Wildlife Habitat Features Field Guide

(Kootenay Boundary Region)

American Badger at burrow entrance (Photo: Rich Weir)

B.C. Ministry of Environment and Climate Change Strategy
Ecosystems Branch

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Executive Summary

A "wildlife habitat feature" is defined as a feature used by one or more wildlife species to meet their life history requirements; special management is necessary to ensure that these features are protected and remain functional. These features are established under the authority of the *Forest and Range Practices Act*. Various regulations under the Act require that an authorized person carrying out primary forest or range activities "does not damage or render ineffective a wildlife habitat feature." Forest agreement holders are also required to report locations of new features encountered during routine forest activities. The Act includes provisions that allow agreement holders to seek exemptions from the requirement to protect a wildlife habitat feature. Before providing an exemption, the delegated decision maker must be satisfied that compliance with the requirement is not feasible.

The current Wildlife Habitat Feature Order (hereafter "the Order) for the Kootenay Boundary Region of British Columbia includes some of the features listed in the Act's Government Actions Regulation. In addition, the Order includes localized features identified by the Ministry of Environment and Climate Change Strategy in consultation with regional staff from the Ministry of Forests, Lands, Natural Resource Operations and Rural Development and industry stakeholders. These represent high-priority features associated with species of special management concern. The current list for the Kootenay Boundary Region may be expanded from time to time to reflect new information that indicates potential threats from forest or range activities on particular localized features.

Identification of a wildlife habitat feature must be sufficiently specific to enable a person affected by it to identify the feature in the normal course of carrying out forest or range practices. Therefore, clear definitions and descriptions accompany the Order. This Field Guide expands on these definitions and descriptions, and also offers suggested management strategies for consideration when carrying out primary forest or range activities; however, under the Act's results-based professional reliance regulatory model, forest agreement holders are under no legal requirement to follow these strategies.

List of Wildlife Habitat Features – Kootenay Boundary Region

1. a nest of a Bald Eagle
2. a nest of an Osprey
3. a nest of a Flammulated Owl
4. a nest of a Western Screech-Owl *macfarlanei* subspecies
5. a nest of a Great Blue Heron
6. a nest of a Lewis's Woodpecker
7. a nest of a Williamson's Sapsucker
8. an American Badger burrow
9. a Grizzly Bear den
10. a significant mineral lick
11. a significant wallow
12. a bat hibernaculum
13. a bat nursery roost
14. a hot spring or thermal spring

Table of Contents

Executive Summary i
Acknowledgements vi

PART 1: INTRODUCTION 1

Background 1
Purpose of the Wildlife Habitat Feature Field Guide 2
Definition and Description of Wildlife Habitat Features 2
Reporting and Tracking Wildlife Habitat Features 3
Exemptions from Requirements to Protect Wildlife Habitat Features 3
Due Diligence and Professional Reliance 4
Related *Forest and Range Practices Act* Provisions, Other Laws, and Legal Obligations 4
Field Guide Contents 6

PART 2: GUIDANCE FOR MANAGING WILDLIFE HABITAT FEATURES 8

1. A Nest of a Bald Eagle 8
2. A Nest of an Osprey 15
3. A Nest of a Flammulated Owl 22
4. A Nest of a Western Screech-Owl *macfarlanei* subspecies 28
5. A Nest of a Great Blue Heron 34
6. A Nest of a Lewis's Woodpecker 41
7. A Nest of a Williamson's Sapsucker 48
8. An American Badger Burrow 56
9. A Grizzly Bear Den 62
10. A Significant Mineral Lick 68
11. A Significant Wallow 72
12. A Bat Hibernaculum 77
13. A Bat Nursery Roost 92
14. A Hot Spring or Thermal Spring 108

List of Tables

Table 1. Bald Eagle nests: what to look for 10
Table 2. Information to consider when conducting primary forest activities near a nest of a Bald Eagle. 10
Table 3. Activity impacts near Bald Eagle nests and suggested lower-impact alternatives 11
Table 4. Habitat and biogeoclimatic associations of Bald Eagles in the Kootenay Boundary Region 12
Table 5. Additional guidance on disturbance buffers for a Bald Eagle's nest 13
Table 6. Osprey nests: what to look for 17
Table 7. Information to consider when conducting primary forest activities near a nest of an Osprey 17
Table 8. Activity impacts near Osprey nests and suggested lower-impact alternatives 18
Table 9. Habitat and biogeoclimatic associations of Osprey in the Kootenay Boundary Region. 19
Table 10. Additional guidance on disturbance buffers for an Osprey's nest 20
Table 11. Flammulated Owl nests: what to look for 24
Table 12. Information to consider when conducting primary forest activities near a nest of a Flammulated Owl 24
Table 13. Habitat and biogeoclimatic associations of Flammulated Owls in the Kootenay Boundary Region 26
Table 14. Additional guidance on disturbance buffers for a Flammulated Owl's nest 27
Table 15. Western Screech-Owl *macfarlanei* subspecies nests: what to look for 29

Table 16. Information to consider when conducting primary forest or range activities near a nest of a Western Screech-Owl *macfarlanei* subspecies....30
Table 17. Habitat and biogeoclimatic associations of Western Screech-Owl *macfarlanei* subspecies in the Kootenay Boundary Region. 32
Table 18. Additional guidance on disturbance buffers for a Western Screech-Owl *macfarlanei* subspecies nest 33
Table 19. Great Blue Heron nests: what to look for 36
Table 20. Information to consider when conducting primary forest or range activities near a nest of a Great Blue Heron....36
Table 21. Activity impacts near Great Blue Heron nests and suggested lower-impact alternatives 37
Table 22. Habitat and biogeoclimatic associations of Great Blue Heron in the Kootenay Boundary Region 38
Table 23. Additional guidance on disturbance buffers for a Great Blue Heron nest 39
Table 24. Lewis's Woodpecker nest description: what to look for 43
Table 25. Information to consider when conducting primary forest and range activities near Lewis's Woodpecker nests. 43
Table 26. Habitat and biogeoclimatic associations of Lewis's Woodpecker in the Kootenay Boundary Region....44
Table 27. Guidance on disturbance buffers for a Lewis's Woodpecker nest 46
Table 28. Williamson's Sapsucker nest description: what to look for....50
Table 29. Information to consider when conducting primary forest and range activities near Williamson's Sapsucker nests. 51
Table 30. Habitat and biogeoclimatic associations of Williamson's Sapsuckers in the Kootenay Boundary Region....53
Table 31. Guidance on disturbance buffers for a Williamson's Sapsucker nest....54
Table 32. American Badger burrows: what to look for 58
Table 33. Information to consider when conducting primary forest or range activities near badger burrows. 58
Table 34. Habitat and biogeoclimatic associations of American Badgers in the Kootenay Boundary Region....60
Table 35. Grizzly Bear ground dens: what to look for 64
Table 36. Information to consider when conducting primary forest activities near Grizzly Bear ground dens 65
Table 37. Guidance on disturbance buffers for a Grizzly Bear den....66
Table 38. A significant mineral lick: what to look for....70
Table 39. Information to consider when conducting primary forest or range activities or near a significant mineral lick 70
Table 40. Guidance on disturbance buffers for significant mineral licks 71
Table 41. A significant wallow: what to look for 74
Table 42. Information to consider when conducting primary forest or range activities near a significant wallow 75
Table 43. Guidance on disturbance buffers for significant wallows....76
Table 44. Bat conservation status and distribution of hibernating bat species by region in British Columbia 80
Table 45. Bat hibernacula: what to look for 81
Table 46. How to determine if a bat hibernaculum is occupied. 82
Table 47. Information to consider when conducting primary forest activities near a bat hibernaculum 85
Table 48. Biogeoclimatic zones and characteristics of hibernacula structures within species' distributions in the Kootenay Boundary Region....87
Table 49. Guidance on disturbance buffers and acceptable activities for bat hibernaculum 89
Table 50. Information to consider when conducting primary forest activities near a bat hibernaculum 90

Table 51. Bat conservation status and distribution by region and biogeoclimatic zone in British Columbia 97
Table 52. Types of nursery roosts used by bats in British Columbia, typical habits and distinguishing features....98
Table 53. Bat nursery roosts: what to look for 99
Table 54. How to determine if a roost is occupied 100
Table 55. How to select high quality suitable nursery roosts for protection as Wildlife Habitat Features in absence of evidence of use....101
Table 56. Information to consider when conducting primary forest or range activities near a bat nursery roost 102
Table 57. Characteristics of natural bat nursery roosts in the Kootenay Boundary Region. 103
Table 58. Level of Disturbance allowable within each of the management zones with respect to the time of year....105
Table 59. Information to consider when conducting primary forest activities near a bat nursery roost....106
Table 60. Hot or thermal springs: what to look for. 109
Table 61. Information to consider when conducting primary forest or range activities near hot springs and thermal springs. 110
Table 62. Guidance on disturbance buffers for a hot or thermal spring 111

List of Figures

Figure 1. Immature Bald Eagle at nest 8
Figure 2. Adult Bald Eagle 9
Figure 3. Distribution of Bald Eagles in the Kootenay Boundary Region. 12
Figure 4. Recommended disturbance buffers around a Bald Eagle's nest, depending on existing disturbance and disturbance level of the proposed activity 13
Figure 5. Osprey nest....15
Figure 6. Adult Osprey 16
Figure 7. Distribution of Ospreys in the Kootenay Boundary Region 19
Figure 8. Recommended disturbance buffers around an Osprey's nest, depending on existing disturbance and the disturbance level of the proposed activity 20
Figure 9. Flammulated Owl in nest cavity....22
Figure 10. Flammulated Owl....23
Figure 11. Distribution of Flammulated Owl habitat in the Kootenay Boundary Region. 25
Figure 12. Recommended disturbance buffers around a Flammulated Owl's nest, depending on existing disturbance and the disturbance level of the proposed activity....26
Figure 13. Western Screech-Owl at nest cavity....28
Figure 14. Western Screech-Owl *macfarlanei* subspecies 29
Figure 15. Distribution of the Western Screech-Owl *macfarlanei* subspecies habitat in the Kootenay Boundary Region. 31
Figure 16. Recommended disturbance buffers around a Western Screech-Owl *macfarlanei* subspecies' nest, depending on existing disturbance and the disturbance level of the proposed activity....32
Figure 17. Great Blue Heron nesting colony....34
Figure 18. Great Blue Heron 35
Figure 19. Distribution of Great Blue Heron habitat in the Kootenay Boundary Region....38
Figure 20. Recommended disturbance buffers around a Great Blue Heron nest, depending on existing disturbance and the disturbance level of the proposed activity....39
Figure 21. Lewis's Woodpecker nest trees....41
Figure 22. Lewis's Woodpecker at nest cavity....42
Figure 23. Distribution of Lewis's Woodpecker in the Boundary area based on habitat suitability mapping....45

Figure 24. Distribution of Lewis's Woodpecker in the Pend D'Oreille area based on habitat suitability mapping 45
Figure 25. Distribution of Lewis's Woodpecker in the East Kootenay area based on habitat suitability mapping 46
Figure 26. Williamson's Sapsucker nest trees 48
Figure 27. Williamson's Sapsucker 49
Figure 28. Suitable habitat for Williamson's Sapsucker within the Boundary portion of the Okanagan-Boundary area of occupancy 52
Figure 29. Suitable habitat for Williamson's Sapsucker within the East Kootenay area of occupancy 53
Figure 30. American Badger at its burrow 56
Figure 31. A freshly dug badger burrow 57
Figure 32. A no machine zone established around an American Badger burrow 59
Figure 33. Distribution of potential American Badger habitat in the Kootenay Boundary Region 60
Figure 34. Grizzly Bear ground den in alpine 62
Figure 35. Grizzly Bear 63
Figure 36. Interior of Grizzly Bear ground den 64
Figure 37. Potential Grizzly Bear denning habitats in the Kootenay Boundary Region. 66
Figure 38. Mountain Goats at a wet mineral lick 68
Figure 39. Bighorn Sheep at dry mineral lick 69
Figure 40. Moose wallow in high-elevation fen 72
Figure 41. Moose in wallow 73
Figure 42. Grizzly Bear in wallow 74
Figure 43. Townsend's Big-Eared Bat hibernaculum located in a cave 77
Figure 44. Bat hibernacula in cliff crevices 78
Figure 45. Northern Myotis exhibiting symptoms of white-nose syndrome 79
Figure 46. Cluster of hibernating bats 83
Figure 47. Signs of bat occupancy in a cave or rock crevice may also include dead or live bats or bat skeletal remains 83
Figure 48. Bat guano from two species 84
Figure 49. Staining from roosting bats 84
Figure 50. Hibernaculum polygon, 100-m Habitat Reserve Zone, and additional 1-km Disturbance Management Zone around a bat hibernaculum Wildlife Habitat Feature 88
Figure 51. Bat nursery roosts in trees 92
Figure 52. Bat nursery roosts in rock features 93
Figure 53. Inside a western red cedar bat nursery roost 95
Figure 54. Sloughing bark provides potential nursery roost sites 95
Figure 55. Nursery colonies 96
Figure 56. Bat guano from two species 100
Figure 57. Habitat Reserve Zone, 100-m Habitat Management Zone and additional 1-km Disturbance Management Zone around a bat nursery roost Wildlife Habitat Feature 104
Figure 58. Hot spring 108
Figure 59. Hot spring 109
Figure 60. Locations of thermal springs in the Kootenay Boundary Region 111

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PART 1: INTRODUCTION

Background

A "wildlife habitat feature" is defined as a feature used by one or more wildlife species to meet their life history requirements; special management is necessary to ensure that these features are protected and remain functional. Wildlife habitat features are established under the authority of the *Forest and Range Practices Act* Government Actions Regulation.[1] The Forest Planning and Practices Regulation,[2] Woodlot Planning and Practices Regulation,[3] and Range Planning and Practices Regulation[4] all require that an authorized person carrying out primary forest or range activities "does not damage or render ineffective a wildlife habitat feature." In addition, *Forest Act* agreement holders are required to report annually to the district manager the location of new wildlife habitat features.[5]

The current Wildlife Habitat Feature Order (hereafter "the Order") for the Kootenay Boundary Region of British Columbia includes some of the features listed in the regulation (i.e., mineral lick, wallow, and the nests of bird species such as Bald Eagle and Osprey). In addition, the Order includes localized features identified by the Ministry of Environment and Climate Change Strategy in consultation with regional staff from the Ministry of Forests, Lands, Natural Resource Operations and Rural Development and industry stakeholders. These represent high-priority features associated with species of special management concern that are potentially affected by forest or range practices, and for which no other means exists to provide special management (e.g., bat hibernacula and hot springs or thermal springs that provide unique habitat for certain plant and invertebrate species). The current wildlife habitat feature list for the Kootenay Boundary Region may be expanded from time to time to reflect new information that indicates potential threats from forest or range activities on a particular localized feature.

****Important Note****

- ***The information contained in this Field Guide does not constitute a legal or professional practice requirement.***
- This information does not create any mandatory obligations on a person undertaking forest or range practices and cannot establish the site-specific prescription for compliance with the requirements of regulation.
- It is up to the prescribing professional, and forest or range manager, to determine the most appropriate practices given site-specific situations and circumstances, and with due consideration of the best current technical information available to that person.
- This approach is consistent with the results-based professional reliance regulatory model required for forest and range management under the *Forest and Range Practices Act*.

[1] See the Government Actions Regulation, Section 11(1): http://www.bclaws.ca/Recon/document/ID/freeside/582_2004#section11.

[2] See the Forest Planning and Practices Regulation, Section 70(2): http://www.bclaws.ca/Recon/document/ID/freeside/14_2004#section70.

[3] See the Woodlot Planning and Practices Regulation, Section 56(1): http://www.bclaws.ca/civix/document/id/complete/statreg/21_2004#section56.

[4] See the Range Planning and Practices Regulation, Section 37(1): http://www.bclaws.ca/civix/document/id/complete/statreg/19_2004#section37.

[5] See the Forest Planning and Practices Regulation, Section 86(3)(b): http://www.bclaws.ca/civix/document/id/complete/statreg/14_2004#section86; and the Woodlot Planning and Practices Regulation, Section 76(2): http://www.bclaws.ca/civix/document/id/complete/statreg/21_2004#section76.

Purpose of the Wildlife Habitat Feature Field Guide

Intended specifically for Kootenay Boundary Region forest and range practitioners, this Field Guide will assist in:

- identifying wildlife habitat features;
- understanding how forest and range activities may damage or render ineffective a wildlife habitat feature;
- understanding reporting requirements (*Forest Act* agreement holders only) when a wildlife habitat feature is encountered; and
- preparing an exemption request when compliance with the Order may not be practical or realistic.

The Field Guide also provides information regarding the choice of practices to consider when undertaking primary forest or range activities around a given feature so as not to damage it or render it ineffective.

Additional supporting information is available on the Wildlife Habitat Features website: gov.bc.ca/Kootenay Boundary-Wildlife-Habitat-Features-Order

Definition and Description of Wildlife Habitat Features

The following 14 features are identified in the Wildlife Habitat Feature Order for the Kootenay Boundary Region:

1. a nest of a Bald Eagle (*Haliaeetus leucocephalus*)
2. a nest of an Osprey (*Pandion haliaetus*)
3. a nest of a Flammulated Owl (*Psiloscops flammeolus*)
4. a nest of a Western Screech-Owl *macfarlanei* subspecies (*Megascops kennicottii macfarlanei*)
5. a nest of a Great Blue Heron (*Ardea herodias*)
6. a nest of a Lewis's Woodpecker (*Melanerpes lewis*)
7. a nest of a Williamson's Sapsucker (*Sphyrapicus thyroideus*)
8. an American Badger burrow (*Taxidea taxus*)
9. a Grizzly Bear den (*Ursus arctos*)
10. a significant mineral lick
11. a significant wallow
12. a bat hibernaculum
13. a bat nursery roost
14. a hot spring or thermal spring

In addition to these definitions, to become recognized as a wildlife habitat feature, ***all*** of the following attributes must be present.

- The feature is newly or previously known to exist at a specified location.
- The feature is in functioning condition; that is, the feature is capable of providing the habitat and ecological functions associated with it.

- The feature has visible evidence of past use[6] by the associated wildlife species (except for bat nursery roost features and hot spring or thermal spring features).
- The feature is naturally occurring; it is not created by human activities.

Occasionally, it may be difficult to determine whether suspected features meet the definition. For example, a potential bat hibernaculum is observed in summer, or an unoccupied cavity nest is spotted outside the usual breeding time. If any doubt exists, the precautionary principle is applied by considering the above criteria. When all attributes are present, it is reasonable to assume the feature meets its definition. If greater certainty is required, revisit the site during the appropriate season or ask a qualified professional to assess the feature.

Reporting and Tracking Wildlife Habitat Features

Tracking the locations of wildlife habitat features is important to ensure effective management, as well as data access and availability. Doing so serves two purposes: (1) it provides those who carry out primary forest activities with the ability to determine the locations of known features and to plan their operations accordingly; and (2) it allows the location of these features to be known for compliance and effectiveness evaluations.

Each year, *Forest Act* agreement holders must report any newly encountered features within, or contiguous to, cutblocks or roads. This information is forwarded to district managers. Woodlot licence holders must report new wildlife habitat features by May 31.[7] All other forest licence and agreement holders must report new features by June 1.[8] At this time, *Range Act* agreement holders have no reporting requirements.

The location of new features is reported online. Paper forms are also available from the regional biologist. For more information on how to report new wildlife habitat features, see: gov.bc.ca/Kootenay Boundary-Wildlife-Habitat-Features-Order.

Exemptions from Requirements to Protect Wildlife Habitat Features

In certain circumstances, it may not be practical or realistic to comply with the regulatory requirements to protect wildlife habitat features. Various *Forest and Range Practices Act* provisions allow agreement holders to seek exemptions from the requirement to protect ("not damage or render ineffective") a feature.[9]

Requests for an exemption are made to the delegated decision maker (currently the Director of Resource Management, Ministry of Forests, Lands, Natural Resource Operations and Rural Development). Before providing an exemption, the delegated decision maker must be satisfied that compliance with the Order is not realistic. This will depend on the circumstances or conditions related to the area in which the feature occurs.

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[6] "Visible evidence of past use" means the presence of the associated wildlife species, or observable sign of the species (e.g., tracks, hair, feathers, fecal droppings, feeding sign or prey remains, excavations, nesting or bedding material, etc.), is seen at the feature location.

[7] See the Woodlot Licence Planning and Practices Regulation, Sections 76(2) and Section 76(3)(d): http://www.bclaws.ca/civix/document/id/complete/statreg/21_2004#section76.

[8] See the Forest Planning and Practices Regulation, Section 86(3)(b): http://www.bclaws.ca/civix/document/id/complete/statreg/14_2004#section86.

[9] See the Forest Planning and Practices Regulation, Section 92(2) (http://www.bclaws.ca/civix/document/id/complete/statreg/14_2004#section92); Woodlot Licence Planning and Practices Regulation Section 79(2) (http://www.bclaws.ca/civix/document/id/complete/statreg/21_2004#section79); and the Range Planning and Practices Regulation, Section 37(2) (http://www.bclaws.ca/civix/document/id/complete/statreg/19_2004#section37).

Exemption requests should be discussed with the Regional Biologist. A request must include a rationale that describes the nature of the problem and any options that may minimize impacts to the feature. Information provided in a formal request will inform any conditions that the decision maker may attach to an exemption.

Consideration of exemption requests begins when a completed formal request is received; incomplete requests are returned to the proponent. Exemption requests are administered as soon as possible after receiving a complete request (e.g., 5–10 business days). During the review process, the delegated decision maker may ask for additional information from the proponent.

Due Diligence and Professional Reliance

Section 72(a) of the *Forest and Range Practices Act* provides for the defence of due diligence to any alleged contravention of the Act, its regulations, and standards.[10] A person is expected to exercise due diligence to meet the requirement to protect wildlife habitat features.

Due diligence refers to the amount of care that a person must exercise in any given situation.[11] A professional must have taken all reasonable care to avoid a contravention (in this case, "not damage or render ineffective a wildlife habitat feature"). This involves a consideration of what a reasonable person would have done in the same circumstances. Each situation must be evaluated considering its own particular facts.

There are two basic elements of due diligence - "reasonable foreseeability" and "reasonable care." The first is based on what a person engaged in the same activity, exercising all reasonable care, would likely have foreseen in those same circumstances; the second is based on the standard of what a person engaged in the activity exercising all reasonable care would have foreseen. The following two principles apply: (1) The greater the likelihood of a harmful event occurring, generally the higher the standard of care; and (2) The greater the potential damage, the greater the degree of care required.

Forest and range practitioners (or qualified professionals, if required) will thus determine the most appropriate actions and practices to adequately protect a wildlife habitat feature. Identifying features in the field, seeking additional specialized advice, and determining how best to protect them are all areas of professional reliance and due diligence.

Related *Forest and Range Practices Act* Provisions, Other Laws, and Legal Obligations

Legal provisions in the *Forest and Range Practices Act* exist to protect and conserve wildlife values across the Crown forest land base (i.e., riparian reserves, wildlife tree retention areas, wildlife habitat areas, and ungulate winter ranges). A wildlife habitat feature is a specific habitat element that has no legally defined measures for protection under the Act. Instead, the protection of these features depends on the professional reliance approach that ensures the feature will not be "damaged or rendered ineffective" by primary forest and range activities. *Forest Act* and *Range Act* agreement holders are expected to protect these habitat features through tools such as wildlife tree retention requirements, the purpose of which is to manage stand-level biodiversity, and through their range use plans.

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[10] See the Forest and Range Practices Act, Section 72(a): http://www.bclaws.ca/Recon/document/ID/freeside/00_02069_01#section72.

[11] For more guidance about due diligence, see "Assessing Due Diligence as a Defence": https://www.for.gov.bc.ca/ftp/hen/external/!publish/web/bulletins/C_and_E_Advice_Bulletin_14.pdf.

Forest and range practitioners are responsible to understand their obligations to protect and (or) manage special habitats or attributes under other provincial and federal laws. The table below describes the habitat protection provisions supplied by these statutes and how the Order provides additional special management for wildlife habitat features. This is not an exhaustive list; practitioners may wish to consult the appropriate authorities for further information.

Habitat Protection in Related Statutes	Additional Protection Provided by the Order[12]
Species at Risk Act* (SARA):**[13] Under general prohibitions of this Act, it is an offence to damage or destroy the residence (e.g., nest or den) of species listed under the Act. This Act also includes a prohibition against destroying any part of "critical habitat"[14] that is identified in a recovery strategy for a listed species. More specifically, prohibitions against killing an individual or damaging its habitat apply to all listed species that occur on federal lands; however, on private or provincial land, these prohibitions apply ***only to SARA-listed aquatic species and migratory birds.	Wildlife habitat features will be protected where *Forest Act* or *Range Act* agreements occur on provincial Crown land. Some features are not related to federally designated species at risk (e.g., a mineral lick, a wallow, an Osprey nest). The Government Actions Regulation requires that primary forest and range activities "not damage or render ineffective" a wildlife habitat feature; however, ensuring the effectiveness of a nest is not addressed under the federal *Species at Risk Act*.
***Migratory Birds Convention Act*:**[15] Activities affecting migratory birds and (or) their nests and eggs (including "incidental take" or damage), regardless of their scale, the level of potential detrimental effects on bird populations, or the nature of mitigation measures taken, can result in violations of the Act. Possibility of prosecution is elevated if no reasonable attempt was made to avoid or reduce the risk of impact if the person had reasonable knowledge of the presence of migratory birds, nests, and eggs in the area and (or) the potential harm.	The list of wildlife habitat features includes features other than the nests of migratory birds. The Government Actions Regulation requires that primary forest and range activities "not damage or render ineffective" a wildlife habitat feature; however, ensuring the effectiveness of a nest is not addressed under the *Migratory Birds Convention Act*.

[12] That is, the ways in which including each wildlife habitat feature in the Order satisfies the Minister that the feature requires special management not otherwise provided under the *Forest and Range Practices Act*, Government Actions Regulation, or other enactment.

[13] Canada *Species at Risk Act*: http://laws-lois.justice.gc.ca/eng/acts/s-15.3/. See, also, the Species at Risk Public Registry website for a wide range of information related to species at risk in Canada: https://www.registrelep-sararegistry.gc.ca/default.asp?lang=en&n=24F7211B-1

[14] "Critical habitat" is habitat necessary for the survival or recovery of a listed endangered, threatened, or extirpated species.

[15] *Migratory Birds Convention Act*: http://laws.justice.gc.ca/eng/acts/M-7.01/; see also: https://www.canada.ca/en/environment-climate-change/services/migratory-birds-legal-protection/convention-act.html

Wildlife Act:[16] Under this Act, a person commits an offence if they: possess, take, injure, molest, or destroy certain bird nests (Eagle, Peregrine Falcon, Gyrfalcon, Osprey, Heron, or Burrowing Owl) and (or) bird nests occupied by a bird or its egg (Section 34). In addition, the Minister may, by regulation, designate land in a wildlife management area as a critical wildlife area for species of wildlife designated under this Act as an endangered species or threatened species (Section 5).	The list of wildlife habitat features includes features other than bird nests and for other species than the four endangered and threatened species that could be protected in a critical wildlife habitat area under the *Wildlife Act*. The Government Actions Regulation requires that primary forest and range activities "not damage or render ineffective" a wildlife habitat feature; however, ensuring the effectiveness of a nest is not addressed under the *Wildlife Act*.

Field Guide Contents

Part 2 of this Field Guide contains a chapter for each wildlife habitat feature currently identified by the Order for the Kootenay Boundary Region. Each chapter contains a definition and description of the feature and some suggested management strategies to consider when carrying out primary forest or range activities in the vicinity of these features.

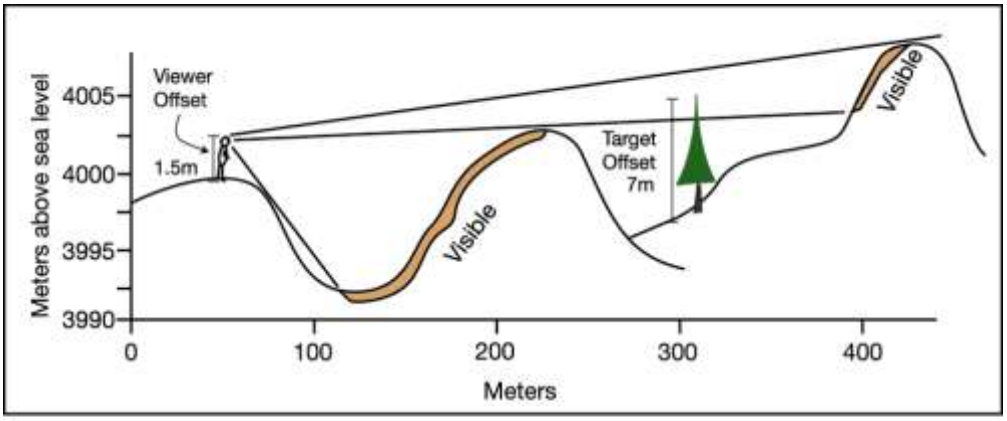
Section 1 supplies a specific definition of each wildlife habitat feature along with photographs showing typical examples. For features associated with bird nests or animal burrows or dens, Section 2 provides clear descriptions of the related bird and animal species. Where applicable, the conservation status of these species is provided using both British Columbia and Committee on the Status of Endangered Wildlife in Canada (COSEWIC) designations. For localized features, such as mineral licks, wallows, or bat hibernacula, this section describes the importance of these features. Section 3 offers a more extensive summary of the feature's characteristics, including tips on identification, information to consider when conducting primary forest and range activities near the feature and, for some features, suggested alternatives to avoid rendering the features ineffective. Section 4 outlines specific timing windows (i.e., sensitive periods and periods of least risk) and guidance on disturbance buffers for the features in the Kootenay Boundary Region. This section includes maps of feature distribution or species' areas of occupancy, any relevant biogeoclimatic associations, and detailed recommendations regarding disturbance buffers. The concluding Section 5 provides links to chapter source material and additional relevant information.

Some chapters include information about the types of disturbance that may affect specific nesting birds along with suggestions of lower-impact alternatives. Implementation of these alternatives relies on knowledge of the two distance concepts illustrated on the next page.

Additional supporting information is available on the Wildlife Habitat Features website: gov.bc.ca/Kootenay Boundary-Wildlife-Habitat-Features-Order.

[16] *Wildlife Act*: http://www.bclaws.ca/Recon/document/ID/freeside/00_96488_01.

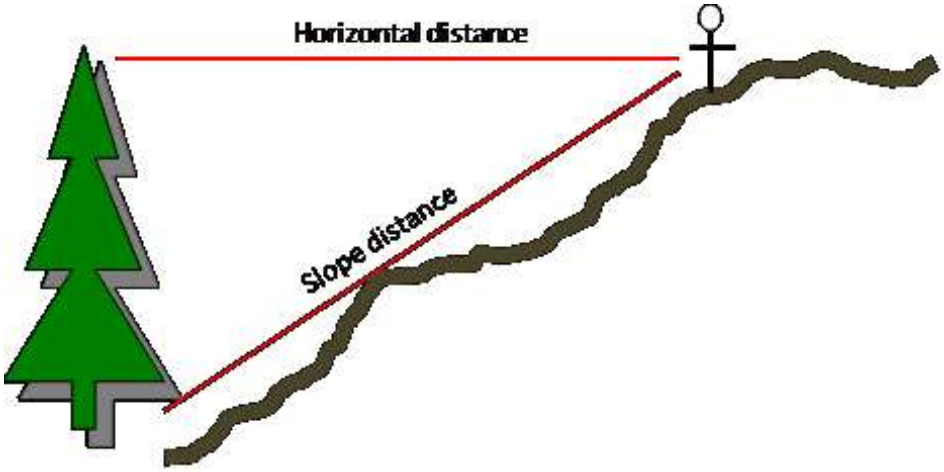
Line-of-Sight – Defined as a straight line along which an observer has unobstructed vision.



A single Line of Sight (LOS) in a particular direction, with examples of viewer and target offsets. Collectively, all of the LOS from a given location make up its viewshed.

(http://mapaspects.org/colca/research/viewshed/what_is.html)

Horizontal Distance – Defined as a straight line distance measured on a flat plain between two objects.



PART 2: GUIDANCE FOR MANAGING WILDLIFE HABITAT FEATURES

1. A Nest of a Bald Eagle

1) Definition

A nest of a Bald Eagle (*Haliaeetus leucocephalus*) means the nest and its supporting structure that either (1) is currently occupied by a Bald Eagle to hold its eggs or offspring, or (2) is habitually occupied and still capable of holding eggs or offspring of a Bald Eagle (Figure 1).

Figure 1. Immature Bald Eagle at nest. (Photo: Jared Hobbs)

2) Species Description

One of British Columbia's largest raptors, adult Bald Eagles are easily identified by a distinctive white head and tail and a powerful yellow bill (Figure 2). Immature birds are mostly dark. As these birds mature, increasing amounts of mottled white appear on the head and tail. Immature Bald Eagles look similar to immature Golden Eagles; however, Golden Eagles have more defined white wing patches and a broad white band at the base of the tail, whereas the tails of juvenile Bald Eagles are mottled with white.

The Bald Eagle is Yellow-listed in British Columbia. This bird is designated as *Not at Risk* by COSEWIC.

Figure 2. Adult Bald Eagle. (Photo: Jared Hobbs)

3) What to Look For

Bald Eagles nest primarily in coniferous forests near a permanent water source, although deciduous and mixed woodlands are also used. Nests are notably large. Made of bulky sticks and branches, the nests are at least 1 m across and often conspicuously placed in the top third of a large tree. Bald Eagles tend to repair and reuse the same nest for many years. Often, more than one nest is built in a breeding territory, with alternate nests used in different years. As many as four nests may occur in one territory, although not more than one is active in a given year. Breeding eagles defend territories of l.5–6.0 km^2 but will forage outside the defended zone. In areas of discontinuous habitat, nests may be widely dispersed, although this is not a function of territoriality.

The surest way to determine which bird species is using a large stick nest is to observe an adult bird at the nest site. The breeding season (typically March through August) is the best opportunity to do this. If a large stick nest is found during the non-breeding season, and cannot be attributed to a particular bird species, then assess the nest characteristics to determine whether it is a Bald Eagle nest.

Table 1 summarizes what to look for when identifying a Bald Eagle nest. Table 2 provides information to consider when conducting primary forest activities near a Bald Eagle nest. Consider substituting lower-impact, alternative activities in areas near a Bald eagle's nest during the breeding season. Table 3 suggests some alternatives to avoid rendering a nest ineffective.

Table 1. Bald Eagle nests: what to look for.

Bald Eagle Nest Description

• Nests are:
  o large, ranging in size from 1.0 to 3.5 m in diameter and from 0.5 to 2.5 m in depth;
  o made of large sticks, forming generally cup-shaped platforms with relatively flat tops;
  o typically built in large trees, up against the tree trunk or on a large, forked branch or stem crotch;
  o generally built in the upper third of the tree with an unobstructed view of the surrounding area;
  o along the Coast, usually within 100 m of shore;
  o in the Interior, usually within 100 m of shore but up to 2 km from a water body (e.g., lake or river);
  o on the Coast, usually in coniferous trees with large limbs, such as Douglas-fir, Sitka spruce, western redcedar, and western hemlock; large black cottonwood and red alder are also used; on treeless offshore islands, nests may be on the ground, usually on cliffs or steep slopes; and
  o in the Interior, most nests are found in black cottonwood, Douglas-fir, balsam poplar and trembling aspen; ponderosa pine and spruce are also used.
• Evidence of use (e.g., whitewash [feces], remains of prey, raptor feathers) is often located at the base of nest trees.
• Adult birds are often seen flying to and from the nest or perched nearby.
• Young, small birds are often not seen from the ground but are heard begging for food from within the nest.

Table 2. Information to consider when conducting primary forest activities near a nest of a Bald Eagle.

Information to Consider

• If you are unsure whether an unoccupied large stick nest is that of a Bald Eagle, consult a qualified professional biologist to identify the species.
• The nest is protected throughout the year under Section 34b of the *Wildlife Act.*
• Unless they occur in more developed locations (e.g., urban/rural interfaces), Bald Eagles generally have low to moderate thresholds for new human disturbance, especially during the breeding season. Unaccustomed levels of noise or human activity near the nest tree can cause some pairs to abandon their nest, particularly during the early part of the nesting season (i.e., before June). Therefore:
  o Avoid conducting high-impact activities (see Table 3) during the breeding season (March 1–August 15) in areas near a Bald Eagle nest.
  o Establish a forested windfirm buffer to provide some visual screening around confirmed nest trees; habitat functions of this buffer include perching and roosting opportunities near the nest site and security cover.
  o Locate any new roads at a distance that will not result in disturbance to the nest site.

Table 3. Activity impacts near Bald Eagle nests and suggested lower-impact alternatives.

Activity	Suggested Lower-impact Alternatives
High Impact	
Blasting	○ Delay until after breeding season (January 1–August 31).
Road construction	○ Delay until after breeding season (January 1–August 31).
Repeated low altitude helicopter flight activity (< 300 m altitude)	○ Plan recurring flight paths to a > 300 m line-of-sight distance from known nest trees during the breeding season (January 1–August 31). ○ Fly at higher altitudes (generally > 300 m) near nest sites during the breeding season.
Falling and yarding (including mechanized falling)	○ Delay until after breeding season (January 1–August 31). ○ Restrict falling and yarding to a > 500 m horizontal distance from known nest trees during the breeding season. ○ Where sufficient visual screening is provided by continuous forest cover (of at least mid-forest age) or topography, restrict falling and yarding to a > 300 m horizontal distance from known nest trees during the breeding season. ○ For region-specific guidance, refer to Section 4.
Medium Impact	
Brushing and thinning	○ Delay until after breeding season (January 1–August 31).
Low Impact	
Block layout, surveys, timber cruising	○ Minimize loud voices or shouting; try to remain at least 50 m away from active nest sites. ○ Minimize time spent in the nest area during the most sensitive courtship, nest building, and egg-laying periods (January to mid-May).

4) Regional Information – Kootenay Boundary

In this section, we provide specific timing windows and guidance on disturbance buffers for the Kootenay Boundary Region. This information may vary from provincial guidance and may not be applicable outside of the Kootenay Boundary Region because of regional specificity.

Bald Eagles are British Columbia residents, meaning they both breed and overwinter within the province (Figure 3). During the breeding season, these birds are found in most forest types (Table 4) and are generally associated with permanent water sources. They overwinter around low-elevation, ice-free water bodies. Bald Eagle sensitivity to disturbance varies with their existing exposure to disturbance and the level of disturbance from the proposed activity. Figure 4 provides suggested minimum buffer sizes. Table 5 supplies additional guidance on protection or alternative measures that may be needed, depending on the nature of the disturbance, existing landscape and cover, or other factors.

Bald Eagles are most sensitive during the breeding season, which includes territory establishment and courtship stages. Each breeding season stage requires protection because this disturbance-sensitive raptor could abandon a site at any time during the entire breeding period. Please note that the following dates offer a general guide of when you might expect to see breeding season

activities in the Kootenay Boundary Region; actual breeding season length will depend on the year and area.

- Courtship and nest initiation: January 1–February 1
- Eggs present: February 1–June 30
- Young present: April 1–August 31

This creates a potential ***sensitive period of January 1–August 31***, which encompasses courtship (month before nesting), nesting, and fledging.[1] Based on observations of nest stage, the length of this sensitive period can be refined. The period of ***least risk is September 1–December 31***.

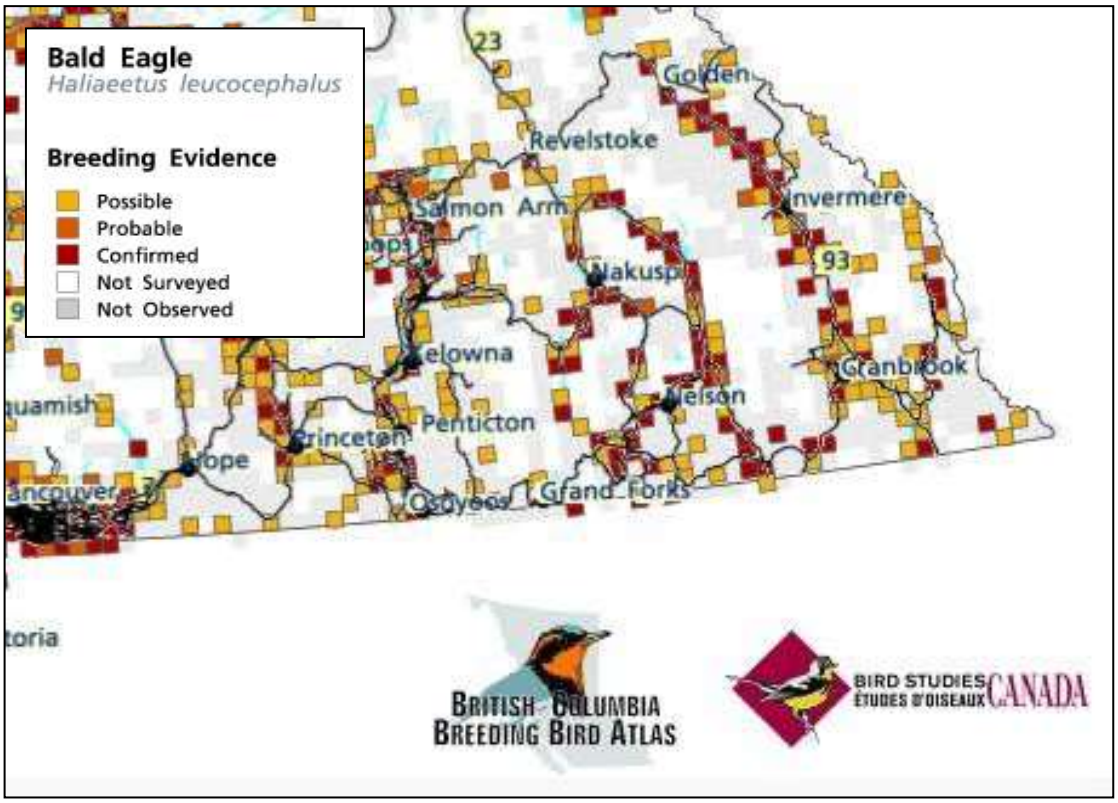


Figure 3. Distribution of Bald Eagles in the Kootenay Boundary Region.[2]

Table 4. Habitat and biogeoclimatic associations of Bald Eagles in the Kootenay Boundary Region.[2,3]

Habitat	Biogeoclimatic Zone[4]
Interior Douglas-fir	IDF
Interior Cedar–Hemlock	ICH
Montane Spruce	MS
Engelmann Spruce–Subalpine Fir	ESSF
Ponderosa Pine	PP

[1] Modified from Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia.

[2] Atlas of the Breeding Birds of British Columbia (2015).

[3] Adapted from BC Species and Ecosystems Explorer – BC Species Summary.

[4] A Field Guide for Site Identification and Interpretation for the Nelson Forest Region (1992).

		Existing Exposure to Disturbance			
	NEST SITE BUFFER	NIL Isolated site, little or no prior access	LOW Undeveloped area with occasional human use	MODERATE Near secondary logging road or minor recreation site	HIGH Near primary road, major recreation site, or human development
Disturbance Level of Proposed Activity	LOW Activities on foot. Small group, visual screening present. Livestock attractants. Examples: layout, cruising, salt licks.	100–200 m	1.5 × tree length	1.5 × tree length	1.5 × tree length
	MODERATE Light mechanized activities. Larger group/duration, no visual screening. Examples: spacing, planting, fence construction.	200–500 m	100–200 m	100–200 m	1.5 × tree length
	HIGH Mechanized activities. Examples: road construction, falling and yarding, landing sites.	200–500 m	200–500 m	200–500 m	100–200 m
	VERY HIGH Blasting, helicopter logging.	1000 m+	1000 m+	1000 m+	1000 m+

Figure 4. Recommended disturbance buffers around a Bald Eagle's nest, depending on existing disturbance and disturbance level of the proposed activity.[5]

Table 5. Additional guidance on disturbance buffers for a Bald Eagle's nest.[6]

A Nest of a Bald Eagle – Guidance on Buffers
• Increase buffer, or delay activities, if a nest is active and the bird constantly flushes away when using minimum buffers. • Consider the sight lines between the activity and the nest; in more open forests or terrain, a larger buffer may be required for these visually acute species. • During breeding season, consider adding a "quiet" buffer of an extra 100 m to the no disturbance buffer in which no unusual or sudden loud activities will occur (e.g., blasting, tree felling, chain saws, trucking, etc.).

[5] Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia.

[6] Guidelines for Raptor Conservation during Urban and Rural Development Land Development in British Columbia (2013).

5) Additional Information

A Field Guide for Site Identification and Interpretation for the Nelson Forest Region, Land Management Handbook No. 20:
https://www.for.gov.bc.ca/hfd/pubs/docs/lmh/lmh20.htm

Atlas of the Breeding Birds of British Columbia – Bald Eagle Species Account:
http://www.birdatlas.bc.ca/accounts/speciesaccount.jsp?sp=BAEA&lang=en

BC Species and Ecosystems Explorer – Species Summary for Bald Eagle:
http://a100.gov.bc.ca/pub/eswp/speciesSummary.do?id=18209

Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia:
https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/natural-resource-standards-and-guidance/best-management-practices/develop-with-care

Guidelines for Raptor Conservation during Urban and Rural Development Land Development in British Columbia:
https://www2.gov.bc.ca/assets/download/E3DEB5DA9E2A4FFA8F24F8E10FDD4C47

Status of the Bald Eagle in British Columbia:
http://www.env.gov.bc.ca/wld/documents/statusrpts/wr62.pdf

U.S. Fish and Wildlife Service National Bald Eagle Management Guidelines:
http://www.fws.gov/southdakotafieldoffice/NationalBaldEagleManagementGuidelines.pdf