Ecosystem Enhancement Program

Columbia Valley Sub-Region Ecological Priorities

The following ecosystem priorities were identified through a review of regional plans and research and by seeking input from community groups, First Nations representatives, government agencies, and subject matter experts. Priorities are listed in random order; no ranking is intended. Species, habitats, and processes are not limited to those listed below.

Aquatic		
Conservation, restoration, and enhancement of aquatic habitat		
Priority Habitat	*Priority Species*	*Priority Processes*
• rivers and tributary streams that support rearing, spawning, overwintering, foraging from valley bottom to upper basin headwaters • mainstem spawning • cold water refugia • lakes and ponds • lake foreshore • shallow open water • alluvial fans and creek mouths • perched ponds • groundwater-surface water interface (warm water spring; mineral springs; cold water source)	• native fish (Westslope Cutthroat Trout, Burbot, Bull Trout, Burbot, Kokanee, Columbia Sculpin, Sculpin spp., Dace, whitefish) • waterbirds (American Avocet, Horned Grebe, Eared Grebe, Western Grebe, Marsh Wren, Double breasted Cormorant, American White Pelican), Black Swift. • freshwater mussels • invertebrates	• fish passage • connectivity • water availability • water temperature and quality (nutrients, turbidity) • productivity • geomorphic processes (erosion, sedimentation, levees, large woody debris, gravel recruitment) • habitat complexity (large woody debris, gravel, rocks, sediment) • invasive plant management
Wetland/Riparian		
Conservation, restoration and enhancement of wetlands and riparian areas		
Priority Habitat	*Priority Species*	*Priority Processes*
• low elevation wetlands • floodplain ecosystems • cottonwood stands • mid elevation riparian habitats and benchland wetlands • steep-sided clay banks • interconnected floodplain wetlands • breeding and nesting areas • migratory stopover sites • rare plant communities	• western toad • Columbia spotted frog • northern leopard frog • western painted turtle • migratory birds and waterfowl (American bittern, Great Blue Heron, Western Screech-Owl, Osprey, Long-billed Curlew, Swallows (all), Olive-sided Flycatcher, Virginia Rail, Sora, Pied-billed Grebe, Eared Grebe, American Coot, Sandhill Crane)	• wetland and floodplain connectivity • valley bottom to mountain top connectivity • hydrologic processes (filtering, recharge, flooding, storage) • geomorphic processes (erosion, levees, gravel, sedimentation, woody debris) • nutrient dynamics

	• bats • American beaver • muskrat • rare plants • macroinvertebrates	• wildlife movement and migration • beaver wetland creation • carbon storage • resiliency • biodiversity
Terrestrial		
Protection, enhancement and identification of corridors and linkage areas • Priority: Columbia Wetlands Spillimacheen- Brisco; Radium Corridor; and Columbia Lake Corridor.		
Conservation and restoration of upland habitats that support species at risk and focal species		
Priority Habitat	*Priority Species*	*Priority Processes*
• open forests and grasslands • mature aspen • mature riparian cottonwood • alpine and high elevation grasslands • climax grasslands • rare plant communities old growth forests • ungulate winter range • ice fields/glaciers • rock outcrops and caves • nesting and/or roosting sites • burrows or denning areas • hibernacula • wildlife trees and snags • mineral licks • calcareous rock / soils	• mountain caribou • grizzly bear • mountain goat • elk, mule deer, moose • bighorn sheep • wolf • bats • American badger • northern pocket gopher • porcupine • wolverine • Lewis' Woodpecker • Bobolink • Clark's Nutcracker • Common Nighthawk • Flammulated Owl • Short-eared Owl • Peregrine Falcon • rubber boa • whitebark pine • limber pine • huckleberry • rare plants • pollinators and other invertebrates • fungi	• valley bottom to mountain top connectivity • climate refugia • food web interactions (predator-prey, seed dispersal, pollination) • natural vegetation succession • natural fire regime • climate refugia • deciduous regeneration • genetic and structural diversity • resiliency
Cultural		
Protection and enhancement of Indigenous cultural values		
Priority Habitat	*Priority Species*	*Priority Processes*
• cultural use areas • riparian areas and wetlands • fisheries sensitive watersheds • berry habitat • old growth • grizzly bear habitat and connectivity corridors	• culturally significant and medicinal plants • furbearers • wide ranging carnivores • ungulates • species at risk • traditional fish food sources	• Indigenous knowledge and traditional practices • Indigenous-led conservation • Connectivity • Bioculture connections (traditional travel and trade routes

• fire maintained ecosystems • species at risk • ungulate winter range • caribou habitat • wildlife habitat areas (WHAs) and habitat features (WHFs) • biodiversity		• Maintenance of subsistence networks (Hunting, trapping and fishing) • Cultural heritage resources • Wildlife food resource conservation

Columbia Valley Subregion Emerging Issues

- Climate Change
- Invasive Species
- Imminent species/habitat decline
- Emergent and persistent diseases/pests
- Wildfire and fire management
- Recreation and access management
- Agriculture, grazing and range management
- Loss of snowpack and cold water creeks
- Water quality and availability
- Conifer encroachment on native grassland

Key References (Priorities and Emerging Issues):

CMI. 2023. Responsible Recreation: Pathways, Practices and Possibilities. Revelstoke, BC.

[CVRPI] Columbia Valley Recreation Planning Initiative.2024. Forster Landscape Unit – Inventory of Public Recreation Uses and Values DRAFT.

Craig, J. 2023. Kootenay Conservation Program: Conservation Priorities in the Kootenays.

Darvill, R. 2022. Kootenay Connect: Columbia Wetlands, Year 3 (2021-2022)- Conservation Planning for Species at Risk in the Columbia Wetlands.

Darvill, R. 2024. Lake Windermere Aquatic Invasive Plant Inventory 2023. Prepared for the Lake Windermere Ambassadors January 2024

[FWCP] Fish and Wildlife Compensation Program. 2023-2024. FWCP Columbia Region 2023–2024 Project List

Fish and Wildlife Compensation Program. 2019. Updated Columbia Region Action Plans: Reservoirs & Large Lakes, Rivers & Riparian Areas, Small Lakes, and Upland & Dryland.

Fish and Wildlife Compensation Program. 2021. Updated Columbia Region Action Plan: Wetland & Riparian Areas.

Gustafson, B. 2022. Summary of Biodiversity conservation Opportunities in the Columbia Valley, Assessing Private and Crown Lands for Landscape Level Conservation Initiatives (2021-

2022). Prepared for the Columbia Wetlands Stewardship Partners and the Kootenay Conservation Program.

[IUCN]. International Union for Conservation of Nature. 2020. Guidelines for conserving connectivity through ecological networks and corridors.

[KCP] Kootenay Conservation Program. Columbia Valley Local Conservation Fund Projects

Kootenay Connect. 2023. Kootenay Connect: Riparian Wildlife Corridors for Climate Change. Year 4 Summary Report.

Kootenay Connect. 2023. Kootenay Connect: 4CW Columbia Wetlands: restoration of habitats and Species at Risk in the Columbia Valley

KNC Forestry. 2022. Ktunaxa Forestry Standards Document For Forestry within ?AMAK?IS KTUNAXA.

Kootenay Conservation Program. 2017. Columbia Valley Priority Conservation Actions Summary Report.

MacHydro. 2023. Addendum: Gap Analysis for Area of Interest – CBWMF Expansion. Prepared for Living Lakes Canada

Mahr, M. 2020. Columbia Wetlands Stewardship Partners: Columbia Wetlands Conservation Action Framework 2020-2025.

Nott, A.H., Allen, D.M., and Neumann, N. 2023. Integrated Hydrological Model for Windermere Creek Watershed: Groundwater Dynamics and Connectivity

Parks Canada Agency. 2022a. Implementation Report: Multi-species Action Plan for Kootenay National Park of Canada (2017 – 2022). Species at Risk Act Action Plan Series. Parks Canada Agency, Ottawa. v + 18 pp.

Parks Canada Agency. 2022b. Kootenay National Park of Canada Management Plan.
Bayley, S., Darvill, R., Gustafson, B., Leven, C., and MacDonald, R. 2023. Kootenay Connect: 4CW Columbia Wetlands: Restoration of habitats Kaslo BC. 160pp.

Province of BC. Kootenay Boundary Land Use Plan Higher Level Plan Order.

Province of BC. 2024. Chronic Wasting Disease.

Village of Canal Flats and Regional District of East Kootenay. 2022. Columbia Lake Management Plan 2022.

Wood Canada Ltd. 2022. Columbia Lake Foreshore Integrated Management Planning – 2021. Report Prepared for Living Lakes Canada, Nelson, BC.