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Canada

Guidelines for Establishing and Operating Treatment Facilities for Oiled Wildlife

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Environment and Climate Change Canada
Public Inquiries Centre
12th Floor, Fontaine Building
200 Sacré-Coeur Boulevard
Gatineau QC K1A 0H3
Telephone: 819-938-3860
Toll Free: 1-800-668-6767 (in Canada only)
Email: enviroinfo@ec.gc.ca

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Abstract

Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS)'s *Guidelines for Establishing and Operating Treatment Facilities for Oiled Wildlife* outline the standards and best practices for the establishment and operation of a facility intended for the treatment of Wildlife under its jurisdiction that have been affected during a Pollution Incident in Canada. While these guidelines focus on actions that should be undertaken related to oil pollution, the guidance provided herein may be useful in planning a response during other types of Pollution or Non-Pollution Incidents. These guidelines discuss all phases of Wildlife intake, treatment, and rehabilitation or euthanasia, and discuss facility requirements and design considerations for various facilities that may be integrated into Wildlife response efforts, including Field Collection Points, Field Stabilization Sites, and Oiled Wildlife Rehabilitation Centres. These guidelines further describe requirements and measures to avoid or reduce occupational health and safety hazards for Wildlife Response Personnel as well as risks to Wildlife, and facility structures and equipment.

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List of Acronyms

CCAC	Canadian Council on Animal Care
CWA	*Canada Wildlife Act, 1985*
ECCC	Environment and Climate Change Canada
ECCC-CWS	Environment and Climate Change Canada's Canadian Wildlife Service
HVAC	Heating, Ventilation, and Air Conditioning
MBCA	*Migratory Birds Convention Act, 1994*
MBR	*Migratory Birds Regulations*
MBSR	*Migratory Bird Sanctuary Regulations*
NABC	North American Banding Council
NIOSH	National Institute for Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
OWRC	Oiled Wildlife Rehabilitation Centre
PPE	Personal Protective Equipment
SARA	*Species at Risk Act, 2002*
SCBA	Self Contained Breathing Apparatus
WRO	Wildlife Response Organization

Definitions

Chain of Custody: A written record for a legal sample documenting the continuity by tracing the possession of the sample from the point of collection through introduction into evidence.

Environmental Emergency: Any uncontrolled or unexpected incident involving the release (or the likelihood thereof) of a polluting substance into the environment that results or may result in an immediate or long-term harmful effect on the environment, or constitutes or may constitute a danger to human life or health. It may be caused by an industrial activity, natural emergency or by a wilful act.

Field Collection Point: Support structure that offers short-term holding of collected Wildlife in carrying crates or boxes prior to transport to a Field Stabilization Site or an Oiled Wildlife Rehabilitation Centre. It is not meant for stabilization or overnight holding.

Field Stabilization Site: Facility that provides initial triage, care and/or euthanasia as well as short-term holding (sometimes overnight) for Wildlife prior to transport to an Oiled Wildlife Rehabilitation Centre. It is not meant for washing oiled Wildlife and not designed for long-term care.

Incident Command: Responsible for overall management of the incident and consists of the Incident Commander, either single or unified command, and any assigned supporting staff.

Incident Commander: The individual responsible for all incident activities, including the development of strategies and tactics and the ordering and release of resources. The Incident Commander has overall authority and responsibility for conducting incident operations and is responsible for the management of all incident operations at the incident site.

Migratory Bird: As defined in the *Migratory Birds Convention Act, 1994*, a migratory bird referred to in the Convention, and includes the sperm, eggs, embryos, tissue cultures and parts of the bird of species listed under Article 1 of the Convention (Government of Canada 2017).

National Wildlife Area: A protected area created under the *Canada Wildlife Act* that contains nationally significant habitats for plants and animals and that is managed for the purposes of wildlife conservation, research and interpretation.

Non-Pollution Incident: An uncontrolled or unexpected Wildlife injury or mortality event other than a Pollution Incident.

Oiled Wildlife Rehabilitation Centre: Facility used for the triage, stabilization, cleaning, pre-release conditioning and/or euthanasia of oiled Wildlife. The centre may be a permanent purpose-built facility, an existing Wildlife rehabilitation centre, a mobile facility, or a temporary facility established during an incident.

Pollution Incident: The release or deposit of a substance that is harmful to Wildlife into an area or waters that are frequented by Wildlife or into a place from which the harmful substance may enter an area or waters frequented by Wildlife.

Responsible Party: Any person or organization who might be responsible for the source or cause of an environmental emergency and/or a Wildlife Emergency.

Restricted Activity/Mobility: Restricted activity/mobility means to hold Wildlife within a space small enough to restrict almost all movement, but to provide enough room for the Wildlife to maintain a normal alert/upright posture and to stretch its body, limbs, and tail, but not enough to leap, fly, or run (Miller, 2012).

SARA-listed Species: A wildlife species listed on the List of Wildlife Species at Risk set out in Schedule 1 of the *Species at Risk Act* (SARA).

Species at Risk: As defined in the *Species at Risk Act* (S.C. 2002, c.29), means an Extirpated, Endangered or Threatened species, or a species of Special Concern.

Unified Command: An application of the Incident Command System, used when there is more than one agency with incident jurisdiction or when incidents cross political jurisdictions. Agencies work together through the designated members of the Unified Command to establish a common set of objectives and strategies and a single Incident Action Plan.

Wildlife: In this document, "Wildlife" is used to refer to the terms Migratory Birds as defined under the *Migratory Birds Convention Act,* and listed Species at Risk as those terms are defined under the *Species at Risk Act* for species falling within the jurisdiction of the Minister of Environment and Climate Change (with the exception of individuals of SARA-listed Species that are located on lands administered by Parks Canada). This term also refers to all wild species occurring in the National Wildlife Areas set out on Schedule I of the *Wildlife Area Regulations* (C.R.C., c. 1609).

Wildlife Emergency: A Pollution or Non-Pollution Incident that results or may result in an immediate and/or long-term harmful effect on the life or health of Wildlife and/or their habitat.

Wildlife Response Organization: Organizations that provide expertise, capabilities and trained personnel to undertake one or several aspects of response, including planning, implementation and reporting of activities related to Wildlife Emergencies. Wildlife Response Organizations (or representatives thereof) are authorized under applicable federal, provincial, and/or territorial legislation to capture, transport, clean, rehabilitate, euthanize, and release Wildlife.

Wildlife Response Personnel: Personnel authorized to undertake Wildlife capture, transport, treatment, and rehabilitation and who may be involved in one or several aspects of the field recovery, stabilization, treatment (including rehabilitation and euthanasia), and release of rehabilitated Wildlife. Personnel may include those from a Wildlife Response Organization, a rehabilitation organization, veterinary staff, and/or trained volunteers.

1.0 Overview

Environment and Climate Change Canada's Canadian Wildlife Service (ECCC-CWS) issues permits for the rehabilitation of contaminated Wildlife by qualified organizations, veterinary staff, and/or trained volunteers authorized under the authority of the *Migratory Birds Convention Act, 1994* (MBCA) and its regulations (*Migratory Birds Regulations* (MBR) and *Migratory Bird Sanctuary Regulations* (MBSR)), as well as the *Species at Risk Act, 2002* (SARA) to carry out these activities (see Appendix A for ECCC-CWS regional permits offices). These *Guidelines for Establishing and Operating Treatment Facilities for Oiled Wildlife* provide guidance for the establishment and operation of facilities intended for the treatment of oiled Wildlife during and after Pollution Incidents in Canada. This includes Oiled Wildlife Rehabilitation Centres (OWRCs), as well as supporting structures such as Field Collection Points and Field Stabilization Sites. Although the purpose and scope of the federal and provincial regulations are beyond the extent of this document, all established laws must be followed while performing oiled Wildlife rehabilitation.

When a Wildlife Emergency occurs, ECCC-CWS provides support in various capacities to authorized rehabilitation organizations. During a Pollution Incident, ECCC-CWS may provide the location of oiled Wildlife, advise on species priorities for capture, treatment, and rehabilitation, band rehabilitated Migratory Birds prior to their release, and advise on release sites for successfully rehabilitated Wildlife. While these guidelines focus on actions that should be undertaken related to oil pollution, the guidance provided herein may be useful in planning a response during other types of Pollution or Non-Pollution Incidents.

2.0 Regulatory Requirements in Canada

Environment and Climate Change Canada (ECCC) is responsible for the administration and implementation of the MBCA, the *Canada Wildlife Act* (CWA), and elements of SARA. Through these Acts, ECCC is responsible for the management and conservation of all Migratory Birds and Species at Risk under ECCC's jurisdiction (i.e., Wildlife). The CWA and *Wildlife Area Regulations* broaden the responsibility of ECCC-CWS to include habitats and all wild species within designated National Wildlife Areas. Refer to the *Guidelines for Effective Wildlife Response Plans* (ECCC-CWS 2022a) for further details on species under ECCC jurisdiction.

ECCC regulates the killing or taking of Migratory Birds, nests and/or eggs as outlined in the MBR and MBSR. Only Migratory Birds listed under Article 1 of the MBCA are protected under the regulations, and permits with authorizations may be issued for activities affecting those birds (Government of Canada 2017, 2018). Authorizations under MBSR are required if activities are occurring in Migratory Bird Sanctuaries. In the case of the *Wildlife Area Regulations* and the *Scott Islands Protected Marine Area Regulations* (under the CWA), a permit is not required in the case of an emergency. Oil spills or other Pollution Incidents that would necessitate the immediate rehabilitation of Wildlife in these protected areas would be considered an emergency.

ECCC-CWS issues permits with authorizations under the MBCA and its regulations (MBR and MBSR) to individuals involved in the capture, transport, rehabilitation, banding, release and euthanasia of

orphaned, injured, or oiled Wildlife, as well as to those who collect Migratory Birds carcasses. SARA-compliant authorizations for Migratory Bird rehabilitation may be issued under the MBCA, even if these Migratory Birds are listed on Schedule 1 of SARA (although additional requirements must be met). Depending on the level of training and expertise, organizations and/or personnel may be permitted to undertake all or part of these activities under a Scientific Permit. Individuals from Wildlife Response Organizations (WROs) or other qualified organizations may be issued Scientific Permits, and are not specific to any incident, location, or group of Wildlife. Additional permits may be issued to organizations or personnel contracted during an incident to support specific aspects of response (e.g., Wildlife capture). In either case, permits include specific authorizations, terms, and conditions on the types of activities that are permitted, species groups that are covered, rehabilitation and release requirements, as well as federal documentation and reporting. Permitting for banding rehabilitated Migratory Birds is part of the Scientific Permit process, and permits are issued to skilled personnel by the Bird Banding Office (BBO; see contacts in Appendix A). Personnel need to demonstrate training, expertise, and justification specific to the response activities for which they are requesting authorization, in order to acquire ECCC-CWS evaluation and approval.

Other Wildlife listed under SARA will generally require provincial permits, except when they occur on federal land, in which case a SARA permit applies. In all cases, permit applications should consider recommendations and requirements for animal care, as described by the Canadian Council on Animal Care (CCAC 2003, 2006, 2008) and the North American Banding Council (NABC; NABC 2019). Municipal, provincial, territorial, or other federal departments, and Indigenous governments may require additional permits. While these guidelines may provide information that would also support response efforts for provincially or territorially regulated species, this is outside the jurisdiction of ECCC-CWS. Where this document refers to birds, it should be assumed that guidance is specific to Migratory Birds under ECCC's jurisdiction, and additional guidance should be sought from other federal, provincial, territorial and Indigenous governments or agencies for non-Migratory Birds, where applicable. It is the responsibility of WROs to ensure that all the necessary permits and technical expertise have been obtained prior to commencement of emergency response.

For information concerning permit authorizations required under the MBCA, SARA, and CWA please contact CWSPermit.PermisSCF@ec.gc.ca or 1-800-668-6767, or see Appendix A for regional information.

3.0 Health and Safety

3.1 Site Safety

Each facility must have a location-specific Health and Safety Plan that Wildlife Response Personnel are required to read and understand. Visitors may also need to review this plan prior to entering the facility. The Site Health and Safety Plan should be in line with the overall incident safety requirements and will need to be approved by the Incident Command Post Safety Officer before Wildlife treatment and rehabilitation activities begin. US Occupational Safety and Health Administrations (OSHA) standard 1910.120(b)(4)(ii) provides guidelines for the development of a Site Health and Safety Plan that can be adapted for an oiled Wildlife rehabilitation facility.

The plan should consider the most effective methods for minimizing potential hazards associated with Wildlife response activities using the following criteria:

1. **Elimination or Substitution** of a hazard
2. **Engineering Controls:** physical modifications to facilities, equipment, or processes to reduce exposure to a hazard
3. **Administrative Controls:** changing work practices, tools, and training to improve awareness and limit exposure risk
4. **Personal Protective Equipment (PPE):** the least effective control used when the previous three options cannot reduce the hazard exposure sufficiently

The following are generally accepted core elements of a Site Health and Safety Plan:

- Organizational structure
- Emergency notification phone numbers
- Address and phone number of local emergency services, including the nearest hospital
- Responsible Party's standard operating procedures for health and safety
- Comprehensive work plan
- PPE requirements and decontamination procedures
- Hazardous substances and associated risks of exposure

3.2 Health and Safety Training

In Canada, the Canada Labour Code Part II Section 124 specifies that “[e]very employer shall ensure that the health and safety at work of every person employed by the employer is protected” (Canada Labour Code 1985). A best practice approach should be considered that meets the requirements of the Canada Labour Code, applicable provincial legislation, and the expectations of any worker. In many jurisdictions, any Wildlife Response Personnel risking exposure to hazardous materials must have some level of Hazardous Waste Operations and Emergency Response (HAZWOPER) or Hazardous Materials Operations (HAZMAT) training. The level of training required depends on the risk of exposure and nature of tasks completed by Wildlife Response Personnel.

A Wildlife rehabilitation facility may contain hazardous materials or controlled substances. Wildlife Response Personnel operating within a Wildlife rehabilitation facility must have adequate training for the safe and humane handling of Wildlife. Wildlife Response Personnel should be trained to the highest level of responsibility they may need to assume and the highest level of potential exposure to hazardous substances they may encounter. There are two levels of site safety training: Awareness Level and Operational Level. The following are generally accepted as the core elements of the two levels of site safety training:

- Awareness Level
    - Knowledge of the names of designated Wildlife Response Personnel and alternates responsible for site health and safety
    - Knowledge of protocols for health and safety, and identification of hazards present on the site
    - Training in the use of assigned PPE
    - Knowledge of work practices by which the employee can minimize risks from site hazards (e.g., use of eye wash stations)

    - Knowledge of safe use of engineering controls and equipment on the site
- Operational Level (in addition to Awareness Level requirements)
    - Knowledge of the types of hazards that Wildlife Response Personnel may encounter
    - Knowledge of the routes of exposure to hazardous substances and methods for eliminating or reducing exposure
    - Knowledge of the toxicity of hazardous substances

3.3 Personal Protective Equipment

PPE is the last line of defense. Safe work practices and safety procedures can eliminate or provide administrative controls over hazards. Safety training applicable to the task of handling animals must be ensured for primary Wildlife Response Personnel in order to eliminate or reduce the potential for injury to both response personnel and Wildlife. The following are key health and safety protocols that all Wildlife Response Personnel should follow when working at treatment facilities:

- Follow the facility-specific Health and Safety Plan and procedures
- Properly wear all designated PPE
- Use species-specific safe handling techniques for captured Wildlife
- Follow implemented check-in/check-out procedures

The Canadian pollution response industry uses the PPE standards defined in the United States OSHA Hazardous Materials standards (United States Department of Labor 1994). OSHA standards provide a comprehensive background on worker and volunteer safety with respect to a Pollution Incident response. OSHA standards outline four levels of protection (US Department of Labor 1994; US OSHA CFR 1920.120 Appendix B), from Level A (highest degree of personal protection in environments that are immediately dangerous to life and health), to Level D (basic level of protection against nuisance contamination). During an incident, the Incident Command Post Safety Officer will work with ECCC-CWS, the WRO(s), and associated personnel to determine the appropriate level of PPE requirements for these activities.

The level of protections outlined in this section represents minimum recommended levels to manage exposure to hazardous materials. Additional PPE and first aid equipment may be required to further protect Wildlife Response Personnel from biological or physical hazards of handling individuals (e.g., pathogens, bites). A hazard identification and risk assessment should be completed for each response to ensure that worker health and safety is addressed according to the actual hazards at the site of the incident.

In the event of an incident that generates hazardous materials or wastes, individuals responsible for their management, handling, or cleanup should be outfitted with appropriate PPE.

Level A
The following Level A equipment may be used as appropriate when the greatest level of skin, respiratory, and eye protection is required:

- Positive-pressure, full face-piece self-contained breathing apparatus (SCBA), approved by the National Institute for Occupational Safety and Health (NIOSH)
- Totally-encapsulating chemical-protective suit
- Coveralls
- Long underwear

- Chemical-resistant gloves (inner and outer)
- Chemical-resistant steel toe and shank boots
- Hard hat (to be worn under protective suit)
- Disposable protective suit, gloves and boots may be worn over the totally encapsulating protective suit for additional protection

Level B
The following Level B equipment may be used as appropriate when a high level of respiratory protection but a lesser level of skin protection is needed:

- Positive-pressure, full face-piece SCBA (NIOSH approved)
- Hooded chemical-resistant clothing (coveralls, chemical-splash suit, etc.)
- Coveralls
- Chemical-resistant gloves (inner and outer)
- Chemical-resistant steel toe and shank boots
- Disposable chemical-resistant inner boot covers
- Hard hat
- Face shield

Level C
A Level C work uniform provides a moderate level of protection against known airborne substances at a concentration that meets or exceeds the criteria for using air-purifying respirators. The work uniform also protects against dermal contact with hazardous substances. The following constitutes Level C equipment, which may be used as appropriate:

- Full-face or half-mask air-purifying respirators (NIOSH approved)
- Hooded chemical-resistant clothing (overalls; two-piece chemical-splash suit; disposable chemical-resistant overalls)
- Coveralls
- Chemical-resistant gloves (inner and outer)
- Chemical-resistant steel toe and shank boots
- Disposable chemical-resistant outer boot covers
- Hard hat
- Escape mask
- Face shield

Level D
A Level D work uniform provides minimal protection, used for nuisance contamination only. The following constitutes Level D equipment, which may be used as appropriate:

- Coveralls
- Gloves
- Chemical-resistant steel toe and shank boots
- Disposable chemical-resistant inner boot covers
- Safety glasses or chemical splash goggles
- Hard hat
- Escape mask
- Face shield

4.0 Facility Requirements and Considerations

The first priority for professional WROs during any Pollution Incident is to identify facilities that will meet the response needs. The following sections will assist an organization in identifying and establishing facilities for the treatment of oiled Wildlife. The guidance provided in these sections applies mostly to OWRCs, but some aspects could also be relevant for supporting structures such as Field Collection Points and Field Stabilization Sites (see Section 5.0).

4.1 Facility Location

Determining where to locate facilities is key to successful oiled Wildlife rehabilitation operations. The facility's location and features will be informed by the nature of the incident (including its location and proximity to resources), as well as the local Wildlife assemblages. The following elements should be considered when planning locations for oiled Wildlife treatment operations:

- Safety for Wildlife Response Personnel and Wildlife
- Proximity of affected Wildlife
- Number and location of Field Collection Points and Field Stabilization Sites, which may provide essential staging points between capture and transport to an OWRC
- Restrictions or required authorizations based on municipal zoning
- Separation from other ongoing response and cleanup activities
- Reduction of unnecessary human traffic through facilities
- Sufficient clean, uncontaminated potable water
- Sufficient electrical infrastructure
- Adequate space to meet current and projected response needs
- Scalability for incidents
- Proximity to necessary resources, including but not limited to supplies, equipment, and lodging for Wildlife Response Personnel
- The ability to retrofit the space for the purpose of a rehabilitation facility and to the needs of the species requiring rehabilitation

Pre-identification of potential facility locations in high-risk areas is recommended. Pre-identification will help to facilitate rapid treatment of affected Wildlife in Pollution Incidents and will also assist in developing:

- a network of trained Wildlife Response Personnel (e.g., members of a Wildlife rehabilitators network that may support a WRO as part of a registered and authorized workforce, during response)
- a reliable list of vendors for supplies and equipment that can service the location
- site-specific Health and Safety and Waste Management Plans
- efficient facility design and zoning to facilitate the movement of Wildlife Response Personnel and Wildlife through the space

Globally, there are only a few purpose-built OWRCs. These OWRCs are typically strategically located in areas that have both a high probability for Pollution Incidents and that are in close proximity to sensitive Wildlife populations. These centres generally have pre-identified transportation networks that can be used for the transport of oiled Wildlife from an incident site to the facility and will typically have a committed local or regional workforce and support services. For most Pollution Incidents, the event will occur too far from a purpose-built rehabilitation facility for operations to be efficiently executed, requiring the establishment of temporary OWRCs as described in this document.

4.2 Facility Environmental Services

4.2.1 Heating, Ventilation, and Air Conditioning (HVAC)

Treatment facilities require temperature control to ensure that oiled Wildlife in care can maintain normal body temperatures. Temperature control is particularly important for birds and fur-bearing species, as oil and other contaminants disrupts the insulating properties of feathers and fur, putting the animals at risk of hypothermia. In the case of Wildlife that are dependent on microhabitat for thermoregulation (e.g., reptiles and amphibians), the ambient temperature in a treatment facility must be kept at a level that meets the species' specific needs.

Proper ventilation is required to maintain both human and Wildlife health. The following HVAC measures should be considered when establishing a facility, recognizing that particular types of contaminants may require specific heating or ventilation protocols:

- In all areas of a facility where oiled Wildlife are most vulnerable to temperature extremes (e.g., intake, stabilization, wash area, and intensive care unit), temperatures should be maintained between 18–29 ºC and adjustable within two degree increments
- Non-animal care areas (e.g., laboratory, kitchen) should be able to be maintained at a moderate temperature so that Wildlife Response Personnel can work and rest comfortably
- The ability to independently control the temperature within specific areas of the facilities (e.g., the washing or drying areas) should also be considered, particularly for Wildlife that cannot maintain a consistent and healthy temperature
- Air within a facility should be exchanged a minimum of 10 times per hour to minimize human and Wildlife exposure to concentrations of volatile petroleum hydrocarbons or other contaminants and to minimize Wildlife Response Personnel and Wildlife exposure to airborne pathogenic organisms (bacterial/fungal)

Typical HVAC systems used in industrial spaces use forced air or closed recirculation systems, which by themselves will not meet the above recommendations. WROs should determine the design of these systems once the facility has been selected and the Wildlife caseload (including contaminants) are known (Berg 2003). These types of systems may require augmentation with portable filtration and air exchange units. Alternatively, portable units may be used for spaces where existing filtration systems cannot be modified, or require additional support.

4.2.2 Electricity

The electricity demands of an OWRC are significant. In addition to the lighting and HVAC system, electric power or natural gas will be used for water heaters, dryers, microwaves, freezers, refrigerators, heat lamps, office and medical equipment, water pumps and filters, power tools, etc. When identifying a potential location for an OWRC, the recommended electrical service requirements include:

- minimum 800 amp, 220 volt, 3-phase service
- the ability to establish minimum ten 20-amp circuits, exclusive of HVAC demands
- the ability to establish circuits with ground fault circuit interrupter breakers to ensure the safety of Wildlife Response Personnel

Using external power sources, such as generators, may be necessary. When considering the use of generators, plans should:

- locate the generators outside the facility or away from Wildlife to reduce fumes and noise that can negatively impact Wildlife and human safety
- ensure access for refueling/repairs

4.2.3 Water Supply

One of the most significant demands on an OWRC is the water supply. The facility will require access to a clean, steady supply of potable water throughout the duration of operations. The following should be used as a guide to water use and quality when identifying facilities for an OWRC:

- Total water volume usage (hot and cold) may be in excess of 100,000 L/day. Volumes of both hot and cold water will vary depending on the number of individuals, species, and the persistence of the contaminant (Berg 2003). Approximately 1,200 L of hot water is required per bird for the wash and rinse process.
- Cold water usage consists of general use in facilities for cleaning as well as filling and management of conditioning pools
- Hot water usage will vary through the operational period, but the capacity to provide a continuous flow of approximately 15 L/minute, heated to at least 42 ºC (108 ºF) is required to ensure successful wash and rinse abilities; the temperature should be able to be controlled in 0.5 ºC increments
- The temperature of hot water should be able to be maintained in the cleaning area while other support functions are occurring (e.g. filling or overflow of conditioning pools, cleaning laundry, using washrooms) which may require the use of specialized equipment (e.g. installation of a thermostatic mixing valve that will maintain the water at a constant temperature during simultaneous tasks)
- Water pressure, particularly for rinsing surfactants from Wildlife during the cleaning process, should be provided at a pressure of 40–60 psi
- Water pressure should be able to be maintained in the rinsing area while other support functions are occurring (e.g. laundry, cleaning dishes or pens, filling pools) which may require the use of specialized equipment
- Water used for cleaning oiled Wildlife should have a hardness representative of moderately soft water, ideally 30-50 mg $CaCO_3$/L in both the cleaning area and conditioning pools
- A water softener may need to be placed in-line with on-demand water heaters in order to correct water hardness
- Water for human consumption and use may require additional infrastructure

When transitioning a structure into an OWRC, it is unlikely that a suitable supply of hot water will exist. In such a scenario, the hardness of water may also be problematic. Provided that the chosen facility is serviced with an adequate cold water supply, appropriately scaled hot water and treatment systems can be retrofitted into existing equipment to deliver the needed capacities. Multiple taps in various locations, including exterior taps for the filling of pools, are required. Additionally, wastewater will need to be managed in a safe and effective manner (see Section 4.2.4 Waste Management).

4.2.4 Waste Management

A significant volume of waste will be generated during oiled Wildlife operations, and must be managed appropriately. A Wildlife-specific Waste Management Plan will be developed to ensure proper waste disposal. The Wildlife-specific Waste Management Plan will be incorporated into the overall incident-specific Waste Management Plan developed by the Environmental Unit of an Incident Command Post to ensure the waste stream is managed in a timely and efficient manner. All waste disposal must comply with applicable waste management regulations and bylaws.

Solid Wastes

The treatment facility will produce a significant volume of solid wastes that may or may not contain contaminants. Examples of solid waste include but are not limited to:

- used Wildlife bedding
- PPE
- general domestic waste

In general, there are two types of solid waste: non-contaminated domestic waste and contaminated waste streams (e.g., contaminated supplies or PPE). Waste bins for contaminated materials should be clearly labeled and strategically placed within the facility to ensure that contaminated materials are only collected where oiled Wildlife are to prevent them from being inadvertently moved into non-contaminated areas. Non-contaminated waste bins can be located throughout the treatment facility where general wastes and non-contaminated materials are to be collected. Non-contaminated waste bins should also be clearly labeled to prevent cross-contamination with contaminated materials.

A protocol for temporary storage of solid waste prior to removal from the facility must be established. Additional strategies should be developed to ensure the control of waste storage and these strategies must take into account the following:

- Location and accessibility for emptying
- Disposal areas should not be in proximity to Wildlife housed outside in order to minimize disturbance and to prevent potential recontamination of Wildlife
- Contaminated waste receptacles should not be located near non-contaminated areas or conditioning pools
- Receptacles must be tarped, sealed, or otherwise covered so that water and/or scavengers are not able to enter the container(s)
- A schedule for emptying container(s) must be established
- The number and distribution of containers should be planned; these containers must be clearly labeled (“contaminated” and “non-contaminated”) to avoid cross-contamination and improper disposal
- A protocol for removal of waste from the facility to an authorized disposal facility must be put in place

Liquid Wastes

A significant volume of wastewater will be generated during several aspects of treatment operations for oiled Wildlife. Several types of residual wastewater from treatment operations may require specific management measures including the following:

- Oily water: Oiled Wildlife washing involves the removal of oil from fur, feathers, skin, and/or shell using a surfactant

- Clean (grey) water: water from Oiled Wildlife rinsing, which involves the removal of surfactant from fur, feathers, skin, and/or shell; cleaning supplies (e.g., dishes, cages); and wastewater from conditioning pools
- Black Water: Domestic sewage from onsite washrooms

Oily wastewater is considered hazardous liquid waste and must be managed appropriately as dictated by the incident-specific Waste Management Plan and in accordance with applicable legislation and local by-laws. Oily wastewater must not be discharged to the municipal wastewater system or to a domestic septic system. Allowances for discharge of non-oily wastewater to a municipal sanitary sewer system may be acceptable, provided the appropriate authorization has been sought.

Dedicated oily wastewater storage tanks should be used to temporarily store the wastewater prior to collection. These should be obtained from sources that supply tanks that are specific for holding this type of waste. The following should be considered as part of an incident-specific Waste Management Plan:

- All openings should be secured so that neither Wildlife nor Wildlife Response Personnel can enter tanks
- Size and number of tanks should be scaled to meet the needs of the response
- Regular removal of oily water should be scheduled
- Tanks should be located outside but may be located inside if freezing is a concern
- Regarding placement, if possible, tanks should be in a location that:
    - reduces the stress of oiled Wildlife
    - is near the wash/rinse area for ease of collection and to reduce the risk of overflow
    - is away from 'cold' areas or conditioning pools
    - allows for interior tanks to ventilate air to the exterior atmosphere
    - is easily accessible to vacuum trucks for emptying
    - is a suitable distance from floor drains or storm drains
    - is within a secondary containment berm or dyke where feasible
    - is more than 30 m from the nearest body of water or stream

Pumps are often used to move oily water from washbasins or from a cleaning room containment pad to the tanks. All connections should be routinely checked for leaks. Transfer hoses should be clearly marked to minimize tripping hazards, and if possible they should be placed out of walking paths. All supplies used to hold or transfer oily water should be labeled and not used for clean water. These supplies typically become oiled solid waste, and should be dealt with accordingly.

Domestic gray and black water wastes generated onsite may be disposed of via the municipal wastewater system, depending on local municipal treatment systems. Grey water may need to be disposed of in the same manner as oily water if treatment systems are not in place. In the event that the facility is serviced by a domestic septic system, a water management strategy may need to be considered to reduce the strain on the domestic system.

Biological Wastes

Biological wastes, including medical sharps (e.g., needles), should be collected based on Workplace Hazardous Materials Information System (WHMIS) and *Occupational Health and Safety Regulations*. Disposal receptacles should be purpose-specific, clearly labeled, and should be placed where medical treatments occur. Biological waste should ultimately be disposed of in the manner required by the applicable waste management regulations.

Most Wildlife carcasses will be considered an important part in assessing the impact of a response and cannot be disposed of without proper authorization. Carcasses should be maintained in frozen storage, subjected to chain of custody requirements and only disposed of if directed by the agency having jurisdiction over specific oiled Wildlife. An appropriate chain of custody protocol will need to be established to document all Wildlife carcasses.

4.3 Logistics and Support

OWRCs and supporting facilities will need a variety of operational support structures put in place. These often include the following:

- Communications: Includes telephone accessibility, which may be cell phones or land lines for public and private communications
- Internet accessibility: May include modem or wireless internet
- Office support: May include computers, and equipment for printing and copying
- Wildlife Response Personnel break, eating, and resting locations

4.4 Pest Control and Biosecurity

4.4.1 Pest and Predator Control

Efforts should be taken to develop and maintain predator exclusion strategies and pest control. All methods should be used responsibly to prevent further injury to the captive Wildlife by considering the following:

- Safe, humane, and effective methods should be used to eliminate or control the risk of pests or predators that might affect the health of the Wildlife in care. Considerations should be given to biting insects (e.g., mosquitoes, flies), ectoparasites (e.g., feather lice, ticks), mammals (e.g., mice, rats, raccoons, fox, coyote, and bears), reptiles (e.g., snakes), and birds (e.g., corvids, hawks and owls).
- Access to interior spaces should exclude pests, predators, or other native/domestic animals from entering facilities
- Construction of exterior Wildlife enclosures should integrate methods to protect captive Wildlife from pests, predators, and other animals

4.4.2 Biosecurity

A biosecurity strategy should be developed and implemented to reduce disease transmission in Wildlife at the facility. Because they process large volumes of animals, OWRCs typically have high Wildlife density in their enclosures, which can increase risk of infectious disease. All precautions should be taken to reduce exposure of Wildlife to infectious diseases.

As the number of Wildlife entering an OWRC increases, disease transmission becomes an increasingly significant concern and will require stringent protocols. All Wildlife Response Personnel should be made aware of potential disease transmission between wild and/or domestic animals and common routes of transmission. Additionally, Wildlife Response Personnel should be prepared for the potential for transmission of disease between Wildlife and humans (i.e., zoonosis). Information concerning disease transmission can be found in the *Guidelines for the Capture, Transport, Cleaning, and Rehabilitation of Oiled Wildlife* (ECCC-CWS 2022b).

A biosecurity strategy should:

- inform Wildlife Response Personnel of potential zoonotic diseases, symptoms, and transmission routes
- establish an effective decontamination and sanitization protocol for all Wildlife Response Personnel and supplies
    - Wildlife Response Personnel should wash hands before and after handling/caring for Wildlife and before eating, drinking, or smoking
    - Biosecurity measures including isolation, separate equipment use, footbaths and proper PPE should be used when caring for Wildlife with known diseases
    - Change clothing and/or shoes before entering or exiting facilities, and use disinfectant footbaths at entrances
- ensure that Wildlife Response Personnel vaccinations are current
- identify Wildlife in the facility that could be susceptible to and/or vectors for identified infectious diseases
- eliminate contact between domestic and wild species
- limit interactions between humans and wild species in care to those necessary for rehabilitation
- maintain clean and hygienic housing for Wildlife
- develop a surveillance and testing protocol in areas with endemic disease outbreaks to ensure diseases can be detected and addressed appropriately
- establish an isolation protocol to limit the potential for disease transmission between individuals in care

4.5 Site Security and Visitor Management

Wildlife rehabilitation often results in the interest of the media and the public who may, for various reasons, request access to ongoing Wildlife treatment and rehabilitation activities. To minimize stress on Wildlife in care, it is important to develop and implement a strategy to co-ordinate tours. Co-ordination with the Joint Information Centre and the Information Officer of the Incident Command Post is necessary in order to facilitate timely visits of the media, politicians, and other individuals or groups, reduce the potential for conflicts and improve transparency. Wildlife Response Personnel should plan for additional site security to manage the flow of visitors to the facility. Generally, the following should be considered:

- Minimize visitors and restrict visitations to a specific period each day and/or set times on specific dates
- Visitors should have a specific reason for touring the facilities (e.g., media and government relations)
- Do not put individual Wildlife on display unless tour times coincide with ongoing activities (e.g., feeding, enclosure cleaning, Wildlife cleaning)
- Maintain a check-in/check-out strategy for all Wildlife Response Personnel and visitors
- Conduct safety briefs for visitors including biosecurity measures such as appropriate clothing, shoes, and allowable proximity to Wildlife
- Provide tour etiquette, media, and photography guidelines in advance of the tour
- Limit access points to the facility and control the perimeter of the exterior facilities

5.0 Oiled Wildlife Rehabilitation Centres and Support Structures

5.1 Facility Overview

The requirements of an oiled wildlife facility should be focused on the needs of the species affected by an incident, which are primarily avian. Multiple facilities may need to be considered if the impacted species have significant differences in housing requirements, care or permitting requirements (e.g., birds). However, one facility is generally sufficient; it is more cost-effective, and lessens the burden on Wildlife Response Personnel and equipment resources. Facility needs will be influenced by a number of factors, including:

- the proximity of the incident and other wildlife facilities (e.g. Field Stabilization Sites)
- the magnitude or potential magnitude of the incident
- the fate, behaviour, toxicity, and persistence of the pollutant in the environment

With respect to these factors the following should be considered when establishing a facility:

- **Location:** The location of an incident may dictate the geographic location of an OWRC in relation to response operations; the distance between the OWRC and the incident will determine how Wildlife will be transported and whether additional support structures and/or resources such as Field Stabilization Sites will be needed
- **Type:** The type of facility will depend upon the geographic location and extent of the incident, availability of suitable buildings that can be converted into a Wildlife facility, and the number and species of Wildlife affected
- **Size:** The size of a facility may limit the ability to provide adequate care, depending on the number of individuals and diversity of species that require treatment, cleaning, and rehabilitation following a Pollution Incident
- **Design:** The design of an OWRC will define how that facility ultimately functions, and its ability to expand and contract with the scale of a response

5.2 Types of Facilities

Several types of facilities may be established as part of Wildlife response operations. Facilities are typically established and coordinated by an authorized organization (e.g., existing Wildlife rehabilitation facilities or specialized WROs). However they may integrate permanent government or non-government infrastructure and personnel to support operations. Operation of each of these facilities are also subject to any additional necessary federal, provincial, and/or municipal permit requirements. One of the main priorities for any facility used or constructed is to ensure that humane medical and rehabilitation care for Wildlife can be provided in a safe and efficient manner. The following sections define the types of facilities and some of the key elements that should be considered when establishing a facility.

5.2.1 Field Collection Points

Field Collection Points are support structures that may be required when oiled Wildlife are located over an extended geographic area. Field Collection Points offer short-term holding of collected Wildlife in carrying crates or boxes. These collection locations should be strategically located to support deployment of Wildlife Response Personnel. Field Collection Points should offer shelter and a level of comfort to the oiled Wildlife, reducing the risk for hypo- and hyperthermia as well as reducing the stress of capture by minimizing handling prior to stabilization or treatment.

Field Collection Points may take advantage of existing structures (e.g., permanent buildings, temporary office trailers), private Wildlife facilities (e.g., veterinary clinics, Wildlife shelters), or vehicles (e.g., box trucks, vans, horse trailers). If private Wildlife facilities are used, they should be authorized to handle Wildlife, and oiled Wildlife should be isolated from domestic animals and/or other Wildlife. If a vehicle is used, the vehicle may also act as the transportation method to the Field Stabilization Site or OWRC.

Field Collection Points are meant for short-term holding prior to transport and not for stabilization, nor should these locations be considered for overnight holding except in the rare cases that night operations occur. In all cases, transportation plans to Field Stabilization Sites or OWRCs should be developed to ensure that Wildlife receive care in a timely manner. Field Collection Points should have the following design elements:

- Enclosures and temporary housing facilities
- Transportation capacity to transfer Wildlife to Field Stabilization Sites and/or OWRCs
- Contaminated and non-contaminated solid waste storage and disposal
- Adequate parking
- Break and rest areas, as well as areas to store belongings

5.2.2 Field Stabilization Sites

Field Stabilization Sites may be required when:

- field operations (search and capture) take place over an extended geographic area
- an OWRC is established a significant distance from the field operations
- transportation time from field operations to an OWRC is likely to be more than two hours

Field Stabilization Sites are designed to provide initial triage, care, and/or euthanasia as well as short-term holding for oiled Wildlife. Field Stabilization Sites may take advantage of existing structures (permanent buildings, temporary office trailers), private Wildlife facilities, or a vehicle. If private Wildlife facilities are used, they should be authorized to handle Wildlife, and oiled Wildlife should be isolated from domestic animals and/or other Wildlife.

Field Stabilization Sites may also be used to house oiled Wildlife at the beginning of a response until an OWRC can be established. In some cases, Field Stabilization Sites can provide surge capacity, regulating the number of oiled Wildlife an OWRC receives to ensure that adequate enclosure and Wildlife Response Personnel capacity is available.

The primary purpose of a Field Stabilization Site is to begin humane efforts to reverse the effects of contaminants on Wildlife, especially when the OWRC is located several hours away. Activities at Field Stabilization Sites may include:

- brief intake examination
- triage, including euthanasia

- active heating or cooling efforts to regulate body temperature
- hydration (orally and/or intravenously)
- nutritional support
- intensive care

In addition to the space needed to perform intake examinations and house individuals, the Field Stabilization Site may require specific design elements for Wildlife Response Personnel such as:

- a separate food preparation and consumption area for Wildlife Response Personnel
- areas to change in or out of PPE
- Wildlife Response Personnel space (adequate parking and some office equipment may be necessary)
- capacity for site security
- solid, liquid, and biological waste storage and disposal

Unlike Field Collection Points, Field Stabilization Sites may be required to hold oiled Wildlife overnight, but this facility type is not meant for washing oiled Wildlife and is not designed for long-term care.

5.2.3 Oiled Wildlife Rehabilitation Centres

OWRCs often consist of an open floor space that can support various configurations as oiled Wildlife treatment needs change. This type of facility may take advantage of existing structures (e.g., warehouses, armories, convention hall spaces, etc.), temporary structures (e.g., tents, mobile trailers, etc.), or private Wildlife facilities (e.g., purpose-built OWRC, existing Wildlife rehabilitation centres, etc.).

The primary purpose of an OWRC is to humanely address the internal and external effects of contaminants on oiled Wildlife and to ensure the safety of all Wildlife Response Personnel. An OWRC is used for the triage, stabilization, cleaning, pre-release conditioning, and/or euthanasia of oiled Wildlife. It must meet specific facility requirements to safely provide:

- veterinary care
- species-specific short, medium, or in some cases, long-term housing and enclosures (oiled and clean/conditioning)
- appropriate nutritional support
- cleaning of oiled Wildlife
- pre-release conditioning and waterproofing

The chosen facility should have the following design elements:

- Spaces to care for the oiled Wildlife
    - Intake and examination areas
    - Veterinary/pathology laboratory space
    - Kitchen for oiled Wildlife food preparation and storage
    - Supply storage
    - Housing (oiled and clean/conditioning; inside and outside) (Miller 2012)
    - Oiled Wildlife cleaning area (washing, rinsing, and drying)
    - Solid, liquid, and biological waste storage and an area to decontaminate PPE and other supplies
- Spaces for Wildlife Response Personnel
    - Adequate parking
    - Areas to take on and off PPE

- Break, rest, and meeting areas
- Office/administration area

The OWRC should be designed to ensure that contaminated and uncontaminated areas remain separated, and scaled to reflect the magnitude of the response effort and size of the anticipated workforce. Flow of Wildlife Response Personnel through the facility should be facilitated to:

- eliminate cross-contamination of oil
- reduce disease transmission
- minimize audio and visual stimuli to reduce stress to housed Wildlife

In addition to meeting the space requirements, an OWRC should have access to potable water, adequate electricity, and have acceptable HVAC systems, or have the capacity to integrate these services.

6.0 Selecting a Facility for an Oiled Wildlife Rehabilitation Centre

The following sections will explore the different types of facilities or structures that can be used as an OWRC or the supporting facilities that may be necessary during a Wildlife Emergency response. Although no one type of facility is best for all situations, pre-planning and identification of what may be regionally available will provide a starting point to expedite the medical care and rehabilitation of oiled Wildlife. A brief discussion of advantages and challenges of each type of facility are outlined below.

6.1 Existing Wildlife Rehabilitation Facilities

Existing Wildlife rehabilitation facilities are authorized facilities that have been pre-established by a local or regional organization that delivers traditional rehabilitation services to Wildlife that are orphaned, injured, poisoned, or diseased.

There are several benefits for using existing Wildlife rehabilitation facilities at the beginning of a response, including:

- a pre-identified workforce of trained rehabilitators and skilled volunteers
- veterinary technicians and veterinarians that work closely with the OWRC (if not as part of the incident-specific Wildlife Response Personnel)
- established community support that can be an advantage during some response efforts
- the capacity to care for and wash a small number of oiled Wildlife
- reduced initial costs for set-up

As the Wildlife Emergency develops, response needs will change, which may make the use of a pre-established Wildlife rehabilitation facility less practical. Some of the issues include:

- inflexible floor plan, which will be difficult to adapt quickly in the event of an emergency
- emergency situations may strain resources and infrastructure beyond the capacity for which the facility is designed (e.g., electricity, water, space, waste streams)
- limited ability to store oily wastewater

- a pre-existing caseload and no capacity to accept an influx of oiled Wildlife
    - Separation of oiled Wildlife and the ongoing caseload may be difficult, creating biosecurity hazards
    - Incoming species may differ from the regular caseload, which may cause Wildlife Response Personnel to become overwhelmed and/or unable to accommodate the housing, nutritional, or medical needs of the oiled Wildlife
- long-term costs to procure supplies or increase infrastructure may quickly accumulate

If an existing Wildlife rehabilitation facility is not chosen as an appropriate OWRC, WROs may develop a collaborative approach with these facilities to incorporate the skills and knowledge from the established and experienced local volunteers/workforce. This type of relationship with existing Wildlife rehabilitation facilities is quite beneficial during a Wildlife response and helps to build regional capacity for responding to emergencies affecting small numbers of oiled Wildlife. Additionally, existing Wildlife rehabilitation centres may provide essential support functions as Field Collection Points or Field Stabilization Sites.

6.2 Purpose-built Oiled Wildlife Rehabilitation Centres

A purpose-built OWRC is a facility that has been pre-designed and pre-established to specifically meet the needs for oiled Wildlife rehabilitation. These facilities are often constructed at the nexus of several major transportation routes to maximize their ability to service different regions. Advantages of using a purpose-built OWRC include the following:

- Purpose-built facilities are designed specifically with the unique needs to safely perform oiled Wildlife rehabilitation; this includes intake, treatment, housing, and cleaning of oiled Wildlife and pre-release conditioning of cleaned Wildlife
- Water supply systems are adequate and dependable; water meets the necessary pressure, hardness, and temperature requirements for cleaning, support functions, and filling conditioning pools
- HVAC systems are designed to provide ideal temperature control for oiled Wildlife and Wildlife Response Personnel, as well as ensure a clean fresh air supply free of vapours/fumes
- Wastewater is managed in accordance with the applicable legislation
- Purpose-built facilities often have permanent Wildlife Response Personnel, a supporting workforce (volunteers), and regional services that can be used
- These facilities are typically prepared to receive oiled Wildlife at a moment's notice and have the necessary supplies (e.g., medical equipment, enclosures, wash supplies) and supporting logistical needs (communications, site security, office supplies)

Challenges or considerations with using a purpose-built OWRC include the following:

- Facilities are permanently located; depending on the location of an incident, the transportation distances (even with the use of Field Stabilization Sites) are too great
- The size of the facility may not be scalable and may not meet the needs of larger responses
- The initial cost of establishing the facility can be prohibitive; these facilities are designed to achieve best human safety and standards for oiled Wildlife care
- If the purpose-built facility is not associated with an active oiled Wildlife rehabilitation organization, ongoing Wildlife Response Personnel and volunteer preparedness may decline without regular exercising and training

- The facilities should undergo regular maintenance, particularly if not being used on a regular basis; the infrastructure systems need to be regularly tested to ensure they are in working order

6.3 Mobile Oiled Wildlife Rehabilitation Centres

Mobile OWRCs may consist of trailers and/or tent structures with the suitable infrastructure and equipment to support a Pollution Incident affecting Wildlife. These types of facilities may be established using pre-existing equipment specific to oiled Wildlife rehabilitation (e.g., mobile trailers) or through using "off the shelf" equipment (field tents/shelters) contracted or purchased at the onset of an incident.

Advantages to using mobile OWRCs include the following:

- Equipment and supplies can be pre-equipped in mobile trailers and ready to use at the onset of a response
- If the units are not pre-packed/pre-designed, companies that rent these types of structures are typically equipped to deliver packaged systems in a short amount of time
- Since these units are mobile, they can be used in a variety of locations, as long as there is road access
- Initial setup of the structure and places to hold oiled Wildlife can be done quickly
- Different individual units can be used for each specific design element of the facility to maintain an organized flow of Wildlife Response Personnel and oiled Wildlife through the centre

Challenges or considerations with using a mobile OWRC may include the following:

- If not pre-packed/pre-designed, service needs (e.g., electricity; water for drinking, washing, or conditioning; water heaters or conditioners) may be difficult to adapt to a mobile system. All supporting needs will need to be bought, stored, and integrated into the system, which may be particularly challenging in remote locations.
- Ongoing logistical needs and communications may be difficult
- Pre-packaged units will require regular maintenance checks to ensure that supplies, equipment, and infrastructure are sufficient and in working order
- Decontamination may prove challenging after each response
- The location chosen for the site should be able to support an extended period of occupation and should have enough room for not only the units, but also Wildlife Response Personnel parking, storage of supporting infrastructure (e.g., water tanks, wastewater, generators), outdoor enclosures, infrastructure for site security and predator protection

All mobile OWRCs should be able to support the needs of the oiled Wildlife and Wildlife Response Personnel in adverse weather conditions. While mobile units are often limited in their capability, they may be a valuable asset during the first stage of a response as initial holding facilities, for support facilities, and for expanding to other OWRCs (e.g., isolation, intake, necropsy, and morgue).

6.4 Temporary Oiled Wildlife Rehabilitation Centres

Temporary OWRCs are one of the most common approaches in oiled Wildlife treatment. These facilities take advantage of pre-existing buildings (e.g., warehouses, sports complexes, etc.) and adapt the structure for successful Wildlife rehabilitation. Generally, the indoor space needs to be large and

open, and outside space should be able to accommodate several purposes (e.g., parking, waste storage, conditioning cages). Advantages to using temporary OWRCs include the following:

- Temporary facilities take advantage of existing building stock, which in most cases can be identified in communities in close proximity to the incident
- Warehouses or other large open space facilities are ideal and are routinely available on short notice; other facilities that have seasonal use such as arenas, school facilities, and exhibition spaces are also commonly used, but co-ordination is required to ensure that scheduled events do not overlap or conflict
- These facilities can be customized to meet incident-specific concerns and needs
- Temporary facilities can also be combined with mobile facilities to increase capacity and improve the flow of Wildlife and Wildlife Response Personnel throughout an incident

Challenges or considerations with using a temporary OWRC may include the following:

- The primary challenge of temporary facilities is their establishment and activation; nearly every element of the facility will require set-up
- The initial investment to purchase materials (e.g., lumber, plumbing, electrical) and equipment (water heaters, fans, lighting) can be costly
- The long-term availability of the rented structure may be limited. Establishment and then remobilization to another facility during a response is not recommended. Remobilization is often not feasible or cost effective and can result in significant challenges.
- Demobilization of the facility can also raise questions concerning asset disposal, establishment of new stockpiles, or donation of equipment and supplies

7.0 Facility Design Elements

7.1 Overview

The design of any location, site, or facility for use during Wildlife response should focus on the specific needs of each incident. OWRCs, Field Collection Points, and Field Stabilization Sites must ensure the safety of the Wildlife Response Personnel and/or volunteer force. Facilities must also ensure the safety of the oiled Wildlife (e.g., protection from predators, unnecessary human disturbance and stress, and inclement weather). Protection and safety can be achieved through careful considerations of the elements needed to care for oiled Wildlife during the design of facilities.

Although flexibility is imperative in order to adapt to the changing needs of the incoming oiled Wildlife over the course of an incident, there are specific services and areas that must be present in every facility to ensure the highest level of humane care.

7.2 Intake and Examination

At each of the Field Collection Points, Field Stabilization Sites and/or OWRCs, an intake and examination space is required for processing incoming Wildlife at each level of care. This space directly receives oiled Wildlife and should be fully separated from areas where Wildlife are undergoing other levels of treatment (e.g., pre-wash care or have already been cleaned) to avoid contamination. Intake and examination spaces should consider the following recommendations for design:

- Should be well organized, clean, and designed in a way that decontamination and cleaning can occur easily and quickly, if applicable
- Should be isolated from outside/facility noise and disturbances
- Should be temperature controlled and well ventilated
- Should be scalable based on:
    - Wildlife Response Personnel requirements and their health and safety needs
    - the number, species, and age of Wildlife arrivals

7.2.1 Field Collection Points

Once received at the Field Collection Point, it is recommended that Wildlife remain in their enclosures until they are transported to a facility that will be able to provide proper medical treatment. Important elements of intake at Field Collection Points include (but are not limited to):

- recording species, number of oiled Wildlife, time of capture, and location of capture
- fulfilling chain of custody needs – ensuring that custody documentation is released and proper signatures obtained by transporting and receiving parties
- providing emergency care only if directed by the appropriate Wildlife Response Personnel

7.2.2 Field Stabilization Sites

At Field Stabilization Sites, oiled Wildlife may receive initial care to treat internal effects of contaminants. Important elements of an intake area at the Field Stabilization Site may include (but are not limited to):

- maintaining/updating records (species, number of oiled Wildlife, time and location of capture/intake)
- assigning a Field Stabilization Site case number to track Wildlife through the chain of custody process
- fulfilling chain of custody needs; ensuring that custody documentation is released and proper signatures obtained by transporting and receiving parties
- providing fluid therapy (orally and/or intravenously) and nutritional support for Wildlife
- providing thermoregulatory support
- providing emergency medical care only if directed by the appropriate Wildlife Response Personnel

7.2.3 Oiled Wildlife Rehabilitation Centres

An OWRC is the primary location for all oiled Wildlife to receive medical and husbandry care to address the external and internal effects of contaminant exposure. Important elements of an intake area at the OWRC include (but are not limited to):

- maintaining records (species, number of oiled Wildlife, time and location of capture/intake) and assigning a case number to track oiled Wildlife through the rehabilitation process (if this was not already completed at a Field Stabilization Site)
- fulfilling chain of custody needs; ensuring that custody documentation is released and proper signatures obtained by transporting and receiving parties
- examining oiled Wildlife for physical condition, injuries, extent of oiling, body temperature, and taking necessary samples (including evidentiary samples)
- providing fluids (orally or intravenously) and nutritional support
- providing additional medical care as necessary

7.3 Pre-wash Care (Stabilization), Housing, and Enclosures for Oiled Wildlife

Once Wildlife have been examined and the internal effects of the oil have been treated, Wildlife will often be held for a period of time prior to beginning the cleaning process to help them rehydrate, receive nutritional support, and reduce stress incurred during capture, transport, and intake. The following should be considered when establishing enclosures and housing for affected Wildlife:

- Holding spaces for oiled Wildlife should be temperature controlled to assist with thermoregulation
- Spaces should be adequately lit and the lighting cycle should be adjusted to match the animal's normal photoperiod, if possible
- Holding spaces should be isolated from disturbances to limit stress
- Holding spaces should be scaled to accommodate the number of anticipated arrivals
- Segregation of incompatible species or ages should be implemented, and efforts should be taken to include features that simulate natural habitats and encourage natural behaviours
- Holding spaces should offer protection against hard surfaces whenever possible
- Straw and many other organic materials can promote fungal and bacterial growth and should not be used
- Clean sheets or towels are materials that can be used for bedding and protection that are soft and less likely to promote fungal and bacterial growth
- Hard ground surfaces are unsuitable for seabirds (e.g., diving ducks, loons, murres, etc.); these species will require the use of net-bottom pens or other suitable enclosures
- Ventilation in the holding space is important, as hazardous vapours could concentrate in enclosed spaces and lead to health problems in both the Wildlife and the Wildlife Response Personnel
- Periodic assessments of indoor air quality may be necessary to ensure that Wildlife and Wildlife Response Personnel have limited exposure to hazardous vapours

During this period of holding, oiled Wildlife may be provided food, water, and nutritional supplements to promote excretion of the ingested contaminants and for ongoing nutrition. These efforts often result in fouled bedding materials that should be replaced regularly, depending on the assessment of the level of contamination and number of individuals present in each holding space. All bedding materials that are removed should be disposed of as hazardous material, as they will likely be stained or saturated with contaminants (see Section 4.2.4 Waste Management).

The holding space, while temporary, should maintain the standards developed by the National Wildlife Rehabilitators Association and the International Wildlife Rehabilitation Council (Miller 2012). For additional information and design considerations for housing and enclosures, see Section 8.0 Enclosures and Housing.

7.4 Washing and Rinsing

The cleaning of oiled Wildlife has two distinct phases: removing the contaminant with a surfactant (washing) and removing the surfactant from the fur, feathers, skin, or shell (rinsing). Cleaning oiled Wildlife is often the most physically demanding and stressful task faced by the Wildlife Response

Personnel and the Wildlife. Therefore, the design of the washing and rinsing space should prioritize the health and safety of the worker and the delivery of humane treatment to Wildlife.

The washing and rinsing space will require direct access to large quantities of hot water. The washing and rinsing process creates a large volume of wastewater that should be managed as liquid hazardous waste. The process requires the capacity to drain or pump oily and gray wastewater to temporary wastewater storage. The use of an inline oil/water separator may assist in receiving an approval to discharge to a sanitary sewer system; however, depending on the concentrations of surfactant and petroleum, separation may be difficult to achieve. Off-the-shelf spill containment systems consisting of a rollout pad and integrated berm are available to assist in the containment of overspray and spillage during the wash and rinse efforts.

The number and size of washing basins and the volume of water required during each wash cycle will vary depending on the species being washed, and the extent of external contamination of the animal. To ensure that the wash process is as ergonomically comfortable as possible for Wildlife Response Personnel, wash basins should be placed on a table or platform allowing for easy setup, emptying, and maneuvering during a wash. Tables used to support the basins should be set at a height that is ergonomically comfortable for Wildlife Response Personnel to complete the wash of one individual without rest. Tables should be designed to support two or three wash basins of up to 40 L capacity each, in addition to the Wildlife. The ideal table height is 0.75 m, though different heights may be required depending on the type of species being treated.

Wildlife Response Personnel engaged in washing and rinsing efforts will require various PPE. An entry and exit from the wash/rinse area should be designed in a manner that allows for the donning of clean PPE, decontamination, and doffing of used and/or contaminated PPE. These actions must be able to be accomplished without cross-contaminating equipment or impeding the flow of cleaned Wildlife from the rinse area to drying pens.

7.5 Drying

Spaces assigned for drying will share similar features with the oiled Wildlife housing. Drying spaces should offer protection against hard surfaces whenever possible. Bedding will require periodic replacement to remove excreted contaminants and wastes and maintain general hygiene. As in pre-wash care, diving ducks, loons, and other seabirds require the use of net-bottom pens.

Wildlife Response Personnel will use heaters and hot air blowers to dry Wildlife, which may require significant electrical power. Refer to the Section 4.2.2 (Electricity) for recommendations concerning meeting facility electrical power demands.

7.6 Enclosures and Housing for Clean Wildlife

As individuals dry after washing, they will require additional space for rehabilitative care. Incompatible species should remain separated. Housing enclosures should be constructed out of materials that are safe and strong enough to enclose the clean Wildlife for both indoor and outdoor settings. All enclosures should aim to reduce the potential for Wildlife to self-harm and should reduce exposure to pests and predators. Housing should ensure a secure, healthy, and safe environment at all times.

The following aspects of housing should be considered for each species received, treated, and rehabilitated:

- Indoor housing should provide a source of heat, cooling, and/or ventilation to ensure that animals are able to thermoregulate while they preen/groom, eat, regain strength, and potentially continue to excrete contaminants
- Where heat has been provided via heat lamps, housing should be designed to ensure that there is adequate room for individuals to move away from the heat source; heating pads should only be used for select species (e.g., turtles)
- Exterior housing requires access to water and electricity
- Housing should be designed to minimize human contact with animals. All housing should have visual barriers to reduce visibility of humans and other animals. Contact reduction will reduce imprinting, habituation, and stress (Washington Department of Fish and Wildlife 2010.
- Perches and/or shelters can be incorporated into housing, where appropriate; outdoor housing that includes pools (e.g., for seabirds, amphibians, or other aquatic wildlife), should incorporate appropriate landing or haul-out areas
- Housing should be adequately lit to the clean Wildlife's comfort and ease in locating food and perches, but cycled to their normal photoperiod

Young clean Wildlife, or those that are injured or ill may be kept in enclosures aimed at restricting activity or mobility until their condition allows for unlimited activity/mobility housing. For additional information and design considerations for housing and enclosures, see Section 8.0 Enclosures and Housing.

7.7 Food Storage and Preparation

Field Stabilization Sites and OWRCs will require food storage and preparation space to ensure that the nutritional needs of Wildlife are met. Depending on the scale of the response and anticipated intake, a Field Stabilization Site may have a smaller space demand for food storage and preparation.

Food storage and preparation facilities should have enough space to store a potentially diverse selection of non-refrigerated, chilled, and frozen foods. For example, a seabird's diet consists of a variety of fish, which may require refrigeration, freezing, or may be offered live. One or more refrigerators and/or freezers may be required to ensure the quality of the stored food.

A food preparation area may require food preparation devices, utensils, and methods to warm foods. Examples of devices that may be required are microwaves, electric kettles, food processors, and/or blenders. The space should include a reliable way to clean used dishes, utensils, and the preparation space, to manage food wastes (to ensure hygiene and food quality) as well as ensure pests are controlled in compliance with the facility’s pest management plan (see Section 4.4 for a discussion on Pest Control). In Pollution Incidents, separate areas to clean oiled and unoiled dishes and utensils is required.

7.8 Pathology Lab

The pathology lab should be designed to provide a workspace that is suitable to conduct hematology/blood sample analyses including the packed cell volume, total solids, and blood glucose tests. Pathology lab space should be designed in a manner to eliminate the possibility of cross-contamination of specimens. The space must ensure appropriate national and provincial bio-safety practices are followed, including the safe and secure disposal of biological wastes. A pathology lab

could be a stand-alone space or could be incorporated into the intake/examination area, depending on the available space, scale of the response, number of species, and types of samples that need to be collected.

7.9 Isolation

An isolation space may be required to separate oiled or clean Wildlife from the general population. This space can be dedicated to intensive care for Wildlife exhibiting symptoms of a transmittable disease; Wildlife exhibiting signs of significant stress due to contamination, capture, and/or holding; or Wildlife of certain ages (in particular, juveniles and seniors) that would be inappropriate to mix with other ages. Isolation housing should restrict mobility while still allowing for easy monitoring of the individual's condition.

7.10 Morgue and Necropsy

During an incident there will often be casualties at the facilities due to exposure, disease, or the stress of captivity. All carcasses may need to be temporarily stored for the federal or provincial agency having jurisdiction over the Wildlife response.

In co-ordination with Incident Command, the agency may direct the WRO to manage all carcasses and maintain custody until their final dispossession is determined. In the design of a facility, a space should be allocated that will have the capacity to securely store all carcasses. The space designed as the morgue should be made secure to the satisfaction of the agency having jurisdiction and be physically separated from the housing of live oiled Wildlife.

The space set aside for morgue services may also be used to facilitate necropsy needs. The design should include:

- surfaces and materials that are easily cleaned and disinfected
- containment of fluids and wastes for disposal
- a clearly defined waste management system for domestic, hazardous, and biological waste streams
- efficient work flow while minimizing cross-contamination with live animals
- adequate lighting and ventilation
- a secure method to preserve and store samples

7.11 Storage

A Field Stabilization Site and OWRC may consume a large amount of materials. Even small incidents require a considerable volume of disposable materials and reusable items. To ensure an effective delivery of care services, incoming supplies and equipment should be catalogued and stored appropriately. The space required will be dependent on the magnitude of the response.

An inventory system and a procedure for tracking received materials should be implemented. During larger incidents, Incident Command may direct the ordering through a single point of procurement. Facilities should ensure that the ordering process is clearly defined to facilitate efficient acquisition of supplies.

7.12 Administration

Much like other space considerations in a Field Stabilization Site or OWRC, the need for administration space is related to the magnitude of the incident. An administration space should be considered a clean space. Access to administrative spaces should be outside the flow of oiled Wildlife to allow for dedicated administrative personnel to operate without the requirement of hazardous materials awareness training or PPE requirements. An administration space will require adequate lighting and electricity to operate office equipment.

7.13 Worker Services and Supporting Facilities

Space should be provided for Wildlife Response Personnel to change clothes before and after duties, take breaks, and/or eat. Facilities may operate for over 24 hours a day and therefore may require shifts. A space separated from the main flow of the Field Stabilization Site or OWRC should remain free of contamination and offer:

- change rooms for the storage of street wear and donning of basic PPE
- disposal locations for contaminated PPE
- washrooms
- rest/cool down area
- food preparation and eating room

8.0 Enclosures and Housing

8.1 General Considerations for Enclosures and Housing

Wildlife species affected by a Pollution Incident may have diverse needs in terms of both interior and exterior housing. Flexibility of design and functionality should be considered when constructing housing. Flexibility will allow housing enclosures to meet the needs of multiple species, and can allow for conversions for future use. The *Minimum Standards for Wildlife Rehabilitation* (Miller 2012) contains specific considerations for housing a wide variety of avian and non-avian species.

The following general elements should be considered during the construction of all housing:

- Housing and caging should be constructed of materials that are safe for use and strong enough to prevent escape and ensure the security of cleaned Wildlife from predators
- Interiors should not have sharp points or corners to prevent injury to oiled/clean Wildlife
- Construction materials should not contain toxic paints or stains and should be simple to clean
- Housing design should minimize human contact and interaction with non-compatible species and aggressive individuals
- Enclosures must be well ventilated and provide adequate lighting that is neither excessive nor direct and should be controlled to ensure that a normal photoperiod is maintained
- Access to housing should be secured to prevent unintended release; where applicable, double door security should be used
- Enclosures should reduce or eliminate the possibility of predators entering the area

The following are examples of materials for housing/enclosures:

- Standard lumber
- Polyethylene plastic (visqueen)
- Cloth-lined chain-link fencing (it is generally not appropriate for birds to have direct contact with chain-link fencing, as the material may damage feathers; this type of fencing may be used for some mammal species)
- Small aperture nylon netting or plastic-coated wire
- Constructed or purchased pools

8.2 Indoor and Outdoor Housing

All housing developed for holding oiled/clean Wildlife during rehabilitation should be designed to accommodate the size and mobility requirements of the species it is intended to hold. Interior housing should consider the needs of animals that have limitations or restrictions with respect to their activity/mobility. Limited activity/mobility may be necessary to support periodic capture for ongoing medical treatment of captured Wildlife. Outdoor limited activity/mobility housing should provide the opportunity for short flights or walks/runs. Semiaquatic and pelagic species should have access to tubs of water or pools for exercise (Miller 2012). Unlimited activity/mobility housing uses large and complex outdoor caging that provide physical and psychological conditioning or reconditioning through extended flights for birds and walks, runs, and/or climbs for other Wildlife (Miller 2012). This housing should allow Wildlife to improve their strength, develop stamina and co-ordination, restore muscle tone, and acclimate to ambient weather conditions. Conditioning pools within OWRCs can also support rehabilitated Wildlife to resume to their normal behaviours (e.g., preening, swimming and floating) after being held in enclosures for extended periods. The *Minimum Standards for Wildlife Rehabilitation* (Miller 2012) describes housing and pool dimensions for a wide variety of avian and non-avian species.

8.3 Bird Considerations

Housing for birds in response to a Pollution Incident demands diverse solutions. Using economical and readily available materials, such as traditional lumber, is the most common approach to meeting housing needs. However, species-specific housing requirements, climate conditions, and the unforeseen conditions of the site will influence the most appropriate design. The advice of experienced Wildlife Response Personnel is essential when it comes to the design of facilities. Applying local and regional knowledge is encouraged. Availability of space is a limiting factor in most response efforts; housing multiple species confirmed to be compatible together is an acceptable practice.

8.3.1 Water Bird Considerations

Species that spend the majority of their time in or near water are often most impacted by Pollution Incidents. These species require housing that provides similar conditions to their natural habitats. Above ground pools should be made available, where possible, once oiled Wildlife are cleaned of contaminants. These pools provide an ideal environment necessary for water birds to regain waterproofing and pre-release conditioning. Shallow pools installed inside housing offer shorebirds and wading birds access to water while in captivity. The following are housing design considerations for water birds (Miller 2012):

- Pool capacity ranging from 1.5 to 2.5 m^3 × 0.6 m deep are useful for pelicans, alcids, loons, grebes, gannets, cormorants, geese, cranes, herons, egrets, and diving ducks
- Shallow pools ranging in depth from <0.1 m to 0.45 m are useful for rails, dabbling ducks, shorebirds, etc.
- A method of surface water recirculation or cleaning to prevent the accumulation of contaminants (e.g., excrement, fish oils)
- Rafts or haul outs to allow for periods of rest
- Solid perches should be considered for appropriate species

8.3.2 Raptor Considerations

While raptors are not commonly affected by Pollution Incidents, they may suffer secondary impacts from preying on oiled carcasses or weakened oiled individuals. Captured raptors will require housing specific to their needs. An enclosure for a raptor has very different requirements than those for a waterbird. Additionally, during pre-release conditioning, raptors may require housing that allows flight space. It is essential for perches to be appropriately sized and have a variety of substrates. Owing to the sensitivity of many raptor species, enclosures should be isolated from the facility's higher traffic areas and methods should be used to reduce visual stress. Raptors are predatory species, and so should also be housed away from cleaned Wildlife that may be considered prey.

8.4 Mammal Considerations

Mammals that can be affected during Pollution Incidents are generally of two very different groups: aquatic/semi-terrestrial mammals and marine mammals.

Aquatic/semi-terrestrial fur-bearing mammals may be impacted when:

- oil pollution comes ashore and contaminates shore habitats where species forage
- oil pollution impacts a body of water inhabited by aquatic/semi-terrestrial mammals

If recovered during a response, the following should be considered during the housing, cleaning, and rehabilitation of these species:

- Enclosures should consider the ability of the animal to chew or dig out of the enclosure
    - Materials used should be carefully considered as many mammals can chew out of wood or plastic enclosures
- Facility housing should be very secure and use a vestibule entry or double door entry to reduce the opportunity for escapes
- Visual barriers should be used to reduce stress while in care
- Many aquatic or semi-terrestrial mammals have specific thermoregulatory regimes, and enclosures must account for species-specific heating or cooling requirements

8.5 Reptile and Amphibian Considerations

With the exception of some larger species of turtles (marine and freshwater), many of the reptiles and amphibians that may be impacted during a Pollution Incident are likely to be of a size that can be easily housed in constructed enclosures or off-the-shelf aquariums or terrariums. For larger species of turtles, pens constructed from standard lumber or galvanized stock tanks may provide adequate housing. For individuals requiring longer periods of care, additional efforts to provide comfortable and suitable

bedding/substrate should be considered. Many materials are not ideal and care should be taken to select appropriate bedding/substrate materials for each species.

For specific information regarding a particular species or incident, efforts should be made to consult with experienced Wildlife Response Personnel and applicable rehabilitation best practices.

9.0 Facility Closure and Demobilization

During emergency response, there will be a gradual reduction in the need for Wildlife treatment and rehabilitation until the facility is no longer necessary. Wildlife Response Personnel must be prepared to close and demobilize the facility. In Wildlife rehabilitation facilities, the need for continued operations can be measured by observing the number of intakes or the number of Wildlife in care. Wildlife rehabilitation operations frequently demobilize after other operations, due to the number of animals in care and time required for full rehabilitation and release. Communication with the Incident Command will provide an idea of the projected outlook for demobilization.

When the need for facility closure and demobilization is confirmed, it is the responsibility of the facility management to establish a plan for demobilization. A demobilization plan should include:

- a schedule for demobilizing Wildlife Response Personnel and volunteers
- co-ordination with other authorized Wildlife agencies to arrange transfer of individual Wildlife to other facilities if long-term care is needed
- a schedule to remove and demobilize non-essential equipment and housing
- a plan to clean, decontaminate, and store all materials and equipment planned for reuse
- an inventory of supplies, materials, and equipment owned by the WRO and those owned by the Responsible Party
- a process for how copies of all incident-related reports, records, documentation, and photographs will be distributed to the Documentation Unit prior to demobilization

Communication should be maintained with logistics and planning sections during demobilization to ensure the disposition of materials and equipment are handled in an appropriate manner. Depending on the status and nature of the incident, a temporary shutdown of the facility may be appropriate if there is the potential for remobilization.

10.0 Custodian

The custodian for the Guidelines for Establishing and Operating Treatment Facilities and any amendments thereto is the:

Director General, Regional Operations Directorate
ECCC-CWS
ECCC

The approval of future updates is vested to the Director General, Regional Operations Directorate, ECCC-CWS.

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Appendix A: Contact Information for Canadian Wildlife Service Regional Permits Offices

Table A-1: Canadian Wildlife Service Permit Office Contacts

Region	Address	Contact
Bird Banding Office National Wildlife Research Centre	Carleton University 1125 Colonel By Drive Ottawa, ON K1A 0H3	• Telephone: (613)998-0524 • Email: bbo_cws@ec.gc.ca
Atlantic (Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick)	17 Waterfowl Lane P.O. Box 6277 Sackville, NB E4L 1G6	• Telephone: (506)364-5068 • Fax: (506)364-5062 • Email: Permi.Atl@ec.gc.ca **For SARA permitting enquiries:** go to https://wildlife-species.canada.ca/SPLEP-SARAPS/ for up to date contact information
Quebec	801-1550 avenue d'Estimauville Québec, QC G1J 0C3	• Telephone: (418)649-6129 • Fax: (418)648-4871 • Email: PermisSCFQuebec-CWSQuebecPermit@ec.gc.ca **For SARA permitting enquiries:** go to https://wildlife-species.canada.ca/SPLEP-SARAPS/ for up to date contact information
Ontario	335 River Road Ottawa, ON K1V 1C7	• Telephone: (613)990-8355 • Fax: (613)990-8400 • Email: wildlifeontario@ec.gc.ca **For SARA permitting enquiries:** go to https://wildlife-species.canada.ca/SPLEP-SARAPS/ for up to date contact information

Region	Address	Contact
Prairie (Alberta, Saskatchewan and Manitoba)	115 Perimeter Road Saskatoon, SK S7N 0X4	• Telephone: (306)975-4090 • Fax: (306)975-4089 • Email: prpermisscf-cwspermitpr@ec.gc.ca **For SARA permitting enquiries:** go to https://wildlife-species.canada.ca/SPLEP-SARAPS/ for up to date contact information
British Columbia	5421 Robertson Road Delta, BC V4K 3N2	• Telephone: (604)350-1950 • Fax: (604)946-7022 • Email: scfpacpermitscwspacpermits@ec.gc.ca **For SARA permitting enquiries:** go to https://wildlife-species.canada.ca/SPLEP-SARAPS/ for up to date contact information
Northern (Northwest Territories, Nunavut & Yukon)	P.O. Box 1870 Suite 301-933 Mivvik Street Iqaluit, NU X0A 0H0	• Telephone: (867) 975-4638 • Fax: (867) 975-4645 • Email: CWSPermitNorth@ec.gc.ca **For SARA permitting enquiries:** go to https://wildlife-species.canada.ca/SPLEP-SARAPS/ for up to date contact information