

NATIONAL OILED WILDLIFE RESPONSE AND PREPAREDNESS GUIDANCE MANUAL



Prepared for:
Ministry of Petroleum and Mining
Kenya Petroleum Technical Assistance Project
(KEPTAP)



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NOTE:

The Kenya national framework for hydrocarbon release prevention, preparedness and response capacity uses the term “hydrocarbon” to refer to crude oil, natural gas, and any product derived from the fractional distillation and refining of crude oil (both liquid and gas phase) and the term “oil” to refer to liquid hydrocarbons.

This National Oiled Wildlife Response and Preparedness Guidance Manual is designed to be used as part of the national framework, including the Kenya National Contingency Plan (NCP) for marine and navigable waters (Marine NCP) and the NCP for onshore areas (Onshore NCP). This guideline will assist responders tasked with oiled wildlife response and preparedness; including the National Incident Management Team (National-IMT), Local-IMTs, management and staff of agencies with wildlife protection and care responsibilities, such as the Kenya Wildlife Services, as well as responders for a responsible party (RP).

This manual is intended to be used in conjunction with the Marine-NCP or Onshore-NCP with and other spill contingency plans relevant to a specific spill location.

Produced for KEPTAP, as part of the national framework for onshore and offshore hydrocarbon release prevention, preparedness and response capacity, under Contract
by

Focus Wildlife International, Ltd
in coordination with

Polaris Applied Sciences, Inc.

January 2020

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Guidance Manual Revision Log

Date	Revision	Comments
August, 2019	0	Manual development through the Technical Committee with Focus Wildlife International, Ltd and Polaris Applied Sciences, Inc.
December, 2019	0.1	Comments and edits suggested by the Technical Committee addressed by Polaris Applied Sciences, Inc.
January, 2020	0.2	Final version to be presented to stakeholders and implemented in 2020

1 Introduction

1.1 Purpose

This Oiled Wildlife Response and Preparedness Guidance Manual is intended to assist the responsible spill party (RP), oiled wildlife lead response agency, Kenya Wildlife Services (KWS), and other stakeholders during response operations and in their wildlife response plans development.

The objective of wildlife response is to minimize the adverse impacts of oil spills and associated response actions on wildlife. Oil spill and wildlife responses not adhering to established international protocols may threaten the survival of an indigenous species or the ecological integrity of an ecosystem and hence are considered as a threatening activity under the Kenya Wildlife Conservation and Management Act, 2016.

Following an incident, perceived inaction by the responsible government agency and/or the RP can motivate well-meaning individuals to take matters into their own hands and subject captured wildlife to rehabilitation efforts that are more than likely harmful. It is therefore of utmost importance for the spill lead agency, KWS, and the RP to signal very early on in an incident that there is an well planned, organized effort by well qualified professional under way to deal with impacted wildlife. It involves a combination of activities that aim to minimize the impacts of an oil spill on wildlife (such as birds, mammals and reptiles) by both prevention of oiling where possible and mitigating the effects on individuals when oiling has taken place (IPIECA, 2016).

Response actions concerning the protection, identification, rescue, processing, and rehabilitation of oiled or threatened wildlife, described in this guideline, will be carried out by the Wildlife Branch within the Operations Section of the Incident Management Team (IMT).

1.2 Geographic Scope

A wildlife response plan should address the potential geographic area of the offshore and near-shore waters, and mainland and inland shorelines of Kenya that may be impacted by a release of hydrocarbons as a result of an oil release. Any incident that releases product into the marine environment has the potential to negatively impact wildlife.

The geographic extent of wildlife response activities will be determined after assessment activities by boat and air (as needed) have been conducted. The information gained from the initial impact assessment and reports from the wildlife monitoring teams will assist with determining the geographic breadth of wildlife response operations. Areas should be prioritized based on the extent of oiling, the wildlife observed, the habitat type, the sensitivity of wildlife that use the site, and the likelihood of wildlife being exposed to oil. It should be noted that oil impacted wildlife (especially birds) can potentially move a long distance from the spill impact area. As such, wildlife operations may extend well outside of the spill impact area. The geographic scope of wildlife response should be continually assessed throughout the incident and planned for accordingly.

1.3 Distribution and Intended Audience

The Kenya Wildlife Services (KWS) is the national authority to ensure the protection of wildlife. These guidelines apply for any type of spill event regardless of its magnitude and complexity. If there is any potential wildlife impact an IMT should establish a Wildlife Branch and notify KWS immediately. These national guidelines are intended to the KWS as the wildlife response lead agency, any potential RP (responsible to for response and preparedness efforts), and any other wildlife stakeholder.

2 Safety Considerations

When initiating wildlife response activities, responder safety is of paramount importance. Thorough site surveys and hazard assessments should be conducted prior to the commencement of any monitoring, deterrence, capture, or rehabilitation activities. Work needs to follow an incident-specific site safety plan. Workers need to wear protective clothing that meets all spill safety requirements and wildlife specific safety requirements. Additional safety requirements are discussed in Section 10.11.

Minimum training requirements will be established, by the Safety Officer and the Wildlife Branch Director of the IMT, for specific positions in order to conform to Kenyan health and safety regulations.

3 Activating Wildlife Response

Any release of oil has the potential to immediately impact wildlife. As such, rapid establishment of a Wildlife Branch, activation of a specialized wildlife response contractor (internationally known as oiled wildlife response organization or OWRO, such as Sea Alarm), and the immediate implementation of wildlife response actions are in the best interest of both mitigating the impact to wildlife and responding to oiled animals through capture and rehabilitation.

3.1 Triggers for Activating Wildlife Response

If oil is released into ocean waters or on-shore, establish a Wildlife Branch and activate a designated professional OWRO immediately.

In order to that it is imperative to implement wildlife operations as soon as possible within the first 48 hours. The immediate activation and mobilization of an OWRO, along with the rapid acquisition of resources, directly correlates to both the effectiveness and full engagement of the response. The Wildlife Branch and wildlife response personnel can be stood down with approval of Incident Command if conditions do not warrant developing further wildlife response planning and implementation.

Pre-identifying OWRO and establishing clear and concise lines of communications is imperative for a successful wildlife response. Additional personnel resources need to be identified from local and regional organizations. These groups may be able to assist the OWRO with specific wildlife

response operations; such as wildlife rehabilitators, field biologists, zookeepers, veterinarians, facility construction support etc. Furthermore, during an oiled wildlife response seemingly mundane tasks such as the cleaning of animal pens, animal food preparations or the transportation of animals from the field to the wildlife center are critical components of a wildlife response and require additional personnel. However, to engage in these tasks no prior training is necessary. Nevertheless, it would be advantageous to identify such individuals in the planning stage and consider providing them with at least a rudimentary understanding of oiled wildlife response and perhaps the safety aspects involved. All these individuals and organizations should be managed and coordinated by the OWRO under the Wildlife Branch.

The need for greater or fewer resources and response personnel will be based on incident specific factors including the severity of oiling, geographic extent and the species involved. The Wildlife Branch will determine the appropriate level of response based on specific needs of the incident. It is anticipated that any spill that would trigger use of this WRP will require a high level of wildlife response capability.

Table 1 Overview of Wildlife Response Processes

Wildlife Response Processes		
1	ICP	Establish Wildlife Branch
2		Notification (Tier 3)
3	Field Operations	Wildlife Impact Assessment
4		Hazing & Deterrence
5		Capture (pre-emptive and/or oiled animal capture)
6		Field stabilization
7		Transport
8	Rehabilitation Operations	Processing & evidence collection
9		Intake/examination
10		Stabilization and pre-wash care
11		Cleaning
12		Pre-release conditioning
13		Release
14	Post-release	Post-release monitoring

3.2 Establishing a Wildlife Branch

In the event of notification of an oil spill incident with the potential to impact wildlife, a Wildlife Branch will be established as part of the Operations Section of the IMT, working closely with the Planning Section (Environment Unit) and Liaison Officers. The Wildlife Branch Director role should be filled by a designated IMT member or by the relevant Kenyan government authority. In a larger incident, a Deputy Wildlife Branch Director position should be established and filled by personnel with skill and experience in wildlife response (most likely from a Tier 3 response organization). The Deputy can also act as liaison to the Environmental Unit (EU) to ensure best practices and effective communication between Operations and Environmental Unit. Depending on the scale of the wildlife incident, a planning officer and logistics officer may be appointed to the Branch to serve as liaisons to their respective IMT sections.

The Wildlife Branch may need to establish a wildlife branch field command post, so that operations can be better overseen and coordinated. In this case, the field command will work with a liaison in the IMT to ensure effective interfacing with the overall Incident Management System. The Wildlife Branch field command post needs office and meeting space as well as communications and office facilities.

The Wildlife Branch field command post should have access to all information available from the Situation Unit. A designated liaison to the Situation Unit receives and collects information from the oiled wildlife response activities which can be shared with the Incident Management Team (IMT).

In order to make the right decisions, information must be collected and made available to the wildlife response team regarding:

- Health and safety with regards to search and capture and on-water wildlife stabilization operations.
- The spill location and time of the spill.
- Magnitude and expected duration of the spill.
- Type of oil and toxicity
- H₂S levels
- Expected behavior of the released oil according to environmental conditions.
- Weather forecast and ice conditions.
- Information on water depth and currents
- Location of the released oil in relation to seasonal distribution and abundance/behavior of wildlife (breeding, migration).
- Animal species affected or at risk.
- Conservation status of at risk or affected species.
- Available resources and their ability to be mobilized and deployed (facilities, equipment, vessels, skilled personnel) including international resources.

Oiled wildlife incidents occur less frequently than oil spill incidents, simply because not every oil spill causes a wildlife problem. However, if a wildlife problem does occur as a consequence of the oil spill incident, the success of oiled wildlife rehabilitation, and an adequate assessment of environmental impacts, will depend on a comprehensive wildlife response strategy (IPIECA, 2016). Figure 1 shows an example of a robust Wildlife Branch organizational chart to address a spill of national significance in Kenya (Tier 2 or 3) oiled wildlife incident; see Section 4.3 for Tier response operations.

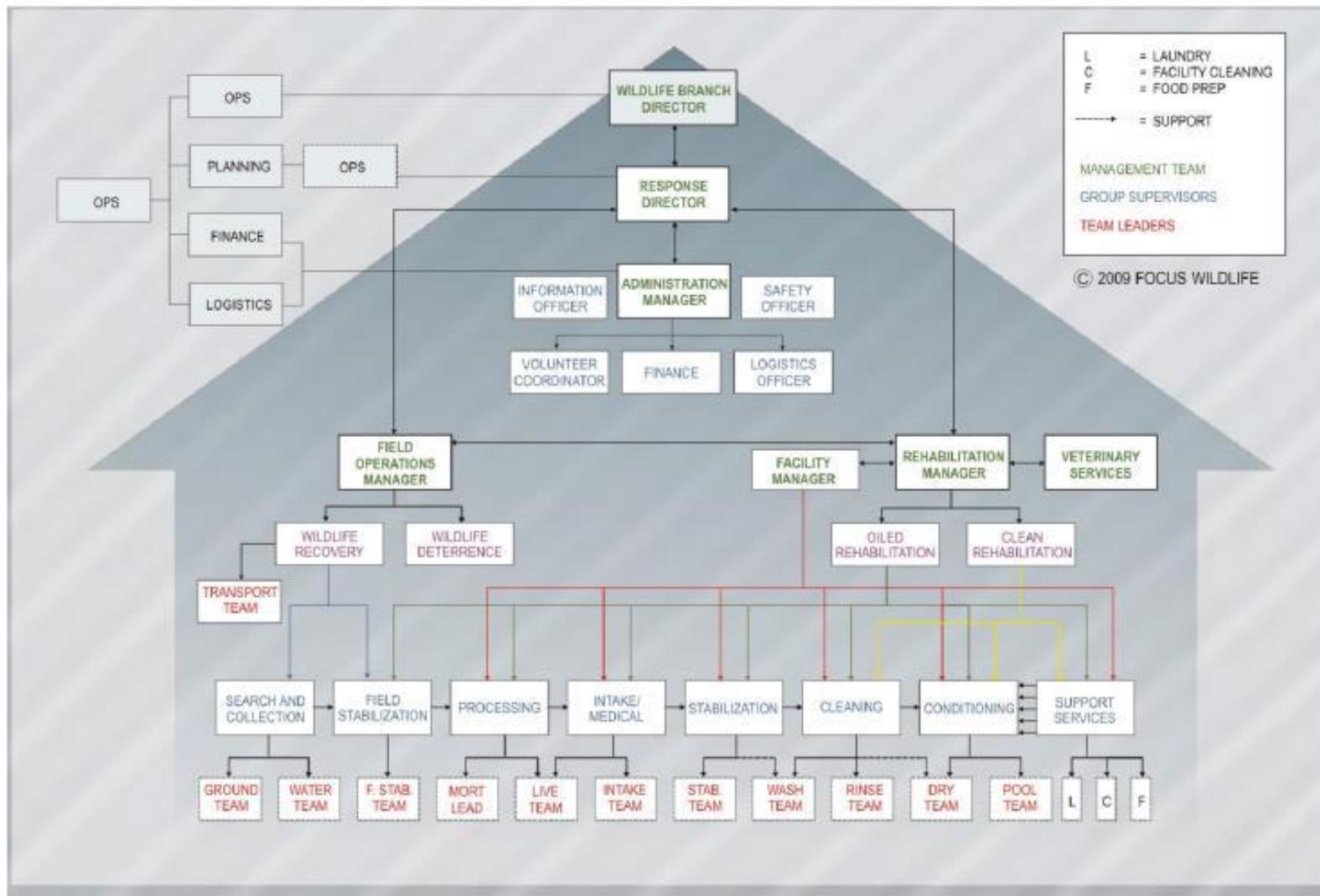


Figure 3-1. Example of a Wildlife Branch for incidents of national significance

3.3 Initial Wildlife Response: 0–48 Hours

The first 24 or 48 hours of a response impacting wildlife are critical to the success of operations (i.e., reducing or avoiding impacts to wildlife). A number of critical steps should be completed as soon as possible after a release occurs.

Within 24 hours of an incident:

- Report incident to appropriate wildlife regulatory agencies
- Activate designated professional Oiled Wildlife Response Organization (OWRO) immediately
- Complete Resources At Risk Report
- Establish the Wildlife Branch under the Operations Section of ICS
- Designate Wildlife Branch Director

Within 24-48 hours of a release, the Wildlife Branch will:

- Mobilize OWRO to arrive within a predetermined time of incident
- Mobilize wildlife response equipment
- Conduct Initial Wildlife Impact Assessment
- Mobilize marine mammal technical experts into Wildlife Branch
- Mobilize mammal technical experts
- Mobilize live-stock experts
- Develop Wildlife Branch organization chart
- Establish Wildlife Hotline
- Implement incident-specific Wildlife Response Plan
- Develop recommendations for initial Reconnaissance Plan
- Determine location for field stabilization
- Establish wildlife staging areas
- Requisition supplies and equipment

3.4 Establishing a Wildlife Hotline

The Wildlife Hotline is a critical initial step and should be established by the Wildlife Branch within the first 24 hours of a spill. The hotline provides a mechanism for collecting information on impacted wildlife sightings from the public as well as response personnel. The information can be used to help determine the geographic scope of wildlife response efforts.

Public sightings of oiled, distressed, or deceased wildlife may occur once oil reaches the mainland or if oiled birds or marine mammals come ashore after impact. The Reporting Hotline will be utilized as the public call-in hotline. During a response, the hotline should also be used as a resource to provide instructions to callers for safe handling and containment of wildlife. These procedures should be written by the Wildlife Branch and distributed to the call center.

Oiled wildlife observations should also be reported by cleanup contractors, regulators, or other personnel actively working within the spill site. Oiled wildlife reporting protocols will be developed to provide a mechanism for cleanup operations (non-public) to report oiled wildlife to the Wildlife Branch. The Wildlife Branch will develop a process for assuring that reports of oiled wildlife are efficiently assigned to field teams to assess.

4 Mobilization and Initial Assessment

4.1 Resource Mobilization

In the event of a release, the OWRO will mobilize technical specialists to arrive on site within a pre-determined time of notification. Staff levels will be determined based on preliminary estimates and trajectories of released oil and reports from monitoring teams of impacted or debilitated wildlife. Wildlife facilities and equipment to support deterrence operations, search and recovery operations, field stabilization, and rehabilitation operations will be mobilized based on both the actual and potential number of animals affected from the release.

It is imperative to pre-establish a contact list of trained responders according to accepted guidelines and provide them with appropriate wildlife and safety training.

4.2 Initial Impact Assessment

An initial impact assessment will be initiated as soon as possible after a release occurs, by the Onsite Response Team (ORT) during small events or by the Wildlife Branch in the Operations Section of the IMT. Ongoing daily assessments will also be conducted by the Wildlife Branch and will provide vital information regarding the changing presence of wildlife in impacted and threatened areas, as well as the number of animals and the variety of species affected. Impact assessment reports will be used to determine the most appropriate facilities, personnel and resources needed for a wildlife response throughout the incident.

4.3 Tiered Response

The Wildlife Branch, headed by the Wildlife Branch Director is responsible for dealing with a wildlife response effort in the aftermath of an oil spill incident. The Team can consist of Tier 1, Tier 2 and Tier 3 resources as defined by IPIECA¹ and described below.

4.3.1 Tier 1 Responders

Tier 1 responders are pre-identified, trained Wildlife Response Team Members within the Kenyan Wildlife Service or (appropriately trained) local organizations. Tier 1 responders will primarily undertake mitigation strategies to prevent oiling of animals and/or capture and stabilization of animals that become oiled. This resource needs to be developed by a potential RP.

¹ IPIECA-IOPG, 2016. Tiered preparedness and response: Good practice guidelines for using the tiered preparedness and response framework. IPIECA-IOPG, London, UK. http://www.oilspillresponseproject.org/wp-content/uploads/2017/01/Tiered_preparedness_and_response_2016.pdf

4.3.2 Tier 2 Responders (National or Regional Resources)

Tier 2 responders are pre-identified trained response personnel from third party organization (governmental or non-governmental) from within Kenya or in the East African Region with transferrable skills and experience regarding specific aspects of the wildlife response (e.g., wildlife rehabilitators, field biologists, zookeepers, veterinarians etc.). This resource needs to be developed.

4.3.3 Tier 3 responders (International Resources)

Tier 3 responders are pre-identified, contracted oiled wildlife response experts and expert organizations from other parts of the world. They will have a mobilization time of >24 hours. These expert organizations will also be involved in training events and exercises.

The Wildlife Branch Director (in consultation with the IMT Operations Section Chief) will determine the Tier response based on the actual local response and rehabilitation capacity, number of casualties expected, and the actual and expected response complexity (Figure 2).

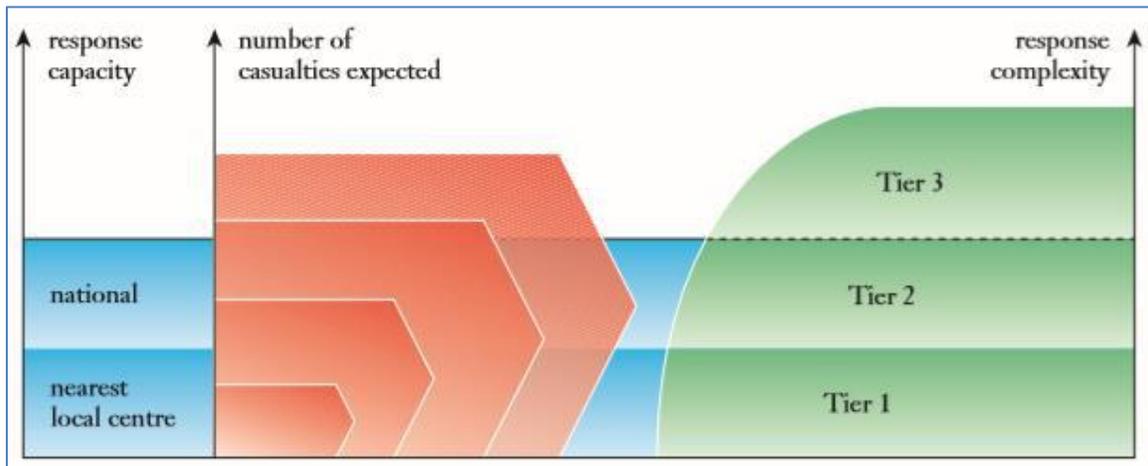


Figure 4-1. A tiered response model based on local response and rehabilitation capacity. The (expected) influx of oiled animals (red arrows) in relation to the local response national rehabilitation capacity (blue bars) in this model will determine the level of response (Tier1, 2, or 3 in green). Source: IPIECA, 2016)

5 Resources at Risk

Compiling a comprehensive list of ALL resource at risk in Kenya that has the potential of getting impacted should be given the utmost priority and inserted in any potential wildlife response plan.

The Wildlife Impact Assessment Report (and continued reconnaissance) combined with the Environmental Unit (EU) completed ICS-232 Resources at Risk (RAR) form the basis of determining what species might be impacted in this incident. It should be noted that the intent of the RAR is to compile a list of species (along with other natural and cultural resources) that may

be present in the spill impact area. Some of the RAR species are either not susceptible to oil impacts or not likely to come in contact with oil.

Species lists included in the incident specific Wildlife Response Plan will focus on wildlife species that are susceptible to oil impacts and likely to become oiled in the incident (occur in the spill impact area). Generally, the most susceptible species groups include birds that use the water or water interface (pelagic sea birds, waterfowl and shorebirds); sea turtles, seals and other marine mammals.

5.1 Species of Concern

Many species that are likely to be found in a spill impact area that is protected on a federal level in Kenya. These species might be afforded the highest level of protection.

Similar to federally listed species, other species might be classified as “species of concern” by different regions. Additionally, species that are under consideration for federal/regional listing are also generally considered a species of concern. Any spill specific Oiled Wildlife Response Plan in Kenya should attempt to list any known species of concern that may be present in the spill impact area (Marine and Inland).

5.2 Implications for Response Planning

Response planning should be adjusted to give higher priority to response actions that protect listed species. Any impacted listed species would have the highest priority for capture and care.

Deterrence actions targeting protected species should need specific authorization from wildlife agencies.

5.3 Biological Resources of Concern

The offshore and near-shore waters of Kenya are biologically rich areas—providing habitat to a diverse abundance of marine and coastal birds, marine mammals, and sea turtles. Many of these marine and neritic species are particularly susceptible to the effects of oil, based on behaviors such as food prehension (both hunting and foraging) and dive patterns during which the entirety of the water column is used. Obligate marine birds are the most susceptible of these species, as they are physiologically and anatomically designed for a life exclusively on or in the water. A comprehensive list of all species of concern should be compiled, frequently updated and inserted in any potential wildlife response plan.

6 Wildlife Response Planning

The Wildlife Branch has large planning requirements, as do all other operational activities in an oil spill response. During spill that last for several operational periods and threaten wildlife, the IMT needs to incorporate specific wildlife response planning elements in a proactive response. The Wildlife Branch has large planning requirement, as do all other operational activities, but it is one of the few operational units that do its own planning. Wildlife planning requires oiled wildlife expertise to develop effective plans—expertise that is only available from personnel in the

Wildlife Branch. It is important to have the right personnel dedicated to completing the planning. The wildlife planning team must include oiled wildlife response experts, as well as wildlife agency personnel (if available). The wildlife planning team is housed within the Wildlife Branch of the Operations Section and works in coordination with the Environmental Unit (EU).

The Wildlife Branch generally is responsible for two distinct planning efforts.

1. Development of a long-range incident-specific WRP.
2. Develop recommendations for a wildlife daily work plan to be included in the Incident Action Plan (IAP). The IAP then defines the specific work activities for each operational component of wildlife response on a daily basis (or other designated operational period).

The wildlife planning team accomplishes daily wildlife planning in collaboration with Operations, the EU, wildlife response contractors, and wildlife agencies. Daily wildlife operations planning will be a critical component of successful response to a release of oil. Operational tasking will be developed for the various operational components (or phases) of wildlife response as described below.

Wildlife response is composed of several phases or distinct operational components. Each operational component was considered in the incident-specific wildlife response plan. Additional incident-specific protocols and procedures will be developed for each phase. Separate strategies and protocols are required to deal with different species groups. Birds and marine mammals will have different tactics and protocols. The distinct operational phases of wildlife response include:

- Wildlife Impact Assessment
- Reconnaissance and Monitoring
- Deterrence
- Search and Capture
- Carcass collection and morgue storage
- Field Stabilization (medical stabilization)
- Wildlife Transport
- Wildlife Rehabilitation
- Release of healthy animals
- Demobilization

The Wildlife Branch planning team should consider the following general guidelines for oiled wildlife response:

- Preventing animals becoming oiled is preferable to mitigating the effect of their oiling
- Proactive actions that capitalize on the short windows of opportunity to save animals are required
- If wildlife rehabilitation is recommended, the necessary resources must be readily available and immediately mobilized to where they are needed

- Animal carcasses should be collected from the impact area
- A proactive policy must be adopted with regard to media reports on the wildlife response and its results
- Public communication strategies should be clear, concise, and transparent
- Provide opportunities for the public to assist as a workforce volunteer with specific duties within the wildlife rehabilitation facility

6.1 Wildlife Decision Making Process

The Wildlife Branch planning team uses wildlife and planning expertise to review all available incident information. The planning team then develops recommendations for the most appropriated response actions based on incident-specific conditions. The most effective and efficient response will be accomplished by having the right mix of expertise and agency personnel developing, reviewing and approving wildlife response recommendations.

Regulatory/agency approval of plans and recommendations can result in time delays in implementing response actions; efficiency is increased when agency personnel are engaged *in person* in the Wildlife Branch. Agency review and approval time should be considered in incidents without agency involvement in the Wildlife Branch.

While wildlife agency/regulatory participation by the KWS is important to developing recommendations, their participation in the decision-making process is critical. All wildlife response actions must be approved by KWS or designated regulators, preferably before recommendations are forwarded to Incident Command (IC) or Unified Command (UC) for approval. Wildlife agencies may take a lead role in recommendations if they feel is in best interest of wildlife. The typical decision-making process would be for the Wildlife Branch to develop recommendations with input and review by all affected parties. The IC/UC ultimately reviews and approves all response actions.

6.2 Response Sizing

Based on all available information, the Wildlife Branch planning team must make recommendations to the Incident Command on the scope and scale of wildlife response efforts necessary to implement an effective wildlife response. The Wildlife Branch utilizes the collective oiled wildlife expertise of the planning team to develop strategies and determine the amount of resources (personnel and equipment) needed to accomplish strategies, goals, and objectives. These recommendations should be fully vetted through the entire planning team, wildlife agencies, and Indigenous community representatives.

The wildlife planning team will continually assess incident conditions to appropriately size the wildlife response efforts. Right-sizing the wildlife response may mean increasing or decreasing efforts as needed. Appropriate scale of response effort may not be consistent during an incident. Typically, search and capture of oil-impacted wildlife will be initiated before rehabilitation efforts are fully implemented. Similarly, search and capture may ramp down while animal care and

rehabilitation are ongoing. Recommendations for adjusting response efforts should be fully coordinated with wildlife agencies and approved by Incident Command prior to implementation.

In order to make decisions appropriate to the size, scale, and potential threat to wildlife from the release, the following information should be used to help determine the best strategies:

- The spill location, impact time and magnitude
- Type of oil and toxicity
- Expected behavior of the released oil according to environmental conditions
- Wildlife habitat in or near the impact zone, identifying the most sensitive or limited habitat in the area as a priority including, wildlife species at risk
- Location of the released oil in relation to seasonal distribution/behavior of wildlife (breeding, migration)
- Weather forecast and season
- Information on water depth, tides and currents in the potential response zone
- Resource availability (facilities, equipment, specific expertise)
- Health and Safety with regards to search and capture efforts

7 Wildlife Field Operations Overview

Wildlife field operations encompass all aspects of on-the-ground wildlife response activities including:

- Reconnaissance and monitoring
- Wildlife Deterrence
- Preemptive capture of not impacted individuals at risk (as needed)
- Oiled wildlife search and capture
- Carcass collection (removing dead oiled animals);
- Chain of Custody and evidence storage
- Field stabilization (evaluation and medical care);
- Field transport (transport from field to wildlife care center).

Components of field operations are described below. The type and level of field activities are determined by the Wildlife Branch planning team and should be updated in the incident-specific Wildlife Response Plan as specific strategies and tactics are developed.

7.1 Wildlife Reconnaissance and Monitoring

Reconnaissance may entail land, water, and/or aerial surveys. Information gained from these surveys is critical to mounting effective deterrence, search and capture, and response efforts and will be used to determine the scope and scale of wildlife response.

Reconnaissance efforts:

- Focus on the immediate and potential impact to wildlife
- Assess potential wildlife impact based on spill trajectories, type and volume of oil
- Evaluate the effect of weather patterns
- Calculate wildlife dispersal patterns and behaviors
- Direct effective search and collection and deterrence actions

Wildlife reconnaissance and monitoring efforts are ongoing throughout the course of a response. Risk and threat of wildlife impacts and current on-site conditions are assessed daily throughout the spill by the wildlife field teams. The Wildlife Branch will continually assess information needs and determine appropriate levels and types of reconnaissance needed. Wildlife reconnaissance and monitoring, along with updated incident information from the Situation Unit are used to build a clear daily picture of current onsite wildlife issues. Information sharing with the Environmental Unit is also critical during this phase of response.

The Wildlife Branch will develop a Reconnaissance Plan for birds and marine mammals/sea turtles. Standardized surveys will be utilized to quantify birds, marine mammals, and sea turtles at risk from the spill and to ensure that wildlife surveys will quantify densities and distribution of wildlife in the spill impact area.

Wildlife monitoring will include aerial observations (aerial over-flights), on-water boat observations, and land-based shoreline observations. Protocols will be developed to avoid scaring wildlife into the water—an operational consideration with aerial observations, as well as with shore-based activities.

7.2 Wildlife Deterrence

Deterrence programs proactively safeguard wildlife from the effects of an accidental product release by dispersing and excluding animals away from contaminated areas, thereby reducing wildlife contamination and mortality. The Wildlife Branch should continually assess opportunities to utilize effective deterrence strategies and tactics.



Figure 7-1 Wildlife Deterrence

Deterrence strategies should be determined and planned by the Wildlife Branch after the initial wildlife impact assessment or first reconnaissance survey is conducted. Hazing or deterrence may be conducted by the Wildlife Branch to keep unoiled wildlife away from oil. Deterrence activities must be authorized and coordinated within the Incident Command

Deterrence actions are most effective in areas already made unattractive to wildlife through vegetation clearing, on-going cleanup operations, and continual hazing operations. For example, birds that are well habituated to existing deterrence actions will not likely be dissuaded from continued use of oiled areas without the implementation of further deterrence, rotation and

combination of visual and auditory deterrence is recommended. It should be noted that historic use factors will be programmed in these birds and their offspring, likely resulting in the instinct for repeated annual usage of these areas.

Deterrence programs can be effective in small, well-defined areas such as sand bars, back eddies, inlets, or the immediate oil impact area. It is important to note that deterrence strategies will only be effective if there are equally attractive adjacent habitat areas into which birds and mammals can be hazed.

Only trained and experienced personnel should conduct deterrence techniques. Inexperienced personnel can worsen the situation by ineffectively deploying deterrents, inadvertently disturbing animals into oiled areas, or causing debilitated oiled animals to scatter. Deterrence activities should be initiated as soon as possible following an accidental release in order to prevent animals from establishing or continuing regular use patterns within a contaminated area. Delays may increase the number of oiled animals.

7.2.1 Deterrence Objectives

Goals and objectives should be developed by the Wildlife Branch with approval of the Incident Command. Incident goals and objectives help determine where efforts and resources should be focused to maximize the effectiveness of deterrence activities. Whenever possible, deterrence goals and objectives should be multi-hazard in nature in order to provide the most comprehensive protection for the site. Deterrence goals and objectives will be developed by the Wildlife Branch with approval of the Incident Command.

Deterrence goals include:

- Avoid impacts to wildlife resources in the area
- Develop deterrence strategies that will provide long-term exclusion of wildlife from oiled areas
- Implement viable deterrence strategies for all potential wildlife hazards at the site
- Modify deterrence strategies over time, based on monitored success/failure of strategies

7.2.2 Deterrence Methods and Strategies

Methods and strategies will be selected by the Wildlife Branch based on the above guidance. Knowledge and experience of trained deterrence specialist should be used to determine criteria for selecting effective incident-specific deterrence strategies. The Wildlife Branch will continually assess opportunities to deploy effective deterrence strategies throughout the incident.

Effectiveness of deterrent methods ranges widely according to studies conducted on several deterrence methods in a variety of settings. Less information is available to support effective deterrents for reptiles, including sea turtles, and many marine mammals. As such, the information below details deterrents with a known level of effectiveness for individual species or classes of wildlife.

Several deterrence methods should be compared to assess the effectiveness of each method (assumed to be deployed according to best practices), the species with which they are effective, and possible unintended secondary effects. Effectiveness is based on experience of wildlife responders in utilizing deterrence strategies in oil spill incidents. All available options should be considered as incident-specific conditions change throughout the incident.

7.3 Preemptive Capture

Pre-emptive capture techniques may be considered for a limited number of species identified as at risk of impact. Any preemptive capture effort requires rapid and coordinated deployment of resources and thorough planning. Each aspect of the capture, transport, relocation, and release must be planned and resources to support successful execution of the plan must be available. Preemptive capture efforts must be coordinated with the appropriate regulatory agency. Incident-specific authorization and permits for the capture of migratory bird species and non-migratory bird Species at Risk are required.

Preemptive capture should be considered when deterrent use is not appropriate (young animals with limited mobility); when population is of high conservation value or where there is a high potential of oiling and associated risk of mortality from oiling; where circumstances are conducive to successful capture. The following factors shall be considered to identify potential candidates for pre-emptive capture:

- Population health and vulnerability
- Population vulnerability to oiling
- Response to deterrent/hazing tactics
- Availability of appropriate housing and husbandry to ensure humane care
- Appropriate relocation habitat

7.4 Search and Capture

Search and capture field teams will focus on daily reconnaissance and assessment of oil-impacted wildlife; prioritizing capture based on individual animal health condition or potential for rapidly declining health secondary to oiling; and, determining appropriate capture methods for these species. Search and capture activities will be directed by the Wildlife Branch; the number of capture teams should be scaled to ensure effective coverage of both the geographic extent of the spill and not impacted areas in which wildlife are known to congregate (loafing, foraging and night roost areas). Wildlife search and capture efforts will be focused in areas where there are known concentrations of impacted animals. As time allows search efforts may be extended to locate oiled animals that may have moved some distance from the spill impact area.

Wildlife capture strategies will be developed based on species, location, degree of oiling and mobility of oiled wildlife (in particular birds). Capture will be prioritized based on species susceptibility to oil impacts and availability of resources and personnel.

Each shoreline capture team should be composed of two or more wildlife staff; on-water teams require a designated boat driver. The OWRO will, when possible, make use of local personnel and equipment resources.

Captured animals are documented on field capture forms and then transported to either the field stabilization unit or the Wildlife Rehabilitation Facility. To ensure that human health and safety guidelines are met, there are certain species whose capture should never be attempted by anyone other than wildlife professionals with skill and experience in their capture (e.g., cetaceans, pinnipeds, raptors). It should also be noted that any animal captured must also be able to be safely and securely transported and housed.

7.5 Field Stabilization

The field stabilization unit accepts oiled animals directly from field capture teams and provides basic first aid measures to ensure that animals are stabilized prior to transport (fluid administration and gross decontamination as needed, depending on species and degree of oiling). Field stabilization units for sea turtles, pinnipeds, and marine mammals should be separate from those for birds due to facility and space requirements and safety considerations. Field stabilization sites are established when transport times from the field to the rehabilitation facility exceed two hours.

A mobile field stabilization center is proposed to be established at Herring Neck or near wildlife field operations staging area (assumed Herring Neck). A remote field stabilization unit may be established on Change Island or Fogo Island if determined to be advantageous by the Wildlife Branch.

7.6 Wildlife Transport

Transportation procedures will be established by the Wildlife Branch and put into practice by search and capture teams in coordination with the field stabilization unit. These groups coordinate transport times with the Wildlife Rehabilitation Group Supervisor to ensure that facility staff is prepared to receive incoming wildlife.



Figure 7-2 Wildlife Capture, Transport and Stabilization Activities

8 General Facility Requirements

It is critical, that during an oiled wildlife response (off or on shore) the appropriate facilities must be available in order to rehabilitate the impacted animals appropriately. Given the below minimum requirements (Table 2), efforts should be made in the pre-planning phase to identify potential facilities throughout Kenya that could be converted/used during a spill. It should be pointed out by adhering to the appropriate stabilization protocols; a potential facility does not need to be located in close proximity the spill site. Animals can be transported in appropriate vehicles to the rehabilitation facility.

Table 2 Preliminary Facility and Infrastructure Checklist for Oiled Wildlife Rehabilitation

<p>General Requirements</p> <ul style="list-style-type: none"> <input type="checkbox"/> Field stabilization space <input type="checkbox"/> Ventilated/heated interior space <input type="checkbox"/> Heated interior space (ventilation unnecessary) <input type="checkbox"/> Minimum of 10–15 air exchanges per hour with outside air in all animal areas <input type="checkbox"/> Air temperature adjustable and maintainable to any given temperature within 19-35C with ventilation system running <input type="checkbox"/> Electrical capacity to support heat lamps, pet dryers, etc. <input type="checkbox"/> Fire hydrant <input type="checkbox"/> Sufficient staff and volunteer support to handle workload
<p>Oiled Bird Requirements</p> <ul style="list-style-type: none"> <input type="checkbox"/> Intake and assessment area that is separate from regular patients <input type="checkbox"/> Area to house oiled patients the ability to prevent cross contamination through establishment of a decontamination zone <input type="checkbox"/> At least one pre-wash holding pen <input type="checkbox"/> At least one post wash holding pen
<p>Wash Requirements</p> <ul style="list-style-type: none"> <input type="checkbox"/> Wash/rinse area (recommended 9.2 m²) <input type="checkbox"/> Water pressure sustainable at 40-60 psi for the duration of the rinse process (to be adjusted by expert wildlife responder according to the animal in hand) <input type="checkbox"/> Water maintainable at 39-41C (102-108F) <input type="checkbox"/> Water hardness of 2-5 GH (34-85 mg/L) <input type="checkbox"/> Water softening system <input type="checkbox"/> Ability to collect and safely dispose of oily waste water <input type="checkbox"/> Propane tanks
<p>Post-Wash Support for Aquatic Birds</p> <ul style="list-style-type: none"> <input type="checkbox"/> At least one warm water pool <input type="checkbox"/> Outdoor conditioning space <input type="checkbox"/> Conditioning pool and constantly running water that drains from the surface to exchange the volume of the pool 4.25x/day

General Requirements
<input type="checkbox"/> Field stabilization space <input type="checkbox"/> Ventilated/heated interior space <input type="checkbox"/> Heated interior space (ventilation unnecessary) <input type="checkbox"/> Minimum of 10–15 air exchanges per hour with outside air in all animal areas <input type="checkbox"/> Air temperature adjustable and maintainable to any given temperature within 19-35C with ventilation system running <input type="checkbox"/> Electrical capacity to support heat lamps, pet dryers, etc. <input type="checkbox"/> Fire hydrant <input type="checkbox"/> Sufficient staff and volunteer support to handle workload
Oiled Bird Requirements
<input type="checkbox"/> Intake and assessment area that is separate from regular patients <input type="checkbox"/> Area to house oiled patients the ability to prevent cross contamination through establishment of a decontamination zone <input type="checkbox"/> At least one pre-wash holding pen <input type="checkbox"/> At least one post wash holding pen <input type="checkbox"/> Minimum 1.2m deep or 13,250 liters 3.6m diameter pool to fill.

9 Rehabilitation Operations

9.1 Best Achievable Care Standards in Oiled Wildlife Response

Professional oiled wildlife response organizations follow best practice documents for oiled wildlife response and rehabilitation. While methods and techniques may differ between spills, the principles and ethics of best practices remain consistent. “Best achievable care” practices take into consideration the realities of individual incidents; successful rehabilitation is defined as the application of best practices within the context of available equipment, facilities, personnel, and other resources. Early and the full support of the Wildlife Branch and wildlife response activities play a defining role in the success of those efforts.

9.2 Wildlife Rehabilitation Phases

The capture, stabilization, cleaning, and conditioning of oiled wildlife require that care begin immediately after an incident. The success of rehabilitation efforts differs based on the number of animals and numerous other variables, including: the immediacy of the response effort, the species involved, the care and husbandry requirements, the time of year, the type of contaminant affecting wildlife, and the extent and duration of contamination. All phases of the rehabilitation process occur at the Wildlife Rehabilitation Facility (often called the rehabilitation center).



Figure 9-1. Wildlife Rehabilitation

Oiled Wildlife Response Organizations in Kenya should work according to international standards for best achievable care of oiled birds (USFWS 2003; OWCN 2015; IPIECA 2017), sea turtles (NOAA 2010) and marine mammals (NOAA 2015). The condensed and general procedures for rehabilitating oiled wildlife are summarized in Table 3 and described in the following sections, and must be understood in order to facilitate a successful wildlife response.

Table 3. General procedures goals for rehabilitating oiled wildlife

Phase	Description and Goals
Processing and Evidence Collection	Evidence collection Assigned individual, temporary band Feather/fur/product sample Photograph Individual medical record
Intake	Medical examination and treatment plan development Critical care concerns addressed Euthanasia evaluations based on established criteria and best practices
Triage	Ongoing euthanasia and treatment plan evaluation based on medical health status
Stabilization	Fluid, nutritional and medical stabilization of impacted animals 48–72 hours period (duration and process taxon-specific) Use species-appropriate husbandry and housing Prepare animals for cleaning process
Cleaning	Pre-treatment to loosen weathered product Removal of all oil/contaminants from an impacted animal by washing (species-specific methods) Removal of the cleaning agent by rinsing Drying cleaned and rinsed animal
Conditioning	Restoring waterproofing and physical health
Release	Federal banding of individual animals Release of cleaned, waterproof animals into a clean environment Post release monitoring

9.2.1 Processing and Evidence Collection

Upon arrival at the rehabilitation center, wildlife goes through a processing procedure. Processing is the means by which evidence is collected from each wild animal, dead or alive. The four pieces of evidence legally required for collection include a product sample (generally conducted via feather or fur sampling), photo documentation, identification/logging and tagging each animal, and a signed medical record, which is then completed during the intake process. Individual medical records follow the individual animal throughout the rehabilitation process.

9.2.2 Wildlife Intake

Following processing, the wildlife proceeds to intake, where each animal receives a thorough medical examination, initial in-house blood-work (packed-cell volume [PCV], total protein [TP], buffy coat [BC], blood glucose [BG] [as necessary]) is taken. A comprehensive initial treatment plan is then laid out for each animal. Triage, either based on medical health status or conservation value, also takes place at this point. In cases where the medical condition of the animal indicates that it will be unable to recover from its current condition and will not be able to survive the rehabilitation process to release, the individual should be humanely euthanized.

Exposure to petroleum products has numerous, significant, and often fatal consequences for wildlife. Exposure effects can lead to debilitation and fatality (including euthanasia) for wild animals. Euthanasia guidelines are generally based on a number of factors relating to each individual animal's condition and will include behavior, secondary complications, blood values, thermoregulatory ability, GI tract function, waterproofing issues, etc. Agonal state, seizing, extreme hyper/hypothermia, and severe traumatic injuries also require immediate euthanasia evaluation.

9.2.3 Triage and Euthanasia Considerations

The number of animals oiled may exceed the resources available to effectively rehabilitate all of the animals presented for care. In this case the most humane course of action is to euthanize those animals with a poor chance for survival so that the remaining animals' chances for survival are optimized.

Euthanasia should be considered whenever the prognosis for release back to the wild is poor. Each case should be considered individually. Priority should be given to animals with a high conservation value, with fair to good prognosis for release. Animals exhibiting symptoms of infectious diseases that may be transmissible to the larger group or to the wild population should be isolated immediately and considered for euthanasia.

Euthanasia decisions are made based on a combination of these factors for each animal on an individual basis. These parameters have been developed through extensive experience on survivability of animals through the rehabilitation process. The Wildlife Branch should coordinate with the appropriate Kenyan agency to develop and approve euthanasia protocols. Permitted wildlife rehabilitators and wildlife veterinarians with species-specific expertise should be the only personnel authorized to implement euthanasia protocols and perform euthanasia.

9.2.4 Stabilization

After intake, the animal moves into the stabilization phase, where it is appropriately housed, provided with medical, nutritional, and husbandry support to treat its condition, until it is deemed medically stable enough to be processed to the cleaning (decontamination) phase. This stage of the rehabilitation process is crucial to the animal's overall survival. If a bird is moved through the cleaning process prior to it being medically cleared to do so, it may die during the cleaning process or it will not have the strength following the cleaning process to recondition for release to the wild. Each individual animal generally remains in stabilization for a minimum of 48 hours; some will require 72 hours or more. Reptiles differ from birds and mammals in this regard. Due to their unique physiology, reptiles should be decontaminated immediately after intake, with stabilization taking place after cleaning. Some individuals may require numerous cleaning sessions, or cleaning may need to be halted and resumed at a later time if the individual's medical health is in jeopardy. During the medical stabilization phase of the rehabilitation process, wildlife is medically monitored on a regular basis (including blood-work), to determine its progress. Species-specific husbandry techniques are used to mitigate secondary complications due to captive care. Some species are particularly susceptible to the complications and have a very short "window of opportunity" before secondary issues become evident. Secondary complications in birds can include, but are not limited to: aspergillosis (fungal respiratory disease, exacerbated by stress and ventilation of a captive environment); keel, hock and foot lesions caused by being off water-based environments (i.e. pressure lesions); feather damage; and feather ball impactions for species that regularly ingest feathers. These secondary complications are often fatal to water birds. Thus, extremely specialized care, husbandry, caging and facility development are mandatory components of oiled wildlife rehabilitation. Humane euthanasia is a necessary component of this phase of the rehabilitation process for wildlife that is not medically able to meet criteria for ongoing rehabilitation.

9.2.5 Wildlife Cleaning

All wildlife receives a "wash evaluation" before proceeding to the cleaning/decontamination process. Wildlife must meet strict medical criteria in order to be cleared to go through the decontamination process. The cleaning process may include pre-treatment to assist with breaking down weathered or heavy product prior to cleaning. Wildlife then goes through a series of specialized washes at specific temperatures, using specific detergent dilution, and with specific technique to remove the contaminant. Once the contaminant is thoroughly removed, wildlife receives a pressure rinse treatment to ensure that all detergent residue, also considered a contaminant to bird feathers, is completely removed. The cleaning process is slightly modified from the above for mammals, and further modified for reptiles and amphibians depending on the specific species in care.

Facility water volume, pressure and hardness requirements must be appropriate to the needs of the cleaning process. After being washed, birds move to the drying area where they are fully dried using high-velocity pet dryers and are carefully monitored for overheating, shock, and other complications. Pinnipeds are dried with heat lamps; sea turtles and cetaceans should not be dried.



Figure 9-2. Wildlife Cleaning

9.2.6 Conditioning

Once fully dried, wildlife moves into the conditioning phase of the rehabilitation process. During this phase animals are returned to environments appropriate to their species (generally water-based environments), allowing them to regain their waterproofing, endurance, acclimation, nutritional status and medical status. Water volume, pressure and hardness requirements are mandatory for this stage of the rehabilitation process to ensure adequate conditioning. Each animal must enter the conditioning phase with a great deal of strength and health in order to reach potential for release. Due to the microscopic architecture of bird feathers, each feather's microscopic barbs and barbules must be preened back into waterproof alignment during this time. This process generally takes between 7–10 days.

All individuals continue to be provided with veterinary medical and nutritional support as required. All wildlife is medically monitored on a regular basis to determine progress (including blood-work). Humane euthanasia can be a necessary component of this phase of the rehabilitation process for wildlife that is not medically able to meet criteria for ongoing rehabilitation to release.

9.2.7 Release

Each animal will receive a pre-release evaluation prior to release to the wild, which includes a full medical examination, blood-work and waterproofing assessment. Waterproofing assessment generally takes place up to 72 hours of conditioning pool access, species-dependent. Strict criteria must be met for wildlife to be considered for release to the wild. Only wildlife that meets these criteria will be released, to ensure survivability once returned to the wild. Wildlife is released in a location appropriate to its species, time of year and migration status, and into a location that has minimal risk of re-oiling. All birds should be banded prior to release by an authorized and permitted bird bander.



Figure 9-3. Bird's identification bands and release operations

10 Post Release Monitoring

The Wildlife Branch in coordination with wildlife regulatory agencies should consider opportunities for initiating scientific post-release monitoring whenever possible. Monitoring can be used to determine effectiveness of response actions on survival and potentially subsequent breeding success of released animals. Simple color marking and monitoring on breed colonies and hauls out areas can provide basic information on survival. More detailed radio-tagging studies might be able to determine movement, migration, long term survival and breeding success of rehabilitated and released wildlife species. ECCC-CWS should consider post-release monitoring into ongoing seabird studies if possible.

11 Waste Management and Disposal

Wildlife response operations will generate a considerable amount of waste and oily waste. The volume of waste will be determined by the scale of the response. Every effort will be made to reduce the volume of waste generated by various components of wildlife response. The Wildlife Branch will work with the EU to ensure that the incident-specific waste management plan will include all needs specific to wildlife response efforts in the field and in the rehabilitation facility. The Waste Management Plan (WMP) should include the supply and procurement of waste disposal containers for wildlife operations, as well as appropriate methods for disposal.

11.1 Wastewater

Wastewater resulting from oiled wildlife rehabilitation operations requires specific and specialized disposal methods. Wastewater is to be handled in accordance with the waste management plan (WMP) for the incident.

- Oily wastewater (water from decontamination process): Must be collected during the decontamination (wash) process managed in accordance with the WMP.

- Grey water: (ex. rinse water, pool overflow water) must be disposed according to federal, provincial, and municipal regulations. Grey water from pool overflows can be managed by routing the water to a cistern (or storage tank) where it is then collected.
- Storm water/runoff: Must be appropriately controlled to prevent contact with grey water and oily wastewater.

11.2 Solid Waste

- The wildlife rehabilitation facility generates considerable solid waste. Disposal of all solid waste must be in accordance with the WMP for the incident.
- Oiled solid waste (e.g., PPE, sorbent pads, towels) that is generated by wildlife field operations as well as animal care facilities should be included in the WMP.
- Disposal of carcasses must be in accordance with designated regulatory agencies, evidentiary protocols, and best management practices for biosecurity. Carcass disposal protocols are frequently site-dependent and will be developed by the Wildlife Branch for incorporation into the WMP for the incident.

12 Media Relations

Media alerts and messaging for the hotline will be developed by the Wildlife Branch at the time the hotline becomes active. Appropriate messaging should be provided to the Joint Information Center (JIC) or Public Information Officer (PIO) to release as media notices.

Media statements regarding the mobilization and on-going activities of the wildlife response should be provided to the public at regular intervals. It is critical to provide the public with timely and accurate information regarding the impact to wildlife and the measures being taken to reduce both morbidity and mortality of wildlife. Similarly, it is important to raise awareness regarding wildlife concerns, public safety concerns, and the hazards of handling wildlife. The opportunity may also be used alert the public to requests for volunteer assistance or to direct their interest in participation to a particular area to avoid detrimental public intervention with positive intentions.

Media releases issued to the public should be jointly developed by the Wildlife Branch (Wildlife Response Director), the Public Information Officer (PIO) and the Joint Information Center (JIC). Accuracy of statements and media releases may be greatly improved by ensuring that all information has been fully confirmed as accurate by the Wildlife Branch. Numbers of live, dead, and released animals should correspond to the numbers established in the prior operational period's (end of day) wildlife report. Consistent use of the prior day's report may eliminate inaccuracies and limit the speculation regarding transparency.

Media and VIP attendance at a wildlife release or tours of the Wildlife Rehabilitation Facility may also be considered. These should be scheduled in advance and coordinated through the Wildlife Branch with the PIO. In order to reduce stress to wildlife, tours may be limited in frequency and duration. Specific requirements for clothing, PPE, camera use and wildlife disturbance will be established prior to these events taking place.

13 Health and Safety

Human health and safety are the first priorities in any oil spill response. All injuries (bites, scratches, trips, falls, burns, etc.) must be immediately reported to the Health and Safety Office. Medical attention should be pursued as needed. Safe lifting practices should be observed when lifting animals and equipment. In the rehabilitation facility, special attention should be paid to the potential for slips, trips, and falls. Recognize areas of particular potential for harm to both humans and animals, e.g., heat lamps hanging near sheets, inadequate ventilation leading to an accumulation of toxic fumes, and certain drugs or disinfectants that may have undesirable secondary effects.

Appropriate personal protective equipment (PPE) is required at each oiled wildlife response, this includes, but is not limited to: safety glasses, protective suits, latex or nitrile gloves, and protective footwear. In addition, personnel working on search and collection will be required to undergo more extensive safety training and may be required to wear other forms of PPE, including Personal Flotation Devices (PFDs). The Site Safety Officer will supervise all aspects of human health and safety. To guard against injury from birds, all workers should wear approved personal protective equipment appropriate to their task.

13.1 Recommended PPE

All workers must be trained on the proper use and limitations of all personal protective equipment prior to using the equipment. In addition to hazards from oil, numerous physical hazards may be associated with bird rescue activities. To protect against bites and scratches, appropriate clothing and equipment should be worn underneath the oil protective equipment whenever necessary. Workers should be aware of temperature, weather, and other environmental conditions and use personal protective equipment to guard against dangerous waters, frostbite, hypothermia, heat-stress disorders, and infectious diseases. The following PPE is recommended:

- Full eye protection, e.g., goggles, safety glasses, or face shield
- Oil resistant rain gear or oil protective clothing (coated Tyvek, Saranex, etc.)
- Gloves (neoprene or nitrile rubber) that are oil resistant and waterproof
- Non-skid shoes/boots, which are oil resistant and waterproof
- Ear protection (muff or ear plug type) when using pyrotechnic devices or operating machinery
- Personal flotation device when working on or near water



Figure 13-1. Wildlife cleaning staff wearing appropriate PPE

13.2 Zoonosis

Zoonoses are infectious diseases that may be transmitted between animals and humans under natural conditions. Personnel handling or coming into contact with wildlife have the potential of exposure to zoonoses. Veterinarians, technicians, search and collection staff, animal handlers, and other animal care personnel who come into direct or indirect contact with animals and any body fluids are at risk of contact with disease agents that may have zoonotic potential. Organisms that may cause or transmit zoonotic diseases include many classifications from viruses and bacteria to internal and external parasites.

Anyone whose immune system is compromised (including, but not limited to conditions such as pregnancy, HIV/AIDS, patients undergoing chemotherapy, organ transplant recipients, splenectomized individuals, or persons under acute or chronic high levels of stress) is highly susceptible to opportunistic and secondary infections with zoonotic disease agents.

Standard veterinary clinic hygiene practices will be employed in all aspects of wildlife operations to reduce risk of disease transmission.

13.3 Site Safety Plan

A Site Safety Plan will be developed by the Wildlife Branch Director in coordination with the Safety Officer, to identify hazards associated with the work on the site, along with the hazard control measures that will be implemented to ensure that people are adequately protected from risk of injury or illness. Site-specific safety plans will be available on site for inspection by all staff utilized in wildlife operations prior to commencing work. The plan should be modified and updated during the course of the incident. The Site Safety Plan should address the following components:

- **Risk management:** identification of the hazards and assessment of the risks associated with the work, and documentation of the risk control measures to be taken.
- **Statement of responsibilities:** a statement that nominates individuals who will be responsible for the site-specific OHS aspects of the work, and who will be available to deal with illness/injury and OHS incidents.
- **Occupational health and safety training:** a statement identifying the training needs of the personnel on the work site.
- **Incident management:** a statement identifying the processes to be used and personnel available to prevent, prepare for, respond to and recover from illness/injury and incidents.
- **Site safety rules:** safety rules that should be displayed in prominent areas on the work site.
- **Safe work method statements:** statements for all work activities identified as having health or safety risks, identifying the measures to be used to manage those risks. Particular attention should be paid to work activities with a high safety risk.

13.4 Oiled Wildlife Carcass Collection and Morgue

An additional component of the wildlife response activities is the removal of any dead, oiled wildlife to avoid attracting scavengers to the site. The responsibility for the collection and documentation of dead oiled wildlife/livestock is primarily the responsibility of the Wildlife Branch. Search and capture field teams will recover dead oiled wildlife (size/weight permitting) as part of their normal daily activities. Unrecoverable dead animals due to their size/weight should be marked (logged) and alternative methods of collection and disposal organized. Dead, oiled animals that are observed by other response personnel should be reported to the Wildlife Branch following pre-approved protocols.

Dead animals should be handled using common sense sanitary precautions to reduce risks to human health. Carcasses need to be handled using nitrile or other chemical resistant disposable gloves. Avoid contact with feces, blood, body fluids, and sharp parts of the bird. Standard personal hygiene must be followed, including thorough hand-washing with soap and water after handling any dead animal (see Site Safety Plan).

After recovery, dead birds for example should be wrapped bird in clean aluminum foil, labeled, and then placed in a plastic bag. One carcass label form (collector, date, time, location, unique carcass #) will be completed for each carcass. One form is required for each carcass collected. Forms should be sealed in a second plastic bag on outside of original plastic bag and foil-wrapped carcass.

Similar dead animal processing protocols need to be established for:

- Mammals (Livestock)
- Marine Mammals
- Turtles
- Amphibians
- Reptiles

Because of their size, livestock, marine mammals and turtles do not need to be wrapped in foil.

14 Administrative Management, Records and Reporting

The importance of recording information cannot be over-emphasized. Record collection enhances individual animals care, response evaluations, and the ability to accurately characterize the best practices for appropriate care. In-house records need to be maintained at the rehabilitation facility and copies provided to the regulatory agencies. Final reports from the rehabilitator for the oiled-bird response, including carcass chain-of-custody and sample collection records, where required, will be delivered to the regulatory agencies within 30 days of the date the Incident Commander declares the response closed or from the departure date of the rescue/rehabilitation organization, whichever comes first.

The following types of records are necessary to preserve vital information for natural resource damage assessment, and improved rehabilitation practices and techniques:

- Resources-at-Risk Survey: provides information regarding the location of birds and other animals in relation to the spilled oil.
- Oiled bird sightings: records and maps for all reports of oiled birds.
- Field Retrieval Report: records for all birds collected in field.
- Live Bird Log.
- Dead Bird Log.
- Running tally: list of all wildlife in-house by species and case number.
- Daily Care Report: documents care for each bird or enclosure, including feedings, treatments, medications, normal/abnormal activities.
- End-of-Day Report: reports current and next day's work.
- Oiled Bird Examination Report: individual record summary of retrieval, medical exam, diagnostic results, samples collected (chemical, blood, and tissue), cleaning, treatment, evaluation, chain-of-custody, Federal bird bands, and final disposition.
- Record of samples collected (chemical, blood, feather, and tissue).
- Lab Analyses Report: identifies all samples sent to labs; requested analyses; and lab results.
- Federal Bird Banding Report: lists all birds banded for release.
- Necropsy Report.

14.1 Demobilization and Termination

Continuous monitoring of oil slick behavior and clean-up progress, search and capture activities, numbers of animals admitted into facilities, animals released and those still in care, all provide important indications of trends in the level of response effort that is required. A downward trend in response effort must be noted and addressed by the Wildlife Branch Director. If clear signs of the end of the wildlife response are observed, the termination of the response needs to be considered.

Termination of the response follows a period of winding down operations, demobilization of staff and equipment, closure of the facilities, and the demobilization of the Wildlife Response team. A plan must be developed by the Wildlife Branch Director or their designate that allows the winding down of wildlife response operations and the demobilization of personnel and equipment under his/her control.

15 References

European Oiled Wildlife Response Assistance Module (EUROWA), Overview of Concepts and Services. Accessed at:

http://www.oiledwildlife.eu/sites/default/files/04Layman_report_final.pdf

European Oiled Wildlife Response Assistance Module (EUROWA), Standard Operating Procedures. Accessed at: <http://www.oiledwildlife.eu/publications/eurowa-standard-operating-procedure-sop-volume-i-external>

European Oiled Wildlife Response Plan. Accessed at:

http://www.oiledwildlife.eu/sites/default/files/04Layman_report_final.pdf

IPIECA Report Series, Volume Thirteen, 2016. A Guide to Wildlife Response Planning, IPIECA Report Series, Volume Thirteen

http://www.oiledwildlife.eu/sites/default/files/Vol13_Oiled_Wildlife.pdf

IPIECA-IOGP Technical Support Document. Key principles for the protection, care and rehabilitation of oiled wildlife. <http://www.ipieca.org/resources/awareness-briefing/key-principles-for-the-protection-care-and-rehabilitation-of-oiled-wildlife/>

Preparedness for Oiled-polluted Shoreline clean-up and Oiled Wildlife interventions (POSOW) Oiled Wildlife Response Manual. Accessed at:

http://www.posow.org/documentation/manual/manual/wildlife_manual.pdf