



**Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:
(1) CONSTRUCTION**

December 19, 2013

Prepared for:

**Government of the Northwest Territories
Department of Transportation**
Yellowknife, Northwest Territories

Prepared by:

KAVIK-STANTEC Inc.
Inuvik, Northwest Territories

Project Number: 123510689





| Revision | Date |
|------------|-------------------|
| Revision 1 | August 26, 2013 |
| Revision 2 | December 19, 2013 |

Table of Contents

| | | |
|----------|--|------------|
| 1 | INTRODUCTION..... | 1-1 |
| 1.1 | PURPOSE..... | 1-1 |
| 1.2 | WILDLIFE SPECIES..... | 1-1 |
| 1.3 | WILDLIFE PROTECTION REGULATORY REQUIREMENTS..... | 1-2 |
| 1.4 | DEFINITIONS OF TERMS..... | 1-3 |
| 2 | CONSTRUCTION MITIGATION MEASURES..... | 2-1 |
| 2.1 | HABITAT DISTURBANCE..... | 2-1 |
| 2.2 | WILDLIFE DISTURBANCE..... | 2-2 |
| 2.2.1 | General Wildlife Disturbance Mitigation..... | 2-2 |
| 2.2.2 | Bird-Specific Disturbance Mitigation..... | 2-4 |
| 2.2.3 | Caribou-Specific Disturbance Mitigation..... | 2-6 |
| 2.2.4 | Grizzly Bear-Specific Disturbance Mitigation..... | 2-7 |
| 3 | PRE-CONSTRUCTION SURVEYS, MONITORING, AND INSPECTION..... | 3-9 |
| 4 | REPORTING..... | 4-1 |
| 5 | EDUCATION AND TRAINING..... | 5-1 |
| 6 | REVIEW OF WPP..... | 6-1 |
| 7 | REFERENCES..... | 7-1 |

List of Tables

| | | |
|-----------|--|-----|
| Table 1-1 | Wildlife Protection Regulatory Requirements..... | 1-2 |
| Table 2-1 | Habitat Disturbance Mitigation Measures..... | 2-1 |
| Table 2-2 | General Wildlife Disturbance and Wildlife-Human Interaction Mitigations..... | 2-3 |
| Table 2-3 | Bird Mitigation Measures..... | 2-5 |
| Table 2-4 | Caribou Mitigation Measures..... | 2-6 |
| Table 2-5 | Grizzly Bear Mitigation Measures..... | 2-8 |

List of Figures

| | | |
|------------|---|------|
| Figure 3-1 | Wildlife Monitor Action Flow Chart..... | 3-11 |
|------------|---|------|

Appendices

| | |
|------------|--|
| APPENDIX A | Plans, Procedures, and Reports Supplementing the WPP |
| APPENDIX B | Relevant Regulatory Requirements of the NWT Wildlife Act and Canada Migratory Bird Regulations |
| APPENDIX C | Timing Restrictions and Setback Distance Guidelines for Wildlife and Wildlife Areas |
| APPENDIX D | Flight Restrictions for Project-related Aircraft |
| APPENDIX E | Forms |
| APPENDIX F | Agency Contact Information |
| APPENDIX G | GNWT Bear Safety Brochure |

Abbreviations

| | |
|---------|--|
| AANDC | Aboriginal Affairs and Northern Development Canada |
| agl | above ground level |
| ATV | all-terrain vehicle |
| COSEWIC | Committee on the Status of Endangered Wildlife in Canada |
| CWS | Canadian Wildlife Service |
| DFO | Department of Fisheries and Oceans |
| DLP | defence of life or property |
| DOT | Department of Transportation |
| EC | Environment Canada |
| ENR | Department of Environment and Natural Resources |
| GNWT | Government of the Northwest Territories |
| GPS | global positioning system |
| HTC | Hunters and Trappers Committee |
| IFA | Inuvialuit Final Agreement |
| IGC | Inuvialuit Game Council |
| MBCA | <i>Migratory Birds Convention Act</i> |
| NWT | Northwest Territories |
| RRO | Renewable Resource Officer |
| SARA | <i>Species at Risk Act</i> |
| WEMP | Wildlife Effects Monitoring Program |
| WM | Wildlife Monitor |
| WMAC | Wildlife Management Advisory Council |
| WPP | Wildlife and Wildlife Habitat Protection Plan |

1 INTRODUCTION

1.1 Purpose

The Wildlife and Wildlife Habitat Protection Plan (WPP) is intended to apply to the construction of the Inuvik to Tuktoyaktuk Highway Project. A separate plan will be in place during the operation of the highway. This WPP is part of a Project Environmental Management Plan, which addresses all aspects of environmental protection for activities associated with project construction. It is supplemented by the plans, procedures, and reports listed in Appendix A.

A Wildlife Effects Monitoring Program (WEMP), separate from the Environmental Management Plan, will address monitoring and testing of predicted effects during the pre-construction, construction, and operations phases for key wildlife species. The WEMP will identify specific monitoring, analysis and reporting requirements necessary to evaluate the effects of the proposed highway on these wildlife species (GNWT 2012).

The purpose of the WPP is to minimize adverse effects to wildlife and wildlife habitat in the project area from activities associated with construction. The WPP:

- Summarizes the regulations and guidelines that apply to species or habitat potentially to be encountered during project construction (Section 1.2)
- Describes measures to be applied by project personnel to protect wildlife and wildlife habitat during project construction activities (Section 2)
- Describes surveys to be conducted prior to construction (Section 3)
- Describes requirements for compliance monitoring by project monitors (Section 3)
- Describes reporting requirements (Section 4)
- Summarizes requirements for training of project personnel and monitors (Section 5)
- Describes how the WPP is to be reviewed as part of an adaptive management process (Section 6)

1.2 Wildlife Species

The WPP is intended to describe wildlife and wildlife habitat mitigation measures, applicable legislation and regulations, monitoring, and reporting requirements applicable to species at risk and species of management concern, including caribou, grizzly bear, moose, furbearers (wolf, wolverine, beaver, muskrat, etc.), and birds. These species are protected by legislation, or are of importance to local Inuvialuit harvesters. Mitigation measures related to reestablishment of habitat on disturbed sites, prevention of introduction of invasive plant species, and prevention of dust impacts are also included.

1.3 Wildlife Protection Regulatory Requirements

Several federal and territorial acts and regulations include regulatory requirements or that apply to wildlife and wildlife habitat in relation to the Project. These are summarized in Table 1-1, with additional context for specific regulatory or procedural requirements provided in Appendix B.

Table 1-1 Wildlife Protection Regulatory Requirements

| Regulator | Regulatory Guidelines | Applicability to WPP |
|-----------------------------------|--|---|
| EC ¹ /CWS ² | <i>Species at Risk Act (SARA)</i> | Under SARA, it is forbidden to kill, injure, harass, destroy the residence of, destroy the critical habitat of, capture or take an individual designated as extirpated, endangered, or threatened on federally-regulated lands (Sections 32 and 33), or territorial lands (Section 34 [1]). An order by the Governor in Council may, based on the recommendation of the Minister of Environment, apply Sections 32 and/or 33 on territorial lands if the territorial laws do not effectively protect the species or its residences in question (Section 34 [2] and [3]). (Government of Canada 2011a) |
| EC/CWS | <i>Migratory Birds Convention Act (MBCA) and Migratory Birds Regulations</i> | The MBCA protects migratory birds and their nests throughout Canada. Migratory birds covered under the act include: waterfowl, cranes, shorebirds, and songbirds (a full list of species is at http://www.ec.gc.ca/nature/default.asp?lang=En&n=0836045B-1). The MBCA is the enabling statute for the Migratory Birds Regulations, 1994. These regulations state that without authorization of a permit, the disturbance or destruction of a nest of a migratory bird is prohibited (Government of Canada 2011b). See Appendix B for relevant excerpts of the MBCA. |
| EC/DFO ³ | <i>Fisheries Act – Pollution Prevention Provisions</i> | The Fisheries Act states that unless authorized by federal regulation, no person shall deposit or permit the deposit of deleterious substances of any kind in water frequented by fish. This protection of water can contribute to protection of wildlife and wildlife habitat |
| EC/CWS | <i>Canada Wildlife Act</i> | The Canada Wildlife Act outlines the controls of the Federal Government, in collaboration with the territories, to protect wildlife. The Act enables EC/CWS to take required measures to protect endangered wildlife and to acquire lands for wildlife research, conservation, and interpretation. This Act outlines the powers that wildlife officers have to manage wildlife offences and associated punishments. |
| ENR ⁴ | <i>NWT⁵ Wildlife Act</i> | The NWT Wildlife Act pertains to all wildlife harvesting and management within the NWT. It acknowledges that the Inuvialuit Game Council (IGC) and HTC's will provide advice related to wildlife management. The Act states that no person shall, without a permit, chase, disturb, or harass wildlife. It prohibits the destruction, disturbance, or taking of the eggs or nests of birds identified in the list of prescribed wildlife. Permits to haze wildlife or engage in an activity that may result in disturbance to an animal or destroy/damage a den, dam, or lodge, or eggs or nests of birds not listed under the MBCA may be issued by ENR under the Act. The Act also states that a person is permitted to kill wildlife in defense of human life or property. (GNWT 2010) See Appendix B for relevant excerpts of the NWT Wildlife Act. |

| Regulator | Regulatory Guidelines | Applicability to WPP |
|--|--|---|
| ENR | <i>Species at Risk (NWT) Act</i> | The Species at Risk (NWT) Act applies to both public and private lands throughout the NWT and includes private lands owned under land claims agreements. The Act applies to any wild animal, plant, or other species managed by the Government of the Northwest Territories (GNWT). The Species at Risk (NWT) Act is intended to be complementary to the federal Species at Risk Act and addresses concerns at the territorial level. |
| IFA ⁶ | IFA (in conjunction with IGC and WMAC ⁷) | The IFA protects the right of Inuvialuit to hunt, fish, trap, and carry on commercial activity within the Inuvialuit Settlement Region. It also establishes processes to protect and preserve Arctic wildlife, environment and biological productivity through the application of conservation principles and practices. |
| <p>Note:</p> <p>¹ Environment Canada</p> <p>² Canadian Wildlife Service</p> <p>³ Department of Fisheries and Oceans</p> <p>⁴ Department of Environment and Natural Resources</p> <p>⁵ Northwest Territories</p> <p>⁶ Inuvialuit Final Agreement</p> <p>⁷ Wildlife Management Advisory Council</p> | | |

1.4 Definitions of Terms

Adaptive management – Adaptive management is a process for applying remedial methods and procedures when there is a failure in the predicted performance of designs and measures intended to protect environmental values.

Deleterious – Any substance that, if added to any water would degrade or alter or form part of a process of degradation or alteration of the quality of that water so that it is rendered or is likely to be rendered deleterious to fish or fish habitat or to the use by man of fish that frequent that water (Fisheries Act)

Environmental Monitor – Individuals who observe project activities in relation to permit conditions, and report observations to the relevant regulator.

Habitat – Air, soil, water, food, cover and all the other components of the natural environment of wildlife or of a species of wildlife (NWT Wildlife Act)

Mitigation – Measures taken to eliminate or reduce a potential project effect.

Monitoring – The process of observing and documenting project activities

Project – The Inuvik-Tuktoyaktuk Highway, a proposed 140km all-season highway between the Town of Inuvik and the Hamlet of Tuktoyaktuk in the Inuvialuit Settlement Region.

Wildlife – Big game, birds of prey, fur-bearing animals, migratory game birds, non-game animals, non-licence animals and upland game birds, including any hybrid offspring resulting from the crossing of 2 wildlife animals (NWT Wildlife Act)

Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:
(1) CONSTRUCTION
Section 1: Introduction
December 19, 2013

Wildlife Monitor – Individuals who work with field crews to mitigate disturbance to animals in the area, following guidelines set out in the Wildlife and Wildlife Habitat Protection Plan

Worker – A person employed by the Developer or the Contractor to work on the project

2 CONSTRUCTION MITIGATION MEASURES

2.1 Habitat Disturbance

To the degree possible, habitat disturbance will be limited to the area required for the right-of-way of the highway and borrow sources. All other construction facilities such as access roads and camps will be temporary. Efficient project design and implementation limits the geographic footprint of project facilities and borrow sites. When habitat disturbance is required for construction activities, appropriate mitigation and monitoring actions ensure that any potential long-term effects to soil and vegetation are prevented or reduced. Rare plant and vegetation surveys have been conducted along the length of the highway and at all borrow sites. Results from these surveys will be used to apply appropriate mitigation measures in locations where rare plants or plant communities have been identified. Mitigation measures designed to protect wildlife habitat during construction activities are outlined in Table 2-1.

Table 2-1 Habitat Disturbance Mitigation Measures

| Issue | Mitigations |
|-------------------------------|---|
| Habitat disturbance (general) | <ul style="list-style-type: none"> • To protect wildlife and wildlife habitat from spills of deleterious substances, all contractors and employees will follow the procedures detailed in the Spill Contingency Management Plan • Access to active construction areas will be limited to authorized personnel. • Construction vehicles will only be operated on designated winter roads, ice roads, access trails, or constructed embankment. • A minimum depth of 20 cm of packed snow or ice cover will be maintained on winter roads and access trails during winter operations. • Workers will not walk off-site onto land at any time of year, unless there is a specific requirement (i.e., waste recovery), and these activities will be scheduled to avoid sensitive wildlife periods. • Final site inspection and clean-up will be conducted; site-specific clean-up will be conducted on foot where that work takes place off the right-of-way to avoid disturbance to vegetation. • All fuel will be stored at least 100 m from waterbodies; refueling and servicing of machinery and storage of fuel and other materials for the machinery will occur a minimum of 100m away from any waterbody. All refueling and fuel transfer will be conducted in accordance with the Safe Work Practices for Fueling Equipment and Handling Petroleum. • Equipment used in or near water will be clean and free of oil, grease or other deleterious substances, and will be required to use drip pans and drip trays placed under all equipment while not in use. All equipment will be inspected regularly to ensure it is free of leaks. |

| Issue | Mitigations |
|-----------------------------------|--|
| Vegetation disturbance | <ul style="list-style-type: none"> • Winter roads will be designed to minimize the length of overland portions, where possible. • Winter roads will not use the same overland alignment in successive seasons, where possible. • Borrow pits will be closed as soon as they are no longer required, and reclaimed in a progressive manner, as described in the applicable Pit Development Plan. • Vegetation removal will be minimized at the clear-span abutments and culvert installations. Approved site-stabilization will be conducted as required. • Annual monitoring of roadsides for invasive species will be conducted each year of construction and invasive vegetation will be controlled immediately to eliminate seed production and long term establishment. |
| Disturbance to rare plant species | <ul style="list-style-type: none"> • The project footprint will be surveyed by a qualified biologist/botanist for the presence of Yukon stitchwort and other rare plant species in advance of construction. Where rare plants and/or communities are found, they will be avoided where possible. If avoidance is not an option, suitable mitigation strategies will be determined in consultation with ENR |
| Dust deposition | <ul style="list-style-type: none"> • During construction, dust will be controlled with the application of water as required, in accordance with the <i>Guideline for Dust Suppression</i> (GNWT ENR 1998). • Vehicle speeds will be kept to <50 km/h during summer construction to minimize the transfer of dust from road construction areas to the surrounding vegetation. |

2.2 Wildlife Disturbance

2.2.1 General Wildlife Disturbance Mitigation

Environmental Monitors, reporting to the Inuvialuit Land Administration, will monitor Project activities during construction to observe whether work is conducted in accordance with applicable regulations, commitments, and mitigation measures. Project Wildlife Monitors will record wildlife observations and the project's activities in relation to the mitigations and procedures in the WPP. Both Environmental Monitors and Wildlife Monitors will provide advice to the construction contractor(s) and report their observations to the appropriate management agency and designated Project contact. Details regarding reporting requirements specifically for Wildlife Monitors are outlined in Section 4 - Reporting.

Mitigations outlined in Table 2-2 are designed to reduce wildlife disturbances and prevent wildlife-human interactions/conflicts. Wildlife sensitive periods and recommended minimum setback distances for wildlife habitat and wildlife use areas are specified in Appendix C. When setbacks cannot be followed, the Wildlife Monitor will contact the local GNWT ENR or EC-CWS office to determine adjustments for specific situations. In the case of exceptions to setback distances applied to nests of breeding birds, nests will be monitored to ensure breeding activity is not disrupted.

Additional wildlife mitigation measures specific to birds, caribou, and grizzly bears are outlined separately in subsequent sections of this WPP.

Table 2-2 General Wildlife Disturbance and Wildlife-Human Interaction Mitigations

| Issue | Mitigations |
|-------------------------------|--|
| Wildlife protection (general) | <ul style="list-style-type: none"> • No feeding, harassing, or approaching wildlife will be permitted. • When possible, wildlife will be given the right-of-way, including but not limited to vehicle, aircraft, and pedestrian travel. Wildlife showing normal feeding behaviour and no aggression toward humans will be left alone, unless there is a human safety issue. • No hunting or trapping will be permitted by project personnel. • With the exception of designated project Wildlife Monitors, project personnel are prohibited from keeping personal firearms in camps or project contractor vehicles. This firearms restriction applies to the entire length of the highway during construction and any other construction-related facilities or areas. • Observations of poaching or evidence of illegal hunting/trapping must be reported to ENR. • Vehicle movements will be planned to minimize trips and reduce the potential disturbance of wildlife. These strategies will include the use of vans or extended cab pick-up trucks to transport workers. • Blasting will be conducted at borrow sources during winter only (November 15 to April 30). • Blasting will not be conducted within setback distances in Appendix C, unless exceptions have been approved by Tuktoyaktuk/Inuvik Hunters and Trappers Committees (HTCs) and ENR and/or CWS, as relevant. Wildlife Monitors will check blast areas for both human and wildlife presence prior to any detonation to ensure the area is clear; and, following detonation they will recheck the surrounding area to determine whether any wildlife have been disturbed. • Wildlife observations by project personnel will be reported to a Project Wildlife Monitor (see Section 3 Monitoring and Inspection). A list of species requiring real time reporting (see Section 4 Reporting) will be used to allow the Wildlife Monitor to provide direction on construction activities. • Project Wildlife Monitors will communicate daily observations only to the Project Supervisor, and ENR/CWS. Observations are not to be made available to other project personnel or the general public. • Project Wildlife Monitors may recommend avoidance of areas with sensitive wildlife activity or temporary work stoppages should observations indicate a need (e.g. when large numbers of caribou or other wildlife are in the vicinity of the road alignment or winter access routes). • The destruction of wildlife will be avoided unless a Project Wildlife Monitor determines that no other recourse is possible or if danger to human life or property is imminent (in accordance with Section 39 of the <i>NWT Wildlife Act</i>). Such destruction will be reported to ENR and/or CWS, and appropriate compensation will be determined for species with hunting quotas as agreed to in advance by HTCs in consultation with ENR. • Project activities will not destroy or damage beaver dams/lodges or muskrat push-ups. • The relevant sections of the <i>Wildlife Act</i> and <i>Migratory Birds Regulations</i> are outlined in Appendix B. Directions on defensive actions, reporting and permit requirements will be followed by the Wildlife Monitor and/or project personnel. • All project personnel will undergo a wildlife awareness program, which will include prevention measures for wildlife mortality and reporting procedures for wildlife-related incidents (See Section 5 – Education and Training). • Wildlife Monitors retained for the project will have undergone training specific to monitoring and reporting for this project. |

| Issue | Mitigations |
|---|--|
| Disturbance to muskrats and muskrat push-ups | <ul style="list-style-type: none"> • Pre-construction surveys will be conducted to locate muskrat push-ups on lakes proposed to be used for water withdrawal and winter travel. |
| Potential wildlife mortality due to project activities | <ul style="list-style-type: none"> • All vehicles and equipment used by project personnel will follow any construction zone speed limits to reduce the risk of hitting wildlife, as enforced by the site supervisor. • Vehicle operators will yield the right-of-way to wildlife and take all reasonable measures to avoid wildlife-vehicle collisions. • Areas known for wildlife presence will be deemed speed limit reduction zones during construction and signed appropriately. • The presence of wildlife such as caribou, grizzly bear, moose, furbearers, and birds, on or near the Highway will be communicated by the initial observer to the Wildlife Monitor who will inform other construction vehicle drivers. Based on guidance from the Wildlife Monitor, construction vehicles will either stop or proceed with caution when wildlife is on or near the road. • Wildlife Monitors will notify ENR Wildlife Officers of the species, sex/age/location of both road kill and naturally occurring wildlife carcasses located on within the right-of-way and other construction areas as soon as possible. • ENR is responsible for designating personnel to remove road kill and naturally occurring wildlife carcasses located near the highway and will provide the location of a disposal site. • Nest sweeps will be conducted prior to summer construction activities and carried out within four days of construction, for activities to be conducted within the migratory bird nesting season (see Appendix C) |
| Wildlife attractants increasing potential for human/wildlife conflict | <ul style="list-style-type: none"> • Camps and associated infrastructure will be designed to exclude wildlife. Options include security fencing, electric fencing, regular snow removal, covering vents with wire mesh to exclude small mammals and birds, and metal mesh skirting around elevated trailers, walkways, and stairs to prevent wildlife access. • Fencing or other methods will be used to prevent wildlife from entering waste storage areas. • Work areas will be kept clean and free of potential hazards to wildlife such as wire, cable, tubing, plastic, antifreeze or other materials that wildlife may eat or become entangled in. • Waste will be stored, handled, and transported in accordance with the Waste Management Plan, including storage of all solid waste in sealed, bear-proof containers. |

2.2.2 Bird-Specific Disturbance Mitigation

The majority of road construction activities will occur during winter when the risk of disturbances to breeding birds and their nests or young birds is negligible. However, summer activities will include: embankment compaction, bridge deck installation and grading. Summer construction activities will mostly be confined to the surface of the previously constructed highway embankment and will not occur on undisturbed land. The primary objective of bird-specific mitigation (see Table 2-3) is to prevent or minimize impacts to birds, their nests and habitat. Results from baseline project surveys (KAVIK-STANTEC 2012a, 2012b, 2012c) may provide some indication of areas of particular concern based on habitat modeling or previous observations (e.g., potential habitat for Horned Grebe).

Table 2-3 Bird Mitigation Measures

| Issue | Mitigations |
|--|---|
| Disturbance to birds and bird habitat | <ul style="list-style-type: none"> • Any vegetation clearing necessary for construction activities (e.g., to install water crossings), will be conducted during frozen ground conditions, and will be done by hand, where practical. • Highway construction activities during summer will be primarily limited to road base compaction and grading, and culvert remediation and maintenance, with activities confined to the surface of the previously constructed embankment; no work is expected to take place on undisturbed land. • For any construction activities, including vegetation clearing, planned during the breeding bird season (generally May 1 – July 31, but with some exceptions; see Appendix C), pre-disturbance surveys will be conducted no more than four days prior to the commencement of activity; these will focus on the embankment and immediately adjacent habitat visible from the embankment. • If an active nest is found, setback distances (as defined in Appendix C) will be applied and maintained until the nest is no longer active, unless exceptions are approved in consultation with ENR and/or CWS. • To reduce the probability of birds establishing nests on the embankment, and to conduct regular inspections of the embankment and all water course crossing structures, efforts will be made to drive regularly along the constructed embankment during freshet and the early part of the nesting season (late May through mid-June), taking care to look out for early nests while doing so. • If concentrations of waterfowl are present in nesting habitat, the Wildlife Monitor (in consultation with CWS if necessary) will determine whether Project activities should be minimized to avoid disturbance until nesting is completed (i.e. young have left the vicinity). • Where possible, project aircraft flights will be scheduled for times when few birds are present, including early spring, late fall and winter. If flights must be scheduled during these times, flights should be minimized over important bird habitat, and a minimum flight altitude of 650 m should be maintained (1100 m over areas where birds are known to concentrate; specific restrictions are indicated in Appendix D, Table D-1). • Efforts will be made to ensure all project aircraft flight paths are as direct as possible (unless indirect flight paths are required to avoid sensitive bird areas) and the number of flights is kept to a minimum. Every effort will be made to implement aircraft setback distances (Appendix D, Table D-1) during periods when birds are particularly sensitive to disturbance and are concentrated, such as during migration and moulting. |
| Project facilities and bird protection | <ul style="list-style-type: none"> • When construction activities require lighting, directed lighting rather than broad lighting will be used whenever possible during spring, summer, and fall months to avoid attracting birds. • At camps and associated infrastructure, lights will be positioned to shine downwards and/or will be fixed with shielding to minimize the distribution of peripheral light wherever possible. Lights will be shut off whenever possible if camps are not in use. • Birds will be deterred from nesting on infrastructure by placing covers/screens on vents, holes, and crevices where birds could potentially nest, and if necessary through active (but non-lethal) disturbance of birds to discourage them from establishing a nest on a construction site. If bird nesting occurs, the nest will not be disturbed until after the birds have left the area, with clearance to be discussed in consultation with ENR/CWS. |

2.2.3 Caribou-Specific Disturbance Mitigation

Effective communication among relevant HTC's, the IGC, WMAC, ENR, Department of Transportation (DOT), DOT contractors, and Wildlife Monitors will ensure appropriate and updated information is available on caribou observations, including data from radio collars, which may help predict the seasonal occurrence of caribou along the Project route. Implications regarding current caribou observations and other information relevant to wildlife protection should be frequently shared and discussed among the necessary parties. Any changes to the population status of the relevant caribou herds should be discussed and implications of mitigation and monitoring measures should be considered in WPP reviews to incorporate population survey information when it becomes available from ENR.

Numerous activities associated with the highway construction project could potentially affect caribou. Blasting at borrow sources, material hauling and general construction activities will occur throughout the winter. This may potentially affect caribou by way of road mortalities and interruption of movement patterns due to sensory disturbance. Mitigation measures to protect caribou from potential effects of construction activities are outlined in Table 2-4 along with general construction activity mitigations.

Table 2-4 Caribou Mitigation Measures

| Issue | Mitigations |
|---|--|
| Ground vehicle traffic near caribou | <ul style="list-style-type: none"> • The presence of caribou in areas of construction and access roads will be communicated to other drivers and all construction vehicles will stop or reduce speeds when caribou are within 500 m of the road. • To facilitate normal herd movements, consideration of changes in construction activities will be determined by the Wildlife Monitor, in consultation with ENR, on an ongoing basis; this may include restriction of highway access and/or reduced speed limits during peak caribou migration periods (e.g., arrival during fall rut and departure to calving grounds in spring). • Vehicle speeds during construction will be 50 km/h to reduce the potential of caribou mortality due to collisions, except on ice roads with extended visibility. Work stoppages may be required during periods of high caribou presence should observations indicate a need (e.g. when large numbers of caribou (>50) are in the vicinity of the road alignment or winter access routes). Activities may resume after these groups of caribou have moved >500 m from the activity or are no longer visible. |
| Project-related aircraft flights over caribou | <ul style="list-style-type: none"> • The number of flights will be kept to the minimum necessary. • Flight paths will be altered as necessary to avoid important areas, especially during sensitive periods. • If caribou are sighted they will not be approached, followed, hovered above, or circled around. • Higher altitude flight paths or paths that veer away from caribou will be chosen when the animals are observed running, panicking or exhibiting other startled response. • Minimum altitudes for flights are outlined in Appendix D, Table D-1. |

| Issue | Mitigations |
|--------------------------------------|---|
| Construction activities near caribou | <ul style="list-style-type: none"> • Blasting activities have the potential to affect caribou and therefore blasting will only occur when caribou are >500 m away. • All sightings and movements of caribou will be monitored and reported to Wildlife Monitors in real time. Observations will include the behavioural response of animals to the development activities. • Workers or construction equipment should maintain a minimum distance of 500 m from caribou. Temporary construction suspensions may be recommended by Wildlife Monitors, in consultation with ENR, if deemed necessary to protect caribou from potential disturbances. • If it is clear that caribou will likely remain in the development area for extended periods the Wildlife Monitor may gently encourage individual or small numbers of caribou to move away from the area using methods pre-approved by ENR |

2.2.4 Grizzly Bear-Specific Disturbance Mitigation

During the winter, grizzly bears inhabit dens and go into a physiological fasting and energy-sparing state, and pregnant females give birth and nurse their young. Grizzly bears may be particularly vulnerable to disturbance while occupying winter dens. The energetic costs associated with relocating to another den after a disturbance, especially when cubs are present, could have negative consequences on survival and reproduction. Construction-related activities in the vicinity of active bear dens may potentially cause bears to relocate, especially early in the denning season. To mitigate potential disturbances to denning grizzly bears, setback distances for development activities (see Table 2-5) will apply to all known and suspected active dens during the highway construction phase. Baseline surveys commenced in October 2012 and will continue each fall by qualified biologists and Wildlife Monitors in areas of new construction, at borrow sources, and winter access areas. Additionally, ENR will conduct annual fall and spring aerial den surveys of the regional study area as part of the WEMP.

Grizzly bear hunting in the area adjacent to the highway is conducted under quota. The highway traverses two management areas: Inuvik area I/GB/03 and Tuktoyaktuk area I/BC/04. All human-caused mortalities of grizzly bears are counted under the quota. Therefore if there are defence of life or property (DLP) or highway collision mortalities this impacts hunting opportunities in the communities. Wildlife compensation values have been agreed to with the HTC's.

Table 2-5 Grizzly Bear Mitigation Measures

| Issue | Mitigations |
|--|---|
| Locating active dens | <ul style="list-style-type: none"> • Prior to each winter of construction, aerial surveys will be conducted, while ground-based inspections of stockpiles and active borrow sources will be conducted to locate active and suspected active bear dens within setback distances of areas scheduled for winter work. Results from these surveys will be discussed with the HTC's prior to winter work, recognizing the sensitive nature of the information. • All suspected or freshly dug dens will be recorded and mapped. • The following options may be considered prior to construction: <ul style="list-style-type: none"> • If signs of active bear use are observed within 800 m, the Wildlife Monitor may implement measures to deter bears from denning within 800 m of construction activity (e.g., borrow sites and access roads) and permanent development sites. The Wildlife Monitor will abide by response measures outlined in the Inuvik ENR Bear Encounter Response Guidelines (Appendix E). Escalation of deterrent measures will follow these guidelines. Use of any deterrent measure will be reported to ENR. • If the Wildlife Monitor is unable to deter the bear and the animal represents an immediate threat to public safety or property, ENR personnel may be called on for assistance • To prevent the establishment of active dens on high suitability denning sites, temporary electric fences may be installed in the late summer around primary borrow sites and other areas to be disturbed the following winter. Location of fencing will be determined in consultation with ENR. |
| Construction activities near grizzly bear den | <ul style="list-style-type: none"> • If an active den or if a grizzly bear is observed during winter operations (October 1 – May 30) within 800 m of activity (1500 m of blasting), activities will be immediately suspended within this exclusion zone and ENR will be contacted to determine appropriate mitigation. • Minimum flight altitude guidelines in Appendix D will be adhered to when helicopter transport is necessary. |
| Grizzly bears observed near construction sites, camps, or facilities | <ul style="list-style-type: none"> • The site supervisor will inform project personnel if grizzly bears are present near construction or camp areas and review potential safety issues (see bear safety training in Section 5 – Education and Training). |
| Potential vehicle-grizzly bear collisions | <ul style="list-style-type: none"> • Construction vehicles will always stop or reduce speeds when grizzly bears are on or near the road. Construction vehicle speeds will be less than 50 km/h to reduce the potential of grizzly bear mortality due to vehicle collisions, except on ice roads with extended visibility. |
| Grizzly bear safety issues | <ul style="list-style-type: none"> • Field supervisors will ensure proper storage, transportation and disposal of wastes to avoid attracting bears and other carnivores to camps or other work sites (See Section 2.6, Wildlife Attractants). • The Wildlife Monitor and designated/trained staff will have access to bear deterrent materials including bear spray, cracker shells, and a 12 gauge shotgun with plastic slugs and slugs. All work crews will have at least one can of bear spray while bears are active. The use of any deterrent method will be reported to ENR. • All ENR bear response guidelines will be followed. These response guidelines and other bear safety issues will be communicated to all employees and contractors as part of orientation and training (See Section 5 - Education and Training). |

3 PRE-CONSTRUCTION SURVEYS, MONITORING, AND INSPECTION

Compliance and effects monitoring activities will be conducted to ensure the terms and conditions set out in regulatory approvals, licenses and permits, the WEMP, and in the commitments are met, and to check the effectiveness of mitigation measures in avoiding or minimizing potential effects. Ultimately, site supervisors will be responsible for ensuring that commitments in the WPP are met and for monitoring the implementation of wildlife and wildlife habitat mitigation measures. Project Wildlife Monitors will conduct monitoring of construction activities as they relate to wildlife and wildlife habitat protections and the mitigation measures outlined in the WPP. Wildlife Monitors will also be responsible for conducting and recording observations of wildlife throughout construction activities and participating in wildlife surveys. There may be periods when more than one Project Wildlife Monitor is required due to separation of construction activities; the number needed will be determined by the ability to fulfill the duties and responsibilities listed below.

Monitoring activities will provide a means of measuring the effectiveness of mitigation measures in avoiding or minimizing potential effects on wildlife. A Wildlife Sighting Form (Appendix E) will be used during construction to report on daily wildlife observations. This form will be used to describe the types of wildlife observed, the frequency and location of observations, and report on effectiveness of mitigation. Wildlife Sighting Forms will be distributed to project personnel, carried in vehicles, and will be completed in consultation with the Project Wildlife Monitor. Project Wildlife Monitors will be contracted project personnel, but will be expected to report observations in accordance with the WPP and without consideration for potential implications on construction activities. The HTC's will be approached to identify potential wildlife monitors.

Project Wildlife Monitors will be on-site during construction to monitor wildlife and manage risks. They will require independent transportation (ATV/Argo/truck as appropriate) to allow them to access and survey project sites in advance of construction crews, as well as equipment required to execute their duties (e.g., GPS, bear deterrents). Duties and responsibilities of Project Wildlife Monitors are outlined below:

- Observing activities during construction to ensure work is conducted in accordance with applicable regulations, commitments and mitigation measures.
- Providing wildlife briefings as part of daily tailgate meetings, and on supplementary occasions as required.
- Collecting and compiling data for the Wildlife Sighting Form.

- Monitoring and ensuring that setback distances for construction activities (Appendix C) are being followed. Particular attention will be paid to barren ground caribou during periods when they may be particularly vulnerable to disturbance from construction activities (i.e. migration, fall rut, or when cows with calves are present) to ensure that natural caribou behaviours and movements are allowed to continue.
- Taking appropriate steps to minimize project encounters with wildlife (see flow chart) including recommending temporary work stoppages or avoidance practices to the appropriate Project Construction Manager when necessary to prevent wildlife disturbance.
- Acting as the lead responder to all wildlife incidents. This may, if necessary, include grizzly bear denning deterrent methods or caribou deterrent methods follow the advice of ENR in regard to wildlife deterrence.
- Maintaining detection and deterrent equipment.
- Notifying and communicating with ENR/CWS in accordance with legislation and the WPP, including communication of any road kills or naturally occurring carcasses.

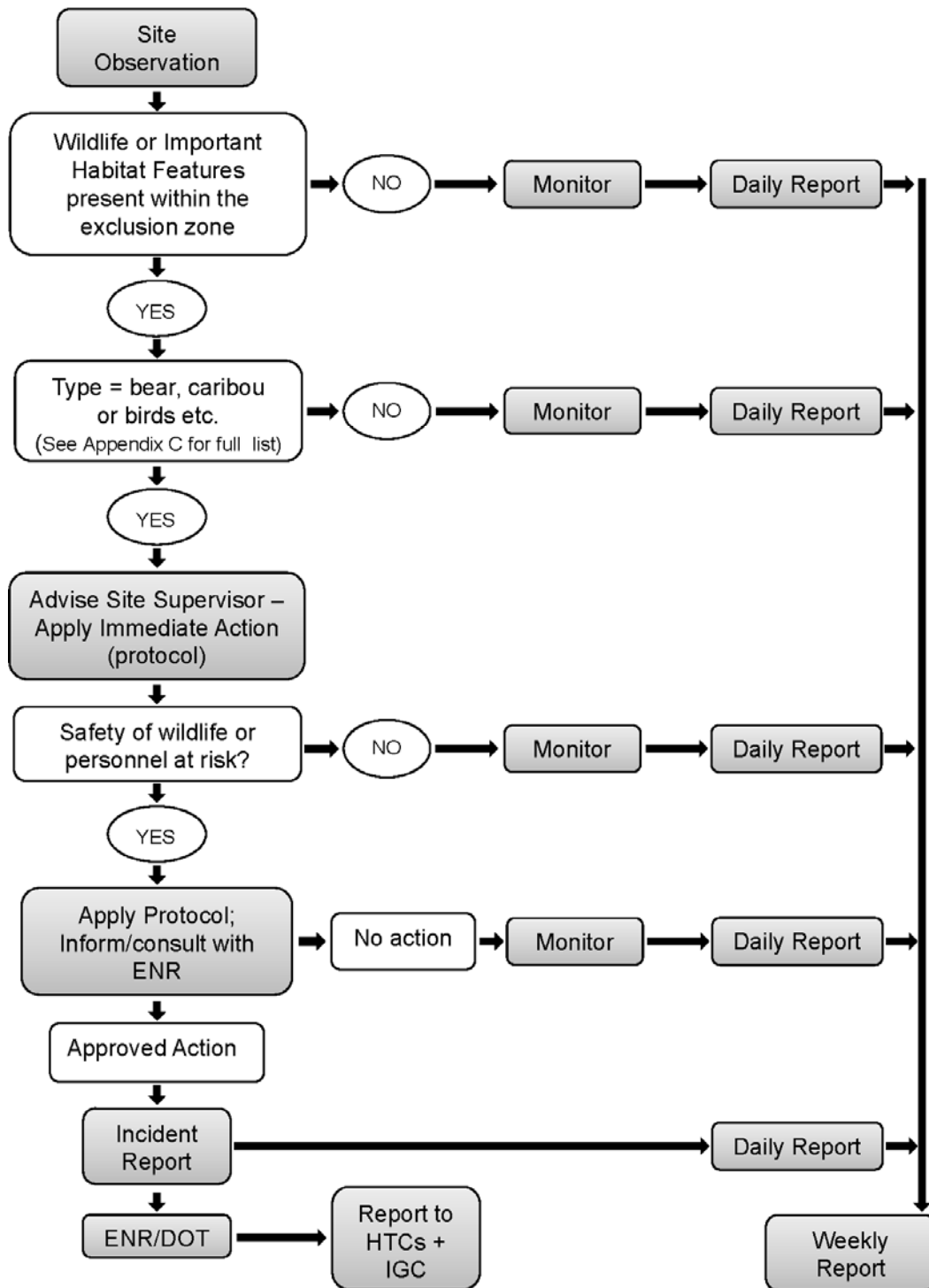


Figure 3-1 Wildlife Monitor Action Flow Chart

4 REPORTING

As per the action flow, Project Wildlife Monitors will notify the Site Supervisor of observations of certain wildlife species. The Wildlife Monitor will discuss with ENR or CWS biologists a response to potential dangerous wildlife situations, wildlife-vehicle interactions, and wildlife-construction interactions in accordance with the action flow. A Wildlife Monitor Form (Appendix E) will be completed daily by Wildlife Monitors. The Wildlife Monitor Form includes location [UTM coordinates, latitude/longitude or highway kilometer], date, species, number, sex/age if known, wildlife behaviour and, as required, and type of any wildlife-vehicle and wildlife human interactions. Sign of certain species will also be recorded. All project personnel will be asked to record incidental wildlife observations on a simplified Wildlife Sightings Form (Appendix E). Any wildlife encounters involving injury, mortality, or threats to project personnel should be recorded on a Wildlife Incident Form (Appendix E). Observations of note, such as repeated encounters with a species of concern or a nest should be followed up by the Wildlife Monitor. All wildlife records will be acquired and maintained by the Wildlife Monitors. The developer will provide these records to the HTC and ENR in weekly updates, but is expected to report as soon as possible on any human-wildlife interactions. Species to be recorded by Wildlife Monitors (whether inside or outside any applicable setbacks) include:

- Species at Risk – polar bear, caribou, rusty blackbird, short-eared owl, and peregrine falcon
- Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed species – grizzly bear, wolverine, and horned grebe
- Waterbirds – waterfowl (ducks, geese, swans), loons, cranes, terns
- Upland Birds – rock and willow ptarmigan
- Other Species of Management Concern - moose, foxes, wolves, beaver, and muskrat

In addition, any wildlife mortalities or other human-wildlife interactions with any species should be reported using the form.

The project-specific Inuvik ENR Bear Encounter Response Guidelines (Appendix E) will be followed in the event of a bear encounter. These guidelines outline roles and responsibilities and mitigations for bear encounter scenarios. All bear encounters will be reported to the ENR office closest to the area of operation. The Inuvik ENR Bear Report Checklist (Appendix E) will be completed by the Wildlife Monitor following all bear encounters prior to contacting ENR. The use of any deterrent method on wildlife will be reported to ENR. ENR will maintain all wildlife observations in the GNWT departmental Wildlife Management Information System. CWS will enter migratory bird observations into eBird.

In addition to the above mentioned wildlife reporting requirements, DOT contractors will also prepare and submit an annual Construction Wildlife Monitoring Report by May 15, and an annual report covering summer construction by October 15. These reports will include work completed to date, any work stoppages, relevant observations on the success and failures of mitigation measures from the WPP and

will focus on potential and real effects to wildlife during construction activities. Shapefiles of work conducted to date will also be provided to ENR so habitat loss and potential disturbance can be monitored. The reports will be used to highlight any unforeseen shortcomings in the WPP so that improvements can be made throughout the construction phase of the Project and will include a summary of the Wildlife and Wildlife Habitat Monitoring Daily Report Forms Wildlife and Wildlife Habitat Effects Monitoring Table. The Construction Wildlife Monitoring Report will also specifically report on the adequacy of mitigations for SARA species and report on any adaptive management that is required.

5 EDUCATION AND TRAINING

The DOT's contractor(s) will be responsible for educating and training staff on applicable practices contained within the WPP. To ensure the safety of Project employees and wildlife, the field supervisor and safety advisor will, in consultation with ENR and CWS, educate all field workers on the applicable practices. All training will be documented and recorded in the Construction Monitoring Report.

Information provided to contract employees during training will include the following:

- Review of the WPP
- An understanding of wildlife response protocols including reporting requirements and procedures related to wildlife observations, wildlife incidents, and wildlife-related accidents. Posters on display in camps illustrating species that require real-time reporting will reinforce the training information.
- Understanding of confidentiality of observations made during work.
- Instructions not to disturb any birds or nests of observed birds.
- Reporting procedures for all wildlife observations, including provision of a completed version of Appendix F (Agency Contact Information).
- Instructions regarding Project restrictions and operating protocols (e.g. wildlife right-of-way and speed limits).
- An understanding of Species at Risk, including identification (posters in camps) and reporting procedures.
- Wildlife policies (i.e., no feeding, no harassment, no hunting, and no trapping).
- Instructions on waste and wildlife attractant management including the implications of wildlife human-habituation, food conditioning, and unsecured wildlife attractants.
- An understanding of working safely in wildlife areas and avoiding wildlife encounters through familiarization with the ecology of potentially dangerous predators, including grizzly bears, wolves, and wolverines. This will include education on the identification, behaviour, seasonal movements, and habitat preferences of these species, as well as specific bear awareness and safety training, referencing regulations, permit conditions, industry standards, and Project commitments/policies, and information on managing non-natural attractants. Appropriate videos/DVD's such as "Staying Safe in Bear Country" and "Working in Bear Country", as well as the GNWT Bear Safety Brochure (see Appendix G) will be provided as part of the bear awareness and safety training. Workers will be educated on proper procedures for exiting vehicles or buildings in bear areas, where high risk bear-human interaction areas are likely to occur (i.e., areas where vegetation or terrain limit visibility and might hide a bear, and locations where sounds may mask the sound of an approaching bear), and to watch for bear sign and avoid potential denning and feeding areas if possible.

- Instructions regarding worker safety precaution protocols for working in remote areas. These include, working in pairs or larger groups, packing out waste for proper disposal, having adequate communication with supervisors and wildlife monitors (radios, cell phones, and satellite phones), and regular check-in times.
- Instructions for the wildlife monitors and other designated/trained staff on how to use non-lethal deterrent materials (e.g., bear spray). These individuals will be given access to non-lethal deterrent materials while working and living on constructions sites.

6 REVIEW OF WPP

Mitigation measures in this plan will be improved if necessary based on monitoring results and relevant research over time. The relevant HTC, WMAC, EC, GNWT, and DOT will be invited to review and suggest changes to the WPP on a bi-annual or annual basis throughout the construction phase of the Project, possibly including input from meetings of the Corridor Working Group. This WPP review will occur at minimum after winter construction each year, with participants provided a written report of the monitoring results to review in advance of the meeting. The suggestions and input provided by these parties will serve the function of modifying the WPP to ensure its effectiveness at protecting wildlife and wildlife habitat. Through this annual review process, participating parties will have access to the annual Construction Wildlife Monitoring Report prepared by DOT contractors. Additionally, reviewers of the WPP will also have access to wildlife monitor reports that detail any relevant wildlife observations, conflicts, and issues. Through this process the Project contractor will be provided an opportunity to employ adaptive management techniques to ensure sensitive species, species at risk, and species of management concern are adequately protected during all construction phases. The WPP will be re-issued one month prior to each year of construction, whether revised or not.

7 REFERENCES

- Aboriginal Affairs and Northern Development Canada, Fisheries and Oceans Canada, Environment Canada – Canadian Wildlife Service and GNWT – Department of Environment and Natural Resources (AANDC). 2012. Northern Land Use Guidelines – Volume 9a: Northwest Territories Seismic Operations.
- Environment Canada. 2012. Final technical submission respecting the Inuvik to Tuktoyaktuk highway, NWT. EIRB File Number 02/10-05. 53 pp.
- Government of Canada. 2011a. SARA public registry. Government of Canada website: http://www.sararegistry.gc.ca/default_e.cfm. Accessed October 15, 2012.
- Government of Canada. 2011b. Migratory Birds Regulations. Government of Canada website: http://laws-lois.justice.gc.ca/eng/regulations/C.R.C.,_c._1035/. Accessed October 15, 2012.
- Government of Canada. 2012. Fisheries Act. Government of Canada website: <http://laws-lois.justice.gc.ca/eng/acts/f-14/FullText.html>. Accessed October 15, 2012.
- Government of the Northwest Territories (GNWT). 2010. Government of the Northwest Territories website: <http://www.justice.gov.nt.ca/pdf/ACTS/Wildlife.pdf>. Accessed October 15, 2012.
- Government of the Northwest Territories (GNWT). 2012. Inuvik to Tuktoyaktuk Highway Wildlife Effects Monitoring Program (WEMP): Initial Design and Cost Estimates of Proposed Wildlife Studies – DISCUSSION DRAFT.
- Government of the Northwest Territories Department of Environment and Natural Resources (GNWT ENR). 1998. Guidelines for Dust Suppression on Commissioner's Lands. February 1998.
- KAVIK-STANTEC Inc. 2012a. Inuvik – Tuktoyaktuk Highway Baseline Data Acquisition Program: Wildlife Habitat Potential Mapping, Final Report. Prepared for the Government of Northwest Territories
- KAVIK-STANTEC Inc. 2012b. Inuvik to Tuktoyaktuk Highway – Vegetation Atlas with Waterbird Counts. Prepared for the Government of the Northwest Territories.
- KAVIK-STANTEC Inc. 2012c. Inuvik to Tuktoyaktuk Highway – Wildlife Habitat Potential Supplemental Maps for Borrow Sources 177, 174, 309 and PW2. Prepared for Government of the Northwest Territories.

APPENDIX A

Plans, Procedures, and Reports Supplementing the WPP

Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:
(1) CONSTRUCTION
Appendix A: Plans, Procedures, and Reports Supplementing the WPP
December 19, 2013

Table A-1 Plans, procedures, and reports expected to be in place prior to commencing construction activities, as stated by the WPP

| Plan or Procedures | Responsible Party |
|--|-------------------|
| Erosion and Sediment Control Plan | DOT contractor |
| Fish and Fish Habitat Protection Plan | DOT contractor |
| Wildlife Effects Monitoring Program | GNWT |
| Explosives Management Plan | DOT contractor |
| Pit Development Plans (site-specific) | DOT contractor |
| Waste Management Plan | DOT contractor |
| Spill Contingency Plan | DOT contractor |
| Construction Monitoring Reports* | DOT contractor |
| Wildlife and Wildlife Habitat Effects Inspection Table* | DOT contractor |
| Wildlife and Wildlife Habitat Effects Monitoring Table* | DOT contractor |
| * Template will be required before construction; however, main content will be provided annually subsequent to commencing construction activities. | |

APPENDIX B

Relevant Regulatory Requirements of the NWT Wildlife Act and Canada Migratory Bird Regulations

**Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:
(1) CONSTRUCTION
Appendix B: Relevant Regulatory Requirements of
the NWT Wildlife Act and
Canada Migratory Bird Regulations
December 19, 2013**

Relevant Regulatory Requirements of the NWT Wildlife Act and Canada Migratory Bird Regulations

NWT Wildlife Act (GNWT 2010)

38. (1) *Subject to subsection (3), no person shall without a permit entitling him or her to do so*

(a) persistently or repeatedly chase, weary, harass or molest wildlife without intending to capture or kill it;

(b) engage in any activity that is likely to result in a significant disturbance to a substantial number of wildlife animals;

(c) break into, destroy or damage any den, beaver dam or lodge or muskrat push-up outside any municipality or prescribed area, unless authorized to do so by the regulations or any other law; or

(d) destroy, disturb or take the eggs or nests of any birds mentioned in the prescribed schedule.

...

(3) A person may chase a bear away from a municipality, camp or settlement or its immediate vicinity where that action is necessary to defend life or property and makes it unnecessary to kill the bear, and a vehicle may be used in that chase.

39. (1) *Notwithstanding anything in this Act, a person may wound or kill wildlife if it is necessary*

(a) to preserve his or her or another person's life; or

(b) to protect his or her property.

(2) Every person who wounds or kills wildlife under subsection (1) shall without delay report the wounding or killing to an officer and

(a) give the wildlife to the officer, or

(b) advise the officer of where the wildlife is located, and the officer shall dispose of the wildlife in the prescribed manner.

89. *No person shall in any place outside a municipality or settlement store, dispose of or allow to accumulate any refuse in a manner that*

(a) substantially alters the habitat in that place or its immediate vicinity, or

(b) attracts or is likely to attract wildlife to that place or its vicinity,

but this section does not apply to a refuse dump situated in the vicinity of a municipality or settlement that serves the whole or a substantial part of that municipality or settlement.

Canada Migratory Birds Regulations (Government of Canada 2011b)

6. Subject to subsection 5(9), no person shall

(a) disturb, destroy or take a nest, egg, nest shelter, eider duck shelter or duck box of a migratory bird, or

(b) have in his possession a live migratory bird, or a carcass, skin, nest or egg of a migratory bird except under authority of a permit therefore.

APPENDIX C

Timing Restrictions and Setback Distance Guidelines for Wildlife and Wildlife Areas

Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:
(1) CONSTRUCTION
Appendix C: Timing Restrictions and Setback Distance Guidelines for Wildlife and Wildlife Areas
December 19, 2013

Timing Restrictions and Setback Distance Guidelines for Wildlife and Wildlife Areas (adapted from AANDC et al. 2012 and Environment Canada 2012)

Seasonal avoidance is the primary mitigation for this Project, especially for nesting birds, given that borrow source activity and construction of embankment will be limited to November through April. Work during the breeding season will be primarily on the embankment, restricted to driving on it and doing limited construction activities at selected locations. In rare cases when seasonal avoidance is not possible, the setbacks outlined in the table below will be taken into consideration, and if deviations are required, will be discussed with CWS (migratory birds) or ENR (other wildlife) and documented by Wildlife Monitors to evaluate potential effects and allow for adaptive management of future situations. Nest setback distances are intended to apply linearly along the embankment (e.g., if a shorebird nest is discovered on the embankment, the default mitigation is to stay at least 100 m away on either side, but no surveys are required to search for nests off the embankment). The dates presented reflect typical seasonal timing, but are not intended to be restrictive (e.g., if a bird nest is initiated prior to the start of the defined breeding season, or dependent young remain in the area after the end, the same precautions should apply). If nests are not on top of the embankment (i.e., not at risk of direct destruction), traffic passing by should be minimized, but may not need to be entirely avoided, pending case-specific discussion with CWS.

| WILDLIFE SPECIES | FEATURE OR HABITAT | SPECIFIC CONDITIONS | PERIOD¹ | SETBACK DISTANCE |
|-----------------------------------|---------------------------|---|---------------------------|-------------------------|
| Caribou (barren-ground, woodland) | N/A | General development activities when caribou are in the area | Year round | 500 m |
| Caribou (barren-ground, woodland) | N/A | Snowmobile distance when caribou are in the area | Snow period | 250 m |
| Ungulates (general) | Mineral/salt lick | General development activities | Year round | 1 km |
| Grizzly bear, black bear | Den | If activity is blasting | Oct 1 – May 30 | 1.5 km |
| Grizzly bear, black bear | Den | General development activities | Oct 1 – May 30 | 800 m |
| Grizzly bear, black bear | Berry habitat | General development activities when bears are observed foraging | Jul 15 – Sep 15 | 300 m |
| Wolverine | Den | General development activities | Oct 15 – Jul 15 | 800 m |
| Lynx | Den | General development activities | Apr 1 – Jul 15 | 250 m |
| Fox | Den | General development activities | May 1 – Jul 15 | 150 m |
| Wolf | Den | General development activities | May 1 – Sep 15 | 800 m |
| Wolf | Den | Entering area by foot | May 1 – Sep 15 | 500 m |

**Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:**

(1) CONSTRUCTION

Appendix C: Timing Restrictions and Setback Distance Guidelines for Wildlife and Wildlife Areas

December 19, 2013

| WILDLIFE SPECIES | FEATURE OR HABITAT | SPECIFIC CONDITIONS | PERIOD¹ | SETBACK DISTANCE |
|-------------------------|--------------------------------|---|-------------------------------------|-------------------------|
| Waterfowl (general) | Staging area | General development activities when large concentrations of birds are present | Spring/Fall | 1.5 km |
| Horned grebe | Edge of water body with a nest | General development activities | May 15 – Aug 31 | 100 m |
| Swans/Loons/ Cranes | Nest | General development activities | May 15 – Aug 31 | 750 m |
| Swans/Loons/ Cranes | Nest | Pedestrians/ATVs | May 15 – Aug 31 | 500 m |
| Ducks | Nest | General development activities | May 15 – Aug 31 | 150 m |
| Ducks | Nest | Pedestrians/ATVs | May 15 – Aug 31 | 100 m |
| Geese | Nest | General development activities | May 15 – Aug 31 | 500 m |
| Geese | Nest | Pedestrians/ATVs | May 15 – Aug 31 | 300 m |
| Shorebirds ² | Nest | General development activities | May 15 – Jul 31 | 100 m |
| Shorebirds ² | Nest | Pedestrians/ATVs | May 15 – Jul 31 | 50 m |
| Terns/Gulls | Nest | General development activities | May 15 – Jul 31 | 300 m |
| Terns/Gulls | Nest | Pedestrians/ATVs | May 15 – Jul 31 | 200 m |
| Bald eagle | Nest | General development activities | Apr 15 – Aug 31 | 500 m |
| Golden eagle | Nest | General development activities | Apr 15 – Aug 31 | 800 m |
| Osprey | Nest | General development activities | May 1 – Aug 31 | 1 km |
| Peregrine falcon | Nest | General development activities | May 1 – Aug 31 | 1.5 km |
| Short-eared owl | Nest | General development activities | May 1 – Jul 31 | 1.5 km |
| Raptors (general) | Nest | General development activities | Year round | 500 m |
| Rusty blackbird | Nest | General development activities | May 1 – Jul 31 | 300 m |
| Songbirds (general) | Nest | General development activities | May 1 – Jul 31 | 100 m |
| Songbirds (general) | Nest | Pedestrians/ATVs | May 1 – Jul 31 | 30 m |
| All other wildlife | Nest/den | Varies with region and species; contact GNWT - ENR or EC office | Breeding, nesting, birthing seasons | 100 m |

¹ The wildlife sensitive periods presented are a general guide as the specific timing of wildlife and bird activities may vary from year to year. Year-round avoidance may not be possible in all cases; exceptions will be discussed with ENR to develop appropriate mitigation

² For Whimbrel, the setback should be 500 m for general development activities and 300 m for pedestrians and ATVs

APPENDIX D

Flight Restrictions for Project-related Aircraft

Table D-1 Summary of Environmentally Acceptable Minimum Flight Altitudes

| SPECIES / SITUATION | RECOMMENDED ALTITUDE (agl) |
|--|-------------------------------|
| Over areas likely to have birds | > 650 m (2100 ft) |
| Over areas where birds are known to concentrate (colonies, moulting areas) | > 1,100 m (3500 ft) |
| Over large mammals during ferry flights | > 300 m (975 ft) |
| During wildlife surveys | > 100 m (325 ft) |
| When flying point to point in vicinity of caribou and other wildlife species | > 610 m (2000 ft) |
| SOURCE: Environmental Impact Screening Committee (EISC). June 29, 2012. Environmental Impact Screening Guidelines. Retrieved from: http://www.screeningcommittee.ca/pdf/eisc_guidelines.pdf | |

APPENDIX E

Forms

This section comprises four distinct forms and associated guidelines:

1. Bear Encounter Response Guidelines and Bear Report Checklist form
2. ITH Wildlife Monitor Form – for daily reporting by designated wildlife monitors
3. ITH Wildlife Sightings Form – for reporting incidental observations of wildlife by anyone in the Project area
4. ITH Wildlife Incident Form – for reporting wildlife encounters involving injury or death to wildlife, or potential risk to people



Department of Environment and Natural Resources

PO Box 2749, Inuvik, NT X0E 0T0

Bear Encounter Response Guidelines for Construction of Inuvik-Tuktoyaktuk Highway

I. PRINCIPLES:

1. Protection of Life and Property
2. Conservation

II. OPERATIONAL GUIDELINES:

- A. Deterrence
- B. Re-locate, if feasible
- C. Destroy

III. OPERATIONAL PROCEDURES:

Contacts:

Initial contact during regular hours:

Environment and Natural Resources Inuvik office at (867) 678-6650 FAX (867) 678-6659

Initial contact after regular hours and weekends:

Renewable Resource Officer on call 1 May to 31 October

Cell: (867) 678-0289

Stephen Charlie, Regional Superintendent

Cell (867) 620-0009

Response Personnel:

The following personnel can be available for responding to problem bear situations:

| | | | |
|-----------------|-------------|----------------|---------------|
| Doug Villeneuve | Inuvik | (867) 678-6680 | Cell 678-5314 |
| Marsha Branigan | Inuvik | (867) 678-6670 | Cell 678-0477 |
| Tobias Halle | Inuvik | (867) 678-6681 | Cell 678-5839 |
| Lila Voudrach | Tuktoyaktuk | (867) 977-2350 | Cell 678-0587 |

Initial Contact:

The reporter should complete the attached checklist prior to calling Department of Environment and Natural Resources (ENR). It is critical that as much information as possible be provided at this point in order to determine the appropriate response.

IV. RESPONSE

Wildlife Monitors (WMs) will be the initial responders to problem bears. It is imperative that they have a sufficient supply of approved deterrents at their disposal. All bear sightings and encounters shall be reported to the ENR office closest to the area of operation.

The potential responses will be considered in the following order:

a) Camps

1. Wildlife Monitors will employ conventional means of deterring problem bears that threaten public safety or property. This may involve chasing a bear out of the camp with a vehicle or snowmobile, or using noise makers and rubber bullets. If these methods prove ineffective, and where a helicopter is available or can be obtained in the area, the bear may be chased from camp. Pilots must be careful not to over stress the bear during this flight and must back off when the bear is a sufficient distance from the camp and keeps running in the desired location. If circumstances allow, a Renewable Resource Officer (RRO) should be contacted prior to using aircraft to deter bears. Undue harassment is illegal and must be avoided. **All incidents involving any means of deterrence should be reported to a Renewable Resource Officer as soon as possible.**
2. Should for some reason, the Wildlife Monitor is unable to deter a bear, and where the bear does not pose an immediate threat to public safety or property, the Department of Environment and Natural Resources (ENR) may send a deterrent or capture team to the site.

b) Denning bears

If a bear is located in, at or near a den site, work in the area must halt. All employees should safely retreat from the area and report the occurrence to the Wildlife Monitor, Site Supervisor, and the RRO in your area as soon as possible. The establishment of an 800m exclusion zone would happen immediately. The WM will assess the situation and then the WM and Site Supervisor will call ENR to report and discuss the situation.

Each situation will be assessed individually but mitigations include:

If the den is in an area that still allows the program to continue then the exclusion zone will be maintained until the bear emerges in the spring.

If the den would result in the halt of part or the entire program, the appropriate HTC(s) would be contacted to discuss options. Confidentiality of active bear den locations is an important consideration until after emergence in the spring. Based on consultation with ENR and the HTC(s), ENR and HTC member might need to assess the site to determine the measures the Developer will be required to implement to ensure bears are not unduly disturbed.

Options include (in order of application/severity):

- Adjust the access road or camp location to avoid the bear den by 800 m;
- Do not use all or a portion of a granular source for that year of construction in order to avoid the den by 800m;
- Reduce the size of the exclusion zone and proceed with increased vigilance on behalf of the WM;
- Contact the HTC to preselect potential hunter(s) in case a bear needs to be harvested;
- If a den is located directly on the ROW for the road, and no other mitigations can be applied, the appropriate HTC will select a hunter to harvest the bear(s) in a den. The Developer will compensate the HTC accordingly.

c) Free ranging bears

Prior to active deterrence of free ranging bears, and where public safety or property is not in immediate danger, the WM will assess the situation. The WM should determine if the bear has been disturbed from a den or if it is denning in close proximity. Bears in the vicinity of a den should not be deterred and work should cease the WM has discussed the situation with ENR. If the WM has determined that the bear is in fact free ranging, and not lingering around a den site, then active deterrence may commence if necessary. This would most likely apply to polar bears in the winter, or grizzly bears in the summer or spring.

d) Destruction of the bear

Instructions to destroy the bear will be given when deterrent actions have failed, when additional deterrent actions are not possible, and when it is determined that capture and relocation cannot be conducted or is unlikely to be successful.

The bear can be destroyed if human life or property is in imminent danger.

If a bear is killed, you will be required to:

- 1) Report the kill to Department of Environment and Natural Resources, as soon as possible.
- 2) Skin the bear, leaving the claws and penis (if applicable) attached, and preserve the hide by freezing or salting it and storing it in a cool place. Be generous with the salt.
- 3) Turn in the hide, the skull, and any other biological samples requested to a Department of Environment and Natural Resources Renewable Resource Officer.

As per the NWT Wildlife Act, no person may retain any part of a bear killed in defence of life or property.

V. FOLLOW-UP

After response measures are completed, the situation will be reviewed with the camp operator and corrective actions identified. These may include a wide array of actions aimed at avoiding future bear problems and ensuring that the operator is made aware of legal obligations. The need for conservation and the vulnerability of bear populations to over harvest is to be stressed.



Department of Environment and Natural Resources

Bag Service #1 Inuvik, NT X0E 0T0

FAX (867) 678-6659

Bear Report Checklist

1. Report Details:

Date/Time of Report: _____

Reporter's Name: _____

Affiliation/Location of Reporter: _____

Contact Number for Reporter: _____

Other on Site Contacts: _____

Wildlife Monitor's Name: _____

2. Camp Details:

Location of Incident: _____

Latitude/Longitude: _____

Type of Camp- Permanent/ Mobile: _____

Number of People in Camp: _____

How Long has Camp Been Here (if Mobile): _____

Are there any Aircraft on site? If yes, Type: _____

3. History of the Problem:

Date/Time Bear First Sighted: _____

Type of Bear: Grizzly _____ Polar _____ Black _____

Sex of Bear: Male _____ Female _____ Unknown _____

Age of Bear: Cub _____ Juvenile _____ Adult _____

Has Bear Been Observed Before: _____

Den site found (YES NO)? If Yes description/LAT LONG _____

What was the Bear Attracted To: _____

Did the Bear Obtain Food: _____

Behaviour of Bear: Fearful _____ Not Fearful _____ Aggressive _____

Damage By Bear: _____

4. Deterrent Action:

Was the Bear Deterred? Yes _____ No _____

If Yes, Type of Deterrent Used: _____

5. Other Information:

Weather on Site at Time of Report: _____

Checklist Forwarded to: _____

Project Personnel Wildlife Observations Guidelines

1. Separate forms have been prepared for Wildlife Monitors and Project personnel.
2. Wildlife Monitors will use the ITH Wildlife Monitor Form
3. Project personnel will use the Wildlife Sightings Forms and/or Wildlife Incident Form. These forms will be located in Wildlife Log Books and available in crew vehicles and camps.
4. The Wildlife Monitor will periodically check each Wildlife Log Book and identify occurrences that require action (e.g., repeated bear/wolf/wolverine sightings in a particular area, nesting birds). They will also replenish Wildlife Sightings and Wildlife Incident Forms in the log books as needed.
5. Any species observed (e.g., bear, wolf, fox, wolverine, caribou, moose, beaver, muskrat, ptarmigan, owl, falcon, grebes or waterfowl, or bird nests) should be recorded and identified to the best of the observer's ability.
6. The Wildlife Monitor will include species of note recorded by personnel in its regular reports.
7. All Incident Forms will be forwarded to the Wildlife Monitor daily.

ITH Wildlife Monitor Form

Date (dd/mm/yyyy): _____

Observer(s): _____

| Time | Species ¹ | Number | Age/sex ² | Location (describe) | UTM coordinates | | Notes ³ | Photo ID |
|------------------|----------------------|--------|----------------------|---------------------|-----------------|----------|--|----------|
| | | | | | Easting | Northing | | |
| Example: 0840 | Moose | 1 | Adult male | KP3 | 556878 | 7644255 | Cloudy (overcast), moose seen walking by borrow source I401A (KP 3), no construction activity at borrow source | 23 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

| | | | |
|-----------------------|----------------|----------|--|
| 1- Target species: | 2 – Age: | 2 – Sex: | 3 – Notes, where applicable |
| grizzly bear | Adult | Male | Weather |
| polar bear | Juvenile | Female | Wildlife behaviour (e.g. aggressive, fleeing, courtship, etc.) |
| wolverine | Other, specify | Both | Construction activity and nature of wildlife interaction with people or vehicles |
| gray wolf | Both | Unknown | Location (e.g. highway km) |
| red fox | Unknown | | Indirect evidence of wildlife (e.g. mineral lick, den site, nest, tracks, scat) |
| arctic fox | | | Cause of mortality (if observed) |
| barren-ground caribou | | | |
| boreal caribou | | | |
| moose | | | |
| beaver | | | |
| muskrat | | | |
| rock/willow ptarmigan | | | |
| rusty blackbird | | | |
| short-eared owl | | | |
| peregrine falcon | | | |
| horned grebe | | | |
| waterfowl | | | |

Additional notes (e.g. details on wildlife interactions or response to mitigation):

Wildlife Incident Form

Date:

Time:

Location (*Coordinates/ Kilometre Post/ Local Name*):

Wildlife Species:

Person(s) Involved:

Description of Incident:

(Example: bear was chased away twice from camp at borrow source X and had to be shot; or found a dead wolverine near the constructed embankment at KP 13)

Description of the deterrent used:

Reporting (*please use a check mark to identify what was completed*):

Called in the incident to the crew lead or supervisor

Provided a copy of this form to the Wildlife Monitor

Incident was reported by the Wildlife Monitor to ENR

APPENDIX F

Agency Contact Information

**Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:
(1) CONSTRUCTION
Appendix F: Agency Contact Information
December 19, 2013**

Agency Contact Information

| Agency | Person Responsible | Title | Contact Information |
|-----------------------------|--------------------|-------|---------------------|
| GNWT DOT | | | work: cell: |
| GNWT ENR | | | work: cell: |
| Environment Canada – CWS | | | work: cell: |
| Tuktoyaktuk HTC | | | work: cell: |
| Inuvik HTC | | | work: cell: |
| WMAC-NT | | | work: cell: |
| | | | work: cell: |
| | | | work: cell: |
| | | | work: cell: |

APPENDIX G

GNWT Bear Safety Brochure

**Inuvik to Tuktoyaktuk Highway
Wildlife and Wildlife Habitat Protection Plan:
(1) CONSTRUCTION
Appendix G: GNWT Bear Safety Brochure
December 19, 2013**

If You Encounter a Bear...



- Remember the 3 S's... Stop, Stand still, Stay calm.
- Ensure others know that a bear is in the vicinity.
- Do not run.
- Leave the bear an open avenue of escape.

...at a DISTANCE

- Alert the bear to your presence – speak in low tones, slowly wave your arms.
- Quietly walk back the way you came or make a wide detour.
- Keep an eye on the bear.
- Stay downwind.
- Consider using warning shots, noisemakers.

...that is NEARBY

- Do not shout or make sudden movements.
- Avoid direct eye contact.
- Back away slowly.
- Climb at least four metres up a tree to escape a grizzly. (Ineffective against black bears).

Deterrents...



- Include... 12 gauge cracker shells, air horns, flares, and chemical repellents such as pepper spray.
- Are not completely effective against every bear in every situation.
- Should not make you less careful to avoid bear conflicts.
- Are potentially dangerous – use with extreme caution.

If a Bear Charges...



- Many charge are bluffs – the bear will often veer to the side at the last minute.
- Use a chemical repellent only at close range.

- If you have a firearm and contact appears unavoidable, shoot to kill.
- Play dead only during a grizzly bear attack (lie on your side, curl into a ball with your legs tight to your chest, hands clasped behind your neck).

If you must shoot a bear in self-defense, report the kill to a Renewable Resource Officer as soon as possible. If an Officer is not immediately available, skin the bear and preserve the hide. The hide must be turned in to an Officer. You may not keep any part of a bear killed in self-defense.

For Further Information...



For further information, contact any Environment and Natural Resources Office:

| | |
|-----------------------|----------|
| Area Code (867) | |
| Aklavik | 978-2248 |
| Deline | 589-3421 |
| Fort Good Hope | 598-2271 |
| Fort Liard | 770-4311 |
| Fort McPherson | 952-2200 |
| Fort Providence | 669-3002 |
| Fort Resolution | 394-4596 |
| Fort Simpson | 695-7433 |
| Fort Smith | 872-6400 |
| Hay River | 875-5554 |
| Inuvik | 678-6670 |
| Lutsel K'e | 370-3141 |
| Norman Wells | 587-3500 |
| Behchokò | 392-6511 |
| Tsiigehtchic | 953-3605 |
| Tulita | 588-3441 |
| Tuktoyaktuk | 977-2350 |
| Ulukhaktok | 396-4505 |
| Yellowknife | 873-7181 |



May 2009

Safety in Grizzly and Black Bear Country



Black Bear

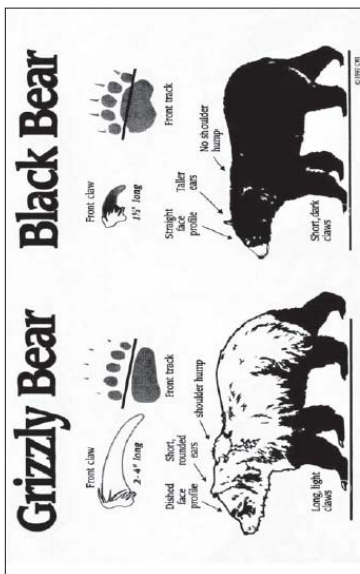
Welcome to Bear Country



Grizzly and black bears can be found throughout the Northwest Territories. They are an important part of the northern ecosystem.

Northerners are committed to maintaining healthy populations of all wildlife, including grizzly and black bears. Treat them with respect. Remember that you are in a bear's territory.

What's the Difference Between...?



While You are Travelling...



- Always be alert.
- Travel in groups.
- Travel only during daylight.
- Avoid carrying strong smelling foods.
- Make noise where visibility is limited.
- Avoid bear feeding areas such as flood plains, berry patches and areas rich in horsetails and other grasses.
- Avoid bear travel areas like shorelines, trails along the water or near berry patches.
- Watch for fresh bear droppings and tracks.
- Carry bear deterrents.



Grizzly Bears

If You are Camping...



- Avoid camping in areas frequented by bears.
- Always sleep inside a shelter (tent, cabin, etc.).
- Don't keep food in tents or areas of camp other than the cook tent.
- Keep a clean camp - wash all dishes and utensils after every meal.
- Avoid cooking greasy foods.
- Burn all garbage every day or take it to a bearproof disposal site. Burying garbage does not eliminate odors.
- If you're going to leave the campsite:
 - bearproof your camp - store food and other attractants (dish detergent, toothpaste, etc.) in an inaccessible place.
 - let someone know where you are going.
 - take a partner and bear deterrents with you.

If You are Fishing...



- Be cautious near streams or lakes - bears frequent these areas.
- Clean fish away from camp and store them underwater.
- Burn fish guts away from camp.
- Store fish-cleaning knives away from camp.
- Don't wear clothes that smell like fish to bed.

If You are Hunting...



- Avoid hunting late in the day and returning to camp in the dark.
- Stay alert when dressing game or handling meat and only do so away from camp.
- Avoid shooting more than your party can pack out in a single load.
- If you must leave meat in the field, leave it near a visible landmark with a clear approach route and cover it with a tarp to discourage scavengers.
- Don't keep bloodied clothes in your tent.