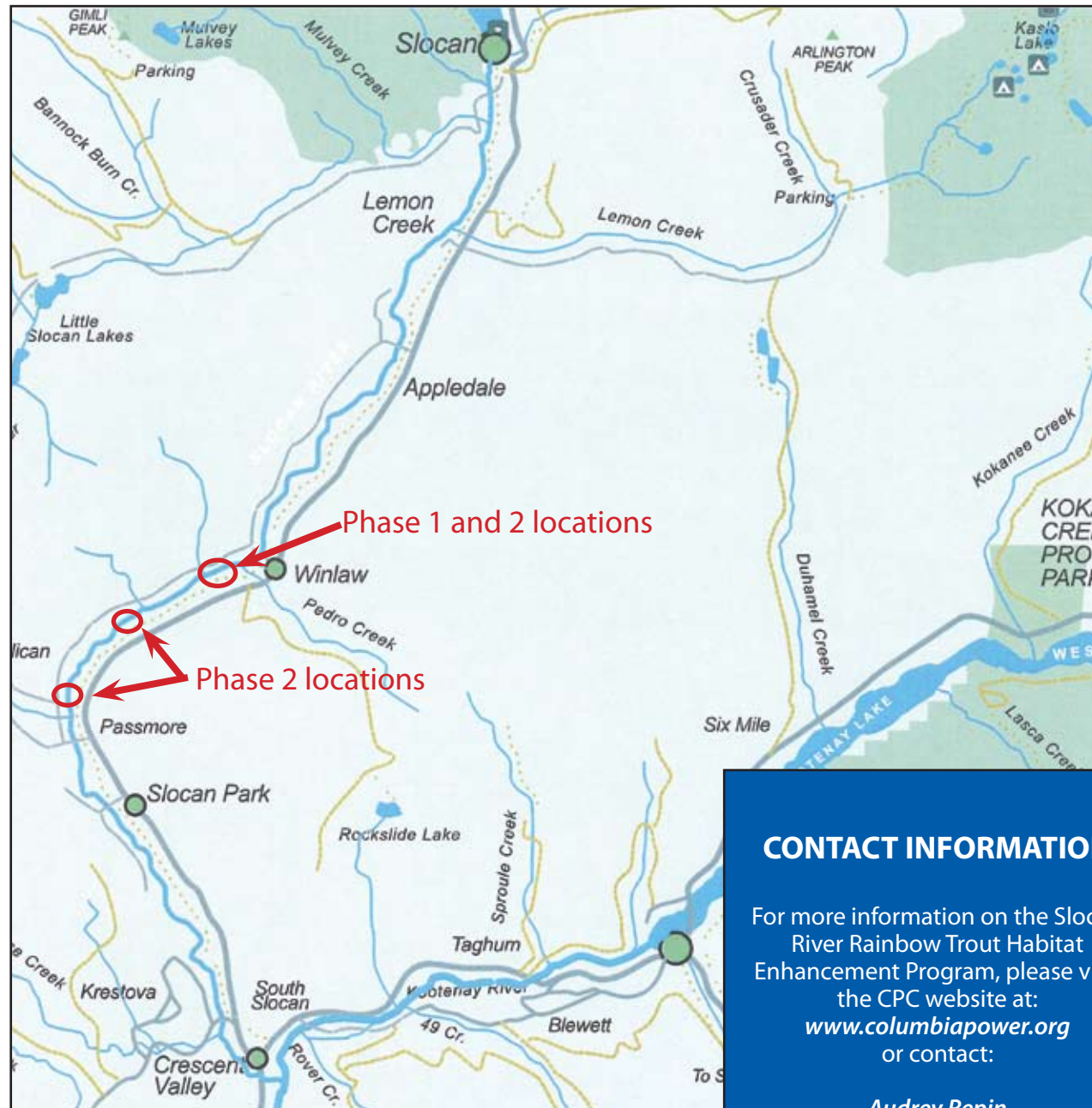


PHASE 1 AND 2 STRUCTURE LOCATIONS



CONTACT INFORMATION

For more information on the Slocan River Rainbow Trout Habitat Enhancement Program, please visit the CPC website at: www.columbiapower.org or contact:

Audrey Repin
or
Llewellyn Matthews
Columbia Power Corporation
250.365.8585
or
Tom Bradley
Slocan River Streamkeepers
250.226.7792

Slocan River Rainbow Trout Habitat Enhancement Project Newsletter

February 2008

Volume #10

WHAT IS THE SLOCAN RIVER RAINBOW TROUT HABITAT ENHANCEMENT PROJECT?

The Project is Brilliant Expansion Power Corporation's (BEPC) fish compensation plan for the construction of the Brilliant Expansion Hydroelectric Project near Castlegar, which began commercial operation in September 2007.

There are two components to the Habitat Enhancement Project:

- the Riparian Restoration Program, addressing long-term fish compensation, is delivered in partnership with the Slocan River Streamkeepers, and provides \$20,000 in funding annually from BEPC for riparian (riverbank) restoration work along the Slocan River;
- the placement of 15 in-stream fish habitat structures in the Slocan River to address immediate compensation goals.

Three public meetings were held in the Slocan Valley during 2002-04 to inform local residents of the Project and to seek input, which was used to develop the final plan. At the request of the local community, the habitat component was split into two phases. Phase 1 was developed as a demonstration project which included five structures that were installed in February 2005.

Several studies have since been completed to assess fish utilization and structure durability. In addition, two recreational surveys have also been completed to solicit public feedback on the potential impacts of structure installations on recreational use.

The Riparian Restoration Program goal is to address riparian habitat degradation by supporting private landowners and community-based efforts

to protect and rehabilitate riparian areas. A steering committee, consisting of representatives from the Streamkeepers, fisheries agencies and BEPC determine which applications are recommended for funding.



Riparian steering committee members tour possible riparian restoration funding sites in 2007.

HABITAT STRUCTURES SHOW IMPROVED TROUT UTILIZATION SINCE THEIR INCEPTION

Public input has consistently indicated that Phase 2 structures would only be supported if it was demonstrated that the structures were being used.

Monitoring results of rainbow trout utilization surveys conducted annually, in late summer, since habitat structure installation in 2005 have demonstrated increased use by the target size (over 20 cm) classes

of fish over a two year period. Fish counts completed for the four structures by underwater observation have shown that up to 22 rainbow trout in excess of 20 cm fork length have colonized additional trout habitat provided by the structures during summer. The highest counts have been associated with structures located in deep water areas of the channel; observations conducted in late fall have similarly shown that trout utilization declines as adult trout move to defined over-wintering environments elsewhere in the Slocan River or Brilliant Headpond.

Although rainbow trout constitute the target species for compensation, an ecosystem response has been demonstrated as other native fish species have also been ob-

served to colonize these same woody debris structures on a seasonal basis. Due to the positive response of fish to habitat structures constructed in Phase 1, BEPC is proceeding with the completion of the remaining 11 structures at multiple locations between Winlaw and Vallican to meet its fish compensation target for entrainment losses at the Brilliant Expansion Project.



A rainbow trout inside the multiple rootwad structure.

What's inside

Lessons Learned From Phase 1.....2
 Invitation to Open House 2008.....2
 Riparian Program Accomplishments.....3
 In Focus: The Egan Project.....3
 Interpretive Signage.....3
 Contact Information.....4
 Phase 2 Structure Location Map.....4

LESSONS LEARNED FROM PHASE 1 ASSIST IN PLANNING FOR PHASE 2

Lessons learned in Phase 1 have resulted in six new designs of the 11 structures being installed at Winlaw, Lebahdo and Vallican (see location map on Page 4). Those, along with 5 other structures developed previously have been accepted by Fisheries and Oceans Canada for Phase 2. Successes and failures identified during the experimental phase, in addition to public feedback acquired through recreational surveys conducted in 2005 and 2007, have been instrumental in developing structure types and locations that are socially acceptable and biologically meaningful.

plan, have been revised to increase spacing between structures to prevent crowding;

- structures will be placed along the channel margins where suitable depths best promote trout utilization; and
- structure design has been reinforced to reduce the risk of structure failure.

"The lessons learned from the demonstration phase over the last



Phase 2 structures will only be located along the channel margin of the river to avoid structure loss.

The key lessons learned from Phase 1 include:

- mid-channel structures will not be constructed in future in order to reduce navigation hazards;
- structure locations, originally identified in the 2004 Option B

two years have provided invaluable insight with respect to Phase 2," commented Llewellyn Matthews, Director of Environmental Affairs for Columbia Power. "Going forward, we will only consider structures located along the channel margin of the river; in-channel locations will not be considered due to the higher risk of structure loss under peak flow. In this regard, structure locations will be predicated on channel sites and flow conditions that promote long-term structure durability, maximize fish utilization and minimize risk to river users."

The 11 structures intended for completion in the fall of 2008 will incorporate similar designs as those constructed during the demonstration phase. Plans call for installation of seven structures at the Winlaw site, two structures just downstream of the Winlaw site and two structures near the old Vallican Bridge.



Moving the Phase 2 structures to the channel margins will reduce navigational hazards.



Divers prepare to enter river for fish count during structure monitoring.

RIPARIAN PROGRAM ACCOMPLISHMENTS

Riparian habitat is the densely vegetated transition zone between the water and adjacent upland habitat. The long-term goal of the Riparian Restoration Program is to improve fish production in the river through improved habitat, improved water quality and increased food sources.



An example of a bank stabilization project.

Riparian habitat is extremely important because of its high value to fish and wildlife. Vegetation intercepts sediment and agricultural run-off before it reaches the river, stabilizes the bank, gives cover to small mammals and amphibians, and creates feeding and nesting areas at the river's edge for birds. It also increases nutrient and woody debris levels in the river and moderates water temperature by providing shade.

Human settlement, as well as development, have reduced the amount of riparian vegetation along the Slocan River, which in turn have cumulatively decreased fish habitat values in the river.

To date, 25 projects have been completed at locations throughout the Slocan Valley. These projects include improvements aimed at bank stabilization by re-planting vegetation.

Since 2005, the Riparian Restoration program has enabled riverside landowners and Streamkeepers to carry out streambank restoration. To date, over 2,300 trees have been planted, 250 meters of riverbank stabilized using vegetative techniques, over 550 meters of land fenced to exclude livestock and hundreds of meters of riverbank

grass-seeded to prevent erosion. "It is clear a key to success in this program is landowner commitment, including their willingness to participate and carry out maintenance. As any gardener knows, trees have to be tended for the first few years to survive," said a Streamkeepers representative.



Riparian Program project sites can be identified by these signs.

INVITATION TO OPEN HOUSE 2008

Brilliant Expansion Power Corporation (BEPC) will host an open house on Saturday, February 23, 2008 at the Passmore Hall from 1:00 pm until 3:00 pm. This information exchange will include a poster session that provides Phase 2 habitat structure designs and locations and is designed as an opportunity for the public to discuss the project with BEPC.

BEPC staff and private consultants will be on hand to review the results of previous studies conducted during Phase 1 (i.e., recreational and fish utilization surveys), as well as introduce proposed strategies under Phase 2 to meet habitat compensation objectives. The Slocan River Streamkeepers will also be on hand to discuss the Riparian Restoration Program.

The public is encouraged to attend the open house to review Phase 2 structure designs scheduled for installation in the fall of 2008.



Riparian Restoration Program Open House at Passmore, March 2006.

IN FOCUS: The Egan Project

Chris and Diane Egan's land demonstrates a successful project done in the fall of 2005. Located approximately 4 km south of Slocan Park, the land contains approximately .5 km of river front and was actively farmed in the past.

The Egans were concerned about the long-term health of the land, citing the lack of large trees and few younger trees for recruitment. To address this problem, they had previously planted 60-70 cedar, pine and fir trees purchased from a nursery. The Riparian Program enabled them to plant live cottonwood and willow stakes, which in time will help to restore the riparian area by providing bank stability and shade to the river, and eventually introducing coarse woody debris into the river, benefitting fish and other aquatic life.

Protecting the existing mature trees from beavers also ensures the availability of shade and large logs while the planted trees mature.



INTERPRETIVE SIGNAGE

During 2006 and 2007, interpretive signage, explaining both the fish habitat structures and the riparian restoration component of the project, was installed on the Slocan Valley Trail adjacent to the Phase 1 habitat structures.



Hikers stop to view the interpretive signage on the riverbank alongside the Phase 1 habitat structures location near Winlaw.

Top and Middle: Fall 2005—Streamkeepers work party plants live stakes on the Egan property.

Bottom: Fall 2007—The live stakes have begun to grow and with protective fencing in place should, in time, grow into mature trees.