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FISH AND WILDLIFE  
COMPENSATION PROGRAM

COLUMBIA BASIN

# *UPLAND / DRYLAND ACTION PLAN*

June 2012 (Revised June 2016)

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The FWCP developed a strategic framework that guides overall planning for compensation investments (MacDonald 2009). The framework has guided the development of strategic plans for each basin within the FWCP program area, which are in turn informing action plans that focus on specific priorities within each basin (**Error! Reference source not found.**).

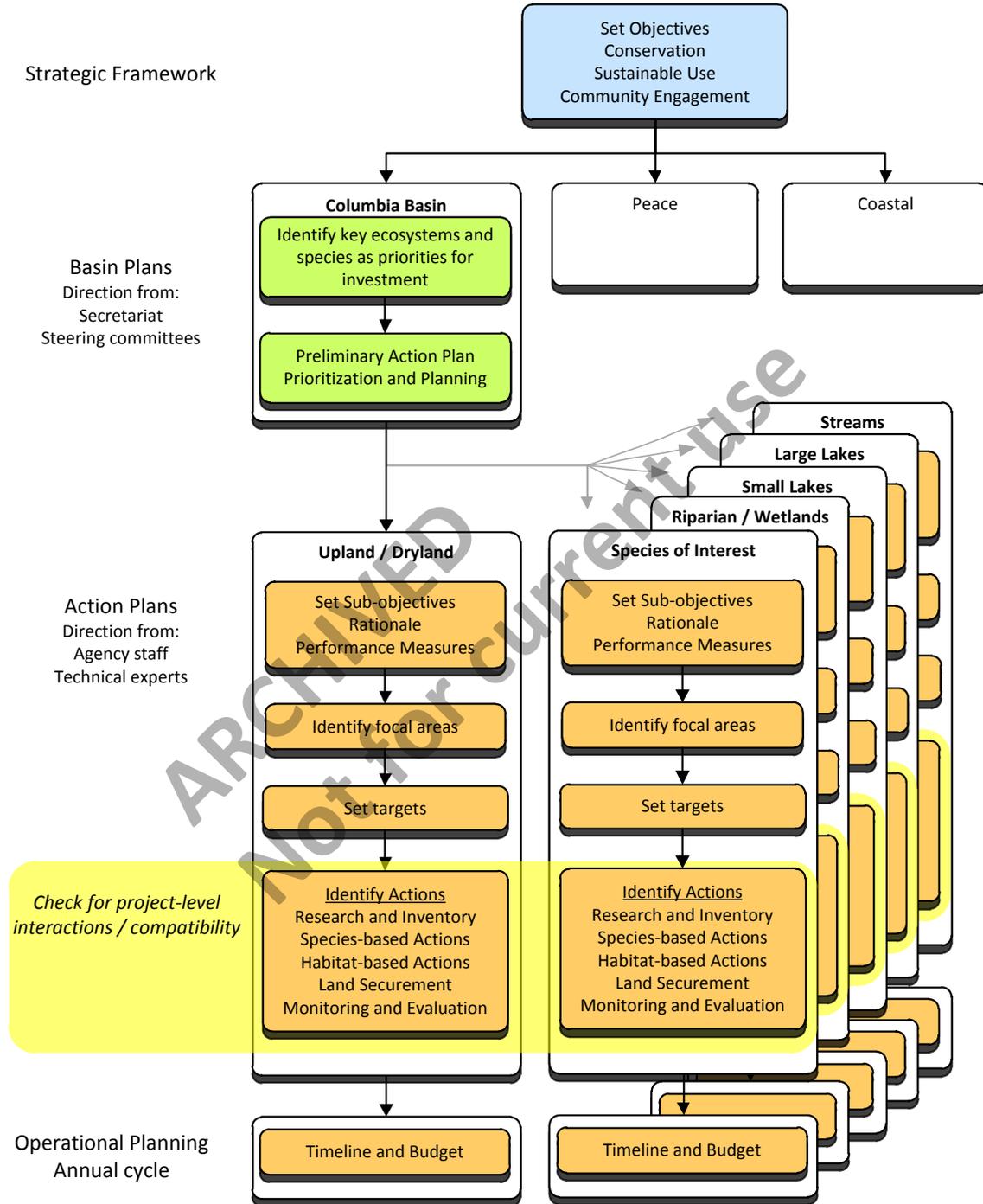


Figure 2. Relationship between the Upland / Dryland Action Plan and higher level planning and objectives.

This Upland/Dryland Action Plan sets out priorities for the Fish and Wildlife Compensation Program to guide projects within the FWCP: Columbia project area in support of wildlife. The plan builds on the FWCP's strategic objectives and the FWCP Columbia Basin Plan (**Error! Reference source not found.a**). Action plans have also been developed for small lakes, large lakes, streams, riparian and wetlands, and species of interest;<sup>1</sup> some actions may be complementary across the different plans.

The actions and priorities described here have been developed with input from the BC Ministry of Environment (MOE), BC Ministry of Forests, Lands and Natural Resource Operations (FLNRO), Fisheries and Oceans Canada (DFO), BC Hydro, First Nations and local stakeholders. It is important to understand, however, that planning priorities within action plans may not translate immediately into funded projects. Limited program funding requires that priority-setting has to also be developed across the program as a whole, not just within action plans. The process of selecting which actions will be implemented in any given year will occur during the annual implementation planning cycle.

## 2. Overview Context

### 2.1. Impacts and Threats

Upland habitats are defined as those ecosystems that are found above habitat influenced by periodic or permanent flooding. Drylands are a subset of upland habitats characterized by relatively low rainfall and rapid drainage, which results in vegetation communities dominated by grasses and drought-tolerant shrubs and trees (Figure 3).

Habitat in the Columbia River system in BC has been altered significantly by the construction of dams and consequent changes to flood regimes. A comprehensive study conducted by the FWCP estimated footprint impacts of BC Hydro operations of the Columbia Basin (Utzig and Schmidt 2011, and references therein). Impacts were estimated by photo-interpreting pre-dam imagery of impacted reaches (Ketcheson et al. 2005) and comparing them to current condition. Basin-wide, 24,088 ha of uplands were inundated by reservoirs resulting from BC Hydro dam construction (Utzig and Schmidt 2011). More upland habitat was inundated in the Kinbasket dam unit than in all other units combined (Figure 4).

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<sup>1</sup> All of the FWCP Columbia Plans are available at: <http://www.fwcpolumbia.ca/version2/index.php>

Approximately 20% of the habitats inundated were terrestrial, and the most common terrestrial habitat type lost was mesic forest, followed by dry and wet forest (Utzig and Holt 2008, MacKillop et al. 2008). Relative to its abundance, wet forest was associated with the greatest impact (MacKillop et al. 2008).

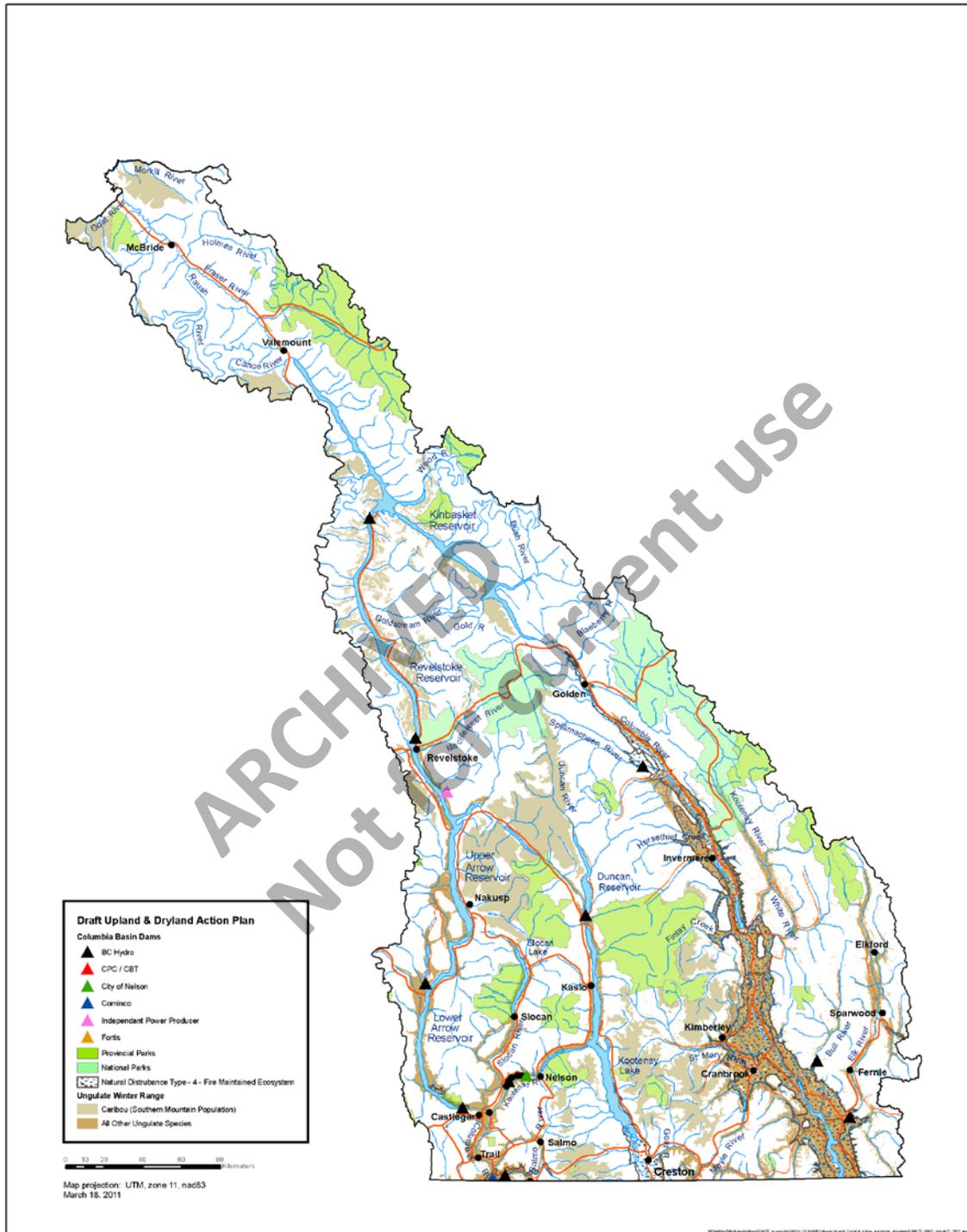


Figure 3. Distribution of dryland habitat (Natural Disturbance Type 4) and ungulate winter range in the Columbia Basin.

## 2.2. Limiting factors

Factors limiting upland habitat fall into three broad categories:

### Extent

The contribution of upland habitats to broader ecological function is ultimately limited by the extent of the habitats on the land base. Habitats are lost through inundation and conversion to other land uses. Although the extent of upland habitat lost to inundation was significant in some areas, as a proportion of low-elevation upland habitat in the Columbia Basin, the area was very small. There were likely range-restricted rare habitat types that were inundated; however, the extent of these losses is unknown.

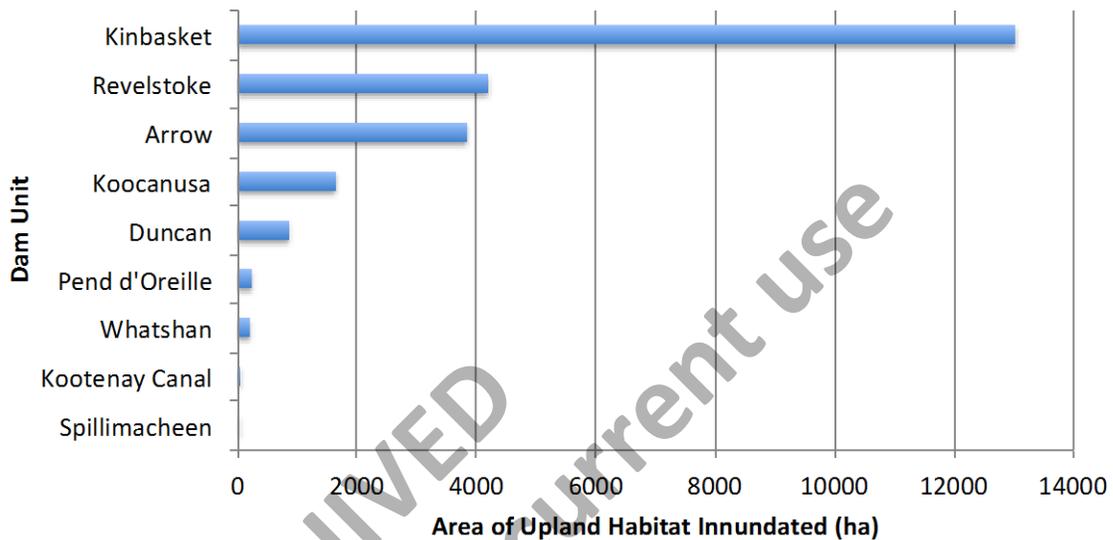


Figure 4. Area of upland/dryland habitats inundated by BC Hydro dam construction in the Columbia Basin, by dam unit (from Golder Associates and Kutenai Nature Investigations 2009).

### Distribution

Connectivity among habitats is important for dispersal of plants and animals and for seasonal movements of some species. Inundation created barriers to dispersal in valleys with reservoirs. Other land use pressures such as conversion for urban, extra-urban and agricultural purposes, and the creation of barriers such as highways and agricultural fencing, have further restricted connectivity.

### Productivity

The productivity of an ecosystem is defined as its ability to grow or yield native plants and animals. Even where the extent and distribution of habitats is relatively intact, the productivity of ecosystems can be eroded by pressures such as invasive species, mechanical disturbance, soil erosion, changes in drainage patterns, as well as forest harvesting, livestock grazing and other extractive activities.

### 2.3. Trends and Knowledge Status

The area of inundation has not changed significantly since dam construction, but there have been a variety of stressors that have continued to affect adjacent uplands. Many of these are directly or indirectly associated with forest harvesting and the associated expansion of the road network, allowing resource extraction and increasing other human-related pressures in previously inaccessible areas. Invasive species and erosion often follow new access.

An expanding human population has increased demand for resources and services provided by uplands habitats. In addition to forest harvesting, mining and livestock grazing, extra-urban development has expanded the footprint of human settlement. An increasing population is also resulting in increasing demand for recreational access for snowmobiles, all-terrain vehicles, hunting, hiking, backcountry skiing, as well as pressure to build or expand tourism infrastructure such as ski resorts, backcountry lodges and adventure tourism tenures.

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### 3. Action Plan Objectives, Measures and Targets

Clear and realistic management objectives are necessary to guide information acquisition and prioritize management actions. Priority actions and information needs will change as both improvements to the system are realized and information is gained. The current plan reflects the information available and values expressed by FWCP partners.

#### 3.1. Objective Setting

The following definitions are used for setting objectives in this report:

Objectives:	Objectives are high-level statements of desired future conditions (outcomes), consistent with MOE's mandate and policies.
Sub-objectives:	Sub-objectives are detailed statements of desired future conditions within objectives, from which performance measures can be derived and alternative management actions evaluated. They may be arranged hierarchically within objectives, and usually indicate conditions necessary to attain the objective to which they refer.
Performance Measures:	Measures are specific metrics that indicate the degree to which desired future conditions have been achieved.
Targets:	Targets are the value of the performance measure that indicates the attainment of a desired condition.
Actions:	Actions are management activities, plans or policies for achieving the objectives.

Objectives are the "ends" or the outcomes we ultimately care about. Actions are the "means," or the things we do to achieve them. This report focuses on describing the actions required to achieve the objectives in relation to riparian and wetland species and habitats. Complementary actions may also be identified in the separate Species of Interest Action Plan.

The opportunity to restore upland habitat directly or indirectly affected by dam construction is limited. As a result, FWCP directs management effort towards the best opportunities for improving the condition and productivity of priority native habitat upland/dryland habitats within the Columbia Basin. These priority habitats include:

1. **Fire-maintained ecosystems** - Fire suppression has led to forest encroachment into parkland-savannah ecosystems in the Columbia Basin (Rocky Mountain Trench Ecosystem Restoration Steering Committee 2006). These habitats are classified as NDT 4 forests in British Columbia (BC Ministry of Forests and BC Ministry of Environment 1995) and are restricted to low-elevation, dry sites in southern portions of the Basin (3). NDT 4 forests are home to a disproportionate number of rare and endangered species and ecosystems (e.g., deciduous forest) and provide important winter range for mule deer (*Odocoileus hemionus*), elk (*Cervus canadensis*) and bighorn sheep (*Ovis Canadensis*; Rocky Mountain Trench Ecosystem Restoration Steering Committee 2006). The Ministry of Environment has identified NDT 4 forest restoration as a strategic priority (ENAR ESDE Inc. 2006).

2. **Exceptional old-growth forests** - The extent of old-growth forests has been reduced as a result of forest harvesting and, for wet forest, inundation following dam construction. The importance of old-growth forests has been recognized in regional and provincial-scale land use planning. There are small areas of exceptional old forest representation in the Columbia Basin that could be protected.
3. **Deciduous forests** - Deciduous forests are a rare feature in the Columbia Basin. Most stands are Black Cottonwood leading and are located in riparian areas; however, there are important upland deciduous stands, principally aspen leading, which require management intervention to maintain.
4. **Ungulate winter range** - Ungulate Winter Ranges have been legally established under the *Forest and Range Practices Act*. These areas provide habitat necessary for the over-winter survival of deer, elk, moose (*Alces alces*), bighorn sheep, mountain goats (*Oreamnos americanus*) and caribou (*Rangifer tarandus*). Some ungulate winter range areas require management intervention (e.g., burning, thinning) to maintain or improve function. Many of these areas are located within NDT 4 forests (3).

## 3.2. Objectives, Measures and Targets

### Objective 1 – Maintain productive and diverse ecosystems.

**Sub-objective 1:** Secure areas of priority habitats threatened with land conversion.

**Rationale:** Conversion to other land uses is an ongoing threat to priority upland habitats, and securing remaining habitat to prevent loss is a high priority. Habitat is considered “secure” if it is protected from conversion to other land uses (e.g., by purchasing the land or negotiating a covenant or stewardship agreement).

**Performance measure:** Hectares of priority habitat secured annually.

**Targets:** Targets for securing habitat will be determined when opportunities have been identified.

**Sub-objective 2:** Reduce threats to priority habitats.

**Rationale:** Many naturally functioning priority habitats can benefit from management actions that reduce specific threats (e.g., treatment for invasive species, access control).

**Performance measure:** Hectares of priority habitat improved annually.

**Targets:** Targets for improved habitat will be determined when opportunities have been identified.

**Sub-objective 3:** Restore degraded priority habitats.

**Rationale:** Land use pressures have altered successional pathways in priority habitats. Common stressors include fire suppression, establishment of invasive species and mechanical disturbance to soil. These stressors can alter successional pathways and/or adversely affect ecosystem productivity. Projects can be designed to restore the original ecological function of these areas.

**Performance measure:** Hectares of priority habitat treated annually.

**Targets:** Targets for restored habitat will be determined when opportunities have been identified.

**Sub-objective 4:** Complete management plans for conservation properties and implement.

**Rationale:** FWCP has committed to co-managing “conservation properties,” which are fee-simple parcels usually owned by the BC Ministry of Environment and co-managed with the Ministry and land trusts. No specific actions are presented for this sub-objective because implementation requirements depend on actions identified in plans.

**Measures and Targets:** Measures and targets will be developed when further inventory and planning is completed.

## **Objective 2 – Maintain or improve the status of priority species.**

**Rationale:** Although species will benefit from general improvements in priority ecosystems, there are specific factors that might be limiting the abundance and distribution of species. Actions to address these factors are presented in the Species of Interest Action Plan for the Columbia Basin.

## **Objective 3 – Maintain or improve opportunities for sustainable use.**

**Rationale:** Many species occupying priority habitats are the focus of sustainable use activities by First Nations and the public. Actions directed specifically towards improving sustainable use opportunities are not addressed in this action plan; however, actions addressing conservation of species and ecosystems are assumed to support a variety of sustainable use activities.

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## 4. Action Plan

### 4.1. Overview

The Action Plan has several individual actions for each upland and dryland area, which are presented in Section 4.2. Some actions support multiple sub-objectives, which in turn support multiple objectives. Figure 5 provides an overview of the link between actions and objectives.

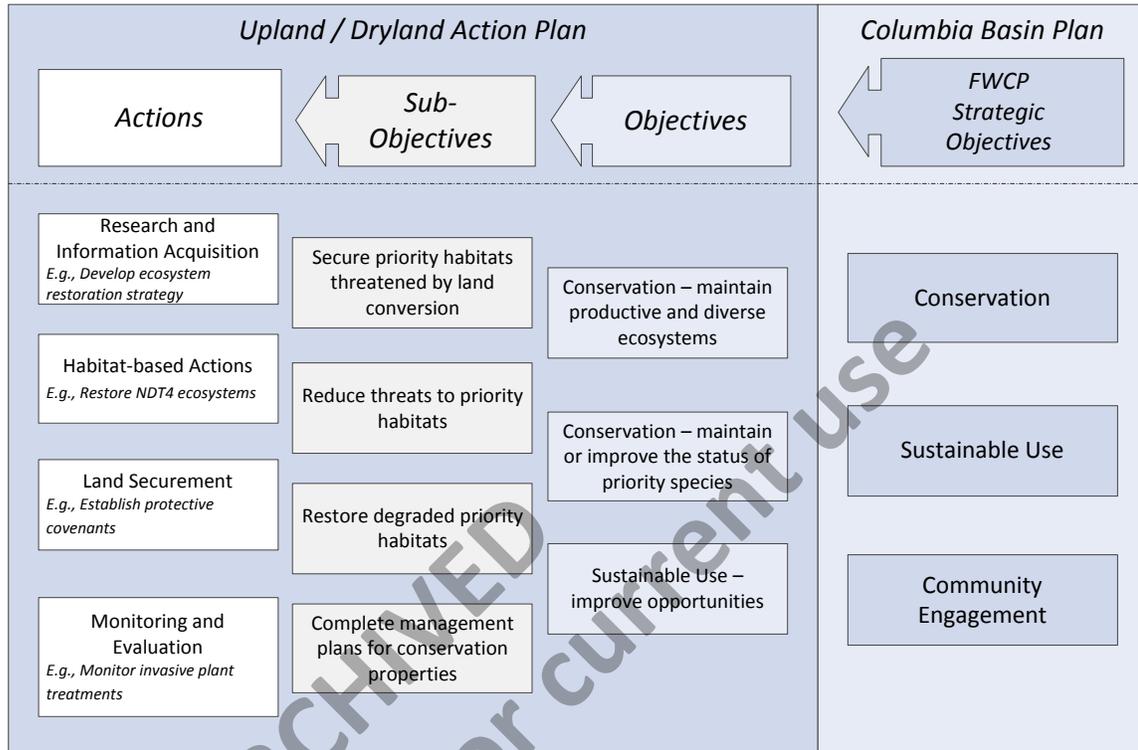


Figure 5: Relationship between actions, sub-objectives and objectives in this Upland/Dryland Action Plan and the FWCP strategic objectives in the Columbia Basin Plan.

At the level of individual project investment and implementation decisions, the FWCP applies the following criteria to further define its role and actions within defined program areas:

### 4.2. Components

As a starting point for action planning, two outputs from the Species Rating and Database Tool (FWCP 2011b) were used to identify high priority species that would benefit most from FWCP investment in upland and dryland areas and the generic types of actions required. The first output is the subset of species that depend on upland and dryland areas more than any other type of habitat (Appendix A). The second output is a list of species (Appendix B) The preliminary recommended actions and their priority (1 = first, 2 = second, - = not applicable) are identified for each species.

**Table B2)** for which upland and dryland areas represent a “supporting” habitat; that is, these species occur in upland and dryland areas, but they occur more often or are more dependent on one or more other habitat types.

The tables below present the main actions identified at this time for each priority habitat type along with the supporting rationale for why the action is required and what it will achieve. Actions are also organized under broad categories: Research and Information Acquisition, Habitat-based Actions, Land Securement and Monitoring and Evaluation. Also provided are priority ratings to guide efforts within and among priority habitat types.

Actions to address objectives and sub-objectives common to all priority ecosystems are presented in Table 1.

Table 1. Actions to address objectives and sub-objectives common to all priority ecosystems in the Columbia Basin.

Objective	Sub-objective	Action	Rationale	Priority
<b>Research and information acquisition</b>				
1	1	Identify opportunities to secure priority upland/dryland habitats in the Columbia basin.	Opportunities and risks have not been systematically evaluated across the basin.	1
<b>Habitat-based actions</b>				
1	3	Prevent and manage invasive species on, or adjacent to, conservation properties, restoration sites, and other ecologically sensitive areas.	Invasive species can spread rapidly, outcompeting and preying on native species, dominating natural and managed areas, and altering biological communities <sup>2</sup> . FWCP’s strategy is to contribute to the prevention and management of invasive species in the following priority:  1) On or adjacent to conservation properties co-operatively managed by FWCP where the threat to	1

<sup>2</sup> Invasive Species Strategic Plan (December 2014), Inter-Ministry Invasive Species Working Group

Objective	Sub-objective	Action	Rationale	Priority
			properties conservation objectives is significant; and,  2) In or adjacent to FWCP restoration areas and other ecologically significant FWCP project sites where the threat is considered significant.	
<b>Land securement</b>				
1	1	Contribute to land acquisition opportunities as they arise.	Properties adjacent to existing conservation properties, and those that protect recovery and focal species should be the priority.	2
2	1	Protect connectivity corridors for carnivores and ungulates in the Creston Valley.	Movement east-west between the Selkirks and Purcells, as well as north-south movement across highway 3 is a concern.	1
2	1	Secure important connectivity habitat for carnivores and ungulates in the Elk Valley and Columbia Valley.	Areas have been identified that serve as movement corridors for grizzly bears and other species	2
<b>Monitoring and Evaluation</b>				
1	3	Monitor the status of invasive plant infestation and their response to treatment	Effectively managing invasive plants requires monitoring the status of infestations and whether treatments are halting or reversing their spread	1

### Fire-maintained Ecosystems

Actions to address objectives and sub-objectives related to fire-maintained ecosystems are presented in Table 2. Fire-maintained ecosystems are common at low elevations in the Columbia

basin, particularly in the Rocky Mountain trench in the East Kootenay and Creston, Pend D'Oreille, and Columbia River valleys of the West Kootenay (Figure 3).

Table 2. Actions to address objectives and sub-objectives related to fire-maintained ecosystems in the Columbia Basin.

Objective	Sub-objective	Action	Rationale	Priority
<b>Research and information acquisition</b>				
1	3	Develop strategy for ecosystem restoration in the West Kootenay in partnership with WK Ecosystem Restoration Committee	There is currently no coherent strategy that outlines ecosystem restoration priorities in the West Kootenay	2
1	3	Test the Ecosystem Scorecard that was developed by the FWCP to assess the potential impacts of restoration treatment based on pre-treatment vegetation abundance and distribution	This tool will help in ecosystem restoration planning to assist biologists determine desired future conditions for sites targeted for restoration	2
1	3	Support research that helps develop restoration techniques for NDT 3 and 4 habitat types	Allow us to replicate naturally functioning processes or arrive at similar outcomes using alternate techniques. Improvements may be made in prescribed burning, slashing, piling, pile burning and seeding	2
1	3	Continue to re-evaluate and refine the criteria developed to prioritize suitable ecosystem restoration areas.	Existing priorities were developed for the NDT4 area by East Kootenay Ecosystem Restoration Program. This is a partnership program of which FWCP is a member. Criteria for evaluation include: rare and endangered species present, range condition, ungulate winter range class, to list a few. NDT3 areas are evaluated based on habitat	2

Objective	Sub-objective	Action	Rationale	Priority
			condition and ungulate population trends.	
1	1	Develop guidelines for retaining, and determine the presence of cavity nests and wildlife trees within treatment areas.	Maintain existing cavity nests and create artificial cavities and or snag creation	1
<b>Habitat-based actions</b>				
1	3	Contribute to NDT4 restoration planning and treatments on crown land, conservation lands and within Parks and Protected areas (understory slashing, and/or burning), through the NDT4 Ecosystem Restoration Committees.	Restoration requires periodic mechanical or other treatments to reduce tree densities and improve the vigor of natural vegetation communities.	1
1	2	Invasive plant species control prior to restoration treatment	Removal or reduction in invasive species abundance prior to treatment will help minimize the spread of invasive species post treatment	1
1	3	Continue with wildlife tree recruitment (primarily for Lewis's Woodpecker), grassland and open forest ecosystem restoration activities in the East Kootenay (e.g. Hoodoo Conservation Property; Premier Ridge)	Improve condition of important habitat.	1
1	2	Address access management issues on FWCP-managed properties.	This is an ongoing problem that threatens ecological values.	1
1	3	Incorporate upland deciduous objectives into restoration plans and	Aspen sites require periodic disturbance. Current age structure	2

Objective	Sub-objective	Action	Rationale	Priority
		prescriptions.	of these stands indicates lack of recruitment.	
<b>Land securement</b>				
1	1,2	Protect upland grasslands and open forests in the Columbia Valley	Contiguous blocks of protected grasslands are rare in the area	1
<b>Monitoring and Evaluation</b>				
1	3	Coordinate and consolidate vegetation monitoring of restoration treatments and compare to pre-treatment condition	Monitor the success of ongoing treatments to ensure (1) objectives are being met (increase bunchgrass/fescue) and (2) invasive plant species distribution and abundance does not increase. Coordination among agencies is required.	1
1	3	Monitor species dependent on open forest habitats response to restoration treatments	Monitor the success of ongoing treatments to ensure that species objectives are being met.	2

### Exceptional Old-growth Forests and Deciduous Forests

There are currently no actions identified to address objectives and sub-objectives related to exceptional old-growth habitats and deciduous forests in the Columbia basin, beyond identifying candidate areas for securement (Table 1). As mentioned, most deciduous forests in the basin are associated with riparian ecosystems and actions for those habitats are presented in another action plan. Upland deciduous forests are often located in fire-maintained ecosystems but require distinct management to maintain.

### Ungulate Winter Range

Actions to address objectives and sub-objectives related to ungulate winter are presented in Table 3. The BC Ministry of Environment has legally established ungulate winter ranges throughout the

Columbia Basin (Figure 3). Some of these areas are also fire-maintained ecosystems and actions to reduce threats or restore can be similar.

Table 3. Actions to address objectives and sub-objectives related to ungulate winter range in the Columbia Basin.

Objective	Sub-objective	Action	Rationale	Priority
<b>Research and information acquisition</b>				
1	3	Develop a framework for identifying ungulate enhancement opportunities in the NDT3 based on the Ungulate Winter Range guidelines developed for forest licensees.	Opportunities exist working with forest licensees within the NDT3 that could be planned around enhancing ungulate winter range.	2
<b>Habitat-based actions</b>				
1	3	Restore ungulate winter range where feasible.	Ungulate winter range objectives are variable, but conditions can be improved for some species in some areas through mechanical treatment or other treatments.	2
<b>Land securement</b>				
1	1	Secure important connectivity habitat for carnivores and ungulates in the Elk Valley and Columbia Valley	Areas have been identified that serve as movement corridors for grizzly bears and other species.	2
<b>Monitoring and Evaluation</b>				
1	1,2	Monitor species dependent on open forest habitats for responses to restoration treatments	Monitoring species responses to restoration treatments is a measure of effectiveness.	2
1	3	Continue with winter ungulate	Ungulate inventories can help	1

Objective	Sub-objective	Action	Rationale	Priority
		inventories (both aerial and ground) in order to estimate population size, age and sex ratios, and trend.	evaluate the effectiveness of habitat treatments, identification of sites that may need treatment, and aid in determining which ungulate species are increasing and/or decreasing with geographical areas.	

## 5. Conclusion

More than 24,000 ha of upland habitat were inundated by reservoirs resulting from BC Hydro dam construction. This extensive loss of habitat resulted in direct and indirect impacts to a number of wildlife species. The opportunity to restore upland habitat lost to inundation is limited; therefore, FWCP focuses on improving the condition of specific upland and dryland habitats that are rare or require intervention to maintain their productivity. These habitats include:

1. Fire-maintained ecosystems;
2. Exceptional old-growth forests;
3. Deciduous forests; and,
4. Ungulate winter range.

Basin-wide actions include identifying and securing important habitats (in particular related to connectivity) and treating invasive plant infestations. Restoration and monitoring are key actions for fire-maintained ecosystems and ungulate winter ranges. No actions, other than securement, have yet been identified for exceptional old-growth forests and deciduous forests.

By making investments in these habitats FWCP directly addresses their program's strategic objective to maintain productive and diverse ecosystems. The investments indirectly contribute to improving the status of priority species by improving the habitats on which many of the species depend. These habitats also support a variety of consumptive and non-consumptive sustainable use activities by First Nations and the public.

## 6. References

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## Appendix A Species with Highest Priority Habitat Association to Uplands and Drylands

The following species have been identified as having their highest priority habitat association with Uplands and Drylands. These species are rated with a high conservation concern and/or local interest and a strong linkage to footprint impacts (see FWCP: Columbia Species of Interest Plan). The preliminary recommended actions and their priority (1 = first, 2 = second, - = not applicable) are identified for each species.

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**Table A1. Output from the Species Rating and Database Tool (FWCP 2011b). This table identifies species of regional conservation concern whose primary habitat is Uplands and Drylands. First and second order priority actions are listed in twelve categories.**

Species	Guild	Research & Information Acquisition			Species-Based Actions			Habitat-Based Actions			Land Securement		Monitoring & Evaluation	Priority in the Species Plan
		Inventory	Assessment (e.g., targets)	Integrated habitat planning	Translocate / Reintroduce	Alternate Predator Prey Man	Other	Habitat Creation	Habitat restoration	Restore connectivity	Habitat Acquisition	Habitat Stewardship		
California Myotis	BAT	1	-	-	-	-	-	-	-	-	-	-	-	Inventory
Hoary Bat	BAT	1	-	2	-	-	-	-	-	-	-	2	-	Inventory
Long-eared Myotis	BAT	1	-	-	-	-	-	-	-	-	-	-	-	Inventory
Long-legged Myotis	BAT	1	-	-	-	-	-	-	-	-	-	-	-	Inventory
Northern Myotis	BAT	-	-	-	-	-	-	-	-	-	2	-	2	Focal
Silver-haired Bat	BAT	2	-	2	-	-	-	-	1	-	-	2	2	Focal
Townsend's Big-eared bat	BAT	2	-	2	-	-	-	-	-	-	1	-	2	Focal
American Badger	CAR	-	-	-	2	-	-	-	2	1	2	2	-	Recovery
American Marten	CAR	1	-	-	-	-	-	-	-	-	-	-	-	Inventory
Grey Wolf	CAR	2	-	2	-	2	-	-	-	2	-	-	1	Focal
Grizzly Bear	CAR	2	-	2	-	2	-	-	2	1	2	2	2	Focal
Wolverine	CAR	2	-	2	-	-	-	-	-	1	-	-	2	Focal
Brown Creeper	FLY	1	-	2	-	-	-	-	2	-	-	-	-	Inventory
Chestnut-backed Chickadee	FLY	1	-	2	-	-	-	-	2	-	-	-	-	Inventory
Hammond's Flycatcher **	FLY	-	-	-	-	-	-	-	-	-	-	-	1	Inventory
Olive-sided Flycatcher **	FLY	1	-	2	-	-	-	-	-	-	-	-	-	Inventory
Pacific-slope Flycatcher	FLY	1	-	2	-	-	-	-	-	-	-	-	-	Inventory
Western Wood-pewee **	FLY	1	-	2	-	-	-	-	-	-	-	-	-	Inventory
White-breasted Nuthatch	FLY	1	-	-	-	-	-	2	2	-	-	-	-	Inventory
Band-tailed Pigeon	GAM	1	-	-	-	-	-	-	-	-	2	2	-	Inventory
Dusky Grouse	GAM	1	-	-	-	-	-	-	2	-	-	-	I	Inventory
Ruffed Grouse **	GAM	1	-	-	-	-	-	-	2	-	2	2	-	Inventory
Rufous Hummingbird **	HUM	1	-	-	-	-	-	-	-	-	2	2	I	Inventory
Barred Owl	OWL	1	-	-	-	2	-	-	-	-	-	-	-	Inventory
Northern Pygmy-owl **	OWL	1	-	2	-	-	-	2	-	-	-	-	-	Inventory
Bighorn Sheep	UNG	2	-	-	2	-	-	-	1	2	2	2	2	Focal
Caribou	UNG	2	-	2	2	1	-	-	2	2	2	-	2	Recovery
Elk	UNG	2	-	2	-	2	-	-	1	2	2	2	2	Focal
Mule Deer	UNG	2	-	-	-	2	-	-	1	-	2	2	2	Focal
White-tailed Deer	UNG	2	-	-	-	1	-	-	2	2	2	2	2	Focal
Connecticut Warbler	WAR	1	-	-	-	-	-	-	-	-	2	2	-	Inventory
Purple Finch	WAR	1	-	2	-	-	-	-	-	-	-	-	-	Inventory
Lewis' Woodpecker **	WOO	2	-	2	-	-	-	2	1	-	2	2	-	Recovery
Pileated Woodpecker	WOO	-	-	2	-	-	-	-	-	-	-	-	I	Inventory
Red-naped Sapsucker **	WOO	-	-	-	-	-	-	-	-	-	-	-	I	Inventory

\* Priority wetland species - *Canadian Intermountain Joint Venture*  
 \*\* Priority landbird - *Northern Rockies Bird Conservation Region (Partners in Flight)*

1 = First Priority Action  
 2 = Second Priority Action(s)

I: Indicator sp

## Appendix B Species Associated with Uplands and Drylands as Supporting Habitat

The following table include species that have been identified with having Uplands and Drylands as a “supporting” habitat association, meaning that their highest habitat association is with another ecosystem type.

It is expected that most habitat-based actions of benefit for species in this list will be addressed within those other plans. That said, these species also use Uplands and Drylands, and some portion of their habitat requirements may be addressed in this Action Plan.

These species are rated with a high conservation concern and/or local interest and a strong linkage to footprint impacts (see FWCP: Columbia Species of Interest Plan). The preliminary recommended actions and their priority (1 = first, 2 = second, - = not applicable) are identified for each species.

**Table B2. Output from the Species Rating and Database Tool (FWCP 2011b). This table identifies species of regional conservation concern whose secondary habitat is Uplands and Drylands. First and second order priority actions are listed in twelve categories.**

Species	Guild	Research & Information Acquisition			Species-Based Actions			Habitat-Based Actions			Land Securement		Monitoring & Evaluation	Priority in Species Plan
		Inventory	Assessment (e.g., targets)	Integrated habitat planning	Translocate / Reintroduce	Alternate Predator Prey Man	Other	Habitat Creation	Habitat restoration	Restore connectivity	Habitat Acquisition	Habitat Stewardship		
Barn Swallow	AER	1	-	-	-	-	-	-	-	-	2	2	-	Inventory
Northern Rough-winged Swallow **	AER	1	-	-	-	-	-	-	-	-	-	2	-	Inventory
Vaux's Swift **	AER	2	-	2	-	-	-	1	-	-	-	2	2	Focal
Violet-green Swallow	AER	1	-	-	-	-	-	2	-	-	-	2	-	Inventory
Northern Leopard Frog	AMP	2	-	-	1	-	-	2	2	2	2	2	-	Recovery
Western Toad	AMP	2	-	1	-	-	-	2	-	2	2	2	2	Focal
Fisher	CAR	1	-	2	2	-	-	-	2	2	2	2	-	Inventory
Eastern Kingbird	FLY	1	-	-	-	-	-	-	-	-	-	-	-	Inventory
Red-eyed Vireo	FLY	1	-	-	-	-	-	-	-	-	-	-	-	Inventory
Veery	FLY	1	-	-	-	-	-	-	2	-	-	-	-	Inventory
Western Screech-owl **	OWL	2	-	-	-	-	-	2	-	-	2	1	-	Recovery
Northern Harrier *	RAP	1	-	-	-	-	-	-	2	-	-	-	I	Inventory
Moose	UNG	2	-	-	-	1	-	-	2	-	2	2	2	Focal
American Redstart	WAR	1	-	-	-	-	-	-	-	-	-	-	I	Inventory
Blackpoll Warbler **	WAR	-	-	-	-	-	-	-	-	-	-	-	-	Inventory
Bobolink **	WAR	2	-	-	-	-	-	-	2	-	2	1	2	Focal
Yellow-breasted Chat	WAR	2	-	-	-	-	-	-	2	-	2	1	-	Recovery
American White Pelican *	WAT	-	-	2	-	-	-	2	-	-	-	1	2	Focal

\* Priority wetland species - Canadian Intermountain Joint Venture

\*\* Priority landbird - Northern Rockies Bird Conservation Region (Partners in Flight)

1 = First Priority Action

2 = Second Priority Action(s)

I: Indicator sp