



**Archery and Oxbow Project Restoration**

**Project # 13.COQ.01**

**November 2013**

**Prepared for and with Financial Support of**



**Prepared By**



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### Executive Summary

In 2013 the BC Hydro Fish and Wildlife Compensation Program provided a grant to the North Fraser Salmon Assistance Project Society of \$90,515.20 to undertake maintenance and enhancement on four existing Coquitlam watershed habitat projects.

The project goals and objectives were aligned with the Fish and Wildlife Compensation Program and addressed limiting factors and priorities identified in the *Bridge-Coastal Restoration Program: Strategic Plan, Volume 2: Watershed Plans, Chapter 8: Coquitlam River (December 2000)*, and the *Coquitlam/Buntzen Watershed Salmonid Action Plan Final Draft (October 2011)*.

The project activities, objectives and immediate results:

- Archery Pond and Off-channel Habitat: Replace the intake and improve 3300m<sup>2</sup> of rearing habitat for *Oncorhynchus kisutch* (Coho) and 300m<sup>2</sup> of spawning habitat for Coho and *O. keta* (Chum). The works were completed successfully and resulted in an additional 5,000m<sup>2</sup> of habitat.
- Oxbow Pond and Off-channel Habitat: Install beaver resistant culverts to improve fish passage to 18,000m<sup>2</sup> of rearing habitat and 4,300m<sup>2</sup> of spawning habitat and create access to 1,000m<sup>2</sup> of rearing habitat. The works were substantively completed; however, the culverts were delivered late due to a manufacturing breakdown and will be installed during appropriate weather/fisheries conditions in early 2014.
- Or Creek and PCDH&FC Hatchery Side-channel: Assess and maintain the 20,000m<sup>2</sup> of rearing and 200m<sup>2</sup> of spawning habitat at Or Creek and the 500m<sup>2</sup> side channel at the PCDH&FC site. The two sites were assessed for stability and function and no works were needed at this time.

Substantive in-kind has contributed to the increased size and success of this project.

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## Acknowledgements

The project partners acknowledge the persistent financial support of the BC Hydro Fish and Wildlife Compensation Program for this and other substantive projects in the Coquitlam River watershed. Many of these projects would not be undertaken without this support as these projects and those that remain to be undertaken exceed the resources and capacity of the community and watershed stewards.

In addition, these projects would not be undertaken without the expertise and watershed knowledge of Fisheries and Oceans Canada and the Resource Restoration Unit donations of in-kind engineers, biologists and construction supervisors and the resulting reduced risk and project costs. This partnership ensures projects link to and support Canada's Policy for Conservation of Wild Pacific Salmon.

Substantive in-kind project material donations from Jack Cewe Ltd. and the support of George Turi greatly enhanced the project and reduced project costs. The partnership also contributed to positive community relationships.

The support from the City of Coquitlam of salmonid habitat restoration, enhancement and conservation and the willingness of the City to dedicate lands for salmonid habitat will provide leadership to other municipalities.

### Cover Photo

George Turi (left) and Jim Brooks (Right) of Jack Cewe Ltd. at the Archery Pond Habitat 2013

### Photo Credits

Tony Matahlija

## 1.0 Introduction

The BC Hydro Fish and Wildlife Compensation Program (FWCP) provided a contribution of \$90,515.20 for works associated with the Archery and Oxbow Project Restoration located in the Coquitlam River watershed, a tributary of the Fraser River in southwest British Columbia.

This project links to and addresses limiting factors for salmonids as described in:

*Bridge-Coastal Restoration Program: Strategic Plan, Volume 2: Watershed Plans, Chapter 8: Coquitlam River (December 2000)*

### 1. Factors Limiting Fish Diversity and Production:

Limiting Factor #2 - Loss of habitat

Limiting Factor #3 - Reduced downstream habitat capability

Limiting Factor #4 - Reduced biological productivity

### 2. Factors Limiting Wildlife Diversity and Productivity

Limiting Factor # 1 - Habitat changes

*Coquitlam/Buntzen Watershed Salmonid Action Plan Final Draft (October 2011)*

### Limiting Factors

1. Habitat area: Former spawning, rearing and overwintering areas are permanently lost or seasonally reduced by dam footprint, reservoir flooding, flow diversions, or operating flows; or from non-hydro sources, such as dykes and urban development in the lower watershed. DFO and MOE indicate that rearing habitat is currently limiting for coho and steelhead, and spawning habitat is likely limiting for pink and chum.

2. Habitat quality: Physical habitat below dams has been altered by reduced gravel and wood recruitment, particularly in the upper portion of the lower river. Productivity of Coquitlam Lake Reservoir has been affected by long-term reservoir drawdowns and loss of salmon-derived nutrients. Lakes and streams in this region have naturally low nutrient levels.

3. Access: Anadromous and migratory resident stocks have been excluded from the upper Coquitlam for more than a century. Access has been reduced in the lower river through alteration of the natural flow regime. For example, access to side channel habitat is reduced due to lower mainstem flows and dyking and channelization in the lower watershed. Access to tributaries has been affected by reservoir drawdowns and lower flows in the mainstem. Lack of fish passage at the Coquitlam Dam has blocked inputs of salmon-derived nutrients.

This project is aligned with the Coquitlam/Buntzen Watershed Salmonid Action Plan Objectives, Measures and Target Species:

Objective 1- Ensure a productive and diverse aquatic ecosystem

Objective 2 - Maintain or improve opportunities for sustainable use, and

Priority actions and target species

Maintain existing constructed habitat enhancements for all salmonids.

The first limiting factor addressed by this project is habitat area, the loss of riverine off-channel habitat, that provides critically important spawning and rearing areas for *Oncorhynchus gorbuscha* (Pink), *O. kisutch* (Coho) and *O. keta* (Chum). These areas are also important for Pink and *O. tshawytscha* (Chinook) spawning.

The restoration sites are located on the historic active floodplain of the Coquitlam River that is now largely isolated from direct river flow by dykes. Active restoration of these areas and monitoring and maintenance of restoration projects are the only practicable means of recovering these populations.

Downstream trapping studies on the Coquitlam River have suggested that constructed off-channel habitats, primary mitigation for loss of side-channel/off-channel habitats associated with dam construction and flow manipulation, produce 30-50% of the Coho smolts in the watershed.

The second limiting factor to be addressed is habitat quality, the loss of nutrients due to the effects of the Coquitlam River Dam. This project will increase the biomass of salmon produced by the Coquitlam River and thereby increase the amount of marine derived nutrients that enter the ecosystem each year.

In addition, the number one ranked FWCP priority action of maintaining existing constructed habitat enhancements for all salmonids is addressed by this project and will protect the investments and benefits of previous works. This will also improve the functionality of these areas to better support present day salmon recovery efforts in this section of the Coquitlam River.

Other species expected to benefit from these works include flora dependent on marine derived nutrients and fauna such common predators of juvenile salmon and other small fish ( mink, otter, Great Blue Heron, Belted Kingfisher, Common and Hooded Mergansers, American Dipper), amphibians (salamanders , frogs) and small mammals (beaver, mink , otter). During extreme flood events these protected off-channel habitats will be used by all species of fish found in this section of the Coquitlam River.

2.0 Goals and Objectives

The Archery and Oxbow Project Restoration goals and objectives (Table 1 Archery and Oxbow Project Restoration Goals and Objectives) are directly linked to the Fish and Wildlife Restoration Program *Coquitlam/Buntzen Watershed Salmonid Action Plan Final Draft (October 2011)* identified limiting factors and priority actions.

**Table 1**  
**Archery and Oxbow Project Restoration Goals and Objectives**

Goal	Objective	FWCP Limiting Factor Addressed
Secure 3300m <sup>2</sup> of rearing habitat for Coho and 300m <sup>2</sup> of spawning habitat for Coho and Chum salmon	Replace Archery Pond and Off-channel Habitat intake	1,2,3
Secure 20,000m <sup>2</sup> of rearing habitat and 2,000m <sup>2</sup> of spawning habitat for Coho and Chum salmon	Assess Or Creek habitat site and if needed remediate boulder riffle to ensure intake waterline is covered and wetted	1,2,3
Secure fish passage to 18,000m <sup>2</sup> rearing habitat and 4,300m <sup>2</sup> spawning habitat for Coho salmon	Install Oxbow Pond and Off-channel habitat beaver resistant culverts and create new salmonid habitat, create access to 1000m <sup>2</sup> rearing habitat	1,2,3
Secure 500m <sup>2</sup> of side-channel habitat for Coho and Steelhead salmon	Assess PCDH&FC Hatchery Side-channel for year one remedial works to ensure maximum benefit	1,2,3

**3.0 Study Area**

The Coquitlam River headwaters, Disappointment Lake east of Mt. Bonnycastle, are located in the southwestern relief of the Pacific Range, the southernmost subdivision of the Coast Mountains. The upper Coquitlam River flows into the Coquitlam Lake Reservoir and exits through the 3.6k Buntzen Lake Tunnel and powerhouse network into Indian Arm and a BC Hydro dam into the lower Coquitlam River. The lower Coquitlam River flows 14.2k from the dam, through the City of Coquitlam, across the historic Fraser River floodplain to the confluence at the Fraser River, west of Douglas Island.

The study area and project sites are on the Coquitlam River floodplain downstream of the BC Hydro Coquitlam River Dam (Table 2 Study Area Summary). This area is impacted by the Coquitlam River dam footprint as described in Coquitlam River Buntzen Lake Watersheds Strategic Plan.

**Table 2  
Study Area Summary**

<b>Study Area Description Location</b>	Coquitlam River Watershed, Coquitlam BC ~14.2k Upstream of Fraser River Confluence		
<b>Watershed Code</b>	100-024500-00000-000000-000-000-000-000-000		
<b>Map References</b>	Geodata BC TRIM Map 92G.026 Natural Resources Canada NTS 92G/2		
<b>UTM Co-ordinates</b>	<b>Zone 10</b>	5463673N 516511E	NAD83
<b>Construction Drawings</b>	Attached		
<b>Land Ownership</b>	City of Coquitlam, Parks		
<b>Land Use</b>	Historical: Floodplain Current: Passive recreation, fish and wildlife habitat		
<b>First Nations Traditional Territory</b>	Kwkwetlem Nation Primary Territory		

**Site Description**

The Archery Pond and Off-channel Habitat restoration works occur on the right bank of the Coquitlam River, in the area downstream of the confluence of the Coquitlam River with its major tributary, Or Creek. The site is within the Upper Coquitlam River Park.

The PCDH&FC Hatchery Side-channel is on the right bank of the Coquitlam River approximately 100m downstream of its confluence with Or Creek. It is adjacent to the Port Coquitlam and District Hunting and Fishing Club Al Grist Memorial Hatchery.

The Or Creek project site is at the confluence of Or Creek and the Coquitlam River.

The Oxbow Pond and Off-channel Habitat project is located on the left bank of the Coquitlam River approximately 8k upstream of the Fraser River confluence.

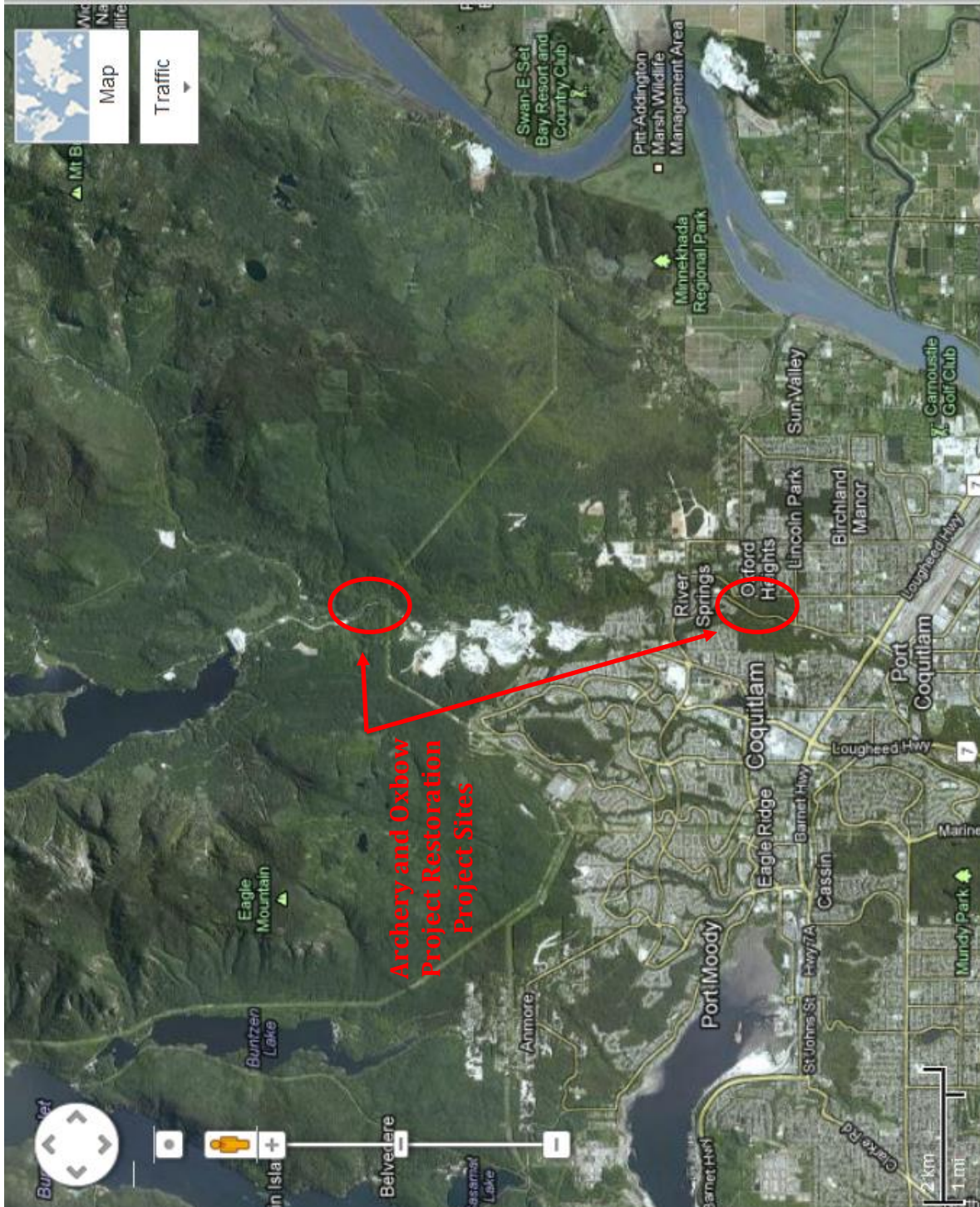


Figure 1  
Study Area and Project Locations, Coquitlam BC  
(Map Courtesy Google Maps)

#### 4.0 Methods

The project was undertaken by North Fraser Salmon Assistance Project Society (NFSAPS), in partnership with Fisheries and Oceans Canada (DFO).

##### Project Site Safety

A pre-fieldwork hazard assessment was undertaken followed by a project site safety meeting conducted by the Construction Supervisor/Safety Coordinator, Mike Landiak of DFO prior to working in/around water to ensure all safety and communication policies and procedures were understood by all project personnel. Crew members were trained on the site evacuation plan, known river hazards, location of first aid kit, communications plan and reportable incidence process.

Appropriate gear (waders/boots with non-slip soles, hard hats, high visibility vests, steel toe boots, eye and ear protection) were worn by project personnel.

This project consisted of work at four locations:

##### Archery Pond and Off-channel Habitat Project

This habitat was constructed in 1994. It consists of 3300m<sup>2</sup> of rearing habitat and 300m<sup>2</sup> of spawning habitat for a variety of salmonids. This habitat produces 3,300 Coho smolts and 75,000 Chum fry each year.

The river intake for this project had reached the end of its service life and needed replacement. This project relocated the intake to a more favourable location so that the pond would receive water throughout the summer as well as winter months preventing stranding of juveniles in the pond and enabling Coho salmon to utilize the habitat throughout the year.

Work commenced June 20, 2013. Work was undertaken in isolation from the stream until project connection to the river during the fisheries window of least harm, August 1-September 15, 2013.

Kwikwetlem Nation archeological monitoring was contracted and a FN representative was on site for the excavation works. No artifacts were discovered.

A Species at Risk assessment was undertaken resulting in the new intake being relocated south of the proposed location to avoid a stand of *Populus trichocarpa* (Black Cottonwood).

Five high strength rear-dump 76m<sup>3</sup> semi-trailer containers of large woody debris (LWD) and ten semi-trailers of boulders were donated by Jack Cewe Ltd. These supplies were delivered to the site on time as were the culverts, valves and pipe.

A small trial pond was constructed adjacent to the existing project to test water quality at the site. Monitoring results were favourable and a new 3,000m<sup>2</sup> pond

and 2,000m<sup>2</sup> channel were excavated. The LWD and boulders were installed to stabilize the banks and provide cover.

Two 900mm X 6m beaver resistant culverts were installed between the new habitat and existing habitat which doubled the flow to the existing channel and improved water quality.

A 108m trench was dug adjacent to the Coquitlam River and a wing type intake, water pipeline and underground valve (to prevent vandalism) were installed. The 108m water pipeline was fused on site as this method provides more secure joins and is the best practice for buried pipes of this length.

In addition, 3,000m<sup>2</sup> of riparian habitat were replanted with native plant species at a ratio of 1 shrub/ tree per 1 metre or denser, 1:1, designed to increase biodiversity and improve fish habitat. The site was overseeded with Fall rye and pasture mix to reduce impact erosion.

Protective fencing has been installed.

This project also undertook minor maintenance of the existing 18 year old pond and channel and redistributed existing spawning gravels.

Excellent weather helped the project meet timelines and donations helped keep it within the budgeted amount.

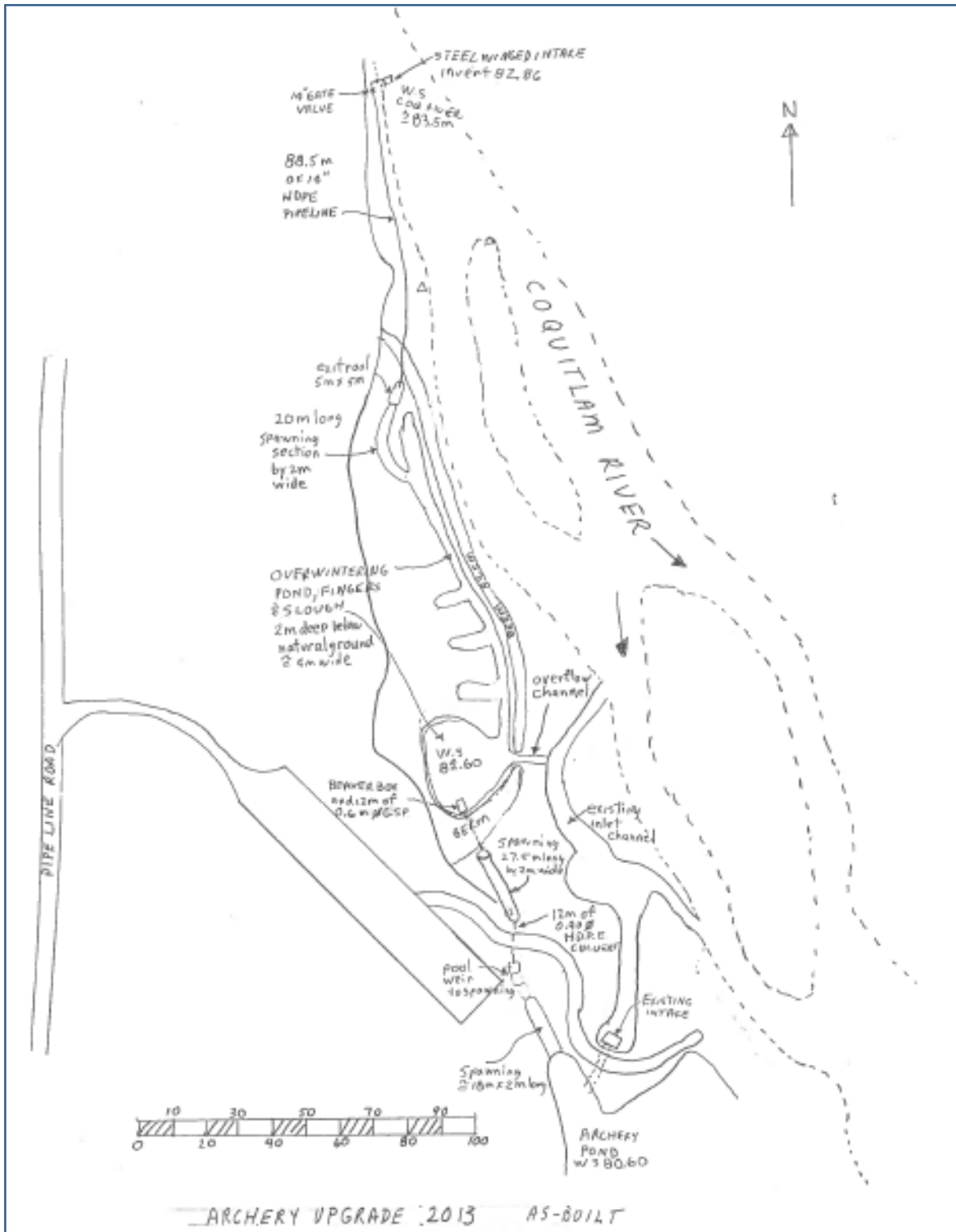


Figure 2

Archery Pond and Off-channel Habitat Works

#### Or Creek Off-channel Habitat Projects Assessment and Maintenance

These works were constructed between 1993 and 1995 and resulted in 20,000m<sup>2</sup> of rearing habitat and 2,000m<sup>2</sup> spawning habitat primarily for Coho and Chum salmon. The intake for these works crosses under Or Creek and was replaced in 2012. These works represents over 30% of the total off-channel habitat available to Coho salmon in the Coquitlam watershed.

The riffle downstream of the intake pipe crossing was assessed for need for supplemental boulders to ensure pipe stability and to prevent exposure. Maintenance works were not necessary at this time.

#### PCDH&FC Hatchery Side-channel

The 150 metre long side-channel habitat project located on the right bank adjacent to the Port Coquitlam and District Hunting and Fishing Club (PCDH&FC) was constructed in 2012 and provides over 500m<sup>2</sup> of Coho and Steelhead spawning habitat. It also provides a steady volume of water to the hatchery water intake over the summer months.

Over winter monitoring and assessment determined Year One remedial works are not necessary at this time.

#### Coquitlam River Oxbow Off-channel Project

These important works were constructed in 1994. It consists of 18,000m<sup>2</sup> of rearing habitat and 4300m<sup>2</sup> of spawning habitat. This habitat produces 8-10,000 Coho smolts and 500,000 chum fry each year. This project was to increase the fish habitat, improve fish passage and to reduce beaver activity impacts to the habitat and park trails by installing two beaver-resistant culverts at strategic locations in the park and a deep connecting channel to bypass existing beaver dams.

The fish passage and habitat quality/quantity improvements were undertaken and all but the installation of the new culverts was completed. The pre-ordered culvert's delivery was delayed due to a manufacturing issue and will be installed during appropriate weather/fisheries conditions in 2014.

#### Project Monitoring

Project monitoring has commenced and is being undertaken by NFSAPS, DFO and PCDH&FC to assess fish populations in the developed habitat areas. Minnow trapping will be done to determine fish use in the ponds in the fall (November 2013) and winter (mid-February 2014). This will confirm the use of the developed habitat as high quality fish habitat.

NFSAPS, DFO and PCDH&FC will also visually inspect the projects and undertake necessary actions to ensure they function as designed and continue to provide maximum benefit to many species of fish and wildlife and high value of the public investment.

### Risk Management

All activities were undertaken under the direct supervision of a DFO biologist and engineer.

FN archeological monitoring and a SAR site assessment were undertaken.

Appropriate insurance was purchased.

### Value Added

The original projects were developed through a partnership between DFO, BC Hydro, PCDH&FC and NFSAPS. These groups continue to work with other project specific partners to undertake project monitoring and maintenance.

The successful Archery Pond and Off-channel Habitat Project received significant in-kind from the City of Coquitlam and Jack Cewe Ltd.

The Archery Project is located within a Coquitlam city park and will strengthen relationships among stewardship groups, increase public awareness of the value of restored fish and wildlife habitat, and provide educational opportunities.



Archery Pond and Off-channel Habitat Project New 108m Waterline



Archery Pond and Off-channel Habitat Project New 108m Waterline Install



Archery Pond and Off-channel Habitat Project Beaver Resistance Culverts



Archery Pond and Off-channel Habitat Project New Off-channel Habitat

Figure 3 Project Before, During and After Photos

## 5.0 Results

The Archery Pond and Off-channel Habitat Project has resulted in 5,000m<sup>2</sup> of new high quality aquatic habitat and improved habitat quality and access to the existing 3300m<sup>2</sup> of rearing and 300m<sup>2</sup> of spawning habitat.

In addition, riparian planting species selection has increased biodiversity. Retaining the spoils on site as bermed hummock areas for planting retained the native plant seeds, bound nutrients and mycorrhizal fungi, which contribute to survival and success of robust, large size plants, and will support accelerated return to riparian function.

Project completion monitoring confirmed the new habitat was immediately utilized by a large number of adult Chum salmon.

The Oxbow Project was completed, though the culvert installation is delayed as a result of a breakdown at the manufacturing company and will be installed during appropriate weather/fisheries conditions in 2014.

Overwinter monitoring and site assessment determined that the PCDH&FC Side-channel and the Or Creek Restoration projects did not require work at this time.

NFSAPS, DFO and PCDHFC will continue to monitor and assess fish populations in the redeveloped habitat area. Gee-minnow trapping will be undertaken to determine fish utilization of the ponds in the fall (November 2013) and winter (February 2014). This will confirm the use of the developed habitat as high quality fish habitat. These groups will also work together to visually inspect the project and undertake necessary actions to ensure it functions as designed.

No risks or negative impacts to the environment were encountered. The projects were undertaken during excellent weather and consequently encountered no challenges.

**6.0 Discussion and Recommendations**

Substantive donations of in-kind from DFO as engineers, biologists and construction supervisors reduced risk, ensured positive results and significantly reduced project costs.

In-kind from Jack Cewe Ltd. of project materials also reduced project costs and enabled the large scale of the project. This new relationship and donation have contributed to a positive relationship between this aggregate company and watershed stewardship initiatives.

The support of the City of Coquitlam and the Coquitlam Watershed Roundtable will contribute to an accelerated increase in awareness and support of salmonid habitat restoration, enhancement and conservation in the region. The willingness of the City to dedicate lands and to be the steward of significant salmon habitat will provide leadership to other municipalities.

The leveraging of their investments in this habitat will contribute to the City's and the Region's food security strategy. Surveys confirm that investments in environmental protection , habitat restoration and food security are a good investment of public funds. Salmon are mentioned 18 times in the Metro Vancouver Food Security Plan:

<http://www.metrovancouver.org/planning/development/AgricultureAndFood/Documents/RegionalFoodSystemStrategy.pdf> .

## References

FWCP Application and Contract

## Contacts

Tony Matahlija	NFSAPS Project Manager	604-710-0581	604-710-0581
Mike Landiak	DFO Senior Engineer	604-666-0645	604-803-2785
Sam Gidora	DFO Construction Supervisor	604-666-6841	604-833-0005
Dave Nanson	DFO Project Biologist	604-666-8182	778-386-0573

**Appendix 1  
Financial Statement**



Financial Statement	Project #		13.COQ.01	
	BUDGET		ACTUAL	
INCOME	FWCP	Other	FWCP	Other
Total Income by Source	90,515.20	35,566.00	84,425.05	59,056.00
Grand Total Income (FWCP + other)	126,081.20		143,481.05	
	BUDGET		ACTUAL	
EXPENSES	FWCP	Other	FWCP	Other
<b>CONSULTANT FEES</b>				
Project Manager	9,200.00	800.00	9,200.00	800.00
Senior Engineer- design and construction	0.00	7,840.00		7,840.00
Senior Biologist- planning and design	0.00	6,720.00		6,720.00
Engineer Support-surveying and drafting	0.00	2,800.00		2,800.00
Construction Supervision	0.00	9,856.00		9,856.00
City of Coquitlam Parks design assistance	0.00	1,600.00		1,600.00
Archeological, SARA assess, monitoring, labour	9,000.00	600.00	8,851.51	600.00
<b>MATERIALS &amp; EQUIPMENT</b>				
Heavy hydraulic excavator/Volvo dump truck, mob-demob	34,339.20		32,535.77	2,240.00
Intake, pipeline valve, fabrication, delivery	13,130.00		19,354.55	5,000.00
Rock, gravel, large woody debris	3,600.00			13,000.00
Riparian vegetation, protection	1,000.00		1,484.83	
Pipe welding and misc. hardware	2,000.00			
Signage	896.00		896.00	
Culverts Beaver restraints	10,200.00		4,955.37	
Travel Expenses				3,250.00
Permits				
<b>ADMINISTRATION</b>				
Office Supplies	300.00	500.00	297.02	500.00
Photocopies & printing				
Postage				
Reports and publishing	1,800.00		1,800.00	
Office Space		3,600.00		3,600.00
Telephone/Fax/Cell Phone/Computer	1,600.00		1,600.00	
Insurance	2,200.00		2,200.00	
Bookkeeping	1,250.00	1,250.00	1,250.00	1,250.00
Total Expenses	90,515.20	35,566.00	84,425.05	59,056.00
Grand Total Expenses (FWCP + other)	126,081.20		143,481.05	
BALANCE (Grand Total Income – Expenses)	0.00		0.00	
FWCP Residual	6,090.15			

Appendix II  
Performance Measures

Performance Measures													
Using the performance measures applicable to your project, please indicate the amount of habitat anticipated to be restored/enhanced for each of the specified areas (e.g. riparian, tributary, mainstream). The same table will be used in the final report to summarize project results.													
Performance Measures - Target Outcomes													
Project Type	Primary habitat benefit targeted of project (sq.m.)	Primary Target Species	Estuarine	In-stream Habitat – Mainstream	In-stream Habitat – Tributary	Riparian	Reservoir Shoreline Complexes	Riverine	Lowland Deciduous	Lowland Coniferous	Upland	Wetland	Other
<b>Impact Mitigation</b>													
Fish passage technologies	Area of habitat made available to target species	Coho, Chum			X								1000m2 of rearing habitat access
Drawdown zone revegetation/stabilization	Area turned into productive habitat												
Wildlife migration improvement	Area of habitat made available to target species												
Prevention of drowning of nests, nestlings	Area of wetland habitat created outside expected flood level												
<b>Habitat Conservation</b>													
Habitat conserved – general	Functional habitat conserved/replaced through acquisition and management				X								25,900m2 of fish habitat
Habitat conserved - general	Functional habitat conserved by other measures												
Designated rare/special habitat (subset)	Rare/special habitat protected												
<b>Maintain or Restore Habitat forming process</b>													
Artificial gravel recruitment	Area of stream habitat improved by gravel placement												
Artificial wood debris recruitment	Area of stream habitat improved by LWD placement												
Small-scale complexing in existing habitats	Area increase in functional habitat through complexing												
Prescribed burns or other upland habitat enhancement for wildlife	Functional area of habitat improved												
<b>Habitat Development</b>													
New habitat created Functional area created		Coho, Chum			X								2,000m2 spawning and 3000m2 rearing habitat
<b>Other</b>													

**Appendix III  
Confirmation of FWCP Recognition**

- FWCP Recognition and project acknowledgement were presented at local Streamkeepers meetings and the Coquitlam River Watershed Roundtable and Core Committee meetings.
- In addition, the City of Coquitlam has agreed to host a project page on the Coquitlam River Watershed Roundtable website.

<http://www.coquitlamriverwatershed.ca/>

The project page link and FWCP project acknowledgement are located at:  
<http://www.coquitlamriverwatershed.ca/news/detail/206>

- The following newspaper item also acknowledges the FWCP:



### Preserving local salmon stocks

[John Kurucz](#) / Tri-Cities Now  
October 29, 2013 04:14 PM



Coquitlam resident Tony Matahlija chairs the North Fraser Salmon Assistance Society. He spent the summer building channels in the north Coquitlam River watershed so thousands of fish can make it back to their spawning grounds. Photograph and online news interview by: Lisa King

Coquitlam resident Tony Matahlija chairs the North Fraser Salmon Assistance Society. He spent the summer building channels in the north Coquitlam River watershed so thousands of fish can make it back to their spawning grounds. Photograph by: Lisa King  
With fish stocks on either side of the country in serious decline, Tony Matahlija was faced with a sink-or-swim scenario.

The year was 1996, and as a result of his dwindling livelihood as a commercial fisherman, Matahlija took a series of government-offered courses that helped fishermen transition into other careers. The result was the establishment of the North Fraser Salmon Assistance Society, a grassroots, Coquitlam-based group that helps preserve salmon stocks across B.C.'s south coast.

Matahlija's latest project wrapped up in early September, and now the fruits of his labour are on full display as thousands of salmon make their way back up the Coquitlam River via newly made fish spawning channels and rearing ponds.

Matahlija teamed up with BC Hydro and a series of volunteers to build the remediation project, which is needed particularly for young fish due to the silt levels in the river.

"If fish spawn in the main channel, because of all the siltation, everything will be dead. This way, we are helping to preserve the [salmon] run," said the Coquitlam resident.

The channels and ponds are fed alternate water sources that are cleaner than the water flowing in the river, which helps juvenile fish survive their first year.

Those contraptions also help adult salmon make it to their spawning grounds in the upper reaches of the watershed.

Matahlija and representatives from BC Hydro have already estimated more than 2,000 salmon have returned — mainly pinks and chum — while more coho are expected to return in the coming weeks. Final estimates won't be known until later this year.

"I don't have an exact number yet, but I believe we are talking about thousands of pink or maybe 10,000 or more chums as well," he said.

Matahlija moved to Canada from Croatia in 1979, though he was literally born into fishing; he grew up on an island in the Adriatic Sea called Rab, where he worked as a sailor during his younger years.

Since moving to Canada and devoting his life to salmon preservation, Matahlija has

helped with hatchery projects across the Tri-Cities: at both the Hyde Creek and Mossom Creek hatcheries, as well as at a hatchery in Sapperton.

He expects to be back up in the Coquitlam River watershed, doing more of the same kind of work, at this time next year as well.

“All my life, I’ve been on the water,” he said. “It’s in my blood. I was born on a skiff. Not too many people can follow this path. It’s like you are born with a gene that makes you have to be on the water all the time.”

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- Interview Online Video



Thursday, October 24, 2013 News

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## **Interview Online Video**

Preserving local salmon stocks

<http://www.youtube.com/watch?v=qtVNfF00ZoE&feature=youtu.be>

**Appendix IV**  
**Project Photos, Supplementary**

Project Photos, 184 Supplementary Before and After Photos  
Located in Report Pouch