



FOR REFERENCE ONLY  
Version from 2011 now archived  
Updated by the Ministry of Coastal  
Fisheries and Aquaculture  
Plans and Programs

[fwcp.ca/region/coastal-region/](http://fwcp.ca/region/coastal-region/)



FISH AND WILDLIFE  
COMPENSATION PROGRAM

# CLAYTON FALLS WATERSHED *WATERSHED PLAN* FINAL DRAFT

OCTOBER 2011

The FWCP is a partnership of:

**BC Hydro**   
FOR GENERATIONS



**Canada**



Fisheries and Oceans  
Canada

Pêches et Océans  
Canada

ARCHIVED  
Not for current use

# Table of Contents

1	Introduction .....	3
1.1	Fish and Wildlife Compensation Program .....	3
	Vision .....	4
	Principles .....	4
	Partners .....	4
	Policy Context .....	4
	Program Delivery.....	5
	Project Investment Criteria.....	6
2	Clayton Falls Creek Watershed .....	7
2.1	Setting .....	7
2.2	Footprint issues.....	8
2.3	FWCP Accomplishments to date .....	8
3	Strategic Objectives for FWCP .....	9
4	Priorities.....	10
4.1	Introduction .....	10
4.2	Priority setting in the Coastal Region.....	10
4.3	Priority topics .....	11
	1 – Gravel placement and habitat enhancement .....	11
	2 – Estuary Enhancement.....	12
	3 – Riparian and Wetland Mapping and restoration.....	12
	3.1 – Inventory of bats .....	13
	4 –Mountain goat monitoring .....	13
5	References.....	14
	Appendix A – Priority Tables.....	15
	1 - Fish.....	15
	2- Wildlife .....	15
	Mammals .....	15
	Birds.....	16
	Amphibians, reptiles and turtles .....	16

## Table of Figures and Tables

Figure 1: Relationship between the FWCP Strategic Framework, policy, strategy and action. ....	3
Figure 2: Falls Watershed .....	7

ARCHIVED  
Not for current use

# Clayton Falls Creek Watershed Plan

## 1 INTRODUCTION

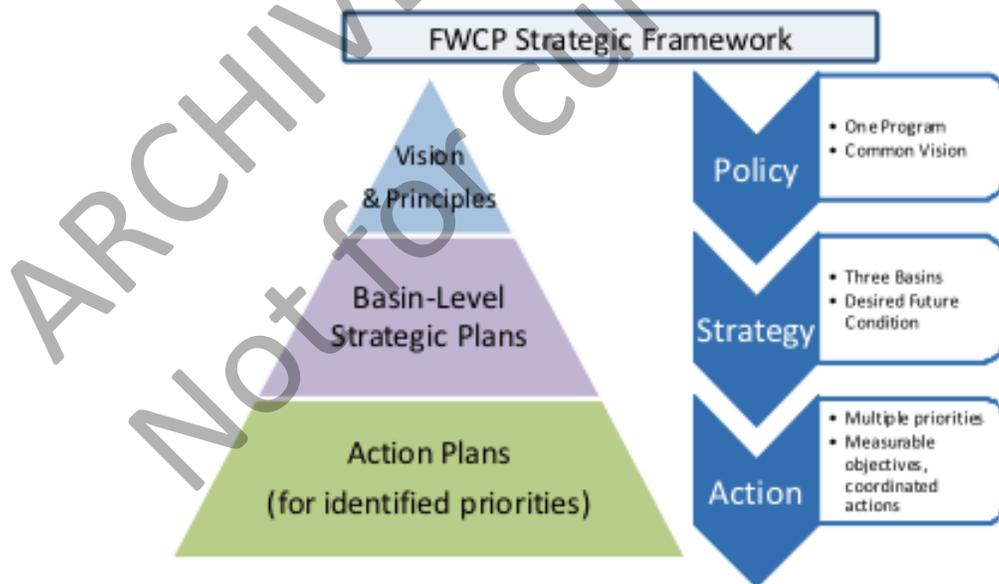
This Clayton Falls Creek Watershed Plan sets forth the strategic direction for the Fish and Wildlife Compensation Program: Coastal Region.

It begins by briefly outlining the vision, principles, policy context and strategic objectives that form the foundation of the FWCP. A description of the Clayton Falls Creek setting includes an overview of the hydro-electric facilities and footprint impacts created by those facilities. The plan describes the development of strategic objectives for FCWP, the creation of priorities for the Clayton Falls Creek watershed and outlines priority actions and projects for the system.

### 1.1 FISH AND WILDLIFE COMPENSATION PROGRAM

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 original 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 and projects that focus on specific priorities within each watershed (Figure 1).



**Figure 1: Relationship between the FWCP Strategic Framework, policy, strategy and action.**

Delivery of the program as a whole is guided by a vision, set of principles and policy priorities as developed by the program's partners.

## VISION

### ***Thriving fish and wildlife populations in watersheds that are functioning and sustainable.***

An effective program will support the maintenance of healthy fish and wildlife populations in basins significantly altered by hydroelectric development. Actions taken should satisfy both the conservation and sustainable use objectives and, where possible, restore ecosystem function, making species more resistant to emerging pressures such as climate change.

## PRINCIPLES

**Approach** - The program has a forward-looking, ecosystem-based approach that defines the desired outcomes and takes actions to restore, enhance and conserve priority species and their habitats.

**Decision Making** - The program efficiently uses its resources and works with its partners to make informed and consensus-built decisions that enable the delivery of effective, meaningful and measurable projects that are supported by the impacted communities.

**Geographic Scope** - Within the watersheds, basins and ranges of the populations of species affected by generation facilities owned and operated by BC Hydro.

**Objectives** - The program defines and delivers on compensation objectives that reflect the partnership's collective goals, and that align with local provincial and federal fish and wildlife conservation and management objectives in the areas where we work.

**Delivery** - The program strives to be a high performing organization with skilled and motivated staff and partners delivering efficient, effective and accountable projects.

## PARTNERS

The program is a partnership between BC Hydro, the BC Ministry of Environment, Fisheries and Oceans Canada, First Nations and public stakeholders. Our goal is to have engagement and participation of all the partners in priority setting, approval, review and delivery of the program.

## POLICY CONTEXT

The FWCP addresses the policy requirements and social commitments to compensate for impacts to fish and wildlife associated with the development of BCH's generating facilities. The core responsibilities of the agencies are:

### **Ministry of Environment**

The Ministry of Environment manages and delivers a wide range of programs and services that support the Province's environmental and economic goals<sup>1</sup>. The Ministry encourages environmental stewardship, develops innovative partnerships, engages First Nations, stakeholders and the public and actively promotes the sustainable use of British Columbia's environmental resources. Within this broader context, the Ministry has a number of responsibilities that are particularly relevant to the development and implementation of actions under the FWCP including:

- Management and conservation of the province's biodiversity;
- Protection of fish, wildlife, species-at-risk and their habitats;
- Protection and restoration of BC's watersheds; and,
- Provision and management of fish and wildlife-based recreation.

---

<sup>1</sup> <http://www.bcbudget.gov.bc.ca/2010/sp/pdf/ministry/env.pdf> (MOE Service Plan)

A number of policies and plans guide the Ministry in delivering on these goals and objectives. The **Conservation Framework**<sup>2</sup> is British Columbia's approach for maintaining the rich biodiversity of the province, providing a set of science-based tools and prioritized actions for conserving species and ecosystems in B.C. **Program Plans for Freshwater Fisheries, Wildlife and Ecosystems**<sup>3</sup> articulate a clear set of strategies supported by actions to achieve both conservation-based outcomes and the provision of recreational opportunity. **Recovery Strategies and Management Plans** have been developed to guide the maintenance, recovery and/or use of specific species and ecosystems. These plans may include specific performance measures and targets.

### **Fisheries and Oceans Canada**

Under the **Fisheries Act**, DFO is the primary agency responsible for conserving and managing Canada's fisheries, including Pacific salmon. It does so through management and monitoring of fisheries, protection of fish habitat, and pollution prevention. The **Policy for the Management of Fish Habitat** (1986) has an overall objective of 'net gain' of fish habitat and helps guide the implementation of fish habitat protection through collaboration with relevant provincial agencies. The **Species at Risk Act** mandates protection of geographically and genetically distinct populations. The principle goal of the **Wild Salmon Policy**<sup>4</sup> and is "to restore and maintain healthy and diverse salmon populations and their habitats for the benefit and enjoyment of the people of Canada in perpetuity". This is achieved through safeguarding genetic diversity, maintaining ecosystem integrity and managing for sustainable fisheries.

### **BC Hydro**

As a Crown Corporation, BC Hydro is committed to producing, acquiring and delivering electricity in an environmentally, socially and financially responsible manner,<sup>5</sup> through managing impacts from its operations, and weighing environmental values with social and economic interests. Where negative impacts cannot be avoided, it will work to mitigate or offset them, enhance affected habitat and sustain resources over the long term. As part of its water licenses to operate its facilities, BC Hydro is required to undertake compensation programs in different regions of the province. Through the compensation program, it is committed to developing positive projects, such as investments to improve fish stocks, and building relationships to encourage stakeholder and aboriginal community engagement, particularly where their input can contribute to better decisions.

## **PROGRAM DELIVERY**

The overall vision and common principles drive the FWCP program and projects, and provide a foundation for determining strategic priorities at the watershed level (Watershed Plans) which, for the smaller basins, are developed into actions and projects. The bulk of projects undertaken in small basins by the FWCP will be delivered under Watershed Plans that lay out a suite of key actions to achieve specific goals associated with species and ecosystems. Actions could include research, implementation activities, monitoring and evaluation activities, and communication mechanisms. Applicants are encouraged to use the Watershed Plans to develop projects that meet the overall objectives of the FWCP program. Technical Committees, staff and the management board will reference the plans to ensure that the highest priority projects are invested in.

A portion of the FWCP program activities will include small-scale, short-duration strategic projects that target specific issues identified by program partners or others (e.g., community members). These could include projects not yet identified in any Watershed Plan, as well as lower priority items that require timely response in order to take advantage of an investment or partnership opportunity.

---

<sup>2</sup> <http://www.env.gov.bc.ca/conservationframework/>

<sup>3</sup> <http://www.env.gov.bc.ca/esd/>

<sup>4</sup> Canada's Policy for Conservation of Wild Pacific Salmon, 2005.

<sup>5</sup> BC Hydro Social Responsibility Policy.

## PROJECT INVESTMENT CRITERIA

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:

- FWCP does:
  - Fund actions to create, restore, or otherwise improve the function of ecosystems that have been impacted by BC Hydro activities;
  - Fund actions to create, restore, or otherwise improve the function of alternate ecosystems that provide a better opportunity for investment;
  - Participate as a team member in species of interest planning;
  - Fund specific management actions for species of interest as identified by recovery teams and action/implementation groups;
  - Fund baseline inventory that contributes to the development of habitat or species based actions within Watershed Plans;
  - Fund monitoring programs designed to measure the effectiveness of FWCP funded habitat and species actions; and,
  - Contribute to all aspects of managing co-operatively managed conservation lands.
- FWCP does not:
  - Fund core activities of government or non-government agencies or programs;
  - Lead the development of species recovery goals;
  - Fund, co-ordinate or lead National Recovery Teams for species at risk;
  - Develop policy related to land or wildlife management;
  - Administer government regulations;
  - Engage in enforcement and compliance activities, except in relation to co-operatively managed conservation lands; and,
  - Fund programs designed exclusively to address government harvest objectives.

ARCHIVED  
Not for current use

## 2 CLAYTON FALLS CREEK WATERSHED<sup>6</sup>

### 2.1 SETTING

Clayton Falls Creek watershed is immediately west of Bella Coola and flows north into North Bentinck Arm (Figure 2). The drainage basin is approximately 93 km<sup>2</sup> and experiences a typical coastal climate. Inflows are primarily rainfall driven, although snow at higher elevations provides increased flows during the spring freshet, and glaciers provide a continual flow during the summer. It is a highly variable system, with winter flows normally being the lowest, except during rain events when peak flows occur.

The Clayton Falls Creek hydroelectric project is not part of BC Hydro's integrated generation system which provides electricity to most of the province. The facility is located about four kilometres (km) west of Bella Coola on Clayton Falls Creek. The Clayton Falls Creek project is a run-of-river facility, and is controlled remotely from Ah-Sin-Heek Diesel Generating Station. The hydroelectric project consists of Clayton Falls Dam and generating station is located appropriately 720 m upstream from the mouth of Clayton Falls Creek, and the Clayton Falls headpond, which has negligible storage capacity. Water flows from intakes in the headpond via a penstock to two generating turbines in the powerhouse with a total of 2 MW capacity. Water from the turbines is discharged into a 60 m long tailrace, which also serves as a spawning channel for pink and chum salmon.

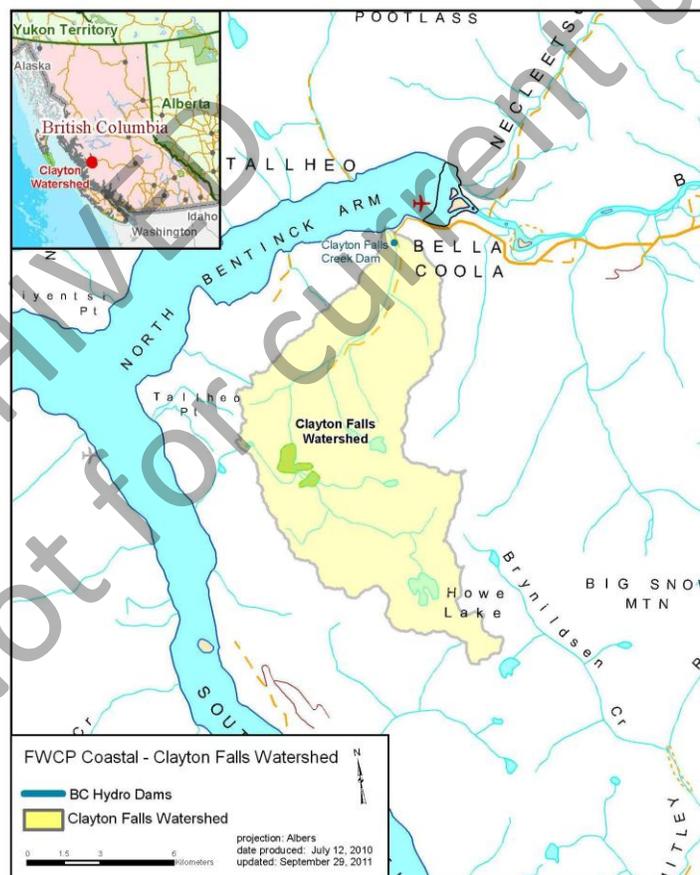


Figure 2: Falls Watershed

<sup>6</sup> More details of the watershed can be found at: [http://www.bchydro.com/bcrp/about/strategic\\_plan.html](http://www.bchydro.com/bcrp/about/strategic_plan.html)

The Clayton Falls Creek project lies in the traditional territories of the Nuxalk Nation. There is a small BC Hydro recreational area near the powerhouse

## 2.2 FOOTPRINT ISSUES

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 16: Clayton Falls Creek River (December 2000);
- Clayton Falls Creek Water Use Plan Consultative Committee Report (July 2003); and
- Findings in the Community Workshop (Bella Coola, 17 February 2011).

**Inundation:** The dam inundated less than one hectare (ha) of land.

**Habitat loss:** 2 ha of riparian habitat. Small areas of spawning habitat and rearing habitat downstream of the falls may be seasonally altered due to operations or from natural events. There is reduced recruitment of sediment and large woody debris.

**Migration barriers:** The original falls are 200m from the mouth and presented a natural barrier to fish.

**Altered Flow Regime:** Alterations in the flow regime have likely impacted fish productivity in the river below the dam.

## 2.3 FWCP ACCOMPLISHMENTS TO DATE

Since 1999 the Bridge Coastal Restoration Program has invested approximately \$5,000 to conduct the Clayton Falls Creek spawning channel environmental assessment to improve pink salmon productivity. It recommended gravel placement and channel complexing.

ARCHIVED  
Not for current use

### 3 STRATEGIC OBJECTIVES FOR FWCP

Strategic objectives for the Fish and Wildlife Compensation Program reflect a synthesis of the core objectives and mandates of the partner agencies as they relate to mitigating impacts associated with hydro-power generation in British Columbia.

Conservation and sustainable use are core objectives for both the Ministry of Environment and Fisheries and Oceans. Conservation is addressed in terms of maintaining specific species or habitats both in terms of their importance for diversity (including genetic diversity), as well as their importance for ecosystem functions, integrity and productivity. For example, a species such as White Sturgeon may be important in terms of species diversity, while Pileated Woodpeckers may be important for maintaining ecosystem functioning and integrity by creating habitat for other species. Sustainable use incorporates the human interest in utilizing species for sustenance, commercial, recreational, or cultural purposes. Consequently, species such as coho, moose or bald eagles (wildlife viewing) could be considered important from a sustainable use perspective.

Community engagement is a core objective for BC Hydro under the compensation program and is driven by its social responsibility policy. It also reflects the 'shared stewardship' goal of the Ministry of Environment. It reflects the importance of incorporating local values and interests in determining and implementing projects.

The FWCP strategic objectives are therefore:

#### Conservation

- **Maintain or improve the status of species or ecosystems of concern.**  
This focuses on the conservation goals for ecosystems, habitats or ecological communities, and specific species. Priorities may be identified through the provincial Conservation Framework, or at the Conservation Unit level under the federal Wild Salmon Policy. Conservation priorities may also be identified at the watershed level based on local conditions.
- **Maintain or improve the integrity and productivity of ecosystems and habitats.**  
This addresses the concept of ecosystem integrity, resiliency and the functional elements of ecosystems, including efforts to optimize productive capacity.

#### Sustainable Use

- **Maintain or improve opportunities for sustainable use, including harvesting and other uses.**  
This objective focuses on the program's role in restoring or enhancing the abundance of priority species and in providing information to resource management decision makers related to providing opportunities for harvesting and other uses. Harvesting includes First Nations, recreational, sport and commercial harvests. Other uses may include cultural, medicinal, or non-consumptive uses.

#### Community Engagement

- **Build and maintain relationships with stakeholders and aboriginal communities.**  
This objective stems from BC Hydro's social responsibility policy and MOE's shared stewardship objective. This recognizes the importance of engaging aboriginal communities, local stakeholders, and other interest groups to contribute toward making good decisions and delivering effective projects.

## 4 PRIORITIES

### 4.1 INTRODUCTION

Across the FWCP as a whole, the general process of identifying priority action plans and projects involves three steps:

#### **Step 1 – Identification (Candidate Priority Species and Ecosystems)**

The first step involves identifying and prioritizing the species and ecosystems against the core strategic objectives, and how they have been impacted by footprint issues associated with hydro-power generation.

#### **Step 2 – Preliminary Planning**

This step consists of reviewing the identified priorities with consideration to identifying candidate action plans and projects. It may involve grouping species or ecosystems together for coordinated action. Key considerations include: addressing limiting factors, exploring the opportunity for multiple benefits, addressing any specific local threats, the practicality of implementing actions, and the plan's consistency with existing agency programs.

#### **Step 3 - Prioritization**

This step consists of a final prioritization of candidate action plans and projects (and their priority areas) according to cost effectiveness and technical feasibility criteria:

- **Technical Feasibility.** – The program should generally seek out investments that are the most technically feasibility. Considerations generally include the use of proven methods and availability of technical resources. Innovative approaches should be considered but they must have a credible technical foundation and reasonable expectation of success. The potential interrelationship with system operations and programs being implemented by the Water License Requirements program must also be considered.
- **Cost Effectiveness.** – The program should generally seek out investments that are the most cost effective. This includes issues or actions which may benefit multiple species, areas where there is an opportunity to leverage additional funds for activities, issues where previous work has been conducted and incremental expenditure may have substantive benefits, actions that are closely related to on the ground actions with measurable impacts, amongst others.

### 4.2 PRIORITY SETTING IN THE COASTAL REGION

In the Coastal region of the FWCP, Step 1 involved a review of existing Watershed Restoration Plans, interviews with agency staff, a series of community workshops and a final evaluation.

In 2000, specific restoration objectives were originally articulated in the Watershed Restoration Plans.<sup>7</sup> These plans contain details of the major footprint impacts, objectives and limiting factors for productivity and have guided the work of the FWCP Coastal for the past decade.

In the case of the Clayton Falls Creek watershed, priorities for FWCP Coastal were further reviewed and updated in 2010 through consultation with BC Hydro, Fisheries and Oceans Canada (DFO), and Ministry of Environment (MOE). This resulted in a list of priority tables for fish and wildlife species in the Clayton Falls Creek watershed (Appendix A). Draft project priorities were

---

<sup>7</sup> Watershed Restoration Plans may be obtained at the FWCP website:  
[http://www.bchydro.com/bcrp/about/strategic\\_plan.html](http://www.bchydro.com/bcrp/about/strategic_plan.html)

reviewed with local First Nations and community groups at a workshop in Bella Coola (17 Feb 2011).

## 4.3 PRIORITY TOPICS

The following topics have been identified as priority candidates for development into future FWCP Coastal project proposals. It is important to understand, however, that planning priorities 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. The process of selecting which projects will be implemented in any given year will occur during the annual implementation planning cycle.

### 1 – GRAVEL PLACEMENT AND HABITAT ENHANCEMENT

#### Rationale

The stream below the dam at Clayton Falls Creek has a steep gradient and is a high energy stream. Nevertheless, the lower 200m provide intertidal and stream spawning habitat for pink and chum salmon. Most of the spawning takes place in the tail race channel; however, pink and chum also migrate upstream as far as the base of the falls to spawn. Spawning success in the mainstem is limited by the availability of suitable gravels, which account for only small portions of the substrate.

The lower reaches provide good rearing habitat with boulders, cascades and a high gradient for Steelhead, coho and Dolly Varden.

Current maintenance activities by BC Hydro at a water intake site above the falls results in the removal of gravel sediments that accumulate around the intake screen and hinder the effectiveness of water delivery. This intake is used to deliver minimum 'fish water' flow in the Clayton Falls Creek GS tailrace when both generating units are not in operation. There has been discussion about recasting the gravel over the falls during this maintenance to retain a more natural system of sediment recruitment below the falls.

#### Focus

Increase stream productivity of multiple species, pink and chum in particular, through improving spawning habitat.

- Assess gravel as a limiting factor to fish production in the tailrace and lower reach of Clayton Falls Creek; Water License Requirements Program study CLAMON-1 may provide most up to date information and related data
- Assess the potential to add LWD to the lower reaches of Clayton Falls Creek
- Identify the habitat potential for the tailrace
- Gravel placement by truck.
- Channel complexing

#### Expected outcome

- Determination if gravel is the limiting factor to fish productivity in the lower reach of Clayton Falls Creek and the tailrace.
- Gravel placement plan for the area
- Improved substrate for spawning through increased amount of suitable gravel.
- Improved spawning success and productivity, particularly for pink and coho.

## 2 – ESTUARY ENHANCEMENT

### Rationale

The estuary area at the base of Clayton Falls Creek may have been negatively impacted by changes in flow as a result of the Clayton Falls Generating Facility. The estuary provides critical habitat for salmonid as they transition from fresh to salt water. It also provides habitat for other mammal and bird species.

### Focus

- Assess the current condition of the estuary and determine restoration opportunities.

### Expected outcome

- Action recommendations for restoration or management

## 3 – RIPARIAN AND WETLAND MAPPING AND RESTORATION

### Rationale

Riparian and wetland areas have been heavily impacted by the creation of dams, and continue to be under threat in many remaining areas. These areas are the limiting factor for critical life stages of many species, both aquatic and terrestrial. Riparian and wetland areas are both diverse and biologically rich and thus considered as highly valuable from an overall ecological standpoint.

To date, FWCP has not significantly funded restoration of riparian areas or wetlands in the Clayton Falls Creek system. At this point it is a priority to assess opportunities and implement restoration actions in areas with high restoration potential.

Through the FWCP priority-setting process, several general species groups (bats in particular) were considered first-priority representatives of the wetland and riparian community in terms of where to focus investment. Because there is little up-to-date information for these particular species in the watershed, the most immediate focus is to complete mapping and/or inventory that informs next steps (restoration, management, etc). Habitat mapping would help screen for habitats that might support species at risk, including owls, water shrew, amphibians and certain birds. Follow-up inventories of specific species would be better directed with a habitat mapping base as a foundation.

### Focus

- Conduct habitat mapping of potential areas for restoration. Determine possible habitats for bats, include mapping of old large riparian trees and old growth that could be used by cavity nesters.

### Expected outcome

- Prioritized areas to conduct field work for species identification and for conservation.
- Restoration opportunities identified and assessed.

## 3.1 – INVENTORY OF BATS

### Rationale

Some bat species have been affected by the loss of habitat due to the loss of large riparian trees for roosts. They are an important species from both a conservation and ecosystem functioning perspective. There are several bat species which are likely to be found in the Clayton Falls watershed including the Keen's Myotis (CF- 1, 6, 1).

### Focus

- Conduct field inventory for bats, and develop recommended actions for restoration.

### Expected outcome

- Confirmation of species presence/non-presence and prioritized areas to conduct work.
- Action recommendations for restoration or management

## 4 –MOUNTAIN GOAT MONITORING

### Rationale

Mountain goats are in decline in the coastal region. While not directly related to hydro development, it is thought that human access may be partially responsible for limiting their productivity.

### Focus

- The focus will be on monitoring of mountain goat populations and habitat, with a view to recommending opportunities for restoration.

### Expected outcome

- Trends in population and distribution, and limiting factors.
- Action recommendations for restoration.

## 5 REFERENCES

- BC Hydro. 2004. Consultative Committee Report and draft Clayton Falls Water Use Plan submitted to the Comptroller of Water Rights in July 2003. Executive Summary available at: [http://www.bchydro.com/etc/medialib/internet/documents/environment/pdf/wup\\_clayton\\_falls\\_executive\\_summary\\_pdf.Par.0001.File.wup\\_clayton\\_falls\\_executive\\_summary.pdf](http://www.bchydro.com/etc/medialib/internet/documents/environment/pdf/wup_clayton_falls_executive_summary_pdf.Par.0001.File.wup_clayton_falls_executive_summary.pdf)
- Bridge-Coastal Restoration Program. 2000 Strategic Plan, Volume 2, Watershed Plans, Chapter 16: Clayton Falls Creek River. Available at: [http://www.bchydro.com/bcrp/about/strategic\\_plan.html](http://www.bchydro.com/bcrp/about/strategic_plan.html)
- MacDonald, A. 2009. Fish & Wildlife Compensation Program: Executive Summary. Report for BC Hydro, Vancouver, BC.

ARCHIVED  
Not for current use

## APPENDIX A – PRIORITY TABLES

The following are the priority tables developed through consultation with the Ministry of Environment and the Department of Fisheries and Oceans in the summer and autumn of 2010. The tables represent the agencies' priorities for different species and what activities should be undertaken for them, and were reviewed and updated at a community workshop in Bella Coola (17 February 2011).

### 1 - FISH

Species	Priority	Comments
<b>Upper Clayton Falls Creek</b>		
All species	Medium	There are no targets set for any species
	Low	There is limited work for any restoration opportunities up stream of the dam.
<b>Lower Clayton Falls Creek</b>		
All species	medium	No Targets provided
	low	Limited opportunities for restoration due to steep gradient and high energy of stream.
All species	medium	Maintenance of spawning opportunities in tailrace d/s of dam. Addition of suitable gravels required to offset sedimentation and armouring of sections of this channel.

### 2- WILDLIFE

#### MAMMALS

Species	FWCP Priority	CF Rank	Comments
Bats	<b>High</b>	1	General inventory needed. Little is known about the population status.
Grizzly Bear	<b>Medium</b>	3,2,3	Tweedsmuir GBPU (viable). Not a lot of use of watershed by grizzly bears due to lack of salmon, more use by black bears.
Wolverine	<b>Low</b>	3,2,3	Tracks of wolverine are observed in the alpine when they do goat surveys. No restoration opportunities other than enhancing prey (ungulates).
Mountain Goats	<b>High</b>	4,1,3	There was a herd there; however there has been a large population decline on the central coast. Access management is a concern, snowmobiles going up through Clayton Falls Creek road and heli-skiing. Winter and summer aerial inventory required to determine presence and abundance.

## BIRDS

BCR=Bird Conservation Region (CWS)  
 PCJV=Pacific Coast Joint Venture (CWS)  
 NAWMP=North American Waterfowl Management Plan (CWS)  
 PIF=Partners in Flight (CWS)

Species	FWCP Priority	CF Rank	Comments
Great Blue Heron (herodias sp.)	Medium	6,2,3	Species impacted by loss of nesting and foraging habitats due to hydroelectric development. Loss of habitat and predation by Bald Eagles are high magnitude threats. Inventory and protection of nest sites needed. There was a nest site on the bench that accesses the Clayton Falls Creek valley - have not seen nesting birds in the area for several years. A priority species in BCR 5.
Harlequin Duck	Low	4,1,3	Population data: no trend (NAWMP). A priority species for PCJV and BCR 5 (CWS). A species that is definitely impacted by hydroelectric development.
Bald Eagle	Low	6,6,6	A priority landbird species in BCR 5. Needs continental/regional stewardship.
Northern Goshawk (laingi sp.)	Medium	1,6,1	This species has not been found in the Clayton Falls Creek watershed; however, it may be present as no concerted survey has been done. A priority landbird species in BCR 5 for CWS.
Peregrine Falcon (prob. anatum sp.)	Low	5,6,2	Peregrine falcon is present in the area, but there are no breeding records for Clayton Falls Creek area. There are two subspecies and it could be either one. A priority landbird species in BCR 5 for CWS.
Gyrfalcon (non-breeding)	Low	6,6,4	PIF has rated this a low vulnerability based on population trends. A priority species in BCR 5.
Marbled Murrelet	Medium	1,1,2	WHAs designated in the adjacent watershed for this species. There could be some use in the Clayton Falls Creek watershed. A priority species in BCR 5.
Band-tailed pigeon	Medium	5,2,3	Need inventory and identification and protection of mineral licks. Possible breeding record near Bella Coola. A priority species in BCR 5.

## AMPHIBIANS, REPTILES AND TURTLES

Species	FWCP Priority	CF Rank	Comments
Pacific Tailed Frog	Medium	4,1,2	Many of these species present. There was a flood event in 2010 flood event and it is not known how they have been affected. MOE has identified several areas for WHA designation.

Species	FWCP Priority	CF Rank	Comments
Red-legged Frog	<b>Medium</b>	3,1,2	Their presence needs verification. Need generalized amphibian surveys.
Ensatina	<b>Medium</b>	6,2,4	Need inventory, may be present, range not well known. 1 record in South Bentinck Arm.
Garter snakes (all species)	<b>Medium</b>		This species was common, but they are declining elsewhere in BC. Need to establish baseline.

#### Habitats-Plants

Species	FWCP Priority	CF Rank	Comments
Yellow Cedar	<b>Medium</b>		There are questions as to how climate change is affecting yellow cedar. There was a significant die-off in Fjordlands after a cold period. Yellow cedar could be used as a marker of climate change. Clayton Falls Creek has the furthest inland coastal yellow cedar.

ARCHIVED  
Not for current use