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Jurisdictional Review of Wildlife Area Management in Western Canada

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Jurisdictional Review of Wildlife Area Management in Western Canada

Government of Yukon
Fish and Wildlife Branch
MR-24-01

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Jurisdictional Review of Wildlife Area Management in Western Canada

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EXECUTIVE SUMMARY

The Government of Yukon is conducting an evaluation of the Wildlife Key Area (WKA) inventory program, which identifies important wildlife habitats in Yukon. To support that evaluation, this report describes programs used by provincial and territorial governments of British Columbia, Alberta, and the Northwest Territories that are analogous to the WKA program. The objectives of this document are to summarise key similarities and differences among the programs, and to determine what information is publicly available, how this information is used in regulatory assessment and land use planning processes, and what legal protections, if any, are in place for each program.

Programs included in this review are spatially explicit and Geographic Information System-based, overlap with the WKA program in terms of the species and habitats protected, and are used in regulatory and/or land use planning processes within their respective jurisdictions. Programs in British Columbia identified as analogous to the WKA program include Wildlife Management Areas, Wildlife Habitat Areas, and Ungulate Winter Ranges. Alberta programs include Wildlife Sensitivity Datasets, comprising key range layers and key wildlife layers. The Northwest Territories programs include Northwest Territories-wide Habitat Datasets and Special Designated Areas. These programs all share the same objective: to identify, conserve, and/or manage important habitats for harvested species and/or species of conservation concern. However, the programs differ in the species of focus, legal designations, incorporation in land use planning, availability and confidentiality, and compliance and effectiveness monitoring.

Only seven species included in the WKA program are represented in programs used by all four jurisdictions (i.e., moose, woodland caribou, mountain goat, grizzly bear, Bald Eagle, Golden Eagle, and Peregrine Falcon). Among the species groups reviewed (i.e., ungulates, carnivores/furbearers, and raptors), British Columbia programs capture the greatest number of species, followed by the Northwest Territories, Yukon, and Alberta. Each jurisdiction delineates habitat areas using a combination of wildlife surveys and local knowledge; however, British Columbia and Alberta also incorporate habitat suitability mapping into their program boundaries. All jurisdictions provide public access to program information though online tools; however, Yukon and British Columbia have policies for keeping some sensitive species and habitat information confidential.

While all programs are incorporated in some way into environmental assessments and permitting processes, habitat protection programs in Yukon, Alberta, and the Northwest Territories are not legally designated and do not carry Ministerial Orders for land use outside of the assessment and permitting process. In contrast, British Columbia programs are legally designated, and mandatory management prescriptions and mitigation measures must be followed within these areas. Except of Alberta programs, all programs included in this review are incorporated into regional land use planning, and British Columbia programs may also be used in sub-regional or local land use planning. Lastly, all programs have some framework for compliance and effectiveness monitoring, except for the WKA program in the Yukon.

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AEPA	Alberta Environment and Protected Areas
AER	Alberta Energy Regulator
BMA	Bear Management Areas
BMP	Best Management Practices
CDC	Conservation Data Centre
CIMP	Cumulative Impact Monitoring Program
EA	Environmental assessment
EBAR	Ecosystem-based Automated Range
EDP	Energy Development Planning
EISC	Environmental Impact Screening Committee
EPMG	Environmental Protection Management Guideline
EPMR	Environmental Protection and Management Regulation
FREP	Forest and Range Evaluation Program
FRPA	*Forest and Range Practices Act*
FWIMT	Fish and Wildlife Internet Mapping Tool
FWMIS	Fish and Wildlife Management Information System
GAR	Government Actions Regulation
GIS	Geographic Information System
GNWT	Government of the Northwest Territories
GWM	General Wildlife Measures
IGC	Inuvialuit Game Council
ISR	Inuvialuit Settlement Region
IWA	Important Wildlife Areas
IWMS	Identified Wildlife Management Strategy
LAT	Landscape Analysis Tool
MCP	Minimum convex polygons
MPERG	Mining and Petroleum Environment Research Group
MSSC	Master Schedule of Standards and Conditions
MVLWB	Mackenzie Valley Land and Water Board
NWT	Northwest Territories
OGAA	*Oil and Gas Activities Act*
PCMB	Porcupine Caribou Management Board
RRC	Renewable Resource Councils
RSF	Resource Selection Function
SARA	*Species at Risk Act*
SARC	Species at Risk Committee
UWR	Ungulate Winter Ranges

Acronym/Abbreviation	Definition
WHA	Wildlife Habitat Areas
WKA	Wildlife Key Area
WMA	Wildlife Management Areas
WMAC (NS)	Wildlife Management Advisory Council (North Slope)
WMAC (NWT)	Wildlife Management Advisory Committee Northwest Territories
WMIS	Wildlife Management Information System
WMMP	Wildlife Management and Monitoring Plan
WMU	Wildlife Management Units
WSI	Wildlife Species Inventory
YCDC	Yukon Conservation Data Centre
YESAB	Yukon Environmental Socio-economic Assessment Board
YFWMB	Yukon Fish and Wildlife Management Board
YG	Government of Yukon

1 INTRODUCTION

The Government of Yukon (YG) currently uses the Wildlife Key Area (WKA) inventory program to house information about the spatial extent of key areas for legally harvested species, protected species groups, and habitat features. These key areas represent geographic locations used by wildlife for critical, seasonal life functions. The WKAs are used to identify specific areas where mitigation measures may be required to minimize the potential effects of proposed human activities on relevant wildlife species.

The WKA program was first developed in the late 1980s and has since been an influential publicly accessible database of wildlife information. After nearly 40 years of use, YG is undertaking a program evaluation and review of the WKA program to better understand the territory's needs for and uses of a WKA program, and how the current information is meeting those needs. This report describes programs that are analogous to the WKA program used by adjacent western management agencies (i.e., provincial/territorial governments of Alberta, British Columbia, and the Northwest Territories) to identify and manage important wildlife species and habitats. The jurisdictional review will provide important context for the upcoming evaluation of YG's WKA program. Key questions addressed in this document include:

- What are WKA analogous programs in other jurisdictions?
- How do the programs differ, and how are they similar?
- What information is made public and what is kept confidential?
- How is the information used within assessment and regulatory processes?
- What legislated or regulatory protections and mitigations are associated with these programs?

Analogous programs in adjacent jurisdictions were selected for comparison with the WKA program based on the following criteria:

- the program is spatially explicit and Geographic Information System (GIS)-based;
- species, taxonomic groups, and habitat features included in the program overlap with those in the WKA program; and,
- the program is used in regulatory and land use planning processes.

Programs in British Columbia (BC) identified for comparison include Wildlife Management Areas, Wildlife Habitat Areas, and Ungulate Winter Ranges. In Alberta, Wildlife Sensitivity Datasets, encompassing key range layers and key wildlife layers, were reviewed. Northwest Territories (NWT)-wide Wildlife Habitat Datasets, including the Species General Status Ranking Program and InfoBase, the NWT Species at Risk website, the Species and Habitat Viewer, and the Wildlife Management Information System, were identified as analogous and suitable for comparison with the WKA program. Special Designated Areas were also included in the context of Community Conservation Plans in the NWT.

Each jurisdiction is unique in their approach to identification and management of wildlife habitat areas. Therefore, while each section of this review addresses key aspects of analogous programs, the structure and organization of each section is dictated by the datasets available for each jurisdiction.

2 YUKON

2.1 WILDLIFE KEY AREAS

The purpose of the WKA program in the Yukon is to protect and maintain the health and sustainability of wildlife populations by documenting geographic locations that are critical for those species (Environment Yukon 2014). The WKAs are intended to focus mitigation and conservation efforts on areas that are limited in availability and critical for meeting life history requirements of wildlife species. The program is used during the Environmental Assessment (EA) process to avoid/minimize potential project-related effects on wildlife and wildlife habitat, and in land use planning to identify and incorporate wildlife resource values. Public access to the WKA spatial database is provided through the interactive map application 'GeoYukon', managed, and maintained by YG.

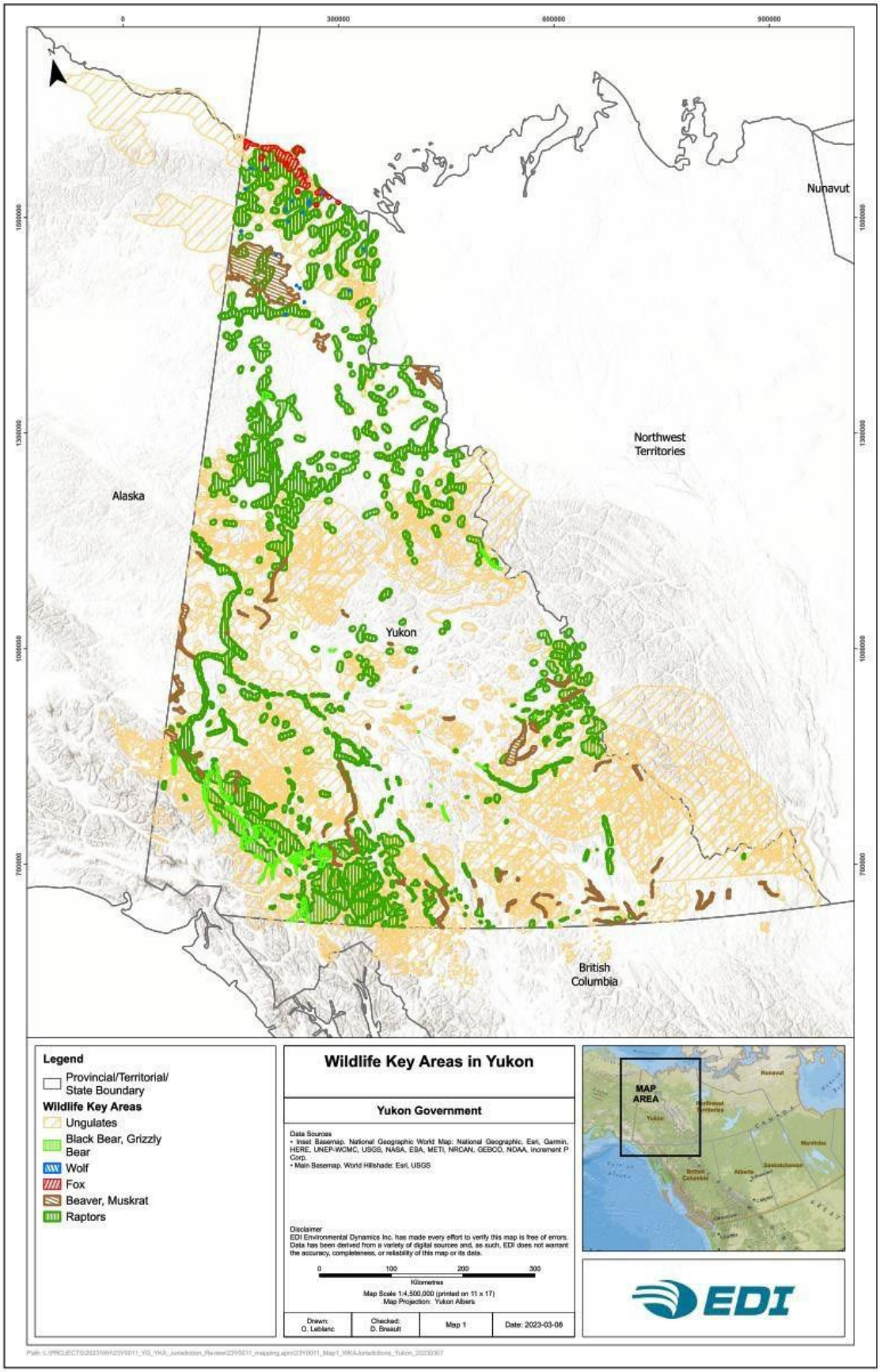
2.2 SPECIES AND HABITATS OF FOCUS

The WKA program includes legally harvested species (e.g., caribou [*Rangifer tarandus*], moose [*Alces alces*]), other species groups (e.g., raptors), and habitat features (e.g., ungulate mineral licks). This review focuses primarily on the habitats used by ungulates, carnivores, furbearers, and raptors that are mapped in the WKA program and occur in one or more adjacent jurisdictions (Table 2-1; Map 2-1). The WKAs are defined by the critical, seasonal life history function (i.e., Key Area Type) they provide for a given species and taxonomic group (Table 2-1).

Aside from some species protected under federal legislation (i.e., shorebirds, seabirds, larids, swans, and bowhead whale [*Balaena mysticetus*]), WKAs primarily correspond with species that are harvested and managed under territorial legislation (i.e., mule deer [*Odocoileus hemionius*], elk [*Cervus elaphus*], moose, woodland and barren-ground caribou, thinhorn sheep [*Ovis dalli*], mountain goat [*Oreamnos americanus*], wood bison [*Bison bison athabascae*], muskox [*Ovibos moschatus*], grizzly [*Ursus arctos*] and black bear [*Ursus americanus*], wolf [*Canis lupus*], fox [*Vulpes lagopus*], muskrat [*Ondatra zibethicus*], beaver [*Castor canadensis*], waterfowl, and sharp-tailed grouse [*Tympanuchus phasianellus*]; Yukon Government 2012, Loewen and Waterreus 2013, Environment Yukon 2014, 2022). The WKA program overlaps with the Yukon Conservation Data Centre (YCDC; Section 2.2.1), which tracks information on species and ecological communities of conservation concern in the Yukon (Environment and Climate Change Canada and Environment Yukon 2018). Several furbearers and small game species are not represented in either system, including lynx (*Lynx canadensis*), fisher (*Pekania pennanti*), marten (*Martes americana*), least weasel (*Mustela nivalis*), ermine (*Mustela erminea*), mink (*Neogale vison*), river otter (*Lontra canadensis*), coyote (*Canis latrans*), snowshoe hare (*Lepus americanus*), Arctic ground squirrel (*Urocitellus parryii*), red squirrel (*Tamiasciurus hudsonicus*), and porcupine (*Erethizon dorsatum*).

Table 2-1. Focal species of ungulates, carnivores, furbearers, and raptors mapped in the Wildlife Key Area program.

Taxon/Species	Key Area Type
Moose	Early Winter Range (Faro, post-rut)
	Late Winter Range
	Summer Range (Old Crow Flats)
	Year-round, All Functions (North Yukon)
Woodland Caribou	Winter Range
	Summer Post-calving (Chisana Caribou Herd)
	Fall Rut
	Migration Corridor
Barren-ground Caribou	Spring Calving
	Summer Insect Relief
Thinhorn sheep	Winter Range
	Spring Lambing
	Early Winter Rut
	Year-round, All Functions (small, isolated populations)
	Movement Corridors
Mountain Goat	Year-round, All Functions
	Movement Corridors
Mule deer	Winter Range
	Year-round, All Functions
Elk	Year-round, All Functions
Wood Bison	Year-round, All Functions
Muskox	Winter Range
	Fall Rut
Mineral Lick (for any of the above species)	Mineral Lick (Level 3)
Grizzly Bear, Black Bear	Major Feeding Range
Wolf	Denning Site
Fox	Denning Area (Level 3)
Beaver, Muskrat	Year-round, All Functions
Raptors (Golden Eagle, Gyrfalcon, Bald Eagle, Osprey, Peregrine Falcon, Rough-legged Hawk, Merlin)	Summer Nesting


Nunavut
Northwest Territories
Alaska
Yukon
British Columbia
Legend
Provincial/Territorial/ State Boundary
Wildlife Key Areas
Ungulates
Black Bear, Grizzly Bear
Wolf
Fox
Beaver, Muskrat
Raptors
Wildlife Key Areas in Yukon
Yukon Government
Data Sources
• Imagery Basemap: National Geographic World Map; National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
• Main Basemap, World Hillshade: Esri, USGS
Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data has been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.
0 100 200 300
Kilometres
Map Scale 1:4,500,000 (printed on 11 x 17)
Map Projection: Yukon Albers
Drawn: O. Leblanc
Checked: D. Braault
Map 1
Date: 2023-03-08
MAP AREA
EDI

2.2.1 YUKON CONSERVATION DATA CENTRE

While the WKA program focuses mainly on legally harvested species (Environment Yukon 2014), harvested species are a small component of species tracked by the YCDC, which houses information on over 230 species of plants and animals, as well as ecological communities, that are of conservation concern in the Yukon (Environment and Climate Change Canada and Environment Yukon 2018). Species and communities are included in the YCDC based on their conservation status under the federal *Species at Risk Act* (SARA) and assessment by the Committee on the Status of Wildlife in Canada, as well as under the Yukon *Wildlife Act* (Government of Yukon 2002, Environment and Climate Change Canada and Environment Yukon 2018, Yukon Conservation Data Centre 2019). Known locations of at-risk plants, animals, and ecosystems are mapped and available to the public through GeoYukon. Some overlap of species occurs between the WKA and YCDC databases. For example, the following wildlife species in the WKA program are also tracked in the YCDC database:

- woodland caribou;
- barren-ground caribou;
- wood bison;
- grizzly bear; and,
- Peregrine Falcon (*Falco peregrinus*).

2.3 IDENTIFICATION AND DELINEATION

The WKA program mainly represents areas of documented use by legally harvested species of big game animals (i.e., moose, caribou, bison, muskox, sheep, goat, deer, elk, bear, wolf; Environment Yukon 2022). The WKAs are identified primarily through targeted wildlife surveys during critical seasons of use. The WKAs are also identified and delimited based on interviews with knowledgeable experts and biologists with extensive experience travelling or working in areas where survey data are limited or nonexistent (Loewen and Waterreus 2013). Literature reviews and hunting/trapping statistics also contribute to the mapping process (Loewen and Waterreus 2013, Environment Yukon 2014). However, no standard protocols currently exist for mapping local knowledge.

The WKA polygons are mapped based on threshold distances from known occurrences of the species or important habitat features. The WKAs may also represent areas where species density has been observed to be high or where certain types of habitats are limited. The majority of WKA polygons are delineated by generalizing from known locations of animals. Therefore, WKA boundaries do not necessarily include habitat features that are important for understanding the spatial and temporal distribution of species (Loewen and Waterreus 2013, Environment Yukon 2014). This strategy was taken due to lack of spatial habitat data. Habitat suitability mapping may be incorporated into the process and is used to refine WKA boundaries when and where spatial habitat information is available. For example, the Ecosystem and Landscape Classification Program may be incorporated into the WKA program (Loewen and Waterreus 2013). Targeted wildlife surveys are conducted to assess and update the WKA program based on the following criteria (Loewen and Waterreus 2013):

- The survey fills a current data gap that is an immediate priority.
- Results of the survey may inform conservation recommendations for a Land Use Plan.
- Results may contribute to meeting community objectives for fish and wildlife conservation.
- The survey is needed for management planning of a protected area.
- Resources and funding are available for the survey.
- The survey population is small or isolated and may require special management actions.
- Development activities are proposed in the survey area and WKA information could contribute to important mitigation recommendations.
- Large landscape changes have occurred that may have substantially reduced habitat availability/quality.

The WKAs are mapped at the 1:250,000 scale based on the National Topographic Database, produced by Natural Resources Canada, and mapping at finer resolutions is not appropriate given the level of resolution of the original database.

2.4 MANAGEMENT STRATEGY

Management of wildlife and wildlife habitat, including WKAs, is carried out by YG with recommendations from the Yukon Fish and Wildlife Management Board (YFWMB) and Renewable Resource Councils (RRCs), under the Yukon *Wildlife Act*, which gives ultimate jurisdiction to the territorial government (Government of Yukon 2012a). Management, including sustainable harvest, is implemented through a combination of laws of general application under the *Wildlife Act*, as well as wildlife harvest data, and species-specific management guidelines (e.g., moose, woodland caribou, thinhorn sheep, black bear; Department of Renewable Resources 1996, Government of Yukon 2002, Environment Yukon 2016). Hunting regulations, including licensing, reporting, biological submissions, harvest limits, timing, and special area restrictions, apply to Game Management Subzones and are enforced under the *Wildlife Act* (Environment Yukon 2022).

Final Agreements (i.e., constitutionally protected modern treaties), identify the YFWMB as the primary tool of fish and wildlife management in Yukon (Government of Yukon 2012a). Integrated wildlife management is carried out under Final Agreements between First Nations, YG, and the Government of Canada (Council for Yukon Indians et al. 1993). Final Agreements define the roles of First Nation government, Inuvialuit, YG, RRCs, and relevant boards (e.g., Surface Rights Board, Water Board, Fish and Wildlife Management Board) in managing wildlife and wildlife habitats within Traditional Territory and Settlement Land (Council for Yukon Indians et al. 1993). In Final Agreements, RRCs are established as the primary advisory bodies for the sustainable management of renewable resources, including wildlife and wildlife habitat. The Wildlife Management Advisory Council (North Slope) (WMAC [NS]), established under the Inuvialuit Final Agreement, provides for joint land use planning related to wildlife and wildlife habitat on the Yukon North Slope. The Porcupine Caribou Management Board (PCMB), established under the Porcupine Caribou Management Agreement, advises on matters that affect the herd and its habitat (Government of Yukon 2012a).

Species management plans guide management decisions for species that occur throughout Yukon (i.e., elk, wolf, and grizzly bear), or specific populations in discrete areas (i.e., Aishihik wood bison and Chisana caribou herd; Department of Renewable Resources 1996a, b, Yukon Elk Management Planning Team 2008, Chisana Caribou Herd Working Group 2012, Government of Yukon 2012b, a, Environment Yukon 2016, Yukon Grizzly Bear Conservation and Management Plan Working Group 2019). Management of other species and populations is guided by co-management plans between YG and other governments and organizations (WMAC [NS] and WMAC [NWT] 1998, Fortymile Harvest Management Committee 2020). Species management plans are often focused on specific herds, population units, or areas, and generally do not include prescribed recommendations or regulations (Yukon Elk Management Planning Team 2008). These plans are based on precautionary principles and an adaptive management framework that recognizes the need to reassess species information as knowledge grows or populations change over time (Yukon Grizzly Bear Conservation and Management Plan Working Group 2019). Engagement and collaboration with First Nation and Inuvialuit governments, as well as wildlife management boards and councils, user groups, and the public, inform species management plans (Government of Yukon 2012a). Special Management Areas are defined in Final Agreements as special wildlife or fish management areas, Habitat Protection Areas, as well as migratory bird sanctuaries or wildlife sanctuaries, within Traditional Territory (Council for Yukon Indians et al. 1993). For example, wildlife harvest may be limited or prohibited within Special Management Areas based on conservation, public health, or safety reasons.

2.5 AVAILABILITY AND CONFIDENTIALITY

The WKA-related spatial information is made available to the public through the GeoYukon map application managed and maintained by YG. The WKA database is mapped at three levels of resolution:

- Level 1: raw data in the form of point locations used to delineate WKAs;
- Level 2: polygonal interpretations of Level 1 data and the primary level for environmental assessments and management; and,
- Level 3: generalized representation of the area of use, encompassing Levels 1 and 2.

Any of the three levels may be based on wildlife surveys or local, anecdotal knowledge. Level 1 point data are maintained by other databases and not available to the public. Point locations may be shared through information requests and data sharing agreements that specify the purpose and terms of use of the data (Loewen and Waterreus 2013). Some WKAs are only available to the public as Level 3, as there is not sufficient spatial information for mapping at Level 2 (e.g., wood bison). Sensitive locations, such as mineral licks, raptor nests, and denning sites, are only available to the public at Level 3, to obscure the true locations of these features (Environment Yukon 2014).

2.6 REGULATORY AND ASSESSMENT PROCESS

The WKA inventory is used by YG and the Yukon Environmental Socio-economic Assessment Board (YESAB) in the EA process (Environment Yukon 2014). Under YESAB, project applications for proposed

land use, such as mining and mineral exploration projects, require the applicant to list wildlife species that are known to or may occur in the proposed project area. The WKA database is a simple tool that applicants can use to determine overlap of their project with sensitive wildlife habitats and habitat features. Therefore, WKAs are often included in proponent proposals and are always considered by YESAB in their assessments and recommendations. The information is intended to be used during the development assessment process to plan activities so that they spatially or temporally avoid sensitive areas where species of concern are known to occur (Environment Yukon 2014).

Best Management Practices (BMPs) for mineral and coal exploration in Yukon recommend checking the WKA database prior to commencing field programs that involve aircraft operations and airborne surveys (Yukon Chamber of Mines 2010). The BMPs for avoiding aircraft disturbance include planning flight paths and landing areas to avoid WKAs, including maintaining specific distances from raptor nests and mineral licks during sensitive time periods (Yukon Department of Environment 2010). The Mining and Petroleum Environment Research Group (MPERG) advises aircraft to avoid flying over caribou calving and post-calving areas and thinhorn lambing cliffs, and maintaining recommended flight altitudes during sensitive times of year (i.e., caribou calving, post-calving, and rutting periods; Mining Environment Research Group, Yukon Environment 2006, Yukon Department of Environment 2010). Guidelines for industrial activity in bear country include avoiding locating camps and work in areas where bears are known to occur frequently, when possible (Mining and Petroleum Environment Research Group 2008). Depending on results of baseline EAs, a Wildlife Attractant Management Plan may be required for permit approval.

2.7 LAND USE PLANNING

The WKAs are mapped at the 1:250,000 scale, and are most appropriately used in planning at the regional level, rather than at sub-regional or local levels (Loewen and Waterreus 2013). The Yukon Land Use Planning Council supports regional land use planning carried out by Regional Land Use Planning Commissions. These commissions consist of individuals nominated by YG and Yukon First Nations whose traditional territories overlap each planning region (Yukon Land Use Planning Council 2022). Regional planning in Yukon is carried out under Final Agreements and plans are approved by YG and affected First Nations (Council for Yukon Indians et al. 1993).

The WKA program is used in regional land use planning, alongside traditional knowledge databases, to determine the spatial distribution of ecologically important areas (Vuntut Gwitchin Government and Yukon Government 2009). For example, the Peel Watershed Regional Land Use Plan identifies significant ecological values, including critical habitat for focal wildlife species (e.g., caribou, thinhorn sheep, grizzly bear), which were mapped using WKAs and other datasets (Peel Watershed Planning Commission 2008, 2019). Regional land use planning objectives include BMPs for avoiding and reducing activities in significant wildlife habitats, including WKAs, during biologically sensitive periods of use (Vuntut Gwitchin Government and Yukon Government 2009). Sensitive periods correspond with the seasonal life history function (i.e., Key Area Type) defined by the WKA program (Peel Watershed Planning Commission 2019).

2.8 COMPLIANCE AND EFFECTIVENESS MONITORING

No system is currently in place to track use or effectiveness of the WKA program in land management decisions, including regional land use planning and the EA process (Loewen and Waterreus 2013). For example, the WKA inventory is used by project proponents and YESAB Designated Offices during the EA process (Yukon Environmental and Socio-economic Assessment Board 2010, Environment Yukon 2014). The WKA program may be used to determine potential project-related effects and recommended mitigations, prior to application review by governments and regulatory agencies. A system for tracking mitigations and recommendations related to WKAs, as well as their acceptance by regulators, may help formalize the role of WKAs in the assessment process, and provide a method for standardizing accepted mitigations (Loewen and Waterreus 2013).

3 BRITISH COLUMBIA

Management of wildlife and wildlife habitat in BC is governed by various acts and associated regulations. The *Wildlife Act* is the key piece of legislation for conserving and managing wildlife, wildlife features, and wildlife habitat in the province (British Columbia Ministry of Forests 2023a). Under the *Wildlife Act*, vertebrate species (excluding fish) can be legally designated as endangered or threatened, which may lead to additional protections such as the designation of critical wildlife habitats within Wildlife Management Areas (WMAs) (British Columbia Ministry of Forests 2023b). The *Forest and Range Practices Act* (FRPA) is the key piece of legislation governing forest and range practices on public lands in the province (British Columbia Ministry of Forests 2023c), while the *Oil and Gas Activities Act* (OGAA) is the key piece of legislation governing oil and gas activities in the province (British Columbia Energy Regulator 2023). Under the FRPA and the OGAA, three categories of wildlife that require special management to mitigate the effects of forest and range practices or oil and gas activities on wildlife and wildlife habitat have been established by the Minister responsible for the *Wildlife Act* (British Columbia Ministry of Environment 2023a, b, c).

1) Category of Species at Risk: includes endangered, threatened, or vulnerable wildlife species (vertebrates and invertebrates) and endangered or threatened plant species and ecological communities that may not be adequately protected via other mechanisms (British Columbia Ministry of Environment 2023a).
2) Category of Regionally Important Wildlife: includes species that are regionally important and dependent on habitats not protected under the FRPA or the OGAA (British Columbia Ministry of Environment 2023a).
3) Category of Ungulate Species: includes ungulate species that may require a designated area for winter survival (British Columbia Ministry of Environment 2023b).

In regard to the FRPA, these categories of wildlife are together referred to as 'Identified Wildlife' under the *Identified Wildlife Management Strategy* (IWMS) (British Columbia Ministry of Environment 2023a). For the OGAA, these categories of wildlife are together referred to as 'High Priority Wildlife' under the *Environmental Protection Management Guideline* (EPMG) (BC Oil and Gas Commission 2021). Under the FRPA's Government Actions Regulation (GAR) or the OGAA's Environmental Protection and Management Regulation (EPMR), Wildlife Habitat Areas (WHAs) and Ungulate Winter Ranges (UWRs) may be established for Identified Wildlife (FRPA) or High Priority Wildlife (OGAA) and managed through the implementation of General Wildlife Measures (GWMs) and objectives (British Columbia Ministry of Environment 2023a, b, c).

3.1 WILDLIFE MANAGEMENT AREAS, WILDLIFE HABITAT AREAS, AND UNGULATE WINTER RANGES

Wildlife Management Areas, WHAs, and UWRs are the main wildlife-related management mechanisms implemented in BC (Map 3-1). Each of these mechanisms is described in the following subsections, including species and types of habitats protected. Other designations such as ecological reserves, fisheries sensitive watersheds, temperature sensitive streams, and old-growth management areas can also be implemented in BC, but will not be discussed herein. These designations do not meet the criteria for analogous programs because

their focus is not on species, taxonomic groups, or habitat features included in the Yukon WKA program, which includes ungulates, carnivores, furbearers, and raptors.

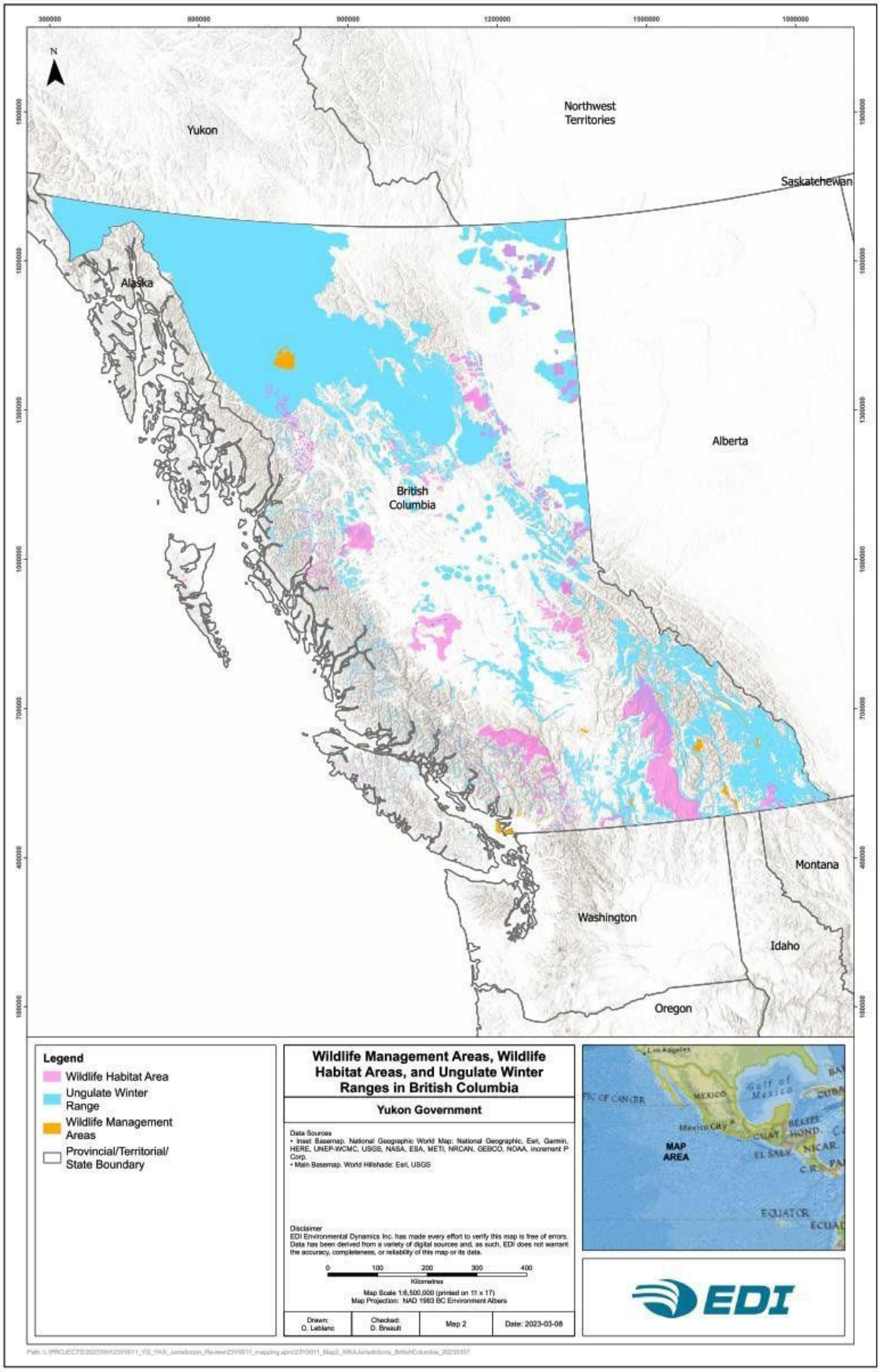
3.1.1 WILDLIFE MANAGEMENT AREAS

Wildlife Management Areas are designated under the *Wildlife Act* to conserve and manage regionally and internationally significant fish and wildlife species and their habitats (British Columbia Ministry of Forests 2023d, e). Habitat values potentially suitable for designation as a WMA include habitat for species of conservation concern, habitat required for critical lifecycle phases (e.g., spawning, rearing, nesting, denning, calving, and winter feeding), habitat used for migration purposes or other movement corridors, habitat that supports especially high species diversity or productivity, and habitat that is valued for consumptive or non-consumptive human uses (e.g., subsistence, spiritual, recreational fishing/hunting, and wildlife viewing) (British Columbia Ministry of Forests 2023e). Currently, 31 WMAs in BC protect a variety of habitat values, including important habitats for ungulate, carnivore, furbearer, and raptor species (British Columbia Ministry of Forests 2023f), some of which are captured by the Yukon WKA program (see Section 3.2.1 for details). Wildlife Management Areas are often collaborative initiatives managed through joint partnerships between the provincial government, local communities, Indigenous groups, and/or not-for-profit organizations. Each WMA has a long-term management plan associated with it (British Columbia Ministry of Forests 2023e).

3.1.2 WILDLIFE HABITAT AREAS

Wildlife Habitat Areas are designated under the FRPA's GAR or the OGAA's EPMR to meet the identified habitat requirements (e.g., nest, den, or kidding or calving location) of an Identified Wildlife element (FRPA) or High Priority Wildlife element (OGAA) (British Columbia Ministry of Environment 2023d). Forest and range, oil and gas, and associated activities[1] are managed within a WHA through the implementation of GWMs and objectives to mitigate effects on the Identified Wildlife element (FRPA) or High Priority Wildlife element (OGAA) for which the WHA was established (British Columbia Ministry of Environment 2023d). Elements included in the list of Identified Wildlife (FRPA) or High Priority Wildlife (OGAA) for which WHAs can be established include fish, amphibians, reptiles, invertebrates, birds, mammals, plants, and ecological communities (BC Oil and Gas Commission 2021, British Columbia Ministry of Environment 2023e). Identified Wildlife elements (FRPA) and High Priority Wildlife elements (OGAA) that have designated WHAs in BC include ungulate, carnivore, furbearer, and raptor species (British Columbia Ministry of Environment 2023d), some of which are captured by the Yukon WKA program (see Section 3.2.2 for details). Currently, over 1,300 approved WHAs exist for ungulate, carnivore, furbearer, and raptor species in BC.

[1] 'Associated activities' represents forestry related and oil and gas related activities that may apply to exploration and mining activities (e.g., vegetation clearing, road building, or drilling). As such, GWMs and objectives associated with a WHA may apply to exploration and mining activities through the application of a permit.


N
Yukon
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Oregon
Legend
Wildlife Habitat Area
Ungulate Winter Range
Wildlife Management Areas
Provincial/Territorial/ State Boundary
Wildlife Management Areas, Wildlife Habitat Areas, and Ungulate Winter Ranges in British Columbia
Yukon Government
Data Sources
• Inset Basemap: National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
• Main Basemap: World Hillshade: Esri, USGS
Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data has been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.
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3.1.3 UNGULATE WINTER RANGES

Ungulate Winter Ranges are designated under the FRPA's GAR or the OGAA's EPMR to conserve areas that are necessary to meet the critical winter habitat requirements (i.e., forage provision, security cover, and thermal protection) of ungulate species (BC Oil and Gas Commission 2021, British Columbia Ministry of Environment 2023f). Forest and range, oil and gas, and associated activities[2] are managed within an UWR through the implementation of GWMs and objectives to mitigate effects on the winter habitat requirements of the Identified Wildlife element (FRPA) or High Priority Wildlife element (OGAA) for which the UWR was established (British Columbia Ministry of Environment 2023d). Two types of UWR may be established: core areas and specified areas. Most UWRs are core areas, which represent the most critical winter habitat for the associated Identified Wildlife element (FRPA) or High Priority Wildlife element (OGAA). Activities, and the timing of activities, tend to be more restrictive within designated core areas (i.e., more GWMs and objectives apply) relative to specified areas. Core areas apply to forest and range, oil and gas, and associated activities. In certain circumstances, a specified area may be established around a core area to act as a buffer. Activities within designated specified areas tend to be less restrictive (i.e., fewer GWMs and objectives apply) relative to core areas, with a focus on wildlife health and well being (Government of British Columbia 2009). Specified areas apply to forest and range practices only. Ungulate species that have designated UWRs in BC include black-tailed deer (*Odocoileus hemionus*), white-tailed deer (*Odocoileus virginianus*), mule deer, boreal caribou, northern caribou, mountain caribou, elk, Roosevelt elk (*Cervus elaphus roosevelti*), moose, bighorn sheep (*Ovis canadensis*), thinhorn sheep, Stone's sheep (*Ovis dalli stonei*), and mountain goat (Government of British Columbia 2023a). Currently, 95 approved UWRs are found in BC.

3.2 SPECIES AND HABITATS OF FOCUS

The following subsections compare the species and habitat types captured by BC wildlife-related management mechanisms (i.e., WMAs, WHAs, and UWRs) and the Yukon WKA program. See Appendix Table A-1 and Appendix Table A-2 for species captured by BC wildlife-related mechanisms.

3.2.1 WILDLIFE MANAGEMENT AREAS

As summarized in Section 3.1.1, WMAs conserve and manage habitat for species of conservation concern, habitat required for critical lifecycle phases (e.g., spawning, rearing, nesting, denning, calving, and winter feeding), habitat used for migration purposes or other movement corridors, habitat that supports especially high species diversity or productivity, and habitat that is valued for consumptive or non-consumptive human uses (e.g., subsistence, spiritual, recreational fishing/hunting, and wildlife viewing) (British Columbia Ministry of Forests 2023e). Ungulate, carnivore, furbearer, and raptor species represented in currently designated WMAs include, but may not be limited to, the following (British Columbia Ministry of Forests 2023f):

[2] 'Associated activities' represents forestry related and oil and gas related activities that may apply to exploration and mining activities (e.g., vegetation clearing, road building, or drilling). As such, GWMs and objectives associated with an UWR may apply to exploration and mining activities through the application of a permit.

- ungulates: black-tailed deer, white-tailed deer, mule deer, woodland caribou, elk, Roosevelt elk, moose, bighorn sheep, Stone's sheep, and mountain goat;
- carnivores/furbearers: ermine, long-tailed weasel (*Mustela frenata*), marten, mink, muskrat, beaver, river otter, Vancouver Island marmot (*Marmota vancouverensis*), hoary marmot (*Marmota caligata*), badger (*Taxidea taxus*), wolverine (*Gulo gulo*), bobcat (*Lynx rufus*), lynx, cougar (*Puma concolor*), coyote, wolf, black bear, and grizzly bear; and,
- raptors: Northern Harrier (*Circus hudsonius*), Sharp-shinned Hawk (*Accipiter striatus*), Rough-legged Hawk (*Buteo lagopus*), Red-tailed Hawk (*Buteo jamaicensis*), Northern Goshawk (*Accipiter gentilis*), American Kestrel (*Falco sparverius*), Prairie Falcon (*Falco mexicanus*), Peregrine Falcon, Gyrfalcon (*Falco rusticolus*), Bald Eagle (*Haliaeetus leucocephalus*), Golden Eagle (*Aquila chrysaetos*), Osprey (*Pandion haliaetus*), Barn Owl (*Tyto alba*), Flammulated Owl (*Psiloscops flammeolus*), Great Horned Owl (*Bubo virginianus*), Short-eared Owl (*Asio flammeus*), Spotted Owl (*Strix occidentalis*), and Turkey Vulture (*Cathartes aura*).

Several of these species are covered by the Yukon WKA program, including mule deer, woodland caribou, elk, moose, mountain goat, muskrat, beaver, wolf, black bear, grizzly bear, Rough-legged Hawk, Peregrine Falcon, Gyrfalcon, Bald Eagle, Golden Eagle, and Osprey. Key Area Types identified for these species under the Yukon WKA program include Year-round (All Functions), Winter Range, Summer Post-calving, Summer Range, Fall Rut, Migration Corridors, Denning Site, Major Feeding Range, and/or Summer Nesting (Table 2-1). Similar habitat types may be conserved and managed for these species within WMAs in BC, depending on the purpose of each designated WMA. The management plan for each of the 31 WMAs in BC would need to be reviewed to determine focal species and associated habitat types.

3.2.2 WILDLIFE HABITAT AREAS

As summarized in Section 3.1.2, WHAs are established to meet the identified habitat requirements (e.g., nest, den, or kidding or calving location) of an Identified Wildlife element (FRPA) or High Priority Wildlife element (OGAA) (British Columbia Ministry of Environment 2023d). The following ungulate, carnivore, furbearer, and raptor species have designated WHAs in BC (British Columbia Ministry of Environment 2023d):

- ungulates: bighorn sheep, caribou (boreal caribou, northern caribou, northern mountain population, and southern mountain population), and mountain goat;
- carnivores/furbearers: badger, fisher, grizzly bear, and mountain beaver (*Aplodontia rufa*); and,
- raptors: Flammulated Owl, Northern Goshawk (*laingi* subspecies), Spotted Owl, and Western Screech-owl (*Megascops kennicottii*).

Out of this list, the only species that are covered by the Yukon WKA program are woodland caribou, mountain goat, and grizzly bear. Key Area Types identified for these species under the Yukon WKA program include Winter Range, Summer Post-calving, Fall Rut, Migration/Movement Corridors, Year-round (All Functions), and/or Major Feed Range (Table 2-1). Similar habitat types may be conserved and managed for these species within WHAs in BC, depending on the purpose of each designated WHA. The metadata for

each of the 1,300+ approved WHAs in BC would need to be reviewed to determine focal species and associated habitat types.

3.2.3 UNGULATE WINTER RANGES

As summarized in Section 3.1.3, UWRs conserve areas that are necessary to meet the critical winter habitat requirements (i.e., forage provision, security cover, and thermal protection) of a given ungulate species (BC Oil and Gas Commission 2021, British Columbia Ministry of Environment 2023f). Ungulate species that have designated UWRs in BC include black-tailed deer, white-tailed deer, mule deer, boreal caribou, northern caribou, mountain caribou, elk, Roosevelt elk, moose, bighorn sheep, thinhorn sheep, Stone's sheep, and mountain goat (Government of British Columbia 2023a). Several of these species are captured by the Yukon WKA program, including mule deer, woodland caribou, elk, moose, thinhorn sheep, and mountain goat. Under the Yukon WKA program, winter habitat has been specifically identified as a Key Area Type for mule deer, woodland caribou, moose, and thinhorn sheep via the 'Winter Range' designation (Table 2-1). Although winter habitat has not been specifically identified as a Key Area Type for elk and mountain goat under the Yukon WKA program, winter habitat requirements for these species have been captured via the broader 'Year-round, All Functions' designation (Table 2-1).

3.3 IDENTIFICATION AND DELINEATION

3.3.1 WILDLIFE MANAGEMENT AREAS

Wildlife Management Areas may be designated on provincial Crown land that is not currently in a park, conservancy, or recreation area, or on private land that has been leased to the BC Ministry of Forests (British Columbia Ministry of Forests 2023e). However, a high-level summary of how WMAs are delineated in BC is not publicly available. Each WMA is designated to meet a specific objective for a variety of species and habitats. Objectives and boundaries are decided upon through a collaborative process with identified partners (i.e., provincial government, local communities, Indigenous groups, and/or not-for-profit organizations); therefore, each WMA may be delineated using different information and methods. These methods may be found in the management plan for each of the 31 WMAs in BC.

3.3.2 WILDLIFE HABITAT AREAS

Wildlife Habitat Areas can be established on provincial Crown land only and must not overlap federal or private lands (British Columbia Ministry of Water, Land and Air Protection 2004a). They also cannot overlap provincial parks or protected areas unless a range tenure exists within a park or protected area, in which case the GWMs and objectives associated with the WHA would only apply to the range activities (British Columbia Ministry of Water, Land and Air Protection 2004a). Procedures for establishing WHAs are outlined in *Procedures for Managing Identified Wildlife* (British Columbia Ministry of Water, Land and Air Protection 2004a), which is part of the IWMS (British Columbia Ministry of Environment 2023a). A summary of these procedures is provided as follows:

- Step 1: site is proposed;
- Step 2: BC Ministry of Water, Lands and Resource Stewardship technical review of proposed WHA;
- Step 3: review and comment of candidate WHA;
- Step 4: preparation of final WHA package;
- Step 5: review by the provincial WHA committee;
- Step 6: decision by the BC Ministry of Water, Lands and Resource Stewardship delegated decision maker; and,
- Step 7: notice of decision, impact tracking, and warehousing of approved WHA boundaries.

A mapping protocol for WHAs is provided in Appendix 8 of *Procedures for Managing Identified Wildlife* (British Columbia Ministry of Water, Land and Air Protection 2004a). This protocol ensures that WHAs are consistently mapped for tracking and monitoring purposes. The size and shape of a WHA is dependent on the specific Identified Wildlife element it is intended for; these criteria are provided in *Accounts and Measures for Managing Identified Wildlife* (British Columbia Ministry of Environment 2023e). It is preferred that WHA boundaries are digitally mapped, but if this is not possible, boundaries may be delineated on 1:20,000 scale TRIM-based maps (NAD83) (British Columbia Ministry of Water, Land and Air Protection 2004a). Preliminary WHA boundaries may be field verified and adjusted as needed for site conditions (British Columbia Ministry of Water, Land and Air Protection 2004a).

3.3.3 UNGULATE WINTER RANGES

Ungulate Winter Ranges are identified and delineated by BC Ministry of Water, Lands and Resource Stewardship regional staff based on the most up-to-date information regarding the winter habitat requirements and range use of ungulates, including scientific and management literature, survey and collar data, local knowledge, and other regional expertise (British Columbia Ministry of Environment 2023f). Ungulate Winter Range delineation is species specific with general objectives, including maintaining sustainable ungulate populations and habitats, minimizing disturbance during critical periods (e.g., kidding or calving season), and managing the risk of interaction between predators and livestock (Government of British Columbia 2004).

A high-level summary of how UWRs are delineated in BC is not publicly available. Each UWR is designated for a particular species and may be delineated using different information and methods. The metadata for each UWR would need to be reviewed (currently, 95 approved UWRs are found in BC). The 'Caribou Portal' tool provides information on the different caribou ranges in BC and the UWRs that have been established for them, including information on survey and collar data (British Columbia Ministry of Environment and Climate Change Strategy 2023a).

3.4 MANAGEMENT STRATEGY

Wildlife Management Areas, WHAs, and UWRs are the main mechanisms used in BC to manage wildlife and wildlife habitats. Wildlife Management Areas are designated under the *Wildlife Act* and are part of the

Conservation Lands Program. Wildlife Habitat Areas are designated under the FRPA's GAR or the OGAA's EPMR and are part of the IWMS (FRPA) or covered in the EPMG (OGAA). Ungulate Winter Ranges are designated under the FRPA's GAR or the OGAA's EPMR; they are not part of the IWMS (FRPA) but are covered in the EPMG (OGAA). Each of these management strategies is summarized in subsequent subsections. Other management mechanisms applicable to wildlife and wildlife habitat in BC include the province's new Together for Wildlife strategy, BMPs, and the BC Conservation Data Centre (CDC).

3.4.1 CONSERVATION LANDS PROGRAM

Wildlife Management Areas are part of the Conservation Lands Program in BC. The main goal of the Conservation Lands Program is to conserve and manage important habitats for regionally and internationally significant fish and wildlife species, including species of conservation concern, critical lifecycle phases (e.g., spawning, rearing, nesting, denning, calving, and winter feeding), migration routes and other movement corridors, and habitats that support especially high species diversity or productivity (British Columbia Ministry of Forests 2023d, e). Two types of conservation lands exist based on the legal tools and agreements employed to acquire and secure the land: (1) administered conservation lands with legal administration and management authority; and (2) non-administered conservation lands that have a recorded 'interest' secured for fish and wildlife, but lack legal administration and management authority (British Columbia Ministry of Forests 2023d). Wildlife Management Areas are an administered conservation land (British Columbia Ministry of Forests 2023d) and are often managed collaboratively through joint partnerships among the provincial government, local communities, Indigenous groups, and/or not-for-profit organizations (e.g., Ducks Unlimited Canada, NatureServe, or the Nature Trust of BC).

3.4.2 IDENTIFIED WILDLIFE MANAGEMENT STRATEGY

The IWMS guides the management of Identified Wildlife on provincial Crown land, with the goals of (1) minimizing the effects of forest and range practices on Identified Wildlife and (2) conserving the limiting habitats of Identified Wildlife throughout their current and, where appropriate, historic ranges (British Columbia Ministry of Environment 2023a). Under the IWMS, Identified Wildlife includes two categories of wildlife: (1) Species at Risk and (2) Regionally Important Wildlife. As previously noted, Ungulate Species (the third category of wildlife represented by 'Identified Wildlife' under the FRPA) is not part of the IWMS. Wildlife Habitat Areas may be established for Identified Wildlife and managed through the implementation of GWMs and objectives (British Columbia Ministry of Environment 2023a, b). Two documents comprise the IWMS.

- *Procedures for Managing Identified Wildlife*: this document outlines how to establish, modify, and rescind a WHA and how to implement strategic and landscape level planning recommendations (British Columbia Ministry of Water, Land and Air Protection 2004a).
- *Accounts and Measures for Managing Identified Wildlife*: this document summarizes information about the status, life history, distribution, and habitat requirements of each Identified Wildlife element and provides guidance for managing their habitats (British Columbia Ministry of Environment 2023e).

3.4.3 ENVIRONMENTAL PROTECTION MANAGEMENT GUIDELINE

The EPMG provides guidance to oil and gas companies and those potentially affected by oil and gas activities regarding the requirements of the EPMR, including requirements related to High Priority Wildlife (BC Oil and Gas Commission 2021). High Priority Wildlife includes the three categories of wildlife identified under the OGAA: (1) Species at Risk, (2) Regionally Important Wildlife, and (3) Ungulate Species (British Columbia Ministry of Environment 2023c). Wildlife Habitat Areas and UWRs may be established for High Priority Wildlife under the OGAA and managed through the implementation of GWMs and objectives (BC Oil and Gas Commission 2021).

3.4.4 TOGETHER FOR WILDLIFE

Together for Wildlife is BC's new strategy to improve wildlife stewardship and habitat conservation across the province (British Columbia Ministry of Forests 2023g). The strategy was initiated through a collaborative engagement process that involved Indigenous peoples, rural communities, academic institutions, industry stakeholders, and conservation, hunter, trapper, guide outfitter, recreation, and tourism stakeholder organizations (British Columbia Ministry of Forests 2023g). The strategy's vision is that, *wildlife and their habitats thrive, are resilient, and support and enrich the lives of all British Columbians* (British Columbia Ministry of Forests 2023g). Five goals were established that outline where the province is going with wildlife stewardship and habitat conservation, and 24 corresponding actions were developed that detail how the province will achieve these goals (British Columbia Ministry of Forests 2023g). A Minister's Wildlife Advisory Council was established in 2020 to support implementation of the strategy (British Columbia Ministry of Forests 2023g).

3.4.5 BEST MANAGEMENT PRACTICES

A suite of BMPs is available in BC to mitigate the effects of industrial development projects and other anthropogenic activities on wildlife and wildlife habitat. Best management practices applicable to ungulate, carnivore, furbearer, or raptor species include the following:

- *Develop with Care 2014: Environmental Guidelines for Urban and Rural Land Development in British Columbia* (British Columbia Ministry of Environment and Climate Change Strategy 2014);
- *A Compendium of Wildlife Guidelines for Industrial Development Project in the North Area, British Columbia* (British Columbia Ministry of Forests, Lands and Natural Resource Operations 2014);
- *Best Management Practices for Linear Developments Proposed Within the Peace Region* (British Columbia Ministry of Water, Land and Air Protection 2008);
- *Wind Power Exploration and Development / Wildlife and Wildlife Habitat* (British Columbia Ministry of Environment 2008);
- *Information to Avoid/Minimize Impacts to Environmental Values* (British Columbia Ministry of Forests, Lands and Natural Resource Operations n.d.);
- *Wildlife Guidelines for Backcountry Tourism/Commercial Recreation* (British Columbia Ministry of Environment 2023g);

- *Best Management Practices for Recreational Activities on Grasslands in the Thompson and Okanagan Basins* (British Columbia Ministry of Water, Land and Air Protection 2004b);
- *Wildlife Information for Commercial Backcountry Recreation Opportunities in the North Central Monashee Mountains* (British Columbia Ministry of Environment 2000);
- *Snowmobiling and Caribou in British Columbia* (British Columbia Ministry of Environment and BC Snowmobile Federation 2006);
- the Caribou Portal (British Columbia Ministry of Environment and Climate Change Strategy 2023a);
- Habitat Tools to help forest professionals conserve fisher habitat (BC Fisher Habitat Working Group 2023);
- *Management Guidelines for Beaver in British Columbia* (British Columbia Ministry of Environment 1988);
- *Beaver Management Guidelines* (British Columbia Ministry of Environment, Lands and Parks 2001); and,
- *Guidelines for Raptor Conservation during Urban and Rural Land Development in British Columbia* (Caskey and Chutter 2013).

3.4.6 BRITISH COLUMBIA CONSERVATION DATA CENTRE

The BC CDC collects and shares data and information on species (wildlife and plants) and ecosystems in BC (British Columbia Conservation Data Centre 2023a). The main goals of the BC CDC are to:

- compile a list of species (wildlife and plants) and ecosystems that occur in BC;
- assess the conservation status rank of each species and ecosystem on the list;
- map known locations (i.e., element occurrences) of each species and ecosystem on the list; and,
- make the data and information as readily available to the public as possible (British Columbia Conservation Data Centre 2023a).

The data and information housed in the BC CDC can be accessed through the BC Species & Ecosystems Explorer (British Columbia Conservation Data Centre 2023b), which is a searchable, web-based database, and CDC iMap (British Columbia Conservation Data Centre 2023c), which is an interactive, web-based mapping platform. Data and information on species and ecosystems of conservation concern can be derived from the BC Species & Ecosystems Explorer and CDC iMap, including mapped element occurrences.

3.5 AVAILABILITY AND CONFIDENTIALITY

No single source is available that succinctly summarizes wildlife and wildlife habitat management in BC. Information about WMAs, WHAs, and UWRs is, however, available to the public via a variety of resources published by the Government of BC, many of which are available online. Many of these resources are referenced throughout Section 3. The various resources are not necessarily easy to navigate, and a user must

review multiple resources to gain a holistic understanding of how wildlife and wildlife habitat are managed in BC and find information and data applicable to their project(s).

Spatial data related to WMAs, WHAs, and UWRs are made available to the public via the online BC Data Catalogue (Government of British Columbia 2023b). Interactive, web-based mapping platforms house spatial data and information related to WMAs, WHAs, and UWRs, including the Conservation Lands map (for WMAs only) (British Columbia Ministry of Forests 2023h), iMapBC (Government of British Columbia 2023c), and the previously mentioned CDC iMap (British Columbia Conservation Data Centre 2023c). Most data and information in the BC Data Catalogue and the interactive, web-based mapping platforms are publicly accessible, but some data and information are sensitive and not publicly available. Sensitive data include the following categories:

- data and information pertaining to species or ecosystems that are susceptible to persecution or harm (e.g., intentional harassment, unintentional harassment, or illegal collection);
- proprietary data, which includes data and information pertaining to private or First Nations lands and/or data and information provided on a time-restricted basis (e.g., the owner of the data is involved in an EA process);
- data and information secured under provincial or federal statutory constraints; and,
- data and information that would pose a risk to government interests if they were released to the public (e.g., treaty negotiations, government-to-government agreements, or legal investigations) (Government of British Columbia 2023d).

Some mapped element occurrences of a species or ecosystem of conservation concern in CDC iMap and iMapBC are 'masked', meaning that the exact location of the element occurrence is not shown, but a generalized location is displayed instead. Sensitive data and masked element occurrences can be requested through the Government of BC on a demonstrated need-to-know basis once a user has completed the *Species and Ecosystems Secure Data and Information Training Module* (Government of British Columbia 2023d) and signed and submitted a Confidentiality and Non-Reproduction Agreement (Government of British Columbia 2023d). For proprietary data, a Data and Information Sharing Agreement must also be in place (Government of British Columbia 2023d).

Data and information pertaining to presence or abundance surveys completed in BC for wildlife species are housed in the Wildlife Species Inventory (WSI) (British Columbia Ministry of Environment and Climate Change Strategy 2023b). Wildlife species in the WSI context include birds, mammals, amphibians, reptiles, insects, and plants, plus the habitats they live in (British Columbia Ministry of Environment and Climate Change Strategy 2023b). The WSI facilitates central storage of data and information pertaining to wildlife presence and abundance surveys and access to data and results for management purposes and conservation efforts (British Columbia Ministry of Environment and Climate Change Strategy 2023b). Data submitted to the WSI are uploaded to a searchable, web-based database called the Species Inventory Web Explorer (Government of British Columbia 2023e) where users can search for information applicable to their project(s). Some data and information in the WSI are sensitive and not publicly available, as per the reasons previously

stated. These sensitive data can be requested through the Government of BC on a demonstrated need-to-know basis, as outlined in the previous paragraph.

3.6 REGULATORY AND ASSESSMENT PROCESS

During the development process, proponents are responsible for determining whether the boundaries of their proposed activities overlap with any approved WMAs, WHAs, and/or UWRs. If overlap occurs, proponents are responsible for engaging with the appropriate natural resource agencies and determining what the wildlife management implications are for their proposed activities. Which natural resource agencies are engaged depends on the type of project (e.g., exploration, mining, oil and gas, forestry, whether the project is in the EA process). Natural resource agencies that may be consulted in BC include the following:

- Ministry of Energy, Mines and Petroleum Resources;
- Ministry of Water, Lands and Resource Stewardship;
- Environmental Assessment Office; and,
- BC Energy Regulator.

Wildlife Management Areas are designated under the *Wildlife Act*. Orders may be established by the Regional Manager for the BC Ministry of Water, Lands and Resource Stewardship that prohibit or restrict certain activities within a WMA that might affect wildlife and/or wildlife habitat (British Columbia Ministry of Forests 2023e). The government or the Minister may also establish regulations pertaining to the use or occupation of a WMA (British Columbia Ministry of Forests 2023e). While rights granted prior to the designation of a WMA remain in effect, new activities that overlap an existing WMA require written permission from the Regional Manager to proceed (British Columbia Ministry of Forests 2023e).

Wildlife Habitat Areas and UWRs are designated under the FRPA's GAR or the OGAA's EPMR. Forest and range, oil and gas, and associated activities are managed within WHAs and UWRs through the implementation of GWMs and objectives, which are established in Ministerial Orders by the BC Ministry of Water, Lands and Resource Stewardship (British Columbia Ministry of Forests 2023i). These Ministerial Orders contain information pertaining to what activities may be allowed within approved WHAs and UWRs, when these activities may occur, and any mitigation measures that may be required to avoid, minimize, or restore project-related effects on wildlife and wildlife habitat.

If a proponent's proposed activities overlap an approved WMA, WHA, and/or UWR, they must engage with the appropriate natural resource agencies to determine what is required to proceed with their proposed activities. The proponent must also familiarize themselves with any orders and/or regulations that might be associated with a WMA, WHA, and/or UWR to determine if any modifications may be required for their proposed activities, and what mitigation measures may need to be implemented to avoid, minimize, or restore project-related effects on wildlife and wildlife habitat. These mitigation measures would be incorporated into any permit conditions and/or wildlife mitigation and monitoring plans associated with the project (e.g., during the exploration phase or during the EA development stage) and into the EA during the EA process.

3.7 LAND USE PLANNING

The land use planning process in BC is currently being modernized by the Government of BC to advance reconciliation efforts, support economic opportunities, and guide stewardship of public lands and resources (British Columbia Ministry of Forests 2023j). Over 60 land use plans currently exist in BC, including broader-scale, regional land use plans that apply to entire natural resource regions in the province, and smaller-scale, sub-regional or local plans for specific areas within certain natural resource regions in the province, such as land and resource management plans, sustainable resource management plans, recreation/access management plans, and landscape unit plans (British Columbia Ministry of Forests 2023k). Land use plans are usually reviewed and updated every five years. Some existing land use plans are currently being updated under the modernized land use planning process (British Columbia Ministry of Forests 2023j). Other new land use plans are currently under development under the modernized land use planning process (British Columbia Ministry of Forests 2023j).

Land use plans typically incorporate general management direction specific to wildlife and wildlife habitat that is applicable across the entire plan area (except protected areas), including objectives for:

- maintaining the habitat requirements of naturally occurring species;
- maintaining or enhancing habitat for species of conservation concern and regionally important species; and,
- managing wildlife populations at sustainable levels to support consumptive and non-consumptive uses.

Other objectives may include improving the management of interactions between wildlife and humans (e.g., human-bear interactions), and managing human access to wildlife habitat. Land use plans may also incorporate location-specific management direction that is applicable to certain zones within a plan area (e.g., resource management zones). These zones may be divided into categories of management direction for specific purposes, such as special management zones focused on managing for non-extractive values. In these zones, commercial and industrial activities are managed to maintain the identified 'special' values, which may include a wildlife and/or wildlife habitat value. Zones may be based on conservation values, where commercial and industrial activities are prohibited or restricted to conserve wildlife and/or wildlife habitat values.

In addition to general management direction and more location-specific management direction, management measures associated with approved WMAs, WHAs, and/or UWRs may be incorporated into regional and sub-regional or local land use plans during the initial development or updating process (BC Oil and Gas Commission 2021, British Columbia Ministry of Environment 2023a, British Columbia Ministry of Forests 2023e). A high-level summary of the types of wildlife and wildlife habitat management direction provided in land use plans in BC is not publicly available. Each land use plan is unique. The land use planning process is collaborative and engages multiple stakeholders to guide sustainable resource management and stewardship on public lands within a specified plan area (British Columbia Ministry of Forests 2023l). Each of the over 60 land use plans would need to be reviewed to gain a full understanding of the wildlife and wildlife habitat values and related management directions included in each plan.

3.8 COMPLIANCE AND EFFECTIVENESS MONITORING

3.8.1 COMPLIANCE AND ENFORCEMENT

The province's natural resource agencies are responsible for managing, conserving, and protecting BC's natural resources, which includes ensuring compliance with applicable laws and regulations (Government of British Columbia 2023f). Natural resource agencies in BC include the following:

- Ministry of Agriculture and Food;
- Ministry of Energy, Mines and Low Carbon Innovation;
- Ministry of Environment and Climate Change Strategy;
- Ministry of Forests;
- Agricultural Land Commission;
- BC Energy Regulator (formerly known as the BC Oil and Gas Commission); and,
- Environmental Assessment Office (Government of British Columbia 2023f).

These natural resource agencies work collaboratively with a variety of municipal, provincial, federal, and Indigenous partners to ensure compliance with applicable laws and regulations, as per the *Compliance Management Framework* (Government of British Columbia 2020). Each natural resource agency has its own unique organizational structure, with at least one unit responsible for compliance and enforcement activities (Government of British Columbia 2020). Although the range of compliance and enforcement activities undertaken by each natural resource agency is diverse, a standardized framework with objectives to define compliance, performance management to facilitate continuous improvement, and communication requirements to establish accountability has been established (Government of British Columbia 2020). Compliance objectives include setting requirements, promoting compliance, verifying compliance, and enforcing requirements as needed for non-compliance issues (Government of British Columbia 2020). Performance management includes reviewing performance measures, evaluating program effectiveness, and effectiveness or ambient monitoring (Government of British Columbia 2020). Communicating out results involves informing interested parties (e.g., governments, Indigenous groups, industry stakeholders, and the general public) of compliance and enforcement activities (Government of British Columbia 2020).

Various natural resource agencies in BC have compliance and enforcement organizational units that might deal with wildlife and wildlife habitat management issues on a day-to-day basis. The natural resource agencies and corresponding compliance and enforcement units involved depend on the type of project (e.g., exploration, mining, oil and gas, forestry, whether the project is in the EA process), the associated permit conditions, and the nature of the issue (e.g., direct harm to wildlife or a wildlife mortality, or unauthorized habitat disturbance or destruction within a designated WMA, WHA, or UWR). These agencies may include:

- Ministry of Energy, Mines and Petroleum Resources — Compliance Audits and Enforcement Branch;
- Ministry of Environment and Climate Strategy — Conservation Officer Service;

- Ministry of Forests — Compliance & Enforcement Branch;
- Environmental Assessment Office — Compliance & Enforcement Branch; and,
- BC Energy Regulator — Compliance & Enforcement Operations.

The *Natural Resources Compliance & Enforcement Database* is a searchable, web-based database that houses records, documents, and details related to compliance and enforcement activities that are undertaken by the natural resource agencies in BC (Government of British Columbia 2023f). This information is publicly available to promote compliance with laws and regulations (British Columbia Ministry of Environment and Climate Change Strategy 2023c).

3.8.2 EFFECTIVENESS MONITORING

A high-level summary of the effectiveness monitoring frameworks of WMAs in BC is not publicly available. Wildlife Management Areas are often managed collaboratively through joint partnerships between the provincial government, local communities, Indigenous groups, and/or not-for-profit organizations. The management plans for each of the 31 WMAs would need to be reviewed to determine the effectiveness monitoring framework of each WMA.

The effectiveness of WHAs and UWRs is assessed under the BC Forest and Range Evaluation Program (FREP). This program monitors and evaluates the status of 11 resource values that may be affected by forest and range practices to assess the effectiveness of management mechanisms at mitigating the effects of forest and range practices on these resource values (British Columbia Ministry of Forests 2023m). 'Wildlife' is one of the identified resource values, and wildlife monitoring under FREP includes evaluating the mechanisms under FRPA that address the conservation of wildlife habitat for species at risk, regionally important species, and ungulate species, including WHAs and UWRs designated under the GAR and their associated GWMs and objectives (British Columbia Ministry of Forests 2023n). The priority question for wildlife monitoring is, *Do ungulate winter ranges and wildlife habitat areas maintain the habitats, structures and functions necessary to meet the goals of the area and is the amount, quality and distribution of these areas contributing effectively with the surrounding land base (including protected areas and managed land base) to ensure the survival of the species now and over time?* (British Columbia Ministry of Forests 2023n).

A Framework for Monitoring & Evaluating Wildlife Resource Values (Paige and Darling 2009) provides a standardized and prioritized approach for evaluating WHAs and UWRs designated under the FRPA's GAR (British Columbia Ministry of Forests 2023n). This standardized approach includes the following steps:

1) identifying monitoring objectives and questions;
2) developing a conceptual model and selecting indicators and thresholds;
3) developing a draft monitoring protocol to measure the indicators;
4) testing and finalizing the monitoring protocol;
5) collecting and analyzing the data;
6) reporting on the results; and,
7) making recommendations (Paige and Darling 2009, British Columbia Ministry of Forests 2023n).

Certain species have been identified as priority species in the monitoring and evaluation process, including caribou (i.e., boreal, northern, and mountain), mountain goat, badger, grizzly bear, and Northern Goshawk (*laingi* subspecies) (British Columbia Ministry of Forests 2023n). Priorities for monitoring and evaluation are determined by ranking species based on the following criteria:

1) the BC Conservation Framework priority;
2) the number or area of implemented habitat management mechanisms (e.g., WHAs or UWRs);
3) the importance of the habitat management mechanisms to the species' conservation; and,
4) any uncertainties regarding the effectiveness of the implemented habitat management mechanisms (British Columbia Ministry of Forests 2023n).

Once this ranking process has been completed, species priorities are considered in the context of existing commitments, current resources, and the benefit, feasibility, and urgency of proposed activities (British Columbia Ministry of Forests 2023n).

4 ALBERTA

The *Wildlife Act* and associated Wildlife Regulation govern the bulk of provincial wildlife-related matters in Alberta, including issues related to species of conservation concern and wildlife harvest (Government of Alberta 1997, 2000). Section 36 of the *Wildlife Act* and Section 96 of the Wildlife Regulation state that *a person shall not wilfully molest, disturb or destroy a house, nest or den of prescribed wildlife* unless otherwise authorized (Government of Alberta 1997, 2000). Prescribed wildlife include the nests and dens of endangered animals, upland game birds, migratory birds and bats; the dens of snakes used as hibernacula or birthing dens; and the dens of bats used as hibernacula (Government of Alberta 1997). The Wildlife Regulation further divides the province into Wildlife Management Units (WMUs), within which hunting seasons, rules, and regulations are prescribed (Government of Alberta 1997, 2023a).

4.1 WILDLIFE SENSITIVITY DATASETS

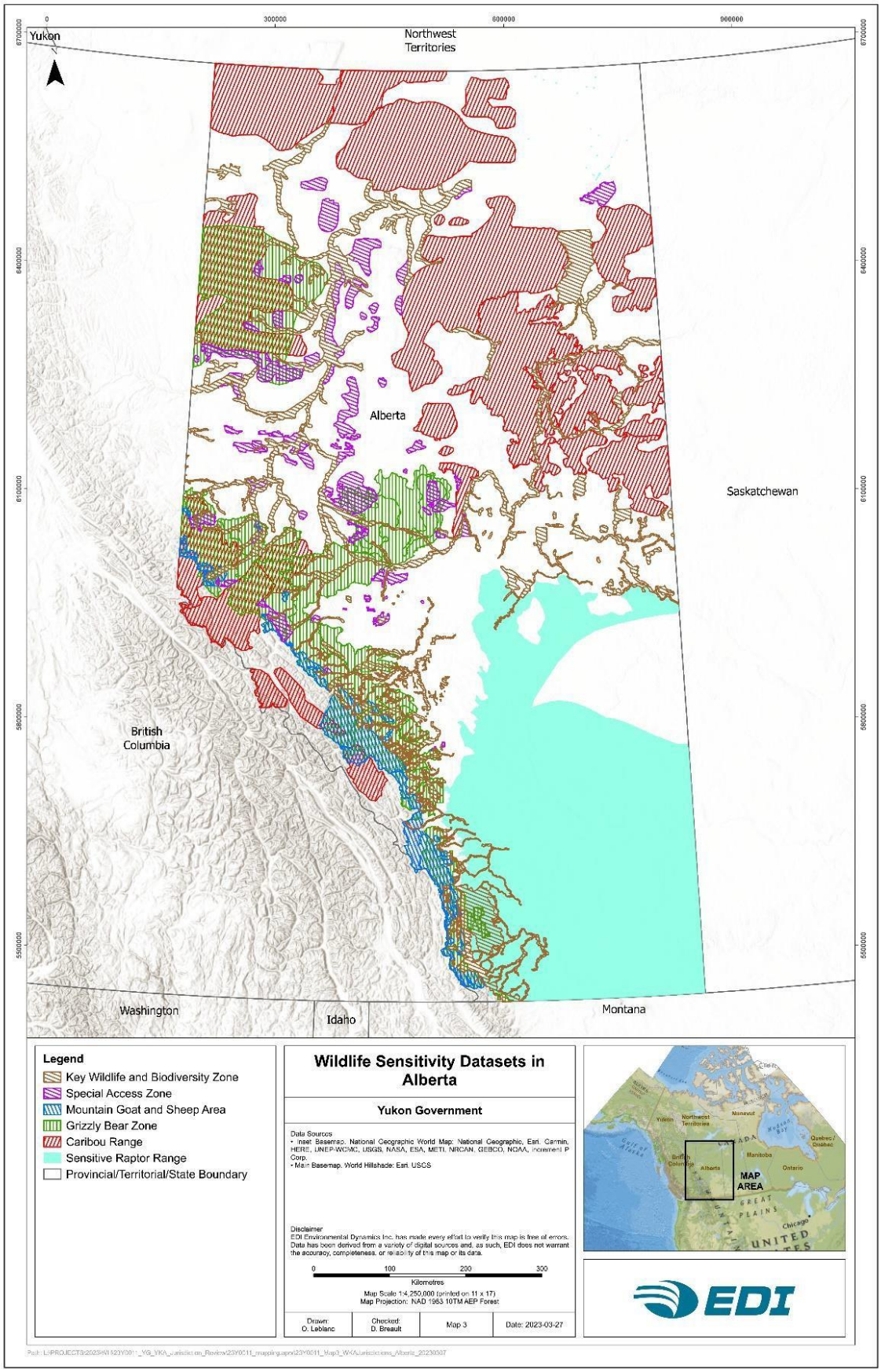
Alberta Environment and Protected Areas (AEPA) uses a suite of Wildlife Sensitivity Datasets to *provide industrial operators, government departments, and the general public with the best information currently available on the extent of wildlife sensitivities* in the province (Alberta Environment and Protected Areas 2023a). These datasets are intended to inform the requirement for site- and species-specific wildlife surveys, and implement mitigation measures, as appropriate.

Wildlife Sensitivity Datasets are provided under two discrete categories: key range layers and key wildlife layers (Table 4-1; Map 4-1). Key range layers have been developed for select species based on their known extent of occurrence in Alberta, and are provided to identify where species-specific surveys may be necessary and/or where species-specific mitigation strategies are to be applied (Alberta Environment and Protected Areas 2023a). Key wildlife layers are more habitat-based, identifying *key wildlife areas important for the viability and productivity of Alberta's wildlife populations* (Alberta Environment and Protected Areas 2023a). Industrial development within key wildlife layers typically require mitigation strategies to maintain the habitat values within these areas (Alberta Environment and Protected Areas 2023a).

Table 4-1. Wildlife Sensitivity Datasets in Alberta.

Dataset Type	Dataset Name	Subtype
Key Range Layers	Burrowing Owl Range	-
	Caribou Range	**Zone A**
		Zone B
	Endangered and Threatened Plants Ranges	-
	Greater Sage Grouse	Core Area
		Recovery Area
	Greater Short-horned Lizard	Range
		Habitat
	Ord's Kangaroo Rat	Range
		Habitat
	Sensitive Amphibians Ranges	-
	Sensitive Raptor Ranges	**-**
	Sensitive Snake	Hibernacula Range
		Habitat
	Sharp-tailed Grouse	-
	Swift Fox	-
Key Wildlife Layers	Piping Plover Waterbodies	-
	Trumpeter Swan Waterbodies and Watercourse	-
	Grizzly Bear	**Core Areas**
		Secondary Areas
		Support Zones
		Habitat Linkage Zones
	Mountain Goat and Sheep	**Areas**
		Disease Buffer
	Key Wildlife and Biodiversity Zones	**-**
	Special Access Zones	**-**
	Colonial Nesting Birds	-

Note: Bolded datasets are considered analogous to ungulate, carnivore/furbearer, and raptor mapping in the YG WKA program. Other Wildlife Sensitivity Datasets related to species of conservation concern that occur in Alberta, but do not occur in Yukon, will not be the focus of this review.


Yukon
Northwest Territories
Alberta
Saskatchewan
British Columbia
Washington
Idaho
Montana
Legend
Key Wildlife and Biodiversity Zone
Special Access Zone
Mountain Goat and Sheep Area
Grizzly Bear Zone
Caribou Range
Sensitive Raptor Range
Provincial/Territorial/State Boundary
Wildlife Sensitivity Datasets in Alberta
Yukon Government
Data Sources
• Base: Esri, National Geographic World Map: National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
• Main Basemap: World Hillshade: Esri, USGS
Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data has been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.
0 100 200 300
Kilometres
Map Scale 1:4,250,000 (printed on 11 x 17)
Map Projection: NAD 1983 10TM AEP Forest
Drawn: O. Leblanc
Checked: D. Breault
Map 3
Date: 2023-03-27
MAP AREA
EDI

4.2 SPECIES AND HABITATS OF FOCUS

4.2.1 KEY RANGE LAYERS

Generally, key range layers have been developed for species of conservation concern as listed federally under Schedule 1 of SARA (Government of Canada 2021), provincially under the *Wildlife Act* and Wildlife Regulation (Government of Alberta 1997, 2000), and/or species determined to be sensitive under the Alberta wild species general status listing (Table 4-1; Alberta Environment and Parks 2020a). Key range layers similar to those available in the Yukon include Caribou Ranges and Sensitive Raptor Ranges.

Woodland caribou are classified as Threatened under the Alberta *Wildlife Act* (Government of Alberta 1997). A Caribou Range is a geographic boundary defined by a herd that is known to meet life history requirements (e.g., calving, rutting, wintering) in each area and is composed of individuals that interact little with other herds (Government of Alberta 2017a). Alberta contains 12 boreal and 3 southern mountain woodland caribou populations that fall under provincial jurisdiction and are endorsed by the Alberta Caribou Committee (Government of Alberta 2017a). Caribou Ranges compose approximately 23% of the province, and recovery goals and strategies differ across ranges depending on population status and levels of human activity. Each Caribou Range is split into Zone A, representing areas where land use activities could pose a higher risk to caribou populations, and Zone B, representing areas where land use activities could pose a lower risk to caribou populations (Government of Alberta 2021a). A system of Caribou Range Planning is outlined in Alberta's Caribou Recovery Plan in response to population and distribution declines (Alberta Woodland Caribou Recovery Team 2005).

The majority of Sensitive Raptor Ranges are found in the Grassland and Parkland natural regions in the southern portion of Alberta (Map 4-1), where sensitive raptor species (i.e., Bald Eagle [*Haliaeetus leucocephalus*], Golden Eagle [*Aquila chrysaetos*], Ferruginous Hawk [*Buteo regalis*], and Prairie Falcon [*Falco mexicanus*]) are known to breed and nest (Alberta Sustainable Resource Development 2011, Alberta Environment and Protected Areas 2023a). Peregrine Falcon ranges are distributed throughout the province.

4.2.2 KEY WILDLIFE LAYERS

In contrast to key range layers that focus on the known extent of occurrence of wildlife species of conservation concern, key wildlife layers are habitat-based, and relate to a variety of habitats that support wildlife species of conservation concern (e.g., grizzly bear), wildlife harvest (e.g., ungulates), cultural interest (e.g., mountain goat and sheep) and biodiversity and landscape connectivity (Table 4-1). Key wildlife layers similar to those available in the Yukon include: Grizzly Bear Zones, Mountain Goat and Sheep Areas, Key Wildlife and Biodiversity Zones, and Special Access Zones.

The grizzly bear is listed as Threatened under the Alberta *Wildlife Act* due to small population size, high rates of human-caused mortality, and reductions in habitat (Government of Alberta 2016). Alberta has established seven Grizzly Bear Management Areas (BMAs) along the eastern foothills of the Rocky Mountains. Grizzly Bear Recovery Zones are divided into Core Zones and Secondary Zones, within which the Government of

Alberta intends to manage for grizzly bear recovery (Alberta Environment and Parks 2020b). Core Zones are designated as high-quality grizzly bear habitat within which grizzly bear conservation is the major non-economic resource consideration in land use planning. Secondary Zones buffer and help to connect the Core Zones (Alberta Environment and Parks 2020b). In addition, Grizzly Bear Support Zones have been delineated to support the grizzly bear population to improve grizzly bear survival, particularly females with cubs moving between the recovery and support zones. These zones identify priority areas for managing bear attractants and other sources of human-wildlife conflict adjacent to the recovery zone (Alberta Environment and Parks 2020b). Grizzly Bear Habitat Linkage Zones identify corridors of major east-west highways that divide the provincial grizzly bear population into demographic units that are at risk of becoming more isolated over time as highway use intensifies, and where there is need to maintain or enhance grizzly bear connectivity between adjacent bear management areas (Alberta Environment and Parks 2020b).

Rocky Mountain bighorn sheep and mountain goats are considered culturally important, provide wildlife viewing and hunting opportunities, and bighorn sheep are the designated provincial mammal (Government of Alberta 2021b). Mountain Goat and Sheep Areas consist of high-elevation alpine areas on the eastern slopes of Alberta's Rocky mountains, including important escape terrain, and adjacent valleys where mountain goats and bighorn sheep are known to occur (Alberta Sustainable Resource Development 2010, Alberta Environment and Parks 2017). Most of these Areas are within designated Prime Protection Zones, where industrial activity is not permitted, or Critical Wildlife Zones, which are managed under regional and sub-regional integrated resource plans that prioritize habitat protections (Alberta Sustainable Resource Development 2010, Government of Alberta 2023b). These ranges have been identified to avoid land use disturbances that may have a direct or indirect adverse effect on animal behaviour, and to avoid permanent alteration of physical habitat conditions (Alberta Environment and Protected Areas 2023a). The Mountain Goat and Sheep Areas Disease Buffer has been delineated to minimize or reduce adverse effects of land use activities on bighorn sheep and mountain goat population health, and reduce or eliminate potential contact between wild and domestic sheep and goats. Within this buffer, the use of domestic sheep and goats is restricted (Alberta Environment and Protected Areas 2023a).

Key Wildlife and Biodiversity Zones typically occur along the valleys of major rivers and represent important movement corridors for ungulate populations (Map 4-1). These areas represent a combination of critical ungulate winter habitat and riparian habitats with high potential for biodiversity (Government of Alberta 2015). Ungulate winter habitat is defined as areas with high quality and abundant winter food resources in proximity to good thermal and security cover, which support optimal thermoregulatory requirements during harsh winter conditions (Government of Alberta 2015).

Provincial Special Access Zones are patches of natural habitat within intensively developed landscapes. These zones are intended to maintain habitat connectivity, provide important ungulate habitat, and limit adverse effects related to access in wildlife refugia (Alberta Environment and Parks 2017).

4.3 IDENTIFICATION AND DELINEATION

Wildlife Sensitivity Datasets are derived from aerial surveys, historical information, movements of collared animals, and habitat suitability maps (Alberta Environment and Protected Areas 2023a). Methods for delineation differ between key range layers and key wildlife layers, as well as among datasets included in the key wildlife layers.

4.3.1 KEY RANGE LAYERS

Caribou Ranges are delineated based on studies of movements and habitat use using data obtained from radio-collared caribou between 1980 and 2019. These delineation methods are outlined in federal SARA Recovery Strategies for the two populations of woodland caribou that occur in Alberta (Environment Canada 2012, 2014).

Sensitive Raptor Ranges are based on known species ranges, locations of species occurrences, and habitat suitability models. Smoothed minimum convex polygons (MCP) have been used to delineate ranges of sensitive raptor species, with the exception of Peregrine Falcons, which have been derived from known nesting locations on natural features (Alberta Environment and Protected Areas 2023a).

4.3.2 KEY WILDLIFE LAYERS

The Grizzly Bear Recovery Zones are derived from Resource Selection Function (RSF) models informed by grizzly bear telemetry data and population genetic inventories to identify areas of highest probability of grizzly bear occurrence. Core Areas are ranked as high-quality grizzly bear habitat and generally low mortality risk as measured through open route densities (e.g., road access, as well as trails, powerlines, and pipelines; Alberta Environment and Parks 2020b, Alberta Environment and Protected Areas 2023a). Secondary Areas are areas of good habitat, reflecting the broader range of grizzly bears (Alberta Environment and Protected Areas 2023a). The Boreal Grizzly Bear Range in the Chinchaga region has been calculated using a variety of information sources, including location data from a variety of sources (FWMIS observation points, telemetry, and mortality data) and local knowledge of AEPA staff familiar with this area (Alberta Environment and Protected Areas 2023a).

Development of Grizzly Bear Support Zones considered the 20-year history of grizzly bear occurrences, habitat potential, topographical relief, conflict potential, and proximity to a Recovery Zone, with features such as roads, lakes, rivers, or edges of Wildlife Management Unit boundaries used to delimit the outer boundaries (Alberta Environment and Parks 2020b). Grizzly Bear Habitat Linkage Zones have been defined as a 5 km buffer around major highways through the Recovery Zone (i.e., Highways 1, 3, 11, 16, and 43).

Mountain Goat and Sheep Areas encompass habitat use across all seasons and were derived by applying an 800 m buffer to observations from telemetry and aerial surveys, as well as habitat suitability indexes (Government of Alberta 2022a). The Mountain Goat and Sheep Areas Disease Buffer was produced by applying a 52 km buffer to the Mountain Goat and Sheep Areas wildlife sensitivity layer and from known sheep wintering ranges in Waterton and Jasper National Parks.

Key Wildlife and Biodiversity Zones are delineated based on the borders of riparian vegetation complexes with high productivity and variable topography, as well as mapped ungulate winter ranges (Government of Alberta 2015).

Provincial Special Access Zones are delineated using data from multiple sources, including ungulate surveys, road densities, *Prairie Farm Rehabilitation Act* soil maps, ortho-rectified imagery, and topographical data (Alberta Environment and Parks 2017).

4.4 AVAILABILITY AND CONFIDENTIALITY

Wildlife Sensitivity Datasets are publicly available to be referenced through a variety of means, including:

- downloadable as spatial shapefiles online (Alberta Environment and Protected Areas 2023a);
- using the Fish and Wildlife Internet Mapping Tool (FWIMT) – Public (Government of Alberta 2022b);
- GeoDiscover Alberta (Government of Alberta 2022c);
- Landscape Analysis Tool (LAT), a geospatial tool used to identify standards and conditions that apply to AEPA-regulated activities (Alberta Environment and Protected Areas 2023b); and,
- Energy Development Planning (EDP) tool, a geospatial tool used to identify standards and conditions that apply to activities regulated by the Alberta Energy Regulator (AER; Alberta Energy Regulator 2023).

4.5 MANAGEMENT STRATEGY

Alberta land use planning and management is divided into Green Areas and White Areas (Government of Alberta 2007). Green Areas represent almost entirely public lands regulated by the provincial government. The provincial government has authority over the land use disposition application process. White Areas are mostly private lands regulated by municipal governments under the *Municipal Government Act* and the *Provincial Land Use Policies* (Government of Alberta 2007). Hunting is managed in Alberta based on WMUs, which are legally defined in the *Wildlife Regulation*. Wildlife within each WMU are managed according to regulations within the *Wildlife Act* (Government of Alberta 1997, 2000).

Desired Outcomes for wildlife are listed in the Master Schedule of Standards and Conditions (MSSC) and include maintaining ecological conditions for sustainable wildlife populations, as well as minimizing disturbance and adverse effects on wildlife (Government of Alberta 2021a). The BMPs include reporting all sensitive and endangered species using the Fish and Wildlife Management Information System (FWMIS) and limiting line-of-sight along non-road linear features. Recommended setback distances for sensitive wildlife species and habitat features are also specified in the MSSC. The BMPs also include conducting pre-clearing wildlife surveys prior to construction, and no construction on native grasslands during sensitive time periods to reduce adverse effects on nesting birds.

Management strategies for Key Wildlife and Biodiversity Zones are intended to minimize ungulate stress related to industrial activities within and adjacent to key winter ranges (Government of Alberta 2015). Strategies outlined in the recommended land-use guidelines for Key Wildlife and Biodiversity Zones include minimizing all industrial activity and preventing vegetation clearing, minimizing industrial activity during winter to avoid displacing wildlife, reducing access, and following general timing restrictions (Government of Alberta 2015). Similarly, specific timing restrictions also apply to work within Special Access Zones, which are intended to function as wildlife refugia within intensively managed landscapes (Alberta Environment and Parks 2017).

Caribou Ranges are managed by multi-stakeholder committees that oversee research, monitoring, and planning, and develop industrial guidelines based on the requirements of each range (Alberta Woodland Caribou Recovery Team 2005). In 2019, the Government of Alberta initiated a sub-regional approach to caribou recovery. The Alberta Government established Caribou Sub-regional Task Forces composed of representatives from local municipalities, Indigenous communities, industrial and resource development sectors, environmental non-government organizations, and other land users, who provide government with advice for land-use planning within each Caribou Sub-Region. Task forces review management approaches outlined in the draft Woodland Caribou Provincial Range Plan (Government of Alberta 2017a). To date, two sub-regional plans have been developed for Caribou Ranges in northern Alberta (i.e., Cold Lake and Bistcho Lake herds). The Bistcho Lake Sub-Regional Plan outlines three management approaches: integrated land management, ecosystem-based management, and adaptive management (Government of Alberta 2022d).

4.6 REGULATORY AND ASSESSMENT PROCESS

The MSSC identifies conditions of the formal disposition application process under the *Public Lands Act*, the *Mines and Minerals Act*, and Geophysical Regulations (Government of Alberta 2021a). The AEPA regulatory and geospatial tools provide applicants with standards and conditions that apply to their disposition, based on disposition type (e.g., agreements, easements, lease, letters of authority, licenses, permits, quotas), proposed activity (e.g., grazing, farm development, timber harvesting, surface access for oil and gas, commercial use), risk rankings, and supporting spatial layers (e.g., Wildlife Sensitivity Datasets). Successful applications must address Desired Outcomes and BMPs, as per the MSSC, during planning and siting of proposed activities. Spatial layers are the primary driver of wildlife standards and conditions included in formal dispositions, authorizations, and approvals.

Mandatory conditions for dispositions intersecting Caribou Ranges, Grizzly Bear Zones, Key Wildlife and Biodiversity Zones, Special Access Zones, or Mountain Goat and Sheep Areas, may include road closures as defined under the *Public Lands Act*, or effective access controls and access restrictions may be required (Government of Alberta 2021a). Project proponents with dispositions that intersect Key Wildlife and Biodiversity Zones may be requested to prepare a Protection Plan (Government of Alberta 2015, NOVA Gas Transmission Ltd. 2016). Project proponents are required to submit a Caribou Protection Plan as a wildlife mitigation for dispositions that include new exploration and construction activities planned within Caribou Ranges (Government of Alberta 2012a).

Depending on the disposition, activities may not be permitted within Mountain Goat and Sheep Areas. Otherwise, disposition holders may be permitted to conduct activities only during certain times of year. Disposition Holders may not be permitted to conduct activities in alpine areas, potential escape terrain, or other known high use areas (Government of Alberta 2021a). With some exceptions, disposition holders must not conduct any site preparation and construction within Caribou Ranges or Key Wildlife and Biodiversity Zones during sensitive time periods and access construction must follow specific guidelines to reduce risk of facilitated predation. Boundaries for construction within Caribou Ranges depend on Caribou Zones. Holders of disposition intersecting with Caribou Ranges may be required to adhere to government directives, guidelines, policies, and legislation referenced in the relevant Caribou Protection Plan (Government of Alberta 2021a).

4.7 LAND USE PLANNING

Under the Government of Alberta's 2008 Land-use Framework, and supported by the *Alberta Land Stewardship Act*, the province is divided into seven regions based on major watersheds and municipal boundaries: Lower Peace, Lower Athabasca, Upper Peace, Upper Athabasca, North Saskatchewan, Red Deer, and South Saskatchewan (Government of Alberta 2008). Regional plans are developed through contributions from regional advisory councils, First Nations and Métis communities, stakeholders, and municipalities, and plans are implemented using a cumulative effects management system to manage land and natural resources (Government of Alberta 2008, 2021c). Objectives and strategies identified in regional plans are legally binding under the *Alberta Land Stewardship Act* (Government of Alberta 2017b).

Regional plans manage potential adverse environmental effects from development activities and set regional desired outcomes and objectives (Government of Alberta 2008, 2021c). Provincial desired outcomes inform regional desired outcomes and objectives. For example, the Lower Athabasca Regional Plan identifies creating new conservation areas enacted under provincial parks legislation or the *Public Lands Act*, as a desired regional outcome, which is in-line with provincial goals for maintaining and enhancing biodiversity (Government of Alberta 2012b). The plan lists existing conservation areas as wildland provincial parks; however, Wildlife Sensitivity Datasets are not included in this regional plan, as they do not meet the definition for conservation areas (i.e., protected with conservation management intent; Government of Alberta 2012b).

4.8 COMPLIANCE AND EFFECTIVENESS MONITORING

The effectiveness of Alberta's environmental management tools, including Wildlife Sensitivity Datasets, monitoring, evaluation, and reporting initiatives and programs, are evaluated by the Government of Alberta and monitoring organizations (e.g., Alberta Biodiversity Monitoring Institute) (Government of Alberta 2021c). The AEPA has developed guidelines for surveys of sensitive species and wildlife features, some of which are represented in the Wildlife Sensitivity Datasets (Government of Alberta 2013).

The Government of Alberta has committed to completing progress assessments within each Caribou Range every five years (Government of Alberta 2017a). Assessments will include summaries of research and monitoring programs and updates to the Range Plan based on an adaptive management approach. Aerial

surveys are used to assess ungulate populations (i.e., bighorn sheep, bison, caribou, elk, moose, mountain goats, mule and white-tailed deer, and pronghorn antelope) and set hunting regulations, as well as assess predation risk and priority areas for recovery actions in Alberta. Observations of other species of conservation concern (i.e., carnivores and species-at-risk) are also recorded during these surveys. Methods and results from aerial surveys, including estimates of abundance, density, and age-sex composition, are carried out by WMU and season, and survey reports are available to the public (https://www.alberta.ca/aerial-wildlife-survey-reports.aspx; Government of Alberta - Environment Parks 2022).

Regional supporting indicators are regularly monitored to assess progress towards meeting outcomes and objectives identified in regional plans (Government of Alberta 2021c). Annual progress reports inform five year evaluations of regional plans and reviews of regional plans every 10 years (Government of Alberta 2017b).

5 NORTHWEST TERRITORIES

The NWT *Wildlife Act* is the primary legislation related to wildlife and wildlife habitat in the NWT (Government of Northwest Territories 2013). Indigenous, territorial and federal governments share the responsibility of co-management of lands and resources located in settlement areas and regions under Métis, First Nations, and Inuvialuit land claim and self-government final agreements and the *Mackenzie Valley Resource Management Act* (Indian and Northern Affairs Canada 1992, Government of Canada 1998, Inuvialuit Regional Corporation 2022). Co-management systems, including interim measures agreements, are also in place outside of areas with established land claim and self-government agreements (NWT Environment and Natural Resources 2009, Government of Northwest Territories 2013). The Government of the NWT (GNWT) is ultimately responsible for wildlife management under the NWT *Wildlife Act* in areas with interim measures agreements; the GNWT is not responsible for wildlife management within national parks (NWT Environment and Natural Resources 2009, Government of Northwest Territories 2013).

5.1 NORTHWEST TERRITORIES-WIDE WILDLIFE HABITAT DATASETS

The GNWT maintains several datasets and web applications for tracking wildlife species occurrence, important habitats, and ranges across the NWT. These datasets and web applications include the Species General Status Ranking Program and InfoBase, the NWT Species at Risk website, the Species and Habitat Viewer, and the Wildlife Management Information System (WMIS). For the purposes of this review, these information sources are summarised under the category of 'NWT-wide Wildlife Habitat Datasets'.

5.1.1 SPECIES GENERAL STATUS RANKING PROGRAM AND INFOBASE

The NWT Species General Status Ranking Program was initiated by the GNWT in collaboration with the federal government and co-management boards, to fulfill commitments under the *Accord for the Protection of Species at Risk in Canada* (Working Group on General Status of NWT Species 2021). The program ranks the conservation status for thousands of species that are known to occur in the NWT to provide information to the NWT Species at Risk Committee (SARC) for prioritizing more detailed assessments (Working Group on General Status of NWT Species 2021). The program publishes reports every five years with current information on habitat and distribution, as well as population abundance, trends, and threats (Working Group on General Status of NWT Species 2021, Government of the Northwest Territories 2023a). The program maintains the NWT Species Infobase, an online search tool used to catalogue all species occurrences in the NWT. The Infobase is updated annually based on Traditional, local, and scientific information (Working Group on General Status of NWT Species 2021). The NWT Species General Status Ranking Program is recognized as a Conservation Data Centre under NatureServe Canada and follows their standard ranking protocols (NatureServe 2021).

5.1.2 NORTHWEST TERRITORIES SPECIES AT RISK

The GNWT and SARC maintain the NWT Species at Risk website (Government of the Northwest Territories 2013), which contains the most current list of species at risk and information including conservation status, distribution, habitat, population trends, threats, and recovery strategies. This information is intended to be used by developers to determine overlap between species at risk ranges and proposed project footprints. The website also links to the NWT Species and Habitat Viewer, as well as the NWT Species Infobase and Status Ranking Program.

5.1.3 SPECIES AND HABITAT VIEWER

The NWT Species and Habitat Viewer is an online mapping tool maintained by the GNWT Wildlife Division and Centre for Geomatics that allows the public to view and download geospatial datasets related to species, ecosystems, and habitats in the NWT (Government of the Northwest Territories 2023b). This tool allows users to generate reports based on overlap with areas of interest, including proposed project footprints. Information generated in reports includes lists of species occurrences, range maps, agencies responsible for certain species, caribou habitat and range plans (Map 5-1), as well as federal and territorial conservation status and designated critical habitat (Government of the Northwest Territories 2013, 2023b). Spatial data available through the NWT Species and Habitat Viewer are organized into four themes: Species at Risk, Boreal Caribou, Migratory Caribou, and Biodiversity.

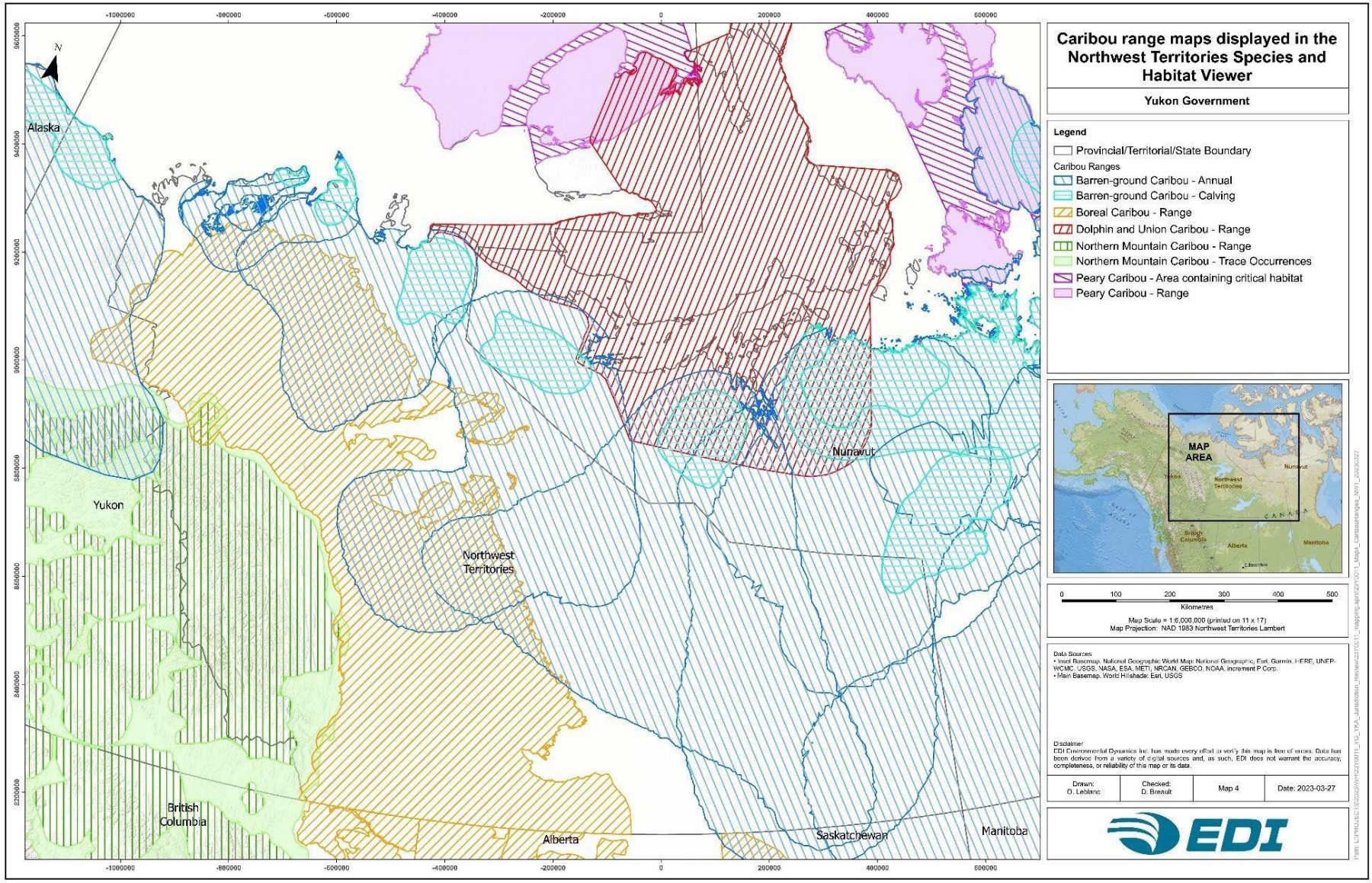
5.1.3.1 Species at Risk

The Species at Risk theme includes range maps for species listed as Endangered, Threatened, or of Special Concern under the federal SARA or territorial *Species at Risk (NWT) Act* (Government of the Northwest Territories 2023b). Range maps correspond with the known distribution of each species within the NWT and include barren-ground caribou annual range and calving areas, northern mountain woodland caribou range and trace occurrences, boreal woodland caribou range, Dolphin-Union caribou range, Peary caribou range and critical habitat areas (Map 5-1), grizzly bear range and areas of increased presence, wolverine range and areas of increased presence, wood bison disease-free, diseased, and captive areas, and Peregrine Falcon range.

5.1.3.2 Caribou

The NWT Species and Habitat Viewer includes themes for Boreal Caribou and Migratory Caribou (Government of the Northwest Territories 2023b). The Boreal Caribou theme displays spatial information for boreal caribou range planning, including species range in the NWT (Map 5-1), boreal caribou range planning regions, and landscape disturbance statistics by planning region. This theme includes a Habitat Disturbance Report tool, which can be used to generate a report of habitat disturbance within an area of interest. The Project Screening tool allows the user to determine potential disturbance effects of proposed projects by planning region. The Migratory Caribou theme contains information on annual and calving ranges, and core seasonal ranges of barren-ground caribou and Dolphin-Union caribou populations. The Bathurst

Caribou Habitat Disturbance Report tool located in this theme produces a report of habitat disturbance in the Bathurst Caribou Range Plan area (Government of the Northwest Territories 2019).


Caribou range maps displayed in the Northwest Territories Species and Habitat Viewer
Yukon Government
Legend
Provincial/Territorial/State Boundary
Caribou Ranges
Barren-ground Caribou - Annual
Barren-ground Caribou - Calving
Boreal Caribou - Range
Dolphin and Union Caribou - Range
Northern Mountain Caribou - Range
Northern Mountain Caribou - Trace Occurrences
Peary Caribou - Area containing critical habitat
Peary Caribou - Range
MAP AREA
Alaska
Yukon
Northwest Territories
Nunavut
British Columbia
Alberta
Saskatchewan
Manitoba
0 100 200 300 400 500
Kilometres
Map Scale = 1:6,000,000 (printed on 11 x 17)
Map Projection: NAD 1983 Northwest Territories Lambert
Data Sources
Disclaimer
Drawn: O. Leblanc
Checked: D. Breault
Map 4
Date: 2023-03-27
EDI

5.1.3.3 Biodiversity

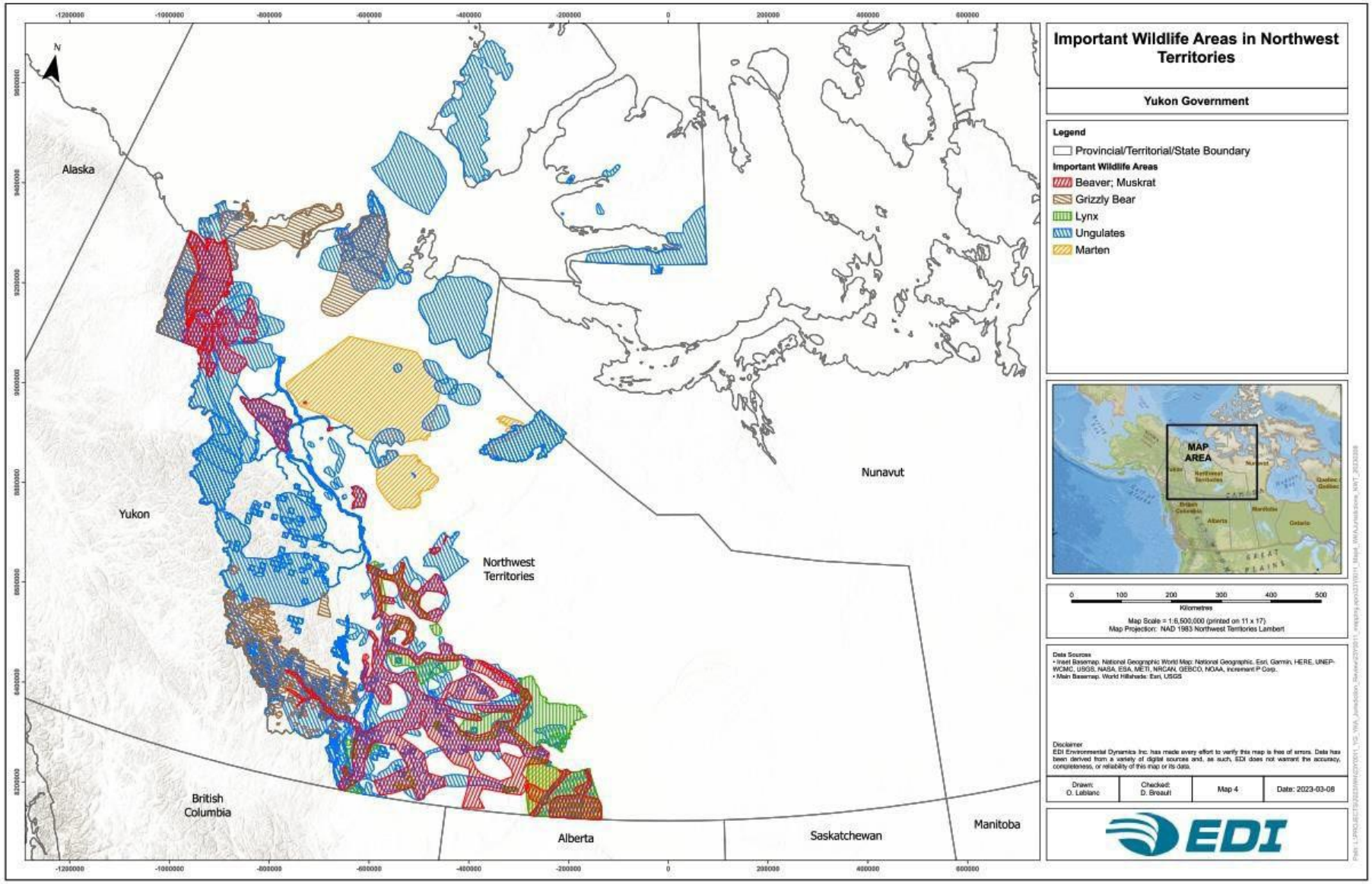
The Biodiversity theme of the NWT Species and Habitat Viewer displays range maps and relative abundance for certain species in the NWT, and distributions of all ecosystems in the NWT, based on the NWT Ecological Classification system (Government of the Northwest Territories 2023b). The Biodiversity Report Tool in this theme can be used to determine which species are known to occur within a selected area of interest based on the NWT General Status Species Ranking Program. Species range maps were delineated based on the NatureServe Ecosystem-based Automated Range (EBAR) method (NatureServe Canada 2020).

5.1.3.4 Important Wildlife Areas

Important Wildlife Areas (IWAs) are also displayed in the NWT Species and Habitat Viewer and represent an important source of scientific and Traditional Knowledge mapped across the Inuvialuit Settlement Region (ISR), Gwich'in Settlement Area, Sahtu Settlement Area, and Dehcho Territory (Map 5-2). The IWAs were developed in 2012 and were intended to provide information on key wildlife areas in the western NWT, to be used in land use and community conservation plans, protected areas planning, EAs, wildlife management plans, and regulatory decision-making (Wilson and Haas 2012). A total of 127 IWAs were mapped for barren-ground caribou, mountain woodland caribou, Dall's sheep, moose, mountain goat, muskox, wood bison, grizzly bear, polar bear, beaver, lynx, marten, muskrat, western toad, and Peregrine Falcon (Wilson and Haas 2012). The IWA map was intended to be expanded to include eastern NWT, and revisions were planned to occur at 10-year intervals; however, the map was not expanded, and the dataset has become a tool used to supplement other information sources in western NWT.

5.1.4 WILDLIFE MANAGEMENT INFORMATION SYSTEM

Species and habitat observation data are available to the public through the WMIS, an online, geo-referenced database that stores spatial information on species and habitats (Government of Northwest Territories 2023). The database includes incidental observations recorded during wildlife research and monitoring programs, as well as observations submitted by the public. Requests for access to WMIS data are reviewed by the WMIS Team, and requests for sensitive species information may be refused under the *Access to Information and Protection of Privacy Act*.


Important Wildlife Areas in Northwest Territories
Yukon Government
Legend
Provincial/Territorial/State Boundary
Important Wildlife Areas
Beaver; Muskrat
Grizzly Bear
Lynx
Ungulates
Marten
MAP AREA
Alaska
Yukon
Northwest Territories
Nunavut
British Columbia
Alberta
Saskatchewan
Manitoba
Kilometres
Map Scale = 1:6,500,000 (printed on 11 x 17)
Map Projection: NAD 1983 Northwest Territories Lambert
Data Sources
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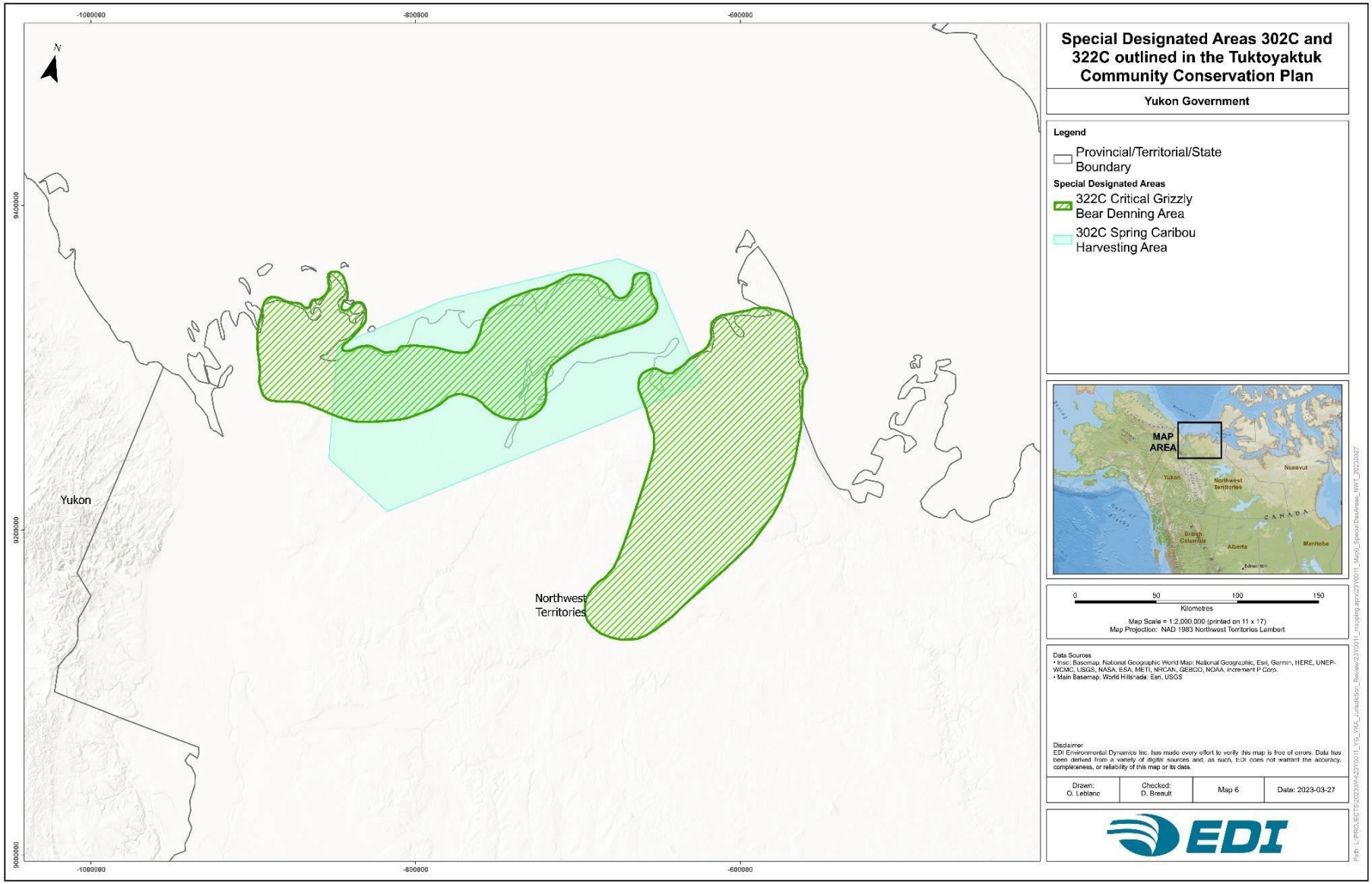
5.2 SPECIAL DESIGNATED AREAS

In the ISR, Inuvialuit Community Conservation Plans define special designated areas that are prioritized for wildlife conservation and management (Inuvik Hunters and Trappers Committee et al. 2016, Tuktoyaktuk Hunters and Trappers Committee et al. 2016, Joint Secretariat 2023). Many of these designated areas correspond with traditional areas used for subsistence harvest of specific wildlife species during specified seasons (e.g., Site 302C Spring Caribou Harvesting Areas; Map 5-3; Tuktoyaktuk Hunters and Trappers Committee et al. 2016). Other areas correspond with annual or seasonal habitats for sensitive or culturally significant species (e.g., Site 322C Critical Grizzly Bear Denning Areas; Map 5-3; Tuktoyaktuk Hunters and Trappers Committee et al. 2016). Special Designated Areas are identified and delineated through collaboration among community working groups, hunter and trapper committees, fisheries joint management committees, the GNWT, the Canadian Wildlife Service, and Fisheries and Oceans Canada. See Section 5.6 for additional details related to Community Conservation Plans.


-1000000
-800000
-600000
N
9400000
9200000
9000000
Yukon
Northwest Territories
Special Designated Areas 302C and 322C outlined in the Tuktoyaktuk Community Conservation Plan
Yukon Government
Legend
Provincial/Territorial/State Boundary
Special Designated Areas
322C Critical Grizzly Bear Denning Area
302C Spring Caribou Harvesting Area
MAP AREA
Nunavut
Yukon
Northwest Territories
CANADA
British Columbia
Alberta
Manitoba
Edmonton
0
50
100
150
Kilometres
Map Scale = 1:2,000,000 (printed on 11 x 17)
Map Projection: NAD 1983 Northwest Territories Lambert
Data Sources
• Inset: Basemap, National Geographic World Map; National Geographic, Esri, Garmin, HERE, UNEP-WCMC, USGS, NASA, ESA, METI, NRCAN, GEBCO, NOAA, increment P Corp.
• Main Basemap, World Hillshade: Esri, USGS
Disclaimer
EDI Environmental Dynamics Inc. has made every effort to verify this map is free of errors. Data has been derived from a variety of digital sources and, as such, EDI does not warrant the accuracy, completeness, or reliability of this map or its data.
Drawn: O. Leblanc
Checked: D. Breault
Map 6
Date: 2023-03-27
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5.3 CO-MANAGEMENT AND AGREEMENTS

In the NWT, in regions with settled land claims, the responsibility of co-management of wildlife is shared among governments, wildlife management councils, renewable resources boards, and game councils established under the respective land claim agreements (Table 5-1; NWT Environment and Natural Resources 2009). These boards are primarily responsible for ensuring that the interests of land claim beneficiaries are integrated into wildlife management decision-making (NWT Environment and Natural Resources 2009). In the ISR, the Wildlife Management Advisory Committee NWT (WMAC [NWT]) conducts and supports wildlife research and advises the territorial and federal governments on wildlife conservation and management issues, while the Inuvialuit Game Council (IGC) represents the collective Inuvialuit interest in all aspects of the management of wildlife and wildlife habitat. Integration of co-management board decisions and recommendations is established under the NWT *Wildlife Act* and Wildlife General Regulations (Government of Northwest Territories 2013, 2014a).

Table 5-1. Co-management boards and councils, with shared responsibility in wildlife management established under land claim agreements in the Northwest Territories.

Co-management Boards and Councils	Final Land Claim or Self-Government Agreements	Settlement Area, Region, or Lands
Wildlife Management Advisory Council (NWT) Inuvialuit Game Council	Inuvialuit Final Agreement	Inuvialuit Settlement Region
Gwich'in Renewable Resources Board	Gwich'in Comprehensive Land Claim Agreement	Gwich'in Settlement Area
Sahtu Renewable Resources Board	Sahtu Dene and Métis Comprehensive Land Claim Agreements	Sahtu Settlement Area
Wek'èezhìi Renewable Resources Board	Tłı̨chǫ Land Claims and Self-government Agreement	Tłı̨chǫ Wek'èezhìi Co- management Lands

The NWT is divided into six wildlife management zones that are further subdivided into hunting areas for different species (i.e., polar bear, grizzly bear, wood bison, barren-ground caribou, muskox, wolf, and wolverine). Harvest regulations specify different types of licenses required for hunting within the NWT (Government of Northwest Territories 2022). Indigenous harvesters have traditional harvesting rights within their traditional areas and require a General Hunting License only when harvesting outside of those areas. Indigenous harvesters with no traditional harvesting rights in the NWT require a Resident or Non-resident Hunting License.

Hunting in the ISR is governed by the Inuvialuit Final Agreement and non-beneficiaries must receive permission from the local Hunters and Trappers Committee to access Inuvialuit private lands to hunt certain big game species within the ISR (Government of Northwest Territories 2022). Similarly, non-participants must receive permission to hunt in the Gwich'in Settlement Area and Sahtu Settlement Area under the Gwich'in Comprehensive Land Claim Agreement and the Sahtu Dene and Métis Comprehensive Land Claim

Agreement, respectively. Hunting in Wek'èezhìi and Tłı̨chǫ Lands is governed by provisions in the Tłı̨chǫ Agreement and permission to hunt on Tłı̨chǫ Lands is encouraged but not required by the Tłı̨chǫ Government (Government of Northwest Territories 2022).

5.4 REGULATORY AND ASSESSMENT PROCESS

The regulatory review process in the NWT differs depending on the location of the proposed project. In the Mackenzie Valley, the process is determined by the *Mackenzie Valley Resource Management Act* and the Mackenzie Valley Land and Water Board (MVLWB) issues permits and licences for transboundary developments and developments in the two regions without settled land claim agreements (i.e., the Dehcho and South Slave regions). The Gwich'in, Sahtu, and Wek'èezhìi Land and Water Boards (i.e., the regional Land and Water Boards of the MVLWB) have jurisdiction in their respective regions. If triggered, environmental impact assessments in the Mackenzie Valley are carried out under the jurisdiction of the Mackenzie Valley Review Board (Mackenzie Valley Land and Water Board 2023, Mackenzie Valley Review Board 2023).

In the ISR, the assessment process is established under the *Western Arctic (Inuvialuit) Claims Settlement Act* and the resulting Inuvialuit Final Agreement (Government of Canada 1998, Government of Northwest Territories 2019a, Inuvialuit Regional Corporation 2022). In accordance with the Inuvialuit Final Agreement, every developer in the ISR must receive prior approval from the Environmental Impact Screening Committee (EISC). If the EISC grants project approval, land use permits are issued by the Inuvialuit Land Administration (for developments on Inuvialuit Private Lands) and the GNWT Department of Lands (for developments on territorial and commissioner's land). Water licences are issued by the Inuvialuit Water Board. The Environmental Impact Review Board conducts environmental impact reviews for proposed developments in the ISR, if required.

Under Section 95 of the NWT *Wildlife Act*, large-scale development projects that are likely to cause adverse effects on wildlife or wildlife habitat are required by law to develop a Wildlife Management and Monitoring Plan (WMMP; Government of Northwest Territories 2013, 2018). Developers are required to submit geospatial data of the proposed project footprint to assess habitat disturbance and cumulative effects (Government of Northwest Territories 2019). In the ISR, under the EISC process, developers that require an environmental screening need to submit a Wildlife Encounter Management Plan (Environmental Impact Screening Committee 2021). For larger-scale projects in the ISR, a WMMP is required. Refer to Section 5.7for additional details regarding the different types of WMMPs (i.e., Tier 1, Tier 2, and Tier 3 plans).

5.5 LAND USE GUIDELINES

Northern land use guidelines were developed to assist small- to medium-scale project proponents and operators in avoiding or minimizing environmental effects on territorial and commissioner's land (Government of Northwest Territories 2015, Government of the Northwest Territories 2023c). Guidelines for six types of development, including seismic operations, roads and trails, camp and support facilities, and pits and quarries, were created in consultation with land use administrators and resource managers

(Government of the Northwest Territories 2023d). Northern land use guidelines for seismic operations recommend using GNWT wildlife and habitat databases to avoid or minimize effects on important wildlife habitat (Government of Northwest Territories 2015). These guidelines also recommend minimum flight altitudes over certain habitats and during sensitive periods, including Dall's sheep lambing and rutting areas, and mountain goat habitat (Government of Northwest Territories 2015, Government of the Northwest Territories 2023c).

In addition to the northern land use guidelines, the GNWT has developed the following guidelines related to wildlife and wildlife habitat management in the NWT:

- *Safety in Grizzly and Black Bear Country* (Government of the Northwest Territories 2017);
- *Flying Low? Think Again …* (Government of the Northwest Territories 2023c); and,
- *Guidelines for Exploration and Development Projects in Boreal Caribou Habitat* (Government of the Northwest Territories 2022).

5.6 LAND USE PLANNING

Land use plans for settlement areas and regions have been developed under the authority of settled land claim agreements and interim measures agreements in regions with no settled land claims (Indian and Northern Affairs Canada 1992, Government of Canada 1998). In the Mackenzie Valley, regional land use plans are legally binding under the *Mackenzie Valley Resource Management Act* and proponents must consult these plans for applicable wildlife management guidance (e.g., Conservation Zones). They include the following documents:

- *Sahtu Land Use Plan* (Sahtu Land Use Planning Board 2013);
- *Nan Geenjit Gwitr'it T'agwàa'in / Working for the Land: Gwich'in Land Use Plan* (Gwich'in Land Use Planning Board 2018);
- *Tłı̨chǫ Wenek'e: Tłı̨chǫ Land Use Plan* (Tłı̨chǫ Government 2013); and,
- *Respect for the Land: The Dehcho Interim Draft Land Use Plan* (The Dehcho Land Use Planning Committee 2016).

According to the GNWT Land Use and Sustainability Framework, regional land use plans are considered the primary instrument for making land use decisions in the NWT (Government of Northwest Territories 2014b). In the ISR, Inuvialuit Community Conservation Plans provide non-legally binding guidance for community-based conservation, monitoring, and management of lands and renewable resources (Joint Secretariat 2023):

- *Aklavik Inuvialuit Community Conservation Plan* (Aklavik Hunters and Trappers Committee et al. 2016);
- *Inuvik Community Conservation Plan* (Inuvik Hunters and Trappers Committee et al. 2016);
- *Paulatuk Community Conservation Plan* (Paulatuk Hunters and Trappers Committee et al. 2016);
- *Sachs Harbour Community Conservation Plan* (Sachs Harbour Hunters and Trappers Committee et al. 2016);

- *Tuktoyaktuk Community Conservation Plan* (Tuktoyaktuk Hunters and Trappers Committee et al. 2016); and,
- *Ulukhaktok Community Conservation Plan* (Olohaktomiut Hunters and Trappers Committee et al. 2016).

While these Inuvialuit Community Conservation Plans are not legally binding, the EISC process requires developers to thoroughly consider all sensitive and Special Designated Areas outlined in these plans that overlap with, or are in proximity to, their proposed projects. Land use plans and community conservation plans define special management and conservation areas that are often aligned with sensitive wildlife habitats. These areas are prioritized for wildlife conservation and management and may carry restrictions and conditions for harvesting and development activities (Inuvik Hunters and Trappers Committee et al. 2016).

5.7 COMPLIANCE AND EFFECTIVENESS MONITORING

Under the NWT *Wildlife Act*, all proponents of developments in the NWT are expected to develop and implement basic mitigation monitoring to determine if mitigations are effective and to document on-site wildlife occurrences (Government of Northwest Territories 2019). Project proponents may be required to submit a WMMP with land use applications for larger-scale developments (Government of Northwest Territories 2018). The type of WMMP required depends on the spatial scale and type of development being proposed. Tier 1 plans are the most basic and are required for projects with well-understood effects and mitigations that are likely to be effective. Tier 2 plans are required when a high degree of uncertainty exists regarding the potential effects of the project and the likely effectiveness of proposed mitigations. These plans include effects monitoring to track indicators within local and regional study areas and quantify project-related effects on wildlife and wildlife habitat, and describe how this information will be used in management actions. Tier 3 plans involve regional wildlife monitoring beyond local and regional study areas, and may be expected to contribute to cumulative effects initiatives (Government of Northwest Territories 2019). Tier 3 developers may be required to follow guidelines and BMPs based on collaborative regional monitoring programs.

The Cumulative Impact Monitoring Program (CIMP) coordinates environmental monitoring and communicates results to decision makers and the public, as legislated under settled land claim agreements and the *Mackenzie Valley Resource Management Act* (Indian and Northern Affairs Canada 1992, Government of Canada 1998). The CIMP funds approximately 30 research and monitoring projects annually, which focus on caribou, water, fish, and Indigenous knowledge (NWT Environment and Natural Resources 2022). Results from CIMP projects are available through the NWT Discovery Portal and high-level summary reports of monitoring results are published approximately every five years (Department of Environment and Natural Resources 2022).

6 CONCLUSION AND SUMMARY

The analogous programs selected for comparison with the WKA inventory all share roughly the same purpose/objective: to identify, conserve, and/or manage important habitats for legally harvested species and/or species of conservation concern (Table 6-1; Appendix Table B-1). These programs all catalogue publicly available GIS-based information related to legally harvested species and species at risk to prioritize efforts for monitoring, assessment, and mitigation purposes. All programs included in this review are used in regulatory and assessment processes within their corresponding jurisdictions; however, the programs differ in legal designations, land use planning, availability and confidentiality, and compliance and effectiveness monitoring frameworks (Table 6-2).

Table 6-1. Programs analogous from adjacent jurisdictions selected for comparison with the Wildlife Key Area program.

Jurisdiction	Program	Type	Subtype
Yukon	Wildlife Key Areas	–	–
British Columbia	Wildlife Management Areas	–	–
	Wildlife Habitat Areas	–	–
	Ungulate Winter Ranges	Core Areas	–
		Specified Areas	–
Alberta	Key Range Layers	Caribou Range	Zone A
			Zone B
		Sensitive Raptor Ranges	–
	Key Wildlife Layers	Grizzly Bear	Core Areas
			Secondary Areas
			Support Zones
			Habitat Linkage Zones
		Mountain Goat and Sheep	Areas
			Disease Buffer
		Key Wildlife and Biodiversity Zones	–
		Special Access Zones	–
Northwest Territories	NWT-Wide Wildlife Habitat Datasets	Species General Status Ranking Program and InfoBase	
		NWT Species at Risk website	–
		Species and Habitat Viewer	Species at Risk
			Caribou
			Biodiversity
			Important Wildlife Areas
		Wildlife Management Information System (WMIS)	–
	Special Designated Areas		–

Table 6-2. Key similarities and differences among Wildlife Key Area-analogous programs across the four jurisdictions.

Jurisdiction	Program	Legally Designated?	Publicly Available?	Confidential Component?	Regulatory and Assessment?	Land Use Planning?	Compliance Monitoring?
Yukon	Wildlife Key Areas	No	Yes	Yes	Yes	Yes	No
British Columbia	Wildlife Management Areas	Yes	Yes	Yes	Yes	Yes	Yes
	Wildlife Habitat Areas	Yes	Yes	Yes	Yes	Yes	Yes
	Ungulate Winter Ranges	Yes	Yes	Yes	Yes	Yes	Yes
Alberta	Key Ranges	Yes	Yes	No	Yes	No	Yes
	Key Wildlife Layers	Yes	Yes	No	Yes	No	Yes
Northwest Territories	NWT-wide Wildlife Habitat Datasets	No	Yes	No	Yes	Yes	Yes
	Special Designated Areas	No	No	Yes	Yes	Yes	Yes

6.1 SPECIES AND HABITATS OF FOCUS

Moose, woodland caribou, mountain goat, grizzly bear, Bald Eagle, Golden Eagle, and Peregrine Falcon are the only species included in WKA-analogous programs across all four jurisdictions (Appendix Table A-1; Appendix Table A-2). Species not included in all programs either do not occur across all jurisdictions (e.g., wood bison and barren-ground caribou), or are not prioritized for management or conservation in all jurisdictions (e.g., marten, river otter, and lynx). Among the species groups reviewed (i.e., ungulates, carnivores/furbearers, and raptors), BC wildlife-related management mechanisms (i.e., WMAs, WHAs, and UWRs) capture the greatest number of species (51), followed by NWT (28), Yukon (24), and Alberta (12). All four jurisdictions include area-based protections for seasonally important ungulate habitats; however, the Yukon is the only jurisdiction with area-based protection explicitly for mineral licks (Appendix Table A-1).

6.2 IDENTIFICATION AND DELINEATION

Each jurisdiction uses a combination of wildlife surveys and local/expert knowledge for identifying and delineating areas included in their programs. However, the WKA program is the only program with boundaries based solely on known locations of animals. Analogous programs in BC and Alberta incorporate

habitat suitability, topography, and vegetation mapping into the delineation process, and species range maps in the NWT are delineated based on the NatureServe EBAR method.

6.3 AVAILABILITY AND CONFIDENTIALITY

All provincial/territorial programs are spatially explicit and publicly available online through GIS-based mapping tools maintained by the respective provincial/territorial government. The main access tools for each jurisdiction include:

- GeoYukon;
- BC Data Catalogue and iMapBC;
- GeoDiscover Alberta; and,
- NWT Species and Habitat Viewer.

Yukon and BC programs keep sensitive data confidential, and these can be made available upon request on a case-by-case basis. The criteria for defining sensitive data differ between the two jurisdictions; however, similar methods are used to mask or generalize sensitive data unless otherwise requested. The WKA program masks animal point locations, mineral licks, raptor nests, and denning sites, whereas the BC definition for sensitive data includes information pertaining to species or ecosystems that are of conservation concern or vulnerable to harm, proprietary data, and federally or provincially constrained data.

6.4 REGULATORY AND ASSESSMENT PROCESS

All programs are used by regulatory agencies and review boards during EAs and permitting processes. In the Yukon, Alberta, and the NWT, territorial and provincial habitat protection programs are not legally designated and are considered useful tools used by developers, regulatory agencies, and review boards to determine spatial or temporal overlap between proposed projects and critical or sensitive wildlife habitats. Mitigation and monitoring measures may be legally prescribed by regulatory agencies and review boards on a case-by-case basis. These prescriptions are based on the scale of the proposed project, spatial and/or temporal overlap with wildlife habitats, and risk of adverse effects on wildlife or wildlife habitat. However, these territorial/provincial habitat protection programs do not carry Ministerial Orders or legal conditions for land use outside of the assessment and permitting process established for each jurisdiction.

In contrast, the analogous programs described for BC are legally designated, and mandatory management prescriptions and mitigation measures must be followed within these areas. Activities within WMAs require permission from BC MWLRS Regional Managers and must adhere to legal Orders established for the given WMA, and activities within WHAs and UWRs must conform with legal management prescriptions (i.e., GWMs) established in BC MWLRS Orders for a given WHA or UWR. Of the programs included in this review, BC WHAs and UWRs carry the strictest legal requirements for what activities may be allowed.

6.5 LAND USE PLANNING

Except for wildlife-related management mechanisms in Alberta, all programs described in this review are incorporated into land use planning processes at the regional scale. In the Yukon, WKAs are used in regional land use planning, alongside traditional knowledge databases, to determine the spatial distribution of ecologically important areas (Vuntut Gwitchin Government and Yukon Government 2009). In BC, WMAs, WHAs, and UWRs may be incorporated into regional and sub-regional or local land use plans (BC Oil and Gas Commission 2021, British Columbia Ministry of Environment 2023a, British Columbia Ministry of Forests 2023e). In Alberta, regional plans establish legally binding objectives and strategies (Government of Alberta 2008, 2021c); however, only two of the six regions have approved plans, and neither have incorporated Wildlife Sensitivity Datasets into environmental management objectives (Government of Alberta 2017b). In the NWT, regional land use plans and community conservation plans define Conservation Zones and Special Designated Areas that are often aligned with sensitive wildlife habitats and are prioritized for wildlife conservation and management (Inuvik Hunters and Trappers Committee et al. 2016).

6.6 COMPLIANCE AND EFFECTIVENESS MONITORING

Except for the WKA program, all programs described in this review have some form of compliance and effectiveness monitoring. In BC, natural resource agencies work collaboratively with a variety of municipal, provincial, federal, and Indigenous partners to address compliance issues, including unauthorized habitat disturbance or destruction within a designated WMA, WHA, or UWR (Government of British Columbia 2020). The effectiveness of WHAs and UWRs is assessed under the BC FREP, which monitors the status of wildlife resource values and evaluates the mechanisms under FRPA that address the conservation of wildlife habitat, including WHAs and UWRs.

In Alberta, the AEPA has developed guidelines for surveys of sensitive species and wildlife features, some of which are represented in the Wildlife Sensitivity Datasets (Government of Alberta 2013). Progress assessments within each Caribou Range are completed every five years to inform updates to range plans (Government of Alberta 2017a). Aerial surveys are used to assess ungulate populations and identify priority areas for recovery actions.

In the NWT, all proponents of developments are expected to develop and implement basic mitigation monitoring to determine the effectiveness of mitigations (Government of Northwest Territories 2019). Proponents of large-scale developments may be required to submit a more detailed WMMP with land use applications (Government of Northwest Territories 2018). The CIMP funds approximately 30 research and monitoring projects annually, which focus on caribou, water, fish, and indigenous knowledge (NWT Environment and Natural Resources 2022).

6.7 CLOSURE

This review was conducted by Qualified Professionals using accepted methods. This report summarises relevant information from mainly grey literature (e.g., reports, statutes, and government documents) on WKA-analogous programs in the Yukon, BC, Alberta, and the NWT. This document is intended to provide important context for the upcoming YG evaluation and review of the WKA program. It should be noted that the scope of this review is limited to four jurisdictions, focuses on programs related to the management and conservation of ungulates, carnivores/furbearers, and raptors, and summarises information at a high/coarse level of detail. There may be programs associated with other jurisdictions and/or species, as well as details related to the programs covered that are beyond the scope of this review. Therefore, it cannot be guaranteed that this review includes all wildlife management mechanisms that may be analogous to the WKA program.

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APPENDICES

APPENDIX A SPECIES AND HABITATS OF FOCUS

Appendix Table A-1. Species and habitat features included in Wildlife Key Area-analogous programs across the four jurisdictions.

Group	Species/Habitat Feature	Scientific Name	YT	BC	AB	NWT
Ungulates	Mule and black-tailed deer	*Odocoileus hemionius*	✓	✓		✓
	White-tailed deer	*Odocoileus virginianus*		✓		✓
	Elk	*Cervus elaphus*	✓	✓		
	Roosevelt elk	*Cervus elaphus roosevelti*		✓		
	Moose	*Alces alces*	✓	✓	✓	✓
	Woodland caribou	*Rangifer tarandus*	✓	✓	✓	✓
	Barren-ground caribou	*Rangifer tarandus*	✓			✓
	Mountain goat	*Oreamnos americanus*	✓	✓	✓	✓
	Bighorn sheep	*Ovis canadensis*		✓	✓	
	Thinhorn/Dall sheep	*Ovis dalli*	✓	✓		✓
	Stone's sheep	*Ovis dalli stonei*		✓		
	Wood bison	*Bison bison athabascae*	✓			✓
	Muskox	*Ovibos moschatus*	✓			✓
	Mineral lick (any of the above)		✓			
Carnivores/Furbearers	Grizzly bear	*Ursus arctos*	✓	✓	✓	✓
	Black bear	*Ursus americanus*	✓	✓		✓
	Polar bear	*Ursus maritimus*	✓			✓
	Cougar	*Puma concolor*		✓		
	Lynx	*Lynx canadensis*		✓		✓
	Bobcat	*Lynx rufus*		✓		
	Wolf	*Canis lupus*	✓	✓		✓
	Coyote	*Canis latrans*		✓		
	Arctic fox	*Vulpes lagopus*	✓			✓
	Swift fox	*Vulpes velox*			✓	
	Wolverine	*Gulo gulo*		✓		✓
	Badger	*Taxidea taxus*		✓		
	Fisher	*Pekania pennanti*		✓		
	Ermine	*Mustela erminea*		✓		
	Long-tailed weasel	*Mustela frenata*		✓		
	Marten	*Martes americana*		✓		✓
	River otter	*Lontra canadensis*		✓		
	Mink	*Neogale vison*		✓		
	Beaver	*Castor canadensis*	✓	✓		✓
	Mountain beaver	*Aplodontia rufa*		✓		
	Muskrat	*Ondatra zibethicus*	✓	✓		✓
	Vancouver Island marmot	*Marmota vancouverensis*		✓		
	Hoary marmot	*Marmota caligata*		✓		

Group	Species/Habitat Feature	Scientific Name	YT	BC	AB	NWT
Raptors	Barn owl	*Tyto alba*		✓		
	Great horned owl	*Bubo virginianus*		✓		
	Burrowing owl	*Athene cunicularia*		✓	✓	
	Flammulated owl	*Otus flammeolus idahoensis*		✓		
	Short-eared owl	*Asio flammeus*		✓		✓
	Spotted owl	*Strix occidentalis*		✓		
	Western screech-owl	*Otus kennicottii macfarlanei*		✓		
	Bald eagle	*Haliaeetus leucocephalus*	✓	✓	✓	✓
	Golden eagle	*Aquila chrysaetos*	✓	✓	✓	✓
	Rough-legged hawk	*Buteo lagopus*	✓	✓		✓
	Ferruginous hawk	*Buteo regalis*			✓	
	Sharp-shinned hawk	*Accipiter striatus*		✓		
	Red-tailed hawk	*Buteo jamaicensis*		✓		
	Osprey	*Pandion haliaetus*	✓	✓		✓
	Northern harrier	*Circus hudsonius*		✓		
	Gyrfalcon	*Falco rusticolus*	✓	✓		✓
	Goshawk	*Accipiter gentilis laingi*		✓		✓
	Peregrine falcon	*Falco peregrinus*	✓	✓	✓	✓
	Merlin	*Falco columbarius*	✓	✓		✓
	American kestrel	*Falco sparverius*		✓		
	Prairie falcon	*Falco mexicanus*		✓	✓	
	Turkey vulture	*Cathartes aura*		✓		

Appendix Table A-2. Comprehensive species and habitats of focus by program across the four jurisdictions.

Jurisdiction	Program	Species and Habitats of Focus
Yukon	Wildlife Key Areas (WKAs)	Mule deer, elk, moose, woodland and barren-ground caribou, thinhorn sheep, mountain goat, wood bison, muskox, mineral licks, polar bear, grizzly bear, black bear, wolf, fox, muskrat, beaver, waterfowl (i.e., ducks, geese, and swans), raptors (i.e., golden eagle, gyrfalcon, bald eagle, osprey, peregrine falcon, rough-legged hawk, and merlin), sharp-tailed grouse, shorebirds, seabirds, larids, seal, beluga whale, and bowhead whale.
British Columbia	Wildlife Management Areas (WMAs)	Black-tailed deer, white-tailed deer, mule deer, woodland caribou, elk, Roosevelt elk, moose, bighorn sheep, Stone's sheep, mountain goat, ermine, long-tailed weasel, marten, mink, muskrat, beaver, river otter, Vancouver Island marmot, hoary marmot, badger, wolverine, bobcat, lynx, cougar, coyote, wolf, black bear, grizzly bear, northern harrier, sharp-shinned hawk, rough-legged hawk, red-tailed hawk, northern goshawk, American kestrel, prairie falcon, peregrine falcon, gyrfalcon, bald eagle, golden eagle, osprey, barn owl, flammulated owl, great horned owl, short-eared owl, spotted owl, and turkey vulture.
	Wildlife Habitat Areas (WHAs)	Bighorn sheep, woodland caribou (i.e., boreal caribou, northern caribou, northern mountain population, and southern mountain populations), mountain goat, badger, fisher, grizzly bear, mountain beaver, flammulated owl, northern goshawk, spotted owl, and western screech-owl.
	Ungulate Winter Ranges (UWRs)	Black-tailed deer, white-tailed deer, mule deer, boreal caribou, northern caribou, mountain caribou, elk, Roosevelt elk, moose, bighorn sheep, thinhorn sheep, Stone's sheep, and mountain goat.
Alberta	Key Ranges (e.g., Caribou Ranges and Sensitive Raptor Ranges)	Burrowing owl, woodland caribou, endangered and threatened plants, greater sage grouse, greater short-horned lizard, Ord's kangaroo rat, sensitive amphibians, sensitive raptors (i.e., bald eagle, golden eagle, ferruginous hawk, prairie falcon, and peregrine falcon), sensitive snakes, sharp-tailed grouse, and swift fox.
	Key Wildlife Layers (e.g., Grizzly Bear Zones, Mountain Goat and Sheep Areas, Key Wildlife and Biodiversity Zones, and Special Access Zones)	Piping plover, trumpeter swan, grizzly bear, mountain goat, bighorn sheep, critical ungulate winter habitat, riparian habitats with high potential for biodiversity, natural wildlife refugia, and colonial nesting birds.
Northwest Territories	NWT-wide Wildlife Habitat Datasets (e.g., Species General Status Ranking Program, Species InfoBase, and the Species and Habitat Viewer)	Barren-ground caribou, northern mountain woodland caribou, boreal woodland caribou, Dolphin-Union caribou, Peary caribou, Dall's sheep, moose, mountain goat, muskox, wood bison, polar bear, grizzly bear, wolverine, lynx, marten, muskrat, beaver, western toad, and peregrine falcon.
	Special Designated Areas (Inuvialuit Settlement Region)	Barren-ground caribou, moose, muskox, grizzly bear, polar bear, wolf, wolverine, migratory bird species (e.g., brant goose and snow goose), ringed seal, beluga whale, bowhead whale, freshwater fisheries (i.e., char, whitefish, lake trout, loche, and cisco).

APPENDIX B GENERAL JURISDICTIONAL COMPARISON

Appendix Table B-1. General comparison of programs analogous to the Wildlife Key Areas inventory across the four jurisdictions.

Jurisdiction	Program	Purpose	Identification and Delineation	Availability and Confidentiality	Use in Regulatory and Assessment Process	Associated Legislation and Regulatory Protections
Yukon	Wildlife Key Areas	Identify key areas for legally harvested species, protected species groups, and habitat features.	Carried out by YG and generalized from known locations of animals based on wildlife surveys, expert interviews, literature reviews, and hunting/trapping statistics.	Through GeoYukon, mapped using 3 levels of confidentiality/resolution, with sensitive locations only available to the public at level 3 (i.e., the most generalized).	Used by proponents and YESAB during EA process to spatially or temporally avoid sensitive areas.	Have established BMPs (non-legal) but no legal designations.
British Columbia	Wildlife Management Areas	Conserve and manage habitat required for critical lifecycle phases, migration, or movement corridors, habitat that supports high species diversity or productivity, and habitat valued for human uses.	Each WMA is delineated differently based on the corresponding WMA management plan through a collaborative process between provincial government, local communities, Indigenous groups, and not-for-profit organizations.	Through the BC Data Catalogue, Conservation Lands map, iMap BC, and CDC iMap, with sensitive data masked/generalized unless otherwise requested.	Proponents determine overlap of proposed project with WMAs, WHAs, and UWRs. New activities within WMAs require permission from Regional Managers (BC MWLRS) and mitigation measures may be permit conditions.	Have established BMPs (non-legal) and are designated under the BC *Wildlife Act* as part of the Conservation Lands Program. Legal Orders (e.g., prohibitions and restrictions) are established by Regional Managers (BC MWLRS).
	Wildlife Habitat Areas	Meet habitat requirements for Identified Wildlife element (FRPA) or High Priority Wildlife element (OGAA).	Based on *Procedures for Managing Identified Wildlife,* site is proposed, reviewed, and designated by BC MWLRS and a WHA committee; the size and shape are based on criteria in *Accounts and Measures for Managing Identified Wildlife.*		Activities within WHAs and UWRs must conform with GWMs established in Orders (BC MWLRS) and mitigation measures may be permit conditions.	Have established BMPs (non-legal) and are designated under the BC *Wildlife Act*, FRPA GAR and IWMS, and OGAA EPMR. The GWMs are legal management prescriptions that must be followed within WHAs.

Jurisdiction	Program	Purpose	Identification and Delineation	Availability and Confidentiality	Use in Regulatory and Assessment Process	Associated Legislation and Regulatory Protections
	Ungulate Winter Ranges	Conserve areas that meet critical winter habitat requirements of specified ungulate species.	Carried out by BC MWLRS based on winter habitat requirements and range use of ungulates, literature reviews, survey and collar data, local knowledge, and regional experts.			Have established BMPs (non-legal) and are designated under the BC *Wildlife Act*, FRPA GAR, and the OGAA EPMR and EPMG. The GWMs must be followed within UWRs.
Alberta	Key Ranges	Identify known extent of species of conservation concern and/or sensitive species for survey or mitigation purposes.	Based on aerial surveys, historical information, movements of collared animals, habitat suitability maps, and known species ranges.	Through the FWIMT, GeoDiscover Alberta, LAT, and EDP tool.	Spatial overlap with Wildlife Sensitivity Datasets determines standards and conditions that apply to dispositions under the *Public Lands Act*.	Have established BMPs and land-use guidelines (non-legal), as well as legal protections established under the Alberta *Wildlife Act* and Wildlife Regulation, the *Public Lands Act*, the *Mines and Minerals Act*, and Geophysical Regulations.
	Key Wildlife Layers	Identify key wildlife areas important for the viability and productivity of Alberta's wildlife populations for mitigation purposes.	Based on aerial surveys, historical information, movements of collared animals, habitat suitability maps, riparian vegetation maps, soil maps, ortho-rectified imagery, and topographical data.			

Jurisdiction	Program	Purpose	Identification and Delineation	Availability and Confidentiality	Use in Regulatory and Assessment Process	Associated Legislation and Regulatory Protections
Northwest Territories	NWT-wide Wildlife Habitat Datasets	Track species occurrence, important habitats, and ranges across the NWT, for conservation status updates and mitigation purposes.	Based on traditional, local, and scientific information, and the NatureServe EBAR method.	Public can access species habitat information through the Species General Status Ranking Program and InfoBase, the NWT Species at Risk website, the Species and Habitat Viewer, and the WMIS.	Developers submit geospatial data for proposed projects to assess overlap with wildlife habitat, and may be required to develop WMMPs.	Have established BMPs and land-use guidelines (non-legal). Assessment and permitting process is established under the NWT *Wildlife Act* and the *Mackenzie Valley Resource Management Act*.
	Special Designated Areas	Identify areas prioritized for wildlife conservation and management.	Based on collaboration among community working groups, hunter and trapper committees, fisheries joint management committees, the GNWT, the CWS, and DFO.	Spatial data for Special Designated Areas are available upon request through the appropriate Land Use Planning Board.	Developers in the ISR must consider overlap between proposed projects and Special Designated Areas before permit approval from the EISC.	Inuvialuit Community Conservation Plans provide non-legal guidance. Assessment and permitting process is established under the *Western Arctic (Inuvialuit) Claims Settlement Act* and Inuvialuit Final Agreement.