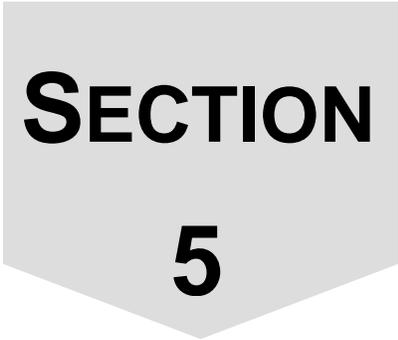


OIL SPILL CONTINGENCY MANUAL



**SECTION
5**

WILDLIFE RECOVERY



WILDLIFE RECOVERY

5.1



Action

Implementation of wildlife recovery section of the Corporate and supplemental emergency response plans.



Procedure

- Ensure spill reporting requirements both internally and externally have been met.
- If wildlife is impacted by the spill dispatch in-house or contract wildlife subject matter experts.
- Dispatch in-house or WCSS spill response equipment that includes wildlife deterrence equipment.
- During the emergency phase of the spill responders may be able to obtain approval from local authorities to enact some immediate exclusion and deterrence strategies concurrent with the initial wildlife impact assessment and development of the wildlife management plan.
- Ensure documentation is maintained linked to actions advised by regulators and wildlife responders and actions agreed to by the responsible party.
- Establish the wildlife branch in the Incident Command System (ICS).

Action

Ensure proper authorities have been notified.

Procedure

The initial spill response or emergency phase following a release is crucial timing for setting up containment, recovery and other tactics to minimize the impacts on wildlife. During this time mandatory notifications related to wildlife damage must take place in each jurisdiction. This section identifies the contacts to make to assist the Responsible Party with ensuring these are completed in a timely fashion.

Call the appropriate provincial emergency response line (see Table below). Report all information pertaining to the incident.

| Provincial Emergency Response Lines <i>(Telephone numbers are accessible only from within the respective province)</i> | | | |
|--|---------------------------|---|-------------------------|
| √ | Province/Territory | Agency | Telephone Number |
| | Alberta | Ministry of Environment | 1-800-222-6514 |
| | British Columbia | Provincial Emergency Preparedness Program | 1-800-663-3456 |
| | Saskatchewan | Ministry of Environment | 1-800-667-7525 |

In order to reduce duplication of effort for reporting requirements, Environment Canada and Fisheries and Oceans Canada entered into Environmental Occurrences Notification Agreements with the Governments of Alberta, British Columbia, Manitoba, Ontario and Saskatchewan, as well as with the Governments of the Northwest Territories and Yukon.

Under these Notification Agreements, 24-hour authorities operating for the provinces and territories receive notifications of environmental emergencies and transfer this information to Environment Canada. In the majority of jurisdictions, an authority within the respective provincial or territorial government provides this notification service. It is good practice to have the lead reporting authority verify that they will contact other agencies that require notification.



Action

Ensure qualified wildlife responders are involved.



Procedure

Qualified oiled wildlife response organizations should include oiled wildlife response and rehabilitation specialists/subject matter experts and biologists who have the ability to:

- Ensure safety standards for working around oil or other contaminants are met or exceeded. Ensure compliance with corporate safety standards and site-specific safety requirements. Ensure compliance with safety requirements for working with wildlife.
- Provide accurate and timely information to Incident Command and the Wildlife Branch and perform the duties of any positions held within the Wildlife Branch.
- Contribute to the site safety plan.
- Identify and comply with federal and provincial regulatory requirements linked to oiled wildlife response.
- Conduct an initial wildlife impact assessment.
- Determine the scope of wildlife impacts and the potential for further impacts.
- Identify strategies and resources required to mitigate wildlife damage and to mount an effective response. These may include, but are not limited to, qualified personnel, wildlife deterrence and rehabilitation equipment, and a wildlife rehabilitation facility.
- Develop a site-specific wildlife management plan.
- Possess or obtain the necessary approvals, permits, maps, and technical information.
- Establish and implement deterrence and hazing program in line with regulatory requirements and Wildlife Branch activities as outlined in the Wildlife Management Plan. In the absence of professional wildlife experts during initial spill response phase, experienced spill responders may be able to obtain approval to conduct initial deterrence measures. Consultation with the oiled wildlife response organization prior to implementing initial deterrence measures is advised.
- Coordinate and conduct search and recovery efforts; capture and stabilize impacted wildlife.

- Coordinate and conduct oiled wildlife rehabilitation in accordance with internationally recognize care standards and facility requirements.
- Maintain all necessary documentation.

Key competencies of professional wildlife response organizations should include training, skill and experience in the following areas:

- Oil spill response best practice safety requirements and guidelines.
- Management of oiled wildlife response operations.
- Coordination of Wildlife Branch operational objectives with wildlife regulators and overall spill response operational planning.
- Species-specific wildlife deterrence, capture, handling, and rehabilitation strategies and techniques.

The following information should be provided to oiled wildlife qualified responders

- Description of the incident (Spill Report Form – Section 2.1)
- Product Safety Data Sheet (MSDS)
- List with contact information for wildlife regulators that have been notified.
- List of actions advised by wildlife regulators.
- Identification/involvement of other wildlife specialists/personnel.
- List of affected live animals observed and/or collected.
- List of casualties observed and/or collected.
- ICS status including the formation of an Environmental Unit and Wildlife Branch
- Status of an initial wildlife management plan or activation of existing wildlife response plan.
- Identification of wildlife equipment and resources on site or in the area.



Conduct an initial wildlife initial impact assessment.



Procedure

Identify the scope of impacted wildlife and the potential for continued wildlife impacts. Baseline wildlife data should include general information regarding species in the spill area and resources at risk.

Baseline environmental data should also be collected during the emergency phase of the release. In order to determine the species potentially impacted by the release, it is important to gather baseline environmental data in the area. Some of this data may be available from existing publications, local government wildlife biologists, or government databases; additional data may need to be collected to better tailor the needs of the response. Some species may not be observable in the initial assessment as they may be hiding due to the level of disturbance or may simply be species which are difficult to detect.

The following is a list of typical steps to be completed and documented by the wildlife response organization, in conjunction with the responsible party.

- Conduct an initial wildlife impact assessment; identify the scope of impacted wildlife and the potential for continued wildlife impacts.
- Identify the strategies, personnel, and equipment resources necessary to mount a rapid and effective response.
- Conduct initial wildlife reconnaissance. Wildlife reconnaissance should begin with the impact assessment and continue throughout the response process in order to ensure effectiveness of response strategies and timely information about changing field conditions (migrating birds or other wildlife movement, oil trajectory, weather changes impacting potential intersection of released product and wildlife, species that may present a danger to workers in the area).
- Document initial response actions advised by regulators and wildlife responders and implement those actions agreed to by the regulator and responsible party (e.g. set-up wildlife deterrents).
- Develop a Wildlife Management Plan to be included in the first Incident Action Plan.
- Ensure all necessary permits (e.g., Wildlife Rehabilitation Permit, Migratory Bird Permit, Research and Collection License) are in place or have been applied for.
- Conduct on-going, daily reconnaissance and document observations.
- Maintain daily records including labeled photographs of all actions with dates, time, GPS location and weather.



Develop a wildlife objective that can be used in the Incident Action Plan and wildlife management plan.



Identify a wildlife objective that can be conveyed to key stakeholders in the early stages of the spill.

The objective should be relatively general and at a high level; for example:

- The primary objective is to minimize wildlife impacts, including preventing injury to wildlife and habitats from both the oil and from the implementation of response countermeasures; as well as providing the best achievable care to impacted wildlife.

When communicating wildlife management objectives they should be conveyed with following general format (CAP):

- 1) C - Show concern
- 2) A - Identify actions that are being taken.
- 3) P - Outline the plan to move forward.

Identify objectives to support the Incident Action Plan for use in Site Safety Plans and the Wildlife Management or Wildlife Response Plan; examples include:

- Ensure wildlife response personnel safety is the highest priority; worker safety must be considered before any wildlife reconnaissance, protection or retrieval effort is started.
- Ensure all legal requirements such as notifications, permits and approvals are obtained and documented.
- Species at risk and of special concern will be given priority throughout the wildlife management, recovery and rehabilitation process.

- Prevent oil from reaching critical habitats by intercepting the contaminant before it migrates into surface water (block culverts; utilize trenching, berms, inverted weirs or other).
- Utilize strategies such as diversion, deflection, containment or exclusion booming, filter fencing or other technology to minimize impacts in surface water.
- Remove as much oil from the environment as quickly as possible, utilizing a low impact strategy to minimize vegetation and soil disturbance and achieve a net environmental benefit.
- Reduce the risk of oiling wildlife by keeping wildlife out of contaminated areas; identify wildlife deterrence or hazing program components.
- Evaluate animals contaminated and if possible capture the animal, stabilize, transport to a rehabilitation facility, clean and condition for release.
- Prevent secondary contamination to animals (scavengers) by collecting carcasses of dead animals.
- Ensure stakeholders are informed and that their input is considered.
- Limit potential long-term impacts to habitat from the spill and clean-up tactics.
- Promote recovery of wildlife and fish populations to pre-contaminant levels.



Develop a wildlife management plan.



In some jurisdictions (e.g., Alberta) response activities, including permit applications, will not be advanced until a wildlife management plan has been submitted and approved. The Responsible Party may be given verbal approval and/or direction from regulators to take steps to deter or exclude wildlife from the contaminated area. In order to expedite the submission and approval of the Wildlife Management Plan, it is advisable for wildlife response personnel to work on the plan remotely or while in transit to the spill site; later updating the plan for accuracy after the initial wildlife impact assessment has been conducted.

It is important to note that while wildlife specialists often prepare the plan, it is regarded as the Responsible Party's plan and the Responsible Party will be held legally responsible for the commitments outlined in the plan.

Key components of a Wildlife Management Plan are identified by the wildlife response team with input from provincial regulators and approval from the Operations Section Chief and Incident Commander. The following are examples of key components that may be included in a wildlife response plan. Components are incident-specific; not all components will be required for every incident:

Introduction

- Detailed description of release and the environmental setting
- Objectives of the Wildlife Management Plan. These objectives generally include the following:
 - Ensure the safety of personnel working with wildlife and reduce the potential for wildlife interactions that may pose a threat to human health and safety.
 - Minimize impacts to wildlife and the surrounding environment.
 - Establish protocols for preventing wildlife interactions.
 - Establish protocols for reporting wildlife interactions, should they occur.
 - Comply with applicable provincial and federal legislation for protection of wildlife.
 - Assess wildlife populations in immediate area and determine impact to wildlife.
 - Establish protocols for capture, transport, stabilization, rehabilitation and release of affected wildlife.
 - Establish protocols to report and recover dead wildlife and work with regulators to dispose of carcasses appropriately.

Environmental Setting

- Wildlife species in the area
- Habitat in the area
- Priority species (Threatened/Endangered Species; Species at Risk; species intolerant of captivity)

Wildlife Management

- Mitigation and deterrence techniques
 - General techniques
 - Exclusion
 - Deterrence
 - Hazing
 - Pre-emptive capture and rehabilitation or relocation
 - Genus and species-specific techniques
 - Reptiles and amphibians
 - Birds
 - Furbearers including small mammals and large carnivores
 - Hoofstock/Ungulates
 - Semi-aquatic and aquatic species
 - Maintenance of deterrence equipment
- Clean-up operations strategies

Wildlife Reconnaissance

- Strategy and personnel
- Wildlife sightings reporting

Wildlife Recovery and Rehabilitation

- Federal and Provincial Notifications
- Permits
- Qualified personnel
- Wildlife impact assessment and reconnaissance
- Search and Recovery
- Field stabilization
- Transport
- Processing and data/evidence collection
- Rehabilitation
- Wildlife mortalities
- Closure and Wildlife Branch demobilization

Appendices and Supplemental Information

- General Wildlife Safety Guidelines
- Biological and population data on wildlife species and species at risk in the area

- Standards of Animal Care
- Wildlife Capture Protocols
- Wildlife Rehabilitation Protocols
- Permits
- GPS and weather



Obtain the necessary permits.



Oiled wildlife response organizations must adhere to several layers of wildlife regulations, starting at the Federal level with Environment Canada (EC) and the Canadian Wildlife Service (CWS) and including the Species at Risk Act (SARA). Provincial wildlife acts and regulations differ by province, and within provinces often have large differences by jurisdiction. The following section provides background information.

FEDERAL WILDLIFE REGULATIONS

Spring or fall migration period for bird species in the area:

- Most species of birds in Canada are protected under the [Migratory Birds Convention Act, 1994](#) (MBCA). The MBCA was passed in 1917, and updated in 1994 and 2005, to implement the Migratory Birds Convention, a treaty signed with the United States in 1916. As a result, the Canadian federal government has the authority to pass and enforce regulations [[Migratory Birds Regulations \(C.R.C., c. 1035\)](#)] to protect those species of birds that are included in the Convention. Similar legislation in the United States [<https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php>] protects birds species found in that country, though the list of bird species protected by each country can be different.

SARA animals or their habitat impacted by this release:

- Permits are required by those persons conducting activities that may affect species listed on [Schedule 1](#) of SARA as extirpated, endangered, or threatened, and which contravene the Act's [general](#) or [critical](#) prohibitions. Depending on the species and its location, applications should be directed to the appropriate authorities.

When oiled animals need to be collected, documented and considered for rehabilitation:

- Several federal permits are required for the collection and rehabilitation of oiled wildlife. These generally include a Migratory Bird Permit from Environment Canada Canadian Wildlife Services and a Provincial Wildlife Rehabilitation Permit. Separate, specific permits may be required for the planned capture of specific classes of wildlife (e.g., amphibian trapping).

When deterrence and hazing equipment are deployed:

- "There are several scare techniques which may be effective and do not require a permit, however a permit under the Migratory Bird Regulations is required for the use of aircraft or firearms (defined as capable of emitting at projectile at more than 495 feet per second). Propane cannons, blank pistols or pyrotechnical pistols firing crackers shells with less than 495fps are legal without a permit. Most scare tactics are relatively short lived in terms of effectiveness as birds acclimate to the disturbance so scare techniques should be alternated to be effective."

PROVINCIAL WILDLIFE REGULATIONS FOR ALBERTA, BRITISH COLUMBIA AND SASKATCHEWAN

Alberta

If it is necessary to capture, transport and rehabilitate wildlife within the province of Alberta:

In the province of Alberta the *Alberta Wildlife Act* requires a number of different permits in order to work with wildlife. These permits require technical expertise to be proven during the application process.

- Research permit and/ or collection license, required to authorize handling, disruption, collection or temporary possession of wildlife. This permit is considered by the *Alberta Environment and Sustainable Resource Development* on a case-by-case basis and qualifications must be met.
- Rehabilitation permit/facility inspection for the captive housing, treatment and rehabilitation of wildlife. This is a standing permit renewed annually to proven experts in the field of wildlife rehabilitation with strict requirements. Facility inspections are carried out and permits are issued by the *Alberta Environment and Sustainable Resource Development* on an annual basis.

Please note: Not all wildlife rehabilitation facilities and personnel are qualified or permitted to work with oiled wildlife.

- Federal wildlife collection permits related to the capture and recovery of migratory birds are issued through Environment Canada, Canadian Wildlife Service, Prairie and Northern Region: Twin Atria Bldg., Rm. 200, 4999-98 Avenue, Edmonton, AB, T6B2X3, Phone: 780-951-8600.
- Federal wildlife permits related to the rehabilitation of migratory birds are issued through Environment Canada, Canadian Wildlife, Prairie and Northern Region: Twin Atria Bldg., Rm. 200, 4999-98 Avenue, Edmonton, AB, T6B2X3, Phone: 780-951-8600.

If Alberta species at risk and/or their habitat become impacted by this release:

Alberta's Endangered Species Conservation Committee (ESCC) and its Scientific Subcommittee (SSC) ranks species in the following categories:

- Endangered Species (Endangered and Threatened Species are listed under Alberta's *Wildlife Act*)
- Threatened Species*
- Species of Special Concern
- Data Deficient Species
- In process

A short list of species at risk and a searchable database can be found at the following site:

<http://aep.alberta.ca/fish-wildlife/species-at-risk/default.aspx>

British Columbia

When it is necessary to capture, transport and rehabilitate wildlife within the province of B.C.:

A variety of wildlife permits can be required in British Columbia depending on anticipated wildlife activities. These permits require technical expertise to be proven during the application process.

- Possession Permits are required to authorize handling, disruption, and collection or temporary possession of wildlife. This permit application is considered by the *BC Ministry of Natural Resources* on a case-by-case basis and qualifications must be met.
- The *BC Ministry of Natural Resource Operations* issues rehabilitation permits for provincially regulated species (including mammals, reptiles, amphibians and most non-migratory birds). Provincial permits are processed through FrontCounterBC

(www.frontcounterbc.gov.bc.ca/) 441 Columbia St., Kamloops, BC V2C 2T3, phone: 250-828-4131.

- Federal wildlife collection permits related to the capture, recovery and rehabilitation of migratory birds are issued through Environment Canada, Canadian Wildlife Service, Pacific and Yukon Region: 5421 Robertson Rd, RR#1, Delta, BC, V4K 3N2, phone: 604-350-1950.

When British Columbia species at risk and/or their habitat are impacted by this release:

Provincial Red and Blue Lists

RED LIST: Includes any ecological community, and indigenous species and subspecies that is extirpated, endangered, or threatened in British Columbia. Extirpated elements no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered elements are facing imminent extirpation or extinction. Threatened elements are likely to become endangered if limiting factors are not reversed. Red-listed species and sub-species may be legally designated as, or may be considered candidates for legal designation as Extirpated, Endangered or Threatened under the *Wildlife Act* (see <http://www.env.gov.bc.ca/wld/faq.htm#2>). Not all Red-listed taxa will necessarily become formally designated. Placing taxa on these lists flags them as being at risk and requiring investigation.

BLUE LIST: Includes any ecological community, and indigenous species and subspecies considered to be of special concern (formerly vulnerable) in British Columbia. Elements are of special concern because of characteristics that make them particularly sensitive to human activities or natural events. Blue-listed elements are at risk, but are not Extirpated, Endangered or Threatened.

Saskatchewan

When it is necessary to capture, transport and rehabilitate wildlife within the province of Saskatchewan:

The Ministry of Environment in Saskatchewan issues provincial Scientific Research Permits under the authority of the *Wildlife Act* 1998 to study and work with wildlife. Activities that may directly affect protected wildlife or wild species at risk in Saskatchewan require ministry approval. Capture and release of wildlife must be approved in the form of a Scientific Research permit. Proposals are reviewed and if legitimate, the director **may** issue a permit to: pursue, trap, capture, handle or attempt to do any of those things, whether or not the wildlife is then or subsequently captured, wounded or killed; or release captive wildlife.

The Permits are processed and issued by the Fish and Wildlife Branch in Regina. Normally, six weeks is allowed for processing; however under emergency measures a request for a quicker approval should be made.

- Federal wildlife collection permits related to the capture and recovery of migratory birds are issued through Environment Canada, Canadian Wildlife Service, Prairie and Northern Region: Twin Atria Bldg., Rm. 200, 4999-98 Avenue, Edmonton, AB, T6B2X3, Phone: 780-951-8600.
- Federal wildlife permits related to the rehabilitation of migratory birds are issued through Environment Canada, Canadian Wildlife, Prairie and Northern Region: Twin Atria Bldg., Rm. 200, 4999-98 Avenue, Edmonton, AB, T6B2X3, Phone: 780-951-8600.

When Saskatchewan species at risk and/or their habitat become impacted by this release:

Saskatchewan's *Wildlife Act* designates at-risk wildlife into the following categories:

- Extirpated: No longer exists in the wild in Saskatchewan, but exists in the wild outside of Saskatchewan
- Endangered: Threatened with imminent extirpation or extinction
- Threatened: Likely to become endangered if the factors leading to its endangerment are not reversed
- Vulnerable: Of special concern because of low or declining numbers due to human activities or natural events but that is not endangered or threatened.

The Conservation Data Centre is a partnership between the Province of Saskatchewan and Nature Saskatchewan and manages information related to species at risk in Saskatchewan. A list of species at risk in Saskatchewan can be found at: <http://www.biodiversity.sk.ca/SppList.htm>



Prevent wildlife from entering the impacted area



Procedure

Time is of the essence when an incident impacts or has the potential to impact wildlife. It is crucial to enact exclusion and deterrence strategies concurrent with the initial wildlife impact assessment. The Responsible Party should work closely with the oiled wildlife response organization to determine immediate effective measures that may be taken prior to establishing mitigation and deterrence objectives as part of the larger Wildlife Management Plan.

A variety of response strategies may be used when responding to oiled wildlife incidents. These procedures are only guidelines; actions may vary depending on the situation. Detailed methodologies are not given, however responders should be competent in these strategies through regular training and exercises.

The activation of the response plan should take place immediately after an accidental release of oil on or near bodies of water, marine environments or areas that are known for wildlife sensitivities. Response strategies will assist with preventing or mitigating damage to wildlife.

Prevention Measures

- Monitor and anticipate the track of the released oil in relation to the known and actual whereabouts of vulnerable wildlife.
- Identification of important bird areas (IBAs) and high use habitat areas.
- Give priority to the deflection or containment of hydrocarbon drifting towards concentrations of vulnerable animals or their habitats where possible
- Protect habitat from becoming oiled by using appropriate booming and other shoreline protection measures.
- Clean habitats before animals arrive (migratory bird areas).
- Plan clean-up of areas near habitats so as to minimize or avoid disturbance.
- Pre-emptive capture of animals, identification of nests or eggs.
- Deterrence to scare animals away from oil impacted areas and into clean, unthreatened areas.

Wildlife Mitigation Measures

Deterrence programs provide a unique opportunity to proactively safeguard wildlife from the effects of an accidental product release. A well-designed and well-managed program can offer effective protection in many situations.



Deterrence Objectives



Identify where efforts and resources should be focused to maximize the effectiveness of mitigation-related activities.

Whenever possible, mitigation goals and objectives should be multi-hazard in nature in order to provide the most comprehensive protection for the site.

Mitigation goals include:

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



Consider following preventative measures to keep larger animals from entering an oil spill site.



Construct a drift fence around the perimeter of the spill site:

- Determine the fence location.
- Utilize orange snow-fence, posts, 8' 2x4s, pie-plates and scare tape.
- Attach (8' 2x4s) to each post and attach pie-plates to each 2x4 stud so that they spin and flap in the wind.

- Attach minimum height of 2.5 meters of snow fence to posts and attach scare tape at random locations.
- Conduct routine inspections (daily) and maintain documentation.



Consider following preventative measures to keep amphibians, reptiles and small mammals from entering the spill site.



Construct a barrier fence along the inside of the snow fence with pit traps at several locations.

- Utilize reclamation fabric, tie straps and pit traps to keep small animals from entering the spill site and trapping animals that are inside the fence perimeter.
- Dig a 15cm trench along the inside of the snow fence.
- Bury the bottom of reclamation fabric that is a minimum of 1 meter in height and attach it to the snow fence.
- Place pit traps along the fence (inside the perimeter fence) at locations identified by the wildlife specialist.
- Monitor the traps and release animals that are not contaminated; contaminated animals will be assessed by the wildlife specialist and local agency representative to determine follow up actions.
- Maintain documentation.



Action

Consider a variety of deterrents for keeping birds out of the spill site.



Procedure

Utilize scare tape (holographic and commercial scare tape) and a variety of hazing equipment.

- In small areas deploy stringers at 3 meter intervals across the spill site with scare tape attached every meter.
- Supplement scare tape with scare cannons, bird guard, effigies, car lot flagging, scare tape and other hazing equipment and change the position of the equipment on a frequent basis.
- In larger areas use a combination of equipment, boats and other materials identified by the wildlife specialist and local agency representative.

Deterrence Program Considerations

The following points should be considered before beginning any deterrence operations:

Habitat, species natural history and phylogenic information will influence deterrent success

- Particular species are difficult to deter, especially if the chosen deterrents mimic sounds or visual elements to which wildlife are already habituated.
- The potential effects of human activity and disturbance on sensitive habitats and species should be considered.
- Migration and breeding are largely influenced by season; migratory populations are generally easier to disperse than are breeding birds from a nesting area.
- Seasonal considerations, such as migration and breeding, require an increase in hazing regularity in order to be effective.
- Juvenile (unflighted) and molting birds are not easily dispersed and require a combination of different techniques. Flightless birds may take to the water when hazed, which may increase the overall wildlife impact if the water is contaminated.

The availability of “clean” habitat (species-appropriate) within a reasonable distance will positively influence hazing success

- Avoid dispersing birds into areas that might become contaminated; be aware of oil trajectory predictions.

- Determine if “clean” habitat can be made more attractive (e.g., temporarily limit access to people, boats or other activities that often deter wildlife use)

The use of appropriate hazing techniques

- Deterrence will be more effective if the entire area of concern can be hazed as continuously as possible. Do not start a deterrence operation that cannot be maintained for the required duration.
- Automatically operated devices may be used when staffing is limited, during bad weather, or at night.
- Use a variety of devices and techniques, with random variations.
- Most deterrence activities are probably not effective for areas larger than 7–10 square miles
- Highly mobile devices that can influence large radiuses are necessary for larger spills on water.
- Techniques with potential to induce sparks should be used with caution.
- Sound-emitting devices may not be acceptable in residential areas.
- Deterrence evaluations should be based on site- and incident-specific details.
- If pyrotechnics are used, permits may also be required from local authorities.
- Preplanned deterrence activities must be reconsidered in the case of a release. An entirely new plan may need to be formed based on incident specifics.

| Mitigation Measure | Effectiveness ¹ | Considerations (non-monetary) | Costs (relative) |
|----------------------------------|----------------------------|---------------------------------------|------------------|
| Physical Barriers | | | |
| Solid Cover | Very Good | Human safety | Very high |
| Floating Barrier (mesh, plastic) | Fair | Entanglement | High |
| Elevated Mesh Netting | Very Good | Entrapment | Moderate |
| Suspended Wires | Fair | Collision hazard | Low |
| Mylar Streamers | Good | Weather; placement | Low |
| Sight-line Fences | Good | | Moderate |
| Auditory Hazing Methods | | | |
| Cannons | Subject to habituation | Human safety, residential area | Low |
| Shotgun Blasts, Cracker Shells | Subject to habituation | Human safety | Low |
| Horns | Subject to habituation | Residential areas | Low |
| Breco Bird Scaring Device | Marginal | Residential areas | High |
| Recorded (distress, predator) | Subject to habituation | Season | Moderate |
| Ultrasonic (Bird-X) | Marginal | Effect varies with sound profile used | Unknown |
| Visual Hazing Methods | | | |
| Lights (laser, colored, strobe, | Poor—daytime; | Residential areas | Moderate |

| | | | |
|--|---------------------------------|---------------------------------------|-----------|
| spot, flashing, intermittent) | good—nighttime | | |
| Rotating Beacon (floating or on land) | Poor—daytime; good—nighttime | | Moderate |
| Pyrotechnics | Subject to habituation | Human safety | Moderate |
| Effigies (owl, falcon, human) | Marginal | | Low |
| Combined Auditory and Visual Hazing Methods | | | |
| Motorboat | Good; must be ongoing | Human safety | Very high |
| Helicopter | Good; must be ongoing | Human safety; untargeted dispersal | Very high |
| Predators (falconry, dogs) | Good; must be ongoing | | High |
| Other Methods | | | |
| Provide Adjacent Habitat | Very Good | May attract additional wildlife | High |



Maintain documentation



- Document initial response actions advised by regulators and wildlife responders and implement those actions agreed to by the regulator and responsible party.
- Collect photographs of all actions with dates, time, GPS location and weather.

In order to maintain accuracy, accountability and transparency, wildlife activities should be documented and summarized for the current and upcoming operational period. This summary report should be submitted to the Responsible Party. The regulatory agency may request to receive these reports, and will have the authority to receive them if they so require. The report generally consists of two sections: Actions taken during the last operational period and the plan for the upcoming operational period. This report has a deadline for inclusion in the Incident Action Plan for the upcoming operational period. The report should summarize wildlife activities in the following categories:

Actions Completed

- Wildlife monitoring/sightings
- Hazing activities
- Deterrents currently in place
- Wildlife recovery (live, dead, oiled, unoiled)
- Wildlife intake status summary
- Resources mobilized or demobilized

Plan for the upcoming operational period

- Monitoring
- Deterrence and hazing
- Wildlife recovery
- Wildlife rehabilitation
- Resources needed

The importance of recording information cannot be over-emphasized. Record collection enhances individual bird care, response evaluations, and the ability to accurately characterize the best practices for appropriate care. Final reports from the rehabilitator for the oiled-bird response, including carcass chain-of-custody and sample collection records, where required, may be delivered to regulatory agencies as required. All original response and animal care records are required to remain the property of the oiled wildlife response organization.

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 (ICS form 232): provides information regarding the location of birds and other animals in relation to released product.
- 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.
- Admittance Ledger: list of all wildlife admitted by species and case number.
- Wildlife Report: reports current and next day's work.
- Wildlife Patient Record: 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.
- 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.

Wildlife Mortalities

Wildlife mortalities are required to be tracked, documented and reported daily. Animals that are recovered dead are to be documented and tracked on a *Dead Animal Log* or *Intake Log* and be issued a *Chain of Custody* form with a unique number corresponding to each individual animal.

Mortality Regulations and Reporting

Environment Canada (EC) will need to be notified within 12–24 hours of migratory bird mortalities or Species at Risk as listed in Schedule 1 (SARA Registry). The provincial wildlife regulator will need to be notified of all oiled provincially protected animals within 12–24 hours as well. Generally, wildlife mortalities are reported in the daily Wildlife Report and in the Situation Status Report generated by the Environmental Unit. The following considerations should be noted:

- Environment Canada must be notified of all oiled migratory birds on a daily basis.
- Identify one person (in the Wildlife Branch) who will be responsible for notifying Environment Canada and the provincial wildlife regulatory agency of ongoing migratory bird mortalities.
- Notifications are to be made in writing and should be consistent in format (SitStat report; Wildlife Report).
- Notification may be duplicated based on reports generated by the Wildlife Branch. Data on wildlife intakes (both alive and dead) need to be consistent. It is recommended that these numbers be reported only once per day, at the same time each day in order to reduce confusion or inaccuracy.



Handling Mortalities

Each incident will have specific guidelines provided by the wildlife regulators. It is best to establish the wildlife mortality plan as part of the Wildlife Management Plan by consulting with all stakeholders to define a collection process that meets all regulatory requirements.



Procedure

Carcasses recovered in the field should be immediately wrapped in aluminum foil and stored in a paper bag until it is delivered to the processing staging area for examination. Carcasses should never be housed in plastic bags, boxes, latex gloves, or other containers unless first contained in tinfoil. Once wrapped in foil and labeled, carcasses may be kept in a cooler with ice to delay decomposition until they can be delivered to the processing center. Chain of custody must be maintained on each carcass.



Action

All wildlife mortalities collected must be sent to the data processing area as quickly as possible.



Procedure

A staging area for data processing of dead animals is often established at the wildlife rehabilitation facility and can be staffed by wildlife response personnel, wildlife regulatory agents or a combination. Animals that die or are euthanized after recovery are to be sent directly to the data processing area. Standardized record keeping and labeling procedures are established in accordance with wildlife response best practices and regulatory requirements for the specific incident. Wildlife response personnel and qualified biologists perform carcass examination to collect valuable data on the sample collection, measurements and photographs.

A *Dead Animal Log* is kept of all carcasses found in or near the area during a spill response with details recorded. Animals that die or are euthanized after initial capture are logged on the *Live Animal Log* and processed according to live animal protocols.

Standardized labeling is used with the following information:

- Spill name
- Date and time of mortality collection
- Collection location (UTM coordinates)
- Name of person that obtained the carcass (and contact information)

- Assigned unique intake number (*Dead Animal Log*) and/or unique Chain of Custody number
- Species
- Band number (if applicable)
- Oiling status (oiled or unoiled)

Carcasses must be stored in a locked freezer unit until relinquished to an Environment Canada Law Enforcement or Provincial Wildlife Officer. Access to the freezer must be limited to individuals specified by regulators. A list of carcasses maintained in the freezer must be posted.

Chain of Custody forms stay with the carcass at all times and are turned over to authorities at the time of handover. A completed copy may be kept by the processing team for thorough record keeping, and must be marked as *COPY*.



Remove dead and/or distressed oiled wildlife from the impact zone.



Removal of distressed wildlife from the impact zone may need to occur prior to the Oiled Wildlife Response Team (OWRT) arriving on-scene. In the initial phase of some responses, animals oiled at the immediate time of the release may be found within the impact zone. These animals are frequently heavily oiled and in distress. The severity of oiling may have greatly reduced their capacity to fly or move normally. It is important that these animals are immediately removed from the impact zone. The following procedures should be followed in such an event:

- Human health and safety, both for response personnel and for the public must always be the primary concern.
- Field personnel should consult with wildlife response team personnel to assist with species identification and potential threats to human safety. Response team personnel may also be able to determine if local personnel who are skilled and experienced in wildlife handling are available to assist.
- In coordination with the Public Information Officer, the public should be alerted not to attempt to capture or collect oiled wildlife. Oiled wildlife capture requires skilled

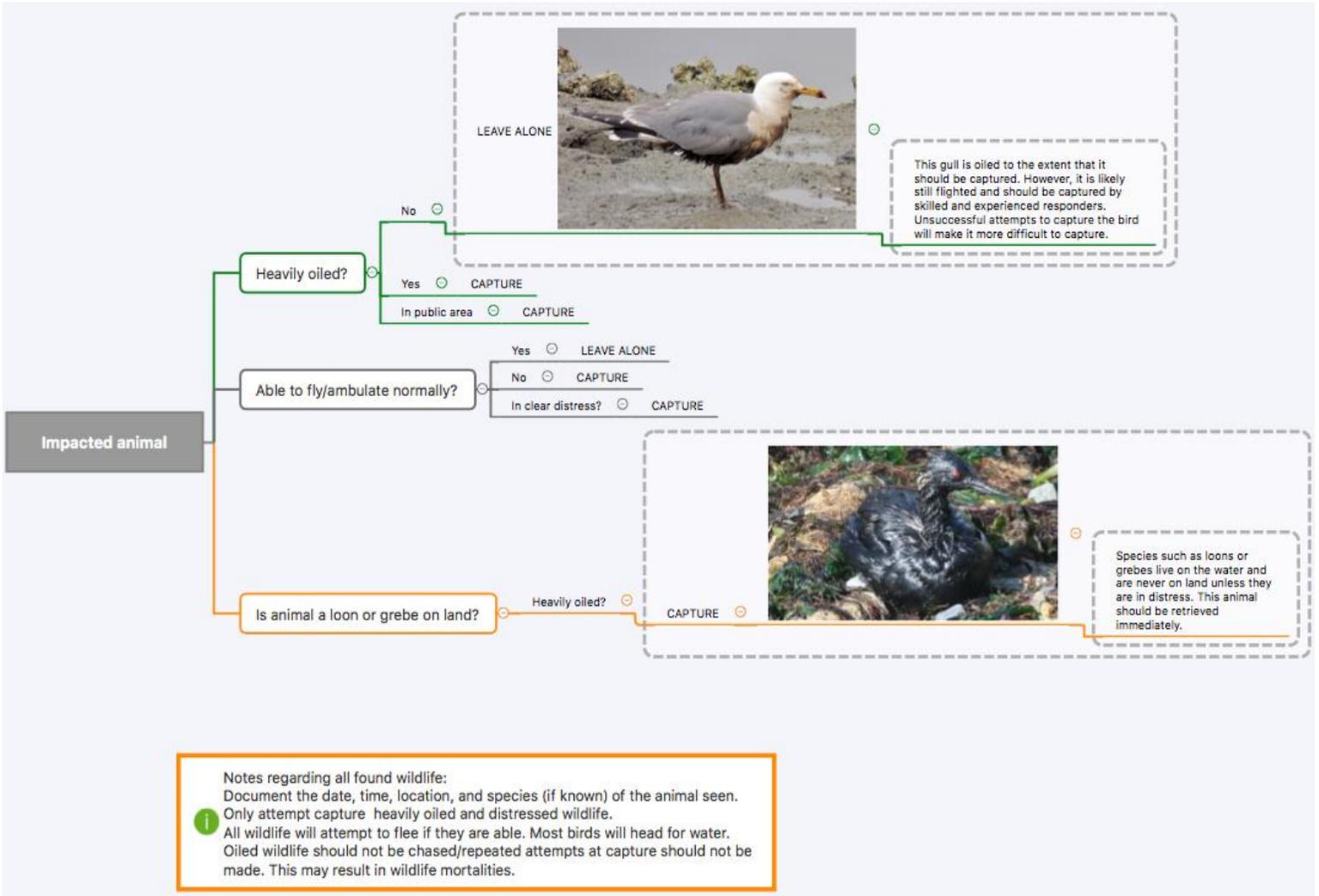
and experienced personnel in order to be done safely and successfully. Attempts by individuals without specific oiled wildlife capture skills often results in human injury, injury to wildlife including death, and reduced success in overall and individual wildlife capture success.

The following guidelines may be used to safely capture heavily impacted wildlife prior to the OWRT arrival on scene. Provincial and federal permits are required for wildlife recovery on an organized scale, for the collection of dead birds to be held as evidence, and for wildlife rehabilitation. It is generally permissible for one or two clearly distressed animals to be picked up and contained until the OWRT is on site. Wildlife should not be given direct care (other than containment in a warm, quiet room) by field personnel. Only capture wildlife that is clearly in distress and that may be easily picked up by hand or with a towel. Do not attempt to capture wildlife with a net.

Bird handling methods

- Work in teams and request assistance if needed.
- Wear the appropriate personal protective gear, including gloves and eyewear.
- Use a towel, sheet, or light covering to gently place over the birds (do not use fabric with holes or unraveled edges that may result in strangulation, injury or damage to feet and feathers).
- Approach a bird from behind or the side; avoid direct eye contact, use fluid movements.
- Control the bird's head by controlling the neck from behind at the base of the skull, or by cupping the skull with a gloved hand if towels and blankets are unavailable.
- Fold the wings into its body and pick it up while controlling the head; support the legs.
- Hold birds against your body at waist level and away from the face and other people to avoid injury from pecking, stabbing and biting.
- Place the bird in a carrier or appropriate box.

Place contained animal in a warm 26–29C, quiet, well-ventilated area away from drafts, humans, and noise.



Action

Transporting Oiled Birds



Procedure

Transportation Procedures

Goals

To assure efficient and safe transport of oiled animals from the field to the rehabilitation centre

- Transportation plan should assure transportation of animals from the field to the rehabilitation center within 4-6 hours of capture
- Animals should be transported in individual carriers or boxes whenever possible
- Animals should be transported inside vehicles with an ambient temperature of between 21–26° C (70–80° F) as appropriate
- Good ventilation should be achieved; auditory and visual stimuli should be reduced
- If transport time exceeds 2 hours animals should be checked every two hours



Action

Establish an Environmental Unit in the Planning Section and Wildlife Branch in the Operations Section of the Incident Command System.



Procedure

Incident Command System Integration

Wildlife response management uses the organizational structure of the Wildlife Branch within the Operations Section of the ICS. The Wildlife Branch has the functional responsibility for all aspects of oiled wildlife response operations and incorporates:

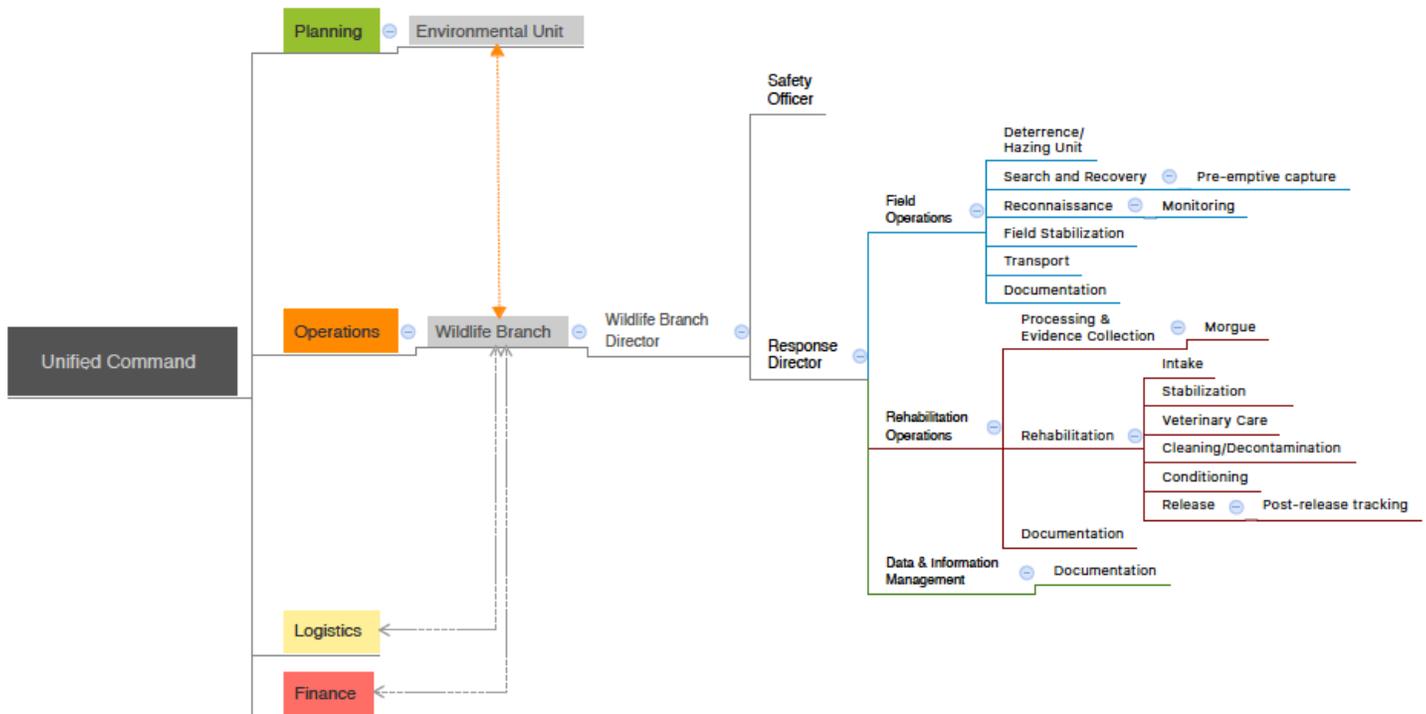
- Wildlife impact assessment
- Reconnaissance; search and recovery
- Oiled wildlife capture
- Cleaning and wildlife rehabilitation facilities
- Release and monitoring

- Collection and documentation of dead oiled wildlife
- Reporting to the Responsible Party's Incident Management Team (IMT)

Overall objectives and priorities for the Wildlife Branch are agreed upon within the IMT and the Unified Command (UC), with advice from the Wildlife Branch Director (WBD) and the Environmental Unit Leader (EUL).

The following diagrams illustrate the organization of the Wildlife Branch. The mobilization and staffing of the positions is flexible and dependent on incident specific requirements.





Environmental Unit, Planning Section

The Environmental Unit is where most of the planning is done in the Planning Section. Because of this, it is important that the Environmental Unit staff be pro-active in implementing plan recommendations and meeting regulatory requirements. This is often best accomplished by building a tightly integrated team that includes representatives from appropriate federal, provincial, local and regional agencies. Technical specialists are frequently assigned to the Environmental Unit.

While the other Planning Section units are involved in tracking, monitoring and displaying information, the Environmental Unit generates information vital to an effective response. It is the responsibility of the Environmental Unit leader and staff to make sure that generated information is appropriately synthesized, recorded and disseminated. The Environmental Unit Leader reports directly to the Planning Section Chief.

Wildlife Branch, Operations Section

The Wildlife Branch is led by a Wildlife Branch Director and, if required, a Deputy Director. This Operational branch has the responsibilities of developing and implementing the actions set forth in the Wildlife Management Plan and the Wildlife Branch portion of the Incident Action Plan. The development of the Wildlife Management Plan is often achieved in close collaboration with local regulatory agency personnel. The Branch Director works closely with the Environmental Unit specialists to ensure best wildlife results are achieved within planning and operations. As within all of ICS, the Wildlife Branch exercises span of control, unity of command and chain of command with the ability to ramp up and down as the wildlife conditions require.

The following general guidelines are included to assist individuals with their roles within the Wildlife Branch.

Wildlife Branch Director

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| Reports to: Operations Section Chief |
| Scope: Responsible for minimizing wildlife losses during the response effort |
| Responsibilities <ol style="list-style-type: none">1. Direct and oversee all activities undertaken in the wildlife branch2. Ensure the health and safety of wildlife responders3. Ensure the oiled wildlife response is consistent with the guidelines provided by the plan4. Ensure the integration of wildlife activities into the overall incident response5. Ensure the approval by the wildlife authorities6. Ensure information flows between the oil spill response team and the wildlife branch7. Minimize wildlife casualties8. Recover and rehabilitate oiled wildlife9. Ensure maintenance of appropriate documentation |
| Manages/supervises: Deputy WBD; all other functions in the Wildlife Branch |
| Immediate actions (0-72 hours) |
| Keep personal log (Form 214), Keep unit log (Form 214a) |
| Liaise with the IMT or the Operations Section Chief. Confirm the extent of the threat to wildlife and the decision to activate and mobilize the Wildlife Branch. |
| Obtain specific instructions from the Operations Section Chief, appoint a Deputy WBD as needed |

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|---|
| Coordinate early aerial and ground reconnaissance of impacted wildlife. Collect relevant data on spilled oil and anticipate or monitor wildlife threats or impacts. |
| Determine level of operational response and identify resources required |
| Develop an incident specific response plan |
| Identify staff and prepare organizational chart for the Wildlife Branch |
| Determine when personnel should arrive; notify and mobilize personnel; ensure their integration on arrival |
| Meet with wildlife response team and delegate roles and responsibilities |
| Identify and establish rehabilitation facility |
| Employ wildlife deterrence methods as authorized and recommended by the OWRT and EUL. |
| Contact local veterinary organizations to engage them in the response effort |
| Ensure all relevant documentation is in place to enable procurement of consumables, equipment, etc. |
| Determine if additional personnel and resources are required |
| Organize a first tactical meeting that plans for key actions for the next 24-48 hours |
| Ensure and chair other tactical meetings in the situation unit as appropriate |
| Provide a report on activities and achievements at the end of each day |
| Ongoing actions (after 72 hours) |
| Keep personal log and unit log |
| Ensure the functioning of the Situation Unit and flows of information between OWRT and the OSC |
| Ensure tactical meetings of the OWRT, chaired by the Deputy WBD at least once a day |
| Define the criteria for downscaling and demobilization, determine the details of the demobilization plan |
| Recommend termination of wildlife response efforts to IMT when appropriate |
| Organize debriefing of personnel and collate final report for IMT |