TITLE

Inland Oiled Wildlife Response: It's a Different Animal

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The Oiled Wildlife Care Network (OWCN) was established in 1994 to address the need for timely, consistent, and professional science-based preparedness and response for wildlife at risk from oil spills occurring in the marine waters of California. Its mission focused on providing a high level of professional care based on the best available technology and science combined with the experience of many organizations that were pioneers in the field of wildlife rehabilitation. Since that time, the OWCN and its now more than 35 members have responded to over 100 spills while caring for more than 8,200 impacted animals. In 2014, in response to the increased risk due to changing sources and transport patterns in oil coming to refineries in California, the State legislature expanded the OWCN's responsibility to include responding to oiled wildlife impacted during oil spills in all surface waters of California. Since then, the OWCN has worked to expand its plan and resources to ensure readiness to provide best achievable capture and care to a host of new species in the myriad of habitats and locations found in a large and ecologically diverse state. The biggest challenges to this expansion are the increased diversity of species and their habitats (California has 233 species and subspecies of reptiles and amphibians), and the increase in geographical scope. Working with the California Department of Fish and Wildlife

(specifically the Office of Spill Prevention and Response, or OSPR), the OWCN staff have identified species at risk and response challenges unique to an inland environment and terrestrial species and the appropriate resources meet those challenges and fill current gaps. We have incorporated lessons learned by colleagues during wildlife responses to inland spills including CNR Lake Wabamun (2005), Enbridge Kalamazoo River (2010), Silvertip Pipeline Yellowstone River (2011), and CNRL Cold Lake (2013). We have repurposed and redesigned existing equipment as well as acquiring additional mobile equipment to increase capacity and decrease response time. We have identified and trained first responders over a wide geographical area focusing on regions with increased risk of incident and impacts while leveraging our current primary care facilities with field stabilization and wildlife transportation plans to achieve maximum flexibility and cost effectiveness. We detail both the process that was used to develop this expansion and the resulting additions to the wildlife plan aimed to provide best achievable care to all wildlife species impacted by an inland oil spill in California.

INTRODUCTION

The current California system for oiled wildlife response in the marine environment is recognized as an example of excellence throughout the world. The program was built on the experience of pre-existing wildlife rehabilitation organizations, the scientific expertise of the UC Davis School of Veterinary Medicine, resources from a range of environmentally-focused organizations throughout the state, and a strong financial commitment from industry and the state legislature. The success of this Oiled Wildlife Care Network (OWCN) is also a product of more than 20 years of oil spill response as a cohesive, integrated program, learning from each spill as well as the lessons learned in the ongoing rehabilitation programs of many of the Network

members. In July 2014, as part of the Department of Fish and Wildlife – Office of Spill Prevention and Response (OSPR)'s legislative responsibilities being broadened to provide best achievable protection to ALL surface waters of the state, the OWCN's mandate was expanded to include responding to oiled wildlife throughout California. In 2015, the OWCN began to implement this increased responsibility by increasing its management staff capacity and focusing on developing a plan and capabilities for inland response in order to duplicate the level of excellence achieved in marine responses.

California's Wildlife Response Plan, an approved part of the state's Regional Contingency Plan (RCP), provides the statutory and organizational foundation for oiled wildlife response throughout the state. It was initially written with a focus on marine response, but is regularly updated and much of it is directly applicable to inland response as well. While local resources in inland areas may be less robust and less practiced for oil spill response, OSPR and OWCN are both working to identify, partner with, and help to build capacity in existing inland organizations, agencies and other resources.

The OWCN's inland planning efforts build on our experience and relationships with existing partners as well as reaching out to develop new partnerships with industry and consultants with specialized inland expertise. While there have been a number of inland spills that necessitated wildlife response, the range of experience inland is tiny compared to the marine experience.

These initial inland planning efforts are undoubtedly just a first step and will be followed by extensive evaluation, adjustment, and expansion through discussion, exercises, and experience in real incidents. As has often been stated, the value in planning is the process and, as the process evolves, the plan is strengthened.

METHODS

Adapting to Inland - What is Different?

California is a large, geographically diverse state that includes a number of mountain ranges, river valleys, and deserts within its nearly 165,000 sq. miles. It includes both the highest and lowest points in the 48 contiguous United States. It is roughly rectangular in shape, running approximately 1000 miles along its length from the northern border with Oregon to the southern border with Mexico, and 250 miles from the Pacific coast to the Nevada border. This diversity of geography and environment provides a broad variety of habitats for hundreds of species. California's main population centers are found in the San Francisco Bay area and Southern California, with the areas north of Sacramento and the eastern half of most of the state more sparsely populated. While this fact means that natural resources are more abundant in these areas, the infrastructure and population needed to support an oiled wildlife response are generally scarcer. The diversity also means a greater range of taxa at risk of oiling, and therefore the need to be prepared with the proper facilities, equipment, and expertise for species that have not historically been involved in oiled wildlife response. This translates to a requirement to develop new techniques for reconnaissance, assessment, deterrence, collection, and rehabilitation.

Identifying Resources at Risk and Setting Planning Parameters

To help identify resources at risk, the OWCN has leveraged the knowledge and expertise of OSPR, the California Department of Fish and Wildlife, and industry contractors to speed the planning and provide expertise we do not have internally. The report "Oil by Rail Safety in California: Preliminary Finding and Recommendations", released in 2014 from The Interagency

Rail Safety Working Group, included a map that identified high hazard areas. For wildlife response planning purposes, these can be grouped into 7 main regions:

- Northern California
    - Siskiyou County near Dunsmuir
    - Plumas and Butte County (the Feather River Canyon)
    - Placer County South of Nevada City
- Southern California
    - San Luis Obispo County just north of San Luis Obispo
    - Kern County, just east of Bakersfield
    - San Bernardino and Riverside Counties, north of San Bernardino to near Palm Springs, and just west of the Nevada border near Cima
    a. San Diego County an area just northeast of La Jolla

While most vertebrate species found in California are potentially at risk of impacts by oil spills, the OWCN is initially prioritizing those species listed in Geographic Response Plans (GRPs) for the identified high hazard areas, species of high conservation value, and those indicated as most likely to be affected by inland spills (via historical record review). Currently the Upper Sacramento GRP and the California –Nevada GRP are complete and a draft Feather River GRP is available. A focus on these groups of animals largely means increasing preparedness for songbird species, rails, and raptors, as well as a variety of reptiles, amphibians and mammal species – all species where there is little or no published information on rehabilitation or impacts of oil spills.

One of the key steps in preparedness is setting planning parameters against which to measure a plan. Ideally, planning parameters are based on an accurate risk assessment in terms of oil

spills and existing wildlife data. For initial planning purposes, the OWCN combined information on historical spills and practicality to set initial preparedness goals:

- To have first responders on scene anywhere in California within 8 hours of activation;
- To put multiple, properly equipped deterrence and collection teams in the field within 12 hours of activation;
- To provide field stabilization support to collection teams within 12 hours of activation;
- To set up a remote facility that is close to the incident and ready to receive wildlife within 24 hours of activation and capable of rehabilitation of up to 100 animals of mixed species; and
- To remotely stabilize species most likely to be captured and, if necessary, transport them to an existing OWCN Primary Care Facility or other permitted facility specializing in that species (as determined by California Department of Fish and Game, OSPR and OWCN).

Maximizing Existing Response Resources

The OWCN currently has 38 Member Organizations and 12 Primary Care facilities spread from Crescent City near the Oregon border to San Diego near the border with Mexico. Most of these facilities were funded partially or wholly in the mid-1990s under the requirements of the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act, and were built to meet the needs of marine oiled wildlife response in California. Although most are located along or near the coast, each of the GRP-identified high risk areas of California is within a 4.5-hour drive of at least one of these facilities. Past experience during spills has shown that, with appropriate vehicles and proper stabilization prior to transport, oiled wildlife can be safely moved distances of this degree without significant negative health effects occurring, thereby allowing current facilities to be included in inland response planning. The Member Organizations also provide a

structure for affiliated personnel trained for spill response under the OWCN training program. Since the late 1990s, the OWCN's training program has provided oiled wildlife response training to more than 6,000 people, and our database currently contains more than 1,100 people to serve as volunteers or staff during a wildlife response in California. Through the expansion of the number of Member Organizations to include those more focused in inland areas and inland species (and subsequent increases in existing training offerings), this structure will effectively provide the system to ensure the manpower necessary for effective statewide response.

Identifying and addressing gaps

In reviewing the needs for inland oiled wildlife response in California, a number of key focus areas have become clear. These include, but are not limited, to the following:

1) Knowledge - One of the most important aspects of preparing for inland response is recognizing that, although many of the principles of oiled wildlife response apply no matter where a spill occurs, there are differences that require alternative approaches in terrestrial and freshwater habitats. For example, many marine species when oiled will come ashore onto beaches where they are easily spotted and may be captured by hand. Many terrestrial species, however, will return to burrows or other cover and only be active at night, therefore requiring extensive trapping efforts. Additionally, the variety of potential species types impacted is greater and requires preparation for everything - from frogs, snakes, and salamanders to coyotes, beaver, and bear along with birds from sparrows to swans. While there is some knowledge and experience with rehabilitation or captive care of most of the species that may be impacted by an inland spill in California, there is very little information or experience regarding effects of oil or methods for oiled wildlife response. There have been inland spills dating back to the late 1800s that have

undoubtedly killed hundreds, if not thousands, of animals. In fact, the largest reported spill in California occurred inland in Kern County in 1910, when Lakeview Oil Company drilled their first well and an estimated 9 million barrels of oil escaped before it was brought under control 18 months later. However, there have been few wildlife responses or organized efforts to document the impacts of these efforts on the species at risk. In our efforts, we have gathered available information from inland spills that included wildlife response in other areas (e.g., Ohio, Michigan, Montana, Alberta) by searching the literature as well as personal communication with involved wildlife responders.

2) Personnel - There is little historical experience in California dealing with the care of oil-affected inland species, but luckily there are many biologists and rehabilitators who have general, non-oil-specific expertise in many of the species we can expect to encounter. In fact, California has more wildlife rehabilitators than any other state. Within the current OWCN responder database, there several hundred individuals who have documented experience working with herptiles (reptiles and amphibians), terrestrial mammals, and terrestrial bird species. The wildlife rehabilitation organizations within the Network regularly receive many of the terrestrial avian and mammal species that may be impacted by oil spills. Several Member Organizations (specifically zoos and aquaria) also are involved in care and breeding of variety of both native and analogous exotic reptiles and amphibians. The OWCN is also continuing to work on a compilation of species specialists including researchers, wildlife management professionals, and animal husbandry specialists outside of the Network who can be called upon to provide either advice or on-site assistance when a spill involves their specialty to ensure the highest level of response. Identifying and capturing oiled wildlife in inland spills can be

challenging because of their behavior - especially if they are not heavily oiled. Many species are nocturnal and spend the daylight hours hiding in dens or undercover, and therefore require special night cameras for surveillance and trapping for capture. Experience is critical in understanding the habits of these species and knowing where cameras and traps will be most effective. While the oil spill response community may lack this knowledge, there are many field biologists with extensive experience in surveying and collecting healthy wildlife for scientific studies than can provide critical support and information. The OWCN continues to reach out to identify organizations with this kind of expertise to recruit into the Network. The Institute for Wildlife Studies joined the OWCN in 2015 specifically to increase the depth and breadth of field experience.

3) Equipment – A large percentage of the current equipment used for marine response (such as portable field stabilization trailers) can also be useful for inland response, but there is much specialized equipment specific to the species found inland that is necessary to acquire. Additional equipment is also required to allow caching of equipment locally for first responders due to the possible lengthy drive times from pre-existing equipment stores. To address this need, the OWCN has obtained and outfitted six trailers to be stationed remotely for timely deployment of field equipment in the case of a spill. Equipment lists to address the additional stabilization and rehabilitation needs of herptiles, mammals, raptors, and terrestrial bird species have been developed, and equipment needed to care for small numbers (matching the established planning parameters) have been acquired to be ready for immediate deployment.

4) Facilities - Location of Primary Care Facilities for oiled wildlife response is a typically a compromise; a balance of infrastructure needs for both the impacted wildlife and the personnel working at the center while minimizing the time from capture to care. In addition to the current Primary Care Facilities, the OWCN has acquired mobile equipment to maximize flexibility and provide a number of options to best meet the needs of a specific incident. This equipment allows the establishment of a mobile primary care facility that is designed to care for approximately 100 animals of mixed species, including aquatic and terrestrial birds, herptiles, and small numbers of a variety of mammal species. This mobile facility is comprised of heavy duty tents designed for use in a variety of military and emergency response roles, and are stored within trailers at the OWCN's storage facility in Davis allowing for quick response throughout the state to meet our goal of onsite in 24 hours.

CONCLUSION

While the principles and elements of an inland wildlife response are similar to marine responses, in most cases it will add many new species, complex habitats, and a wider geographical area typically with fewer available resources. Developing and implementing a successful plan requires a careful analysis of the resources at risk, a realistic set of goals and planning parameters, an identification of resources available to respond (as well as existing gaps), and a plan to reach the desired planning standard. As more plans are developed, made publically available, discussed, exercised, and eventually tested in responses, a body of experience and capacity for inland response will be built similar to that currently found on the marine side. Until then, creating new partnerships with people and organizations outside of the

traditional oiled wildlife response community yet have experience with rehabilitation, captive care and breeding, and field work with these inland species will allow us to maximize our existing experience with inland environments to provide a best achievable response.

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