FWCP
Fish & Wildlife
COMPENSATION PROGRAM

Annual Report

FWCP Coastal Region 2016-2017

The FWCP is a partnership between BC Hydro, the Province of B.C., Fisheries and Oceans Canada, First Nations and Public Stakeholders to conserve and enhance fish and wildlife impacted by existing BC Hydro dams.

Message from the Board Chair

Welcome to our Annual Report for 2016-17. This plain language document reports on key highlights, decisions and expenditures between April 1, 2016 and March 31, 2017, for our Coastal Region. Annual Reports for the other two regions, Columbia and Peace, which make up the Fish and Wildlife Compensation Program (FWCP), are also available at fwcp.ca.

Our Coastal Region includes watersheds on Vancouver Island, in the Lower Mainland, Southern Interior, and the Mainland Coast, where BC Hydro generation facilities exist. In total, 14 watersheds in some of the most densely populated portions of B.C. comprise our Coastal Region. Our work in this region is voluntarily funded by BC Hydro, which operates 14 dams across our Coastal Region.

Our work in this region is guided by a diverse nine-member Board that includes our partners: First Nations, the Province of B.C., Fisheries and Oceans Canada, Public Stakeholders, and BC Hydro. Together, we work to conserve and enhance fish and wildlife impacted by BC Hydro dams. The Board is responsible for all funding decisions and provides oversight on our activities in each watershed.

In 2016-17, a focus of the Program was on updating our Action Plans across 14 watersheds in which we operate. Activities were initiated early in the year with research, interviews, and engagement across a number of Coastal Communities occurring into the fall. Updating and refining 41 strategic planning documents into 14 documents took a big collective effort including the FWCP team, technical committees, and the Coastal Board. The Action Plans are scheduled to be completed and posted by September 2017.

These new initiatives are in addition to managing delivery of the 41 fish and wildlife projects approved by our Coastal Region Board. The 18 wildlife and 23 fish projects represent a total investment this fiscal year of over $2 million. Species and habitat-based actions are the focus for the majority of projects approved by the Board, most of which are delivered by non-government organizations or First Nations, and are spread across the watersheds in which we work.

Thanks to all members of the Board, Fish and Wildlife Technical Committees, and staff for contributions to the FWCP Coastal Region during this past year, and for helping to make FWCP a success. The FWCP Coastal Region continues to evolve and I look forward to finalizing the updated Action Plans in the new year to ultimately support our vision of thriving fish and wildlife populations in healthy and sustainable ecosystems.

Sincerely,

Brian Assu,
FWCP Coastal Region Chair

Front Cover: The FWCP started live-streaming images of a captive breeding pair of Northern Spotted Owls during F17. Photo: L. Ware

1.0 Organizational overview

INTRODUCTION

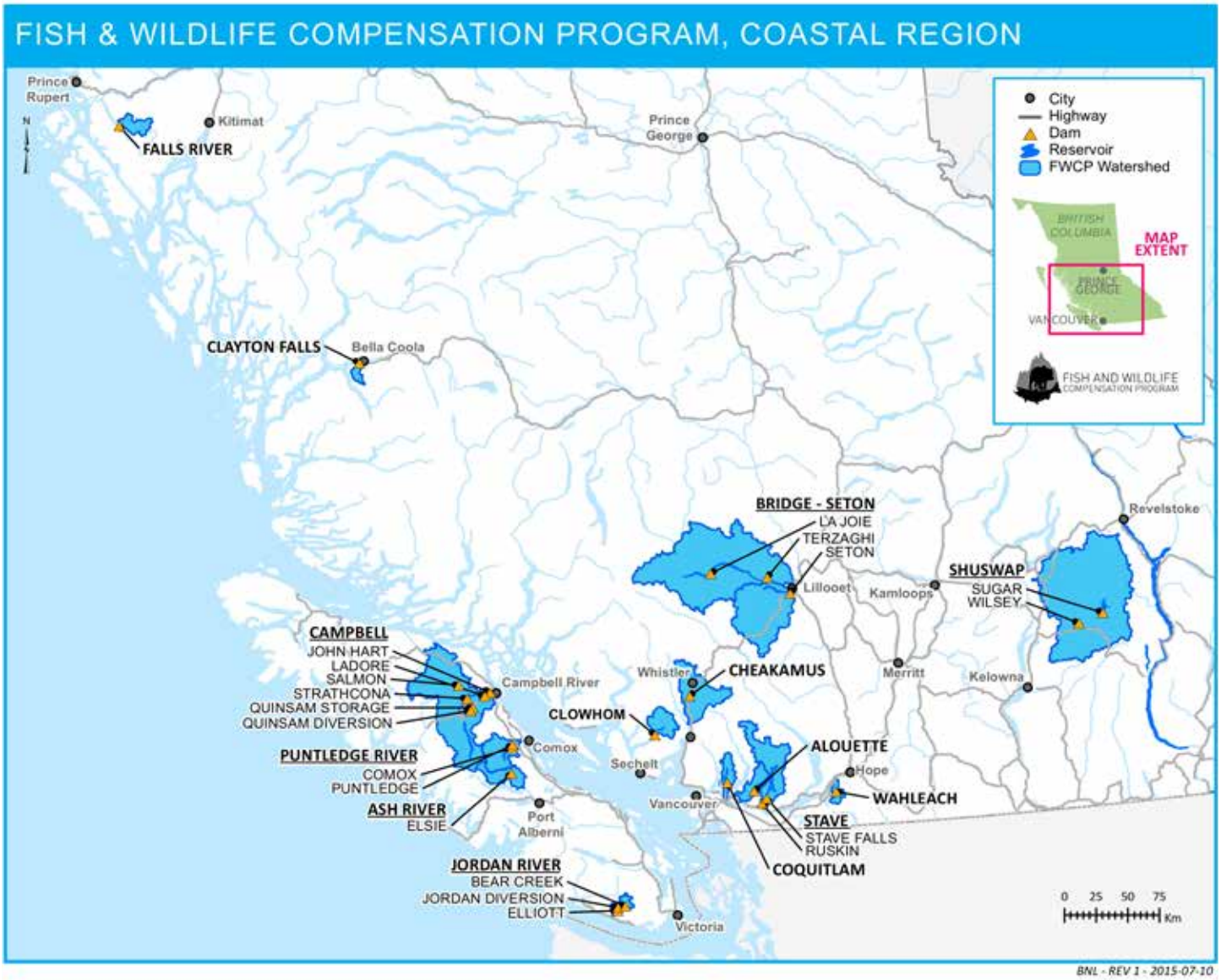
The Fish & Wildlife Compensation Program (FWCP) was established to compensate for the impacts resulting from the construction of BC Hydro dams by conserving and enhancing fish and wildlife in the Coastal, Columbia and Peace regions of British Columbia. FWCP operates as a partnership between BC Hydro, the Province of B.C., Fisheries and Oceans Canada (DFO), First Nations, and Public Stakeholders.

We have invested more than $151 million since 1988, and delivered nearly 1,750 projects in our three regions.

Formerly known as the Bridge-Coastal Restoration Program, the FWCP's Coastal Region was established in 1999. This voluntary initiative was developed in response to First Nations and stakeholder interests' in addressing opportunities for restoration.

As identified in the map below, the Coastal Region includes 14 watersheds on Vancouver Island, the Mainland Coast, the Lower Mainland, and parts of the Southern Interior (e.g. Bridge, Seton and Shuswap River watersheds).

This Annual Report provides an overview of the activities and a financial performance report, as well as a project funding summary with highlights from the Fiscal Year 2017 (F17) covering the period of April 1, 2016 to March 31, 2017.



GOVERNANCE

The FWCP's governance recognizes the regulatory accountabilities of our agency partners—BC Hydro, the Province of B.C., and Fisheries and Oceans Canada— and enables partnership with First Nations and Public Stakeholders. Work in each region is guided by a local Board responsible for setting strategic priorities and approving annual expenditures, as well as our investments in conservation and enhancement projects.

In the past year, the Coastal Region Board consisted of nine members representing First Nations, Public Stakeholders, the Province of B.C., Fisheries & Oceans Canada, and BC Hydro. We welcomed Todd Manning as a new Public Stakeholder to replace long standing member Ken Farquharson who retired from the Board in 2016.

The F17 Board Members were:

First Nation Representatives:

Brian Assu, (Chair), We Wai Kai Nation
Larry Casper, Seton Lake Indian Band
Fran Genaille, Peters Band

Public Representatives:

Vivian Birch-Jones
Todd Manning
Jack Minard

Agency Representatives:

Adam Silverstein, Fisheries and Oceans Canada
Scott Barrett, B.C. Ministry of Forests, Lands and Natural Resource Operations
Kim Cox, BC Hydro

The Board reports to the Policy Committee, representing the federal and provincial government regulators (DFO and the Province), as well as BC Hydro. The Policy Committee exists to allow the agencies to provide oversight on a range of fish and wildlife related issues relevant to BC Hydro including, but not limited to, the FWCP.

The Policy Committee members were:

- **Edie Thome**, Director of Environmental Risk Management, BC Hydro *Karen Popoff replaced Edie Thome for BC Hydro part way through the year*.
- **Kaaren Lewis**, Assistant Deputy Minister, B.C. Ministry of Environment
- **Cheryl Webb**, Regional Director Pacific Region, Fisheries and Oceans Canada

Our Board is supported by four Technical Committees—one for wildlife projects, and three for fish projects (Lower Mainland, Southern Interior, and Vancouver Island). Their primary roles are to support the development of strategic plans; provide advice on the effective implementation of Action Plans; and provide fair and objective technical review, evaluation, and ranking of fish and wildlife project proposals for the Annual Operating Plan.

The Lower Mainland Fish Technical Committee:

Randall Lewis, Squamish First Nation
Veronica Woodruff, Public
Dave Nanson, (Chair), Fisheries and Oceans Canada
Mike Willcox, B.C. Ministry of Forests, Lands and Natural Resource Operations
Brent Wilson, BC Hydro

The Southern Interior Fish Technical Committee:

Elinor McGrath, Okanagan Nation Alliance
Brian Heise, Public
Sean Bennett, Fisheries and Oceans Canada
Andy Morris, B.C. Ministry of Forests, Lands and Natural Resource Operations
Arne Langston, (Chair), BC Hydro

Vancouver Island Technical Review Committee:

Jim Lane, Nuu-chah-nulth Tribal Council
Eva Wichmann, (Chair), BC Hydro
Mike McCulloch, B.C. Ministry of Forests, Lands and Natural Resource Operations
Margaret Wright, Fisheries and Oceans Canada
Darren Hebert, Public

Wildlife Technical Review Committee:

John Cooper, Public
Fraser Corbould, BC Hydro
Dr. Brent Gurd, (Chair), B.C. Ministry of Forests, Lands and Natural Resource Operations

Prior to November 2016, the responsibilities of overall management of the FWCP and the management of the FWCP Coastal Region were delivered by one individual, Trevor Oussoren. Since then a new management structure has been implemented with the hiring of a full-time dedicated Coastal Region Manager, Julie Fournier. Trevor has now been able to continue the overall management of the FWCP in a full-time capacity. All three regions are supported by Business Coordinator, Lorraine Ens.

Our Coastal Region Board includes representatives from First Nations, the Province of B.C., BC Hydro, Fisheries and Oceans Canada, and Public Stakeholders.

2.0 FWCP strategic framework

Our strategic framework guides planning for compensation investments (i.e. fish and wildlife projects) and supports our vision.

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 resilient to emerging pressures, such as climate change.

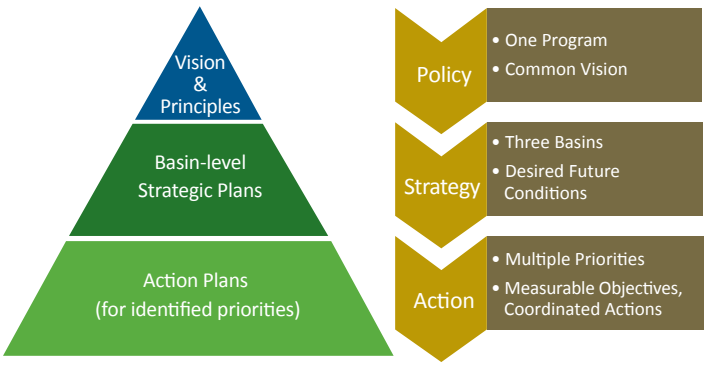


Figure 2.1
Relationship between FWCP's Strategic Framework, Basin Strategic Plans and Action Plans.

3.0 FWCP strategic objectives and strategic plans

3.1 Strategic Objectives

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

Conservation

- Maintain or improve the status of species or ecosystems of concern.
- 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 our 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, and commercial harvests. Other uses may include cultural, medicinal, or non-consumptive uses such as wildlife-viewing.

Community engagement

- Build and maintain relationships with stakeholders and Aboriginal communities. This objective stems from BC Hydro's social responsibility policy, the provincial Ministry of Environment's shared stewardship goal, and the approach of Fisheries and Oceans Canada's Stewardship and Community Involvement Program. This recognizes the importance of engaging with Aboriginal communities, local stakeholders, and other interest groups to contribute toward making good decisions and delivering effective projects.

3.2 Strategic Plans

Fish and wildlife investments in each FWCP region are guided by Action Plans that were developed with local input and provide strategic guidance. In FWCP's Coastal Region, Action Plans exist for each of the 14 watersheds where FWCP operates. High-level watershed Plans set out the strategic direction for the Coastal Region and describe the specific watershed settings and general impacts that the creation of the generation facilities (i.e. construction of the dams, the development of hydro-power, and alterations in the hydraulic regimes of the systems) had on ecosystems, fish, and wildlife habitat.

Each year, as the FWCP Coastal Board reviews and approves an Annual Operating Plan, alignment with the strategic priorities identified in the Action Plans is of key consideration.

All projects approved for F17 align with the Action Plans. The Plans are posted on fwcp.ca and each year applicants are asked to review the relevant Action Plan to identify how their proposed project aligns with and supports their objectives.

Starting in 2016, the Board initiated a process to update the Coastal Watershed Action Plans across 14 watersheds in which we operate. Activities were initiated in fall 2016, with research, interviews, and engagement across a number of Coastal communities continuing in winter and spring of 2017. The Watershed Action Plans are scheduled to be completed and posted (fwcp.ca) by September 2017, with the final documents being approved by the Policy Committee in the fall 2017.

4.0 Report on performance

4.1 Results of the 2016-17 grant application intake

2016-17 marked the second year of implementation of the online grant application and management system. The Grant Management System (GMS) has allowed for administrative management efficiencies, more robust data-collection and reporting, and helps automate some of the application review process. A total of 61 applications were received for F17.

4.2 Financial report

FWCP is funded by BC Hydro through a notional fund, which is indexed to the Consumer Price Index (CPI). For F17, the annual funding budget from the notional fund for our Coastal Region was $2.051M.

Each year, our Board allocates funds, in whole or in part, toward fish and wildlife projects, administrative costs (e.g. salaries, safety, Board and Technical Review Committee expenses), project support and communication costs (e.g. Program evaluation, communications support, and advertising). These allocations form the Annual Operating Plan. Any unallocated funds are carried forward ("unspent surplus budget"), and are available for new spending in future fiscal years.

Similarly, not all allocated "committed" funds are expended by the end of a given fiscal year, due to the seasonal nature of some field-based projects. The unspent committed funds ("F16 remaining commitment to spend in F17") is the difference between the committed funds and what has actually been spent. These funds are carried forward as a liability on the balance sheet and remain available for spending on the respective committed projects to ensure payment in full. All committed funds are associated with the fiscal year in which the spending was approved, and tracked separately.

Our financial situation in the Coastal Region at the start of F17 (April 1, 2016) included a Board-approved budget of $2.1M (Figure 4.1). In addition, a funding commitment of $917K to be spent from F16, and $218K from F15, and an unspent surplus of $24K.

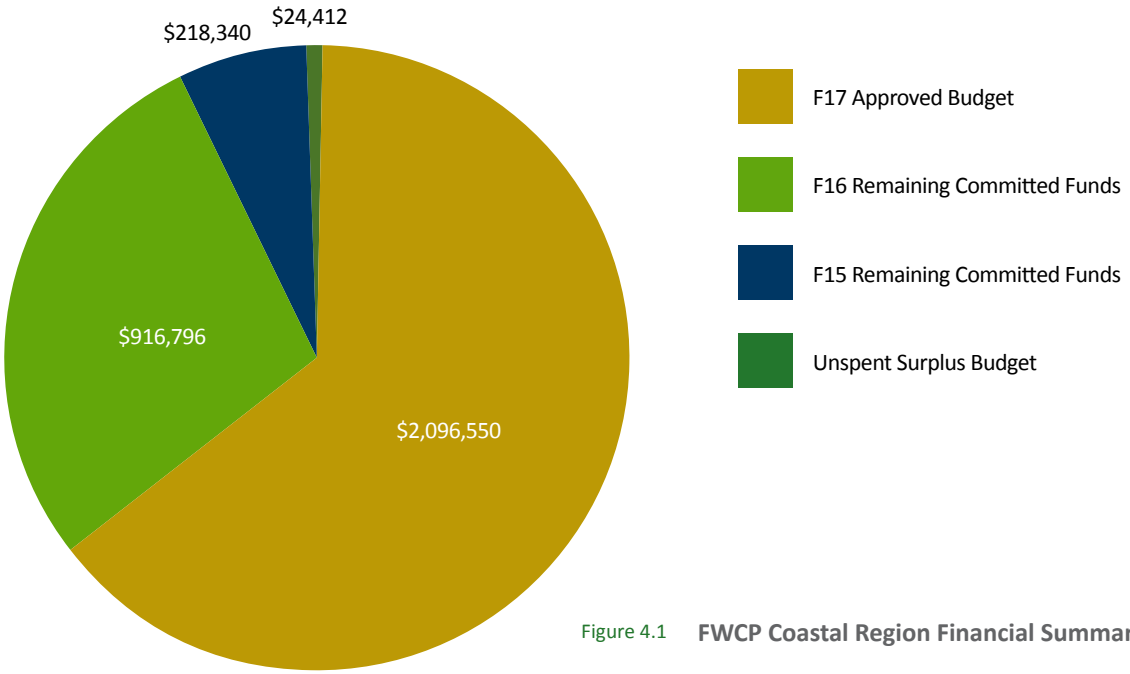


Figure 4.1 **FWCP Coastal Region Financial Summary at April 1, 2016**

For Fiscal Year 17, the Board approved a budget of $2.1 million, primarily toward fish and wildlife projects. The Board was able to approve slightly more than the Fiscal Year 17 notional funding by drawing on funds from the unspent surplus budget from previous years. Figure 4.2 illustrates the approved Fiscal Year 17 budget at the start of the fiscal year. A complete project list for Fiscal Year 17 is found starting on page 8. Administrative costs made up approximately 8% of the total budget, including regional manager salary & expenses, office-related expenditures (support staff, Board, and Technical Committee costs), fees associated with uploading reports to the Provincial Data Warehouses ($5K), and maintenance, support, and refinements to our Grant Management System. The remaining allocations included wildlife projects (36%), fish projects (34%), land securement projects (19%), and communications (2%).

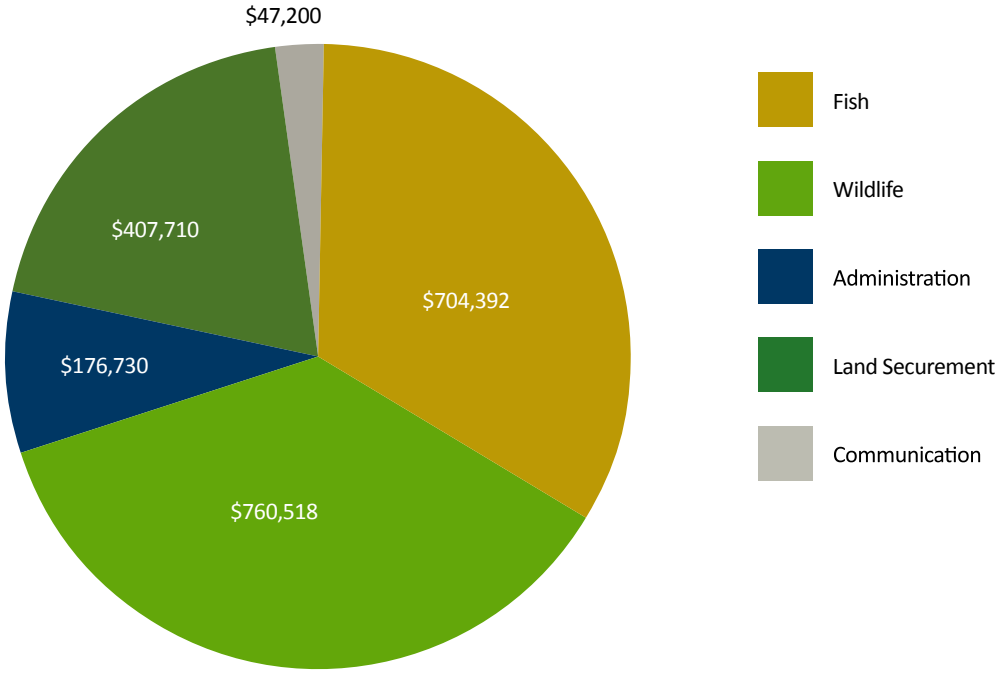


Figure 4.2 **Approved budget at April 1, 2016**

Program expenditures up to fiscal year-end March 31, 2017 are shown in Table 4.1. It should be noted that this reflects a "snapshot" in time of actual and planned payments made related to Fiscal Year 17 projects. Each year, allocated project funding is not fully paid by year-end due to the seasonal nature of field-based projects and the fact that many project proponents are unable to submit their final project reports for approval by the March 31, fiscal year-end. Fiscal Year 17 allocated funds not yet paid by March 31, 2017 are labelled "Planned" in Table 4.1. In mid F17, $125K of x plan was added to the April 1 approved budget of $2.1M to pay for the development of the Action Plans.

In addition, it is not uncommon for projects to come in under budget ("Unspent" in Table 4.1). Any funds not spent during the fiscal year will be carried forward as unspent surplus budget and made available for new project spending in future fiscal years. Over time, as additional projects remaining in the "Planned" category come in under budget, the unspent amount for F17 may increase. In the case of Fiscal Year 17, by March 31, 2017 the approved budget exceeded the available funding by $9,750 (0.5%) as outlined in Table 4.1. As outlined above, projects do come in under budget or alternatively are cancelled for various reasons. The overage was within the Board's risk tolerance based on the overall implementation plan.

Table 4.1 Actual Budget at March 31, 2017

Fund category	FY17 approved budget	Paid up to March 31, 2017	Planned payments[1]	Unspent funds[2]
Fish	$704,392	$371,762	$324,557	$8,073
Wildlife	$760,518	$488,372	$272,080	$67
Administration	$176,730	$185,911	$5,285	$(14,466)
Land Securement	$407,710	$19,890	$387,820	$0
Communications	$47,200	$47,294	$3,330	$(3,424)
TOTAL	**$2,096,551**	**$1,113,229**	**$993,071**	**$(9,750)**

Note[1]: Planned payments represent expected invoices for approved, ongoing projects that have not yet submitted final reports by March 31.
Note[2]: Unspent funds are carried forward and available for the next fiscal year.

4.3 Approved budget allocation by watershed

The approved F17 budget for our Coastal Region included $704,392 on fish projects, $760,518 on wildlife projects, and $407,710 for land securement initiatives, for a total of $1.873 million (89%). These projects were distributed across the watersheds in which we operate, as shown in Figure 4.3. During 2016-17, the FWCP supported projects in 11 of 14 watersheds in the Coastal Region (exceptions include the Ash, Falls River, and Clayton Falls watersheds).

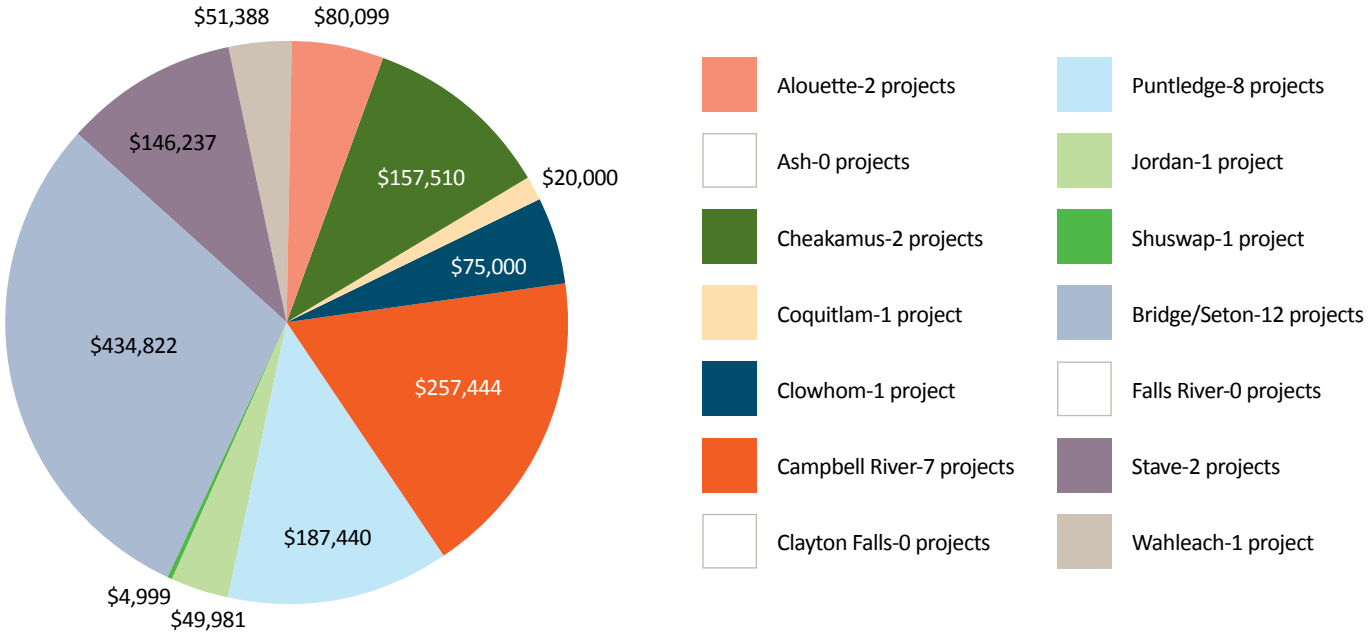


Figure 4.3 **Projects by watershed**

4.4 Strategic Plan accountability

As noted in Section 2.2, alignment with the strategic priorities identified in the Action Plans is a requirement to be eligible for an FWCP grant. It is a key consideration for the Technical Review Committees and Board during the project evaluation and selection process.

During F17, work was initiated to complete the 2nd phase of a Strategic Project Review for projects implemented from 2013 –2016 (Ecofish Research Ltd. 2016). This work built off the phase 1 work implemented in 2014-15 (Ecofish Research Ltd. 2015), where a desktop review was conducted of all FWCP projects implemented between 2010 and 2013. All projects were evaluated, including gauging progress toward achieving Action Plan objectives, assessing updating requirements for Action Plans, and identifying projects for future investment. The report summarizes characteristics of the funded projects and the distribution of funding among watershed and action types, evaluates how well the funded projects achieved the FWCP priority objectives and aligned with Priority Actions, and makes recommendations for improvement. In F17, 84 projects were reviewed, while in F15, 120 projects were reviewed, (Total=204 projects) representing an FWCP project investment of over $10M.

4.5 F17 projects

Table 4.2 Fish project table

2016-17 FWCP Coastal Region application-based projects – fish								
#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding[1]	Project outcome[2]
1	COA-F17-F-1182	Puntledge Summer Chinook Parentage-Based Tagging Study: Year 3	Puntledge	K'omoks First Nation	Puntledge Salmonid Action Plan	Species-Based Actions	$35,259	Samples from 211 brood year 2015 Summer Chinook adults and 702 naturally-spawned juveniles were collected between February and July 2016 during outmigration. The natural spawners were estimated to be 59% of the Summer Chinook that emigrated past the hatchery brood collection point in the lower river during 2015. DNA analysis of brood year 2016 hatchery and natural spawners is underway.
2	COA-F17-F-1187	Alouette Sockeye Adult Enumeration Monitor (Bridging 2016)	Alouette	Alouette River Management Society	Alouette Salmonid Action Plan	Monitoring & Evaluation	$16,474	The 2016 Alouette Sockeye Salmon run saw 6 adults returning between July 19 and August 7, 2016. The Sockeye were sampled before being transported to Alouette Lake. The measurements indicated an average fork length of 60 cm. Adults were aged as four years old, and originated from Alouette stock.
3	COA-F17-F-1189	Grilse Creek LWD Post-Construction Maintenance & Monitoring	Campbell	British Columbia Conservation Foundation	Campbell Salmonid Action Plan	Habitat-Based Actions	$8,311	In June 2016, Routine Effectiveness Evaluations (REE's) were conducted on all Large Woody Debris (LWD) sites installed in the summer of 2014. The majority of the sites were performing either as expected even though the overall REE scores had decreased from the 2015 survey. Required maintenance was completed in August of 2016 on two of the three structures.

[1] FWCP funding identified in Table 4.2 may vary from the approved budget as of April 1, 2016, due to project budget increases or decreases as projects progress throughout the fiscal year.

[2] Final reports for all projects are posted to the appropriate Provincial databases once available. Visit fwcp.ca/search for an updated list of all available final reports.

2016-17 FWCP Coastal Region application-based projects – fish

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding[1]	Project outcome[2]
4	COA-F17-F-1193	Campbell System Fish Restoration Proposal	Campbell	A-Tlegay Fisheries Society	Campbell Salmonid Action Plan	Research & Information Acquisition	$5,000	First Nations habitat restoration priorities were examined and measured to rank proposed projects with 62 survey respondents. It was determined that most of the high-ranking projects had already been completed leaving a gap in feasible projects. This led us to propose projects of our own and analyse them using the same evaluation matrix. As a result, a restoration project in the Quinsam River was selected.
5	COA-F17-F-1198	LRISS Aquatic Invasives Project	Bridge-Seton	Lillooet Regional Invasive Species Society	Bridge-Seton Riparian Wetlands Action Plan	Research & Information Acquisition	$18,793	Crews removed 9,502 m^2 of Yellow Flag Iris, 451 m^2 of Knotweed and 970 m^2 of Himalayan Blackberry along the shores of Seton, Anderson and Tyaughton Lakes. Based on monitoring of sites treated last year, the best way to remove Yellow Flag Iris is to dig out and remove all of the roots. A number of outreach methods were used to share information about this project including media, training and community events.
6	COA-F17-F-1199	Small Woody Debris Restoration in the Puntledge River Headpond	Puntledge	Courtenay and District Fish and Game Protective Association	Puntledge Salmonid Action Plan	Research & Information Acquisition	$8,503	A habitat enhancement project was completed in the Puntledge River headpond in January/February 2016 using recycled Christmas trees. The SWD installations were assessed during five snorkel surveys and minnow trapping. Overall, the sites that were treated with SWD bundles had slightly higher densities of Chinook fry compared to untreated sites. However the total number of fry observed during all surveys was low. Results from marked fry releases and minnow trapping were inconclusive.

2016-17 FWCP Coastal Region application-based projects – fish

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding[1]	Project outcome[2]
7	COA-F17-F-1206	Assessment of Past Puntledge River Restoration Projects	Puntledge	K'omoks First Nation	Puntledge Salmonid Action Plan	Monitoring & Evaluation	$17,579	Coho Salmon was observed spawning in all side-channels, Chinook were observed in Forbidden and Bull Island, while Chum and Pink Salmon were observed in Powerline. High discharges and poor visibility impeded surveys. Hydraulic sampling methods were employed to evaluate incubation success in Bull Island (99% survival) and Powerline (51% survival). Mark-recapture surveys in the Forbidden and Wong side-channel complex were conducted during unseasonably cool conditions resulting in relatively low population estimates of 0.18 fry/m^2 and 0.14 fry/m^2 respectively.
8	COA-F17-F-1210	Assessment of Kokanee Spawning in Comox Lake	Puntledge	Courtenay and District Fish and Game Protective Association	Puntledge Salmonid Action Plan	Research & Information Acquisition	$18,690	Weekly spawning assessments at 16 potential shoreline sites were conducted from October to November 2016. Over 50 Kokanee were observed spawning and guarding redds at a depth of ~ 2.5 m in nearshore habitat at the south east end of Comox Lake on October 31, 2016. Incubation success using buried incubators found was 85.5%. Average intergravel temperature data at the incubation site was 2 degrees warmer than surface water temperature, suggesting possible groundwater sources that may be attracting kokanee spawning to this location. An analysis of historical reservoir elevations was conducted to assess the potential impact to kokanee reproductive success in Comox Lake.

2016-17 FWCP Coastal Region application-based projects – fish

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
9	COA-F17-F-1218	Elk Falls Canyon Spawning Gravel Bulk Delivery: Year 1	Campbell	British Columbia Conservation Foundation	Campbell Salmonid Action Plan	Habitat-Based Actions	$58,300	Between August 8 and 12, 2016 approximately 200 m^3 of graded and washed spawning gravel was delivered into the Elk Falls Canyon, the largest single gravel project at this site since construction of the John Hart Dam in 1952. Costs per unit to deliver the gravel were approximately 60% less than the previously used helicopter method. The gravel pad produced was used by dozens of adult Chinook, Pink, Chum and Coho salmon in the fall of 2016.
10	COA-F17-F-1251	Land Securement & Reclamation for Puntledge Salmonids	Puntledge	Comox Valley Project Watershed Society	Puntledge Riparian Wetlands Action Plan	Research & Information Acquisition	$11,016	Baseline studies were conducted in order to inform the development of a restoration plan and an associated budget. The Steering Committee actively worked on various strategies for land securement.
11	COA-F17-F-1258	Campbell River Spawning Gravel Placement: Site 7-IV	Campbell	Campbell River Salmon Foundation	Campbell Salmonid Action Plan	Habitat-Based Actions	$79,261	The gravel placement project placed 4,300 metric tonnes of spawning gravel into the Campbell River in August 2016. The gravel was placed at Site 7, 300 m downstream of the John Hart Generating Station. Due to large amounts of rainfall, flows in the Campbell River increased to 650 m^3/s in November potentially washing away the gravel as the placement design is based on flows up 260 m^3/s.

2016-17 FWCP Coastal Region application-based projects – fish

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
12	COA-F17-F-1329	Seton River Corridor Conservation Restoration Project: Phase 4	Bridge-Seton	Splitrock Environmental	Bridge-Seton Salmonid Action Plan	Habitat-based actions	$40,000	Report in progress.
13	COA-F17-F-1342	Upper Squamish River Habitat Restoration Project	Cheakamus	Squamish River Watershed Society	Cheakamus Salmonid Action Plan	Habitat-Based Actions	$85,400	This project resulted in restoration of four areas. Culvert upgrades at High Falls and Mile 22 Creek improved access into the spawning channel and increased flows into the rearing pond. Downstream, 75 m of the roadside watercourse was converted into a 110 m long spawning channel. At Branch 100 Creek the spillway was reconstructed to re-water the 12,000 m^2 wetland and improve spawning habitat. Modifications of the Ashlu off-channel habitats saw construction of 4 new spawning channels, riparian planting and the installation of beaver control fencing. These works all provide important improvements to habitat for salmonids as well as other fisheries and wildlife.
14	COA-F17-F-1343	Dave Marshall Salmon Reserve Restoration & Upgrades	Cheakamus	Squamish River Watershed Society	Cheakamus Salmonid Action Plan	Habitat-Based Actions	$72,110	Restoration, clean up and upgrade work was conducted at several sites including Far Point, Coho Connector, Birth of a Stream North and South, Wountie Channel, Mykiss Channel, Gorbuscha Channel, Eagle Point and Duck Pond. The extension of Kiwi Channel now ties directly into the downstream Evans Creek Re-watering project.

2016-17 FWCP Coastal Region application-based projects – fish

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
15	COA-F17-F-1352	Survey of Two Tributary Creeks in the Courtenay River Estuary	Puntledge	Comox Valley Project Watershed Society	Puntledge Salmonid Action Plan	Research & Information Acquisition	$4,490	This project updated field verified ArcGIS and Excel SHIM datasets, associated maps, geo-referenced feature photos, and completed drone surveys for Glen-Urquhart and Mallard Creeks to better inform the CVRD committee on the management of the tidal gates and the estuary floodplain and prioritize future restoration planning along these two systems.
16	COA-F17-F-1354	Apple Springs Effectiveness Monitoring Program	Bridge-Seton	Bridge River Indian Band	Bridge-Seton Salmonid Action Plan	Monitoring & Evaluation	$10,000	Report in progress.
17	COA-F17-F-1360	Gates Creek Salmonid Habitat and Population Assessments	Bridge-Seton	Lillooet Tribal Council	Bridge-Seton Salmonid Action Plan	Research & Information Acquisition	$47,000	Abundance and survival estimates for Sockeye Salmon fry leaving Gates Creek and the Gates Creek spawning channel. The results of the first open site electrofishing mark-recapture survey for juvenile Coho Salmon, Bull Trout and Rainbow trout, fish density for age 0+ Rainbow Trout, and catch statistics for Coho Salmon and Bull Trout juveniles, were determined.
18	COA-F17-F-1371	Stave River Watershed: Restoring Salmon Habitat	Stave	Fraser Valley Watersheds Coalition	Stave Salmonid Action Plan	Habitat-Based Actions	$71,237	This project restored 606 linear meters (7,866 m^2) newly created instream salmon habitat and 2,768 m^2 of riparian and aquatic planting using 16,294 individual native plants.
19	COA-F17-F-1372	Coquitlam Sockeye Restoration Using Hatchery Intervention	Coquitlam	Watershed Watch Salmon Society	Coquitlam Salmonid Action Plan	Species-Based Actions	$20,000	Report in progress.

2016-17 FWCP Coastal Region application-based projects – fish

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
20	COA-F17-F-1379	Design/Work Plans for Gravel Placement in Jordan River Reach 1	Jordan	Pacheedaht First Nation	Watershed Plan	Research & Information Acquisition	$49,981	Assessments of bedrock, gravel, salmon returns, bathymetric surveys and flow rates provided the data and informed the selection of a pilot spawning gravel site along the right bank of the Jordan River, 100 m downstream of the tailrace. The average surface area of the planned spawning gravel pad is 700 m^2. Work plans and material requirements have been developed spawning gravel pad is 700 m^2 with a depth of approximately 1 m. Work plans and material requirements have been developed for the habitat restoration at this site.
21	COA-F17-F-1382	Simms Park Refocus to Improve Side Channel Connectivity:	Puntledge	Comox Valley Project Watershed Society	Puntledge Salmonid Action Plan	Habitat-Based Actions	$5,000	Updated survey work and stakeholder engagement was undertaken in 2016 to inform a new restoration plan. The updated project plan is now more cost effective and maximizes fish, wildlife and community benefits; thereby increasing the chances of it being successfully funded and implemented.
22	COA-F17-F-1411	Middle Shuswap River Off-Channel Access Assessment:	Shuswap	Yucwmenlucwu (Caretakers of the Land) 2007 LLP	Shuswap Salmonid Action Plan	Research & Information Acquisition	$4,990	35 side channel access points were surveyed and photo-documented in October 2016. Overall, there was low to moderate riparian habitat at surveyed sites. Bank protection works and unrestricted riparian access along the main channel of the MSR were observed throughout the survey as well as poor to good established riparian vegetation. Enhancement recommendations include the addition of cover habitat and opening up access to the inlet at side channel C to increase scour and productivity.

2016-17 FWCP Coastal Region application-based projects – fish								
#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
23	Directed Project	Supporting the Puntledge River Hatchery (Summer Chinook production)	Puntledge	Fisheries and Oceans Canada (DFO)	Puntledge Salmonid Action Plan	Species-Based Actions	$17,000	The FWCP Coastal Region sets aside funds to support the Puntledge River Hatchery's summer Chinook production.

Table 4.3 Wildlife project table

2016-17 FWCP Coastal Region application-based projects – wildlife								
#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
24	COA-F17-W-1181	Clowhom Watershed Species-at-Risk and Habitat Surveys: Year 4	Clowhom	Halcyon Professional Services	Watershed Plan	Habitat-Based Actions	$75,000	Report in progress.
25	COA-F17-W-1186	Monitoring Bear Dens in Jordan & Campbell River Watersheds	Jordan and Campbell	Artemis Wildlife Consultants	Watershed Plan	Habitat-Based Actions	$8,942	Through video-monitoring we have documented multiple visits by bears to den structures, including bears climbing into 5 of our structures. Only one of 18 structures has not documented a bear visit and the number of visits has continued to increase. We also documented the first full entrance by a bear into a den pod in 2016.
26	COA-F17-W-1191	Vancouver Island Marmot: Buttle Lake Supplementation and Monitoring 2016	Campbell	Marmot Recovery Foundation	Campbell Species Action Plan	Species-Based Actions	$86,630	MRF installed six feeders at Mt. Washington and two in Strathcona Provincial Park. In total, 17 marmots were released into Strathcona to support seven existing colonies, and an additional nine marmots were released on Mt. Washington. Radiotelemetry was used to monitor survival noting poor survival in Strathcona between 2015 and 2016. Remote cameras and crews were used to observe litters and colonies and it is estimated that there are currently 70-100 marmots living in nine colonies in the Strathcona region.

2016-17 FWCP Coastal Region application-based projects – wildlife

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
27	COA-F17-W-1207	Species-at-Risk Conservation in the Stave River Watershed	Stave	Athene Ecological	Stave Species Action Plan	Species-Based Actions	$75,000	Highlights of year 2 include 47 species at risk observations including Western Toad, Red-legged Frog, Western Painted Turtle, "Coastal" Western Screech-owl and Great Blue Heron. Monitoring for Pacific Water Shrew and Coastal Tailed Frog was also completed. Confirmed sites were monitored for occupancy, habitats were assessed and Wildlife Habitat Area proposals completed. Restoration activities enhanced habitat at Allan Lake, Worldwide 1, Mill Pond, and Silvermere Lake. Nest boxes for Western Screech-owl were installed.
28	COA-F17-W-1211	Riparian Habitats and Species-at-Risk in Wahleach Watershed	Wahleach	South Coast Bat Action Team	Watershed Plan	Research & Information Acquisition	$51,388	Field inventories detected 10 wildlife species-at-risk, 3 mammal species-at-risk, 3 amphibian species-at-risk and 4 avian species-at-risk. No Pacific water shrews were detected. Important wetland and habitat areas were identified using aerial photos and spatial reference information. We have identified additional footprint impacts to aquatic and terrestrial wildlife and habitat beyond what is described in the 2011 Wahleach Watershed Plan.
29	COA-F17-W-1217	Wolverine Inventory and Conservation in South Coast Mountain Ranges	Bridge-Seton and Cheakamus	Ministry of Environment	Cheakamus Species Action Plan	Research & Information Acquisition	$37,205	Report in progress.

2016-17 FWCP Coastal Region application-based projects – wildlife

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
30	COA-F17-W-1221	Restoring Wildlife Habitat: Salmon River Conservation Area	Campbell	The Nature Trust of British Columbia	Campbell Riparian Wetlands Action Plan	Habitat-Based Actions	$11,000	Highlights include surveys for songbirds and owls, installation of nest boxes for Western Screech Owls and water quality sampling. This project restored 30,000 m^2 of upland habitat, enhanced 2763.5 m^2 riparian habitat along the Salmon River and improved 55m of linear wetland habitat. Nine species of conservation concern were recorded. Several priority species benefited directly from this habitat enhancement project.
31	COA-F17-W-1253	Riparian and Wetland Prioritization in Puntledge Watershed	Puntledge	Ecofish Research	Puntledge Riparian Wetlands Action Plan	Research & Information Acquisition	$69,904	The project identified that the lower Puntledge watershed historically supported an abundance of riparian and wetland habitats. Sites with high conservation value included the Cruikshank, Upper and Lower Puntledge, and Browns rivers and Rees Creek. Other field-verified sites with high conservation value included portions of the floodplain of Perseverance Creek, the Morrison Creek headwaters, and other large wetland complexes connected to the Lower Puntledge River and Comox Lake. The conservation priorities identified in this project could guide conservation efforts in the Puntledge watershed.
32	COA-F17-W-1286	Tailed Frog eDNA Assessment in the Bridge/Seton Watersheds	Bridge-Seton	Hemmera Envirochem Inc.	Bridge-Seton Species Action Plan	Species-Based Actions	$37,720	In August 2016, 72 locations were sampled. Tailed frog eDNA was detected in 34 discrete stream reaches at 28 new sites. We also confirmed a more widespread extant distribution at several previously unconfirmed areas within an apparently isolated metapopulation of tailed frog in the Shulaps drainage and in tributaries along Anderson Lake.

2016-17 FWCP Coastal Region application-based projects – wildlife

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
33	COA-F17-W-1292	Whitebark Pine Restoration in the St'at'imc Territory	Bridge-Seton	Lillooet Tribal Council	Bridge-Seton Species Action Plan	Habitat-Based Actions	$32,196	In the late summer of 2016, we caged and collected cones, surveyed Whitebark Pine health plots, surveyed Clark's Nutcrackers and planted Whitebark Pine seedlings grown at Splitrock Nursery in a recent burn site on Porcupine Ridge (Shulaps Range)to support the restoration of Whitebark Pine ecosystems in the Coast Mountains around Lillooet.
34	COA-F17-W-1295	Restoring Species of Conservation and Cultural Value	Alouette	Katzie First Nation	Alouette Riparian Wetlands Action Plan	Habitat-Based Actions	$63,625	We combined scientific and traditional knowledge values to create an Eco-Cultural Restoration Plan for Katzie territory. In this first year of our multi-year project, we enhanced 1 ha of wetland at two high priority sites along the lower Alouette River for 11 species of conservation concern while also restoring access to plant species of cultural value. We designed marshes to sustain large patches of wapato and tule, so that members of the Katzie and wider community can engage in traditional harvesting of these culturally-valued plants. We also initiated a long term effectiveness monitoring program. Results suggest that our actions to plant shrubs may broaden the suite of bird species able to find breeding resources, and thus is expected to increase bird species richness over the long term.
35	COA-F17-W-1314	Restoration of the Lillooet Sub-Populations of Spotted Owls	Bridge-Seton	MFLNRO	Bridge-Seton Species Action Plan	Species-Based Actions	$48,554	Survey effort for spotted owls was conducted in the Lillooet portion of the range. Spotted owl inventories detected an estimated 41 barred owls in 13 of the 17 study sites. Twelve barred owls were removed from 5 study sites to enhance and protect habitat for spotted owls.

2016-17 FWCP Coastal Region application-based projects – wildlife

#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
36	COA-F17-W-1318	Northern Spotted Owl Captive Breeding Program	Bridge-Seton	British Columbia Conservation Foundation	Bridge-Seton Species Action Plan	Species-Based Actions	$49,900	The Northern Spotted Owl is Canada's most endangered bird; its entire Canadian range occurs in the southwestern portion of B.C. Today, the captive population consists of eight captive born (two from the USA), seven wild caught juvenile, (one from the USA), and two of the initial owls captured from the wild. There are currently 17 Northern Spotted Owls at the breeding facility in Langley.
37	COA-F17-W-1319	Fisher Artificial Reproductive Den Box Study	Bridge-Seton	Davis Environmental Ltd.	Bridge-Seton Species Action Plan	Species-Based Actions	$34,625	Monitoring during the reproductive season (late March – June) identified four den boxes that were used for reproduction. Three of the structures used were in the Bridge Watershed and one was in the Chilcotin. All 4 den boxes were new, bringing the total number of den boxes used to 6 over the 3 denning seasons we have monitored. An average of 2 kits were observed at the den boxes.
38	COA-F17-W-1341	Powerhouse Foreshore Restoration Project Maintenance Program	Bridge-Seton	Splitrock Environmental	Bridge-Seton Species Action Plan	Species-Based Actions	$17,180	Report in progress.

2016-17 FWCP Coastal Region application-based projects – wildlife								
#	Project ID	Project title	Watershed	Project lead	Action Plan alignment	Action type	FWCP funding	Project outcome[2]
39	COA-F17-W-1356	Puslumcw (Wet Ground) Wetland & Riparian Survey	Bridge-Seton	Cayoose Creek Indian Band	Bridge-Seton Riparian Wetlands Action Plan	Research & Information Acquisition	$61,650	We identified, classified and written site specific recommendations for 48 wetland sites. Wetland survey and amphibian workshops trained young technicians from the community and results were presented at community gatherings in and around Lillooet. Our results demonstrate that wetlands are scarce, and often highly disturbed in this area and have generated community interest in wetlands, and a collective will to move forward in the conservation and restoration of wetland habitat.
40	Directed Project	Land Securement for Conservation Purposes	TBD	TBD	TBD	Land Securement	$307,710	The Coastal Region Board set-aside funding to contribute to land securement initiatives throughout the region.
41	Directed Project	Gates Creek Conservation Property (Land Management)	Bridge-Seton	TBD	Bridge-Seton Riparian Wetlands Action Plan	Land Securement	$100,000	Funding set aside for land management i.e. demolition of unoccupied out buildings.