FOR REFERENCE ONLY

Version from 2011 now archived

Updated 2017 version of Coastal Region Action Plans available at:

fwcp.ca/region/coastal-region/

FISH AND WILDLIFE COMPENSATION PROGRAM

ASH RIVER WATERSHED

SPECIES OF INTEREST ACTION PLAN

FINAL DRAFT

The FWCP is a partnership of:

BC hydro FOR GENERATIONS

British Columbia

Canada

Fisheries and Oceans Canada

Pêches et Océans Canada

OCTOBER 2011

GDS11-360

Table of Contents

Table of Figures and Tables

Ash River Species of Interest Action Plan

1 INTRODUCTION

The Fish and Wildlife Compensation Program (FWCP): Coastal Region evolved from its origin as the Bridge-Coastal Restoration Program (BCRP), a program initiated voluntarily by BC Hydro in 1999 to restore fish and wildlife resources that were adversely affected by the footprint of the development of hydroelectric facilities in the Bridge-Coastal generation area. Footprint impacts include historical effects on fish and wildlife that have occurred as a result of reservoir creation, watercourse diversions and the construction of dam structures.

In 2009, the program developed a strategic framework that guides overall planning for compensation investments (MacDonald, 2009). The framework has guided the development of strategic plans for each watershed within the FWCP program area, which are in turn informing action plans that focus on specific priorities within each watershed (Figure 1).

This Species of Interest Action Plan sets out priorities for the Fish and Wildlife Compensation Program to guide projects in the Ash River project area, which for the purposes of this planning document includes the Ash River above the confluence of the Stamp River. As many species of interest, such as Roosevelt Elk may have ranges that extend beyond the watershed boundaries, the action plan may also consider actions in areas beyond the Ash River project area. Also, as the headwaters of the Ash River system are adjacent to the headwaters of the Puntledge and Campbell River systems, some activities may be considered jointly between the three systems, such as inventory and mapping.

The plan focuses on species of conservation concern (including species-at-risk) or other regionally important species for management planning process. The plan builds on the FWCP's strategic objectives and the Ash River Watershed Plan (FWCP, 2011). Action plans have also been developed for riparian and wetland areas and salmonids; and some actions may be complementary across the different plans.

The actions and priorities outlined in this plan have been identified through a multi-stage process involving BC Hydro, Fisheries and Oceans Canada (DFO), Canadian Wildlife Service (CWS), Ministry of Environment (MOE), local First Nations, and local communities. Initial priorities were developed through consultation with agency staff. These priorities were then reviewed and discussed at a workshop[1] to allow First Nations, public stakeholders, and interested parties to comment and elaborate on the priorities. In addition to mapping and inventory of species of concern in general, priority species included in this plan are:

[1] Port Alberni (18 June, 2010)

- Roosevelt elk
- Northern Pygmy-owl
- Western Screech-owl
- Band-Tailed Pigeon
- Northern Red-Legged Frog

The actions and priorities discussed here have been developed with input from the BC Ministry of Environment, Fisheries and Oceans Canada, 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.

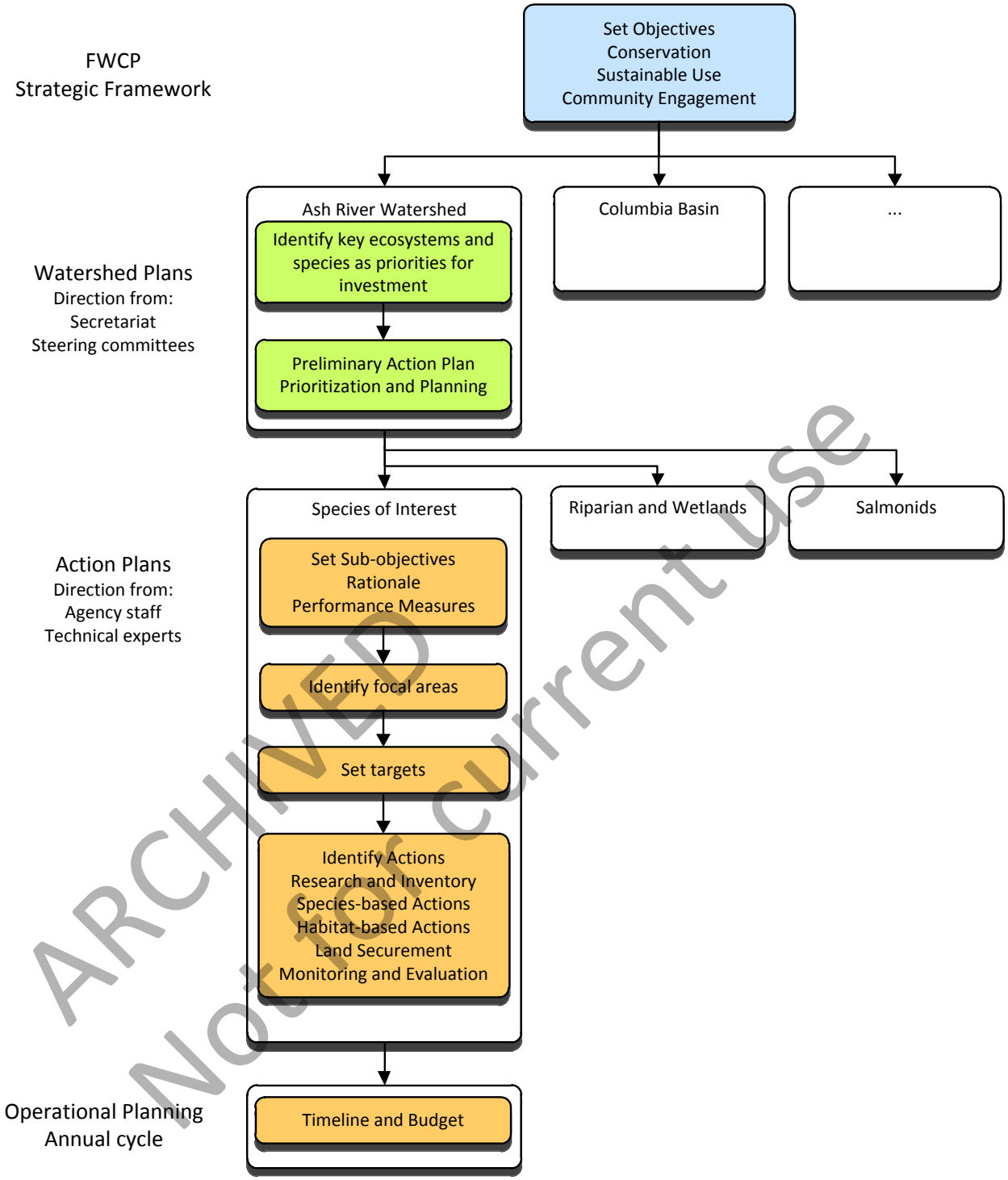

Figure 1: Relationship between the Species of Interest Action Plan and higher level planning and objectives.

2 OVERVIEW CONTEXT

The Ash River watershed is situated about 40 km northwest of Port Alberni in central Vancouver Island, between the Beaufort Range and Strathcona Provincial Park (Figure 2). The upper Ash watershed is dominated by mountains up to 2,000 m, which form the boundary between the Ash, Campbell and Puntledge watersheds, and small areas of permanent snowpack exist there. From Oshinow Lake at elevation 410 m, the Ash River drops a further 80 m in 13 km to Elsie Lake Reservoir. The lower parts of the watershed have lower relief than the upper basin. Below Elsie Lake Reservoir the lower Ash River flows into the Stamp River and from there into the Somass River before meeting the ocean at Port Alberni. There are three lakes on the Ash River mainstem, Oshinow, Elsie and Dickson Lakes, and several smaller lakes on tributaries.

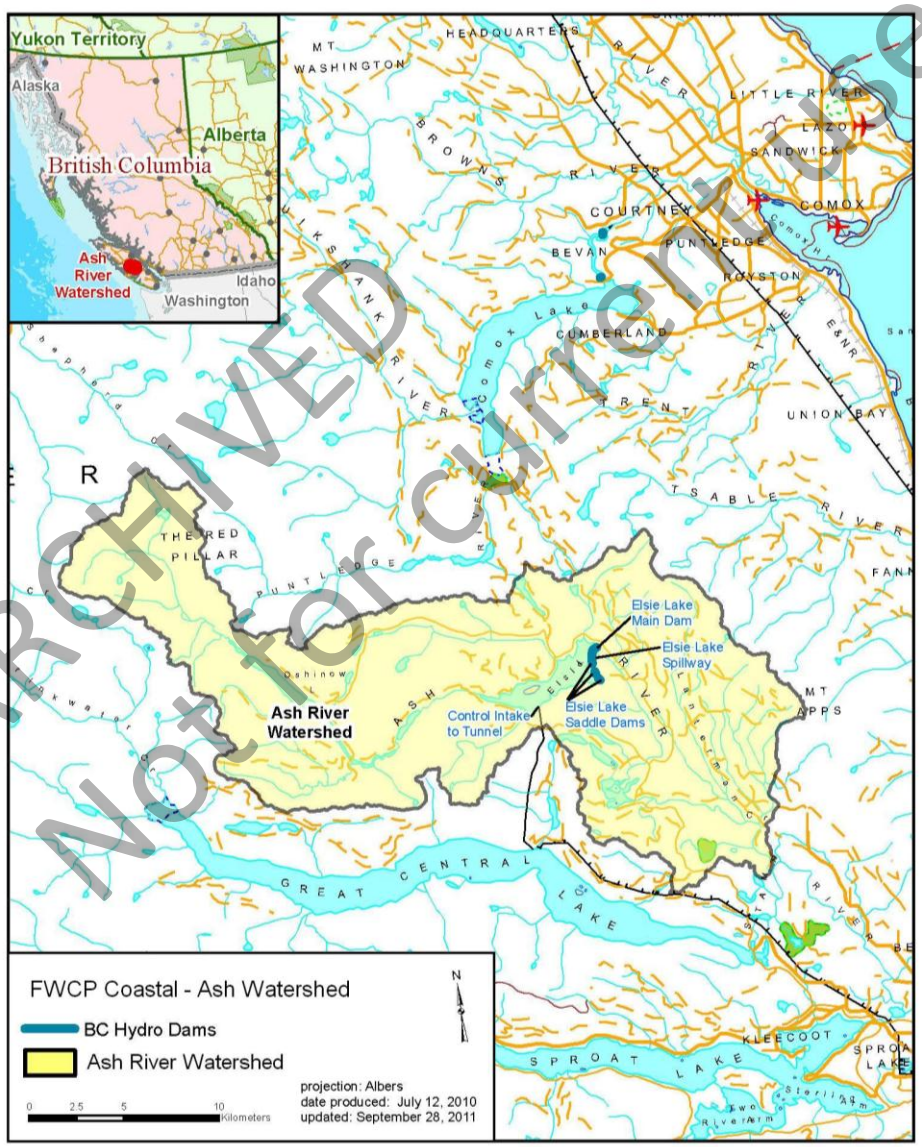

Figure 2: The Ash River hydropower project.

The Ash River basin is in the transition zone between the wet west coast and drier east coast climates of Vancouver Island. The basin is affected by frontal storms arriving from the southwest off the Pacific Ocean with strong, moist winds that bring heavy precipitation for durations of a few hours to a few days. Monthly rainfall can be as high as 800-900 mm between November and March. Peak inflow, however, occurs from May to July from snow melt, whereas August and September are low flow months.

The Ash River watershed is in the traditional territories of the Hupacasath First Nation and Tseshaht First Nation.

The Ash River project, completed in 1958 by the B.C. Power Commission, consists of Elsie Dam at the outlet of Elsie Lake Reservoir and four saddle dams. Water is diverted from Elsie Lake Reservoir through a 7.8 km tunnel and penstock to a powerhouse on the shoreline of Great Central Lake (Figure 2). The plant usually operates at maximum capacity (10.7 m^3/s), except in late summer when inflows are low and during a 1-2 week annual maintenance period, usually scheduled for August. Flows are released down the Ash River from Elsie Dam to support fish and other objectives, according to operations described in the Ash River Project Water Use Plan (BC Hydro 2004). Updated minimum flows agreed to in the WUP are 3.5 m^3/s from May 1 to October 31; 5 m^3/s from November 1 to April 30; and two separate pulse flows for adult steelhead migration, of 10 m^3/s for two days between August 1 and September 30.

2.1 IMPACTS AND THREATS

Fish and Wildlife habitat and species have been significantly altered due to the construction of the dams, the development of hydro-power, and alterations in the hydraulic regimes of the systems. The following summary of the primary footprint impacts is derived from:

- Bridge-Coastal Restoration Program: Strategic Plan, Volume 2: Watershed Plans, Chapter 4: Ash River (December 2000);
- Ash River Water Use Plan Consultative Committee Report (October 2003); and
- Findings in the Community Workshop (Port Alberni, B.C., June 18, 2010).

Hydro-related Impacts — The impacts that occurred are based on location in the watershed as follows:

Elsie Dam and Upstream.

1. The creation of Elsie Lake Reservoir flooded 5 km of mainstem channel, 4.6 km of tributary channel and 271 ha of natural lake, as well as associated riparian areas.
2. There is reduced access to reservoir tributaries due to annual water level fluctuations of about 15 m.
3. Fluctuating water levels also impact littoral productivity in the reservoir.
4. Entrainment mortality is not quantified but is limited to resident species or offspring of fish transported around the dam, as there is no fish passage at Elsie Dam.

Lower Ash River.

5. The dam footprint led to a loss of instream, riparian and upland habitats.
6. Large woody debris recruitment has been reduced by the dam.
7. Spills from the dam strand steelhead smolts during spring out-migrations.
8. Elsie Dam blocks movement of resident trout.
9. Reduced flows have enhanced accessibility for summer steelhead to habitats above Lanternman Falls and potentially Dickson Falls.
10. 25 km of summer rearing habitat and capacity in the mainstem has been improved by summer fish flow releases.
11. Diversion of water to Great Central Lake, and reservoir retention has reduced nutrient levels downstream.

Diversions

12. Diversion of water to Great Central Lake may have elevated water temperatures in the lower Stamp and Somass rivers, which historically would have received cold water from the Ash.

Non-Hydro Impacts — Other impacts on fish populations in the Ash River watershed include historic effects of logging, historic and ongoing salmon harvest, linear developments, urbanization and habitat changes in the Alberni estuary. A substantial portion of the upper watershed is protected within Strathcona Provincial Park.

2.2 LIMITING FACTORS

The limiting factors for species of interest are dependent upon the specific species of interest. Suitable and productive habitat is, in general, a key limiting factor for most species. Species are therefore greatly impacted by activities affecting habitat and its associated food supply.

The factors are summarized here.

Loss of Habitat: Loss of riparian and wetland habitats has occurred in flooded valley bottoms. Potential effects include availability of habitat for amphibians, water shrews and other small mammals and their predators, foraging and overwintering habitat for ungulates, and breeding habitat for some species of neo-tropical migrants.

Habitat Alterations: Altered flow regime has changed riparian and wetland habitats, either increasing the period or extent of inundation or drying. This leads to changes in the composition and structure of the ecological community, precipitating changes in the suitability of the habitat for wildlife. Potential effects on wildlife include changes to habitat quality and quantity for species, including a lack of seasonal nesting sites, a lack of snags and for cavity nesters, or potential structures for raptors, etc. Also, the lack of riparian vegetation in drawdown zones affects ungulates, furbearers, small mammals and several species of passerines including some neo-tropical migrants.

Wildlife Migration: Structures, reservoirs and diversions can create impediments to wildlife movement.

2.3 TRENDS AND KNOWLEDGE STATUS

SPECIES

Table 1 shows a list of potential species of conservation concern which could occur in the Ash River watershed. It is based on species with CF[2] ratings of 1-2 for any goal known to occur in both the Alberni-Clayquot Regional District.[3] Species of interests that were highlighted and ranked in workshops and interviews are in **bold**. These include species of concern and also sustainable use species. Comments on species are

[2] Conservation Framework (CF) Goals are 1- contribute to global efforts for species & ecosystem conservation;2- prevent species & ecosystems from becoming at risk;3- Maintain the diversity of native species & ecosystems. They are rated between 1-6, where 1 is high priority and 6 is low priority.

[3] The search was performed using the Provincial Conservation Data Base at http://www.env.gov.bc.ca/atrisk/toolintro.html

derived from literature, interviews and the community workshop (Port Alberni 28 May, 2009).

Most of the important species at risk were mentioned during the workshop (in **bold)**. However, rare plants and invertebrates are of importance and should be assessed when undertaking any project around restoration.

Note that while fish are reported in Table 1 they are addressed in the Ash River Salmonid Action Plan.

KNOWLEDGE GAPS

A comprehensive inventory of the species present in the in the Ash River system does not exist. Some work has been done with respect to the creation of wetlands that has provided information regarding the presence of Painted Turtles, but in general there is little knowledge about species of concern in the Ash watershed.

Table 1: Species of conservation concern that are likely to be present in the Ash River Watershed (This is based on species with a CF rating of 1 or 2 for Alberni-Clayquot Regional District). High priorities for FWCP investment are in bold.

Animals	COSEWIC	CF List	FWCP Priority	Comments
Mammals				
Roosevelt Elk		3,2,3	V. High	Terrestrial. While not hunted now, there is potential to have a small # introduced. It would be very important for First Nations, and for hunting. Note: Roosevelt Elk eat seedlings private forestry companies may not welcome re-introduction of elk.
Wolverine, *vancouverensis* subspecies	SC (May 1989)	2,6,2		Terrestrial, alpine.
Vancouver Island Marmot	E (Mar 2008)	1,6,1	Medium	Terrestrial. There is little habitat for marmots in the Ash watershed. There are other priority areas on the island for it (Campbell and Puntledge).
Ermine, *anguinae* subspecies		2,2,3		Wetland; terrestrial
Townsend's Big-eared Bat		5,2,3		Wetland and terrestrial. There is potential habitat in areas adjacent to the river; however an inventory of this should be done. Many need habitat similar to Western Screech owl.
Keen's Myotis	DD (Nov 2003)	1,6,1		Wetland; terrestrial. There is potential habitat in areas adjacent to the river, however an inventory of this should be done. Many need habitat similar to Western Screech owl
American Water Shrew, *brooksi* subspecies		1,6,2		Lake; wetland; riparian
Birds				
Northern Goshawk, *laingi* subspecies	T (Nov 2000)	1,6,1	Medium	Terrestrial. There is potential habitat in the Ash. Inventory – survey is needed to determine extent of habitat and presence of species.
Great Blue Heron,	SC (Mar 2008)	3,6,1	Low	Estuarine; lake; wetland; riparian; terrestrial. There are no known colonies,

Animals	COSEWIC	CF List	FWCP Priority	Comments
fannini subspecies				but they are increasingly seen nesting in conifers
Marbled Murrelet	T (Nov 2000)	1,1,2	Low-Medium	Estuarine; lake; marine; terrestrial. The species is unlikely to exist in the Ash watershed because there is little old-growth remaining.
Common Nighthawk	T (Apr 2007)	6,2,4		
Olive-sided Flycatcher	T (Nov 2007)	5,2,3		Wetland; terrestrial
Sooty Grouse		5,2,3	Medium	This species does relatively well with forestry and is less of a concern than other species in this watershed. It is food for goshawk and is thus if greater importance.
Ruffed Grouse[4]		4,2,4	Low	This grouse needs riparian habitat and that is lacking in the watershed.
Harlequin Duck [5]		4,1,3	Medium	Riparian and riverine. There is some bird watching – thus some sustainable use
Peregrine Falcon	SC (Apr 2007)	5,2,3		
Peregrine Falcon, *pealei* subspecies	SC (Apr 2007)	2,1,2		Estuarine; lake; marine; riparian; terrestrial
Northern Pygmy-Owl, *swarthi* subspecies		1,3,3	High	Terrestrial
Western Screech-Owl, *kennicottii* subspecies[6]	SC (May 2002)	3,1,2	High	Wetland; terrestrial. There is habitat potential with respect to snags.
Bald Eagle	NAR (May 1984)	6,6,6		
Barn Swallow		6,2,3		Estuarine; lake; wetland; riparian; terrestrial
Caspian Tern	NAR (May 1999)	4,2,3		Estuarine; lake; marine; wetland; riparian; terrestrial

[4] This species did not appear during the search of the CF data base but was mentioned in the workshop.
[5] This species did not appear during the search of the CF data base but was mentioned in the workshop.
[6] The workshop mentioned western screech owls in general and not *kennicottii* subspecies in particular.

Animals	COSEWIC	CF List	FWCP Priority	Comments
White-tailed Ptarmigan, *saxatilis* subspecies		2,4,4		Terrestrial
Band-tailed Pigeon	SC (Nov 2008)	5,2,3	High	Wetland; terrestrial. It is a key food for goshawks and important for ecosystem health. Identifying key mineral sites and protecting them would be fairly easy with radio collars. This could be a high priority for funding.
Brandt's Cormorant		6,6,1		Estuarine; marine
Cassin's Auklet		3,6,2		Marine; terrestrial
Common Murre		6,6,2		Marine; terrestrial
Amphibians, reptiles and turtles				
Northwestern Salamander	NAR (May 1999)	5,1,3		
Western Toad	SC (Nov 2002)	3,2,4		Wetland
Western Painted Turtle	E/SC (Apr 2006)	6,2,3		Wetland
Western Painted Turtle - Pacific Coast Population	E (Apr 2006)	4,6,2		lake; wetland; riparian
Common Ensatina	NAR (May 1999)	6,2,4		
Northern Red-legged Frog	SC (Nov 2004)	3,1,2	High	Wetland. There is a potential to protect small existing wetlands, or creating new ones, to help with rearing
Northwestern Garter Snake	NAR (May 2003)	5,3,4		
Fish				
Cutthroat Trout, *clarkii* subspecies		4,2,3	Low	Estuarian, riverine, lake, marine
Coho Salmon	E (May 2002)	4,2,4		Coho interests are related to fish passage on the Ash.
Dolly Varden		4,2,3		Estuarian, riverine, lake, marine

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 stakeholders (FWCP partners, First Nations and local communities) through reports, interviews and regional workshops held between 2009 and 2011.

3.1 OBJECTIVE SETTING

The following terminology is used in this report.

Objectives:	Objectives are high-level statements of desired future conditions (outcomes), consistent with FWCP partner mandates and policies.
Sub-objectives and Status Indicators:	Sub-objectives are detailed statements of desired future conditions within objectives, from which status indicators can be derived and alternative management actions evaluated. Sub-objectives and indicators provide the details necessary to translate policy into actions and to evaluate their consequences. They may be arranged hierarchically within objectives, and usually indicate conditions necessary to attain the objective to which they refer.
Measures:	Measures are specific metrics whose values indicate the degree to which desired future conditions have been achieved. They can be either qualitative or quantitative. There is a preference to develop the latter where possible for ease of monitoring.
Targets:	Targets are the values of measurable items that indicate the attainment of a desired condition. In the current context these may be expressed as a single value or as a range to acknowledge the inherent variability of ecosystems.
Actions:	Management actions, 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 species of interest. Complementary actions may also be identified in the separate Salmonid and Riparian and Wetland Action Plans.

3.2 OBJECTIVES, MEASURES AND TARGETS

There are two management objectives for the Ash River system as a whole.

Objective 1: Maintain or improve the status of species of interest.

***Rationale* —** There is a high priority placed on improving the population and distribution of species of concern that are found within the Ash River system. Limiting factors for species of concern may be specific in nature, such as a lack of suitable nesting sites, or may be broader in scope. Consequently, action to improve the status of species may include improvements in the habitat and ecosystems they depend upon.

***Measure* —** Measures may differ between species in term of success due to the nature of the species. For example marmots may be relatively easy to measure the absolute number and their distribution, while goshawks are more difficult and might require a different quantifier, such as ha of habitat suitable for breeding.

***Targets* —** Specific targets will be developed for specific species focused projects.

***Objective 2:* Maintain or improve opportunities for sustainable use.**

***Rationale* —** Several species of interest are the focus of sustainable use activities by First Nations and non-first nations people. For example some species are hunted, while bird and wildlife viewing is also a popular recreational use in the watershed. Consequently, any actions aimed at achieving the above objectives indirectly support this sustainable use objective. Although there are no direct actions aimed at improving sustainable use at this time, it is conceivable that projects aimed at generally improving opportunities for sustainable use activities could be identified by the program partners in the future.

***Measures and Targets* —** There are no specific measures or targets required at this time aside from those associated with the above objectives.

As part of their overall management responsibilities, MOE periodically collects information regarding abundance trends, hunter reports, catch per unit effort (CPUE) and number of hunting licences sold in the region.

4 ACTION PLANNING

4.1 OVERVIEW OF PLAN

Management for species of interest ultimately rests with the provincial and federal environment Ministries, but FWCP contributes resources towards planning and implementation of management actions that benefit species within its program area, usually based on the outcomes of multi-agency planning processes. FWCP's mandate limits its involvement in species of interest management to activities that meet FWCP objectives.

The Action Plan has several individual actions for each species, which are presented in Section 4.2. Some actions support multiple sub-objectives, which in turn support multiple objectives. Figure 3 provides an overview of the link between actions and objectives.

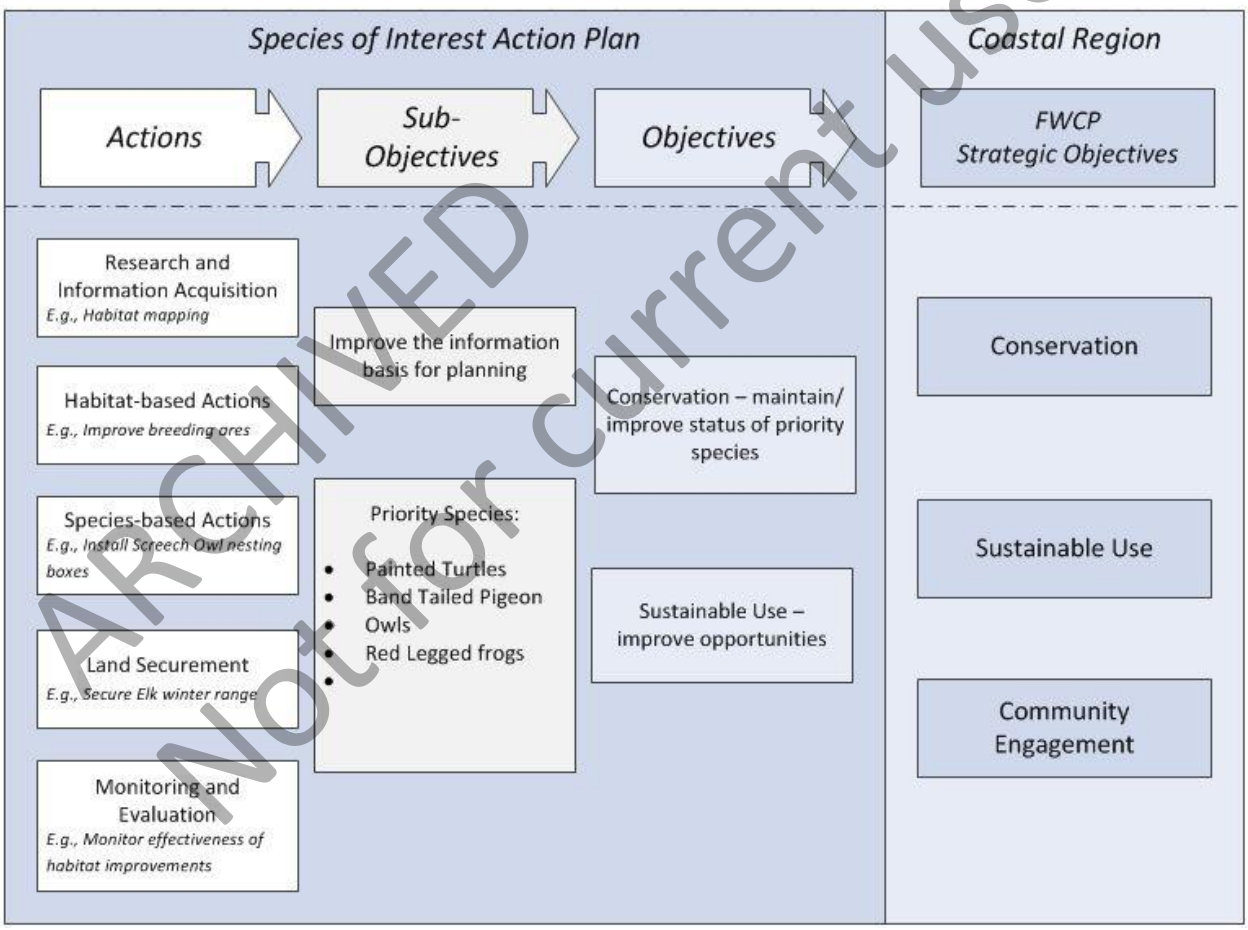

Figure 3: Relationship between actions, sub-objectives and objectives in this Species of Interest Action Plan and the FWCP strategic objectives in the Ash River Watershed Plan.

4.2 COMPONENTS

The FWCP is most interested in receiving proposals to address the high-priority species listed in Table 1:

- Roosevelt elk
- Northern Pygmy-owl
- Western Screech-owl
- Band-Tailed Pigeon
- Northern Red-Legged Frog

No specific actions have been proposed in this watershed for high priority species.

Species-focussed actions are aimed at mitigating key limiting factors. Where actions address habitat limitations they do so in relation to specific factors affecting a specific species. There may of course be additional benefits for other species that depend upon the habitat in question. Many species of concern are related to streams, wetlands and riparian areas. In implementing actions under the Species of Interest Plan close coordination should be maintained with actions under the Riparian and Wetlands Plan and the Salmonid Action Plan to ensure compatibility and to develop synergy.

INVENTORY AND ACTION DEVELOPMENT

Tables of actions have yet to be developed for all high-priority species in the Ash watershed. For these, proposals that address inventory requirements as well as the development and implementation of management actions are encouraged.

5 REFERENCES

BC Hydro. 2003. Consultative Committee Report and draft Water Use Plan submitted to the Comptroller of Water Rights in October 2003. Executive Summary available at: http://www.bchydro.com/etc/medialib/internet/documents/environment/pdf/wup_ash_river_executive_summary_pdf.Par.0001.File.wup_ash_river_executive_summary.pdf.

BC Hydro. 2004. Ash River Project Water Use Plan. Revised for Acceptance by the Comptroller of Water Rights. Available at: http://www.bchydro.com/etc/medialib/internet/documents/environment/pdf/wup_ash_river_water_use_plan_pdf.Par.0001.File.wup_ash_river_water_use_plan.pdf.

BC Hydro. 2010. Annual Report 2010, Ash River Project WUP Monitoring Program and Physical Works, October 30, 2010. Available at: http://www.bchydro.com/etc/medialib/internet/documents/planning_regulatory/wup/vancouver_island/2010q4/ash_annual_report.Par.0001.File.ASH-Annual-Report-2010-Oct-30.pdf.

Bridge-Coastal Restoration Program. 2000. Strategic Plan, Volume 2, Watershed Plans, Chapter 4: Ash River. Available at: http://www.bchydro.com/bcrp/about/strategic_plan.html

Bridge Coastal Restoration Program. 2008. Ash River workshop summary, Port Alberni BC, June 18, 2010. Available at: http://www.bchydro.com/bcrp/about/strategic_plan.html

Fish and Wildlife Compensation Program. 2011. Ash River Watershed Plan. Available at: http://www.bchydro.com/about/our_commitment/compensation_programs.html

MacDonald, A. 2009. Fish & Wildlife Compensation Program: Executive Summary. Report for BC Hydro, Vancouver, BC.