

Introduction

Identified Wildlife are species at risk and regionally important wildlife that the Minister of Water, Land and Air Protection designates as requiring special management attention under the Forest and Range Practices legislation. Under this legislation, the definition of species at risk includes endangered, threatened or vulnerable species of vertebrates, invertebrates, plants and plant communities. Regionally important wildlife include species that are considered important to a region of British Columbia, rely on habitats that are not otherwise protected under FRPA, and are vulnerable to forest and range impacts.

The Identified Wildlife Management Strategy (IWMS) provides direction, policy, procedures and guidelines for managing Identified Wildlife. The goals of the Identified Wildlife Management Strategy are to minimize the effects of forest and range practices on Identified Wildlife, and to maintain their critical habitats throughout their current ranges and, where appropriate, their historic ranges. In some cases, this will entail restoration of previously occupied habitats, particularly for those species most at risk.

The Identified Wildlife Management Strategy applies to Crown forest and range land or private land that is subject to a tree farm or woodlot licence. It addresses forest and range practices regulated under British Columbia's forest legislation. It does not address activities such as recreation, hunting, or poaching. Under the *Wildlife Act*, native terrestrial vertebrates designated as "wildlife" are protected from killing, capture, and harassment except by permit or regulation. The strategy also does not address agriculture or urban development. The IWMS is not intended to be a comprehensive recovery strategy; instead it is intended to be one tool that can be used to manage or recover species habitats. A role of the Ministry of Water, Land and Air Protection is to direct or assist in the development of conservation strategies and recovery plans for species at risk. These plans and strategies

can address all requirements for a species' conservation including research and inventory needs, habitat conservation, and regulatory measures.

Identified Wildlife are managed through the establishment of wildlife habitat areas (WHAs), objectives for wildlife habitat areas, and implementation of general wildlife measures (GWMs), or through other management practices specified in strategic or landscape level plans. Wildlife habitat areas are mapped areas that have been approved by the Minister of Water, Land and Air Protection as requiring special management. The purpose of WHAs is to conserve those habitats considered most limiting to a given species.

General wildlife measures describe the management practices that must be implemented within an approved WHA or other spatially defined area. A GWM may limit activities partially (e.g., seasonally) or entirely. General wildlife measures prescribe a level of management appropriate to the conservation status of Identified Wildlife. Management objectives are consistent with the goals and commitments of the Canadian Biodiversity Strategy and provincial goals for the management of wildlife (i.e., as outlined in the Provincial Wildlife Strategy).

For the most part, Identified Wildlife provisions do not address the issues of habitat supply, habitat connectivity, and population viability and other issues such as access management. Such issues should be taken into account during strategic or landscape level planning. Species requiring consideration within strategic level plans are typically wide-ranging species that are sensitive to landscape level changes such as, but not limited to, Badger, Caribou, Grizzly Bear, Marbled Murrelet, Queen Charlotte Goshawk, Spotted Owl, and Wolverine.

The management practices included in IWMS are designed to reduce the impacts of forest and range management on Identified Wildlife within targeted social and economic constraints, to balance both socio-economic considerations and conservation of species at risk in British Columbia's managed forest and rangelands. Identified Wildlife Management

Strategy provisions in themselves may be insufficient to conserve viable populations of these species throughout their natural ranges in British Columbia. Other strategies and planning, such as Recovery Plans, may be required. The IWMS is intended to be the single-species complement to the broader, coarse-filter provisions of the province's forest and range practices legislation, and strategic land use plans.

Selection of Category of Species at Risk

Forest practices legislation authorizes the Minister of Water, Land and Air Protection to establish categories of species at risk and regionally important wildlife, for purposes of establishing wildlife habitat areas, objectives and general wildlife measures that make up the IWMS.

On May 3, 2004 the Minister of Water, Land and Air Protection approved 39 species, subspecies and populations for inclusion in the category of species at risk. This category of species at risk represents those species that may be affected by forest and range management on Crown land and are listed by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), current to November 2002. The species included in this list represent the Identified Wildlife that will form the basis of the Identified Wildlife Management Strategy Version 2004.

An additional list of non-COSEWIC listed provincially red- and blue-listed species have been identified as being negatively affected by forest and range management on Crown land. It is anticipated that these species will be evaluated for inclusion in the category of species at risk and IWMS Version 2004 in the near future.

The Minister of Water, Land and Air Protection has legal authority to establish a category of regionally important wildlife. This category has not been

evaluated at this time. It is anticipated that the category of regionally important wildlife will be examined for inclusion in IWMS Version 2004 at a later date.

Account Development and Review

Accounts summarize the status, life history, distribution, habitat requirements and management standards for Identified Wildlife. Accounts were prepared according to IWMS priority (see Selection of Identified Wildlife). The priorities for account development were elements ranked as having a high priority for inclusion in IWMS. Candidates considered of intermediate priority were also considered, particularly those that are listed nationally by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) and those that were originally included within IWMS Volume 1.

Additional accounts will be developed on an ongoing basis according to IWMS priority or national listing (COSEWIC). At this time it is anticipated that updates will be made available annually following updates to national and provincial status listings. Provisions may be made for emergency situations, see *Procedures for Managing Identified Wildlife*.

Each account was peer reviewed by a technical reviewer, operational reviewer, and IWMS reviewer. In addition, the IWMS Technical Government Working Group, IWMS stakeholder Technical Advisory Committee, and regional WHA committees reviewed accounts. In many cases other professionals and specialists, especially those involved in setting species management or recovery direction (i.e., Recovery Teams), also reviewed accounts.

Account Template

ENGLISH NAME¹

Scientific name

Original author²

Species or Plant Community Information

Taxonomy

Describes current taxonomic classification. Not included in plant community accounts.

Description

Describes distinguishing features used for identification.

Distribution

Global

Describes global range.

British Columbia

Describes distribution in British Columbia.

Forest regions and districts

Describes distribution according to the Ministry of Forests administrative units (Appendix 1).

Ecoprovince and ecosections

Describes distribution using the ecoregion classification system (Appendix 2), which divides the province into hierarchically and ecologically defined units. Units are defined by climate, physiography, vegetation, and wildlife potential.

Biogeoclimatic units

Describes distribution using the biogeoclimatic ecosystem classification system (Appendix 3). Biogeoclimatic units are defined based on geographically related ecosystems that are distributed within a vegetationally inferred climatic space.

Broad ecosystem units

Describes distribution using the broad ecosystem inventory classification system (Appendix 4). A broad ecosystem unit is a permanent area of the landscape, meaningful to animal use, that supports a distinct kind of dominant vegetative cover, or distinct non-vegetated cover (such as lakes or rock outcrops). Each vegetated unit is defined as including potential (climax) vegetation and any associated successional stages (for forests and grasslands). Broad ecosystem classes have been created based on the integration of vegetation, terrain, topography, and soil characteristics. They are amalgamations of different groups of site series units, as well as site associations. Each BEU may include many distinct climax plant associations. Broad ecosystem units may not be intuitively obvious as many associated habitats may occur in a single unit (i.e., trembling aspen in the Interior Douglas-fir Forest unit).

Elevation

Elevation in metres.

1 English and scientific names largely follow 2003 Resource Information Standards Committee (RISC) standards except for those subspecies without standardized English names. Non-standard English names are noted in quotation marks (e.g., “Queen Charlotte” Goshawk) in the account titles.

2 Accounts were modified from the original drafts as part of the peer review process; IWMS legal, policy, and technical reviews; or recommendations from the IWMS Technical Advisory Committee and regional reviews.

Life History or Plant Community Characteristics

For vertebrates and invertebrates, information on the diet and foraging behaviour, reproduction, site fidelity, home range, and movements is provided. For plants, information on reproduction and dispersal is provided. For plant communities, the structural stage, natural disturbance regime, and fragility of the community are described.

Habitat

Structural stage

Lists structural stages used (Appendix 5) for forested habitats and usually only coniferous species. Structural stage depends on the age class of the ecosystem and vegetation species. For plant community accounts, the structural stage at climax condition is listed.

Important habitats and habitat features

Describes important habitats (e.g., nesting habitat) or habitat features such as wildlife trees (see Appendix 6), coarse woody debris (see Appendix 7), or canopy structure. Not included in plant community accounts. If not specifically described, age follows the definitions of the *Biodiversity Guidebook* (1995 – see <http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/biodiv/biotoc.htm>). See Appendix 8 for scientific names of commonly referred to tree species.

Conservation and Management

Status

Describes status in British Columbia (*Red*, *Blue*, or *Yellow*), as determined by the Conservation Data Centre (MSRM). Provincial status is determined and reviewed biannually using the internationally accepted methods of the NatureServe. For more information, see <http://wlapwww.gov.bc.ca/wld/documents/ranking.pdf>. In summary, elements are ranked from 1 to 5 where 1 is critically imperilled

and 5 is secure. Generally, red-listed elements are ranked 1 or 2, blue-listed elements are ranked 3, and yellow-listed elements are ranked 4 or 5.

Status in Canada, as determined by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) is also provided. COSEWIC lists species as *Extinct*, *Extirpated*, *Endangered*, *Threatened*, *Special Concern*, *Not at Risk*, or *Data Deficient*. For the most up-to-date lists, see <http://www.cosewic.gc.ca>.

NatureServe ranks are also provided for British Columbia (BC) and neighbouring jurisdictions including Alaska (AK), Yukon (YK), Northwest Territories (NWT), Alberta (AB), Washington (WA), Idaho (ID), and Montana (MT). National (N) and Global (G) ranks, which reflect an element's status in Canada or throughout its global range, are also provided when known. This information can indicate the relative importance of conservation within British Columbia and may be used to set regional or provincial management priorities. See Appendix 9 for a description of ranking methodology and codes.

Trends

Population trends

Indicates any noted trends as well as information on abundance, number of known occurrences, and any noted increases, declines, or losses of previously occupied sites.

Habitat trends

Provides general indication of trend (i.e., unknown, likely increasing, likely decreasing, or stable).

Threats

Population threats

Describes threats to populations, such as low reproductive rate, limited dispersal ability, and disease.

Habitat threats

Describes the type of threats to a species' habitat or to a plant community, with particular emphasis on threats from forest or range management practices.

Legal Protection and Habitat Conservation

Summarizes existing legislation, policy, or guidelines that directly protect or manage elements or their habitats with emphasis on FRPA provisions and protected areas.

Identified Wildlife Provisions

Identified wildlife provisions include (1) sustainable resource management and planning recommendations, (2) wildlife habitat areas, and/or (3) general wildlife measures. There is a new provision under FRPA that enables government to set objectives for wildlife habitat areas. This provision is consistent with the shift towards more results based forest practices and enables forest tenure holders to prepare results and strategies for Forest Stewardship Plans that are consistent with objectives for wildlife habitat areas. Objectives for wildlife habitat areas have not been included in the accounts. Procedures for using this new provision are currently under development.

Sustainable resource management and planning recommendations

Recommendations for strategic or landscape level planning. Where appropriate and consistent with current land use plans and future planning processes, these recommendations may be adapted as resource management zone objectives, landscape unit objectives, or land use objectives under a sustainable resource management plan. Where recommendations are not established as legal objectives, they may provide guidance to operational plans such as forest stewardship plans.

Under the 1995 Forest Practices Code (FPC), most Identified Wildlife were managed through the establishment of wildlife habitat areas and did not require specific land use objectives to be established. Three species (Bull Trout, Fisher, and Grizzly Bear) were designated “Higher Level Plan” (HLP) species, and could be managed through the establishment of resource management zone objectives (a type of HLP under the FPC). Under the new forest

legislation (FRPA), it is anticipated that, where necessary, strategic or landscape level land use objectives will be established under the *Land Act*. Nonetheless, there may be benefits from planning for the requirements of elements at the strategic and landscape level in that it may be possible to effectively plan for a greater number of species and accommodate connectivity requirements while reducing the incremental impacts to resource industries.

Strategic and landscape level objectives should be considered for species that have large home ranges, occur at low densities, have widely and sparsely distributed limiting habitats, or are sensitive to landscape level disturbances. The requirements of such species must be addressed over large areas, such as regions or watersheds, to effectively manage their populations. There are at least seven species within IWMS for which strategic level objectives should be considered: Badger, Caribou, Grizzly Bear, Marbled Murrelet, Queen Charlotte Goshawk, Spotted Owl, and Wolverine.

The requirements of Identified Wildlife may also be considered within landscape level plans. Generally, the biodiversity goal of landscape level planning is to maintain representative elements (i.e., ecosystems and stand level structural features) across the landscape to increase the probability of maintaining plant communities, species, populations, and community processes over time. However, some elements, particularly those at risk, or those associated with rarer or unique habitats, may not be adequately addressed; thus, it is important to consider more specific requirements or locations of these elements. The FRPA priorities for landscape level planning are old forest and wildlife tree retention. For many Identified Wildlife, recommendations have been made within accounts for old forest or wildlife tree retention to best meet their needs and to assist planning to meet multiple goals (i.e., IWMS, landscape or stand level biodiversity), where possible, and where these goals are compatible. These recommendations are provided for use during landscape level planning and may be developed as legal objectives.

However, in some cases, using landscape level provisions (i.e., old forest) to manage for a single species may compromise the ability to represent the full array of biodiversity elements within the landscape; thus, the implications to other biodiversity elements should always be considered.

Wildlife habitat area

Wildlife habitat areas (WHAs) are areas of limiting habitat that have been mapped and approved by the Minister of Water, Land and Air Protection. Wildlife habitat areas are designed to minimize disturbance or habitat alteration to a species' limiting habitat or to a rare plant community. In most cases, a WHA contains both a core area that is protected from habitat alteration and a management zone to minimize disturbance during critical times or to core area habitats.

Goal

Refers to the overall purpose and management of the WHA.

Feature³

Describes an appropriate feature that is required for establishment of a WHA (e.g., active nest area, specific number of breeding pairs or density, maternity colony, or hibernacula). Typically these will be based on limiting habitats, significant concentrations, or those habitats not addressed by coarse filter provisions (i.e., riparian management and landscape unit planning) that are currently occupied. In some cases, WHAs may be recommended for potentially or historically suitable sites for recovery or recruitment. Generally, these will be recommended or endorsed by established recovery teams to meet the requirements of the federal *Species at Risk Act*.

Size

The size of the WHA is estimated; however, these are rough estimates and are subject to site-specific considerations. Further study may determine whether these estimates are adequate to conserve the species or plant community.

Design

Describes the configuration of a WHA including recommendations for inclusion of a core area and a management zone as well as other important considerations for designing a WHA. The general design of WHAs is based on important life history characteristics such as home range size. Typically the WHA will be designed to address key management concerns, whether those are related to habitat or disturbance. Thus, in some cases the design of the WHA will be based on habitat factors and in other cases it may simply be based on distance from an important habitat feature (i.e., a nest) to minimize disturbance at that feature.

General wildlife measures

General wildlife measures (GWMs) direct forest and range practices within a WHA, specified ecosystem unit, or other spatially defined area, and have been approved by the Minister of Water, Land and Air Protection.

Goals

List of the overall objectives and desired results for management within a WHA or otherwise defined area.

Measures

General wildlife measures can address forest and range practices carried out under the Forest Practices Code (during transition) or under FRPA. The practices include road construction, road maintenance, livestock grazing, hay cutting, pesticide use, and timber harvesting. Practices have been grouped under the following headings: access, harvesting and silviculture, pesticides, range, and recreation. A GWM may limit activities partially or entirely. A GWM may apply to the core area or management zone of a WHA. When neither are specified, the GWM applies to the entire WHA. All general wildlife measures may be modified case by case by the Minister of Water, Land and Air Protection or designate. For more information, see *Procedures for Managing Identified Wildlife*.

3 Not to be confused with "wildlife habitat feature."

Additional Management Considerations

Recommendations for managing an area adjacent to a WHA or for managing activities that are not regulated under the FRPA.

Information Needs

Suggested list of three main research or inventory priorities.

Cross References

List of other Identified Wildlife whose requirements and distribution may overlap with the species or plant community under consideration.

References Cited

Personal Communications

Identified Wildlife by Forest Region

See Appendix 11 for lists of Identified Wildlife by forest district.

English name	Scientific name	Coast	Southern Interior	Northern Interior
Plants				
Scouler's Corydalis	<i>Corydalis scouleri</i>	x		
Tall Bugbane	<i>Cimicifuga elata</i>	x		
Vertebrates				
Fish				
Vananda Creek Limnetic and Benthic Sticklebacks	<i>Gasterosteus</i> spp. 16 and 17	x		
Amphibians				
Coastal Giant Salamander	<i>Dicamptodon tenebrosus</i>	x		
Coastal Tailed Frog	<i>Ascaphus truei</i>	x	x	x
Coeur d'Alene Salamander	<i>Plethodon idahoensis</i>		x	
Great Basin Spadefoot	<i>Spea intermontana</i>		x	
Northern Leopard Frog	<i>Rana pipiens</i>	introduced	x	
Red-legged Frog	<i>Rana aurora</i>	x		
Rocky Mountain Tailed Frog	<i>Ascaphus montanus</i>		x	
Tiger Salamander	<i>Ambystoma tigrinum</i>		x	
Reptiles				
"Great Basin" Gopher Snake	<i>Pituophis catenifer deserticola</i>		x	
Birds				
Ancient Murrelet	<i>Synthliboramphus antiquus</i>	x		
Burrowing Owl	<i>Athene cucularia</i>		x	
Flammulated Owl	<i>Otus flammeolus idahoensis</i>		x	
Great Blue Heron	<i>Ardea herodias fannini</i>	x	x	x
"Interior" Western Screech-Owl	<i>Otus kennicottii macfarlanei</i>		x	
Lewis's Woodpecker	<i>Melanerpes lewis</i>	historical	x	
Long-billed Curlew	<i>Numenius americanus</i>		x	x
Marbled Murrelet	<i>Brachyramphus marmoratus</i>	x		x
"Queen Charlotte" Goshawk	<i>Accipiter gentilis laingi</i>	x		
Sage Thrasher	<i>Oreoscoptes montanus</i>		x	
Short-eared Owl	<i>Asio flammeus</i>	x	x	x
Spotted Owl	<i>Strix occidentalis</i>	x	x	
White-headed Woodpecker	<i>Picoides albolarvatus</i>		x	
Yellow-breasted Chat	<i>Icteria virens</i>	x	x	

English name	Scientific name	Coast	Southern Interior	Northern Interior
Mammals				
Badger	<i>Taxidea taxus jeffersonii</i>	extreme east only	x	
Caribou (mountain, boreal and northern ecotypes)	<i>Rangifer tarandus caribou</i>	x	x	x
Fringed Myotis	<i>Myotis thysanodes</i>		x	
Grizzly Bear	<i>Ursus arctos</i>	x	x	x
Keen's Long-eared Myotis	<i>Myotis keenii</i>	x		
Pacific Water Shrew	<i>Sorex bendirii</i>	x		
Spotted Bat	<i>Euderma maculatum</i>		x	
Vancouver Island Marmot	<i>Marmota vancouverensis</i>	x		
Wolverine	<i>Gulo gulo luscus,</i> <i>Gulo gulo vancouverensis</i>	x	x	x

