

Bridge Coastal Restoration Program: Stave River Watershed Plan Update

**Public Information Session: Draft Notes
Mission, BC
March 27, 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 Stave River 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 Stave River Hydro-Electric System

Brent Wilson provided an overview of the Stave River system. It encompasses 3 hydroelectric generation projects (the Alouette, Stave Falls and Ruskin projects). Alouette Reservoir is diverted via a tunnel to Stave Reservoir. The Alouette and Stave provide storage whereas Ruskin provides generation. The Stave Water Use Plan was submitted in 1999 and approved in 2003. The Stave and Ruskin projects are the focus of this workshop.

Much of the focus of the Water Use Plan was retention and recovery of salmon populations. There has been significant recovery of the salmon; escapements now peak as high as 600,000 (from a low of a few thousand).

Operational results of the Water Use Plan include controlling reservoir levels to accommodate archaeological investigations, draw-down recreation season targets and Hayward Reservoir operations.

The Bridge Coastal Restoration Program in the Stave River System

Scott Allen, Program Manager BCRP, provided a summary of BCRP funded projects in the Stave River watershed since 1999. BCRP has spent \$0.27 million in the Stave watershed (2% of total BCRP investment to date) including the upcoming fiscal year. BCRP investment in the lower mainland and coastal area to date is approximately 22%

of grant funds since 1999. Funding in the Stave River system has been spread over 7 fish and 2 wildlife projects. These include: paleolimnological studies, habitat surveys, Roosevelt elk reintroductions, smolt imprinting, fish habitat restoration and riparian assessments. There has been some restoration work that has re-contoured banks to retain important cultural sites that were threatened by erosion.

Q: How does the release of Steelhead smolts coincide with Chum?

A: Chum are already gone (release is in May).

Agency Priorities – Fisheries: Ministry of Environment and Fisheries and Oceans Canada

Steve MacFarlane provided an overview and rationale of the priorities (see handout) for both DFO (for Matt Foy) and MOE (for Duane Jesson). MOE indicated that there is a lack of biological information on fisheries in the Stave system, they need baseline studies.

Q: What do you mean by the need for “continued upgrading”?

A: Will always need to augment the gravel, keeping what is there productive. There will always be projects coming up. There has been re-contouring going on too.

Q: What is the timing of the Chum returns?

A: Late October

Public comment: Silvermere drainage basin is often overlooked but is being used (couple hundred Coho returning). Silvermere empties into Stave; would like more emphasis on it.

Public comment: the Stave Chinook program at the hatchery has been dropped for this year. There is enough and anglers aren't accessing them.

Public comment: Stave Valley Salmon worked with MOE on bass in Silvermere (have up to 6 lb. bass in Silvermere Lake). The water temperature is very high in Silvermere Lake (up to 27°C) so some other species don't stay in the lake.

Agency Priorities – Wildlife: Ministry of Environment

The BC government's new “Conservation Framework” was outlined by Brent Gurd. The Conservation Framework will help identify priority wildlife species for government and it can help direct BCRP funds to those species with a higher conservation threat. However, while game species rank low in the conservation framework, they still garner great management attention.

Public comment: Stave Valley has been working with MOE on purple martin and they have re-established a colony.

Q: They have re-established osprey on Stave more than Hayward. Why?

A: Built platforms on Stave and Hayward, but Hayward ones not occupied. Different ability to catch fish based on water depths?

Q: How will the Conservation Framework affect regional priorities? Often personalities have more effect on what gets done locally.

A: Have to have the people on-side within Ministry, it is a challenge.

- Q: Who does the population assessments (from “Action Groups” in Brent’s presentation)? Is it only MOE? Local government can’t comprehend these things. Worried it will sit on a shelf.
- A: No, it’s beyond MOE, above and beyond ministry (Natureserve, global experts). MOE doesn’t expect local government to understand rankings; expecting smaller groups to be involved in the “Do” and “Plan/List Action” Groups.
- Q: Pacific water shrew was missed in BCIT woodlot, worried this information won’t filter down to local planning offices.
- A: Look at online mapping databases to see where these species are. Need a coordinated plan. The need to submit data from BCRP projects to the Conservation Data Centre database was emphasized.
- Q: Worried that species aren’t spread evenly across province, issue of people’s concerns when they live in the centre of the population distribution.
- A: There are scale issues, peripheries versus centre of distribution. Should grizzly bears be ranked the same in the lower mainland as northern BC? They are provincial ranks.
- Q: Does this (the Conservation Framework) have cabinet approval?
- A: Yes.
- Q: How far into this process are you? Are you in the “Do” stage?
- A: For some yes, like Oregon spotted frog (need to augment populations and restore land). The Conservation Framework was rolled out last spring.
- Q: As far as coordinated action, has the Ministry considered liaising with community groups? To pass on information (like Community Advisors in DFO). Communication is vital.
- A: That’s everyone’s job in government... dedicated positions, no. Yes, would be good, need the public to lobby for it. There will be increasing tools available for communicating the Framework.

Afternoon Session

Priorities Discussions

Due to the small number of participants the workshop did not break into separate fish and wildlife breakout groups for priorities discussions, all attendees discussed both fish and wildlife priorities. The group reviewed and commented on the agency priorities in the handout tables. The general direction provided to the groups was to first review and discuss the initial agency priority ratings and identified project areas. Then participants were asked to indicate their level of support, to suggest any potential changes, and to provide supporting rationale for their comments.

Wildlife Summary

- Comments from the workshop are included in *italics* in the table.
- Priority classification reflects discussions regarding the priority that should be given to BRCP activities and importance given to it by the participants in their area, and NOT the priority given to it by the agencies.

Species / Habitat	Conservation Framework Rating (goal 1, 2, 3)
<p><i>Pacific Water Shrew</i></p> <p>Projects should link to Recovery Team objectives. Habitat restoration using existing BMPs. Recovery habitat assessment in watershed. Manage suitable habitat where possible.</p> <ul style="list-style-type: none"> • <i>Agreed on High priority.</i> • <i>Blue Mountain and BCIT woodlots need inventory (involve students from BCIT).</i> • <i>Could do restoration and enhancement because the species is known to be there.</i> 	5, 6, 1
<p><i>Western Screech-Owl</i></p> <p>Riparian dependent, habitat restoration and securement potential. Inventory lacking. Nest box programs?</p> <ul style="list-style-type: none"> • <i>Agreed on High priority.</i> • <i>Priority project: inventory.</i> • <i>Discussion of installation of nest boxes and the species requirements. Provided website for screech-owl nest box plans.</i> 	3, 1, 2
<p><i>Great Blue Heron</i></p>	6, 2, 3

<p>Nesting habitat (riparian) and foraging habitat restoration and securement potential.</p> <ul style="list-style-type: none"> • <i>Agreed on High priority.</i> • <i>A lot going on with heron populations in relation to bald eagles (eagles harassing heron colonies, but also use of resident eagles for protection, herons abandoning rookeries for unknown reasons too).</i> • <i>The Lower Stave is used by herons for feeding.</i> • <i>There is a rookery in Silverdale, maybe on Kwantlen land? Not sure it's active.</i> • <i>Some decline in cottonwoods in Lower Stave which may be a problem for herons and eagles, good potential for a restoration project.</i> 	
<p>Spotted Owl</p>	<p>5, 6, 2</p>
<p>Needs landscape-level management.</p> <p>Projects should link with Recovery Strategy.</p> <ul style="list-style-type: none"> • <i>High conservation priority but low restoration priority.</i> • <i>Downgraded priority due to feasibility (very little old-growth left in Stave, can't do much for them).</i> • <i>Should partner with Metro Vancouver (as discussed at COQ meeting).</i> 	
<p>Riverine Birds</p>	<p>AMDI 6, 6, 6 HADU 4, 1, 3 COME 6, 6, 5</p>
<p>Mergansers, American Dipper, Harlequin Duck, this species group affected by multiple BC Hydro operations.</p> <p>Water quality, stream productivity and fisheries relationships.</p> <p>Riparian conservation.</p> <p>Research on genetics and dispersal of birds between river systems, connectivity of populations over larger scales.</p> <ul style="list-style-type: none"> • <i>Agreed on Medium priority.</i> • <i>Metro Vancouver has been doing merganser and American dipper studies in the lower mainland (contact: Janice Jarvis).</i> • <i>Good population of mergansers in the Lower Stave River and in front of Ruskin Powerhouse area.</i> 	
<p>Band-tailed Pigeon</p>	<p>5, 2, 3</p>
<p>Securement or protection of critical mineral sites</p> <ul style="list-style-type: none"> • <i>Agreed on High priority.</i> • <i>Is a migratory hunted bird that needs sodium at mineral sites (in sloughs and muddy areas) during the breeding season.</i> • <i>Washington is radio-tracking some.</i> • <i>Project priority: identification and securement of critical mineral sites. There are some in the area, some may be on private lands.</i> • <i>COSEWIC rank: Special Concern, provincial Blue list.</i> 	
<p>Northern Goshawk</p>	<p>1, 6, 1</p>
<p>Breeding habitat conservation, landscape level land management.</p> <p>Stand treatments in young forests (thinning, fertilizing) to speed up old-growth characteristics (larger trees and large branches for nests, canopy closure, flightpaths under canopy).</p> <ul style="list-style-type: none"> • <i>Agreed on High priority.</i> 	

<ul style="list-style-type: none"> • A COSEWIC Threatened species if it's the laingi subspecies, otherwise a yellow-listed species. 300-400 pairs for the whole coast. Are starting to use older second growth forests (used to be thought of as old-growth dependant). • Are thought to be in the Lower Stave, Brent Gurd could check the CDC protected database for sightings/detections if anyone wants to pursue a project in the Stave. • It was possibly greatly affected due to inundation of Stave. Would have used the meandering river that was flooded in Stave. 	
Red-legged Frog, Western Toad, Coastal Tailed Frog	3, 1, 2 3, 2, 4 4, 1, 2
<p>Conservation of streams, wetlands and riparian habitats.</p> <p>Conservation covenants on private lands.</p> <p>Water quality initiatives.</p> <p>Inventory and research needed.</p> <ul style="list-style-type: none"> • Agreed on High priority. • Red-legged frogs have been tied into some of the salmon projects in the Stave. Projects too small to bother with BCRP money (too much paperwork to request a few thousand dollars). • Reduce bull frog habitat whenever possible – this can be linked into stream and riparian habitat enhancement. 	
Elk	3, 2, 3
<p>Recently transplanted into Stave, monitoring required.</p> <ul style="list-style-type: none"> • Agreed on High priority. • Were extirpated before impoundment. • Grazing issues are important for maintenance of the population. • There was some discussion on the methodology of the transplant, no animals were killed in the Stave transplant. 	
Furbearers	
<p>Inventory and landscape-level habitat management.</p> <ul style="list-style-type: none"> • Low to Medium priority. • Lots of beavers in the area, would like less of them (eating restoration projects). Don't plant willows when conducting riparian vegetation enhancement where they exist. • Wolverine felt to be captured under Species At Risk. 	
Bald Eagle	6, 6, 6
<p>Winter roost, nesting habitat conservation.</p> <p>Riparian covenants.</p> <ul style="list-style-type: none"> • Change to Medium priority. • High from a First Nations cultural perspective. • Need to be monitored as they may become endangered again (eating pollutants etc.). • Are directly linked to Chum populations (their main food source). • Project: riparian habitat restoration and protection of nests. Need same perch habitat that is declining (cottonwoods) as the herons. 	
Osprey	6, 6, 6

<p>Nest sites on Stave Lake and lower Stave River</p> <ul style="list-style-type: none"> • <i>Low-Medium priority.</i> • <i>Nest on flooded snags in the Stave reservoir, Hydro has raised numerous nests on stilts.</i> • <i>May need to create more nesting habitat.</i> • <i>Could use BCRP funds to enhance nesting habitat.</i> • <i>There is also one active nest on the Stave River on pilings.</i> 	
<p>Wolverine</p>	<p>3, 2, 3</p>
<ul style="list-style-type: none"> • <i>Added to the list, considered a High priority.</i> • <i>Anything that increases their prey (ungulates) is good for the species.</i> • <i>Minimizing disturbance is important (of natal sites).</i> 	
<p>Species At Risk in general</p>	
<p>Inventory is key, we know very little about many species' distribution and abundance.</p> <p>Restoration of habitat.</p> <p>Securement of critical habitat.</p> <ul style="list-style-type: none"> • <i>About 30 species at risk could occur in the Stave, not all are listed on the priorities table but all are considered a High priority. Brent Gurd listed most of them in his presentation to the group.</i> • <i>There is some existing activity associated with breeding boxes (needs to be a specific size).</i> • <i>An assessment should be done to see if the Trail Routes for Trans Canada Trail is being planned near any sensitive areas (outside of the footprint issue).</i> • <i>The use of Kym Welstead's website of BMPs was discussed and login information provided.</i> • <i>Need identification of priority habitats.</i> 	
<p>Riparian Habitat</p>	
<p>Conservation covenants and restoration of damaged sites, especially low-gradient areas.</p> <ul style="list-style-type: none"> • <i>A High priority.</i> • <i>Ducks Unlimited very interested in Silvermere area and preservation of those wetlands and riparian areas. They would like to conserve private lands in the area.</i> • <i>While it is understood that access to the west side of Stave lake will be hard to restrict, riparian enhancement could be considered for the east side of Stave Lake.</i> • <i>Purple martin (a blue-listed species) project was discussed, they are now established on the Stave River due to nest box program that cost very little and it was easy to add it to the fish restoration project. Don't need extra BCRP money to do the projects for them.</i> • <i>Important location for work: tidal wetland adjacent to Fraser (south side Lougheed highway, east of Stave River and Silvermere).</i> • <i>Participants would like to add the Silverdale area and a little to the east to the footprint areas since the Stave habitats can't be regained. Ducks Unlimited very interested in that area. Cheap farmland available. The land is a close possible to the original habitats lost in the Stave to impoundment.</i> • <i>Chester Creek may be a good area (?)</i> 	
<p>Wetlands</p>	

<p>Conservation and restoration to more natural conditions. Long term conservation.</p> <ul style="list-style-type: none"> • <i>A High priority.</i> • <i>Potential areas to look at conservation:</i> <ul style="list-style-type: none"> ○ <i>Silvermere Lake – Ducks Unlimited also very interested in preservation of area.</i> ○ <i>The area adjacent to Fraser River, on the south side of the Lougheed Highway and E. of the Stave River.</i> 	
<p><i>Ungulate Winter Range</i></p>	
<p>Winter range enhancement (Mountain Goat at NW end of Stave Lake, Elk, Black-Tailed Deer), by thinning, spacing, prescribed burns.</p> <p>Riparian forest conservation (Elk and deer).</p> <ul style="list-style-type: none"> • <i>A High priority.</i> • <i>Relationship with Forest and Range Act</i> • <i>Overlaps with spotted owl habitat.</i> • <i>Overlaps between black-tailed deer and elk winter ranges, more pressure on those now that elk have been reintroduced.</i> • <i>Priority project: winter range conservation.</i> 	

Q: Are these priorities shared with local and regional government? The city of Mission for example?

A: These priority tables were given to everyone invited, which included members of local government. They didn't attend. The final product is an Addendum to the Watershed Plan that will be available online.

Q: Mike Gage asked who does inventory for Northern Goshawks.

A: John Cooper responded that they are difficult to survey for, MOE doesn't generally do it, it's usually forest companies who do.

Q: Could BCRP funds be used to create literature on some of the wildlife species for distribution at events such as the Fraser Valley Eagle Festival since many people don't know what these species look like? (No answer?)

Fish Summary

The fish breakout group was facilitated by Dan Ohlson (Compass Resource Management). The breakout group reviewed and commented on the agency priorities in the handout table. There was broad support for all of the fish priorities. Specific comments by species and location are summarized below:

Lower Stave River

Chum Salmon:

- High support for continued gravel work. It was emphasized that an ongoing approach is needed for gravel restoration projects with many section of the river receiving treatment on an interval of approximately every 10-15 years on a rotating basis.
- There is a need to monitor gravel projects to decrease impacts on herons. An example was cited at a previous project where water levels were lowered to allow

access for gravel work, the herons came to feed and then they roosted nearby and got electrocuted. Heron mitigation strategies need to be developed.

- It was noted that the project to lower the elevation of the East bank channel to reduce stranding had already been completed.

Coho Salmon:

- It was noted that Silvermere Lake (3 tributaries of Silvermere Lake) spawning far exceeds Thompson Creek. This should be considered a High priority since there is not a lot of Coho habitat in Stave watershed, need to retain it in the two spawning creeks that exist. This would require a policy decision within the BCRP program to allow work to occur outside of the affected watershed.
- It was again noted that the project to along the East bank had already been completed.

Sockeye Salmon:

- There is interest in the potential connection to the Alouette system, where Sockeye / Kokanee assessments are a High priority. If they are Alouette Sockeye they are High priority, but no restoration potential for that link. Keep as Medium priority.

Pink Salmon and Chinook:

- Confirmed the low priority rating. The Lower Stave is fully subscribed, no need for any activities.

Steelhead Trout:

- Definitely a focus of fishermen. It was stated that there are approximately 300 returning fish over ~2 km – these are very high numbers. They are now taking broodstock from Stave. BCCF is currently doing some Steelhead counts on Fraser.
- There was a request to consider implementing formal creel surveys / log book methods to improve the understanding of inventory.

Cutthroat Trout:

- Generally agreed with priority and projects, yet re-emphasized that there is currently a lack of information. Noted that Jennifer Jarvis from Metro Vancouver has orchestrated creel surveys in past, would be helpful to get at inventory.
- Agreed with ensuring access and maintaining habitat in Thompson Creek (note: Marshall Creek was a typo).

Bull Trout:

- Agreed with Low priority.

Other Species:

- Segregate bass from other species in list! Need to make sure any and all enhancement projects don't improve habitat for bass (e.g., CWD), or bullfrogs or sunfish.

Hayward and Stave Reservoirs

Kokanee:

- Important as a prey species. Doing population estimates under WUP. Worried about effects of upper Stave development for IPPs. No specific projects, but a high management priority. BCIT (under Mark Angelo's direction) has just started a new Watershed Centre – need to connect with them.

Cutthroat Trout:

- Agreed that the priority should be on assessing the opportunity / feasibility of projects, which could lead to future implementation projects.

Rainbow Trout:

- There was a suggestion to consider introducing a Put & Take fishery in Hayward Lake.

Littoral productivity:

- Noted as a very High priority, driven by the desire to solve the ATV use issue in the area. Agreed that before spending any funds on restoration would need to find sites that have some security (from ATVs) in order to ensure long-term sustainability of projects undertaken. Feasibility at present is considered low, although it was noted that Mission District is interested in resolving the access / use issue around Stave Reservoir.

Multi-Species watershed-wide

- Priorities supported.

General comments:

- The Stave area is heavily influenced by urban development, consequently the importance of land acquisition and covenants was a recurring theme. For example, many farms which served as seasonal wetlands are being developed. Land acquisition generally requires significant funds; BCRP expressed a desire to be a partner in such projects, but not the lead organization. To this extent, partnerships should be sought such as Ducks Unlimited, Ministry of Transport and DFO amongst others. There is a potential for BCRP to help with seed funding to develop larger proposals or conduct inventories with the purpose of using data to develop larger proposals and approach partners.
- Further to the discussion of partners, was the importance of building on work being conducted, such as the work of Metro Vancouver for GIS mapping of Spotted Owls in the Fraser Valley and conducting work on riverine birds.
- Chris Thomas (Kwantlen First Nation and Sto'lo Tribal Council) was pleased that everyone is on side to protect these species. He noted that there wasn't much

aboriginal content. Blue Mountain woodlot is in traditional territory. He wanted to know whether the Kwantlen can do studies (future employment) on Pacific water shrews, for example. He gained a lot of knowledge by attending the workshop. As a Sto'lo, it was heart-warming to see the interest amongst the group. He would like to do whatever he can and appreciated being called to the table, invite him to the next meeting.

- BCRP should consider smaller funding grants (e.g., <\$5000) for small scale activities (e.g., purple martin or screech-owl nest boxes or bullfrog monitoring and eradication in existing projects). It is too onerous to apply for full grants when only a small amount of money is needed.
- Specific 'points of interest', Areas of Interest, etc. should be mapped (GIS coordinates) and sent to CDC (MOE) for mapping.
- Inventory studies should always be associated with the intent to look at restoration activities (e.g., Mountain Goats on Mission ridge could be studied with intent to preserve corridors, maintain winter grazing etc.).
- There is an IPP going into the upper Stave and its impacts should be considered when BCRP is determining if any projects should be conducted in that area.
- The geographical definition of 'footprint' should be expanded to take advantage of areas of critical habitat currently outside the footprint. This can be seen as compensatory areas. Specifically, these could include areas east of the mouth of the Stave.
- Access is a real problem, it is a multi-jurisdictional problem (MOF owns the roads, Crown owns the land, Hydro doesn't have the ability to keep people out). Suggestion: self-policing by interest groups. Access needs to be under control before projects affected by access will be considered.
- A mechanism for getting information to the Environmental Departments and Planning Departments of the municipalities should be enhanced (while not a BCRP project *per se* it is important to mention).

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.