

PEACE REGION ACTION PLAN UPDATE

Draft Action Tables for Discussion

Introduction

Our ecosystem-based action plans identify priority actions eligible for FWCP funding that align with our vision, mission, and strategic objectives. The action plans guide decision-making by setting out the annual operating plan for each region. Since 2014 our current Peace Region Action Plans have guided more than \$7.1 million in project funding toward more than 114 projects. More at <http://fwcp.ca/region/peace-region/>.

We are working now to [update our Peace Region Action Plans](#) and are seeking input from a broad range of perspectives. Final updated action plans are scheduled for completion by August 2020, prior to our annual intake of grant applications.

Review our draft action tables

We have compiled draft action tables (attached) that include revised draft actions, draft objectives and sub-objectives, and a draft list of priority species for your review.

Draft Action Tables:

1. *Draft priority species list* – draft list of priority species in our Peace Region
2. *Cross-Ecosystem Draft Actions* – draft actions to address multiple ecosystems
3. *Rivers, Lakes and Reservoirs Draft Actions* – draft actions for aquatic ecosystems
4. *Riparian and Wetland Draft Actions* – draft actions for riparian areas and wetlands
5. *Upland Draft Actions* – draft actions for upland areas
6. *Objectives and sub-objectives* – see each action table for draft objectives and sub-objectives

The draft priority actions in each action table, along with the draft list of species, objectives and sub-objectives, were developed based on a [2019 strategic project review](#), a literature review, and early input from Indigenous Nations regional and provincial agencies, stakeholders, and subject matter experts.

You're invited: give us your feedback and suggestions by May 1, 2020

We invite your input on any aspect of our draft action tables and would appreciate answers to these questions:

1. What **actions** should be added, deleted or revised?
2. What changes would you suggest for the **priority** (i.e. 1, 2 or 3) assigned to each draft action? (see Setting priorities below)
3. What **species** should be added, deleted or moved between categories (e.g., recovery, focal or inventory)?
4. Do you have any comments on the draft **objectives or sub-objectives**?
5. Do you have any **other suggestions** for how we can improve our action plans?

Share your ideas during one of our upcoming online discussions (see next page for details) or use our [online feedback](#) form at <http://fwcp.ca/peace-region-action-plan-update/> until May 1, 2020.

Setting priorities

Each priority action in our draft action tables has been assigned a priority (i.e. priority 1, 2 or 3) based on the definitions below.

Priority	Definition of FWCP Priorities
1	Required urgently due to current/imminent threats, and/or highest priority for FWCP partners and stakeholders, and/or provide a significant benefit relative to cost.
2	Required due to current/imminent threats, and/or high priority for FWCP partners and stakeholders, and/or provide good benefit relative to cost.
3	Identified due to possible threats, and/or high priority for some FWCP partners and stakeholders, and/or benefit relative to cost may not be known.

Background

The [Fish & Wildlife Compensation Program](#) is a partnership between BC Hydro, the Province of BC, First Nations, Fisheries & Oceans Canada and Public Stakeholders to conserve and enhance fish and wildlife in watersheds impacted by existing BC Hydro dams.

Our Vision: Thriving fish and wildlife populations in watersheds that are functioning and sustainable.

Our Mission: We compensate for fish and wildlife in watersheds impacted by existing BC Hydro dams.

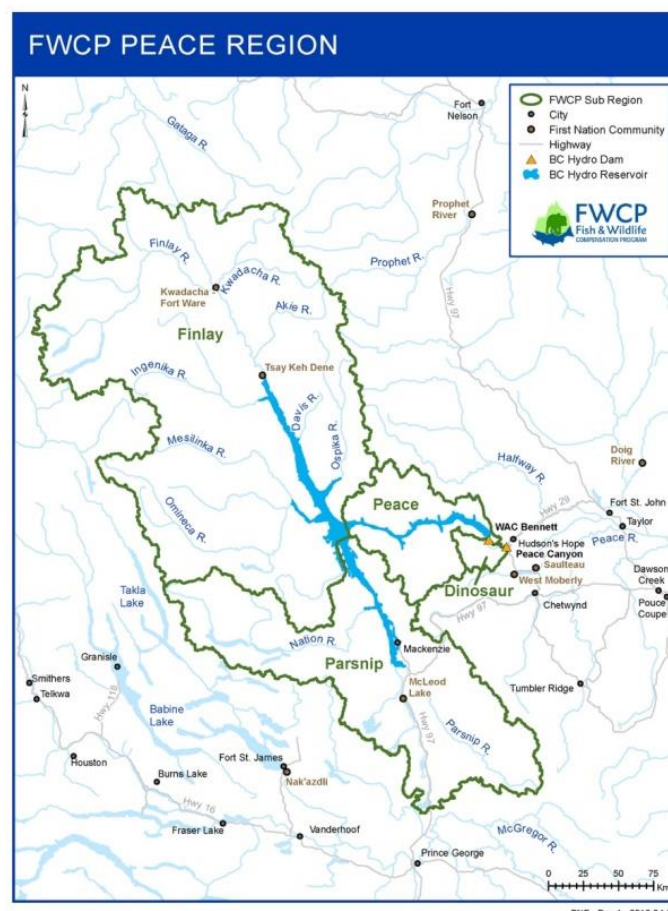
Strategic Objectives: Conservation, sustainable use, and community engagement.

The FWCP funds five types of actions (i.e. projects)

1. research & information-acquisition actions;
2. habitat-based actions;
3. species-based actions;
4. monitoring and evaluation actions; and
5. land securement actions.

The FWCP's Peace Region delivers projects in two ways: open projects and directed projects.

1. Open projects are funded through the FWCP's [annual grant application](#) intake process; and
2. Directed projects are undertaken via a procurement process (i.e., request for proposal, direct award, contribution agreement, etc.) to undertake specific projects.



Join the discussion

Due to public health concerns related to COVID-19 Coronavirus we have cancelled community-based, in-person discussions planned for April 2020 in Mackenzie, Hudson's Hope and Prince George. Instead we are offering more [online options to share our ideas about draft](#) actions and hear yours.

Contact us if you have questions: Chelsea Coady, FWCP Peace Region Manager
<mailto:chelsea.coady@bchydro.com> or 250-561-4884

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DRAFT Priority Species in the FWCP Peace Region

Species Category Definitions: Recovery, focal, and inventory categories are an indication of the state of knowledge for each species and not an indication of the priority level for each species.

Recovery Species: Recovery species are a high priority and conservation concern and have likely been adversely impacted by dam construction. These species have formally been classified as either threatened or endangered by Canada or B.C. and recovery and/or management plans have been developed by federal or provincial management agencies. Actions for recovery species align with recovery strategies and plans.

Focal Species: Focal species have a strong linkage to dam footprint impacts and are of regional high priority. At least some information related to population status, critical habitats and key limiting factors have been defined for focal species based on previous FWCP projects (e.g., through development of a monitoring framework), and therefore specific follow-up actions have already been developed. Actions for focal species should build upon previous FWCP projects with an aim to restore and/or enhance suitable habitats in the relevant ecosystems.

Inventory Species: Inventory species have also been affected by dams, but detailed inventory and/or trend monitoring is required to better understand population status, critical habitats and key limiting factors. Actions for inventory species should aim to provide the basis for future compensation actions, if required.

DRAFT Priority Species in the FWCP Peace Region

Peace Region Priority Species

Species Group	Priority Species	Provincial Listing	Federal Designation	Species Category	Ecosystem-based Action Plan		
					Rivers, Lakes & Reservoirs	Riparian & Wetland	Uplands ¹
Fish	Bull Trout	Blue	-	Focal	√		
	Arctic Grayling	-	-	Focal	√		
	Kokanee (native)	-	-	Focal	√		
	Kokanee (introduced)	-	-	Focal	√		
	Lake Trout	-	-	Focal	√		
	Rainbow Trout	-	-	Inventory	√		
	Burbot	-	-	Inventory	√		
	Dolly Varden	-	-	Inventory	√		
	Lake Whitefish	-	-	Inventory	√		
	Mountain Whitefish	-	-	Inventory	√		
	Pygmy Whitefish	-	-	Inventory	√		
	Brassy Minnow	-	-	Inventory	√		
	Northern Pikeminnow	-	-	Inventory	√		
	Minnow spp.	-	-	Inventory	√		
	Sculpin spp.	-	-	Inventory	√		
Sucker spp.	-	-	Inventory	√			

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					Rivers, Lakes & Reservoirs	Riparian & Wetland	Uplands ¹
Aquatic Invertebrates	Freshwater Mussels	-	-	Inventory	√		
	Freshwater Clams	-	-	Inventory	√		
	Freshwater Insects	-	-	Inventory	√		
	<i>Apatania comosa</i> : Tricoptera	-	-	Inventory	√		
	Zooplankton	-	-	Inventory	√		
Carnivores	Grizzly Bear	Blue	Special Concern	Inventory		secondary	primary
	Fisher	Blue	-	Focal		secondary	primary
	Wolverine	No Status	Special Concern	Inventory		secondary	primary
Ungulates	Caribou (Central Mountain Population)	Red	Threatened	Recovery			√
	Caribou (Northern Mountain Population)	Blue	Special Concern	Recovery			√
	Moose	-	-	Focal		primary	secondary
	Mountain Goat	Blue	-	Inventory			√
	Stone's Sheep	Blue	-	Inventory			√

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					Rivers, Lakes & Reservoirs	Riparian & Wetland	Uplands ¹
Small Mammals	American Water Shrew	Blue	Special Concern	Inventory		v	
Bats	Little Brown Myotis	Yellow	Endangered	Recovery		secondary	primary
	Northern Myotis	Blue	Endangered	Recovery		secondary	primary
	Additional Bat spp. (Big Brown Bat, Long-eared Myotis, Long-legged Myotis, Hoary Bat, Silver-haired Bat, Eastern Red Bat)	-	-	Inventory		secondary	primary
Amphibians & Reptiles	Western Toad	Yellow	Special Concern	Inventory		secondary	primary
	Long-toed Salamander	-	-	Inventory		secondary	primary
Breeding Birds	American Bittern	Blue	-	Inventory		primary	secondary
	Baltimore Oriole	Blue	-	Inventory		primary	secondary
	Barn Swallow	Blue	Threatened	Inventory		primary	secondary
	Black Swift	Blue	Endangered	Inventory		primary	secondary
	Black-throated Green Warbler	Blue	-	Inventory		secondary	primary
	Broad-winged Hawk	Blue	-	Inventory		primary	secondary

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					Rivers, Lakes & Reservoirs	Riparian & Wetland	Uplands ¹
Breeding Birds	Canada Warbler	Blue	Threatened	Recovery		primary	secondary
	Cape May Warbler	Blue	-	Inventory		primary	secondary
	Common Nighthawk	Yellow	Threatened	Recovery		primary	secondary
	Connecticut Warbler	Blue	-	Inventory		primary	secondary
	Eared Grebe	Blue	-	Inventory		primary	secondary
	Evening Grosbeak	Yellow	Special Concern	Inventory		primary	secondary
	Great Blue Heron, <i>herodias</i> subspecies	Blue	-	Inventory		primary	secondary
	Northern Goshawk, <i>atricapillus</i> subspecies	Blue	-	Inventory		secondary	primary
	Olive-sided Flycatcher	Blue	Threatened	Recovery		primary	secondary
	Rusty Blackbird	Blue	Special Concern	Recovery		primary	secondary
	Short-eared Owl	Blue	Special Concern	Recovery		secondary	primary

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					Rivers, Lakes & Reservoirs	Riparian & Wetland	Uplands ¹
Breeding Birds	Swainson's Hawk	Red	-	Inventory		primary	secondary
	Upland Sandpiper	Red	-	Inventory		secondary	primary
	Winter Wren	Blue	-	Inventory		secondary	primary
	Yellow Rail	Red	Special Concern	Recovery		secondary	primary
Culturally Important Species		-	-	Inventory, Recovery or Focal	√	√	√

CROSS-ECOSYSTEM OBJECTIVES

DRAFT FOR DISCUSSION PURPOSES ONLY

Strategic Objectives	Objectives	Sub-objectives
Conservation	<i>Maintain productive and diverse ecosystems</i>	<i>Maintain and/or increase resilience of aquatic and terrestrial ecosystems to habitat disturbances, including climate change and other cumulative effects</i>
	<i>Maintain or improve the status of priority species</i>	<i>Maximize the population viability of priority species</i>
		<i>Maximize the effectiveness of actions supported by FWCP</i>
Sustainable Use	<i>Maintain or improve opportunities for sustainable use</i>	<i>Maintain or improve the quality and availability of sustenance and recreational resources</i>
Community Engagement	<i>Maintain and improve opportunities for community engagement</i>	<i>Build, maintain and improve relationships with Indigenous Nations and local stakeholders that support conservation and sustainable use projects in the Peace Region</i>

CROSS-ECOSYSTEM DRAFT ACTIONS

DRAFT FOR DISCUSSION PURPOSES ONLY

This document provides a list of updated FWCP Peace Region priority actions and is intended to support discussions to update Action Plans.

Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maintain and/or increase resilience of aquatic and terrestrial ecosystems to habitat disturbances, including climate change and other cumulative effects								
1	Research & Information Acquisition	Framework to incorporate assessment of climate change into actions	1	Fish & Wildlife	Develop a framework for the FWCP Peace Region to incorporate elements of climate change into actions (e.g., research, habitat restoration, land securement and/or monitoring of fish and wildlife populations, ecosystems or habitats). Research associated with this action could include modeling and/or mapping of future potential effects of climate change to fish and/or wildlife populations and habitat in the Peace Region and to prioritize species or ecosystems most vulnerable to climate change impacts. Elements of this action should also be linked to the cumulative effects mapping actions that inform further prioritization of activities in each of the ecosystem-based action plans (Action #1 in each of the ecosystem-based action plans).	Increased understanding of climate change impacts on aquatic and terrestrial ecosystems in the Peace Region that would inform prioritization of actions and projects related to climate change (e.g., development and implementation of resiliency plans, land securement initiatives, restoration actions).	Directed	NEW ACTION
2	Land Securement	Prioritize land securement	2	Fish & Wildlife	Conduct a small-scale workshop for land securement partners to identify and prioritize areas for land securement. The workshop proposed in this action should be informed by Action #1 in the Cross-Ecosystem Plan and Action #1 in each of the ecosystem-based action plans related to mapping of values and risks to aquatic and terrestrial ecosystem health. Mapping actions are to be used to support prioritization of options for land securement, including working with the Province to update land designations such as Fisheries Sensitive Watersheds and Old Growth Management Areas.	Prioritize areas for land securement in coordination with other land securement partners.	Directed	NEW ACTION

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Maintain and/or increase resilience of aquatic and terrestrial ecosystems to habitat disturbances, including climate change and other cumulative effects								
3	Land Securement	Land securement	2	Fish & Wildlife	Land securement in association with partner organizations to address fish and/or wildlife conservation objectives or to support habitat-based actions proposed by the FWCP. This action is generally intended to follow Action #2, although new opportunities that arise independently can be considered. Land securement could address ecosystem function objectives across the Action Plans of Rivers, Lakes & Reservoirs, Riparian & Wetland, and Uplands. Priority habitats include riparian areas, wetlands, old growth forests, and important habitat features (e.g., bat or snake hibernacula, mineral licks).	Conserve, protect and restore ecosystem function and resilience through land securement .	Open	REVISED ACTION

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Maximize the population viability of priority species								
4	Research & Information Acquisition	Respond to emergent issues related to priority species	1	Fish & Wildlife	Support project work related to urgent and emerging issues for fish and wildlife species in the Peace Region such as emergent diseases, invasive species and recent or imminent species declines. The priority species list was generated based on current priorities and knowledge of conservation status in early 2020; thus, this action is intended to allow for work on additional species not yet identified as a priority species if an urgent issue is identified. Please contact the FWCP Peace Region Manager if you are considering a project to address an emerging threat to a species not currently identified as a priority species.	Provide support to organizations and/or initiatives aimed at addressing emergent or urgent conservation issues .	Open/ Directed	NEW ACTION

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Maximize the effectiveness of actions supported by FWCP								
5	Monitoring and Evaluation	Assess success of habitat and species based actions	1	Fish & Wildlife	Assess success of habitat-based or species-based Actions #3, #18, and #21 of the Rivers, Lakes and Reservoirs Plan, Actions #2, #3, #5, #7, #11, #12 and #14 of the Riparian & Wetland Plan or Actions #2, #4, #7, #12, #13, #14 and #16 in the Uplands Plan. Success could be assessed through monitoring of biological and/or physical habitat responses based on quantifiable performance measures. Success could be assessed on a graduated schedule such as every 1, 3, 5 and 10 years or based on high flow events or other natural or human-caused disturbances in the Peace Region. Projects would benefit from the incorporation of citizen science to collect data prior to and following the implementation of habitat-based actions.	Assess success of habitat and species based actions based on quantifiable performance measures , which can support future planning and prioritization	Open/ Directed	REVISED ACTION
6	Monitoring and Evaluation	Assess condition and maintain habitat enhancements	1	Fish & Wildlife	Conduct condition assessments and/or maintenance on habitat enhancements supported by the FWCP, such as in Actions #3, #18, and #21 of the Rivers, Lakes and Reservoirs Plan, Actions #2, #3, #5, #7, #11, #12 and #14 of the Riparian & Wetland Plan and Actions #2, #4, #7, #12, #13, #14, and #16 in the Uplands Plan. This could include the development of an inspection and maintenance schedule if required. If monitoring and maintenance activities are proposed for several years, information about future objectives and actions should be provided.	Maintain functioning of habitat enhancements supported by the FWCP	Open	NEW ACTION

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Maximize the effectiveness of actions supported by FWCP								
7	Monitoring and Evaluation	Monitoring framework with performance measures	2	Fish & Wildlife	Develop a monitoring framework with GIS-based and on-the-ground performance measures for the FWCP Peace Region that has strong interagency support and exchange of data. The performance measures should be cost-effective and address progress on the sub-objectives defined for the FWCP Peace Region and be potentially relevant to other FWCP regions. The monitoring framework should develop indicators with reference points that add to the measures developed in the Strategic Project Review (Regehr et al. 2019). Work under this action should also follow priority mapping actions in each ecosystem plan (Action #1 in each ecosystem plan).	Development of monitoring framework to evaluate performance of FWCP Peace Region program, including conservation status of priority species and achievement of sub-objectives	Directed	REVISED ACTION
8	Monitoring and Evaluation	Implement monitoring framework	2	Fish & Wildlife	Implement aspects of the monitoring framework described in Action #7 to evaluate performance of FWCP Peace Region, including conservation status of priority species and achievement of sub-objectives.	Monitor performance measures related to priority species or sub-objectives that can be used to prioritize further action.	Open/ Directed	NEW ACTION

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Maintain or improve the quality and availability of sustenance and recreational resources								
9	Research & Information Acquisition	Research culturally important species, incorporating Indigenous knowledge	1	Culturally Important Species	Work with Indigenous Nations and stakeholder communities to characterize culturally important plants and animals, indicators of aquatic and terrestrial ecosystem health (threats or stressors), and locations and methods for sustenance and recreational use enhancement. Work under this action should include incorporation of Indigenous knowledge to document priority species and habitats for further actions. See Actions #22 and 23 in the Rivers, Lakes and Reservoirs Plan, Actions #13 and 14 in the Riparian & Wetland Plan, and Actions #15 and 16 in the Uplands Plan for the implementation of follow-up actions for culturally important species in specific ecosystem types.	Support projects that work with Indigenous Nations and local stakeholders to identify opportunities to enhance culturally important species in freshwater and terrestrial habitats.	Open	REVISED ACTION
10	Research & Information Acquisition	Reservoir-related contaminant (e.g., mercury) monitoring	2	Fish & Wildlife	Develop a contaminant monitoring program to assess potential reservoir-related contamination (i.e., mercury, potential contaminants from flooded mines) levels in aquatic and terrestrial ecosystems. The issue of mercury methylation in aquatic habitats has been studied previously (see fwcp.ca/mercury, PF16-W02, CO94394); however, the impact of mercury and other reservoir-related contaminants on terrestrial species has been less studied (Crowley and Hodder 2017). Mercury levels may also change over time and should continue to be monitored. Work in aquatic habitats should follow high priority recommendations from the Williston-Dinosaur Watershed Fish Mercury Investigation Summary Report (Azimuth 2019, CO94394). Research conducted should be used to identify conservation, enhancement or mitigation actions for medicinal and sustenance priority species.	Assessment of potential reservoir-related contamination levels in priority species used medicinally and for sustenance.	Open/ Directed	REVISED ACTION

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Build, maintain and improve relationships with Indigenous Nations and local stakeholders that support conservation and sustainable use projects in the Peace Region								
11	Research & Information Acquisition	Conduct stewardship and education activities related to aquatic and terrestrial conservation in the Peace Region	2	Fish & Wildlife	Conduct stewardship & education activities related to aquatic and terrestrial conservation. Projects that fall under this category should have a high educational, volunteer and/or community engagement component. Example projects that align with this action include bird banding work that promotes education and volunteer support (PEA-F20-W-3144-DCA), or educational actions that promote learning within school systems whether K-12 (e.g., Williston School Ecology Program PEA-F20-W-2931) or college/university (e.g., UNBC Colloquium presentations PEA-F20-W-2952). Please contact the FWCP Peace Region Manager if you have a project idea.	Support environmental stewardship and education activities related to fish & wildlife conservation in the Peace Region.	Open/ Directed	REVISED ACTION
12	Habitat-based Action	Promote environmental stewardship to groups that have the potential to impact priority species and sensitive habitats	2	Fish & Wildlife	Promote environmental stewardship (e.g., through workshops, meetings, presentations, social media) to industries, developments, communities, organizations and private landowners that have the potential to impact priority species and sensitive habitats in the Peace Region through activities and behaviour. Consider developing a low cost program that would reward engagement (e.g., acknowledgement, publicity).	An increased understanding among land users of the potential impacts of various activities on aquatic and terrestrial ecosystems as well as effective measures to lessen described impacts.	Open/ Directed	REVISED ACTION

RIVERS, LAKES & RESERVOIRS OBJECTIVES

DRAFT FOR DISCUSSION PURPOSES ONLY

Strategic Objectives	Objectives	Sub-objectives
Conservation	<i>Maintain productive and diverse ecosystems</i>	<i>Maintain and/or increase resilience of aquatic ecosystems to habitat disturbances, including climate change and other cumulative effects</i>
		<i>Understand the relationships between reservoir productivity, Kokanee, Lake Trout and other fish populations, and aquatic and terrestrial food webs</i>
	<i>Maintain or improve the status of priority species</i>	<i>Maximize the population viability of Arctic Grayling</i>
		<i>Maximize the population viability of Bull Trout</i>
		<i>Maximize the viability of priority aquatic species</i>
<i>Address fish passage issues in streams to enhance productivity of priority species</i>		
Sustainable Use	<i>Maintain or improve opportunities for sustainable use</i>	<i>Enhance sustenance and recreational resources based on input from Indigenous Nations and stakeholder communities</i>
		<i>Enhance sustenance and recreational resources through monitoring of fish stocking and fish catch</i>
Community Engagement	<i>Maintain and improve opportunities for community engagement</i>	<i>Increase opportunities for community engagement and resource stewardship through citizen science</i>

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Maintain and/or increase resilience of aquatic ecosystems to habitat disturbances, including climate change and other cumulative effects								
1	Research & Information Acquisition	Cumulative Effects Assessment of Aquatic Ecosystems (Tier 1)	1	Fish	Develop a current habitat assessment map for documenting cumulative effects to aquatic ecosystems in the Peace Region. Mapping should include human developments on the landscape including BC Hydro footprints, but also additional developments such as linear development features, forestry operations and water licenses. Assessment can also include predictions of effects of climate change to streams and priority fish species in the Peace Region and linked to Action #1 of the Cross-Ecosystem Plan. The deliverable will include identification of priority areas for conservation, monitoring and restoration actions and should work with existing Tier 1 assessment frameworks developed by the Province. For example, work should build upon the current Provincial Cumulative Effects Framework (e.g., Lewis et al. 2016; Interim Assessment Protocol for Aquatic Ecosystems in British Columbia 2019).	Increased understanding of cumulative effects to aquatic ecosystems in the Peace Region and how FWCP can help support and prioritize on-the-ground action (e.g., identification of priority areas for conservation, monitoring, land securement initiatives, and restoration actions).	Open/ Directed	NEW ACTION
2	Research & Information Acquisition	Ground-based assessments of watershed condition (Tier 2)	1	Fish	Implement Tier 2 ground-based assessments of watershed condition in the FWCP Peace Region to follow Tier 1 assessment work undertaken in Action #1. Ground-based assessments should utilize standardized inventory methods (e.g., existing Forest and Range Evaluation Program (FREP) protocols; Pickard et al. 2018), but should be tailored to develop specific restoration and enhancement opportunities for priority fish species or aquatic habitats (e.g., West et al. 2020 (in press)). Work undertaken in this action should be used to identify limiting factors for enhancement opportunities and validate and improve the Tier 1 assessment (mapping) predictions undertaken in Action #1. The deliverable for this action includes an assessment of watershed health and a list of prioritized conservation, enhancement and/or restoration opportunities for stream habitats.	Development of a list of prioritized aquatic and riparian habitat conservation, restoration and enhancement opportunities to address issues related to poor watershed condition or to sustain critical fish habitat.	Open/ Directed	NEW ACTION

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Maintain and/or increase resilience of aquatic ecosystems to habitat disturbances, including climate change and other cumulative effects								
3	Habitat-based Action	Implement stream conservation, restoration and enhancement actions	2	Fish	Implement conservation, restoration, and/or enhancement actions based on the findings of the Tier 1 and Tier 2 assessments in Actions #1 and #2. Actions could include on-the-ground stream restoration projects such as riparian planting or building groundwater channels, or could include land securement actions such as defining new fisheries sensitive watersheds (FSW's) to protect priority fish species. See Actions #2 and #3 in the Cross-Ecosystem Plan for steps related to Land Securement.	Maintain and/or increase the productivity and resilience of key fish species and aquatic ecosystems in the Peace Region.	Open/ Directed	NEW ACTION
	Species-based Action							

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Understand the relationships between reservoir productivity, Kokanee, Lake Trout and other fish populations, and aquatic and terrestrial food webs								
4	Research & Information Acquisition	Williston Reservoir productivity and relationships to fish productivity	1	Kokanee, Lake Trout and other Fish	Assess Williston Reservoir productivity including relationships to historical reservoir productivity and Kokanee, Lake Trout and/or other fish species productivity. Measures of productivity have been assessed for the Williston Reservoir in the past. Historical fish monitoring also suggested a shift in species composition from Lake Whitefish to Kokanee dominated (Plate and Bocking 2012). Kokanee are pelagic feeders in reservoirs and are likely to be limited by the ultra-oligotrophic Williston Reservoir. The decline in number of spawning Kokanee for some locations within the three years of the Ecosystem Impact of Kokanee Study (Coxson et al. 2019) and the recent Kokanee spawning census (DWB 2019) indicate some uncertainty as to the status of Kokanee in the reservoir. In comparison, the populations of piscivorous Lake Trout may be increasing, which may be having adverse effects to species such as Bull Trout. Studies should therefore also build upon completed and ongoing work in the Peace Reach Lake Trout Movements multi-year study and efforts to understand potential competitive effects of Lake Trout on Bull Trout (Culling and Euchner 2018, or more recent). Projects that involve citizen science are also encouraged.	Understand relationships between reservoir productivity, carrying capacity for fish and interactions among species such as Kokanee, Lake Trout and Bull Trout. Recommendations for further actions related to reservoir carrying capacity and potential impacts to sustainable use of fish and ecosystem health.	Open/ Directed	NEW ACTION
5	Research & Information Acquisition	Aerial surveys of Kokanee	1	Kokanee and other Fish	Continue assessments of the distribution and abundance of Kokanee spawners in tributaries of the Williston Reservoir using aerial surveys. Spawner survey work should follow recommendations developed in the Williston Watershed Kokanee Spawner Distribution and Aerial Enumeration Surveys project (DWB 2019 or more recent report once available).	Assess distribution and abundance of Kokanee in spawning tributaries and develop recommendations for further action.	Directed	NEW ACTION

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Understand the relationships between reservoir productivity, Kokanee, Lake Trout and other fish populations, and aquatic and terrestrial food webs								
6	Research and information acquisition	Assessments of Kokanee distribution, abundance and habitat use	2	Kokanee and other Fish	Continue assessments of the distribution, abundance and habitat preferences of Kokanee spawners in tributaries of the Williston Reservoir that are not currently covered with aerial surveys (Action #5) and there is a concern regarding Kokanee and impacts to other species or populations. Work could include a) assessments of Kokanee spawning abundance; b) identification of native versus introduced kokanee habitat use, abundance and potential introgression; c) determination of predictors of habitat use by spawning Kokanee; and/or, d) environmental DNA (eDNA) assessments across a large number of sites that could be used to identify additional rivers and streams used by Kokanee for spawning.	Assess distribution, abundance and habitat preferences of Kokanee in spawning tributaries and develop recommendations for further action.	Open	NEW ACTION
7	Research & Information Acquisition	Effects of Kokanee introductions	2	Kokanee	Assess effects of Kokanee introductions to spawning tributaries including potential competitive effects of Kokanee spawning to other fish and to nutrient dynamics of spawning tributaries. Studies of nutrient dynamics could include assessment of Kokanee nutrient contributions to predators such as bears, wolves and eagles that feed on Kokanee carcasses. Work should build upon the Ecosystem Impact of Kokanee Study (Coxson et al. 2019) and the First Nations Information Gathering on Kokanee, Bull Trout and Arctic Grayling (Pearce et al. 2019), and address Indigenous Nation concerns regarding Kokanee.	Identify the risks and benefits of Kokanee reintroductions to fish and wildlife in spawning tributaries.	Open	REVISED ACTION

RIVERS, LAKES & RESERVOIRS DRAFT ACTIONS

DRAFT FOR DISCUSSION PURPOSES ONLY

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Understand the relationships between reservoir productivity, Kokanee, Lake Trout and other fish populations, and aquatic and terrestrial food webs								
8	Research & Information Acquisition	Cost-effective Lake Trout monitoring	2	Lake Trout	Develop cost-effective method for monitoring of Lake Trout populations in the Williston Reservoir. Basic index monitoring of Lake Trout is challenging but is key to understanding potential competitive effects on Bull Trout. Monitoring could potentially consider using gill netting at representative sites in the reservoir. Studies should involve local communities and guardians, including potential monitoring of Lake Trout fishing effort and catch in addition to population status. Monitoring work should ultimately address competitive interactions between Lake Trout and Bull Trout, potential long term implications for Bull Trout productivity and opportunities to increase sustainable use of Lake Trout in the Williston reservoir. Work must build on the previous FWCP Lake Trout study (Culling and Euchner 2018, or more recent).	A cost effective monitoring program to determine Lake Trout population status, potential competitive effects on Bull Trout and opportunities for increased sustenance use of Lake Trout.	Open	NEW ACTION

RIVERS, LAKES & RESERVOIRS DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the population viability of Arctic Grayling								
9	Research & Information Acquisition	Research and Monitoring of Arctic Grayling	1	Arctic Grayling	Conduct research and monitoring of Arctic Grayling to obtain population data (distribution, abundance, population trend) and identify critical habitats and key limiting factors at the level of geographic accuracy suitable for delineating conservation and enhancement actions. Monitoring should follow priorities defined in the Arctic Grayling Information Synthesis (Stamford et al. 2017) and the Arctic Grayling Monitoring Framework (Hagen & Stamford 2017). See Table 1 in Monitoring Framework for highest priority actions. Note that this is Step 1 to 3 in the Monitoring Framework.	Obtain population data and identify critical habitats and key limiting factors for Arctic Grayling to support prioritization of further conservation and enhancement actions	Open	REVISED ACTION
10	Habitat-based Action	Implement high priority habitat-based actions for Arctic Grayling	1	Arctic Grayling	Implement high priority habitat conservation, restoration and enhancement options for Arctic Grayling. Work should follow continued monitoring of data gaps in Action #9 and work completed Arctic Grayling Information Synthesis (Stamford et al. 2017) and the Arctic Grayling Monitoring Framework (Hagen & Stamford 2017). See Table 1 in monitoring framework for highest priority actions. This is Step 4 in the Arctic Grayling Monitoring Framework.	Maintain or increase the population viability of Arctic Grayling	Open	REVISED ACTION
	Species-based Action							

RIVERS, LAKES & RESERVOIRS DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the population viability of Arctic Grayling								
11	Monitoring and Evaluation	Assess success of actions for Arctic Grayling	2	Arctic Grayling	Assess success of actions for Arctic Grayling that are supported by FWCP; for example, research and information acquisition activities in Action #9 or enhancement activities conducted in Action #10, and use this information to update the Arctic Grayling Monitoring Framework (Hagen & Stamford 2017). An assessment of performance of the progress made on all activities under the monitoring framework is required after at least 5 years of implementing studies (no earlier than 2024). Success of habitat or species-based actions should be assessed through monitoring of biological and/or physical habitat responses (after implementation) and include collection of quantitative population data (abundance, trend, distribution) necessary to assess the effectiveness of conservation and enhancement actions and refine knowledge of limiting factors. Implement updates to the monitoring framework based on progress and findings.	Monitor success of actions for Arctic Grayling and use this information to update the Arctic Grayling Monitoring Framework and identify further monitoring, conservation and/or enhancement actions	Open	REVISED ACTION

RIVERS, LAKES & RESERVOIRS DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the population viability of Bull Trout								
12	Research & Information Acquisition	Population genetic structure for Bull Trout	1	Bull Trout	Conduct a population genetic structure study for Bull Trout in the Peace Region including tributaries of the Williston and Dinosaur reservoirs to inform conservation unit designation (key data gap in Bull Trout Information Synthesis: Hagen and Weber 2019). For example, Bull Trout population status has been inventoried in the past in Gething Creek in the Dinosaur Reservoir, although it is unknown whether this is a genetically unique population or is simply enhanced periodically via entrainment of Bull Trout populations from the Williston Reservoir. Work should attempt to partner with other monitoring programs to obtain tissue samples from key index streams (such as Actions #4, #8 and #13). Work should be used to prioritize Bull Trout populations for further monitoring or conservation and enhancement actions.	Determine Bull Trout population structure to support prioritization of populations for conservation and enhancement actions.	Open	NEW ACTION
13	Research & Information Acquisition	Research and Monitoring of Bull Trout	1	Bull Trout	Undertake monitoring actions to address data gaps limiting understanding of conservation status, critical habitats and limiting factors for Bull Trout of the Williston Reservoir watershed. Specific studies are defined in the Bull Trout Information Synthesis Monitoring Framework (Hagen and Weber 2019). See Table 6.2a in Monitoring Framework for highest priority actions. Work should be used to develop specific conservation or enhancement actions for Bull Trout.	Support monitoring to address limiting factors and data gaps for Bull Trout in order to identify and develop habitat or species based actions.	Open	REVISED ACTION
14	Habitat-based Action	Implement high priority habitat-based actions for Bull Trout	1	Bull Trout	Conduct habitat conservation, restoration and enhancement activities targeting Bull Trout. Work should follow continued monitoring of data gaps in Action #13 and work completed in the Bull Trout Information Synthesis Monitoring Framework (Hagen and Weber 2019). See Table 6.2a in Monitoring Framework for highest priority actions. Potentially promising enhancement methods include: 1) stream fertilization, 2) fish access improvement, 3) side channel development, and 4) riparian restoration.	Maintain and/or increase population viability of Bull Trout	Open	REVISED ACTION
	Species-based Action							

RIVERS, LAKES & RESERVOIRS DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the population viability of Bull Trout								
15	Monitoring and Evaluation	Assess success of actions for Bull Trout	2	Bull Trout	Assess success of habitat-based or species-based actions for Bull Trout that are supported by FWCP, for example, enhancement activities conducted in Action #14. Success could be assessed through monitoring of biological and/or physical habitat responses and include collection of quantitative population data (abundance, trend, distribution) necessary to assess the effectiveness of conservation and enhancement actions and refine knowledge of limiting factors.	Monitor success of enhancement actions for Bull Trout and identify further conservation and enhancement actions.	Open	REVISED ACTION

RIVERS, LAKES & RESERVOIRS DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Address fish passage issues in streams to enhance productivity of priority species								
16	Research & Information Acquisition	Research to prioritize fish passage actions	1	Fish	Conduct research to support identification of fish passage issues in streams and locations for habitat based actions to improve fish access. Perched culverts are one reason fish access can be limited. The FWCP is interested in supporting the improvement of fish access when there are significant habitat gains possible. Research in this action should build upon the Orphaned Culvert Project (Ecofor 2016) and the Fish Passage Assessments and Habitat Confirmations (PEA-F20-F-2967) project and should identify opportunities for fish passage actions.	Identify fish passage issues in the Peace Region and locations for habitat based actions to improve fish access to stream habitats.	Open	NEW ACTION
17	Research & Information Acquisition	Workshop to prioritize options for fish passage improvements	1	Fish	Conduct a small-scale workshop for assessment of options and to prioritize areas for fish passage improvements in the Peace Region. Partners should include Indigenous Nations, landowners and resource use tenure holders, agencies and other stakeholders. The workshop should build upon the Fish Passage Assessments and Habitat Confirmations (PEA-F20-F-2967) project and any other work conducted in Action #16.	A prioritization of options to restore fish access to streams in the Peace Region.	Open/ Directed	NEW ACTION
18	Habitat-based Action	Restore fish access to streams	2	Fish	Conduct habitat improvements to restore fish access to streams in the Peace Region. Perched culverts are one reason fish access can be limited. The FWCP is interested in supporting the improvement of fish access when there are significant habitat gains possible and there is an opportunity for partner financial support in implementing habitat-based actions to improve fish passage. This action could involve the removal, restoration or replacement of existing culverts and should build upon results of the Orphaned Culvert Project (Ecofor 2016), the Fish Passage Assessments and Habitat Confirmations (PEA-F20-F-2967) project, and further research to identify locations for improving fish access in Action #16 and the workshop in Action #17.	Restore fish access in streams of the Peace Region.	Open/ Directed	REVISED ACTION

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the viability of priority fish species in the Peace Region								
19	Research & Information Acquisition	Research lesser known priority species to inform conservation status	2	Fish	Conduct research on priority, but lesser known, fish populations in the Peace Region, including analysis of limiting factors to support prioritization of future projects in stream, lake and reservoir habitats. This could include an assessment of existing data and monitoring of population status, key limiting factors and/or threats and habitat status or habitat capacity. See Table 2 in the Rivers, Lakes and Reservoirs Action Plan for priority inventory species. Work related to Pygmy Whitefish, Mountain Whitefish, Burbot, Brassy Minnow and Northern Pikeminnow may be of particular interest. Projects that involve citizen science are highly encouraged.	Support research in streams, lakes and/or reservoirs to address limiting factors and data gaps for priority inventory fish species in the Peace Region in order to identify and develop further conservation or enhancement actions for those species.	Open	REVISED ACTION
20	Research & Information Acquisition	Development of restoration plan for priority fish species	2	Fish	Develop a comprehensive habitat restoration and protection plan for priority fish species in streams, lakes and/or reservoirs the Peace Region assessed in Action #19 or other actions in this action plan in relation to limiting factors analyses and assessment of conservation status and/or habitat capacity. Restoration refers to habitat or species-based actions that restore habitat capacity or population viability, while protection includes habitat-based actions or land securement that protect important habitat from further degradation.	To determine high priority, cost-effective habitat and/or species-based actions for fish that can be supported by the FWCP	Open/ Directed	NEW ACTION
21	Habitat-based Action	Habitat-based enhancements for priority fish species	3	Fish	Undertake habitat-based enhancements in streams, lakes and/or reservoirs in the Peace Region for priority fish species. This action may be dependent on assessment of population status, assessment of limiting factors, and development of a restoration plan and options for enhancement in Actions #19 and #20.	Sustain and/or increase populations of priority fish species in streams, lakes and/or reservoirs in the Peace Region to support opportunities for sustainable use and to maintain ecosystem health.	Open	REVISED ACTION
	Species-based Action							

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Enhance sustenance and recreational resources based on input from Indigenous Nations and stakeholder communities								
22	Research & Information Acquisition	Research and monitoring of culturally important fish species	1	Fish	Conduct research & monitoring of culturally important fish species or in priority freshwater habitat locations as defined by results of Action #9 in the Cross-Ecosystem Plan or by existing surveys of Indigenous Knowledge (e.g., Pearce et al. 2019). Monitoring could be conducted by local guardians or other stakeholders to support local concerns regarding potential stressors to freshwater habitats and sustenance resources. Work should support identification of next steps such as conservation or enhancement actions.	Monitoring of culturally-important fish species and habitats to develop conservation and enhancement opportunities in lake, stream and reservoir habitats.	Open	NEW ACTION
23	Habitat-based Action	Enhancement of culturally important fish species	2	Fish	Implement conservation, restoration or enhancement actions for priority fish species or priority freshwater habitat locations as defined by Action #9 in the Cross-Ecosystem Action Plan or by monitoring in Action #22 of Rivers, Lakes and Reservoirs Action Plan. Habitat-based or species-based actions that include local community engagement, citizen science and volunteer support are encouraged.	Sustain and/or increase populations of culturally important fish species in lakes, streams and reservoirs to support opportunities for sustainable use and to maintain ecosystem health.	Open	REVISED ACTION
	Species-based Action							

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Enhance sustenance and recreational resources through monitoring of fish stocking and fish catch								
24	Monitoring and Evaluation	Monitoring of fish populations or catch to support existing stocking programs	2	Fish	Support monitoring of species-based enhancements in lakes (e.g., stocking) in the Peace Region to support the regional stocking program and maximize opportunities for sustenance and recreational use of fish. Monitoring work undertaken in this action needs to occur in partnership with the Freshwater Fisheries Society of BC and the Province to support evaluation of stocking effectiveness. Work could include monitoring of fish populations and fisheries catch (creel surveys). Projects that involve citizen science are also encouraged.	Support monitoring of stocking in the Peace Region to maximize opportunities for sustainable use of fish.	Open	REVISED ACTION

RIPARIAN & WETLAND OBJECTIVES

DRAFT FOR DISCUSSION PURPOSES ONLY

Strategic Objectives	Objectives	Sub-objectives
Conservation	<i>Maintain productive and diverse ecosystems</i>	<i>Maintain and/or increase resilience of riparian and wetland ecosystems to habitat disturbances, including climate change and other cumulative effects</i>
		<i>Restore the hydrologic connectivity of wetlands</i>
	<i>Maintain or improve the status of priority species</i>	<i>Maximize the population viability of Moose</i>
		<i>Maximize the viability of priority riparian & wetland species</i>
Sustainable Use	<i>Maintain or improve opportunities for sustainable use</i>	<i>Enhance sustenance and recreational resources based on input from Indigenous Nations and stakeholder communities</i>
Community Engagement	<i>Maintain and improve opportunities for community engagement</i>	<i>Increase opportunities for community engagement and resource stewardship through citizen science</i>

RIPARIAN & WETLAND DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maintain and/or increase resilience of riparian and wetland ecosystems to habitat disturbances, including climate change and other cumulative effects								
1	Research & Information Acquisition	Assess threats and impacts to wetland and riparian areas	1	All	Utilize the previous FWCP Riparian and Wetland Mapping Project (most recently Fillatow et al. 2018) to assess the connectivity, current function of, and threats, including cumulative effects, to mapped wetland and riparian areas in the FWCP Peace Region and identify priority areas for conservation and/or enhancement actions to restore connectivity and ecological function. Work must build on previous work identifying opportunities for wetland restoration (Chu Cho 2020, in progress), and should also consider previous FWCP amphibian wetland connectivity studies (most recently DWB 2019) and BC Hydro Water Use Planning Projects to address reservoir drawdown effects. Please also see the related Action #9 for a species-based approach to habitat restoration, and Action #10 specific to amphibian habitat restoration.	Prioritization of wetland and riparian habitats for conservation and/or enhancement actions.	Open/ Directed	REVISED ACTION
2	Habitat-based Action	Conserve, restore and/or enhance wetland and riparian areas	1	All	Implement conservation, restoration, and/or enhancement actions based on the findings of the wetland or riparian habitat function and connectivity assessments in Action #1. Depending on the findings, actions may include vegetation management activities such as prescribed burning, invasive species management, or bank stabilization through riparian planting. Actions may also include the creation of late-successional forest structures that have been documented or are known to be limiting abundance of wildlife (e.g., wildlife trees, nest cavities, dens). Priority species and species not currently of conservation concern are expected to benefit from habitat-based actions; however, potential conflicts between enhancing habitat to benefit one species to the detriment of another species should be noted and carefully considered. Please also Action #3 specific to restoration of hydrologic connectivity, Actions #5, #6, and #7 specific to Moose habitat restoration, and Action #11 specific to avian habitat restoration.	Implementation of habitat-based actions to conserve, restore and/or enhance riparian and wetland habitats.	Open	NEW ACTION

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Restore the hydrologic connectivity of wetlands								
3	Habitat-based Action	Restore hydrologic connectivity of wetlands	1	All	Implement recommendations to restore wetland hydrologic connectivity, based on findings of the FWCP Riparian and Wetland Mapping Project (most recently Filatow et al. 2018), previous FWCP amphibian wetland connectivity studies (most recently DWB 2019), and previous work identifying opportunities for wetland restoration (Chu Cho 2020). Information acquired through BC Hydro Water Use Planning Projects to address reservoir drawdown effects should also be considered. Habitat-based actions would likely include the installation of culverts or other wetland water management structures.	Implementation of habitat-based actions to restore hydrologic connectivity of wetlands .	Open	NEW ACTION

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the population viability of Moose								
4	Research & Information Acquisition	Monitor Moose and conduct research, if recommended	1	Moose	Conduct research and/or monitoring to support the recommendations of the FWCP funded 5- year Moose Limiting Factors Study (most recently Sittler and McNay 2017), if required.	The application of the recommendations for on-the-ground conservation of Moose across the study area derived from the FWCP funded 5-year Moose Limiting factors study .	Directed	REVISED ACTION
5	Habitat-based Action	Enhance Moose habitat	1	Moose	Implement habitat-based recommendations from the FWCP funded 5- year Moose Limiting Factors Study (most recently Sittler and McNay 2017).	The application of the recommendations for on-the-ground conservation of Moose across the study area derived from the FWCP funded 5-year Moose Limiting factors study .	Open	REVISED ACTION
6	Research & Information Acquisition	Prioritize areas for Moose habitat enhancement	1	Moose	Identify and prioritize areas for Moose habitat enhancement, that do not conflict with Woodland Caribou range, through engagement with the Caribou Recovery Team, provincial Moose teams, and forest practices ministries.	Prioritization of areas for Moose habitat enhancement.	Directed	NEW ACTION
7	Habitat-based Action	Enhance Moose forage	1	Moose	Implement habitat-based actions that increase the production of Moose forage species, particularly deciduous shrubs and trees (Gorley 2016). Locations for habitat-based actions for Moose should be selected strategically to prevent conflict with Woodland Caribou recovery (See Action #6). Consideration should be given to how the scale of habitat-based actions will affect Moose populations. Projects could benefit from engagement and collaboration with forest licencees, forestry professionals, and government ministries.	Increased production of Moose forage species.	Open	NEW ACTION

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the viability of priority riparian & wetland species								
8	Research & Information Acquisition	Research priority species to identify limiting factors	2	All wildlife species groups	Conduct research on priority species in the Peace Region, including analysis of limiting factors to support prioritization of future projects in riparian and wetland habitats. This could include an assessment of existing data and information on population status, habitat status or habitat capacity, and should consider the root causes of degraded habitats and limitations to reproductive potential.	Identification of limiting factors for priority wildlife species in order to identify and develop further conservation or enhancement actions for those species.	Open	NEW ACTION
9	Research & Information Acquisition	Develop a habitat restoration and protection plan	1	All wildlife species groups	Develop a comprehensive habitat restoration and protection plan for priority riparian and wetland wildlife in the Peace Region in relation to limiting factors analyses (Action #8) and assessment of population status/habitat capacity that considers competing factors for various species. The plan will include prioritized candidate areas for habitat restoration and/or protection. Restoration refers to habitat or species-based actions that restore habitat capacity or population viability, while protection includes land securement, or protection through legal mechanisms (e.g., WHA designation) that protect important habitat from further degradation. Please see related Action #1 for a more habitat-based approach (i.e., restoring ecological function).	Prioritization of habitat and/or species-based actions informed by knowledge of limiting factors for priority wildlife species.	Open/ Directed	NEW ACTION
10	Research & Information Acquisition	Identify and prioritize locations for amphibian habitat restoration	2	Amphibians	Conduct a study to identify potential locations for amphibian habitat restoration or rehabilitation. Projects should build on the Amphibian Wetland Connectivity Along the Williston Reservoir project (most recently DWB 2019) assessing amphibian distribution throughout the FWCP Peace region. Please also see the more general but related Action #1 to prioritize wetlands for restoration.	Identification and/or prioritization of amphibian habitat restoration opportunities .	Open	NEW ACTION

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Maximize the viability of priority riparian & wetland species								
11	Habitat-based Action	Identify and prioritize habitat-based actions for priority avian species	2	Breeding Birds	Identify and implement habitat-based Actions that address key conservation issues for priority breeding bird species. Please also see the more general but related Action #2 to implement habitat-based Actions for all priority species, as well as the more specific Action #12 to install nesting or roosting structures.	Implementation of habitat-based actions for priority breeding bird species associated with riparian and wetland habitats and affected by the reservoir footprint.	Open	NEW ACTION
	Species-based Action		2					
12	Habitat-based Action	Install and maintain artificial nest and roost structures	3	Bats and Breeding Birds	Install artificial nesting or roost structures for wildlife species for which such structures limit abundance, and/or would provide valuable stewardship and education opportunities (e.g., easily accessible, near schools or public use areas). Some examples include nesting islands for ground-nesting waterfowl and shorebirds that isolate nests from predators, nest boxes for cavity nesting waterfowl or other bird species, and roost structures for bats. All projects must include a long-term monitoring and maintenance plan for installed structures and should consider learnings from previous FWCP projects (e.g., Corbould 1991, Corbould 1993, Juelfs and Corbould 2008). The long-term monitoring and maintenance plan should include the involvement of established naturalist or environmental stewardship groups and/or school groups.	Increased # of effective artificial nesting and roosting structures for a variety of species, and increased stewardship and education.	Open	REVISED ACTION

RIPARIAN & WETLAND DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Enhance sustenance and recreational resources based on input from Indigenous Nations and stakeholder communities								
13	Research & Information Acquisition	Research on culturally important species	2	Culturally important species in riparian and wetland habitats	Conduct research and monitoring to improve the understanding of documented culturally important riparian and wetland plants and animals, including abundance, distribution, trend, threats and ecological relationships. Monitoring could be conducted by local guardians to support local concerns regarding potential stressors to riparian and wetland habitats and sustenance resources. Research should incorporate Indigenous Knowledge and be used to identify conservation and/or enhancement actions for culturally important species.	Identification of priorities for conservation and/or enhancement actions for culturally important species	Open	REVISED ACTION
14	Habitat-based Action	Implementation of habitat-based actions for culturally important species	2	Culturally important species in riparian and wetland habitats	Implement conservation and/or enhancement actions identified under Action #13 for culturally important species. Habitat enhancement activities that include local community engagement and volunteer support are encouraged.	Implementation of habitat-based actions for culturally important species.	Open	NEW ACTION
	Species-based Action		2					

UPLAND OBJECTIVES

DRAFT FOR DISCUSSION PURPOSES ONLY

Strategic Objectives	Objectives	Sub-objectives
Conservation	<i>Maintain productive and diverse ecosystems</i>	<i>Maintain and/or increase resilience of uplands ecosystems to habitat disturbances, including climate change and other cumulative effects</i>
	<i>Maintain or improve the status of priority species</i>	<i>Maximize the population viability of Woodland Caribou</i>
		<i>Maximize the population viability of bats</i>
		<i>Maximize the viability of priority wildlife species and ecosystems through decommissioning and restoration of linear corridors</i>
		<i>Maximize the viability of priority upland species</i>
Sustainable Use	<i>Maintain or improve opportunities for sustainable use</i>	<i>Enhance sustenance and recreational resources based on input from Indigenous Nations and stakeholder communities</i>
Community Engagement	<i>Maintain and improve opportunities for community engagement</i>	<i>Increase opportunities for community engagement and resource stewardship through citizen science</i>

UPLAND DRAFT ACTIONS

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Maintain and/or increase resilience of uplands ecosystems to habitat disturbances, including climate change and other cumulative effects								
1	Research & Information Acquisition	Identify and prioritize upland habitats for conservation and/or enhancement	1	All wildlife species groups	Inventory the distribution, abundance, current function, and connectivity of remaining ecologically important upland habitats (e.g., wildlife habitat features such as mineral licks, wallows, and large stick nests; roosts, hibernacula or other habitats where native species congregate; and red- or blue-listed ecological communities) and assess threats, including cumulative effects. If applicable, projects should build on previous work in the FWCP Peace region identifying ecologically important upland habitats (i.e., Woodland Caribou range, ungulate winter range). Assessments should be structured to focus on specific habitat types or features.	Prioritization of upland habitats for conservation and/or enhancement actions.	Open/ Directed	REVISED ACTION
2	Habitat-based Action	Implement habitat-based actions	2	All wildlife species groups	Implement conservation, restoration, and/or enhancement actions based on the findings of the uplands habitat function and connectivity assessment in Action #1. Depending on the findings, actions may include vegetation management activities such as prescribed burning (outside of Woodland Caribou range), invasive species management, or other vegetation management activities. Actions may also include the creation of late-successional forest structures that have been documented or are known to be limiting abundance of wildlife (e.g., wildlife trees, nest cavities, dens). Priority species and species not currently of conservation concern are expected to benefit from habitat-based actions; however, potential conflicts between enhancing habitat to benefit one species to the detriment of another species should be noted and carefully considered.	Implementation of habitat-based actions to conserve and/or restore upland habitats.	Open/ Directed	NEW ACTION

UPLAND DRAFT ACTIONS

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the population viability of Woodland Caribou								
3	Species-based Action	Woodland Caribou maternal penning	2	Woodland Caribou	Support the development or continuation of First Nations led maternal penning programs for Woodland Caribou, in coordination with the provincial Woodland Caribou recovery team. Will require partnering with relevant Nations and potentially other outside funders given the expense of these programs.	Maintain and/or increase the viability of Woodland Caribou herds through maternal penning programs.	Open	NEW ACTION
4	Habitat-based Action	Coordination with forest licences to restore functional winter habitat for Woodland Caribou	1	Woodland Caribou	Restore Woodland Caribou habitat function, potentially through cooperation with local forest licensees. For example, a forest harvesting management plan could be developed through collaboration with local forest licensees with a goal to improve mid- to long-term habitat conditions for caribou. This action should consider the habitat newly conserved under the Species at Risk Act Section 11 agreement between the provincial and federal governments. Projects should be developed in coordination with the provincial Woodland Caribou recovery team and regional operations, and align with the Woodland Caribou recovery strategy.	A broad scale plan to work with local forest licenses and other user groups to promote old forests in important Woodland Caribou habitats.	Open	REVISED ACTION

UPLAND DRAFT ACTIONS

DRAFT FOR DISCUSSION PURPOSES ONLY

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the population viability of Bats								
5	Research and information acquisition	Research bat populations, distribution and identify important habitat features	2	Bats	Assess the abundance, population trends, and distribution of bat species, building on existing data and collaborating with ongoing bat projects. Research should identify and prioritize the protection of important habitat features, including hibernacula and maternity roosts. Projects should build on previous FWCP Projects (Paterson and Hansen 2019, Hansen 2018, Lausen 2017) and be aligned with Level I priorities set in the BC Bat Action Plan (http://www.bcbat.ca/publications/) to address knowledge gaps.	Identification of important bat habitat features and prioritization of conservation and/or enhancement actions for bats and their habitats. Conservation and/or enhancement actions could then be implemented under the more general Action #2.	Open	NEW ACTION

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the viability of priority wildlife species and ecosystems through decommissioning and restoration of linear corridors								
6	Research & Information Acquisition	Workshop to prioritize linear corridors for functional and ecological restoration	1	All	Conduct a small-scale workshop to prioritize linear corridors for functional and ecological restoration. Motorized access to upland habitats can increase predator access to ungulate habitat, disturb wildlife, compact soils, and introduce invasive species. Large amounts of habitat can be made unavailable to human users through the strategic decommissioning of certain roads that currently provide access. Collaboration with ministries who may be permitting new roads in these areas is critical. Partners should include First Nations, landowners, agencies and other stakeholders/road user groups. The workshop should build upon the previous FWCP projects (e.g., Chu Cho 2019) that identified priority candidate roads and tested methods to block motorized access.	Prioritization of functional and/or ecological restoration of linear corridors.	Open/ Directed	NEW ACTION
7	Habitat-based Action	Functional and ecological restoration of linear corridors	1	Ungulates	Implement the recommendations from Action #6, to strategically decommission roads and/or support the functional and ecological restoration of linear corridors to reduce predator access to ungulate habitat and minimize wildlife disturbance, soil compaction, and the spread of invasive species.	Functional and/or ecological restoration of linear corridors.	Open/ Directed	NEW ACTION

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Action #	Action Type	Priority Action Short Description	Priority	Priority Species or Species Group	DRAFT Priority Action	Intended Outcome	Delivery Approach	Action Update Status
Maximize the viability of priority upland species								
8	Research & Information Acquisition	Research priority species to identify limiting factors	2	All wildlife species groups	Conduct research on priority wildlife populations in the Peace Region, including abundance, distribution, trend, threats, and analysis of limiting factors to support prioritization of future projects in uplands habitats. This could include an assessment of existing data and information on population status, habitat status or habitat capacity, and should consider the root causes of degraded habitats and limitations to productive potential.	Identification of limiting factors for priority wildlife species in order to identify and develop further conservation or enhancement actions for those species.	Open	NEW ACTION
9	Research & Information Acquisition	Develop a habitat restoration and protection plan	1	All wildlife species groups	Develop a comprehensive habitat restoration and protection plan for priority uplands wildlife in the Peace Region in relation to limiting factors analyses (Action #8) and assessment of population status/habitat capacity. The plan will include prioritized candidate areas for habitat restoration and/or protection. Restoration refers to habitat or species-based actions that restore habitat capacity or population viability, while protection includes land securement, or protection through legal mechanisms (e.g., WHA designation) that protect important habitat from further degradation.	Prioritization of habitat and/or species-based actions informed by knowledge of limiting factors for priority species.	Open/ Directed	NEW ACTION
10	Research & Information Acquisition	Research limiting factors for ungulate species	2	Ungulates	Conduct an assessment of potential habitat-based (bottom-up) limiting factors for priority ungulate species, for example, assessments of vegetation community, seral stage, forest age, and relationships to habitat capacity for important ungulate populations and vulnerable life stages. Assessments should provide recommendations for next steps, including conservation and enhancement actions. Recommendations should consider ecological function and competing factors such as predator-prey dynamics and provincial prioritization of certain ungulate species (e.g., Woodland Caribou) over others.	Prioritization of conservation and enhancement actions to address habitat-based limiting factors for priority ungulate species.	Open	REVISED ACTION

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Maximize the viability of priority upland species								
11	Research and information acquisition	Assess predator-prey interactions and/or competition interactions between priority ungulate species	2	Ungulates	Conduct an assessment of potential competition and/or predation limiting factors for priority ungulate species. Apparent competition can occur indirectly between ungulate populations when they are preyed upon by the same predator. For example, Grey Wolf predation on Woodland Caribou may be greater as a result of historic population expansion of Moose and other ungulates in the Peace Region. Assessments should provide recommendations for next steps, including conservation and enhancement actions for ungulates to address competition and predation limitations for priority ungulates.	Prioritization of conservation and enhancement actions to address competition and predation limiting factors for priority ungulate species.	Directed	NEW ACTION
12	Habitat-based Action	Implement actions from assessment of predation and/or competition interactions between priority ungulate species	2	Ungulates	Implement targeted conservation and/or enhancement actions from the findings of Actions #10 and/or #11, which includes both habitat-based and competition and predation assessments of limiting factors for important ungulate populations.	Implementation of conservation and/or enhancement actions to sustain/and or increase population viability of priority ungulate species.	Open	REVISED ACTION
	Species-based Action		2					

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Maximize the viability of priority upland species								
13	Habitat-based Action	Implement Fisher Habitat Extension Program	1	Fisher	Facilitate adoption and implementation of Fisher Habitat Extension Program (MOECCS 2019). Significant work related to Fisher has been completed in the Peace Basin and there are feasible actions identified for implementation.	Application of the Fisher Habitat Extension Program findings across the FWCP Peace region for increased Fisher conservation.	Open	REVISED ACTION
14	Habitat-based Action	Implement habitat -based actions for priority wildlife	3	All wildlife species groups	Implement conservation and/or enhancement actions from the findings of Actions #8 and #9 to directly (through on the ground work) address identified risks or limiting factors, and to take advantage of documented opportunities, for priority wildlife species.	Implementation of conservation and/or enhancement actions to sustain/and or increase population viability of priority wildlife	Open	REVISED ACTION
	Species-based Action		3					

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Enhance sustenance and recreational resources based on input from Indigenous Nations and stakeholder communities								
15	Research & Information Acquisition	Research on culturally important species	2	Culturally important species in upland habitats	Conduct research and monitoring to improve the understanding of documented culturally important uplands plants and animals, including abundance, distribution, trend, threats and ecological relationships. Monitoring could be conducted by local guardians to support local concerns regarding potential stressors to upland habitats and sustenance resources. Research should incorporate Indigenous Knowledge and be used to identify conservation and/or enhancement actions for culturally important species.	Identification of priorities for conservation and/or enhancement actions for culturally important species	Open	REVISED ACTION
16	Habitat-based Action	Implementation of habitat-based actions for culturally important species	2	Culturally important species in upland habitats	Implement conservation and/or enhancement actions identified under Action #15 for culturally important species. Habitat enhancement activities that include local community engagement and volunteer support are encouraged.	Implementation of enhancement actions for culturally important species.	Open	NEW ACTION
	Species-based Action		2					