

## GUIDELINES FACT SHEET

### GUIDELINES FOR MANAGING IMPACTS FROM MINING EXPLORATION ON WILDLIFE & HABITAT

NOTE: BOLDED TEXT DEFINED IN APPENDIX C

#### **Purpose and Scope of this Fact Sheet**

This Fact Sheet provides information to mining exploration proponents to act as stewards of the environment operating in the Peace Region (Northeastern British Columbia) on Crown Land. The information provides guidance to **avoid, minimize, and mitigate** adverse impacts on **wildlife or habitat** from proposed activities and assist in compliance with applicable legislation, regulation and policies. For the purposes of this Fact Sheet, the term wildlife includes fish and habitat. *N.B. – This document is current as of the date shown in the header.*

The Fact Sheet includes the following sections:

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#### **Background**

Northeastern British Columbia has the highest diversity and overall abundance of wildlife in the province, including the highest numbers of ungulates and carnivores. This wildlife resource has received recognition in land use planning, particularly the approved Dawson Creek, Fort St. John, Fort Nelson and Mackenzie Land and Resource Management Plans (LRMP).<sup>1, 2, 3</sup> These plans provide strategic direction which reflect areas of sensitive natural values, including wildlife, where precautions should be taken during resource development activities. Additional provincial initiatives to protect wildlife values include (but are not limited to) Old Growth Management Areas, Wildlife Habitat Areas and Ungulate Winter Ranges under the *Forest and Range Practices Act of British Columbia*.<sup>4</sup>

## Wildlife Impact

The Ministry of Environment is concerned that the present and anticipated increase of mining exploration activity in the Peace Region, individually and cumulatively, may be adversely impacting the long-term viability of various wildlife populations.<sup>5, 6, 7, 8</sup> Adverse impact(s) to wildlife may result from:

- noise and/or movement of machinery and aircraft;
- timing of exploration activities including associated reclamation;
- proximity to wildlife;
- frequency and duration of activities;
- objectives of reclamation activities;
- work site and access location;
- metal leaching/acid rock drainage;
- worksite practices; and,
- water use.

## Objectives

The goal of this Fact Sheet is to provide managers and operators with information to assist them in the development of operating procedures where adverse impacts to wildlife are avoided where possible and where not, are minimized and/or mitigated. A fundamental recommendation is that proponents prepare a wildlife impact mitigation plan for exploration activities. Primary objectives of this Fact Sheet are the following:

- to provide information to mining exploration managers to avoid, minimize and mitigate adverse impacts to wildlife in both planning and implementation of mining exploration activities;
- to provide information to plan for unforeseen wildlife circumstances during mining exploration activities and
- to improve exploration practices;
- to avoid and prevent contraventions of applicable legislation; and,
- to promote awareness among coal and mineral exploration field personnel of potential exploration/wildlife disturbance concerns.

## Guidelines

1) Prior to undertaking mining exploration activities, proponents should collect relevant wildlife information by consulting these sources:

- all applicable legislation, including (but not limited to)
  - the Provincial *Water Act* ([http://www.qp.gov.bc.ca/statreg/stat/W/96483\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/W/96483_01.htm))
  - the Provincial *Wildlife Act* ([http://www.qp.gov.bc.ca/statreg/stat/W/96488\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/W/96488_01.htm))
  - the Provincial *Fisheries Act* ([http://www.qp.gov.bc.ca/statreg/stat/F/96149\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/F/96149_01.htm))
  - the Provincial *Fish Protection Act* ([http://www.qp.gov.bc.ca/statreg/stat/F/97021\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/F/97021_01.htm))
  - the Federal *Species at Risk Act* (<http://laws.justice.gc.ca/en/S-15.3/211282.html>)
- First Nations;
- Land and Resource Management Plans;
- Tables 1&2 included in this Fact Sheet;
- Appendices A and B;
- existing Wildlife Capability, Terrestrial Ecosystem or Predictive Ecosystem mapping (scale usually 1:50,000 or larger);

- other best management practices including - Best Management Practices for Aircraft Operations/Wildlife in NE BC;<sup>9</sup>
- Peace Region FTP site ([ftp://ftpfsj.env.gov.bc.ca/pub/outgoing/Peace\\_Region\\_Wildlife\\_Values/](ftp://ftpfsj.env.gov.bc.ca/pub/outgoing/Peace_Region_Wildlife_Values/))
- BC Conservation Data Centre (<http://www.env.gov.bc.ca/cdc/>)
- BC Fisheries Data Warehouse (<http://srmapps.gov.bc.ca/apps/fidq/>)
- BC Wildlife Species Inventory (<http://srmwww.gov.bc.ca/wildlife/wsi/index.htm>)
- BC Ungulate Winter Ranges (<http://www.env.gov.bc.ca/wld/uwr/index.html>)
- BC Wildlife Habitat Areas (<http://www.env.gov.bc.ca/wld/identified/index.html>)
- chapter 9 of the *Health, Safety and Reclamation Code of Mines in British Columbia*<sup>10</sup>;
- technical reports and other relevant literature;
- government personnel; and,
- guide outfitters and trappers.

2); Using gathered information and the recommendations in Table 1, a **qualified professional** prepares a written wildlife impact mitigation plan. A good plan will first try to avoid impacts; if this is not possible, strategies to minimize potential impacts or otherwise mitigate the effects should be devised prior to commencing exploration activities. The plan should also include different options in case unexpected conditions require operational flexibility (contingency planning). At a minimum, a wildlife impact mitigation plan will:

- identify wildlife species addressed in the plan and appropriate least risk work windows;
- identify special vehicle closures, Conservation Data Center element occurrences, notations of interest, Wildlife Habitat Areas, Ungulate Winter Range, **sensitive ecosystems**, parks and other protected areas, and other wildlife related land status;
- identify known or potential **important wildlife habitat** (see Appendix A);
- designate avoidance distances (as per tables provided);
- predetermine suitable access and work sites to: maintain avoidance distances, provide visual screening and reduce frequency of disturbance near critical areas; and,
- provide information and location of activities by other industries in the area to assist in coordination to reduce impacts.

3) Prior to conducting any motorized activities within a closed area defined in the Provincial *Motor Vehicle Prohibition Regulation* ([http://www.qp.gov.bc.ca/statreg/reg/W/Wildlife/196\\_99.htm](http://www.qp.gov.bc.ca/statreg/reg/W/Wildlife/196_99.htm)) an application **must** be made to the Permit and Authorization Services Branch (<http://www.env.gov.bc.ca/pasb/applications.html>).

4) For proposed works in and around water, the Federal *Fisheries Act* (<http://lois.justice.gc.ca/en/F-14/text.html>) is the key statute regarding fish and fish habitat in Canada. Proponents should consult the Provincial *Water Act*<sup>11</sup> to determine if a Notification, Approval and/or other applicable permit is required ([http://wlapwww.gov.bc.ca/nor/wateract\\_per/](http://wlapwww.gov.bc.ca/nor/wateract_per/)).

5) Mining exploration operations will often be faced with unpredictable circumstances. Recognizing that safe working conditions are paramount, the wildlife impact mitigation plan should include alternatives such as different access routes, equipment types and activity timing as well as a monitoring feedback mechanism which permits field observations to determine if there is an immediate requirement to change/alter activities.

6) Evaluate the management effectiveness of the wildlife impact mitigation plan, a process which is referred to as, **adaptive management**. For example, a wildlife impact mitigation plan anticipates a

desired outcome, and **monitoring** and evaluation of the actual outcomes can result in innovative, more efficient and effective future wildlife avoidance and mitigation procedures.

7) Relevant sections of the wildlife impact mitigation plan should be conveyed to all field personnel, prior to activity commencement.

8) Written wildlife reports (e.g. monthly submissions) should be provided to the Regional Office, Ministry of Environment. The Wildlife Sighting/Activity Response Form in Appendix B is an example of the relevant wildlife information that should be collected. When possible, avoid, minimize and mitigate adverse impacts on wildlife and their habitats.

## **Protection of Wildlife Checklist**

Here's a proposed checklist to help you in applying these guidelines:

- Wildlife in the project area has been identified by checking maps, local knowledge and other information.
- Exploration plans avoid, minimize and mitigate impacts to wildlife by applying such measures as specified suitable access, least risk windows of operation, minimum approach distances and planning worksite locations.
- Field equipment used is the most suited to the task (e.g. provides the fewest number of visits and the least noise) and when possible, is modified to accomplish this.
- Field personnel have received orientation to ensure they help minimize impacts on wildlife while getting the job done.
- Monitoring and contingency plans are in place to address unpredictable events.
- Field observations are used to refine wildlife impact mitigation plans for current and future exploration activities.
- Applicable legislation, regulation and policies are adhered to (e.g. stream crossing Notifications/Approvals or motor vehicle permits have been submitted/acquired,).

## **Feedback**

To provide feedback regarding the clarity and usefulness of the information presented in this fact sheet, please contact:

Ecosystem Management Section  
Ministry of Environment  
Peace Region  
400 – 10003 110 Avenue  
Fort St. John, British Columbia  
(250) 787-3411

**Table 1. Guidelines for Coal and Mineral Exploration Activities**

Note: alphabet superscript letters in the Guidelines column refer to the activities that the Guidelines apply to

Activities	Potential Impacts	Guidelines
A. Use of aircraft B. Use of terrestrial machinery C. Construction of camps D. Construction of roads and access E. Construction of sump pits F. Construction of drill pit trenches G. Establishment of waste dumps H. Withdrawal of water from streams I. Fuel storage J. Blasting, drilling, clearing K. Stream crossings L. Site reclamation	<ul style="list-style-type: none"> <li>• segregation or forced migration of animal herds as a result of noise and movement</li> <li>• physiological impacts on animals</li> <li>• increased pressure on fish and wildlife from recreational activities</li> <li>• fragmentation of habitat</li> <li>• destruction of sensitive ecosystems</li> <li>• erosion and sedimentation as a result of roads</li> <li>• Contaminated water in pits might be used</li> <li>• Loss of habitat for overwintering survival of fish</li> <li>• Loss of water flow, leading to dehydration and freezing of eggs and other life stages</li> <li>• Pollution and contamination from spilled fuel and other chemicals</li> </ul>	<ul style="list-style-type: none"> <li>• Aircraft Best Management Practices <sup>A</sup></li> <li>• Use native seed mixes <sup>L</sup></li> <li>• Avoid Caribou, Sheep and Mountain Goat winter ranges <sup>B,C,D,E,F,G,I,J</sup></li> <li>• Avoid Sheep, Goat and Caribou birthing and rearing areas <sup>B,C,D,E,F,G,I,J</sup></li> <li>• Avoid Sheep and Goat escape terrain <sup>B,C,D,E,F,G,I,J</sup></li> <li>• Use proper storage practices for fuel and other toxic chemicals <sup>I</sup></li> <li>• Observe least-risk timing windows for aquatic and terrestrial species <sup>B,C,D,E,F,G,H,I,K</sup></li> <li>• Observe Motor Vehicle Closures as required under the Wildlife Act <sup>All except A</sup></li> <li>• Do not approach or disturb occupied bird nests or adult birds with their young <sup>All</sup></li> <li>• Avoid important wildlife habitat as defined in Appendix A <sup>All except A</sup></li> </ul>

**Table 2. Peace Region Selected\* Terrestrial and Aquatic Wildlife Least-Risk Windows\*\***

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec
<b>Terrestrial</b>												
Bison				15	-	-	15					
Caribou Northern and Boreal										15	15	
Rocky Mt Elk	15	-	-	15								
Moose												
Bighorn/Thinhorn Sheep											15	15
Mt Goat											1	31
Trumpeter Swan								31				
<b>Aquatic (sport fish)</b>												
Spring Spawners												
Fall Spawners						15		31				
Both Spring and Fall Spawners							15	15				

\* the selected aquatic and terrestrial wildlife are species of primary management concern in the Peace Region.

**Low Risk** Restrictions would not normally apply. Where ground conditions permit, plan exploration activities within these timeframes.

**Caution** Operators should avoid exploration activities during these timeframes.

**Exploratory activities are not appropriate during this timeframe. Aerial activities should adhere to guidelines<sup>9</sup>. In the event that working within a critical window is unavoidable, proponent should contact the Ministry of Environment, to discuss alternatives, and potential mitigation and monitoring plans.**

## **Appendix A: Important Wildlife Habitat**

Important wildlife habitat should be mapped and described in wildlife impact mitigation plans, and should consider the any of the following that apply:

### **Terrestrial**

- o avalanche chutes;
- o birthing sites (e.g. calving);
- o breeding sites (e.g. leks, rutting arenas);
- o concentrations of migrating birds;
- o caves;
- o cliffs;
- o coal and mineral licks;
- o coarse woody debris;
- o colonies, rookeries;
- o cover;
- o denning sites for Bears, Cougar, Lynx, Wolves, and Wolverines;
- o forests with interior conditions;
- o hibernacula;
- o nesting sites;
- o old growth, and Old Growth Management Areas;
- o open meadows;
- o rearing sites;
- o riparian islands;
- o riparian zones;
- o rubbing and scent posts/points;
- o security areas;
- o seeps, springs;
- o snags;
- o south- and/or west-facing slopes;
- o talus slopes;
- o travel and escape routes;
- o wallows;
- o wetlands;
- o wildlife trails;
- o wildlife tree patches;
- o winter range.

### **Aquatic**

- o channel structure;
- o early (spring) open water;
- o groundwater flow, seeps, springs;
- o large woody debris;
- o logjam pools;
- o main channel pools (including, but not limited to depth, flow and volume characteristics), especially those immediately downstream of large boulders or stable, large woody debris;
- o off-channel pools near woody debris or overhanging banks;
- o rearing habitat;

- o riffle-pool junctions, especially under the cover of banks;
- o riparian islands;
- o riparian zones;
- o spawning habitat;
- o substrate;
- o thermal pools;
- o undercut banks;
- o water flow – volume, seasonal variation (especially along dammed rivers/streams);
- o water temperature;
- o wetlands.

Many of these habitats can be found on Terrain Resource Inventory Maps (TRIM), forest cover maps, and through air photo interpretation. Others would require field assessments and from local and anecdotal information.

If during mining exploration activities, previously non-identified important wildlife habitat is encountered the proponent must:

- modify or stop any activity that is in the immediate vicinity of the previously unidentified habitat to the extent necessary to refrain from threatening it;
- promptly advise the appropriate managers and district environment official of the existence and location of the important wildlife habitat;
- if applicable, implement alternate options detailed in the wildlife impact mitigation plan.

## **Appendix B: Wildlife Sighting/Activity Response Form**

This data form is intended to record wildlife encountered during mining exploration activities. Individuals completing the form are encouraged to take photographs as a record, provided the wildlife is not disturbed. Wildlife forms can be submitted to the Peace Region office of the Ministry of Environment.

### **Directions**

- The first column identifies the wildlife species observed. If a species observed is not in this list, or is unknown, a short description should be included with the report. If a concentration of wildlife is observed, this should also be noted with a short description (for example, many ungulates at a coal and mineral lick, or a large number of birds, particularly during the spring or fall migration periods).
- The second column records the number of wildlife encountered per sighting, or best estimate.
- The third column generally describes the habitat the wildlife was observed in, using the key words provided and noting any special features. Include dominant plants of the area if possible. More than one habitat can be identified for each sighting. Key Words are provided to help describe the habitat.
- The fourth column identifies the observed activity. If an observed activity is not on this list, "other" is recorded in this column, and a short description is given in the comments. More than one activity can be identified for each sighting.
- The fifth column records the altitude the aircraft was operating at when the wildlife was observed (if applicable).
- Finally, the last column records the location of the wildlife, as accurately as possible, with an error estimate (+/-).

The codes used in the following tables are provided to help fill out the form. These codes were adapted from *Inventory Data forms for Species Inventory Fundamentals: Standards for Components of British Columbia's Biodiversity No. 1 [Forms]*, prepared by the Ministry of Environment, Lands and Parks, Resources Inventory Branch for the Terrestrial Ecosystems Task Force, Resources Inventory Committee, March 1998 (version 2.0).

**Wildlife Species Codes**

Species	Code	Species	Code
Bear, Black	URAM	Moose	ALAL
Bear, Grizzly	URAR	Mountain Goat	ORAM
Caribou	RATA	Northern Goshawk	NOGO
Deer, Mule	ODHE	Osprey	OSPR
Deer, White-tailed	ODVI	Sheep, Stone's	OVDA
Eagle, Bald	BAEA	Wolf	CALU
Eagle, Golden	GOEA	Wolverine	GUGU
Elk	CEEL	Unknown	UNKN
Falcon, Peregrine	PEFA	Wildlife Concentration	CONC
Gyr Falcon	GYRF		

**Habitat Key Words**

Terrestrial	Riparian	Special Features
Forest Needleleaf	Big / Med River	Old Field
Forest Broadleaf	Creek	Cropland/Hedgerow
Forest Mixed	Spring	Suburban/Orchard
Old Forest	Hotsprings	Urban
Mature Forest	H / M / L Gradient	Ice
Shrubland	Pool	Rock Outcrop
Savannah	Riffle	Coarse Talus/Boulders
Grassland/Herbaceous	Floodplain	Scree/Fine Talus
Alpine	H / M / L Bench	Cliff
Subalpine	Sand/Gravel Bars	Sand/Dune
	Deep / Shallow Water	Snag/Hollow Tree
	River Mouth/Delta	Snow Free
	Herb Wetland	Moderate, Deep Snow
	Shrub Wetland	Moderate Slope
	Forested Wetland	Steep Slope
	Bog/Fen	N, S, E, W Aspect
	Temporary Pool	

*Activity Codes*

Code	Activity	Description
AL	Alert	<ul style="list-style-type: none"> <li>activity with the purpose of detecting predators; e.g., guard or sentry duty or a heads-up rigid stance</li> </ul>
BE	Bedding	<ul style="list-style-type: none"> <li>bedding, sleeping, or resting above ground, including bedding for the purpose of cud chewing, and roosting and resting of birds</li> </ul>
BI	Birthing	<ul style="list-style-type: none"> <li>giving birth to young, including hatching of eggs of amphibians, reptiles, and birds</li> </ul>
CO	Courtship	<ul style="list-style-type: none"> <li>behaviour for the purpose of enticing a conspecific of the opposite sex into copulation, including copulation, courtship feeding, and defense of mates</li> </ul>
DI	Disturbed	<ul style="list-style-type: none"> <li>behaviour for the purpose of avoiding the observer</li> <li>use only if the activity before disturbance is not known</li> </ul>
DR	Drinking	<ul style="list-style-type: none"> <li>drinking</li> </ul>
EX	Excreting	<ul style="list-style-type: none"> <li>discharging waste through the anus</li> </ul>
FD	Feeding	<ul style="list-style-type: none"> <li>consuming food items, including feeding by animals that search for food and eat simultaneously; e.g., grazers, browsers, flying insectivores, and filter feeders</li> <li>does not include hunting</li> </ul>
FG	Feeding, green-up	<ul style="list-style-type: none"> <li>feeding during spring green-up</li> </ul>
FL	Fleeing	<ul style="list-style-type: none"> <li>hurried movement to avoid a conspecifics or other animals</li> <li>does not include fleeing to avoid the observer</li> </ul>
GR	Grooming	<ul style="list-style-type: none"> <li>behaviour for the purpose of arranging and protecting the fur, feathers, skin, etc., including scratching and rubbing of antler velvet</li> </ul>
HU	Hunting	<ul style="list-style-type: none"> <li>searching for, pursuing, and killing prey</li> </ul>
LI	Living	<ul style="list-style-type: none"> <li>the activity could not be specified due to ignorance or the activity was too diverse</li> </ul>
MD	Migrating daily	<ul style="list-style-type: none"> <li>traveling that is a regular daily activity, including traveling to or away from a communal habitat; e.g., a bat on its daily flight to or from a roosting site</li> </ul>
MS	Migrating seasonally	<ul style="list-style-type: none"> <li>traveling that is a regular annual activity; e.g., an elk or a Sandhill Crane on its migration route, or a snake traveling away from a communal habitat such as a hibernaculum</li> </ul>
RR	Rearing	<ul style="list-style-type: none"> <li>adults feeding neonates and juveniles</li> </ul>
TE	Territoriality	<ul style="list-style-type: none"> <li>behaviour for the purpose of marking or defending a territory; e.g., singing, drumming, winnowing, howling, antler rubbing, wallowing, and scraping the ground</li> </ul>
TF	Traveling, flying	<ul style="list-style-type: none"> <li>used when the purpose of flying is not known</li> <li>if the purpose is known, use a more specific description such as hunting</li> </ul>
TP	Traveling on a path	<ul style="list-style-type: none"> <li>walking on a trail that is embedded in the ground due to animals walking the same route for many years</li> </ul>
TR	Traveling	<ul style="list-style-type: none"> <li>traveling by a method other than flying, swimming, and walking; usually used for animals that do not normally fly, swim, or walk</li> <li>includes seeing an isolated track</li> <li>does not include running if the purpose for running is known</li> </ul>
TS	Traveling, swimming	<ul style="list-style-type: none"> <li>used when the specific purpose of swimming is not known</li> <li>if the purpose is known, use a more specific description such as fleeing</li> </ul>
TW	Traveling, walking	<ul style="list-style-type: none"> <li>used when the purpose of walking is not known</li> <li>if the purpose is known, use a more specific description such as migrating</li> <li>does not include traveling on a path (see TP)</li> </ul>
UR	Urinating	<ul style="list-style-type: none"> <li>urinating</li> </ul>



## Appendix C: Glossary of Key Terms

**Avoid:** to keep away from or withdraw from.

**Adaptive Management:** process for continually improving practices by learning from their outcomes.

**Habitat:** the air, soil, water, food and cover components of the environment on which wildlife depends directly or indirectly in order to carry out their life processes.

**Minimize:** to make a planned, stated, and directed effort to reduce to a reasonable minimum.

**Mitigate:** to make less serious or severe.

**Monitor:** to evaluate progress toward stated objectives and guide the long term revision, adjustment and refinement of the plan; the systematic measuring, comparing, and evaluation of suitable indicators of change in conditions.

**Qualified professional:** A person who possesses, in addition to skill, a special registration, or certification, or education which is obtained by an accredited academic institution, and who possesses knowledge which is inherently or legally necessary to render that person capable, competent, and eligible to perform the particular responsibilities.

**Security Areas:** habitat that is used by wildlife for security, for example to avoid predation.

**Sensitive Ecosystems:** are either relatively scarce or relatively fragile in a regional context. Relatively scarce ecosystems are limited in distribution and relatively fragile ecosystems are sensitive to physical/non-physical disturbance. Red- and Blue-listed Plant Species and Plant Communities<sup>12</sup> are considered to be sensitive ecosystems.

**Wildlife:** vertebrates that are neither human nor domesticated, invertebrates, and plants - includes the eggs and juvenile stages of vertebrates and invertebrates.

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## References:

<sup>1</sup> Fort Nelson LRMP Working Group. 1997. *Fort Nelson Land and Resource Management Plan*. Land Use Coordination Office. <http://srmwww.gov.bc.ca/rmd/lrmp/ftrnelson/index.htm> (March 28, 2003)

<sup>2</sup> Fort St John LRMP Working Group. 1997. *Fort St John Land and Resource Management Plan*. Land Use Coordination Office. <http://srmwww.gov.bc.ca/rmd/lrmp/fstjohn/index.htm> (March 28, 2003)

<sup>3</sup> Mackenzie LRMP Working Group. 2000. *Mackenzie Land and Resource Management Plan*. Land Use Coordination Office. <http://srmwww.gov.bc.ca/rmd/lrmp/mackenzi/> (March 28, 2003)

<sup>4</sup> Province of British Columbia. 2002. *Forest and Range Practices Act*. SBC2002, c.69. Queen's Printer, Victoria, British Columbia. [http://www.qp.gov.bc.ca/statreg/stat/F/02069PH\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/F/02069PH_01.htm) (February 20, 2004).

<sup>5</sup> AXYS Environmental Consulting Ltd. 2003. *A Cumulative Effects Assessment and Management Framework (CEAMF) for Northeast British Columbia*. Prepared for the BC Oil and Gas Commission and the Muskwa-Kechika Advisory Board. M-K-2001-2002-54.

<sup>6</sup> Pepper, C.B., M.A. Nascarella, and R.J. Kendall. 2003. *A Review of the Effects of Aircraft Noise on Wildlife and Humans, Current Control Mechanisms, and the Need for Further Study*. *Environmental Management* 32(4):418-432.

<sup>7</sup> Cote, S.D. 1996. *Mountain Goat Responses to Helicopter Disturbances*. *Wildlife Society Bulletin*, 24:681-685.

<sup>8</sup> Wildlife Branch. 2002. *Interim Wildlife Guidelines for Commercial Backcountry Recreation in British Columbia*. Wildlife Branch, British Columbia Ministry of Environment, Lands and Parks. May 2002.

<http://wlapwww.gov.bc.ca/wld/comrec/crecintro.html> (October 14, 2004).

<sup>9</sup> Peace Region, Ecosystem Section, 2004. *Best Management Practices for Aircraft Operations/Wildlife in North-Eastern B.C.*. Ministry of Water, Land and Air Protection.

[ftp://ftpfsj.env.gov.bc.ca/pub/outgoing/Peace\\_Region\\_Wildlife\\_Values/BMPs/](ftp://ftpfsj.env.gov.bc.ca/pub/outgoing/Peace_Region_Wildlife_Values/BMPs/)

<sup>10</sup> Mining Branch. 2003. *Health, Safety and Reclamation Code for Mines in British Columbia*. British Columbia Ministry of Energy and Mines Victoria, British Columbia.

<sup>11</sup> Province of British Columbia. 1996. *Water Act*. R.S.BC (1996), c. 483.

[http://www.qp.gov.bc.ca/statreg/stat/W/96488\\_01.htm](http://www.qp.gov.bc.ca/statreg/stat/W/96488_01.htm) (December 21, 2005)

<sup>12</sup> Resources Information Standards Committee. British Columbia Ministry of Sustainable Resource Management. (formerly Resources Inventory Branch). 2001. *Tracking Lists*. British Columbia Ministry of Environment, Lands and Parks, Resources Inventory Branch. <http://srmwww.gov.bc.ca/cdc/tracking.htm> (January 21, 2003).

Red listed species include any indigenous species or subspecies that have, or are candidates for Extirpated, Endangered, or Threatened status in British Columbia. Extirpated taxa no longer exist in the wild in British Columbia, but do occur elsewhere. Endangered taxa are facing imminent extirpation or extinction. Threatened taxa are likely to become endangered if limiting factors are not reversed. Not all Red-listed taxa will necessarily become formally designated. Placing taxa on these lists flags them as being at risk and requiring investigation.

Blue Listed species at risk include any indigenous species or subspecies considered to be Vulnerable in British Columbia.

Vulnerable taxa are of special concern because of characteristics that make them particularly sensitive to human activities or natural events.

Yellow Listed species include any indigenous species or subspecies (taxa) that is not at risk in British Columbia. The CDC tracks some Yellow listed taxa that are vulnerable during times of seasonal concentration (e.g. breeding colonies).