

ROCKNES OILED WILDLIFE RESPONSE BERGEN, NORWAY

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ABSTRACT

On January 19, 2004, the bulk ore carrier, Rocknes, capsized after striking rocks near Bergen, Norway. Tragically eighteen crewmembers lost their lives. Approximately 450 tonnes of marine fuel was spilled. Oil quickly spread over 15 kilometers of the Norwegian coastline, threatening the pristine fjord environment and oiling hundreds of animals.

In past oiling events in Norway, the government has utilized trained and certified sharpshooters to humanely euthanize oiled birds. Immediately following the Rocknes oil spill, a group of non-governmental organization's (NGO's) working in Norway formed a coalition called "Action Clean Birds," and asked the government for formal permission to mount an oiled wildlife response. Permission was granted on the stipulation that a professional oiled wildlife response team be brought in to oversee the animal capture, transport, rehabilitation and reconditioning of the animals. The International Fund for Animal Welfare (IFAW) Emergency Relief (ER) Team, co-managed by the International Bird Rescue Research Center (IBRRC) was called upon to mount an oiled wildlife response effort.

As the first authorized response for oiled wildlife in Norway, the Rocknes spill provided a platform to work with local wildlife rehabilitators, veterinarians, ornithologists and others, increasing their capacity to respond locally to future events involving oiled animals. During the month-long response, 131 oiled seabirds were captured, 81 of those were rehabilitated, reconditioned and released, the others died or were humanely euthanized as they were deemed unviable for release.

If pre-planning had been involved, a significantly larger number of oiled birds could have been captured, increasing the probability that a higher percentage of them would have been viable for release due to early capture and treatment.

This case study of the wildlife portion of the Rocknes response reviews steps taken to mitigate the effects of oil on wildlife, as well as demonstrates the importance of planning and preparedness as it relates to the success of an oiled wildlife response.

DISCUSSION

The International Fund for Animal Welfare (IFAW) Emergency Relief (ER) Team's Oiled Wildlife Division was called upon by the non-governmental organization (NGO) Action Clean Birds to come to Norway to lead an oiled wildlife response after many kilometers of coastline were oiled by the Rocknes accident. Action Clean Birds was a coalition of NGO's who were environmental

consultants or animal welfare organizations and lacked hands-on experience, training or expertise in the complicated field of oiled wildlife response or rehabilitation.

Immediately upon arrival, the IFAW ER Team developed a search and collection plan, set up the wildlife rehabilitation center, procured equipment, recruited volunteers, and found husbandry supplies.

Seeing oiled animal elicits an emotional response in most people. If a professional response isn't mounted, people will attempt animal rescue on their own, which is rarely successful. Typically, the most prevalent animals to be impacted by a marine oil spill are birds. Seabirds depend on their ability to stay dry and warm while on the water. Once oiled, they are no longer water-proof, able to stay dry or maintain their body temperature. Often, birds then beach themselves and will preen (re-align their feathers by grooming themselves) obsessively in an effort to remove the oil, ignoring urges to eat or drink, becoming hypothermic, dehydrated and malnourished.

Well-meaning individuals and veterinarians who are untrained in the care of *oiled marine birds* often attempt rescue and rehabilitation as they would for other sick or injured animals, only to find that the birds die in the end, often with captivity related problems. Seabirds are very unique and require specialized housing, feeding and most importantly, reconditioning. If the process of moving the birds through rehabilitation doesn't happen within a certain timeframe or window of opportunity¹, the birds *will* succumb to captivity-related medical problems that are, in most cases, not able to be resolved and render the birds not viable for release.

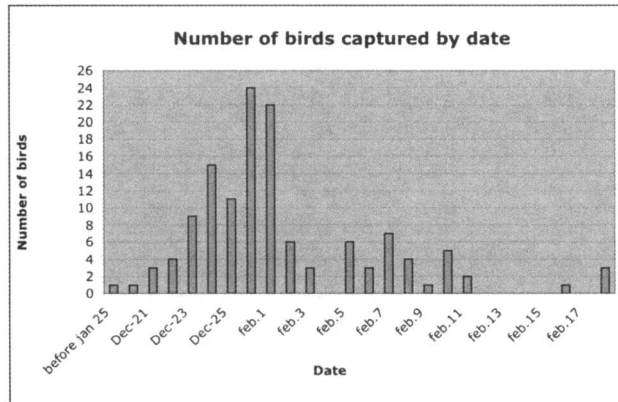
It is for these reasons that trained staff must be utilized during an oiled wildlife response. They not only bring hazardous materials and other health and human safety training, they also have the experience to manage the chaotic world of an oiled wildlife response. It is imperative that the animals are cared for and supported while other aspects of the wildlife response are progressing. This care makes way for the oiled animals to progress through the rehabilitation process in a timely manner to prevent them from succumbing to captivity related problems (and death) such as keel and feet lesions, swollen joints, Aspergillosis (a fungal infection) or other medical problems.

SEARCH AND COLLECTION

The IFAW ER Team immediately began procuring boats with local drivers. On the third day of the wildlife response boats, drivers and field crews were assembled and three specialized search and collection teams set out to capture oiled wildlife. The ambient temperature on the coast ranged from 1°–7° C (33°–45° F) and at that

temperature, beached oiled birds did not have much time before they succumbed to hypothermia.

International Bird Rescue Research Center (IBRRC) staff, Curt Clumpner, and local biologist and ornithologist, Alf Tor, directed the search and collection teams. Live, oiled bird capture numbers peaked at 131 between January 28 and February 1, 2004. Capture was done on land, as well as on the water and every attempt was made to capture sighted oiled birds that were still healthy enough to be on the water. This type of capture is much more difficult, however birds captured in this method are usually in much healthier condition and thus, have a better chance of survival.



The predominate species captured were common eider (*Somateria mollissima*), mallard (*Anas platyrhynchos*) and Great Blacked-backed gull (*Larus marinus*). Additionally, there were other types of seaducks, gulls and alcids.

STABILIZATION AND REHABILITATION

Intake and stabilization procedures were based on IBRRC protocols, which aim to reverse the adverse effects of oiling and include a full physical examination, identification of each bird by temporary leg band and blood sampling to determine Packed Cell Volume (PCV), Buffy Coat (BC), Total Protein (TP) and Blood Glucose (BG). These results guide the treatment and feeding schedules during the rehabilitation process.

Prior to intake and examination, birds were assessed for normal body temperature and in the case of the Rocknes oiled birds; many came into the rehabilitation center in a hypothermic state and needed immediate warming. Birds were warmed by placing the hypothermic bird in a very warm room and, in extreme cases, bottles filled with hot water placed next to the bird. Birds in this condition are closely monitored, as they will quickly overheat.

Once birds were given a full medical examination, they were placed in a specially designed cage with a tightly stretched net-bottom. Net-bottom cages were used by the IFAW ER Team to allow good ventilation, prevent feces from building up on the birds feathers and also to help distribute the weight of the bird in an effort to prevent keel and leg sores. While the net-bottom doesn't prevent keel and leg sores completely, it does allow the bird a longer period of time in captivity before those captivity related problems develop. Seabirds are extremely susceptible to a respiratory disease caused by fungus, and ventilation in the facility and the cage is paramount in preventing this disease. Additionally, feces allowed to build up on feathers will eat away the feathers and damage the structure, preventing the bird from recovering its waterproofing once it has been cleaned.

Birds were held in the stabilization area for a mandatory 24-48 hours and allowed to rest while getting very good supportive care. Rest was an important component to oiled bird rehabilitation

as these birds usually came into care in a severely dehydrated, exhausted, hypothermic and often in a malnourished state. The exhaustion comes from simply trying to keep warm in a cold environment once they were oiled. Supportive care included proper caging, balanced nutrition and fluid therapy in a warm environment. Providing a warm environment helped to reduce the amount of time birds spent preening their feathers to rid themselves of oil. Nutritional slurry was given by stomach tube three to four times per day alternating with a balanced electrolyte solution. Additionally, birds were offered thawed fish and allowed to eat on their own.

Birds were selected for cleaning by meeting pre-wash criteria, which evaluated blood, weight, body condition and special needs. These evaluations ensured they were not anemic, malnourished or dehydrated.

WASHING, RINSING, DRYING

Once birds were able to meet pre-wash criteria, they were washed with a Proctor and Gamble product Yes (tm). This product was chosen because it is the same chemical product as Dawn Detergent, which has shown to have the best efficacy in removing oil from feathers in warm water.

Birds were washed in 40°–41° C (104°–106° F) water by experienced washers and rinsed in water that was the same temperature and delivered at 40-60 psi to ensure complete rinsing of the soap from the feathers. Once washed and rinsed, birds were placed in clean, net-bottomed pens and allowed to dry under specialized pet dryers.

RECONDITIONING

A common myth about aquatic birds is that their natural oils make them waterproof, but the truth is that birds are waterproof due to the structure and alignment of their feathers. Once the oil and the soap have been removed from the feathers, the feathers of a bird have a natural ability to repel water and the contour feathers align in such a way they provide a waterproof barrier. Clean, rinsed and dried birds were placed in fresh-water pools and allowed to bathe and preen (re-align their feathers by grooming themselves). Birds will haul-out, preen and then go back into the water and by doing this repeatedly, they will bring up their waterproofing in a few days. The surface water of the pools must be kept clean by regular siphoning and constant overflow.

During the Rocknes oiled wildlife response pools, built with plywood and plastic sheeting served until ready made, above-ground pools could be obtained.

PRE-RELEASE EVALUATION AND RELEASE

Once again, birds were evaluated to meet body condition, weight and blood criteria that indicated their health. Equally important was waterproofing evaluation and seabirds were made to stay in a pool with no haul-out for a minimum of 48-hours before they were deemed waterproof. Regular feather inspection also showed any problems that might have arisen during the waterproof phase and those were corrected, when possible.

Birds that met all pre-release criteria were banded by local ornithologist, Alf Tor, and released in a clean, habitat appropriate place, usually, a nearby fjord. There were 131 live birds captured and brought into care and of those, 81 (61.8%) successfully met release criteria.

TRIAGE

During the course of the Rocknes response, 21 birds were euthanized because they were deemed not viable for release. These birds did not respond to medical treatment, failed to gain weight or improve their

health during the course of the rehabilitation. It was deemed the most humane treatment to end their suffering rather than put them through a long and uncertain rehabilitation process.

NECROPSIES

Several necropsies were performed on eiders that had either died or were euthanized during the last two weeks of the spill response. The most common finding indicated liver problems were possibly related to oil exposure. Due to the impossibility of running final diagnostic studies our results are incomplete. Samples for histopathological analyses of one eider were left with Dr. Nils Reither. No cases of Aspergillosis were observed or suspected.

CONCLUSIONS

The IFAW ER Team's Oiled Wildlife Division and IBRRC have 30 years combined experience in responding to and caring for oiled wildlife. The most successful oiled wildlife responses are ones that pre-planned, have necessary equipment and supplies identified and accessible, utilize trained and experienced staff, are part of the overall spill response and are funded. Additionally, an oiled wildlife contingency plan should also be in place to identify key individuals, search and collection strategies and potential facilities.

While recognizing the need to mount an oiled wildlife response is commendable and important because the public will often attempt animal rescue if a professional response isn't put in place, there are several logistical issues that are difficult to overcome simply because they lack planning. The ramifications of attempting an oiled wildlife response in a location where there is no pre-planning can be crippling to a response, as well as take a heavy toll on animal life.

In the case of the Rocknes response, we were able to successfully rehabilitate 61.8% of the birds captured but had there been adequate pre-planning, a much larger number of birds could have been captured because there would have been trained staff identified to start search and collection immediately after the oil spill. Additionally, pre-identified resources such as boats and local drivers wouldn't have taken three days to procure.

The facility utilized for this response was on an island and was very convenient for search and collection teams to bring in live, oiled birds. However, it was approximately 20 km from Bergen and difficult for most people to access. Because of the location of the facility, many people who would have volunteered to help in the rehabilitation center, couldn't afford the commute or the toll bridge.

The facility had many problems including: poor heating, which required electric heaters to be brought in to provide warmth for the animals; an inadequate electrical supply to maintain heaters, pet dryers, blenders, etc.; a fraction of the space needed for housing oiled birds and bird cages; and finally, on-demand hot-water heaters and pumps that needed to be retro-fit to supply the minimum requirements of water for washing and rinsing oiled wildlife.

Other logistical concerns were the difficulties of obtaining specialized equipment quickly. Items that were difficult to find locally were brought in from larger cities or in some cases, other countries, in both cases causing delays in the care of the oiled wildlife. If a basic oiled wildlife plan was in place, hard-to-find, specific equipment could have been on-site rapidly.

Successful oiled wildlife response depends on many things and while responses such as the Rocknes can be done, the more planning and training done in advance of the spill, the more successful the response usually is, resulting in increased number of birds released, faster response times and reduced costs.

BIOGRAPHY

Barbara Callahan, is Director of Response Services for International Bird Rescue Research Center and Partnership Coordinator for the IFAW Emergency Relief Team, Oiled Wildlife Division. During her tenure at IBRRC, she has assisted with or helped to manage dozens of oiled wildlife responses in several countries.

1 Window of Opportunity: The amount of time you have to care for an animal prior to it being placed in an outdoor enclosure that simulates its natural environment. Extended periods of indoor cage time can aid in the development of secondary problems such as keel and leg sores, swollen joints, broken feathers, etc. This time varies with each species.

