

# **Bridge Coastal Restoration Program: Alouette River Watershed Plan Update**

**Public Information Session: Draft Notes  
Pitt Meadows, BC  
February 16, 2009**

## **Morning Session**

### **Introduction**

The meeting began with an introduction of participants and a welcome from Mike Gage, Chair of the BCRP board.

The purpose of the workshop was to provide a forum for local community members and First Nations to provide input on fish and wildlife restoration priorities for the Alouette system, as suggested by BCRP agency partners: Ministry of Environment (MOE), Fisheries and Oceans Canada (DFO), and Canadian Wildlife Service (CWS). The public input received from this session will contribute to a larger initiative of updating BCRP's watershed plans to ensure they reflect the most current restoration needs to continue to address the ecological footprint created by the construction of hydroelectric facilities. These updated plans will serve as a framework for guiding and assessing future restoration proposals seeking BCRP funding.

### **The Alouette Hydro-Electric System**

A brief history of the Alouette and Stave hydroelectric system was given by Brent Wilson (BC Hydro). The Alouette system is an inter-basin diversion with a dam on the south end of Alouette Lake, water flows through a 1 km tunnel at the south end of Alouette Lake to a powerhouse and into the Stave Reservoir and through a power plant at Stave Falls. The Water Use Plan (WUP) for the Alouette was the first WUP in BC, completed in 1996 and reviewed in 2006.

Monitoring studies in the Alouette have included smolt enumeration, kokanee out-migration, substrate quality study, water temp study, kokanee age structure study, archaeological impacts assessment, inventory and evaluation (\$201,500/year). Currently sockeye salmon are being "trapped and trucked" up above the dam.

A question was asked about when BC Hydro would be looking to retrofit the power turbines? It is anticipated to occur within the next decade and BC Hydro's latest draft Capital Plan has the planning for this beginning in 2010.

### **The Bridge Coastal Restoration Program in the Alouette**

Scott Allen, BCRP program manager, provided a summary of the BCRP funded projects in the Alouette. To date, 22 fish projects and 1 wildlife project have been conducted with

\$590,000 of BCRP funds. This distribution of projects suggests that the program is missing opportunities to invest in wildlife projects in the drainage.

It was suggested by meeting attendees that on a cost-to-benefit basis, investments in the Alouette have been more valuable than other systems (e.g., BCRP investment in ALU is half of BCRP investment in COQ, however ALU is home to 10x the number of chum and sockeye than COQ) and this should be taken into account in future allocations.

### **Fish Passage Decision Framework for BC Hydro Facilities**

Kevin Conlin (BCRP Planning Committee) gave a presentation on BC Hydro's new fish passage decision framework. The framework provides a 7-step process under which to consider fish passage projects. The Fish Passage Decision Framework will ensure that fish passage decisions are based on a Triple Bottom Line approach, with sound defensible criteria.

In general, the first steps are to be facilitated through the BCRP with input from the agencies and BC Hydro at certain points:

Step 1: Preliminary Screening

Step 2: Stakeholder and FN Engagement - Strategic Watershed Prioritization

Step 3: Environmental Feasibility Studies

Step 4: Preliminary Technical Feasibility Consideration

Step 5: Compensation Program Endorsement

Further steps are to be carried out by BC Hydro with input and approval from the agencies at key points:

Step 6: TBL Driven Business Case Development (Environmental, Technical/Financial and Social Benefits Assessments)

Step 7: BC Hydro Board of Directors Approval

A question was raised about the legal requirements for BC Hydro to undertake fish passage under the Fisheries Act. It was commented that so far this has not been a requirement by the agency when facilities have been upgraded (e.g., Coquitlam seismic work).

Questions were raised about the role of the BCRP Board and whether they were being expected to be more active in facilitating fish passage through the framework steps and whether or not there could be a conflict of interest. It was described that it is still intended to be a bottom up approach (given that proposals are proponent driven) rather than a top down one from the board. There was a comment made about the emphasis on studies rather than just moving forward with fish passage. It was commented that the Planning Committee is considering a request for proposal (RFP) for undertaking identified restoration projects, which would be different than the proponent-driven model currently used by BCRP.

A comment was also made about a Habitat Conservation Trust Fund (HCTF) study that looked at a preliminary fishway design at Alouette and was currently under review at the province. It was noted that HCTF and BCRP are complementary programs but are not working together on this issue in a formal manner.

### **Agency Priorities – Wildlife: Ministry of Environment**

Two presentations were given about the priorities for wildlife in the Ministry of Environment. The BC government's new "Conservation Framework" was outlined by Brent Gurd. The Conservation Framework will help identify priority wildlife species that can help direct BCRP funds to those species with a higher conservation threat. Species at risk biologist Kym Welstead presented options for "Species At Risk-Friendly Restoration". It is possible in many instances to improve the habitat of species at risk during fish-restoration projects (e.g., lessen the steepness of river banks to allow for wildlife species to be able to get out of the water). Comments were made about how best to ensure that restoration priorities were consistent and supportive of SARA? Can this be addressed through best management practices (BMPs) assuming presence?

A question was also raised in regards to how BCRP's approval process reconciles risk to SARA listed species.

Other questions for consideration asked what SARA obligations are expected of proponents, and how SARA will be integrated into BCRP priorities and an updated watershed plan.

Important websites for information provided by these two presenters:

<http://www.env.gov.bc.ca/conservationframework> – Conservation Framework

[www.sccp.ca](http://www.sccp.ca) - South Coast Conservation Program Atlas

<http://shim.bc.ca:3455/BMP> - Best Management Practices for lower mainland wildlife species. username: BMP, password: BMPS4U

### **Agency Priorities – Fish: Fisheries and Oceans Canada**

Matt Foy provided an overview and rationale of DFO's identified priorities (see handout from session). Many species are thought to have benefited significantly as a result of the WUP (1996). It was commented that there is a challenge with fish restoration initiatives and the interaction with plant complexes (and potential SARA species). It was also observed that the North Alouette is different in many ways to the South Alouette (where river flows are moderated by dam releases).

### **Agency Priorities – Fish: Ministry of Environment**

Duane Jesson outlined provincial fisheries priorities (see handout). He also clarified that bulltrout is considered a high priority species as compared to introduced char, carp, bass, and yellow perch species which are low.

## Afternoon Session

### Breakout Groups

During the afternoon session, two breakout groups were facilitated – one for fish and another for wildlife. The general direction provided to the groups was to first review and discuss the initial agency priority ratings and identified project areas. Participants were then asked to indicate their level of support, to suggest any potential changes, and to provide supporting rationale for their comments.

### Fish Breakout Group – Summary

The fish breakout group was facilitated by Michael Harstone (Compass Resource Management). The break out group reviewed and commented on the agency priorities in handout table.

#### *In General*

- **In general, there was broad support and agreement on the identified agency priorities and projects for the watershed** (unless noted otherwise).
- It was highlighted that there is a need to reconcile cross-species priorities in some cases where there is competition. For example, the WUP flows and corresponding large (increase in) chum population can hamper restoration efforts to increase the pink salmon population.
- Specific comments by species are summarized below.

#### *Pink Salmon*

- A number of restoration options were discussed that could benefit pink salmon:
  - The north Alouette River, as natural fluctuations in flows do not favour chum.
  - The right side of Mud Creek.
  - On years with high pink runs could consider a net fishery for chum.
  - Trap and truck chum to Gold Creek.
  - Construction of a selective Pink channel on Corrections-owned property directly across from Allco Park. Larger fish (e.g. Chum) could be excluded from such a channel with 'finger fence' controls.

#### *Chinook*

- A question was raised as to whether this is the right species to place a high restoration value on, given its viability potential.
- Some options considered included (1) better communication and direction to the fish hatchery when Chinook return; and (2) give consideration to a different release point for smolts further upstream to encourage spawners to use that part of the system. *(Note. the current release point at Harris Road was thought to potentially confound WUP monitoring, however this is being reviewed by BCRP prior to TRC review).*

#### *Coho*

- A high priority was recommended for maintaining and improving existing habitats before investing in creating new habitats.

- Another restoration option was funding for a new well at the fish hatchery.

### **Sockeye**

- It was commented that while it may be a lower priority to build a fishway from the agencies perspective (in the short term), that it is a high priority from the community's (societal) perspective.
- It was emphasized that good baseline data was needed to properly assess and make future decisions related to fish passage, as there could be trade-offs between kokanee and sockeye populations. It was further highlighted that there is a need for prioritizing the feasibility studies with consideration to understanding reservoir dynamics, for example:
  - Outmigration
  - Entrainment
  - Marine survival
  - Spawning success (e.g., locations, preferred levels, operational changes)

### **Chum**

- A question was raised as to how to arrive at a target escapement number that is less than some actual years?

### **Nooksack Dace / Salish Sucker**

- It was commented that the first priority has to be in determining if they are present. If so, then critical habitat areas would have to be identified.

### **Steelhead**

- It was noted that the target number was based on work from the Georgia Basin Steelhead (recovery) Plan.
- Another option discussed was the identification of habitat capacity above the dam (including the potential of Gold Creek). Fish passage would therefore provide a potential benefit to steelhead as another target species.

### **Bull Trout**

- MOE confirmed that this is a high priority species for them. The priority areas would mirror that of Cutthroat trout and include the assessment of life histories for the resident population upstream in the reservoir and the anadromous stock below the dam.

### **Carp, Bass, Yellow Perch (i.e., non-native species)**

- Two studies were identified:
  - Assess the degree of prevalence and potential risks to other species
  - Mitigation studies to better protect native species
- Two restoration options were also discussed:
  - Promote fishery of nuisance species
  - Use MOE's policy framework related to non-native (invasive) species

### ***Kokanee***

- It was noted that population targets need to be established in relation to sockeye targets.
- The need for Creel studies to better understand recreational demand and inform potential kokanee targets were also identified.
- A question was raised in relation to the fertilization program and whether there should be limits based on biology or budgets. Dave Hunter commented that BC Hydro plans to review the fertilization program this year with stakeholders and the agencies.
- In terms of additional restoration opportunities, it was not clear whether there were additional spawning opportunities.

### ***Multi-Species (Gold Creek)***

- It was mentioned that a habitat assessment would be important to undertake.

## Wildlife Breakout Group - Summary

The wildlife breakout group was facilitated by Taylor Zeeg (Compass Resource Management). In general, the group agreed with the high priority rankings and added two species (red-legged frog, coastal tailed frog) and projects for consideration as well as identified the need to include old growth forests as a priority habitat. The need for widespread inventory and habitat mapping was a recurring theme.

### General Comments

- Add a column for Conservation Framework rating to the Agency Priority table
- Map the habitat below the ALU dam for species potential
- Conserve available BC Hydro owned lands through use of conservation covenants (e.g., cottonwood riparian on Shuswap)
- If key habitat exists outside of the ALU (or any other BCRP watershed of concern), that cannot be restored or conserved within the ALU, does BCRP support habitat efforts that may lead to improvements elsewhere for species identified as priority?
  - BCRP: Will need to show dams had impact on habitat and will need to go to the policy board
- Need longer project funding timeframes. Currently single-year and require annual application for additional funding. Projects need multi-year funding assurance.
- Include Old Growth Forests as a priority habitat – many species use as habitat

Species / Habitat	Conservation Framework Rating (goal 1, 2, 3)
<b><i>Pacific Water Shrew</i></b>	<b>5, 6, 1</b>
<ul style="list-style-type: none"> <li>• General agreement that this species is a high priority</li> <li>• Agree on list of projects but add “habitat mapping” and “follow BMPs” and perhaps remove “inventory” (due to high mortality potential when inventorying this species)</li> <li>• Add project: Habitat Restoration using Existing BMPs</li> <li>• Consider adding the actual Recovery Team Activities to the priority project list</li> <li>• Suggest this is an umbrella species for other species</li> <li>• Is it possible to identify by habitat type? If the habitat looks suitable assume they are there and manage for them. Habitat:           <ul style="list-style-type: none"> <li>○ Slow moving creeks</li> <li>○ Wetlands / marshes</li> <li>○ Complex riparian forest structure</li> </ul> </li> <li>• I.D. opportunities to address shrews under other restoration projects, those projects would get higher ranking. Restoration efforts may be compatible with fish off-channel restoration work. Refer to the restoration work done by the Musqueam Band (get photos of their work to give guidance)</li> <li>• Include in TOR a requirement to show link between proposed action</li> </ul>	

and recovery team work	
<b><i>Pacific Giant Salamander</i></b>	<b><i>n/a</i></b>
<ul style="list-style-type: none"> <li>• Not in ALU – remove from list because expanding its range is not in the recovery team strategy</li> <li>• Add Red-Legged Frog and Coastal Tailed Frog instead</li> </ul>	
<b><i>Red-Legged Frog</i></b>	<b><i>3, 1, 2</i></b>
<ul style="list-style-type: none"> <li>• This species was added, the group agreed with the addition</li> <li>• There was agreement on the need for the same projects listed for Pacific Giant Salamander: <ul style="list-style-type: none"> <li>○ Conservation of streams and riparian habitats</li> <li>○ Conservation covenants on private lands</li> <li>○ Water quality initiatives</li> <li>○ Inventory and research needed</li> </ul> </li> <li>• Prefers wetland and slow moving water as habitat</li> <li>• Indicator species – can be measure of habitat / other species - link it to current monitoring projects</li> <li>• Add in with project: “Conservation of Wetlands”</li> </ul>	
<b><i>Coastal Tailed Frog</i></b>	<b><i>4, 1, 2</i></b>
<ul style="list-style-type: none"> <li>• This species was added, the group agreed with the addition</li> <li>• Prefer fast moving mountain streams as habitat</li> <li>• Keep project list from Pacific Giant Salamander: <ul style="list-style-type: none"> <li>○ Conservation of streams and riparian habitats</li> <li>○ Conservation covenants on private lands</li> <li>○ Water quality initiatives</li> <li>○ Inventory and research needed</li> </ul> </li> </ul>	
<b><i>Western Painted Turtle</i></b>	<b><i>4, 6, 2</i></b>
<ul style="list-style-type: none"> <li>• The group agreed Painted Turtle is a high priority, and higher priority than Pond Turtle</li> <li>• There is a joint recovery team for Painted Turtle and Western Pond Turtle</li> <li>• Only 6 sightings of Painted Turtle in Lower Fraser Valley – lots of opportunities for conservation / restoration work</li> <li>• There was specific mention of potential for projects at Gary Sutherland Park on the Alouette: <ul style="list-style-type: none"> <li>○ monitor nesting sites,</li> <li>○ mitigate impacts on nests, and</li> <li>○ husbandry projects.</li> </ul> </li> <li>• Could potentially do reintroduction project</li> <li>• Caution on restoration work: don't create bullfrog habitat (invasive species)</li> </ul>	
<b><i>Western Screech-Owl</i></b>	<b><i>3, 1, 2</i></b>
<ul style="list-style-type: none"> <li>• The group agreed screech-owls are a high priority</li> <li>• Riparian-associated species, secondary cavity nester, require minimum diameter tree</li> <li>• Published paper that shows WSOW population in lower mainland declining, likely due to Barred owl predation (Elliot 2006)</li> </ul>	

<ul style="list-style-type: none"> <li>• Project idea: put up artificial snags or nest boxes</li> <li>• Project idea: survey ALU – big gap, don't know how many WSOWs are there. Pursue larger watershed-approach for the species</li> <li>• Project need: there are taxonomic issues with the subspecies, DNA work needed?</li> </ul>	
<b>Spotted Owl</b>	<b>5, 6, 2</b>
<ul style="list-style-type: none"> <li>• Add to priority list</li> </ul>	
<b>Northern Goshawk, laingi subspecies</b>	<b>1, 6, 1</b>
<ul style="list-style-type: none"> <li>• 2 sub-species (<i>laingi</i> subspecies – priority; <i>atricapillus</i> subspecies – not as high priority). Need clarification on occurrence/abundance of <i>laingi</i> subspecies in the ALU</li> </ul>	
<b>Great Blue Heron</b>	<b>4, 2, 3</b>
<ul style="list-style-type: none"> <li>• Dropped from 80 nests to 40 in ALU</li> <li>• Priority project: available habitat is restricted so need long term plan to grow new habitat</li> <li>• Caution: herons may eat painted turtles so need to situate habitat restoration efforts accordingly</li> </ul>	
<b>Species at Risk in General</b>	<b>N/A</b>
<ul style="list-style-type: none"> <li>• Priority: MoE / BCRP develop a terms of reference for a SAR species assessment. The assessment would lead to a management plan with key objectives. Proponents would apply based on specific objectives. This would likely need to go to the BCRP policy board for consideration.</li> <li>• Need general SAR inventory (bryophytes, amphibians, plants etc.). Full season. Spring to fall.</li> <li>• Suggestion: Prepare a Comprehensive Plan <ul style="list-style-type: none"> <li>○ Drainage by drainage assessment of species occurrence</li> <li>○ I.D. suitable habitat even if species isn't currently there</li> <li>○ Itemize every SAR</li> <li>○ I.D. other species not on current priority list but should be added. Use it to build capacity in NGOs and First Nations</li> </ul> </li> <li>• Pursue land conservation opportunities for all of these species (brought up with respect to screech-owls)</li> <li>• Retain levels of biodiversity</li> </ul>	
<b>Wetland / Riparian Habitat</b>	<b>N/A</b>
<ul style="list-style-type: none"> <li>• Focus objectives on diversity not just # of ha of wetland</li> <li>• Measure diversity by indicator species. Is the objective to just create wetlands or have occupied sites? Some previous wetland creation projects have become occupied by bullfrogs and reed canary grass.</li> <li>• Need to increase cottonwood habitats for western screech-owls and herons – need to be growing new habitat, not just managing existing habitat</li> <li>• Need longer term projects to monitor these projects over time</li> <li>• Need baseline assessment of wetlands in ALU, how wetlands are functioning</li> </ul>	

<ul style="list-style-type: none"> <li>• Need better descriptions of what habitats were lost in BC Hydro developments, not just how many hectares, but what habitats were those hectares?</li> <li>• Monitor drawdown: thermal changes and effects on wetland wildlife</li> <li>• Make sure bullfrog habitat isn't being created</li> </ul>	
<b><i>Ungulate Winter Range</i></b>	<b><i>N/A</i></b>
<ul style="list-style-type: none"> <li>• There was not strong support from the group for the "high" priority ranking</li> <li>• It was unclear what the Ministry priorities are in the ALU for ungulate winter range?</li> <li>• Require clarity on Ministry priorities re: wildlife conservation designation</li> <li>• Any protection of old growth for ungulate winter range would help other species</li> </ul>	
<b><i>Bald Eagle</i></b>	<b><i>6, 6, 6</i></b>
<ul style="list-style-type: none"> <li>• Some question as to whether low or medium priority</li> <li>• However, is a High cultural / First Nations priority</li> <li>• Priority: monitor, Bald Eagles are hard on other species and are good indicators of ecosystem health (hard hit by declining salmon stocks)</li> <li>• Resident eagles can "defend" a territory from fly over eagles and thus limit predation on other species</li> </ul>	
<b><i>Mountain Beaver</i></b>	<b><i>6, 4, 5</i></b>
<ul style="list-style-type: none"> <li>• Not a high priority because it doesn't occur in the ALU</li> </ul>	
<b><i>Riverine Birds</i></b>	
<ul style="list-style-type: none"> <li>• Considered medium priority by CWS, no one from CWS present to give reason. Maybe because they are indicator species?</li> </ul>	

## **Breakout Group Plenary Session**

Each break out group summarized their discussions and comments during a plenary discussion. During the discussion it was emphasized the importance of reviewing and building from past restoration efforts.

## **Next Steps**

The next steps expected towards updating the watershed plans were discussed as follows:

- Prepare and distribute draft workshop notes to participants
- Finalize workshop notes
- Agency representatives will review and finalize their agency priorities for the watershed
- Agency priorities and public feedback will inform the updating of the watershed plans (likely in an addendum to the plan)
- Updated watershed plans (addendum) will be prepared and made available.

A comment was made regarding the timing of the updated watershed plans and the priorities that contractors / proponents will be using to guide their applications this year. Ted Down mentioned that any proponent using the province's conservation framework priorities this year (to submit a wildlife restoration project) probably won't be too far off the mark.

It was asked that if there are directional changes in the updated watershed plan, could they be highlighted as such.