best veterinary and wildlife health professionals into the oiled wildlife care and response arena. A competitive grants program has been established that is open to proposals from any agency, company, university or research institution. The first request for proposals has been published and \$100,000 became available in 1996. The level of funding will increase to \$200,000 in 1997 and to \$325,000 in 1998 and beyond. Research that may benefit sea otters is very likely to be supported and advanced as a result of this initiative.

Currently, other OSPR funded research at California universities and Hubbs Sea World Research Institute are addressing the effects of oil on sea otters, harbor seals, and key marine bird species. Specific research programs address: (1) the effects of oil on various organ systems in sea otters; (2) immediate detection of trace amounts of oil in the fur and feathers of live animals; (3) characterizing the potential effects of oil on the immune response of sea otters; (4) characterizing the immune response of harbor seals including differentiating the effects of the rehabilitation process from exposure to oil and other health hazard; (5) establishing baseline health information for pinnipeds; (6) updating information on the status of marine mammal populations and delineating populations at greatest risk of exposure to oil; and (7) establishing baseline health information on key marine bird species. An additional effect of this commitment to research has been support of at least four individuals pursuing doctoral degrees and support for the post-doctoral research of three other individuals.

All of this research is designed to improve our ability to provide care for oiled marine wildlife, and to improve our ability to determine the immediate and the sublethal effects of oil pollution on marine animal populations. It may also enable federal and state trustee agencies to complete comprehensive wildlife injury assessments as part of the Natural Resource Damage Assessment or joint injury determination. Settlements with responsible parties will enable trustee agencies to undertake restoration of injured wildlife resources.

The OWCN allows the petroleum industry to meet its legal requirements (under SB 2040) to provide for the care of potentially oiled wildlife in all locations where they do business in California. The OWCN provides this in a cost-effective and highly professional manner. Because a portion of the interest on the State Oil Spill Response Fund mandated by SB 2040 is being used to build and support the OWCN, no company or potential responsible party has to pay additional fees out-of-pocket unless or until they are responsible for an oil spill. However, responsible parties which cite the OWCN in their oil spill contingency plans (currently this is essentially all contingency plan holders in California) will utilize the OWCN under OSPR's guidance, and will pay all costs of caring for oiled wildlife. Industry has representatives on the OWCN Advisory Board and the OWCN Scientific Review Board. As may be imagined, this type of cooperative approach has received very broad support in the regulated private sector.

The OWCN is one of the first government, private industry, non-profit, professional educational/research institution partnerships of its kind. This program also represents a State government commitment to integrate wildlife care with resource management and ongoing research. This paradigm shift, from concern only about populations to concern for individual animals as well as populations, has proven a challenge to resource agency personnel and their traditional way of thinking and operating. The OWCN's development has been difficult and complicated, but it has the potential to provide optimal care for oiled wildlife, and to also make tremendous contributions to sea otter and marine animal conservation.

## **Conclusions and recommendations**

In California the prevention of and response to oil spills will remain the focus of OSPR. To the extent these programs are effective, they will improve the likelihood of recovery for the southern sea otter. Inspection of petroleum facilities, pipelines, and transportation vessels, and enforcement of marine safety regulations, may become more intense. Further restrictions on petroleum shipping could be considered. Such technological innovations as Vessel Traffic Identification System may help reduce the risk of shipping accidents.

If the OWCN, with all its various programs and partners, is to succeed in lowering the risk that a major oil spill will reduce the southern sea otter population (and other sensitive marine birds, mammals and turtles) below viable population levels, as well as generally improving our understanding of the health of sea otters and other marine species, this cooperative program must be sustained and supported by CDFG-OSPR. With current legislation which allows OSPR the use up to \$1.3 million per year of the interest off the Emergency Response Fund to operate and maintain the OWCN through the U.C. Davis Wildlife Health Center when the building phase is completed in 1998, support for that program seems assured. As noted, there is excellent potential for cooperating with wildlife care programs, educational programs, and marine research in general, as long as these types of activities, and any additional compatible activities at the various OWCN centers unrelated to oil spills, find additional and separate sources of funding.

OSPR and the OWCN are already contributing to the potential recovery of the southern sea otter under the Endangered Species Act (ESA), through activities directly related to oil spill prevention and response. If the southern sea otter is to be delisted, however, it appears that substantial efforts will need to be made to continue tracking morbidity and mortality, to better understand the effects of environmental contaminants, diseases and parasites, as well as the immune response of southern sea otters and factors that may compromise it. With joint funding this type of program would be welcome at the Santa Cruz OWVCRC and/or other OWCN centers. The Santa Cruz OWVCRC could become a world center for sea otter research and management, but FWS and the former National Biological Service (NBS) will need to facilitate and contribute.

Beyond reducing the potential impacts of an oil spill on sea otters and other marine animals, the OWCN and OSPR's Veterinary Services Unit could do much more. Because it brings substantial fiscal and physical resources to bare, the OWCN could facilitate the real implementation of the Federal Marine Mammal Stranding and Response Act in California. The OWVCRC at Santa Cruz could assist in understanding the effects of human activities on sea birds and marine life within the National Marine Sanctuaries of Northern California. If that is to happen, however, National Marine Fisheries Service (NMFS) and National Oceanic and Atmospheric Administration must seek, facilitate, and support those programs.

To date the majority of the funding, equipment, and some key personnel for the OWCN have come from CDFG-OSPR. Non-governmental organizations and other agencies such as the FWS, NMFS, and NBS may all have a vested interest in collaboration with and development of compatible programs. Their support may be in the form of joint research projects, facilitating permits, or continuing support for sea otter and other marine animal demographic, mortality and health studies. Projects related to sea otter recovery and health may be ideal candidates for funds identified in the draft revised southern sea otter recovery plan to "protect population and reduce or eliminate identified potential limiting factors related to human activities including managing petroleum.... (and to) conduct research to understand factor or factors limiting current growth rate of the California population...." (U. S. Fish and Wildlife Service 1996. p. x) or for section 6 (ESA) funds.

The OWCN is a real change from past government-led programs that only gave obligations to the private sector and non-governmental organizations and provided few opportunities. Funds, supplies and training are flowing from a government program to the private sector, and the private sector and universities have input into the program's operations. The OWCN is an example of a truly cooperative approach to research, governance, and public service. Recently cooperative efforts to develop a comprehensive southern sea otter research program, which includes CDFG, FWS, NBS, UCSC, The Marine Mammal Center, and the Monterey Bay Aquarium have begun. Large multi-organizational cooperative programs

have been relatively uncommon in the past. They represent a recognition that no single agency, organization or university has all of the resources or political will, all of the best personnel or ideas to provide optimal conservation of sensitive or listed species. There is also a recognition that government and non-governmental organizations need to try to be less insular, more flexible and more cooperative; that universities can provide service along with their research programs; and that in the future we will increasingly need to pool our financial and personnel resources. It may be difficult for some to embrace these changes and new realities. We should remember, however, that the Chinese symbol for "change" also means "opportunity."

### **Literature Cited**

U.S. Fish and Wildlife Service. 1996. Southern sea otter recovery plan, 1996 draft. Ventura, California. 41 pp.

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