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The background of the cover is a scenic landscape photograph of the Columbia National Wildlife Area. It features a range of rugged mountains under a sky with soft, orange and blue clouds, suggesting a sunrise or sunset. In the foreground, there is a calm body of water reflecting the sky and mountains, with some trees and hills visible on the left and right sides. A large, semi-transparent orange rectangle is overlaid on the lower half of the image, containing the title text.

COLUMBIA NATIONAL WILDLIFE AREA MANAGEMENT PLAN 2018

Canada

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About Environment and Climate Change Canada's Protected Areas & Management Plans

What are Environment and Climate Change Canada protected areas?

Environment and Climate Change Canada establishes marine and terrestrial National Wildlife Areas for the purposes of conservation, research and interpretation. National Wildlife Areas are established to protect migratory birds, species at risk, and other wildlife and their habitats. National Wildlife Areas are established under the authority of the *Canada Wildlife Act* and are, first and foremost, places for wildlife. Migratory Bird Sanctuaries are established under the authority of the *Migratory Birds Convention Act, 1994* and provide a refuge for migratory birds in the marine and terrestrial environments.

How has the federal government's investment from Budget 2018 helped manage and expand Environment and Climate Change Canada's National Wildlife Areas and Migratory Bird Sanctuaries?

The Nature Legacy represents a historic investment over five years of \$1.3B and will help Environment and Climate Change Canada expand its National Wildlife Areas and Migratory Bird Sanctuaries to contribute to Canada's biodiversity targets and increase Environment and Climate Change Canada's capacity manage its protected areas.

Environment and Climate Change Canada will be conserving more areas, and have more resources to effectively manage and monitor the habitats and species who reside in its protected areas

What is the current size of the Environment and Climate Change Canada Protected Areas Network?

The current Protected Areas Network consists of 55 National Wildlife Areas and 92 Migratory Bird Sanctuaries comprising close to 14 million hectares across Canada.

What is a management plan?

A management plan provides the framework in which management decisions are made. It is intended to be used by Environment and Climate Change Canada staff to guide decision making, notably with respect to permitting. Management is undertaken in order to maintain the ecological integrity of the protected area and the attributes for which the protected area was established. Environment and Climate Change Canada prepares a management plan for each protected area in consultation with Indigenous peoples and other partners and stakeholders.

A management plan specifies activities that are allowed and identifies other activities that may be undertaken under the authority of a permit. It may also describe the necessary improvements needed in the habitat, and specify where and when these improvements should be made. A management plan identifies Indigenous rights and allowable practices specified under land claims agreements. Further, measures carried out for the conservation of wildlife must not be inconsistent with any law respecting wildlife in the province in which the protected area is situated.

Columbia National Wildlife Area

The Columbia National Wildlife Area (NWA) is made up of 4 units (Wilmer, Brisco, Spillimacheen and Harrogate) which together protect a spectacular and unique collection of wetland habitats. Located in the Southern Rocky Mountain Trench of southeastern British Columbia, the NWA is part of a much larger wetland complex (the Columbia Wetlands) that stretches for approximately 180 km in length and covers some 26,000 hectares in area. Nestled between the Rocky Mountains to the east and the Purcell and Selkirk mountains to the west, the Columbia Wetlands are recognized under the Convention on Wetlands of International Importance ('the Ramsar Convention') and contain portions of the only free-flowing stretch of the Columbia River, the largest (by volume) North American river to flow into the Pacific Ocean. As part of the Pacific Flyway, these extensive riverine wetlands provide important breeding and resting habitat for waterfowl and other migratory birds. The Columbia Wetlands also provide important habitat for many other wildlife species, including species at risk.

In 1970, the Canadian Wildlife Service (CWS) began negotiations to acquire property along the Columbia Wetlands for the purpose of protecting important waterfowl habitat from residential development (CWS, 1986). In 1978, this first purchase became the basis for the current Wilmer unit of the Columbia NWA, which contained 475 ha of the extensive marshes and shallow ponds typical of the area. Between 1979 and 1984, The Nature Trust of British Columbia (formerly the National Second Century Fund of British Columbia) purchased properties at Spillimacheen, Brisco and Harrogate totalling 529 ha, which were then leased to the CWS for the purpose of wildlife management (CWS, 1979; CWS, 1986). Together, these units play a key role in preserving this unique habitat for the benefit of waterfowl and other wildlife.

Situated within the Southern Interior Mountains Ecoprovince in the Interior Douglas-fir Biogeoclimatic Zone, the NWA is comprised primarily of lowland coniferous forest and wetland habitat types. In 2004, the CWS conducted an inventory of the NWA with a special focus on species at risk in order to meet the requirements of the Species at Risk Act (SARA) (Dawe et al., 2012). The survey recorded numerous species, including fungi (4 species), plants (268 species), invertebrates (34 species), amphibians (2 species),

reptiles (1 species), birds (112 species), and mammals (17 species). Of these, ten are on Schedule 1 of SARA as of the date of publication.

The rich, fertile flood plains and valley bottoms of the NWA are not only first class wildlife habitat, but they are also highly-valued lands with potential for agriculture, recreation and residential development. As such, the NWA was created with the goal of maintaining the 'present pristine, unaltered marsh habitat complex for marsh-dependent waterbirds and migratory waterfowl, and manage the upland on a cooperative basis' (CWS, 1986). This goal remains firm today and Environment and Climate Change Canada's CWS continues to work to conserve the important wildlife habitat of the NWA.

To protect the NWA, all activities within the NWA are prohibited unless otherwise posted as permissible or explicitly permitted.

For greater certainty, nothing in this management plan shall be construed so as to abrogate or derogate from the protection provided for existing aboriginal or treaty rights of the aboriginal peoples of Canada by the recognition and affirmation of those rights in section 35 of the Constitution Act, 1982.

Table of Contents

1.	DESCRIPTION OF THE PROTECTED AREA	1
1.1	Regional Context.....	8
1.2	Historical Background.....	9
1.3	Land Ownership.....	11
1.4	Facilities & Infrastructure.....	11
2.	ECOLOGICAL RESOURCES	12
2.1	Terrestrial and Aquatic Habitats.....	12
2.2	Wildlife Species.....	14
2.3	Species at Risk.....	15
2.4	Invasive Species.....	17
3.	MANAGEMENT CHALLENGES & THREATS	17
4.	GOAL & OBJECTIVES	19
4.1	Vision.....	19
4.2	Goals and Objectives.....	19
4.3	Evaluation.....	20
5.	MANAGEMENT APPROACHES	21
5.1	Habitat Management.....	24
5.2	Wildlife Management.....	26
5.3	Monitoring.....	27
5.4	Research.....	27
5.5	Public Information & Outreach.....	28
6.	AUTHORIZATIONS AND PROHIBITIONS	29
6.1	Prohibition of Entry.....	29
6.2	Authorized Activities.....	29
6.3	Authorizations.....	30
6.4	Exceptions.....	31
6.5	Other Federal and Provincial Authorizations.....	31
7.	HEALTH & SAFETY	31
8.	ENFORCEMENT	32
9.	PLAN IMPLEMENTATION	32
9.1	Management Authorities & Mandates.....	34
9.2	Management Plan Review.....	34
10.	COLLABORATORS	34
11.	LITERATURE CITED	35

1. DESCRIPTION OF THE PROTECTED AREA

The Columbia National Wildlife Area (NWA), consisting of four units (Wilmer, Brisco, Spillimacheen and Harrogate), is a series of wetlands that are part of the internationally significant Columbia Wetlands in British Columbia (BC) (Figure 1). The Columbia Wetlands are located within the Southern Rocky Mountain Trench, which is nestled between the Rocky Mountains to the east and the Purcell and Selkirk mountains to the west, in southeastern British Columbia. Adjacent protected areas include the provincial Columbia Wetlands Wildlife Management Area and several small provincial parks.

Environment and Climate Change Canada's Canadian Wildlife Service (CWS) began acquiring property along the Columbia Wetlands in 1973 for the purpose of protecting important waterfowl habitat from residential development. These initial purchases formed the Wilmer Unit. Properties purchased by The Nature Trust of British Columbia i.e., Brisco, Spillimacheen and Harrogate, were later leased to CWS and added to the NWA. Today the NWA's four units protect 1,001 ha of wetland and associated upland habitats, playing a key role in preserving this unique habitat for not only the benefit of waterfowl, but also many other waterbird species, and numerous species of plants and animals, including several species listed under the federal Species at Risk Act (SARA). The NWA is a part of the larger system of wetlands recognized under the Convention on Wetlands of International Importance (the 'Ramsar Convention') as containing wetlands of international significance to waterfowl and other wetland birds. It is also located within the Canadian Intermountain Joint Venture (CJIV) area, formed by the North American Waterfowl Management Plan (NAWMP) in 2003 for the implementation of habitat conservation projects to sustain migratory bird populations.

The NWA is located within the Southern Interior Mountains Ecoprovince in the Interior Douglas-fir (IDF) biogeoclimatic zone (Braumandl et al., 2002). The region experiences hot, dry summers and cool winters with very little snow. As a result, the vegetation in the area is dictated by extremes in water availability. The terraced upland areas are characterized by open range species such as prairie sagewort (*Artemisia frigida*), fescues, and, in treed range, Douglas-fir (*Pseudotsuga menziesii*), all indicative of limited water availability (CWS, 1986). The valley bottom consists of a complex floodplain with a vast network of natural levees, channels, marshes, open water areas and islands

(Dawe et al., 2012). Common plant species here include black cottonwood (*Populus balsamifera* ssp. *trichocarpa*), trembling aspen (*Populus tremuloides*), sedges and various emergent plant species (CWS, 1986; Dawe et al., 2012).

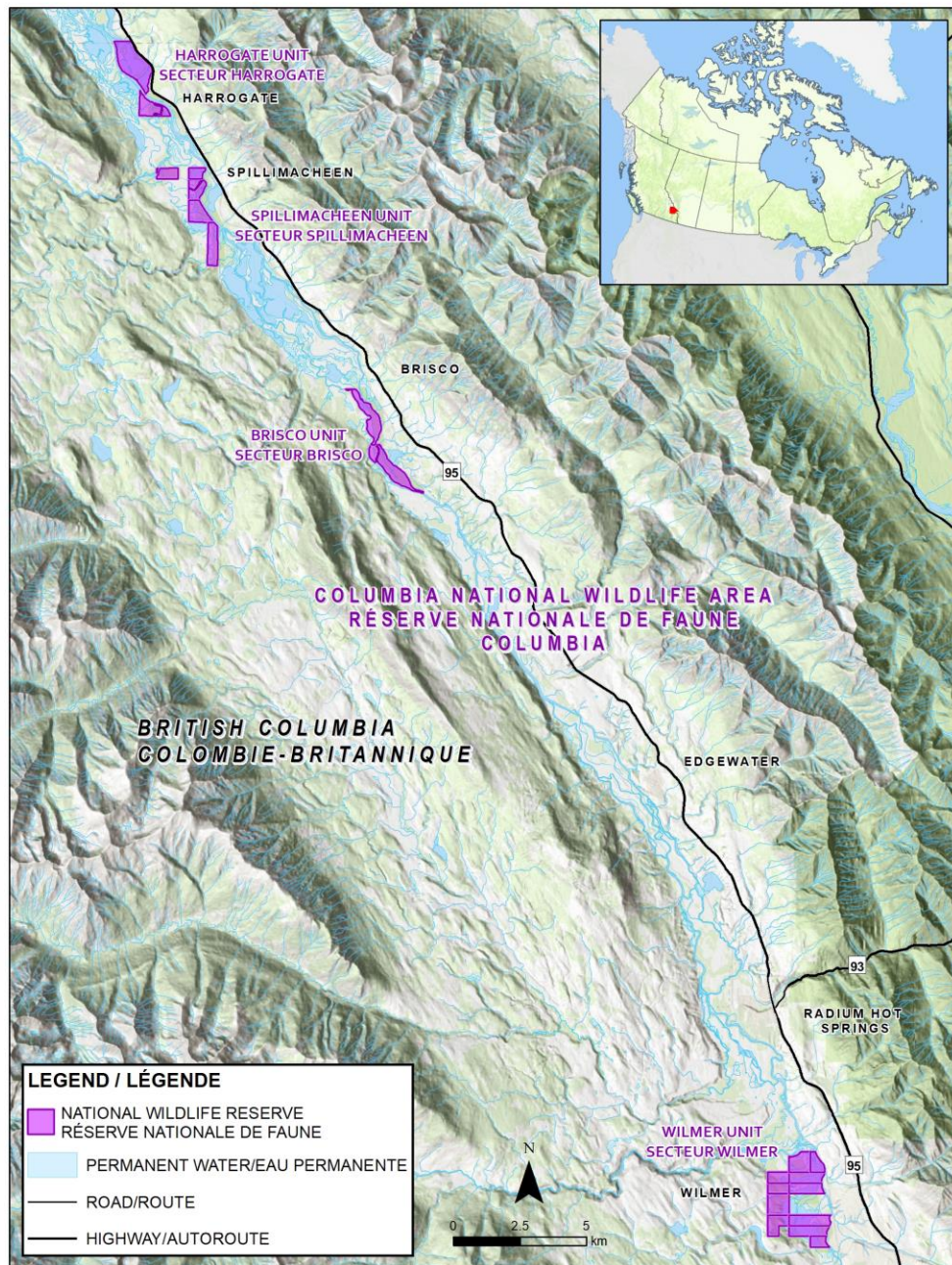


Figure 1: Columbia National Wildlife Area

The four discontinuous units that make up the NWA include:

1. **Wilmer Unit (Figure 2):** This unit is located just 5 km north of Invermere, the largest community in the area and a popular tourist destination. Situated within the Very Dry Cool Subzone of the IDF (IDF_{ck}), the Wilmer Unit is the most structurally complex of the four units. The northern limits contain a large post-glacial fluvial terrace (cliffs) that reaches up to 45 m in height, grading down towards the southern edge of the Horsethief Creek alluvial fan complex. The floodplains in the unit are made up of a series of natural levees, channels, marshes, open water areas and islands (Dawe et al., 2012).

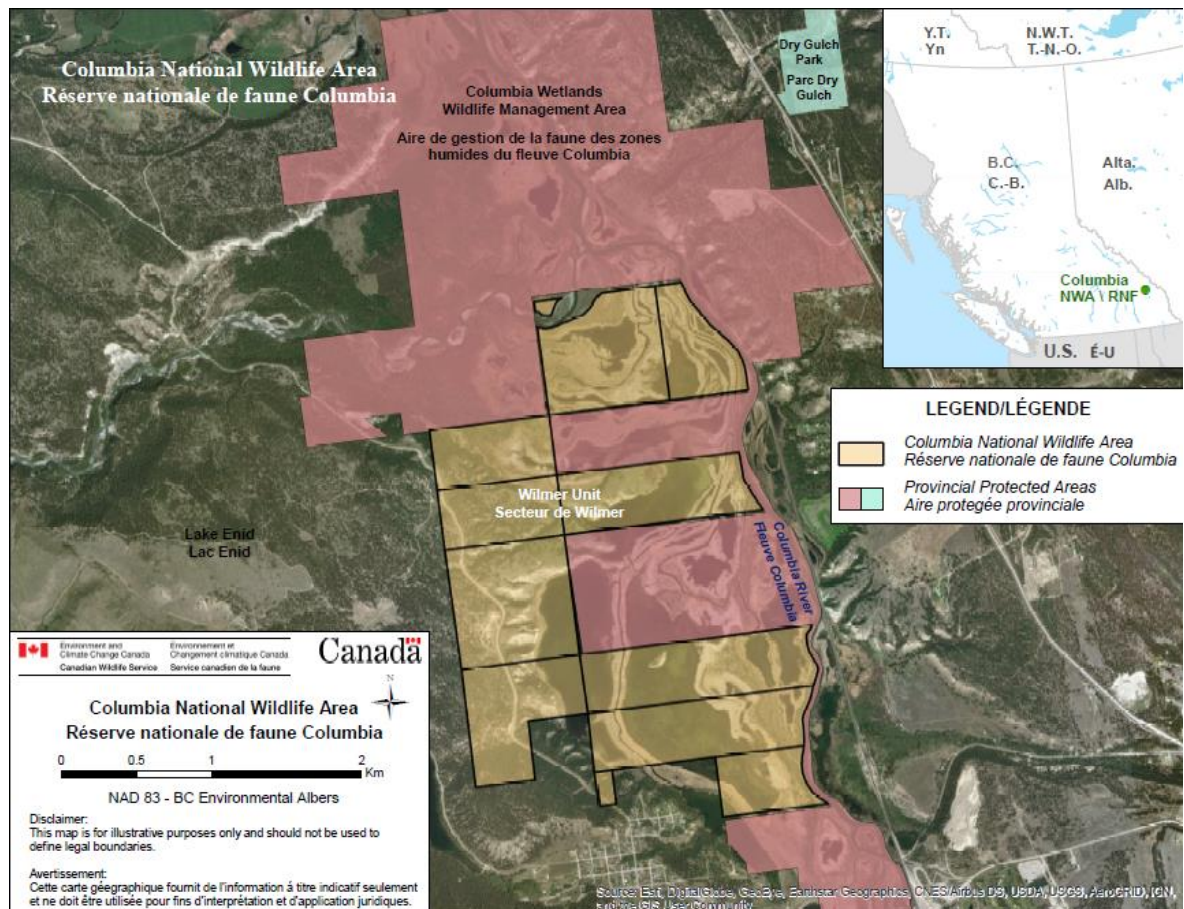


Figure 2: Wilmer Unit

2. **Brisco Unit (Figure 3):** This unit lies 38 km north of Invermere and straddles the boundary between the Dry Cool (IDFdk5) and Dry Mild (IDFdm2) subzones of the IDF. Situated entirely within the floodplain of the Columbia River, the Brisco unit consists primarily of lowland deciduous forest and wetlands. Little work has been done to define the biophysical habitats in this unit. The surface title of this unit is held by The Nature Trust of BC, but leased to Environment and Climate Change Canada.

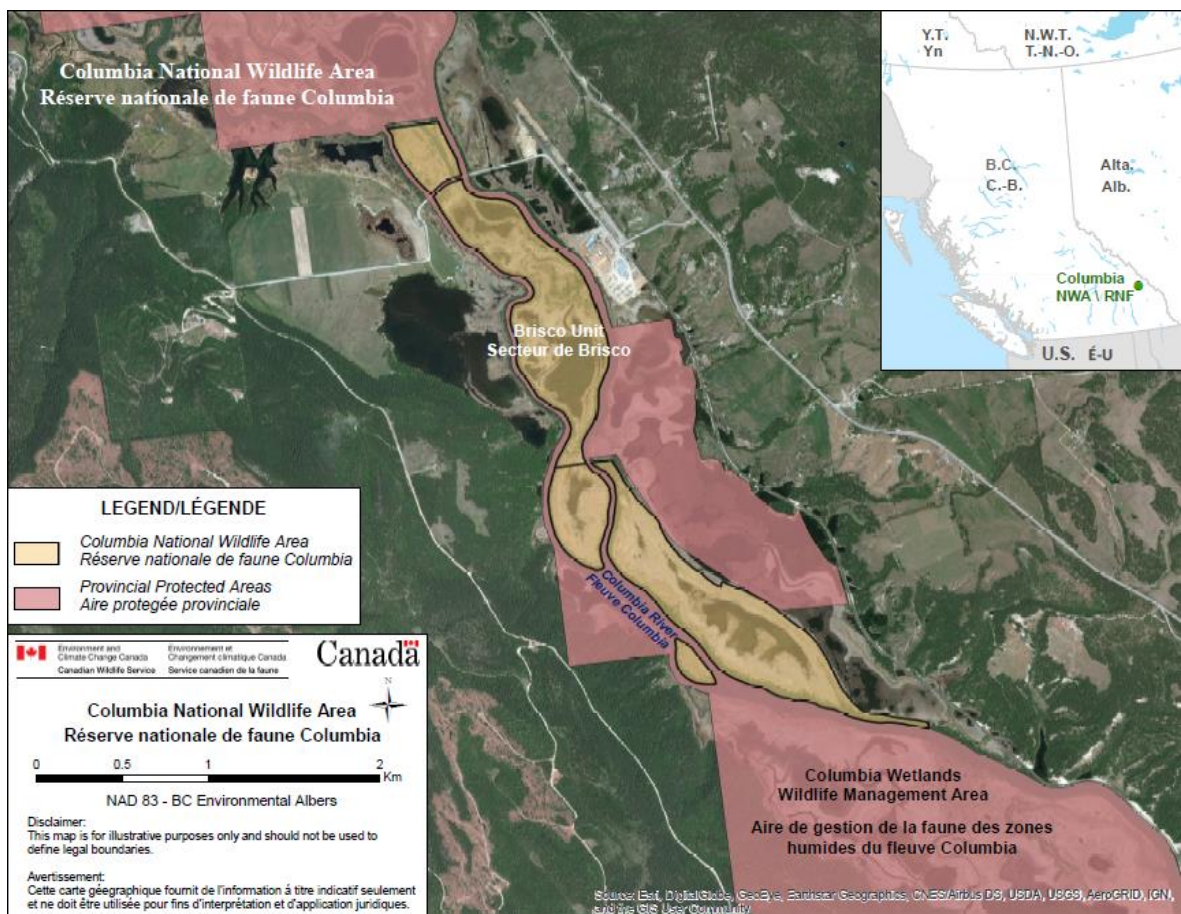


Figure 3: Brisco Unit

- 3. Spillimacheen Unit (Figure 4):** This unit is located 49 km north of Invermere within the Dry Cool Subzone (IDFdk5) of the IDF. Like the Brisco unit, the Spillimacheen unit lies entirely within the Columbia River Floodplain and is almost entirely made up of marsh and seasonal open water areas. The surface title of this unit is held by The Nature Trust of BC, but leased to Environment and Climate Change Canada.

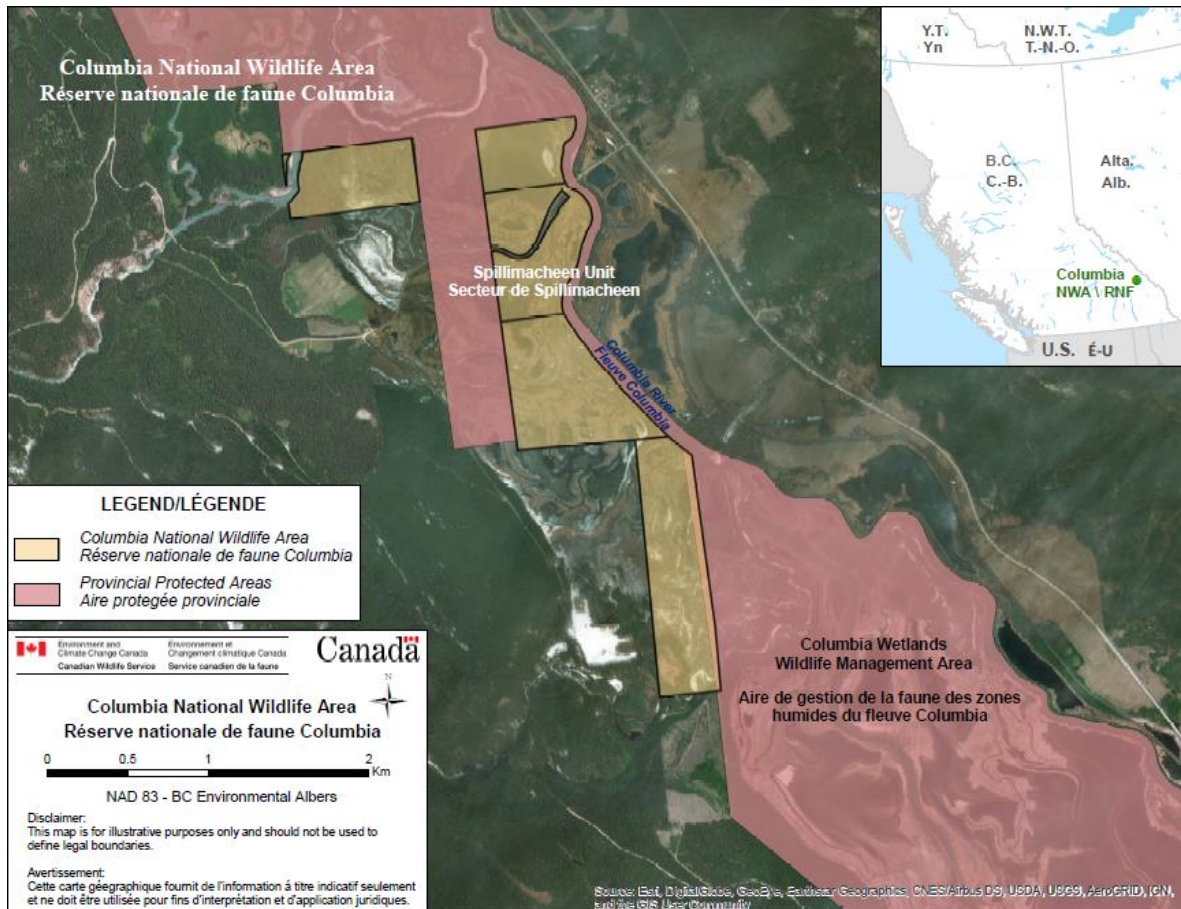


Figure 4: Spillimacheen Unit

- 4. Harrogate Unit (Figure 5):** This most northern of the four units is located 54 km north of Invermere. Similar to the Spillimacheen unit, the Harrogate unit lies within the Dry Cool subzone (IDFdk5) of the IDF and contains primarily marsh, seasonal open water areas and sparse tree coverage. The surface title of this unit is held by The Nature Trust of BC, but leased to Environment and Climate Change Canada.

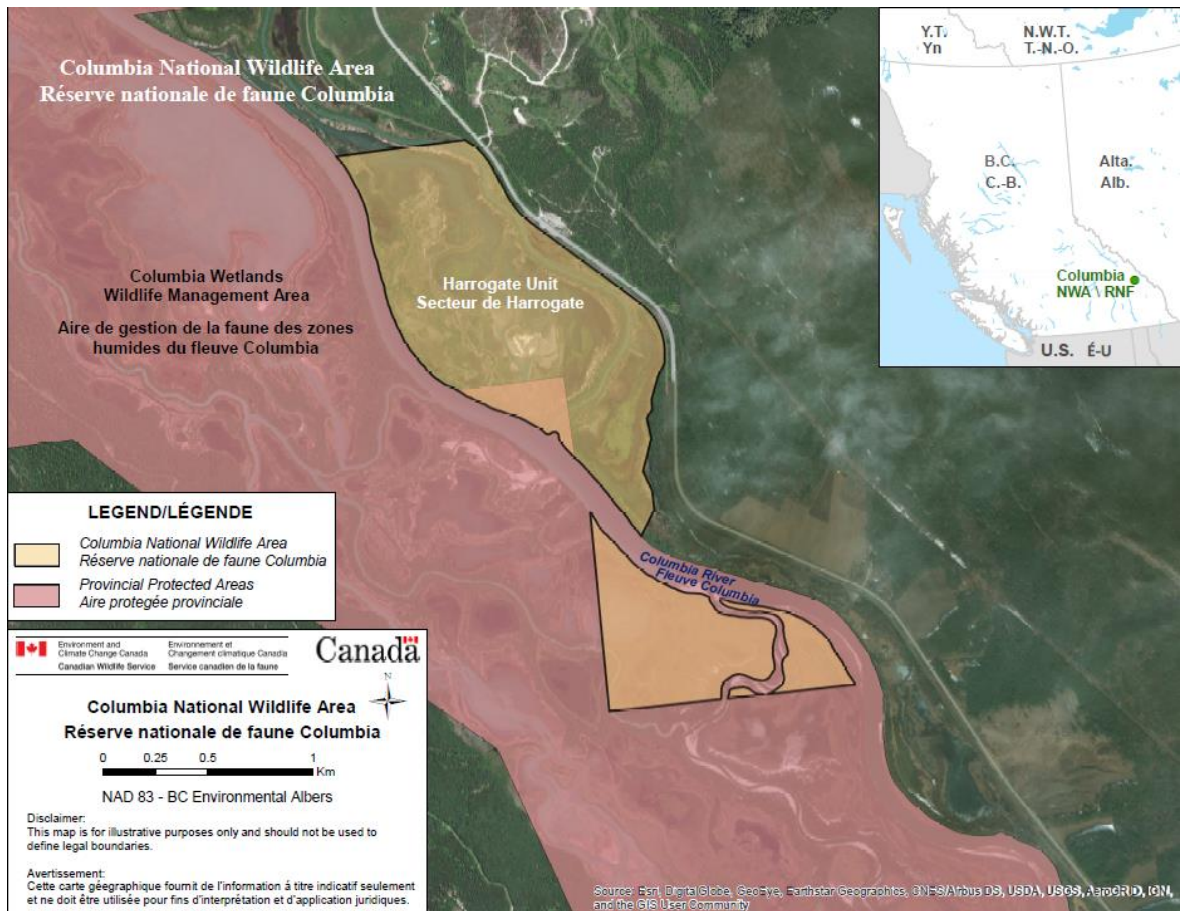


Figure 5: Harrogate Unit

Table 1: Columbia National Wildlife Area Summary Information

Protected Area Designation	National Wildlife Area
Province or territory	British Columbia
Latitude and longitude	50°49' N/ 116°16' W
Size (ha)	1,001 ha, comprised of four units: Wilmer, Spillimacheen, Brisco and Harrogate
Protected Area Designation Criteria	<p>Historic: Maintain pristine, unaltered marsh habitat complex for marsh-dependent waterbirds and migratory waterfowl</p> <p>Current: Criterion 2a – “<i>The area supports an appreciable fauna assemblage of rare, vulnerable, threatened or endangered species</i>”.</p> <p><u>For this NWA:</u> The wetlands within the NWA contain key areas for migrating waterfowl as well as valuable habitat for breeding birds and other wildlife, including species at risk.</p>
Provincial Protected Area Classification System	Category A (high) – species or critical habitat conservation (Environment Canada, 2005)
International Union for Conservation of Nature (IUCN) Classification	Category Ib – Wilderness area
Order in Council Number	SOR 78-408
Directory of Federal Real Property (DFRP) number	<p>16096 (Wilmer Marsh Unit) 16097 (Harrogate Unit) 32051 (Brisco Unit) 67563 (Spillimacheen Unit)</p> <p>http://www.tbs-sct.gc.ca/dfrp-rbif/query_question/number_numero-eng.aspx</p>

Gazetted	1978 to 1984
Additional designations	<ul style="list-style-type: none"> • Part of the Columbia Wetlands Ramsar site • Adjacent to the established Columbia Wetlands Wildlife Management Area (Province of BC) • Located within the Canadian Intermountain Joint Venture (CJIV) area of the North American Waterfowl Management Plan (NAWMP)
Faunistic and floristic importance	<p>Classed as 3M (important migration habitat for waterfowl) in Canada Land Inventory mapping.</p> <p>Rare plant communities (identified by the B.C. Conservation Data Centre as red- or blue-listed): black cottonwood / red-osier dogwood / nootka rose; bluebunch wheatgrass / junegrass; swamp horsetail / beaked sedge; common cattail marsh</p>
Invasive species	Canada thistle, common dandelion, perennial sow-thistle
Species at Risk (Schedule 1)	<p>Confirmed: Western toad, western painted turtle, Lewis's woodpecker, olive-sided flycatcher, common nighthawk, American badger, grizzly bear, peregrine falcon</p> <p>Suspected: Northern leopard frog, little brown myotis</p>
Management agency	Environment and Climate Change Canada - Canadian Wildlife Service
Public access and use	Non-motorized boating and horsepower, restricted boating occurs in the adjacent WMA wetlands and main stem, respectively. All boating is currently prohibited within the NWA. All-terrain vehicles are strictly prohibited within the NWA. Some seasonally accepted activities such as hiking, and wildlife viewing on designated areas.

1.1 Regional Context

The NWA is part of an area known as the Columbia Wetlands, which are located in the Southern Rocky Mountain Trench in the East Kootenay region of BC. The Columbia Wetlands consist of a vast network of wetlands stretching along 180 km of the upper Columbia River from Canal Flats to Donald, BC. This slow-flowing, meandering section of

the Columbia River makes its way north from its outlet on Columbia Lake to Donald Station forming extensive wetlands over more than 27,430 ha of the Rocky Mountain Trench.

As part of the Columbia Wetlands, the NWA exists within a collection of provincial, municipal and private lands. Potential human activities in the surrounding landscape that may have an impact on the NWA include increased residential development, and growth in agricultural and recreational activities (mountain bikes, ATVs, powered boats).

Along with other nearby protected areas including the provincial Columbia Wetlands Wildlife Management Area (WMA) and various privately held lands, the NWA plays a crucial role in the effort to preserve this spectacular wetland ecosystem. Organizations such as Wildsight (www.wildsight.ca), Friends of the Columbia Wetlands, and other members of the Columbia Wetlands Stewardship Partners (www.cwsp.ca), which include representatives from the CWS, Parks Canada, provincial government, The Nature Trust of BC and other non-governmental organizations (NGO's) and First Nations, support various restoration initiatives and guide many of the scientific projects throughout the wetland complex.

1.2 Historical Background

Prior to European settlement, the valley was inhabited by two First Nations groups: the Kinbasket Shuswap and the Ktunaxa. The Shuswap Nation were semi-nomadic hunters whose territory stretched from the Rocky Mountains to the Fraser River. Seasonally, they fished for salmon along the northern reaches of the Columbia River (CWS, 1986).

The Ktunaxa (Kootenay) people, on the other hand, were resident to the area with roots dating back to at least 12,000 BC. They were a hunter-gatherer society with a long history of inter-tribal trade in interior BC as well as east of the Rockies with tribes such as the Blackfoot and Cree Nations (Cross River Wilderness Center, 2012). Along with local sources of food such as salmon from the Columbia River and local plants, the Ktunaxa also maintained a buffalo hunt up to three times a year, a journey which took them through the steep mountain passes and into the prairies of Alberta (CWS, 1986).

The majority of Ktunaxa Nation citizens originate from the Ktunaxa or Kootenai culture. However, the Nation also includes descendants of the Kinbasket family, a small group of Shuswap people who journeyed east from Shuswap territory in the mid-1800's into Ktunaxa territory looking for a permanent home. The Shuswap Band are speakers of the Secwepemc language, a division of the Salishan linguistic stock. Ktunaxa leadership allowed the Shuswap Kinbasket people to stay in Ktunaxa territory where they eventually settled in the Invermere area and became members of the Ktunaxa Nation.

Due to the geographic seclusion of the area, the Ktunaxa were among the last tribes in Canada to make contact with early European settlers. It was not until members of the Ktunaxa themselves crossed the Rocky Mountains with furs for trade that they finally met with David Thompson, an explorer and map maker for the North West Fur Company near the present site of Fort Edmonton (Ktunaxa Nation, 2005). This initial meeting set the stage for what would become a prosperous fur trade in the region. In 1807, Thompson made the trek across the Rockies to establish the Kootenae House trading post close to modern-day Invermere. For years after, the fur trade remained the sole industry in the area allowing the Ktunaxa and Scwepmecw (Shuswap) to maintain a traditional way of life.

A major change occurred in 1864 with the discovery of gold in Finlay and Wild Horse creeks leading to the Kootenay Gold Rush and its associated influx of prospectors from the south (Ktunaxa Nation, 2005). Settlers took up residence along the Columbia River Valley bringing with them a new way of life. Kootenay National Park was established in 1920 and the townsite of Radium Hot Springs was established in 1923. With the beginning of the construction of the Grand Coulee Dam in 1933, the last run of Chinook Salmon (*Oncorhynchus tshawytscha*) made its way up the Columbia River to Columbia Lake putting an end to one of the last remaining traditional sources of food for the Ktunaxa people (Cross River Wilderness Center, 2012).

Steamboats operated on the upper reaches of the Columbia River from about 1886 until 1920. Steam navigation was used by tourists, miners, hunters, mail carriers and settlers as the best means of accessing the Columbia Valley at that time. Steamboat service required considerable maintenance to keep operation, mainly clearing sunken log jams, snags and sweepers from the river, which caused large delays. Steamboat activity began tapering off starting about 1915 when railroad construction increased.

The expansion of the Canadian Pacific Railway opened the doors to mining and forestry. Ranching also became popular in the late 1800s with other agricultural activities picking up in the 1900s as irrigation became more prominent. These industries brought with them a growing demand for residential development and recreational areas. As these demands increased, officials, recognizing the importance of the region's wetlands for migratory bird species, established a Provincial Game Management Reserve in 1947 (CWS, 1986).

In 1973, the CWS began acquiring property in the Columbia Wetlands for the purpose of protecting important waterfowl habitat from the pressures of residential development. In 1978, these lands became the basis for Wilmer NWA, which consisted of extensive marshes and shallow ponds typical of the area. Since then, the NWA has been extended to include three other units, Spillimacheen, Brisco and Harrogate, purchased between 1977 and 1984 by The Nature Trust of BC and leased to CWS. Together, these units make up the present day NWA.

Today a new way of life prevails in the Columbia Valley, one driven primarily by a mixed economy that includes tourism and recreation, with hiking, skiing, rafting and camping as common activities in the many parks and recreation areas that surround the valley. The region is also a hot spot for birding enthusiasts as each spring the valley welcomes the return of over 260 bird species to its extensive, internationally recognized wetlands. Resources such as mining and logging, while not the largest sectors, also contribute a significant amount to the economy in the area.

1.3 Land Ownership

The surface title of the Wilmer unit of the NWA is in the name of the federal government. The surface title of the other three units, Brisco, Spillamacheen and Harrogate, are held by The Nature Trust of BC, but leased to Environment and Climate Change Canada. The subsurface rights for all four units are held by the provincial government.

1.4 Facilities & Infrastructure

There are no public facilities within the NWA, although local public roads run through each of the units. At the Wilmer Unit, a fence has been erected along the eastern and western sides of Westside Road to manage illegal ATV use. An interpretive sign describing the goals and values of the NWA was erected by the Friends of the Columbia Valley on the Wilmer Unit on the east side of Westside Road. Assets that require funds to maintain upgrade or manage the property, and those that are the responsibility of the Friends of the Columbia Wetlands, are listed in Table 2.

Table 2: Facilities and Infrastructure in the Columbia NWA

Type of facility or infrastructure	Approximate Size	Responsibility holder or owner	Unit
Interpretive Sign 1. Wilmer 2. Spillimacheen	3x6"	Friends of Columbia Wetlands	Wilmer and Spillimacheen
Kiosks	N.D.	Friends of Columbia Wetlands	Wilmer
Fencing along east side of Westside Road	2 km	CWS	Wilmer
Fencing along west side of Westside Road	2 km	CWS	Wilmer
Fencing on western boundary	2 km	CWS	Wilmer

2. ECOLOGICAL RESOURCES

2.1 Terrestrial and Aquatic Habitats

The NWA is mostly wetland areas surrounded by shrubs and riparian habitats, and the uplands are comprised primarily of open coniferous forest. The NWA is centered

around the Columbia River floodplain and its associated wetland habitats. Areas of shallow open water habitat include large areas of emergent plants such as fennel-leaved pondweed (*Stuckenia pectinata*) and floating aquatic plants such as yellow pond-lily (*Nuphar lutea*). Marshes tend to be dominated by sedges such as water sedge (*Carex aquatilis*) and beaked sedge (*Carex utriculata*) in higher regions and swamp horsetail (*Equisetum fluviatile*) near permanently flooded areas. The blue-listed¹ swamp horsetail / beaked sedge (*Equisetum fluviatile* - *Carex utriculata*) and cattail (*Typha latifolia*) marsh communities potentially make up a portion of this habitat (Dawe et al., 2012).

Scrub willow thickets, dominated by willows, and wet meadows, made up of grasses such as redtop (*Agrostis gigantea*), occur along alluvial fans and levees close to the water line. Black cottonwood is the only tall tree species to inhabit these areas. Lowland deciduous forests can be found along river banks, natural levees and alluvial fans with the red-listed community black cottonwood / red-osier dogwood / nootka rose (*Populus balsamifera* ssp. *trichocarpa* / *Cornus stolonifera* / *Rosa nutkana*) possibly forming a part of this habitat unit. Black cottonwood, trembling aspen, interior hybrid spruce and paper birch (*Betula papyrifera*) are common tree species while understory shrub species include red-osier dogwood (*cornus stolonifera*), prickly rose (*Rosa acicularis*), and water birch (*Betula occidentalis*) (Dawe et al., 2012).

In addition to wetland habitat, the NWA contains closed-canopy stands of Douglas-fir with sparse understory of Rocky Mountain juniper (*Juniperus scopulorum*), kinnikinnick (*Arctostaphylos uva-ursi*), and pinegrass (*Calamagrostis rubescens*), that can be found along the northerly-facing slopes of draws and occasionally on terraces. In other areas with drumlinized till, fluvial terraces and eroded depressions of glacio-lacustrine deposits, the canopy opens into open Douglas-fir forests with a meager understory of common rabbit-brush (*Ericameria nauseosa*) and junegrass (*Koeleria macrantha*) with occasional

¹ Blue-listed refers to a species in B.C. that is of special concern, under the B.C. Wildlife Act and as defined by the Conservation Data Centre.

Nuttall's pussytoes (*Antennaria parviflora*) and field pussytoes (*Antennaria neglecta*). The relatively flat riverine terraces are home to dry grasslands featuring common rabbit-brush, Rocky Mountain juniper, junegrass and on southerly slopes, bluebunch wheatgrass (*Pseudoroegneria spicata*). The red-listed bluebunch wheatgrass / junegrass (*Pseudoroegneria spicata*-*Koeleria macrantha*) community may also form part of this habitat (Dawe et al., 2012).

2.2 Wildlife Species

The complex wetlands of the NWA provide important year-round and seasonal habitat for a wide variety of wildlife species. Established because of its importance to migrating waterfowl, the NWA is also known to provide habitat for upwards of 264 bird species (Simpson and Kelsall, 1978).

The NWA provides wetland habitat for breeding and migrating waterfowl. Aerial surveys of breeding waterfowl were conducted by the Canadian Wildlife Service in both 2001 and 2004, throughout the entire Columbia Wetlands. Results showed population estimates of 24,800 and 32,600 breeding birds in 2001 and 2004, respectively. The most abundant waterfowl species in the valley was mallard, followed by bufflehead, ring-necked duck and green-winged teal, while rivers and streams were dominated by mallard, scaup, ring-necked duck and bufflehead (CWS, unpublished data). Additional breeding surveys of the wetlands, conducted from a small boat in 2006, focused on finding floating and near-shore nests and females with broods. Floating nests (primarily grebes, coots and black terns) and several broods (primarily cavity-nesting ducks, including bufflehead, common goldeneye, common merganser, hooded merganser, and wood duck) were observed (Gillies, 2006).

The high migration value of the Columbia Wetlands in both the spring and the fall, including the four units of the Columbia NWA, has been documented by the Columbia Wetlands Waterbird Survey (CWWS) from 2015 to recent (Wildsight, 2017).

In the summer of 2004, surveys by Dawe et al. (2012) identified 4 species of fungi, 271 species of plants, 34 invertebrate species, 2 amphibian species, 1 reptile species, 112 bird species and 17 mammal species within the boundaries of the NWA. Of these species,

ten are listed in schedule 1 under SARA (see Section 2.3 below). Though this species count is impressive for a modestly-sized protected area, there are likely many other species that were not detected during this single-season survey. Other species have been recorded outside of the surveys done in 2004. Northern leopard frog was reintroduced in the Columbia marshes in 2013 adjacent to the NWA. Metamorphs of these individuals have since been observed on the NWA, though it has yet to be determined if the introductions were successful.

2.3 Species at Risk

Eleven sensitive species have been identified within the NWA, ten of which are listed on Schedule 1 of SARA (BC Conservation Data Centre, 2012; Dawe et al., 2012; Table 3). In addition, two potential Red-listed plant communities (black cottonwood / red-osier dogwood / nootka rose; bluebunch wheatgrass / junegrass) and two potential Blue-listed plant communities (swamp horsetail / beaked sedge; common cattail marsh) are known or expected to occur within the NWA (BC Conservation Data Centre, 2012; Dawe et al., 2012).

Table 3: Species at Risk in the Columbia National Wildlife Area

Common and Scientific Names of Species	Status			Presence (Confirmed or Suspected)
	Canada		British Columbia	
	COSEWIC ²	SARA ³	Provincial Ranking ⁴	
Mammals				
American badger <i>Taxidea taxus</i>	Endangered	Endangered	Red	Confirmed
Grizzly bear western population <i>Ursus arctos</i>	Special concern	Special concern	Blue	Confirmed
Little brown myotis <i>Myotis lucifugus</i>	Endangered	Endangered	Yellow	Suspected
Birds				
Common nighthawk <i>Chordeiles minor</i>	Special concern	Threatened	Yellow	Confirmed
Peregrine falcon <i>Falco peregrinus</i>	-	Special concern	-	Confirmed
Lewis's woodpecker <i>Melanerpes lewis</i>	Threatened	Threatened	Red	Confirmed
Olive-sided Flycatcher <i>Contopus cooperi</i>	Threatened	Threatened	Blue	Confirmed
Amphibians and Reptiles				
Western painted turtle – Intermountain-Rocky Mountain population <i>Chrysemys picta</i>	Special concern	Special concern	Blue	Confirmed
Western toad <i>Anaxyrus boreas</i>	Special concern	Special concern	Blue	Confirmed

² Federal *Species at Risk Act* (Species at Risk Public Registry, 2018)

³ Committee on the Status of Endangered Wildlife in Canada (COSEWIC, 2018)

⁴ British Columbia Wildlife Act (BC Conservation Data Centre, 2018)

Northern leopard frog <i>Rana pipiens</i>	Endangered	Endangered	Red	Suspected
Plants				
Hooker's townsendia <i>Townsendia hookeri</i>	-	-	Red	Confirmed
Lakeshore sedge <i>Carex lenticularis</i>	-	-	Blue	Confirmed
Nuttall's sunflower <i>Helianthus nuttalli</i> ssp. <i>rydbergii</i>	-	-	Red	Confirmed
Water marigold <i>Megalodonta beckii</i>	-	-	Blue	Confirmed

2.4 Invasive Species

Based on consultations and existing biological information for the NWA, invasive plants do not yet appear to be a major issue; however, invasive plant concerns have elevated significantly in the East Kootenays over the past decade. Both leafy spurge (*Euphorbia esula*) and knapweed (*Centaurea* sp.) are known to exist on the Wilmer Unit. Other invasive plants that may be an issue in future and should be considered during site visits include Canada thistle (*Cirsium arvense*), purple loosestrife (*Lythrum salicaria*), burdock (*Arctium minus*), common tansy (*Tanacetum vulgare*), hoary cress (*Cardaria draba*) and alyssum (*Berteroa incana*), wild caraway (*Carum carvi*), hounds tongue (*Cynoglossum officinale*), absinth wormwood (*Artemisia absinthium*), toadflax spp (*Linaria*). and hawkweed spp. (*Hieracium*).

3. MANAGEMENT CHALLENGES & THREATS

Recreational activities

Communities in the Rocky Mountain Trench, such as Invermere, have undergone rapid residential, agricultural and recreational growth since the NWA was formed. As a result, there is increasing pressure on the surrounding land base, particularly from recreational users of ATVs. The greatest impacts from this activity to date have been in the upland areas of the Wilmer Unit, where unfenced areas allow access for such vehicles. This activity compromises the ecological values of the NWA by degrading

sensitive grassland and parkland habitats, increasing the potential for introduction of invasive plant species, and directly affecting the habitat of rare species such as American badger and common nighthawk.

Mountain biking is prohibited within the NWA. Illegal mountain biking and the resulting unsanctioned trails are although a concern for similar reasons. Boat access to and from the NWA is prohibited.

Low impact activities such as hiking, wildlife viewing, and unauthorized access for canoeing have typically been less of a concern, although directing these activities to designated trails and viewing platforms would minimize development of unauthorized trails.

Hunting is prohibited within the NWA. Hunting occurs within the Columbia Wetlands on the adjacent provincial lands, and has been known to occur illegally within the NWA.

Invasive plants

Invasive plants have the potential to cause habitat degradation. Long-term monitoring will be essential in identifying potential issues with invasive plants.

Presence of old dump site

Historical use of a portion of the Wilmer unit as a dump site was assessed as part of the Federal Contaminated Sites Action Plan and remediation is largely completed (see Section 4 below). Illegal dumping in other areas of the Wilmer unit has also been known to occur.

Change in hydrological regime

Increasing pressures on the local water systems due to increasing population and industrial and agricultural activities may result in future changes to the hydrological regime of the Columbia Wetlands, including within the NWA.

Change in natural fire regime

Fire suppression has resulted in encroachment of forest into grassland habitats necessary for several species, and has increased wildfire fire risk by increasing forest fuels loads.

Others

Prospecting and resource extraction is a possible threat, both current and future. In recent years, prospectors have blazed trails and staked claims within the NWA. There are some potential threats from road traffic and the CP Rail line which runs adjacent to all units of the Columbia NWA. For example, train derailments causing spilled hydrochloric acid, potash and coal have occurred several times in the valley.

4. GOAL & OBJECTIVES

4.1 Vision

The long-term vision for the NWA is conservation: that is, to maintain habitat for the benefit of migrating waterfowl, species at risk and other wildlife species.

4.2 Goals and Objectives

The NWA was established to protect wetland habitats, particularly those of importance to waterfowl. Conservation priorities for the site have expanded over time to include species at risk and their habitats. The NWA is classified under the International Union for Conservation of Nature (IUCN) criteria for protected areas as a Category 1b protected area, which indicates that the NWA is to be managed as a 'wilderness area'.

The purpose of the goals and objectives is to maintain or create conditions that would occur under natural ecological processes. To achieve the overall conservation goal, the objectives for the NWA are as follows:

Goal: Marsh, riparian and upland habitat is maintained in a natural state, or restored for the benefit of wildlife, especially waterfowl, marsh-dependent water-birds, and species at risk.

Objective 1: Habitat degradation due to unauthorized access in upland areas, particularly in the Wilmer Unit, will not increase over time and 80% of degraded

areas where vehicle and bicycle access have been successfully curtailed will be restored to natural conditions (by 2026).

Objective 2: Populations of species at risk are managed for recovery as guided by SARA recovery documents.

Objective 3: The existing hydrological regime is maintained.

Objective 4: The water quality in the marshes is maintained and meets the Canadian Council of Ministers of the Environment (CCME) guidelines.

Objective 5: Riparian habitats, including mature black cottonwood stands, will not decrease in extent over time, particularly at Spillimacheen (by 2026).

Objective 6: 50% of upland habitat, particularly at Wilmer unit, will contain less than 25% canopy closure over the long term (by 2026).

Objective 7: 50% of upland habitat, particularly at Wilmer unit, will contain less than 5% downed woody material over the long term (by 2026).

Objective 8: The distribution and occurrence of invasive plant species in upland and marsh habitats do not increase over time (by 2026).

Objective 9: The dump site is cleaned up (by 2019).

Objective 10: Awareness of the ecological values and protection of the NWA is increased within the surrounding communities (by 2019).

4.3 Evaluation

Annual monitoring will occur within the constraints of available resources. The management plan will be reviewed five years after its initial approval and reviewed and updated every ten years thereafter. The evaluation will take the form of an annual review of monitoring data obtained from the monitoring and research projects outlined below. This monitoring will be used to establish priorities for action and resources.

5. MANAGEMENT APPROACHES

This section and the following table describe the management approaches that will be applied to the NWA. Specific actions will be determined during the annual work planning process and will be implemented as human and financial resources allow.

Table 4: Management approaches for the Columbia NWA

Management Challenge or Threat	Goal and Objectives	Management Approaches (Actions, Including Level of Priority) ¹
Habitat damage caused by ATV's, other off-road vehicles and mountain bikes	<p>Objective 1: Habitat degradation due to unauthorized access in upland areas, particularly in the Wilmer Unit, will not increase over time and 80% of degraded areas where vehicle and bicycle access have been successfully curtailed will be restored to natural conditions (by 2026)</p> <p>Objective 2: maintain species at risk populations</p> <p>Objective 8: no increase in invasive species</p>	<ul style="list-style-type: none"> • Enhance delineation of property with signs and fencing (Priority 1) • Focus pedestrian and bicycle use on designated trails engaging in discussions with local ATC and cycling groups such as the Columbia Valley Cycling Association and working with local conservation groups such as Wildsight (Priority 1) • Install barriers and additional markers/signs (Priority 1) • Increase local awareness by holding annual public open houses (Priority 1) • Increase site visits by enforcement personnel (Priority 1) • Monitor (Priority 1), control and management of invasive species (Priority 2) • Map and restore degraded areas (Priority 2) • Survey species at risk and participate in reintroductions initiatives (Priority 2) • Share habitat and wildlife values with Regional District planning staff to be incorporated into Official Community Plans and other planning documents (Priority 2).
Loss of natural hydrological regime	<p>Objective 3: existing hydrological regime is maintained</p> <p>Objective 4: water quality is maintained</p> <p>Objective 5: no decrease in riparian habitats, including mature black cottonwood stands</p>	<ul style="list-style-type: none"> • Determine long-term trends in wetland composition and distribution (Priority 2) • Identify cottonwood-dominated areas with greatest decline or loss (Priority 2) • Maintain existing riparian vegetation, including black cottonwood stands (Priority 2) and intervene if necessary • Investigate the causes of riparian habitat loss (Priority 2) • Monitor water quality (Priority 3)

Management Challenge or Threat	Goal and Objectives	Management Approaches (Actions, Including Level of Priority)¹
Loss of natural fire regime	<p>Objective 6: canopy closure is maintained to standards</p> <p>Objective 7:downed woody material is maintained to standards</p>	<ul style="list-style-type: none"> • Create a working group of local conservation organizations, the BC Wildlife Service, local First Nations communities and the Ministry of Forests, Lands, Natural Resource Operations, and Rural Development to conduct a prescribed burn on the NWA as a regular management tool (Priority 1) • Assess natural/ideal forest structure (Priority 2) • Establish stand closure and fuel loading targets (Priority 2) • Maintain an open forest dominated by mature trees and open parkland (Priority 2)
Increased potential of introduction of invasive plants	Objective 8: no increase of invasive species in upland and marsh habitats	<ul style="list-style-type: none"> • Monitoring, control and management of invasive species (Priority 2)
Illegal Dumping	<p>Objective 9: the dump site is cleaned up</p> <p>Objective 10:increased awareness of the ecological values and protection of the NWA</p>	<ul style="list-style-type: none"> • Complete final steps in cleanup of dump site (Priority 1) • Increase site visits by enforcement personnel (Priority 1) • Enhance delineation of property with signs and fencing (Priority 1)
Illegal Hunting	Objective 10: increased awareness of the ecological values and protection of the NWA	<ul style="list-style-type: none"> • Enhance delineation of property with signs and fencing (Priority 1) • Increase site visits by enforcement personnel (Priority 1) • Distribute pamphlets to nearby population (Priority 2)

¹ Level of Priority: 1 (from 0 to 3 years); 2 (from 4 to 6 years); 3 (from 7 to 10 years)

5.1 Habitat Management

5.1.1 Wetlands

Wetlands will be managed in order to maintain the existing hydrological regime and water quality, and to control or eliminate invasive species. Direct management of the hydrological regime may not be necessary in the near-term, but potential future interventions must be conducted in close cooperation with NGOs and other agencies with an interest or regulatory responsibility in the Columbia Wetlands. Water in the marshes will be monitored every five years to ensure its quality meets the Canadian Council of Ministers of the Environment guidelines.

To date, invasive plant species have not been an issue in NWA wetlands, but invasions in other areas of the East Kootenay emphasize the need for regular monitoring, and management action, if warranted. Long-term trends in wetland composition and distribution will be assessed every five years and actions will be taken as required. If invasive species become an issue, an invasive plant management program may be developed.

5.1.2 Riparian and Cottonwood Areas

For management of riparian and cottonwood areas, we will engage community volunteers to participate in habitat management initiatives and to help identify and reach rehabilitation targets.

Maintenance of existing riparian vegetation, including significant mature Black Cottonwood stands (particularly at Spillimacheen), is a priority of the management plan. Similar to the preceding discussion on wetlands, ensuring that the existing hydrological regime is maintained is key to protecting riparian habitats. Cottonwood-dominated areas with greatest decline or loss will be identified with habitat mapping and site visits and will help direct and prioritize habitat restoration activities. Factors in riparian habitat loss will also be identified. Where feasible, intervention to protect cottonwood stands and riparian areas and maintain natural conditions may be necessary if significant threats are identified (e.g., beavers and possible fires from camp fires in the area).

5.1.3 Upland Habitats

For management of upland habitats, engagement of local volunteers and partners as identified in Section 5.1.2 above will also help participate in management of upland habitats.

Upland habitats, including treed areas particularly at the Wilmer unit, will be maintained and restored to mimic an ecosystem defined by periodic low-intensity fires. An open forest dominated by mature trees and open parkland will be maintained. In order to achieve this, a natural/ideal forest structure will be assessed taking into considerations species needs. Stand management will be undertaken where required. Stand closure and fuel loading targets will be also developed based on provincial standards to reduce the risk of catastrophic fire. Prescribed burning will be considered with appropriate conversation, coordination and safety measures.

Of all habitats within the NWA, upland habitats have been subject to the greatest degree of disturbance and degradation. Some efforts have been made to control ATV access into sensitive upland areas with limited success. More effective access control measures along with more consistent efforts at monitoring intrusions will be essential to reducing the current trend and minimize habitat degradation. Site visits by enforcement personnel will be increased to four times per year and/or support could be given to local government in monitoring the NWA. Habitat degradation due to ATVs also increases the likelihood that invasive plant species will become established.

The boundary of the NWA will be better marked to minimize conflicts with recreational and other users and support enforcement activities in the area. Barriers and additional markers/signs restricting access to vehicle and bicycles will be installed.

Management of other recreational activities within the NWA (e.g., mountain biking) also needs to be considered. For example, an additional two kilometers of fencing will be installed at the Wilmer unit. Natural barriers (e.g., deadfall, large boulders) will also be used to prevent use of unauthorized bicycle trails. Signage will be installed to attempt to focusing bicycle use on designated trails.

For more passive uses, such as hiking and wildlife viewing, establishment of designated formal trails (e.g., trail to Ritchie's Point) and viewing areas, with educational signage, will likely reduce development of trails in other areas of the NWA.

Local awareness of ecological values of the NWA will be enhanced by holding annual public open houses and by soliciting feedback. Pamphlets will also be distributed to the nearby communities.

A damage assessment and restoration plan, including maps, will be prepared for all areas degraded by unauthorized activities

The dump site is in the final stages of being cleaned-up and remediated as part of a Federally Contaminated Site Assessment. Debris removal from uplands and marsh and the installation of a fence and signage has been completed. Final clean-up will be completed over fiscal year 2018-2019.

5.2 Wildlife Management

As of 2016 the greatest threat to wildlife, including species at risk, within the NWA is habitat degradation due to unrestricted and uncontrolled access by ATV vehicles. Endangered and threatened species such as American badger and common nighthawk may be directly affected by this activity. Completion of fencing and physical barriers to restrict vehicle access will greatly reduce wildlife management issues on the site.

A thorough species at risk survey will be conducted in the first years of the implementation of this management plan and will be done again every five years to document occurrence, trends and management needs.

Hunting occurs occasionally within the NWA, but may be due to lack of awareness of boundaries between NWA and the provincial's Wildlife Management Areas (where hunting is permitted). Better education and posting of property boundaries should reduce inadvertent hunting in the area.

Some opportunities exist to enhance extirpated populations of species at risk (e.g., leopard frog). Where these opportunities exist, participation in reintroduction and other management efforts will be important.

5.3 Monitoring

Effective and efficient monitoring requires careful planning and a coordinated approach. Monitoring will be carried out in a manner that contributes to meeting SARA recovery strategy and action plan objectives. Ongoing monitoring needs are as follows:

1. Habitat composition and distribution using existing habitat mapping or by updating the Terrestrial Ecosystem Mapping tool as a baseline condition to which future changes can be compared;
2. Waterfowl distribution and abundance with an assessment of habitat correlates;
3. Species at Risk distribution and abundance;
4. Water quality once every five years;
5. Invasive plant species every five years in all units to document and map invasive species occurrences and distribution;
6. Mature cottonwood stands health;
7. Riparian habitat health;
8. Illegal public trespassing and property boundaries;
9. Degraded areas and damage, including restored habitats and success;
10. Composition of floral and faunal communities to document changes in the occurrence, distribution and viability of rare species and ecosystems (every five years).

5.4 Research

Research activities will be considered for permitting where the results of the research support management plan objectives and the research methods have a low impact on the environment. Research that does not directly contribute to management of the NWA, but which is of scientific merit, may also be permitted. Areas of specific interest to CWS include:

1. Protecting, maintaining, restoring or enhancing naturally occurring habitats;
2. Understanding the causes of riparian habitat loss potentially related to a lack of recruitment, beaver activity, changes to the hydrological regime;
3. Understanding fuel loads and fire regime assessment in order to better understand risk from wildfire and feasibility and effects of prescribed burning;
4. Recovering species at risk or conserving migratory birds, particularly waterfowl;
5. Reducing the encroachment of invasive species in the NWA;
6. Assessing the trends in species populations (especially species at risk) and habitats of concern; and
7. Maintaining wetlands in a state most beneficial to wetland-dependent wildlife.

To obtain a permit to conduct research in the NWA and to receive instructions concerning guidelines for a research proposal, please contact:

Environment and Climate Change Canada – Canadian Wildlife Service
Pacific and Yukon Region
5421 Robertson Road
Delta, British Columbia V4K 3N2
604-350-1900

5.5 Public Information & Outreach

Public access for recreational purposes to the majority of the NWA is subject to the federal Wildlife Area Regulations and is generally not permitted. An authorized interpretive sign was constructed by the Friends of the Columbia Wetlands at the Wilmer unit off of the Westside Road to provide information on the ecology and sensitivity of the area.

An annual public meeting and regular correspondence with NGOs, government agencies and individuals with an interest in the NWA would help support habitat management goals and objectives. Education and outreach should focus on emphasizing

the ecological values of the NWA and reducing unauthorized and ecologically harmful, motorized vehicle access.

6. AUTHORIZATIONS AND PROHIBITIONS

In the interest of the wildlife and their environment, human activities are minimised and controlled in NWAs through the implementation of the Wildlife Area Regulations. These regulations set out activities that are prohibited (subsection 3(1) of the regulations) in the wildlife area and provide mechanisms for the Minister of the Environment to authorize certain activities to take place in NWAs that are otherwise considered prohibited. The regulations also provide the authority for the Minister to prohibit entry into NWAs.

Activities within a NWA are authorized where notices have been posted at the entrance to or along the boundaries of the NWA or when notices have been published in local newspapers. All activities in a NWA are prohibited unless a notice has been posted or published authorizing the activity to take place. However, in addition to notices, certain activities may be authorized by obtaining a permit from the Minister of Environment.

6.1 Prohibition of Entry

Under the Wildlife Area Regulations, the Minister may publish a notice in a local newspaper or post notices at the entrance of any wildlife area or on the boundary of any part thereof prohibiting entry to any wildlife area or part thereof. These notices can be posted when the Minister is of the opinion that entry is a public health and safety concern or when entry may disturb wildlife and their habitat.

Limited entry is permitted on foot. Motorized vehicles, bicycles, and horses are prohibited in the NWA.

6.2 Authorized Activities

The NWA is generally closed to public access; however, certain activities are authorized with or without special restrictions providing that they do not result in negative impacts to the conservation values of the area.

For the NWA, notices authorizing the following activities will be posted on-site (in the vicinity of the Wilmer Kiosk and the Spillimacheen and Brisco bridge) and/or published in the local media.

All activities have special restrictions. Authorized activities with special restrictions:

- Wildlife viewing on foot only.

Motorized vehicles, bicycles, and horses are prohibited in the NWA.

Note: If there is a discrepancy between the information presented in this document and the notice, the notice prevails as it is the legal instrument authorizing the activity.

6.3 Authorizations

Permits and notices authorizing an activity may be issued only if the Minister is of the opinion that the activity is scientific research relating to wildlife or habitat conservation; or the activity benefits wildlife and their habitats or will contribute to wildlife conservation; or the activity is not inconsistent with the purpose for which the NWA was established and is consistent with the most recent management plan.

The Minister may also add terms and conditions to permits in order to minimize the impact of an activity on wildlife and wildlife habitat.

All requests for permits or authorizations must be made to the following address:

Environment and Climate Change Canada – Canadian Wildlife Service
Pacific and Yukon Region
5421 Robertson Road
Delta, British Columbia V4K 3N2

For further information, please consult the Environment and Climate Change Canada Policy when Considering Permitting or Authorizing Prohibited Activities in Protected Areas Designated Under the Canada Wildlife Act and Migratory Bird Convention Act, 1994 (December, 2011). This policy document is available on the protected areas website at <https://www.canada.ca/en/environment-climate-change/services/wildlife-habitat.html>.

6.4 Exceptions

The following activities will be exempt from the requirements for permitting and authorizations:

- Activities related to public safety, health or national security, that are authorized by or under another Act of Parliament or activities that are authorized under *Health of Animals Act* and the *Plant Protection Act* to protect the health of animals and plants; and
- Activities related to routine maintenance of NWAs, to the implementation of management plans, and enforcement activities conducted by an officer or employee of Environment and Climate Change Canada.

6.5 Other Federal and Provincial Authorizations

Depending on the type of activity, other federal or provincial permits or authorizations may be required to undertake an activity in this NWA.

Contact your regional federal and provincial permitting office for more information.

7. HEALTH & SAFETY

In the case of environmental emergencies, contact will be made with the Canadian Environmental Emergencies Notification System at 1-800-663-3456.

All reasonable efforts will be made to protect the health and safety of the public including adequately informing visitors of any known or anticipated hazards or risks. Further, Environment and Climate Change Canada staff will take all reasonable and necessary precautions to protect their own health and assure safety as well as that of their co-workers. However, visitors (including researchers and contractors) must make all reasonable efforts to inform themselves of risks and hazards and must be prepared and self-sufficient. Natural areas contain some inherent dangers and proper precautions must

be taken by visitors, recognising that Environment and Climate Change Canada staff neither regularly patrol nor offer services for visitor safety in National Wildlife Areas.

Table 5: Emergency Contacts for Columbia National Wildlife Area

Emergency contacts for Columbia NWA (50°49'N, 116°16'W)	Phone Number
Police	1 250 342 9292
Public safety	1 250 342 4260
Report All Poachers and Polluters (RAPP) program	1 877 952 7277
Environmental Emergencies: Environment and Climate Change Canada	1 888 283 2333
Forest Fires; and local authorities (police or fireman)	1 250 342 3200

8. ENFORCEMENT

Active on-the-ground management and/or periodic enforcement are required to prevent disturbance and degradation of habitats within the NWA. The goal with respect to enforcement is to reduce or eliminate unauthorized access and uses, particularly in the upland areas of the Wilmer Unit. In order to accomplish this goal it will be necessary to clearly delineate property boundaries using signage, install barriers to prevent access by vehicles and bicycles, designate specific trails for recreational use, and increase the frequency of surveillance, monitoring and enforcement.

The management of NWAs is based on three acts:

- *Migratory Birds Convention Act, 1994, and Migratory Birds Regulations*
- *Canada Wildlife Act and Wildlife Area Regulations*
- *Species at Risk Act*

Each of these three acts prohibit several activities on CWS conservation holdings. Increasing the frequency of visits for the region is required to adequately manage the properties, especially at the Wilmer Unit where unrestricted ATV access is causing damage to sensitive habitats.

9. PLAN IMPLEMENTATION

The management plan will be implemented over a 10-year period. Annual work plans will be developed in accordance with priorities and budgets and the details of management plan implementation will be developed through Environment and Climate Change Canada's annual work planning process and will be implemented as human and financial resources allow. An adaptive management approach will be favoured for the implementation of the management plan. The implementation of the plan will be evaluated five years after its publication, on the basis of the actions identified in Table 6.

Table 6: Implementation Strategy Timeline

Activity	2018	2019	2020	2021	2022	2023	2024	2025	2026
Determine long-term trends in wetland composition and distribution			X						
Development or acquirement of a habitat map of the properties		X							
Completion of a boundary surveys				X					
Erection of boundary signs (to reduce inadvertent access and hunting)		X	X	X					
Erection of notifications at designated access points		X							
Designation of trails for passive use		X							
Identification of cotton-wood dominated areas with greatest decline or loss			X						
Investigation of causes of riparian habitat loss			X						
Assessment of natural/ideal forest structure			X						
Establishment of stand closure and fuel loading targets		X							
Documentation and mapping of habitat degradation due to unrestricted vehicle access		X							
Installation of fencing independently or in cooperation with other agencies, at the Wilmer Unit to manage unrestricted ATV access			X						
Creation of natural barriers to prevent use of unauthorized bicycle trails	X	X							
Completion of cleanup of dump site		X							
Coordination of management		X							

activities with local conservation stakeholders including NGOs and residents									
Public open house		X	X	X	X	X	X	X	X
Surveying and mapping of invasive plant species occurrence and distribution				X				X	
Monitoring of water quality					X				X
Surveying and mapping of rare species and ecosystems		X							X
Monitoring waterfowl distribution and abundance		X		X		X		X	

9.1 Management Authorities & Mandates

CWS Pacific Region is responsible for site management of the NWA.

9.2 Management Plan Review

This management plan will be reviewed and updated five years after formal approval by Environment and Climate Change Canada, and every ten years thereafter. Significant new information may be appended to the document as required, to aid in site management and decision making.

10. COLLABORATORS

Environment and Climate Change Canada will collaborate with the Government of British Columbia, who manage lands adjacent to the Columbia National Wildlife Area, to ensure that management approaches are compatible and mutually supportive.

Collaboration with local agencies and sector organizations will contribute to the protection and conservation of wildlife species and their habitats in the NWA.

Environment and Climate Change Canada will also collaborate with the Ktunaxa-Kinbasket, and Secwepmecw (Shuswap) First Nations in the management of the NWA, for example, through collaborative implementation of controlled burns.

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