Ecological Conservation

Leveraging Existing Relationships with Regulators to Achieve Win-Win Outcomes: CPs Environmental Response to Record Floods

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In late June 2013, Southern Alberta experienced record flooding within the Bow River watershed which led to the most costly natural disaster in Canadian history. In the course of the flood, CP sustained significant damage to three major bridges and responded to washouts in dozens of locations. During the incident, CPs environmental team worked closely with government regulators to obtain emergency Fisheries Act Authorizations so that repair works could begin immediately. Approximately 2.5 acres of stream habitat was considered permanently altered or lost as a result of flood mitigation and repair works undertaken by CP, and as a condition of the Fisheries Act Authorizations obtained, CP committed to compensating for the loss of fish habitat with a habitat creation or rehabilitation project of similar magnitude.

In collaboration with Parks Canada, a potential fish habitat compensation option adjacent to CPs mainline was identified to restore a fish population to the Cascade River in Banff National Park (Canadas first Nation Park which was founded in 1885 along the CP mainline). Following the construction of the Minnewanka Dam in the early 1940s, flow was diverted around a portion of the historic Cascade River channel for the purpose of generating hydroelectric power. The remnant Cascade River channel within the bypass reach reflects a channel size created by a historic flow regime that no longer exists, and the channel was further enlarged during the floods of 2013 by an emergency spillway release over the dam. As a result, the Cascade River in its current state does not provide habitat that would support a native fish population with large areas of the channel having no surface flow present.

The proposed habitat restoration option identified by Parks Canada was to create a smaller channel within the existing river alignment to accommodate a controlled flow release from Minnewanka Dam. To address the feasibility of this option and to develop a restoration plan that could be advanced to an implementation phase, CP retained Golder to undertake biological, geophysical and hydrotechnical studies of the system. The feasibility studies were aimed at understanding the surface water / groundwater interactions of the system, creating a digital elevation model of the area using an Unmanned Aerial Vehicle (UAV) to assist in optimizing the channel alignment and hydrologic and hydraulic analysis to inform channel design that would support the fish habitat conditions necessary to support a native fish population and to provide the necessary habitat gains to satisfy CPs fish compensation commitments. A preliminary design document was produced that confirmed project feasibility and will be used to support CP in achieving regulatory compliance in response to their emergency flood response activities. The partnership between CP and Parks Canada has been instrumental in moving the project forward, and when implemented, will result in CP achieving regulatory compliance while also satisfying Parks Canadas management objectives by reintroducing a native fish population within the Park.