



**SAKHALIN-1 PROJECT
WILDLIFE RESPONSE MANUAL**

EXXON NEFTEGAS LIMITED

2017

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Wildlife Response Manual

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1 Introduction

This Wildlife Response Manual is intended to serve as general guidance for wildlife hazing, capture, and rehabilitation.

Potential Oil Spill Impacts on Wildlife

Wildlife may be vulnerable to oiling depending on their behavior, food preferences and habitat requirements. Wildlife may encounter oil in inland areas of pipeline crossings, in nearshore and intertidal areas, and at sea.

The number of individuals and species affected by an oil spill will depend on size of the spill, chemistry of the petroleum product spilled, meteorological and oceanographic conditions, the time of year, and the spill location. Species feeding in intertidal and nearshore areas are vulnerable to oiling. Many important bird habitats are located in nearshore and intertidal areas. Bears, foxes, wolves, and wolverines scavenge for food in intertidal areas and may encounter oiled carcasses. Mink, river otters, reindeer and deer forage in inland and coastal areas and may ingest oil-contaminated vegetation or other oil-contaminated food sources.

Seabirds are susceptible to oiling since they feed and rest on the water surface. Whales and dolphins have low vulnerability to oiling as these animals tend to avoid areas that are oiled. Seals generally have low vulnerability to oiling, but vulnerability may increase during pupping season.

Exposure to oil can occur from swimming or wading through oil. Ingestion of oil may occur if an animal attempts to clean its oiled feathers or fur. Another route of oil exposure is through consumption of oil-contaminated food or water.

General effects of oil on wildlife can be separated into physical and toxicological effects. An example of a physical effect is loss of water repellency and insulating properties of feathers when birds become oiled. As a result, the ability to thermo-regulate may be lost. In cold climates, loss of thermoregulation can lead to hypothermia in birds. Some marine mammals, such as otters and fur seals, depend on their fur rather than a layer of blubber to insulate them from the cold. Heavily oiled fur can lead to hypothermia and impaired swimming ability.

Toxicological effects of oil on wildlife include irritation of the eyes, skin, mucous membranes, lungs, and digestive tract. Organ damage and disruption of immune responses may occur. Effects of oil on wildlife reproduction may include altered breeding behavior, decreased hatching success, and decreased survival rates of young.

Red Book Species

Rare and protected species are discussed in the Red Data Book of the Russian Federation. Red Book species and associated habitats that are at

risk of oiling should be given priority protection during an oil spill response. In oiled wildlife response planning, it is important to consider:

- ◆ Areas of Special Value identified in the oil spill response plan;
- ◆ consultation with the Rosprirodnadzor, Rosselkhoznadzor, and the Federal Service for Veterinary and Phytosanitary Oversight and other appropriate regulatory agencies and with local wildlife experts;
- ◆ seasonality of species occurrences (breeding, nesting, and migration periods);
- ◆ habitats important for breeding, nesting, feeding, or resting;
- ◆ areas of high density occurrences; and
- ◆ prioritization for protection of important habitats.

Appendices A, B, C, D describe some of the rare and protected bird and mammal species and their habitats that are at risk of oiling from ENL's onshore and offshore operations. In these appendices, information is provided for key sensitive periods (nesting, molting, migration, breeding, and pupping).

Basis for Wildlife Response Plan

Historical data from International Birds Rescue Research Center (IBRRC) indicate that of 90 oil spills that IBRRC was involved with, there were 6 spills (approximately 7%) where greater or equal to 1,000 birds required treatment for oil exposure. This wildlife response plan is based on the expectation that up to 1,000 birds could potentially require treatment for oil exposure during the initial response to a spill. Additional resources can be mobilized within a few days if the number of oiled birds is estimated to exceed 1,000. Although wildlife species other than birds may be at risk for oiling, birds are the predominant wildlife group that becomes oiled during a spill.

2 Response Personnel

Only trained and qualified personnel should haze, capture, transport, and rehabilitate oiled wildlife. ExxonMobil has contracts in place with two internationally-recognized oiled wildlife response organizations, International Bird Rescue Research Center (IBRRC) and Tri-State Bird Rescue & Research, Inc. Experts from these two organizations can be mobilized to Sakhalin Island within a few days, if needed. The OSR Wildlife Plan will be implemented with the assistance of trained and qualified contractors and support groups such as EcoShelf. Upon notification, contractors and trained local experts will mobilize equipment and trained personnel to the spill site and begin wildlife response operations.

A licensed veterinarian is integral to the oiled wildlife response organization. The veterinarian, using a pre-approved decision tree, will confer with the appropriate Russian authorities and fauna experts and decide which oiled animals should be rehabilitated and which animals should be euthanized. For those animals that will be rehabilitated, the veterinarian administers or supervises the appropriate treatment.

Trained and qualified personnel are essential to an oiled wildlife response. The training that each person receives will depend on the tasks that the person will perform. Personnel may conduct wildlife deterrence operations or search for and capture oiled animals. Other personnel may stabilize and transport oiled animals to a treatment area. Once oiled animals arrive at the treatment area, personnel maintain records on the animals, clean pens, and prepare food for the animals. Qualified personnel that have received additional training may perform tasks such as administer fluids to dehydrated animals, take blood samples from animals, and wash oiled animals.

3 Training, Health and Safety

Worker health and safety are a priority during oiled wildlife response operations.

Summary of Safety Precautions

- ◆ Don't overwork.
- ◆ Eat regularly and well.
- ◆ Be proficient with Material Safety Data Sheets (MSDS).
- ◆ Recognize that the most common hazards are slips, trips and falls; mitigate accordingly.
- ◆ Maintain necessary immunizations, including tetanus and hepatitis.
- ◆ Observe all industrial hygiene safety precautions stated in the Safety Plan.
- ◆ Ensure training regarding the hazards of the work task, and the proper use and limitations of personal protective equipment (PPE).
- ◆ Never conduct wildlife rescue work alone; always work in teams.
- ◆ Keep animals at or below one's waist level to protect the face and eyes from pokes, bites, and scratches.
- ◆ Wear approved personal protective equipment.
- ◆ Always remove protective equipment and wash hands and face with soap and water or approved cleaners before eating, drinking, or smoking.
- ◆ Never eat, drink, or smoke in wildlife handling areas.
- ◆ Minimize contact with contaminated materials and inhalation of vapors even when wearing personal protective equipment.
- ◆ Keep all oil, cleaning compounds, and contaminated materials away from skin, face, and eyes.
- ◆ Ensure that work areas are clean and well ventilated.
- ◆ Report all injuries and illnesses to the supervisor and/or Command Center medical staff.
- ◆ Do not have direct contact with wildlife and consult a physician prior to participating in other aspects of spill response if you have any immunosuppressive condition.
- ◆ Do not work with oiled wildlife if you are ill, pregnant, or on prescribed drugs that might affect your natural immunity.

3.1 Training for Wildlife Response Personnel

In addition to being trained in specific wildlife response tasks, personnel is trained to recognize and prevent oil-related and physical hazards associated with wildlife response operations.

Personal Protective Equipment (PPE)

To prevent exposure to oil and injury from wildlife, workers should wear approved personal protective equipment appropriate to their task. The following is a list of recommended PPE:

- ◆ Full eye protection (goggles or safety glasses) – Eye protection is required when handling animals, especially birds. Birds will peck when under stress and should be considered dangerous as they will aim for eyes.
- ◆ Oil resistant rain gear or oil protective clothing (coated Tyvek, Saranex, etc.).
- ◆ Gloves (neoprene or nitrile rubber) that are oil resistant and waterproof and provide protection against beaks and claws.
- ◆ Non-skid shoes/boots, which are oil resistant and waterproof.
- ◆ Duct tape, used to tape rain jacket sleeves to gloves and rain pants to boots.
- ◆ Ear protection (muff or ear plug type) during deterrent operations, if appropriate.
- ◆ Respiratory protection, if appropriate.
- ◆ Personal flotation device, if appropriate.
- ◆ PPE for Arctic weather conditions, if appropriate.

In addition to PPE, the following personal items are recommended:

- ◆ Long-sleeved shirts,
- ◆ Hat (to provide shade in hot weather /warmth in cold weather);
- ◆ Change of clothes (to rest or leave in);
- ◆ Clean towel/toiletries; and
- ◆ No jewelry (birds will peck at bright, shiny objects).

Clothing and equipment to protect against bites and scratches should be worn underneath the oil protective equipment whenever necessary. Respiratory protection from organic vapor hazards may also be required for some operations.

3.2 Worker Safety

Worker safety is the primary consideration in wildlife handling. Handling and restraint techniques appropriate for specific species need to be applied by trained and experienced personnel.

Oiled wildlife response is often physically and emotionally stressful. Dehydration, exhaustion, and poor nutrition can affect a person's ability to assess and react to a dangerous situation. It is therefore important that workers stay well hydrated and eat nutritionally sound meals. Rest is equally important. Workers should be aware of their own condition and also the conditions of those around them. The safety of all depends on the alertness of each individual.

All wildlife response teams should have a first aid kit on site to be used for minor cuts and scrapes. If bitten, scratched or otherwise injured, report the injury to a supervisor and seek treatment if needed. A person trained to provide emergency first aid, including CPR, should be available to each team.

In addition to hazards from oil, numerous physical hazards may be associated with wildlife response activities. Workers should be aware of temperature and weather conditions. They should use personal protective equipment to protect against dangerous seas, frostbite, hypothermia, heat-stress and heat-exhaustion, and infectious diseases.

In tidal areas, workers should be alert to undertows and sudden drop-offs. Personal flotation devices should be worn for all on-water and in-water activities. Waders or sturdy boots with non-slip soles should be worn for traction on slick surfaces.

Hazardous Substances

Prior to handling oil-contaminated wildlife, the Material Safety Data Sheet (MSDS) for the spilled oil will be reviewed and all recommended precautions followed. Workers and oiled wildlife treatment areas should be periodically monitored using calibrated instruments and devices to determine airborne concentrations of petroleum products (e.g., benzene). Workers will wear appropriate PPE. An area will be designated for the storage of contaminated clothing, equipment and medical waste until the items can be decontaminated or disposed of properly. Ventilation in all work areas should be adequate so as not to allow for the buildup of airborne contaminants.

3.3 Zoonosis

Wildlife may carry diseases that are transmissible to people. Diseases that are transmitted from animals to humans are called zoonosis.

Zoonosis can be transmitted to humans by:

- ◆ inhalation of particles (spores, bacteria) in the air;
- ◆ ingestion of feces (i.e., projectile feces, poor hygiene); or

- ◆ dermal contact.

To reduce risk of contracting zoonotic diseases, wildlife handlers should always:

- ◆ Wash hands thoroughly with soap and water after handling wildlife.
- ◆ Wash hands well before and after eating or smoking.
- ◆ Smoke, drink, or eat in designated areas only and not near wildlife.
- ◆ Clean and treat all cuts and scratches.
- ◆ Use gloves as much as possible.
- ◆ Use surgical masks as appropriate

4 Wildlife Deterrence (Hazing)

The primary strategy for wildlife protection is controlling the spread of spilled oil to prevent or reduce oil contamination of potentially affected species and habitats. Removal of oiled debris and contaminated food sources also protects wildlife. Another method of wildlife protection is deterrence or hazing. Hazing is the term used when a variety of deterrents are used to prevent wildlife from entering areas already oiled or areas that are in the projected pathway of the oil. Hazing should be carefully planned and executed, since hazed wildlife could move into other oiled areas.

Common hazing techniques include:

- ◆ Making noise with pyrotechnics, firearms, air horns, motorized equipment, and recorded bird alarm sounds;
- ◆ Using scare devices such as mylar tape, helium-filled balloons, scarecrows, predator effigies in oiled areas;
- ◆ Control wildlife movements using aircraft, boats, ATVs, or other vehicles; or
- ◆ Hazing by human presence.

Information necessary to help determine whether or not to begin a hazing operation includes time of year, availability of nearby uncontaminated habitat, proximity of nesting colonies and location of species in relation to the spill.

The potential effects of human activity and disturbance on sensitive habitats should be considered prior to starting a hazing operation. For example, take care not to trample fragile vegetation by foot traffic or off road vehicles. If pyrotechnics or gas operated cannons are used, take care to prevent igniting vegetation. Wakes from boat operations should not push floating oil further into wetlands. If it is nesting season, consider the potential effects of hazing on bird reproduction. Young birds are more susceptible to predation if they become separated from their parents.

Habituation is the gradual decrease in response to a deterrence method due to increased familiarity and acceptance. Habituation can be minimized by using a combination of hazing methods and frequently changing the type, timing, and location of the hazing devices. It is recommended that human patrols be incorporated in hazing operations. Molting birds are not easily deterred and require a combination of different techniques.

Hazing is not generally recommended for marine mammals. Before hazing is being considered for marine mammals (whales, dolphins, seals, otters), consult the appropriate regulatory authorities and marine mammal experts. There are no established methods or data for hazing whales and dolphins. Attempts to haze seals from rookery or haul out areas may cause panic and a stampede, resulting in injuries or death, especially for pups. Pup mortalities can also result from abandonment. Deterrence methods for sea otters have

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had limited success. Sea otters habituate rapidly to noise and human disturbance. The use of propane cannons, other firearms, seismic exploders, and killer whale sounds have had limited success for deterring sea otters. Hazing otters with boats and aircraft has not been successful. There are no data indicating that visual devices are effective for deterring otters.

Table 5-1: Deterrence Equipment

5 Capture and Transport of Oiled Wildlife

Objective

The sooner oiled wildlife can be captured and treated the better their chance for survival. It is helpful to plot the location and number of oiled wildlife on maps or charts. Reconnaissance surveys for oiled wildlife may occur in offshore and nearshore waters, shorelines in oiled areas, in addition to areas that could potentially be oiled. Reconnaissance surveys may also be conducted at nearby feeding and resting areas to detect oiled wildlife that may have moved away from oiled areas. The objectives of a reconnaissance survey are to 1) evaluate the number, species and locations of wildlife potentially affected by an oil spill and 2) determine the feasibility to rescue oiled wildlife.

Rosprirodnadzor, Rosselhoznadzor, and the Federal Service for Veterinary and Phytosanitary Oversight can provide information regarding special site considerations (for example, seal or seabird rookeries, cultural or historic resources) and oiled species prioritization for capture.

Safety Considerations

Following an oil spill, conduct oiled wildlife reconnaissance surveys as soon as it is established that it is safe to do so. Hazardous weather conditions, unsafe footing, icy conditions, or dangerous seas may prevent or delay wildlife rescue attempts. Captured wildlife may be aggressive and should be regarded as potentially dangerous. Only trained individuals should undertake the capture and treatment of oiled wildlife. The capture of raptors and marine mammals should be only carried out by individuals trained and experienced in handling these species.

The ENL response organization safety plan should be reviewed by all members of the wildlife capture team. The safety plan includes required personal protective equipment, communication instructions, and plans for on-land and on-water emergencies, as appropriate. Safety plan shall also cover the site-specific hazards associated with weather conditions, terrain and species.

Capture

A capture team consists of two or more people wearing appropriate protective clothing. The capture site is evaluated and strategies are developed to suit the terrain and species being pursued. Capture strategies are discussed prior to entering the capture area. Have an alternate strategy and appropriate equipment available if the initial strategy is unsuccessful. Safety of individuals for the objective of capturing wildlife shall never be compromised.

A variety of capture methods can be used to maximize success. Teamwork is essential to minimize additional stress to wildlife. Capturing oiled wildlife should be done quickly with minimal pursuit and noise. Familiarization with the natural history and behavior of the target species will contribute greatly to capture success.

Accurate records keeping helps wildlife rescue operations in case of spills. Recorded documents allows identifying the number of animals and species exposed to oil impact and identify the sites with the largest number of oiled wildlife.

Capture equipment and supplies need to be regularly maintained and restocked as necessary to ensure availability, cleanliness/decontamination, and good working condition when an oil spill occurs. Have capture equipment readily accessible and easily mobilized.

Birds and Terrestrial Mammals

Small mammals such as otter, sable, mink, and ermine may be captured using hoop (dip) nets and throw nets.

Capture equipment for birds include dip nets, throw nets, seine nets, net guns, and mist nets. Foot traps have been used for small shorebirds. The use of spotlights at night is sometimes used to aid the capture of birds that are especially difficult to approach during the day. Mist nets attached above water to floating poles in addition to submerged mist or gill nets have been used to capture waterfowl.

Seals

Seals are more likely to detect and avoid oil slicks, therefore they are less susceptible to oiling than birds. Whether or not to capture and rehabilitate an oiled seal will depend on the degree of oiling, the age of the seal, and whether the seal is likely to die if not treated.

Young seal pups that become oiled are more likely to need capture and rehabilitation than adults. Young pups do not have a thick blubber layer and are susceptible to hypothermia if they become oiled. Fur seals also do not have thick blubber and depend on their thick fur for warmth. Oil can disrupt the water repellency of the fur resulting in thermoregulatory problems for oiled fur seals.

Capturing and handling seals is dangerous. Only trained and experienced personnel should attempt to capture oiled seals. Consult with Rosprirodnadzor Rosselhoznadzor, and the Federal Service for Veterinary and Phytosanitary Oversight, and other appropriate agencies if it is necessary to attempt to capture an oiled seal. Seals often gather in large rookeries. Disturbance to the rookery may be more detrimental than allowing an individual seal to remain oiled. For example, seal pups may be crushed to death if adults feel threatened and rush to the water. Separation of mothers and pups may also occur, further endangering the pups.

Dead Wildlife

In addition to assessing the impact of an oil spill, dead oiled wildlife are also collected to prevent other wildlife from becoming oiled as they attempt to eat the carcasses. Place carcasses of oiled wildlife in individual bags or wrap in aluminum foil.

Handling Oiled Wildlife

Handle wildlife in a manner that minimizes stress and ensures that the animal cannot injure itself, or the handler. Wear protective goggles and gloves. Carefully handle animals using sheets or towels. Animals should not be handled with bare hands. Gloves, sheets, and towels prevent skin contact with oil and provide protection from pecks, bites and scratches. Heavy gloves are not recommended because they reduce dexterity resulting in possible injury to birds

Appropriate handling techniques are based on the size and species of the animal.

The following is a list of recommendations for handling animals:

- ◆ Use a towel or sheet when handling an aggressive animal or an animal with a nasal discharge.
- ◆ Approach an animal from behind or the side.
- ◆ Control a bird's head by grasping the beak where it joins the head or by cupping the skull with the hand if towels and blankets are unavailable.
- ◆ Fold the wings into the bird's body and pick the bird up while controlling the head.
- ◆ Hold animals at waist level and away from the face and other people to avoid injury from pecking and biting.
- ◆ Request assistance, if required.
- ◆ Do not mechanically restrict a bird from opening its beak or bill by using tape, a rubber band, etc.
- ◆ Keep domestic animals away from the capture location and from captured wildlife.

Transport

Containers

Place captured wildlife in containers. Keep captured wildlife in a warm, dry, well ventilated, quiet area prior to transport. Use containers that are well-ventilated with solid walls such as modified cardboard boxes, plastic carriers, or shipping kennels. Burlap bags and wire cages are not recommended as

they may cause eye injuries and feather damage respectively. Place paper or cloth towels on the bottom of containers to absorb oil. Close containers properly so that they cannot open during transport. Label containers with species, date, time, location of capture, degree of oiling, any injury, and name of capture person.

The following is a list of recommendations for containers:

- ◆ Do not leave containers with wildlife unattended.
- ◆ Place containers in a safe and quiet location (away from noise and activity, above high tide-line).
- ◆ Minimize temperature extremes such as hot sun.
- ◆ Keep containers away from oil vapors.

Place one bird or mammal per container with sufficient space inside for comfort. If necessary, some gentle, gregarious bird species, such as murrelets or ducks, may be placed 2 or 3 to an appropriately sized container. Place only strong, stable birds that are equally affected by oil together in a container. Check containers 5-10 minutes after placing birds together to ensure compatibility. The following lists of compatible and incompatible bird species may be used as a general guideline.

◆ **Compatible Species:**

- Guillemots
- Auklets
- Murrelets
- Ducks & Mergansers
- Geese
- Terns
- Sandpipers
- Horned Grebes

◆ **Incompatible Species:**

- Albatrosses
- Shearwaters
- Fulmars
- Petrels
- Loons
- Scoters
- Cormorants

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- Gulls
- Jaegers
- Skuas
- Eagles
- Other raptors
- Herons
- Red-necked grebes

Wild Life Response Equipment

ENL has three types of kits – **6 hazing kits, 6 capture kits, 6 stabilization kits:**

3 hazing kits, **3** capture kits, **3** stabilization kits are located at **DeKastri** OSR warehouse

2 hazing kits, **2** capture kits, **2** stabilization kits are located at **OPF** OSR warehouse

1 hazing kits, **1** capture kits, **1** stabilization kits are located at **Odopty** OSR warehouse

The kits can be quickly mobilized to a spill site.

6 Stabilization, Rehabilitation, and Husbandry

Introduction

If an oiled animal is hypothermic, dehydrated, sick or injured, it may not survive the stress of being washed. Stabilization increases an oiled animal's chances for successful rehabilitation and release. Stabilization is the initial treatment an oiled animal receives such as warming and hydration prior to washing. Husbandry is the housing, hygiene and nutritional aspects of maintaining wildlife in captivity. The goal in rehabilitating oiled wildlife is the release of healthy animals back into their natural environment.

Stabilization

Evaluation of Oiled Wildlife

Once oiled animals are brought to a treatment area, medical evaluations are conducted in order to determine necessary treatment. All personnel handling wildlife should wear appropriate personal protective equipment to protect them from oil exposure and potential injury. Minimize stress to wildlife by speaking in low voices, working in teams, and rapidly completing the examination.

Stabilization

The first actions are to minimize health and safety risks. Review the Material Safety Data Sheet (MSDS) for the spilled oil prior to handling an oiled animal. Wear protective goggles or safety glasses, protective clothing, and masks when handling oiled wildlife. Isolate diseased animals. Understand the physical dangers associated with the handling wildlife. Treat and report all human injuries and illnesses.

It is also important to minimize stress to wildlife in order to increase their chances for recovery.

Cleaning and Drying

Once oiled wildlife are stabilized, they can be cleaned. Animals are monitored for signs of stress or instability during washing, rinsing, and drying.

After waterfowl are washed and determined to be dry or waterproofed, they are provided access to fresh water pools for swimming. Birds are monitored for chilling and incomplete waterproofing. A waterproofed seabird can stay in a pool, with no haul-out, for 24 hours and exhibit normal behavior, body temperature, and buoyancy

Rehabilitation

Housing

Appropriate housing can reduce or prevent problems such as pressure sores, feather contamination, foot lesions, and infectious disease transmission. The following are guidelines for good housing design and maintenance to maximize the chances of survival and release of healthy wildlife:

- ◆ Construct the cages according to the needs of the affected species;
- ◆ Allow appropriate space based on species need;
- ◆ Provide padding as necessary;
- ◆ Avoid cages with wire walls or floors as these can cause feather damage and beak trauma
- ◆ Avoid solid floors for species susceptible to keel sores or fecal contamination of feathers;
- ◆ Provide perches as needed;
- ◆ Provide for an adequate thermal gradient (combination of ambient air temperature and radiant heat source) appropriate for birds to maintain normal body temperature;
- ◆ Avoid placing washed (clean) animals in housing that previously held oiled animals to minimize the risk of re-oiling clean animals;
- ◆ Maintain high water quality through water exchange or overflow to eliminate waterproofing problems by re-contaminating feathers; and
- ◆ Provide haul-outs as needed.

Disinfecting

Prevention of disease transmission relies heavily on effective disinfecting and sterilization of all inert objects. In addition, consistency in technique and frequency of cleaning procedures will help ensure that optimum cleanliness is maintained throughout the response effort.

Feeding Guidelines

- ◆ For cleaned wildlife, provide solid food, appropriate for the species, in dishes or containers in a manner that prevents re-soiling of feathers or fur.
- ◆ Gavage-feed birds a high-calorie and digestible food slurry prior to washing.
- ◆ Feed wildlife within pools non-oily food.
- ◆ Keep feeding records for individual wildlife.

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- ◆ Personnel should wash their hands prior to and after handling food.
- ◆ Thoroughly clean and disinfect food preparation utensils and containers after each use.
- ◆ Store all food properly (in freezers, refrigerators, air-tight containers) to prevent contamination and spoiling.
- ◆ Store wildlife and human food separately.
- ◆ Monitor temperatures of refrigerators, freezers, thawing tubs and food handling areas to ensure food quality.
- ◆ Control rodents and insects.

Ongoing Health Assessment

After washing and depending on overall animal health, assessment must continue to determine whether additional medical and rehabilitation intervention is necessary prior to an eventual release assessment. These procedures are: 1) assessment of blood values (such as packed cell volume, Total Solids), 2) assessment of nutritive state (through successive weighing and assessment of flesh tone), and 3) behavioral observations (to ensure appropriate feeding activities, social interactions and other behaviors).

Wildlife Treatment Facility Needs

A typical wildlife rehabilitation effort has the following designated areas or facilities for:

- ◆ Animal admission and holding area;
- ◆ Facilities for washing and rinsing animals;
- ◆ Facilities for drying animals;
- ◆ Animal hospital and isolation area;
- ◆ Food preparation area;
- ◆ Necropsy facilities and morgue;
- ◆ Pools;
- ◆ Storage area;
- ◆ De-contamination area;
- ◆ Administration area (sign in, volunteer orientation, training, record keeping);
- ◆ Rest areas and bathrooms for workers;
- ◆ Sufficient space for human food storage, preparation, and dining;

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- ◆ Security facilities (i.e., fencing, etc.) providing controlled access to the facility, key areas within the facility, and any associated outdoor areas; and
- ◆ Communications equipment including radios, phones, faxes, and computers with internet access.

Waste handling

Oiled wildlife response operations generate various types of waste that must be stored, transported, decontaminated, and disposed of. Wastes associated with oiled wildlife response operations include: oily wastewater and gray water (rinse water, pool overflow), as well as solid, hazardous, biological and medical wastes. Wastes must be disposed of in accordance to applicable laws and regulations. Consult with Department of Rospriridnadzor regarding disposal of carcasses. Permits and authorizations must be obtained from various local and regional executive agencies with waste management jurisdictions, including:

- ◆ Approval of temporary waste storage sites;
- ◆ Waste management and storage conditions; and
- ◆ Waste disposal methods

7 Release of Rehabilitated Wildlife

The goal for rehabilitating oiled wildlife is the release of healthy animals back into their natural environment. Release of rehabilitated wildlife requires planning in advance, especially if large numbers of birds are to be released.

Release Site Considerations

- ◆ No oil contamination present
- ◆ Same general geographic area of capture
- ◆ Available, natural, uncontaminated food sources
- ◆ Appropriate seasonal range for species
- ◆ Area not at risk of re-contamination from oil spill
- ◆ Minimal human disturbance
- ◆ Appropriate time of day for species
- ◆ Sufficient manpower
- ◆ Minimal logistics for traveling to site
- ◆ Public interest (media, local residents)
- ◆ Procedures for release
- ◆ Personnel Safety

Post-Release Monitoring

Post-release monitoring helps determine the long-term effectiveness of wildlife rehabilitation. Methods for post-release monitoring are: tag or band returns; color marking; and visual observation.

8 Record Keeping

Record keeping is an important part of a wildlife rehabilitation program. Records are essential for evaluating the effectiveness of treatments and whether the rehabilitation efforts are successful. Careful record-keeping helps wildlife rehabilitation organizations to learn from previous efforts in order to improve the care provided to wildlife. In addition, records are used to determine a spill's impact on wildlife

Appendix A: Red Book Bird Species

Table A-1: Rare and Protected Bird Species.

| Species | Red Book Status | Migration Periods | Sakhalin Island Locations | Khabarovski Krai Locations |
|---|--|------------------------|--|--|
| Marbled murrelet <i>Brachyramphus marmoratus</i> | Red Data Book of Russia Category 3- Rare | April-May Oct.-Dec. | Whole coast and interior Sakhalin Bays:Piltun ,Chayvo, Bays Rivers : Pogibi, Uanga, Askasai, Evai , Val | Tatar Strait De Kastri Tigil and Sakhalin Bays Chayachy Range Amur Liman Popov Island, Uspenye Cove, Tikhaya Cove, Nevelsky Cove, Chayachya Cove, Tabo Cove, and Mosolov Cove |
| Kittlits's murrelet <i>Brachyramphus brevirostris</i> | Red Data Book of Russia Category 4 -Rare | Migratory species | Piltun Bay Chayvo Bay | |
| Japanese murrelet <i>Synthliboramphus wumizusume</i> | Red Data Book of Russia and IUCN Category 1- endangered | Migratory species | Southern Sakhalin | |
| Aleutian tern (Kamchatka tern) <i>Sterna aleutica</i> | Red Data Book of Russia Category 3 -Rare Sakhalin Oblast Red Book, | May Sept.-Oct. | Northeast lagoons Bays: Aniva, Dagi, Viakhtu , Piltun, (Lebendinyi Cape) Melkovodnyi , Chayvo, Nyisky, Nabil, Wrangel Island Rivers : Tyk Pogibi, Uanga, Evai, Bolshoy Goromai Lake Nevskoye N. Soniga Island, north coast of Kleye Strait Kolembanch Cape near Peschanoe and Srednee Lakes | Lazarev Stchastye Bay Popov Island, Uspenye Cove, Tikhaya Cove, Nevelsky Cove, Chayachya Cove, Tabo Cove, and Mosolov Cove |
| Ruff <i>Philomachus pugnax</i> | Sakhalin Oblast Red Book, | | Rivers: Evai, Big and Small Goromay Bays: Chayvo, Lunskii, Nyisky , Nabil | |
| Streaked Shearwater <i>Callonectris leucomelas</i> | Red Data Book of Russia Category 3-Uncommon Sakhalin Oblast Red Book, | Migratory species | Chayvo and Piltun Bays From Viakhtu Bay to Teng River Valley | |
| Short-tailed Albatross (Steller's albatross) <i>Diomedea albatrus</i> | Red Data Book of IUCN and Russia Category 1-threat of disappearance | Migratory species | Chayvo Bay Southern coast of Sakhalin | |
| Red-necked | Sakhalin Oblast Red Book, | | Near Wrangel Island | Nevelsky Strait, |

| Species | Red Book Status | Migration Periods | Sakhalin Island Locations | Khabarovski Krai Locations |
|---|---|-------------------------|---|--|
| phalarope <i>Phalaropus lobatus</i> | | | Bays: Chayvo, Nyisky, Nabil, Piltun Northeast coast of Sakhalin | Chikachev Bay, Tartar Strait |
| Yellow-billed loon (white-billed loon) <i>Gavia adamsii</i> | Red Data Book of Russia Category 3-Rare Sakhalin Oblast Red Book, | April-May Sept.-Nov. | northeast coast Bays: Chayvo, Nyisky, Nabil, Piltun From Viakhtu Bay to Teng River Valley | |
| Glaucous-winged gull <i>Larus glaucescens</i> | Red Data Book of Russia Category 3-Rare Sakhalin Oblast Red Book, | | Chayvo Bay, Piltun Bay Nyisky Bay, Nabil Bay | Nevelsky Strait, Chikachev Bay, Tartar Strait Popov Island, Uspenye Cove, Tikhaya Cove, Nevelsky Cove, Chayachya Cove, Tabo Cove, and Mosolov Cove |
| Ross's gull <i>Rodostethia rosea</i> | Red Data Book of Russia Category 4 –little studied Sakhalin Oblast Red Book, | May | Chayvo Bay, Piltun Bay Tuylene Island | Popov Island, Uspenye Cove, Tikhaya Cove, Nevelsky Cove, Chayachya Cove, Tabo Cove, and Mosolov Cove |
| Ivory gull <i>Pagophila eburnea</i> | Red Data Book of Russia Category 3 -Rare | | Tuylene Island | Popov Island, Uspenye Cove, Tikhaya Cove, Nevelsky Cove, Chayachya Cove, Tabo Cove, and Mosolov Cove |
| Black-billed capercaillie <i>Tetrao parvirostris</i> | Sakhalin Oblast Red Book, Category 3 | | Chayvo Bay Rivers : Val, Pogibi, Uanga, Vagis, Askasai, Evai, Nysh | Tabo Bay Chikhacheva Bay Botcha River Cape Krestovozdvizhensky De Kastri Basaltovy Island Tumnin |
| Spotted greenshank <i>Tringa guttifer</i> | Red Data Book of Russia and IUCN Category 1- Endangered Sakhalin Oblast Red Book, | May-June July-Sept. | NE Sakhalin lagoons Bays: Nabilski, Nyiskii, Piltun, Dagi, Chayvo, Viakhtu, Lunskii, Aniva Rivers : Tyk, Big and Small Goromay Val, Avay, Evai, Askasay, Uanga From Viakhtu Bay to Teng River Valley Plesovyi and Dreitu Brooks Melkovodnyi Bay, Chirkpa Cape Nevskoye Lake Tyuleni Island Terpeniya Cape | Kamenniy Cape Negir' River mouth Schast'ya Bay Langr Island Amur Estuary |
| Long-toed Stint (long-toed sandpiper) <i>Calidris subminuta</i> | Sakhalin Oblast Red Book, Category 3-Rare | April-May | Chayvo and Viakhtu Bays, Avay, Evai River, Dreytu Brook, Potanka Lake, Lyugi, Uangi Cape to Pogibi Cape, Piltun Bay Northeast coast of Sakhalin | |

| Species | Red Book Status | Migration Periods | Sakhalin Island Locations | Khabarovsk Krai Locations |
|--|---|-------------------------|---|---|
| Green sandpiper <i>Tringa ochropus</i> | Sakhalin Oblast Red Book, Category 3 -Rare | April-May | NE coast, Chayvo Bay, Val and Askasai, Rivers Nyiskii Bay | |
| Latham's Snipe <i>Gallinago hardwickii</i> | Red Data Book of Russia Category 3 | April-May Aug.-Sept. | River valleys, Southern and Central Sakhalin Lunskii Bay | |
| Australian curlew <i>Numenius madagascariensis</i> | Red Data Book of Russia Category 2 -decreasing population | April-May July-Sept. | Chayvo Bay, Piltun Bay | |
| Siberian spruce grouse <i>Falcipecten falcipennis</i> | Red Data Book of Russia Category 2, decreasing population | Does not migrate | Northern and central Sakhalin interior Val, Askasai, Evai Rivers | Zatyazhnoy Mountain pass De Kastri Tabo Bay Botcha River Cape Krestovozdvizhensky Tumnin |
| Swan goose <i>Cygnopsis cygnoides</i> | Red Data Book of Russia and IUCN Category 1-Endangered Sakhalin Oblast Red Book, Khabarovsk Krai Red Book Category 1 Endangered | April-May Sept.-Oct. | NE & NW Sakhalin coasts, Rivers : Tyk Viakhtu, Piltun, Lakh, Chyornaya, Chingay, Pogibi, Piltun, Uanga, Vagis, Val, Tym, and Askasay From Viakhtu Bay to Teng River Valley Lakes:Vysokoye and Nizkoye Bays: Tyk, Aniva, Piltun, Nabilsky, Lunskii Tyuleniy Island Shmidt Peninsula | Tartar Strait Amur lower stream area Tabo Bay Kizi Lake Udyl' Lake Schast'ya Bay Langr Island |
| Lesser White Fronted Goose <i>Anser erythropus</i> | Red Data Book of Russia Category 2, decreasing population Khabarovsk Krai Red Book Category 3-Rare | April-May Sept.-Oct. | NE Sakhalin lagoons Bays: Chayvo, Piltun, Nyiskii Nabil, Lunskii Nevskoye Lake Tyuleniy Island Aniva Bay | Udyl' Lake |
| Whooper swan <i>Cygnus cygnus</i> | Red Book of Russian Far East Sakhalin Oblast Red Book, Khabarovsk Krai Red Book Category 3-Rare | March-May Sept.-Nov. | NE Sakhalin lagoons Ossoy River, Maly Goromai River Nevskoye Lake Bays: Baikal, Chayvo, Lunskii, Nyisky, Nabil, Piltun, Salmon Shmidt Peninsula Khimimbrinch Cape Ngayan Cape From Viakhtu Bay to Teng River Valley | |
| Bewick's swan <i>Cygnus bewickii</i> | Red Data Book of Russia Category 5 –rehabilitating species Sakhalin Oblast Red Book, Khabarovsk Krai Red Book Category 3-Rare | April-May Oct.-Nov. | NE bays, Chayvo, Bays: Piltun, Aniva Nyisky, Nabil From Viakhtu Bay to Teng River Valley Lebedinyi Cape Nevskoye Lake | Tumnin |

| Species | Red Book Status | Migration Periods | Sakhalin Island Locations | Khabarovski Krai Locations |
|---|--|-------------------------|---|---|
| Mandarin duck <i>Aix galericulata</i> | Red Data Book of Russia Category 3 Khabarovsk Krai Red Book Category 3-Rare | April-May Sept.-Oct. | River basins Viakhtu and Piltun River watersheds | Rivers: Yay, Duy, Kadi Botcha River Cape Krestovozdvizhensky Tumnin |
| Temminck's cormorant <i>Phalacrocorax filamentosus</i> | Sakhalin Oblast Red Book, | April-May Sept.-Nov | Cape Terpeniya, Aniva Bay | Tabo Bay De Kastri Orlov Cape Davydov Cape |
| Hawk owl <i>Surnia ulula</i> | Sakhalin Oblast Red Book, Category 3 -Rare | Does not migrate | Rivers: Uanga, Vyl, Avay, Botasino Chayvo Bay | Tabo Bay |
| Eagle owl <i>Bubo bubo</i> | Red Data Book of Russia Category 2 decreasing in number | Does not migrate | Irregular occurrence over Sakhalin Island, Chayvo Bay, Kamyshovy range of west Sakhalin Mountains | Occurs in Khabarovski Krai |
| Sakhalin dunlin (Sakhalin black-bellied sandpiper) <i>Calidris alpina actites</i> | Red Data Book of Russia Category 1- endangered Sakhalin Oblast Red Book, | May-July | NE coast Bays: Nabilsky Nabil, Dagi, Chayvo, Kolembanch Cape to Pilitu Lake Nyisky Bay, Piltun Bay (Lebendinyi and Ostrovnoi Capes) Melkovodnyi Bay Avay Delta, Evai and Askasay River estuaries Soniga Island, Kleye Strait Wrangel Islands | De Kastri |
| Spoon-billed sandpiper <i>Eurynorhynchus pygmeus</i> | Red Data Book of Russia and IUCN Category 3 - rare Sakhalin Oblast Red Book, | May-June June-Sept. | NE Sakhalin lagoons, Bays:Terpenia, Chayvo, Piltun, Aniva , Nabil, Nyisky Lunskiy From Viakhtu Bay to Teng River Valley Nevskoye Lake | Amur estuary Tumnin |
| White-tailed sea eagle <i>Haliaeetus albicilla</i> | Red Data Book of Russia and IUCN Category 3 -Rare Sakhalin Oblast Red Book, | Feb.-April Oct.-Nov. | Sakhalin coasts, Bays: Chayvo, Piltin (Zelenyi Cape), Nyisky, Nabil From Viakhtu Bay to Teng River Valley Rivers : Tik, Lakh, Uanga, Avay, Evai, Khambuzin | Bays: Tabo, Tikhaya , Laperusa, Sevemaya De Kastri Lagoon Somon Kamenniy Cape Yushny Cape Basaltovy Island Botcha River Cape Krestovozdvizhensky Tumnin |
| Steller's sea eagle <i>Haliaeetus pelagicus</i> | Red Data Book of Russia and IUCN Category 3 -Rare Sakhalin Oblast Red Book, | Feb.-March Nov.-Dec. | NE coast Bays: Chayvo, Lunskii, Piltun, Nyisky, Nabilsky, Dagi, Aniva Rivers : Evai, Avay, Vagikan, Lakh, Pogibi, Uanga, Val, Vagis , Aksakay, Big and Small Goromay, Ossoy, Piltun, Kadalyn'ya, Paromai , Tym Pogibi Cape to Tyk Bay Nevskoye Lake | Kamenniy Cape Syurkum Cape Davydov Cape Yuzhny Cape De Kastri Bays: Tabo, Laperusa, Frederix, Oprichnik, Nevelski, Sevemaya, |

| Species | Red Book Status | Migration Periods | Sakhalin Island Locations | Khabarovski Krai Locations |
|--|--|---------------------------|---|--|
| | | | Tyuleny Island Kleye Strait near Soniga Island Shmidta Peninsula | Tikhaya, Mosolov, Chikhacheva Rivers: Duy, My, Nigir, Psy, Tigil, Tymi Kizi Lake Udyl' Lake Schast'ya Bay Lagoon Somon Tumnin Popov Island, Uspenye Cove, Tikhaya Cove, Nevelsky Cove, Chayachya Cove, |
| Schrenck's little bittern <i>Ixobrychus</i> <i>eurhythmus</i> | Sakhalin Oblast Red Book, | | Chayvo Bay From Viakhtu Bay to Teng River Valley | Kamenniy Cape |
| Fish hawk (Osprey) <i>Pandion haliaetus</i> | Red Data Book of Russia Category 3-Rare Sakhalin Oblast Red Book, | March-April Sept.-Oct. | NE coast, Bays: Chayvo and Terpenia, Lunskii, Nyisky, Nabil From Viakhtu Bay to Teng River Valley | De Kastri Nigir River Lagoon Somon Botcha River Cape Krestovozdvizhensky Tumnin |
| Hobby Falcon <i>Falco subbuteo</i> | Red Data Book of Russia | May | Bays: Chayvo, Lunskii, Nabil, Nyisky, Piltun | Tabo Bay De Kastri |
| Peregrine falcon <i>Falco peregrinus</i> | Red Data Book of Russia Category 2 – decreasing population | April-May Sept.-Oct. | Bays: Chayvo, Piltun, , Lunskii, Nabil, Nyisky, Shmidt Peninsula Cape Aniva Cape Kuznetsov Moneron Island | Kamenniy Cape Botcha River Cape Krestovozdvizhensky |
| Reed bunting <i>Emberiza</i> <i>schoeniclus</i> | Sakhalin Oblast Red Book, Category 3-Rare | | Pogibi Cape | |

Appendix B: Areas of Special Value

Table B-1: Legislated Areas of Special Value within Zone of Potential Oil Spill Influence – (Such Areas fall within the Terms of Reference of the Sakhalin Authorities.)

| Name of Site | Geographic Area | Resources at Risk | Vulnerability to Possible Oil Spills from Sakhalin-1 Facilities |
|--------------------------------------|--|---|--|
| Chayachy Island <i>zoological</i> | On Chayachy Island in Nabil Bay | Location of Sakhalin Oblast's largest combined colony of Aleutian and river (Kamchatka) terns, which are registered in the Russian Federation Red Book, and of common terns. Annually 250-300 Aleutian terns and up to 1500 pairs of common terns nest on the island. The island serves as a habitat of many bird species (wild ducks, sandpipers, etc.) as a haven during seasonal migrations. | Low - site is located within Nabil Bay and more than 100 km south of Orlan and pipeline |
| Lunsky Bay <i>multipurpose</i> | The water area of Lunsky Bay and adjoining shoreline. Boundaries: <ul style="list-style-type: none"> • northern – 51 23 43 N 143 23 56 E, • southern – 51 08 42 N 143 32 26 E, • western – 51 11 23 N 143 20 57E, • eastern – 51 09 13 N 143 33 00 E, center – 51 15 51 N 143 26 50 E. • Occupied area – 22,110 ha | Certain bird species registered in the Russian Federation Red Book nest on the territory of the natural landmark: Steller sea eagle, white-tailed sea eagle, Siberian spruce grouse, osprey, Aleutian tern, long-billed murrelet. During their migration, a large number of water fowl stop here. Commonly encountered are: peregrine falcon, spoon-billed sandpiper, curlew sandpiper, and others. | Low - site is located more than 100 km south of Orlan and pipeline |
| Lyarvo Island <i>multipurpose</i> | On Lyarvo Island. <ul style="list-style-type: none"> • Center - 52 07 55 N 143 06 51 E. • Occupied area – 100 ha | A flat island with a large amount of freshwater and brackish lakes, which provide good protective, nesting, and feeding areas for the birds that nest here. This is the location of nesting areas for the Aleutian and river terns, which are registered in the Russian Federation Red Book. | Low to Moderate - site is located within Nyisky Bay and approximately 50 km south of Orlan and pipeline |

Table B-2: Legislated Areas of Special Value within the General Area of ENL Facilities on Sakhalin Island

| Name of Site | Reference to Regulatory Act | Zone Description (Geographic) | Resources at Risk | Ecologically Sensitive Season or Time of Year | Organization Responsible for Managing given Resources |
|---|--|---|--|---|--|
| Wrangel Island <i>Zoological</i> | Sakhalin Oblast Executive Committee Decision № 186 dated May 19, 1983. | On islands in the northern part of Piitun Bay. Center – 53 06 33 N. Occupied area – 85 ha. | Location of the largest nesting areas for many species of migratory birds registered in the Russian Federation Red Book (colonies of Aleutian and river terns, Sakhalin dunlin). This where mallards, garrots, teals and others hatch. During their seasonal migrations large numbers of various migratory bird species stop over on these islands to rest and feed: swans, ducks, spoon-billed sandpiper, and others. | Year-round. | Sakhalin Oblast Department of Natural Resource Management and Environmental Protection |
| Chayachi Island. <i>Zoological</i> | Sakhalin Oblast Executive Committee decision № 61 dated February 25, 1986. | On Chayachi Island in Nabil Bay. Center – 51 40 32 N 143 19 31 E. Occupied area – 118 ha | Location of Sakhalin Oblast's largest combined colony of Aleutian and river (Kamchatka) terns, which are registered in the Russian Federation Red Book, and of common terns. Annually 250-300 Aleutian terns and up to 1500 pairs of common terns nest on the island. The island serves many bird species (wild ducks, sandpipers, etc.) as a haven during seasonal migrations. | Year-round. | Sakhalin Oblast Department of Natural Resource Management and Environmental Protection |
| Lunsk Bay <i>Multi-purpose</i> | Sakhalin Oblast Governor's Decree № 412 dated September 8, 1997. Sakhalin Oblast Administration Resolution № 86-pa dated July 25, 2002. | The water area of Lunsk Bay and adjoining shoreline. Boundaries: Northern – 51 23 43 N 143 23 56 E, Southern – 51 08 42 N 143 32 26 E, Western – 51 11 23 N 143 20 57E, Eastern – 51 09 13 N 143 33 00 E, Center – 51 15 51 N 143 26 50 E. Occupied area – 22,110 ha | Certain species registered in the Russian Federation Red Book nest on the territory of the natural landmark: Steller sea eagle, white-tailed sea eagle, Siberian spruce grouse, osprey, Aleutian tern, long-billed murrelet. During their migration, a large number of water fowl stop here. Commonly encountered are: peregrine falcon, spoon-billed sandpiper, curlew sandpiper, and others. | Year-round. | Sakhalin Oblast Department of Natural Resource Management and Environmental Protection |
| Lyarvo Island <i>Multi-purpose</i> | Sakhalin Oblast Executive Committee decision dated № 186 dated May 19, 1983. Sakhalin Oblast Governor's Decree № 53 dated February 2, 1996. | On Lyarvo Island. Center – 52 07 55 N 143 06 51 E. Occupied area – 100 ha | A flat island with a large amount of freshwater and brackish lakes, which provide good protective, nesting, and feeding areas for the birds that nest here. This is the location of nesting areas for the Aleutian and river terns, which are registered in the Russian Federation Red Book. | Year-round. | Sakhalin Oblast Department of Natural Resource Management and Environmental Protection |
| Vostochny State Regional Multi-Purpose Nature Reserve | Order No. 245 of the Governor of Sakhalin Oblast of July 7, 1999 "Establishing the Vostochny State Regional Multi-Purpose Nature Reserve in the Smirnykh District". Order No. 111-pa of the Sakhalin Oblast Administration of June 20, 2005 "Concerning the Development and Siting of Protected Natural Areas of Sakhalin Oblast to the Year 2010" At this time Order No. 245 of July 7, 1999 has been rescinded by decision of a court. | Smirnykh District within the following boundaries: Southern: water divide of the Kirkyini and Yagodnaya Rivers - Mount Kerosinnaya - water divide of the headwaters of the Ozernaya and Bora Rivers - altitude of 516 meters - water divide of the rivers of the Cape Langeri and Vengeri River watersheds - altitude of 892 meters - Mount Vodorazdelnaya; Western: Nabil Range with the most distinct peaks - Mount Vodorazdelnaya, Mount Gromova, Mount Guran, Mount Granichnaya; Northern: water divide of the watersheds of the Pursh-Pursh and Nampi Rivers with characteristic altitudes of 1193, 1041, 958, and 724 meters, Mount Nivkhsкая, Mount Ploskaya, Beregovoy River; Eastern: sea waters 1 km wide along a section of the coast of the Sea of Okhotsk bounded by the mouth of the Beregovoy river and the water divide of the Kirkyini and Kerosinnaya Rivers. 1.2. The Vostochny Reserve is located on federal public forest land and contains the following blocks of the Pogranichny Forest Section of the Pervomaysky Forestry Establishment: 102 - 110, 114 - 177, 180 - 185, 191 (according to a 1993 forest survey). | In accordance with the specific objectives of protecting the environment, preserving biodiversity, and maintaining the ecological balance of Sakhalin Oblast as defined by the Sakhalin Oblast Environmental Protection Committee and the Sakhalin Forests Administration, the Vostochny Reserve is a multi-purpose nature reserve and was established for the purpose of preserving and restoring natural complexes (natural landscapes) and unique ecosystems in the watersheds of the Pursh-Pursh and Vengeri Rivers. | Year-round. | Sakhalin Oblast Game Conservation, Monitoring, and Regulation Administration |

| Name of Site | Reference to Regulatory Act | Zone Description (Geographic) | Resources at Risk | Ecologically Sensitive Season or Time of Year | Organization Responsible for Managing given Resources |
|---|---|---|--|--|--|
| Tundrovyy Regional State Biological Reserve | Created by decision of Sakhalin Oblast Executive Committee № 290 dated September 9, 1987. Reserve Statute approved by Sakhalin Oblast Administration Resolution № 124-pa dated August 18, 2004. | <p>Located in the Okha District on a 189,895 ha site.</p> <p>Boundaries:</p> <p>Northern – from the Tengii River estuary (Okha District) along the 1st group timberline on the left (upstream) bank to the mouth of the left confluent of the Srednyaya Tengii River, and continuing along the timberline of the first group on the left (upstream) of the Srednyaya Tengii River) bank to the junction of districts 152-153-160-161 of the Okha Forestry Service's Northern Forest District, continuing on along the northern boundary of districts 161, 162, 163, 164 to the administrative boundary of the Okha District;</p> <p>Eastern – southward along the boundary of the Okha District to the roadway passing along the existing Nogliki-Komsomolsk-on-Amur oil and gas pipeline;</p> <p>Southern and Southeastern – from the point of intersection of the Okha District administrative boundary and the roadway passing along the existing Nogliki-Komsomolsk-on-Amur oil and gas pipeline, passing through districts 352, 351, 368, 367, 366, 348, 347, 340, 339, 327, and 326 of the Okha Forestry Service's Northern Forest District, to the intersection with the timber line of the first group along the existing Okha-Komsomolsk-on-Amur oil and gas pipeline, continuing on along the timber line of the first group along the existing</p> | <p>Created with the objective of maintaining the integrity of natural communities; preserving the nesting, mass gathering, and migration stopover areas of water fowl and other migratory birds; preserving and reproducing rare and endangered animal species registered in the RF and Sakhalin Oblast Red Books and their habitats.</p> <p>On the reserve territory there are 37 species of mammals and birds (excluding passerine) that are registered in the RF and Sakhalin Oblast Red Books: wolverine, Sakhalin musk deer, white-billed loon, variegated-billed petrel, lesser white-fronted goose, swan goose, whooper swan, Bewick swan, teal, osprey, golden eagle, white-tailed sea eagle, Steller sea eagle, goshawk, peregrine falcon, Siberian spruce grouse, wood grouse, marsh rail, green sandpiper, spotted greenshank, northern phalarope, ruff, spoon-billed Sandpiper, long-toed stint, curlew sandpiper, Sakhalin dunlin, sharp-tailed sandpiper, broad-billed sandpiper, solitary snipe, little curlew, Far-Eastern curlew, snowy owl, eagle owl, pygmy owl, hawk owl, Siberian gray owl.</p> | Year-round | Sakhalin Oblast Game Wildlife Conservation, Management, and Regulatory Authority |
| | | <p>Okha-Komsomolsk-on-Amur oil and gas pipeline, continuing along the timber line of the first group along the existing oil and gas pipeline headed SW to the junction of districts 357-355-372 of the Okha Forestry Service's Northern Forest District, continuing southward along the boundary of districts 355-372 of the Okha Forestry Service's Northern Forest District to the intersection with the boundary of land owned by the Ministry of Defense, continuing on westward along the boundary of land owned by the Ministry of Defense to the seashore. The existing roadway mentioned in this paragraph is not part of the nature reserve;</p> <p>Western – from the boundary of land owned by the Ministry of Defense northward along the western shore of Nevelskoy Bay across Cape Uanga, Pogibi, excluding the territory of the Pogibi settlement in the Okha District, continuing on northward across capes Tunguski, Vagis, Nyidyte, and Noksi in the Amur basin to the timber line of the first group along the Tengii River on its left (upstream) bank.</p> | <p>There are also 44 more culturally, economically or scientifically valuable mammal and bird species: Arctic hare, flying squirrel, squirrel, chipmunk, muskrat, fox, raccoon dog, brown bear, common weasel, least weasel, American mink, sable, otter, reindeer, bean goose, mallard, common teal, killer whale, widgeon, pintail, garganey, dunbird, tufted duck, scaup, surf scoter, black scoter, harlequin duck, long-tailed duck, garrot, magpie diver, red-breasted merganser, white grouse, goosander, hazel grouse, rail, black-bellied plover, lesser golden plover, greenshank, redshank, gray-tailed tattler, black-bellied sandpiper, common snipe, black-tailed godwit, eastern turtle dove.</p> <p>On the reserve territory there are also two plant species that are registered in the Sakhalin Oblast Red Book – the tetraquetra water-lily and the small water-lily.</p> <p>The purposes of the reserve also include protecting the habitat and migration routes of valuable game animals and birds, and conserving irreplaceable, aesthetically valuable wooded and tundra landscapes.</p> | | |
| Nogliki Regional State Biological Reserve | Created by Sakhalin Oblast Governor decree № 367 dated September 21, 1998. | <p>Located in Nogliki District on a 65,800 ha site.</p> <p>Boundaries:</p> <p>Western – from the watershed headwaters of Okhotnichi Creek and Medvezhi Creek of the Nysh River tributaries along the administrative boundaries of the Aleksandrovsk-Sakhalinski and Okha districts to the Dagi oil pipeline.</p> <p>Northern – from the pass along the watershed of the Karpan' and Evai rivers to the 37 km mark on the oil pipeline route</p> <p>Eastern – from the "37th kilometer" signal box on the oil pipeline, following the pipeline contour south to the Dagi River, continuing on along the watershed of the Dagi and Lesser Dagi rivers to Rozhnya Spring, crossing over to the Dagi Mountains to the northern boundary of district 310, continuing on along the northern boundaries of districts 310, 50, and 49, continuing on along the western boundaries of districts 48, 56, 66, 65, and 77.</p> <p>Southern – along the southern boundary of districts 76, 75, 74, and 73 to the administrative boundary of the Aleksandrovsk-Sakhalinski District.</p> | <p>Created with the objective of preserving the natural ecosystems in the area inhabited by indigenous peoples of the North, of protecting the Siberian spruce grouse population, which is registered in the RF Red Book, and of restoring the abundance of wild reindeer and other economically, scientifically, or culturally valuable species of plants and animals.</p> <p>On the reserve territory there are 37 species of mammals and birds (excluding passerine) that are registered in the RF and Sakhalin Oblast Red Books: wolverine, Sakhalin musk deer, reindeer, white-billed loon, variegated-billed petrel, lesser white-fronted goose, whooper swan, Bewick swan, teal, osprey, golden eagle, white-tailed sea eagle, Steller sea eagle, goshawk, peregrine falcon, Siberian spruce grouse, wood grouse, marsh rail, green sandpiper, spotted greenshank, northern phalarope, ruff, spoon-billed Sandpiper, long-toed stint, curlew sandpiper, Sakhalin dunlin, sharp-tailed sandpiper, broad-billed sandpiper, solitary snipe, little curlew, Far-Eastern curlew, snowy owl, eagle owl, pygmy owl, hawk owl, Siberian gray owl.</p> | Year-round | Sakhalin Oblast Game Wildlife Conservation, Management, and Regulatory Authority |

| Name of Site | Reference to Regulatory Act | Zone Description (Geographic) | Resources at Risk | Ecologically Sensitive Season or Time of Year | Organization Responsible for Managing given Resources |
|--------------|-----------------------------|-------------------------------|--|---|---|
| | | | <p>There are also 44 more culturally, economically or scientifically valuable mammal and bird species: Arctic hare, flying squirrel, squirrel, chipmunk, muskrat, fox, raccoon dog, brown bear, common weasel, least weasel, American mink, sable, otter, reindeer, bean goose, mallard, common teal, killer whale, widgeon, pintail, garganey, dunbird, tufted duck, scaup, surf scoter, black scoter, harlequin duck, long-tailed duck, garrot, magpie diver, red-breasted merganser, white grouse, goosander, hazel grouse, rail, black-bellied plover, lesser golden plover, greenshank, redshank, gray-tailed tattler, black-bellied sandpiper, common snipe, black-tailed godwit, eastern turtle dove.</p> <p>On the reserve territory there are also two plant species that are registered in the Sakhalin Oblast and RF Red Books – the tetraquetra water-lily and scabrous bluegrass.</p> <p>The purposes of the reserve also include protecting the habitat and migration routes of valuable game animals and birds, and conserving irreplaceable, aesthetically valuable wooded landscapes.</p> | | |

Table B-3: Federal and Khabarovsk Krai Protected Natural Areas Located Between 53°30' and 46°00' N Opposite the Southern End of Sakhalin Island

| No. (in region) | Name of area | Geographical Location | Regulatory Reference | Geographical description | Resource(s) at risk | Season or time of environmental vulnerability | Organization with jurisdiction over resources |
|-----------------|--------------|---|--|---|---|---|---|
| 1(2) | Botcha | <p>The preserve's closest boundary is 100 km south of the City of Sovetskaya Gavan. The preserve is located on the eastern hills of the Sikhote-Alin Range and covers most of the watershed of the Botcha River, which flows into the Tatar Strait. Its geographical coordinates are:</p> <p>48 16 45 N 139 42 41 E 48 01 57 138 34 15 47 50 04 138 48 53 48 16 55 139 00 12 47 52 55 139 14 20 48 24 11 139 28 16</p> <p>Reference points: Botcha River - mouth 47°58' N 139°31' E Cape Krestovozdvizhensky</p> | <p>Resolution № 528 of the Government of the Russian Federation of May 25, 1995 Resolution № 209 of the Head of Khabarovsk Krai of April 29, 1996</p> | <p>The preserve is located on the northeast slopes of the Sikhote-Alin Range. Its uniqueness lies in the fact that it lies near the dividing line between communities with mainly northern "Okhotsk" species and southern plants and animals.</p> <p>The terrain of the preserve is mountainous with altitudes of mainly 600 to 1000 meters above sea level.</p> <p>The preserve was established for the purpose of studying and conserving southern game biocenoses and the biodiversity of the Northern Sikhote-Alin. The preserve has a buffer zone 81,000 hectares in size that includes part of the Tatar Strait.</p> <p>Total area (hectares): 267,380.0 Buffer zone area (hectares): 81,000 Number of clusters - 1</p> | <p>The preserve is located in the northeast part of the Sikhote-Alin Range in the Botcha River Valley on its eastern macroslope in the Sovetskaya Gavan District of Khabarovsk Krai. The preserve has an interesting and abundant variety of flora and fauna. They include pyrogenic taiga fir spruce and secondary birch larch forests. The preserve is home to the spruce, fire, larch, oak, ash, grape, and Schisandra chinensis, Siberian ginseng, Manchurian thorn tree, and other plants. The Korean cedar, Mongolian oak, and endemics such as the Bergeia, lady slipper orchids, iris, the greater butterfly orchid, and the peony are also encountered there.</p> <p>The fauna include the sable, mink, otter, lynx, wolverine, wolf, brown bear, elk, red deer, roe, wild boar, Siberian musk deer, hazel grouse, and Siberian grouse. Rare species include the intermediate egret, black stork, Mandarin duck, scaly-sided merganser, osprey, white-tailed eagle, peregrine falcon, Siberian grouse, black-billed capercaillie, solitary snipe, and Siberian tiger.</p> <p>The Botcha Preserve is the northernmost permanent habitat of the Siberian tiger, whose abundance in the area has ranged from 4 to 6 individuals in recent years. Anthropogenic impact is slight.</p> <p>The preserve was established for the purpose of protecting the northernmost population of the Siberian tiger, the spawning grounds for valuable salmon, and the forest ecosystems of the northern Maritime Region in all their diversity. A special object of protection is a paleontological monument - the location of petrified Upper Tertiary flora. There is an abundance of rare and endemic plant and animal species in the preserve, including slipper orchids (Chinese slipper orchid and <i>Cypripedium guttatum</i>), <i>Schisandra chinensis</i>, and the Japanese yew). The rare bird species include the black stork, the hooded crane, Blakiston's fish owl, and so forth.</p> | | Sovetskaya Gavan Administrative District |

| No. (in region) | Name of area | Geographical Location | Regulatory Reference | Geographical description | Resource(s) at risk | Season or time of environmental vulnerability | Organization with jurisdiction over resources |
|-----------------|--------------------------|--|---|---|--|---|--|
| 2(3) | Tumnin | The Tumnin Nature Reserve is located on the east macroslope of the Sikhote Alin Range and occupies the Primorsky Ridge on the left bank of the lower course of the Tumnin River, which empties into the Tatar Strait north of the Community of Vanino. The Primorsky Ridge is the water divide of the Tatar Strait and Tumnin River. Its geographical coordinates are: 49 58 53 N 140 27 26 E 50 00 50 139 54 53 49 47 21 140 31 41 49 32 07 140 30 49 49 31 45 140 01 17 Reference points: Tumnin River, mouth 49°20'N140°10'E, | Resolution № 14 of the Council of Ministers of the Russian SFSR of January 6, 1982; Order № 267 of the Main Game Inspectorate of the Russian SFSR of July 14, 1987 | The Tumnin Reserve is located on the east macroslope of the Sikhote-Alin and occupies the Primorsky Ridge, which is the water divide of the Tatar Strait and Tumnin River It has an area of 143100.0 hectares. The entire area is mountainous terrain. Its dense drainage system consists of springs and a large number of small rivers. Number of clusters - 2 | The nature reserve lies on the boundary between natural complexes that gravitate towards the Sea of Okhotsk and southern complexes that are greatly affected by the warm Sea of Japan. On the southern slopes of the Primorsky Ridge there is Mongolian oak, and northern species are complemented by southern species such as the Asiatic black bear, wild boar, tiger, the Manchurian roe deer, and red deer. All of them are at the northern boundaries of their range in the Maritime Region. The reserve is inhabited by many species on the Rare and Endangered Species List of the Russian Federation: the Siberian grouse, black-billed capercaillie, black and Far East storks, solitary snipe, white-tailed eagle and Steller's sea eagle, the Mandarin duck, scaly-sided merganser, osprey, and Blakiston's fish owl. Rare migratory birds include the Bewick's swan, spoon-billed sandpiper, Nordmann's greenshank, snow goose, and Siberian crane. The reserve was founded to conserve, renew, and breed rare and endangered animal species which are on the Rare and Endangered Lists of the IUCN and Russian Federation and are protected by International Agreements and game animals which are of economic, scientific, and cultural value, conserve their habitat, and maintain the overall ecological balance. The primary object of protection is the forests of the eastern macroslope of the Sikhote-Alin, which abut the shores of the Tatar Strait. Protected animal species include the Siberian tiger, white-tailed eagle, Steller's sea eagle, golden eagle, Blakiston's fish owl, Mandarin duck, scaly-sided merganser, Siberian grouse, hooded crane, black stork, Far East stork, and peregrine falcon. The basic purpose for which the reserve was established is to conserve major salmon migration routes in the fall and spring, monitor the salmon's summer feeding grounds at the seashore and at river oxbows, and protect water fowl on Byki Lake and at the mouth of the Aukan River. All species of plants and animals must be protected, including the Siberian tiger and rare bird species such as the black stork, Far East stork, Mandarin duck, scaly-sided merganser, hooded crane, Steller's sea eagle and white-tailed eagle, peregrine falcon, solitary snipe, golden eagle, Siberian grouse, solitary snipe, and Blakiston's fish owl. Protected migratory birds include Bewick's swan, the spoon-billed sandpiper, Nordmann's greenshank, snow goose, and Siberian crane. There are also salmon. | | Khabarovsk Krai Game Animal Conservation, Control, and Regulation Administration Vanino Administrative District |
| 3(8) | Siziman Petrified Forest | Located in Siziman Cove on the shore of Tatar Strait in the northern part of the Vanino District Siziman Cove 50°43'N 140°26'E | Decision No. 97 of the Council of Deputies of the Vanino District of September 10, 1992 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | The petrified forest is an outcropping of petrified trees at the north end of Siziman Cove. Area - 10 hectares; buffer zone – 400. | Shore outcroppings of petrified trees on the shore cliffs of the north shore of Siziman Cove. Natural objects under observation: Siziman Cove. Petrified forest, ancient volcanoes and lava flows, spawning rivers, La Perouse expedition exploration areas. | | Vanino Administrative District |
| 4(19) | Primorskaya Greenbelt | City of Sovetskaya Gavan. Greenbelt on the shore of Sovetskaya Gavan Bay from Cape Gavrilov to Cape Signalny. | Decision of the Sovetskaya Gavan Council of Deputies of July 28, 1994 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Recreational zone Area - 27.0 hectares | Coastal greenbelt, recreational zone of the Community of Zavety Ilyicha | | Sovetskaya Gavan Administrative District |

| No. (in region) | Name of area | Geographical Location | Regulatory Reference | Geographical description | Resource(s) at risk | Season or time of environmental vulnerability | Organization with jurisdiction over resources |
|-----------------|---|---|--|---|--|---|---|
| 5(20) | Zapadnaya Greenbelt | Sovetskaya Gavan, shoreline of Sovetskaya Gavan Bay from Telecommunications Station 26 | Decision of the Sovetskaya Gavan Council of Deputies of July 28, 1994 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Area - 30.0 hectares | Coastal greenbelt, recreational zone of the Communities of Zavety Ilyicha and Maysky | | Sovetskaya Gavan Administrative District |
| 6(21) | Flower Meadow | Outskirts of Sovetskaya Gavan Shore of Bazarnaya Cove. Forest land of the Sovetskaya Gavan Forestry Establishment City Forestry Section. Block 5. | Decision of the Sovetskaya Gavan Council of Deputies of July 28, 1994 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Protected flower meadow Area - 21.0 hectares | Natural complex of shore of Bazarnaya Cove | | Sovetskaya Gavan Administrative District |
| 7(27) | Toki Island | The island is located in the Tatar Strait northwest of Cape Toki 1 km offshore. Reference points: Cape Toki 49°10' N 140°21' E | Decision No. 7 of the Vanino District Council of Deputies of July 21, 1987 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Protected (pinniped) seal rookeries Area - 3.7 hectares; buffer zone (sea waters) - 1256.0 hectares | Island; seal (pinniped) rookeries | | Vanino Administrative District |
| 8(34) | Khadinskaya Greenbelt | City of Sovetskaya Gavan, greenbelt between the Big Khadya River and Community of Lesokombinat (Lumber Mill) | Decision of the Sovetskaya Gavan Council of Deputies of July 28, 1994 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Recreational zone. Area - 35.0 hectares | Coastal greenbelt; recreational zone of the Community of Lesokombinat | | Sovetskaya Gavan Administrative District |
| 9(35) | Olga Greenbelt | City of Sovetskaya Gavan, greenbelt between Cape Olga and Gorizont Gardens | Decision of the Sovetskaya Gavan Council of Deputies of July 28, 1994 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Recreational zone Area - 30.0 hectares | Coastal greenbelt; recreational zone of the City of Sovetskaya Gavan | | Sovetskaya Gavan Administrative District |
| 10(36) | Menshikov Peninsula Greenbelt | Community of Zavety Ilyicha, shore of Sovetskaya Gavan Bay, in the vicinity of Cape Milyutin | Decision No. 97 of the Sovetskaya Gavan Council of Deputies of July 28, 1994 Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Recreational zone Area - 20.0 hectares | Coastal greenbelt on the Menshikov Peninsula; recreational zone of the Community of Zavety Ilyicha | | Sovetskaya Gavan Administrative District |
| 11(7) | Schastya Bay with Kevor and Chayany Islands | Located in the southwest part of Sakhalin Bay of the Sea of Okhotsk between the mainland, Petrovskaya Spit, and Chkalov and Baydukov islands. Geographical coordinates: 53 12 42 N 140 56 54 E 53 05 30 140 54 30 52 52 24 141 25 18 52 54 30 141 27 30 | Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Waterfowl concentrations in the spring and fall migration seasons, seagull colonies: Area - 26300.0 hectares Bay with islands | Aleutian tern (endangered species) colonies, and resting and feeding places for migratory birds. Scaly-sided merganser and Nordmann's greenshank habitat. | | Nikolayevsk Administrative District |

| No. (in region) | Name of area | Geographical Location | Regulatory Reference | Geographical description | Resource(s) at risk | Season or time of environmental vulnerability | Organization with jurisdiction over resources |
|-----------------|------------------------|---|--|--|--|---|---|
| 12(16) | Mosolov Cove | Located on the shore of the Tatar Strait south of Cape Opasnost Mosolov Cove: 51°14' N 140°37' E | Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Protected habitat of Steller's sea eagle and white-tailed eagle, Duy spawning river. Area - 3213.0 hectares | Shore and waters of cove; nesting grounds for white-tailed and Steller's sea eagles; fish spawning ground | | Ulch District Administration |
| 13(17) | Krestovaya Cove | Located on the shore of the Tatar Strait 9 km north of Cape To 51°07' N 140°39' E Krestovaya Cove | Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Protected habitat of Steller's sea eagle and white-tailed eagle; Krestovaya spawning river, the mollusk <i>Corbicula japonica</i> Area - 460.0 hectares | Shore and waters of cove; seal rookeries | | Ulch District Administration |
| 14(18) | Somon Lagoon | Located in the western part of Chikhachev Bay on the outskirts of the Community of De-Kastri. The Somon River flows into Somon Cove from the southwest, and the cover narrows here and forms the Somon Lagoon, which is 2 km long and 1 km wide. The lagoon is shallow and 0.7 meters deep at low tide. Somon Cove 51°28' N 140°46' E | Order No. 7 of the Head of the Krai Administration of January 20, 1997 | The Somon Lagoon is an extension of the cove of the same name. There is a medicinal mud deposit at the mouth of the river that flows into the lagoon. Area - 123.0 hectares | Medicinal mud deposit | | Ulch District Administration |
| 15(22) | Vlasyevskoye Peat Bogs | Located on the shore of Sakhalin Bay of the Sea of Okhotsk on the southwest adjacent to Petrovskaya Spit and the western shore of Schyastye Bay Village of Vlasyevo 53°25' N 140°54' E | Decision No. 106-MS of the Nikolayevsk-on-Amur City Council of Peoples Deputies of July 15, 1993; Order No. 7 of the Head of the Krai Administration of January 20, 1997 | This area is north country with a thick layer of peat bogs and berry bushes (blueberries, cranberries, cloudberrries, and bilberries) and dozens of thermal karst lakes. It is a nesting, feeding, and resting ground for waterfall during their seasonal migrations. Area - 3330.0 hectares | A lowland of the Sakhalin Bay shore, pasture land, and berry bushes | | Nikolayevsk District Administration |
| 16(23) | Cape Kamenny | Located on the north shore of Yekaterina Bay of the Sea of Okhotsk, 2 km north and 1 km south of Cape Kamenny Geographical coordinates: 53 53 06 N 140 18 42 E 53 54 42 140 20 24 | Decision No. 106-MS of the Nikolayevsk-on-Amur City Council of Peoples Deputies of July 15, 1993; Order No. 7 of the Head of the Krai Administration of January 20, 1997 | A system of rocky banks with marine algae and colonies of mussels provides a good feeding ground for seals. Spotted seal and ringed seal rookeries are located on the many rocky islets, while the bearded seal and ribbon seal are encountered less frequently, and sea lions are observed. Up to 3000 seals gather at the rookeries. Area -30.0 hectares; buffer zone (sea waters) 150.0 hectares, Hills, the highest elevation -50.1 m, max slope-0,27 | Shoreline 100 meters wide - ringed seal and spotted seal rookeries, buffer zone - sea waters 500 meters wide | | Nikolayevsk Administrative District |
| 17(24) | Chastyye Islands | 8 islands in the southern part of Amur Liman east of Cape Uarke. Geographical coordinates: Khagemif Islands (Chastyye): Pilyamif Island (52°27,5' N 141°21,5' E), Giamif, Chirtamif, Tyurmus, Matemif, Khagemif, Big Velyamif, Little Velyamif | Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Islands with abrasion shores and steep cliffs covered with firs and Erman's birch. A seal rookeries is located on the rocky beaches. Area - 9200.0 hectares (including sea waters - 8450.0 hectares) | 8 islands; bird rookeries and seal rookeries | | Nikolayevsk Administrative District |
| 18(25) | Seacoast | Located on the north shore of Sakhalin Bay of the Sea of Okhotsk from Cape Aleksandr to Cape Litke | Decision No. 106-MS of the Nikolayevsk-on-Amur City Council of Peoples Deputies of July 15, 1993; Order No. 7 of the Head of the Krai Administration of January 20, 1997 | Waterfowl migration routes run along the coast of Tatar Strait, including the swan goose, there are also auk colonies and white-tailed eagle nests. Area - 1800.0 hectares; buffer zone (sea waters) 3000.0 hectares | Shore beach 300 meters wide - calving grounds for marine mammals; buffer zone - sea waters 500 meters wide | | Nikolayevsk Administrative District |

| No. (in region) | Name of area | Geographical Location | Regulatory Reference | Geographical description | Resource(s) at risk | Season or time of environ- mental vulnerab- ility | Organization with jurisdiction over resources |
|--------------------|---|--|---|--|---|---|---|
| 19(26) | Reineke Island with 1-km sea quiet zone | Located in the Sea of Okhotsk at the boundary of the Nikolayevsk and Tugur-Chumikan Districts 4.5 km north of Cape Aleksandr. Reineke Island 54°20' N 139°46' E | Order No. 7 of the Head of the Krai Administration of January 20, 1997 | The shores of Reineke Island are elevated and faulted, and creeks that dry up in the summer run along the faults. The island's shores are sandy at the points where the faults meet the water. The southern, eastern, and western shores of the island are more elevated than the northern shore. In the southwest part of the island is the prominent cone-shaped Reineke Hill (42°54' N, 131°43' E), which is 148.8 meters high. There are reddish cliffs on the south shore of the island. The southwest tip of Reineke Island, which is formed by the gentle slope of Reineke Hill, is bounded by a sandy beach with scattered boulders. Only grass grows on Reineke Island. Only small parts of the faults are covered with shrubs. Scallops are raised in the vicinity. The island has the largest protected seal rookeries in the Nikolayevsk District. Area - 2300.0 hectares, including a quiet zone of 1500.0 hectares | Seal rookeries | | Nikolayevsk Administrative District |
| 20(31) | Ustrichny Island | Located in Chikhachev Bay on the outskirts of the Community of De-Kastri Ustrichny Island 51°28' N 140°50' E | Order No. 160 of the Head of the Ulch District Administration of May 27, 1997 | A seal rookeries, bird rookeries, a big gray heron colony, and an oyster colony are located on the island. Area - 400 hectares. | Island with adjacent sea waters, waterfowl nesting grounds, seal rookeries, mollusk colonies | | Ulch District Administration |
| 21(32) | Ostrovnoy | Includes Cape Opasnost, the two Dugu-Du Islands located in the Tatar Strait 300 meters south of Cape Opasnost, and the adjacent waters. | Order No. 160 of the Head of the Ulch District Administration of May 27, 1997 | Protected sea bird colonies, seal rookeries, and scallop colony . Area - 400.0 hectares | Dugu-Du Island and the waters of the Tatar strait; waterfowl nesting grounds and migration resting grounds; seal rookeries, and mollusk colonies (scallops) | | Ulch District Administration |

Table C-2: Sakhalin Key Environmental Sensitivities: Mass Bird Congregating Locations

| Name of Site | Zone Description (Geographic) | Resources at Risk | Ecologically Sensitive Season or Time of Year | Organization Responsible for Managing given Resources |
|----------------------------------|---|---|---|--|
| Lagoons of the NE Sakhalin coast | Piltun, Chayvo, Nyisky, and Nabil bays | Birds listed in the Sakhalin Oblast Red Book: Spotted greenshank (nesting), Steller sea eagle (nesting), white-tailed sea eagle (nesting), Sakhalin dunlin (nesting), Kamchatka tern (nesting), long-billed murrelet (possibly nesting), osprey (nesting), red-necked phalarope (nesting), ruff (nesting), little grebe (nesting), spoon-billed sandpiper (migrant), Far Eastern curlew (migrant), bubbling teal (migrant), whooper swan (nesting), Bewick swan (migrant), sharp-tailed sandpiper (migrant), broad-billed sandpiper (migrant), white-billed loon (migrations, wintering), glaucous-winged gull (migrations, summer migrations, wintering), Ross's gull (migrations, wintering) | Year-round | Sakhalin Oblast Department of Natural Resource Management and Environmental Protection |
| Marshy lowlands of Viakhtu Bay | From Viakhtu Bay to the Tengji River Valley | Birds listed in the Sakhalin Oblast Red Book: Spotted greenshank (nesting), white-tailed sea eagle (nesting), swan goose (nesting), long-billed murrelet (possibly nesting), osprey (nesting), Schrenck's little bittern (nesting), little grebe (nesting), marsh rail (nesting), common moorhen (nesting), spoon-billed sandpiper (migrant), Far Eastern curlew (migrant), bubbling teal (migrant), whooper swan (nesting), Bewick swan (migrant), sharp-tailed sandpiper (migrant), broad-billed sandpiper (migrant), white-billed loon (migrations, wintering), streaked shearwater (summer migrations) | Year-round | Sakhalin Oblast Department of Natural Resource Management and Environmental Protection |

Table C-3: Khabarovsk Krai Key Environmental Sensitivities: Bird Congregation Areas

| No. | Area | Name on map (geographical location) | Regulatory Reference | Description of area (geographical) | Resource(s) at risk | Season or time of environmental vulnerability | Organization with jurisdiction over resources |
|-----|--|---|----------------------|------------------------------------|--|---|--|
| 1 | Sakhalin Bay | Sakhalin Bay | | | Nesting area for sea birds: kittiwake, Asiatic marbled murrelet*, Wintering grounds: common murre and thick-billed murre, horned puffin | Year round | Khabarovsk Krai Administration of the Federal Natural Resources Use Inspection Service (<i>Rosprirodnadzor</i>). |
| 2 | Schastye Bay | Schastye Bay | | | Nesting area for sea birds: Aleutian tern* | Year round | -//- |
| 3 | Mouth and lower reaches of Amur | Amur River | | | Nesting area for sea birds: black-headed gull, common gull, little tern*. Of importance for migrating waterfowl and shorebirds. The main East Asian migration routes for native migratory birds of different ecological groups run through this area. | Year round | -//- |
| 4 | Amur Liman | Amur Liman | | | Nesting area for sea birds: Asiatic marbled murrelet*. | Year round | -//- |
| 5 | Coast and littoral areas of Tatar Strait and Nevelsky Strait (Popov Island, Uspenye Cove, and Tikhaya, Nevelsky, Chayachya, Tabo, and Mosolov Coves) | Sea coast and adjacent waters | | | Nesting area for sea birds: common murre and thick-billed murre, spectacled guillemot, red-faced and pelagic cormorants, ancient murrelet, rhinoceros auklet, horned puffin, fulmar, sea terns, including the Aleutian tern*, white-winged tern - little tern*, slaty-backed gull, black-tailed gull, Asiatic marbled murrelet*. Summer migrations: flesh-footed shearwater, fulmar, South Polar skua (Antarctic), pomarine skua, parasitic skua, long-tailed skua (Arctic), , glaucous gull, kittiwake Wintering: fulmar, glaucous gull. Migrating birds: Phalaropus, ivory gull*, Ross' gull, herring gull, little tern*, least auklet. Of importance for migratory waterfowl and shorebirds. The main East Asian migration routes for native migratory birds of different ecological groups run through the area. Major Charadriiformes concentration areas. Nesting areas for white-tailed and Steller's sea eagles. (Cape Mosolov) | Year round | -//- |
| 6 | Udyl Lakes-Kizi Depression System | Floodplain lakes of lower course of the Amur River: Lake Udyl, Lake Kadi, Lake Kizi, and others | | | Of importance for migratory waterfowl and shorebirds. The main East Asian migration routes for migratory birds of different ecological groups run through the area. There are also major concentration places for lake-marsh and coastal-sea migratory birds. Major nesting and molting grounds for geese. | Year round | -//- |
| 7 | Tumnin River | Seacoast north and south of the inflow point of the Tumnin River | | | Nesting area for sea birds: thick-billed and common murre | Year round | -//- |

| No. | Area | Name on map (geographical location) | Regulatory Reference | Description of area (geographical) | Resource(s) at risk | Season or time of environmental vulnerability | Organization with jurisdiction over resources |
|-----|----------------------|---|----------------------|------------------------------------|---------------------|---|---|
| 8 | Mouth of Nelma River | There is a gray heron colony 1.5 km upstream of the mouth of the Nelma River on the side of a hill. | | | Gray heron colony | Year round | -/- |

<*> denotes birds that are on the Rare and Endangered Species List.

Appendix D: Key Environmental Sensitivities and Critical Periods: Marine Mammals

Table D-1: Critical Periods for Marine Mammals in NE Sakhalin

| Species | Location / Critical Period | Status |
|---|---|--|
| Whales/Cetaceans Risks: At risk from Orlan Platform and submarine pipeline. Vulnerability to spills: Generally low, as animals tend to avoid oiled areas and OSR operation areas. | | |
| Western gray whale (Korean) (<i>Eschrichtius robustus</i>) | Open water season (May to October), northeast coast of Sakhalin, and particularly offshore of Piltun Bay. Generally found between the shore and up to 7 km offshore in water depths up to 20 m. | Category 1 RF Red Book; IUCN Red List |
| North Pacific right whale (<i>Eubalaena glacialis</i>) | Right whales may be found in the summer and autumn months, off the eastern coast of Sakhalin Island, roughly from the latitude of Cape Terpeniya to the northern extremity of the island. | Endangered; Listed in Red Book of Russian Federation |
| Bowhead whale (<i>Balaena mysticetus</i>) | Habitat: Okhotsk Sea, including the Shantarsky Archipelago and the northern sector of the sea (Shelikhova Strait). | |
| Pinnipeds Risks: Risk from Orlan Platform and submarine pipeline Vulnerability to spills: Generally low during open water season but higher vulnerability during pupping season. Key sites typically are far south of area or on ice at 15-40 km offshore. | | |
| Largha or Spotted Seal (<i>Phoca largha</i>) | Forms breeding grounds on ice from late March through May, 20-40 km offshore; occasional rookeries on spits and ebb-tide bars. | |
| Bearded Seal (<i>Erignathus barbatus</i>) | Most migrate north during open water. Forms breeding grounds on ice from February through May, 15-30 km offshore; occasional rookeries on spits and ebb-tide bars. | |
| Ringed Seal (<i>Phoca hispida</i>) | Found throughout area. Forms breeding grounds on ice from March through May, 5-40 km offshore. | |
| Steller's sea lion (<i>Eumetopais jubatus</i>) | Open water season; rookeries on Kamen' Opasnosti Island (near Cape Krilyon on the south coast) and Tuyleni Island (near Cape Terpeniya on the east coast- far south of ENL operations). | Category 2 RF Red Book and Oblast Red Book |
| Fur seal (<i>Callorhinus ursinus</i>) | Rookery on Tuyleni Island (near Cape Terpeniya on the east coast- far south of ENL operations). | IUCN Red List |

Table D-2: Sakhalin Key Environmental Sensitivities: Marine Mammals

| Name of Site | Zone Description (Geographic) | Ecologically Sensitive Season or Time of Year | Organization Responsible for Managing Given Resources |
|---|--|---|---|
| Largha or Spotted seal (<i>Phoca largha</i>) | Distributed far and wide, abundance offshore of Sakhalin Island is roughly 40,000 specimens. Forms breeding grounds on the ice from late March through May, 20-40 km from shore. May form occasional rookeries on spits and ebb-tide sandbars. | March – May | Sakhalin Basin Department for Fishstock Protection and Reproduction and Fishing Industry Regulation |
| Bearded seal (<i>Erignathus barbatus</i>) | Distributed far and wide, excluding the southeastern region. Abundance offshore of Sakhalin Island is roughly 35,000 specimens. Forms breeding grounds on the ice from February through May, 15-30 km from shore. Migrates northward in the summer, a small number of seals remaining on the Sakhalin Island seashore. May form occasional rookeries on spits and ebb-tide sandbars, together with the spotted seal. | February – May | Sakhalin Basin Department for Fishstock Protection and Reproduction and Fishing Industry Regulation |

Table D-3: Khabarovsk Krai Key Environmental Sensitivities: Marine Mammals

| No. | Name | Marked on map (geographical location) | Regulatory references | Description of area (geographical) | Resources at risk | Season or time of environmental vulnerability | Organization with jurisdiction over the resources | Appendix No. |
|-----|--|---------------------------------------|-----------------------|------------------------------------|--|--|---|--------------|
| 1 | Ringed seal (<i>Pusa hispida</i> . Shreber) | | | | <p>The Sea of Okhotsk ringed seal basically spends the winter and the summer on floating ice. During the breeding season concentrations of seals are observed in the vicinity of the shore of Sakhalin Bay. The seals make passive migrations with the ice in different directions. After the ice disappears, they disperse over a large area of the sea and spent a lot of time afloat, staying in areas with very rugged shorelines. Sometimes small shore rookeries are observed. In the fall, when fast shore ice appears, the seals concentrate in the coves and bays, forming large groups (Sakhalin Bay). In late fall and early winter most of the seals go to floating ice and stay in the same areas as in the fall. Certain ringed seals continue to stay on the fast ice of the coves and bays. In the fall and winter the seals concentrate in their future calving areas. Calving takes place in March-May. The calves are born amid hummocked floating ice.</p> <p>Seals are also encountered year round in the Nevelsky and Tatar Straits. Calving rookeries are concentrated in the coastal zone. In the summer they disperse in small groups, and by the fall re-concentrate in the coastal zone. Small rookeries (groups) of seals are located on the Ustrichny, Reineke, Dugu-du, and Chastye Islands, in Chikhachev Bay, on Bazaltovy and Ustrichny Islands, on Cape Krugly, in Mosolov Cove between the Dugu-du Islands, in Krestovaya Cove, on the sea coast from Cape Aleksandr to Cape Litke, and in the vicinity of Cape Kamenny. The seals are encountered year round on Toki Island.</p> | Year round (calving: March-May on the ice) | The Amurbyvod Federal Government Agency. The Amur Basin Fisheries Conservation and Renewal and Fishing Regulatory Administration. | 5.1 |
| 2 | Ribbon seal (<i>Histiophoca fasciata</i> . Zimmerman) | | | | <p>This seal is common in the Sea of Okhotsk (Sakhalin Bay). The southern part of its range is located in the northern part of the Sea of Japan (Tatar Strait, Nevelsky Strait). The ribbon seal's ice rookeries are far from the shores, and the seals prefer to form groups on drifting ice flows with patches of open water and cracks. Small groups form in the vicinity of the Chastye Islands and in the area from Cape Aleksandr to Cape Litke (area of Cape Kamenny).</p> | Year round (calving: end of March-end of April) | -/- | 5.2 |
| 3 | Spotted seal (<i>Phoca largae</i> .) | | | | <p>The spotted seal is encountered everywhere in Sakhalin Bay and the Tatar Strait and forms its ice rookeries there. During the breeding and molting season, the seals form rookeries on drifting ice. After the ice melts the seals stay in the coastal zone and disperse along the mouths of spawning rivers. By August-September they form regular shore rookeries. The seals stay at the shore rookeries until late fall, until floating ice appears, and then they stay on the floating ice for the entire ice season.</p> <p>During the molting and breeding season the spotted seal is a typical ice seal (forms rookeries on drift ice). In August-September they form coastal concentrations until the ice appears. Calving rookeries are concentrated in the coastal zone. Small rookeries (groups) are located on the Ustrichny, Reineke, Dugu-du, and Chastye Islands, in Mosolov Cove and Chikhachev Bay, on the Bazaltovy and Ustrichny Islands, on Cape Krugly, in Mosolov Cove between the Dugu-du Islands, in Krestovaya Cove, and on the sea coast from Cape Aleksandr to Cape Litke - in the area of Cape Kamenny.</p> | Year round (March-May – calving rookeries on ice from August-September until the ice appears – concentrations near the shores) | -/- | 5.3 |
| 4 | White whale (<i>Delphinapterus leucas</i> . Palas) | | | | <p>The white whale inhabits an area from the northern part of the Tatar Strait along the entire mainland coast to the north of the Sea of Okhotsk. In the summer the whale stays close to shore and in the open sea. In the winter the whale may be observed in open patches of water between the ice and in the non-freezing parts of the Nevelsky and Tatar Straits. The biggest groups form in the Amur Liman, and the whale is also common in Sakhalin Bay. Its primary food is herring, capelin, salmon, and sturgeon. In the summer it may enter rivers in search of food and hunt for schools of pink salmon and chum salmon.</p> | year round | -/- | 5.4 |

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| 5 | Sea lion (<i>Eumetopias jubatus</i>) Sea | | On the IUCN Rare and Endangered Species List (Category EN A1b) and Rare and Endangered Species List of the Russian Federation (Category 2 Species). | | In the Sea of Okhotsk, sea lions are common in Sakhalin Bay. They calve in May and June. They form shore rookeries at remote and inaccessible parts of islands and reefs, on capes which extend far into the sea, and in areas of great depths. In the Sea of Japan the sea lion is basically confined to the northern part of the Tatar Strait, where it inhabits the coastal zone. Sea lions may be encountered there in the spring, but they are for the most part sparse and do not form big concentrations. Small groups of sea lions are encountered on Toki Island year round. There are no sea lion harem rookeries in the Sea of Japan. In very rare instances lone sea lions are encountered south of the Tatar Strait along the west coast of the Sea of Japan. In the northern Sea of Japan, sea lions feed on common fish (walleye pollack, cod, saffron cod, whitespotted greenling, herring, and flounders) and squid. | Year round (calving: May – June) | Khabarovsk Krai Office of the Federal Natural Resources Use Inspection Service (<i>Rosprirod nadzor</i>) | |
| 6 | Gray whale (<i>Eschrichtius robustus</i>) | | The Okhotsk-Korean gray whale population is on the IUCN-96 Rare and Endangered Species List, Appendix 1 SITES, has been under the protection of the International Whaling Convention since 1946, and is a Category 1 species on the Rare and Endangered Species List of the Russian Federation. | | The gray whale's migration routes to the southern waters of the Sea of Okhotsk run through the Tatar Strait. During their migrations the whales stay close to the mainland coast of the Tatar Strait. Small groups of gray whales are regularly encountered in the Tatar Strait. | February-March migration to the north; November-December return migration to the south. | Khabarovsk Krai Office of the Federal Natural Resources Use Inspection Service (<i>Rosprirod nadzor</i>) | |