RESULTS
Field-based Workshop

-based Plan

with a
Focus on Water
part of
Xeni Gwet in
Chilko Watershed Roundtable Quality Waters Management Plan

May 23-26, 2011
Chilko River/Chilko Lake, B.C.

Facilitator: Herb Hammond

Background and Objectives

The workshop is part of a key, overarching objective of the Xeni Gwet'in First Nations Government:

> *to move from talking and planning to <u>implementation</u> of the various reports and plans that Xeni Gwet'in have commissioned on protecting their land, water, and resources.*

In order to achieve this overarching objective, the workshop was held on the Chilko River just below the outlet of the river at Chilko Lake. This is an extremely important Xeni Gwet'in cultural area and a diverse ecological landscape. Thus, the area provides an excellent location to

discuss implementation of both the cultural and ecological aspects of the Xeni Gwet'in Ecosystem-based Plan (EBP). The EBP includes the Human Use Areas report, which merges Xeni Gwet'in culture with ecosystem character and condition to design a community-based economy.

Other objectives included to:

*explore using salmon as both a **keystone** and **umbrella** species in applying the EBP*

A **keystone species** is a species that has a disproportionate effect on its environment relative to its biomass. Such species plays a critical role in maintaining the structure of an ecological community, affecting many other organisms in an ecosystem and helping to determine the types and numbers of various other species in the community.

The role that a keystone species plays in its ecosystem is analogous to the role of a keystone in an arch. While the keystone is under the least pressure of any of the stones in an arch, the arch still collapses without it. Similarly, an ecosystem may experience a dramatic shift if a keystone species is removed, even though that species was a small part of the ecosystem by measures of biomass or productivity. It has become a very popular concept in conservation biology. (Wikipedia, 2011)

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define <u>hydroriparian ecosystems</u> and discuss how to protect these biological hotspots as part of implementation of the EBP

Hydroriparian ecosystems are key parts of landscapes from small watershed landscapes, like Nemiah Creek, to large watershed landscapes, like the Chilko River. However, in protecting these biologically rich areas necessitates protecting whole watersheds, including sub-watershed areas. Hydroriparian ecosystems may best be understood as the expression of the ecological composition, structure, and processes of the watershed within which they are located.

Hydroriparian ecosystems are vial cultural areas for Xeni Gwet'in, particularly because this is where Xeni Gwet'in people manage and harvest salmon. Xeni Gwet'in management of salmon has always recognized that salmon are a "product" of whole

watersheds. Implementing the EBP is a way of applying this Xeni Gwet'in knowledge with the assistance of western science.

review the components of the Xeni Gwet'in EBP, with particular emphasis on applying the interpretive maps from the large landscape scale to the individual site

The interpretive maps that form the EBP for the Xeni Gwet'in Caretaker Area include:

Map 1: Base Map—Digital Elevation Model
Map 2: Ecological Sensitivity to Disturbance
Map 3: Landbase Unsuitable for Development
Map 4: Potential Old Growth Forest and Past Logging
Map 5: Areas Logged by 2006 with Potential Old Growth
Map 6: Past and Planned Logging with Zones of Influence
Map 7: Protected Landscape Network

The interpretive maps that comprise the Human Use Areas portion of the Xeni Gwet'in Caretaker Area include:

Map 1: Cultural Use and Wildlife Habitat Areas—base map
Map 2: Human Use and Economic Activity Areas—overlay one
Map 3: Summary of Interviews: Cultural and Economic Information—overlay two

apply the EBP, considering both cultural and ecological components, to a variety of "real life" situations in the Xeni Gwet'in Caretaker Area

The Chilko River outlet at Chilko Lake was chosen for the workshop, because there are a variety of land use activities that impinge upon Xeni Gwet'in Aboriginal Title and Rights in this area. As such, this location provided a good place to discuss how to implement the EBP, including working with non-Xeni Gwet'in land users.

Because portions of the Xeni Gwet'in Caretaker area are being actively used for timber management, open range, and tourism, a significant portion of Xeni Gwet'in's implementation of the EBP will involve ecological restoration. The long-standing fire suppression policies of the B.C. government have created a broad need for restoration of forest composition and structure to pre-fire suppression conditions. These restoration activities will be guided by Xeni Gwet'in management systems, and, as such, will constitute eco-cultural restoration.

define a set of priority activities to begin implementation of the Xeni Gwet'in EBP

The workshop was structured to provide the background and strategic discussions necessary to develop a practical list of activities to implement the EBP. This list

essentially comprises an initial "work plan" that ranges from political initiatives by Xeni Gwet'in leadership to restoration and community-based economic development activities.

Results

The results of the workshop are explained by workshop objective below:

Results for the overarching objective: *to move from talking and planning to implementation of the various reports and plans that Xeni Gwet'in have commissioned on protecting their land, water, and resources* are represented by the results of the other objectives for the workshop. In particular, defining a set of prioritized activities (see below) to begin implementation of the EBP provides the practical way of achieving this objective.

Explore using salmon as both a keystone and umbrella species in applying the EBP

Xeni Gwet'in participants explained the significance of salmon over millennia to their people and related this to systems of management, which considered whole watersheds, not just river corridors, or where people fish. This discussion furnished a clear connection between the EBP and Xeni Gwet'in management systems.

The group decided that using salmon as both a keystone species and an umbrella species was an appropriate way to test the effectiveness of the EBP. In other words, the short and long term health of salmon in the Chilko River watershed to a large extent reflects whether or not the EBP is being implemented in principled, comprehensive ways.

Using salmon as a keystone and umbrella species recognizes that the EBP is a watershed plan and that the habitat for salmon is whole watersheds. Thus, along with protecting and restoring hydroriparian ecosystems (see below); protecting, restoring and using in ecologically responsible ways the upland forest ecosystems is part of ensuring the maintenance of healthy salmon habitat.

Based on this understanding, the Xeni Gwet'in Fisheries Technicians need to expand their work from aquatic ecosystems to upland terrestrial ecosystems in order to effectively protect and manage salmon in the Chilko River watershed. This will mean expanding the numbers of, and training for the Fisheries Technicians in forest landscape and site ecology that form the basis for the EBP. Effectively these changes will mean expanding the mandate of the Fisheries Technicians to one of Xeni Gwet'in Forest Guardians.

Forest Guardians will be the primary people responsible for on-the-ground implementation of the Xeni Gwet'in EBP, using salmon as both a keystone and umbrella species.

Define hydroriparian ecosystems and discuss how to protect these biological hotspots as part of implementation of the EBP

We started with definition of important terminology and then related these definitions to field situations near the workshop site.

The *hydroriparian ecosystem* may be defined as:

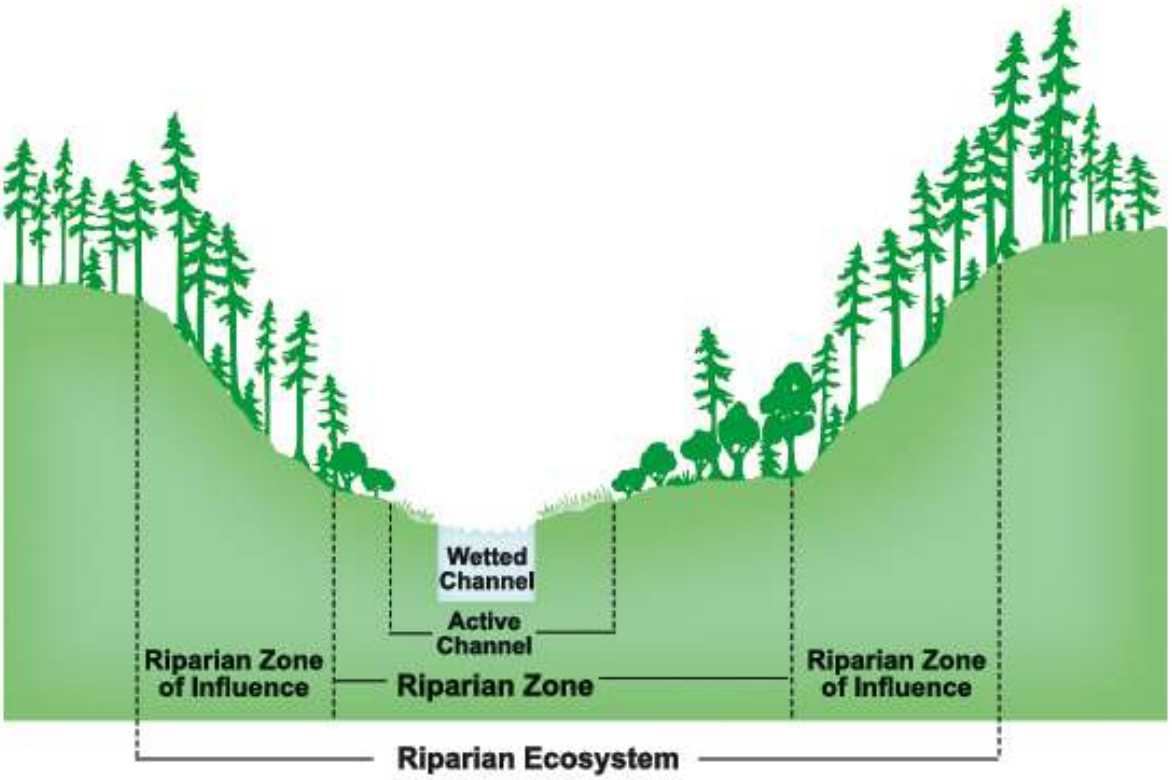
> *Aquatic ecosystems plus adjacent terrestrial ecosystems that are influenced by, or influence, the aquatic system. They extend vertically, below ground in the soil (especially in near-stream gravels), and above ground to the forest canopy where precipitation is first intercepted.* (Hydroriparian Decision Tool, Coast Information Team, 2003)

The *hydroriparian zone* may be defined as:

> *Area that extends to the edge of the influence of water on land defined by plant community (including high-bench or dry floodplains) or landform (e.g. gullies) plus two site-specific tree heights (horizontal distance) beyond. In the transportation and deposition process zones, the hydroriparian zone includes the entire valley bottom plus two site specific tree heights.* (adapted from Hydroriparian Decision Tool, Coast Information Team, 2003)

A diagrammatic view of the hydroriparian ecosystem looks like the following:

RIPARIAN ECOSYSTEM



Key points discussed about hydroriparian or riparian ecosystems include:

> These ecosystems store and regulate the release of energy through their multi layer, diverse, and often dense vegetation. Maintaining hydroriparian ecosystems is vital to maintaining healthy aquatic ecosystems.
>
> The hydroriparian ecosystem (i.e. hydroriparian zone) extends at least 2 site specific tree heights from the normal high water mark, or to the first prominent slope break, whichever is the greater distance. Thus, in deeply incised creeks with steep slopes that run from valley bottom to mountain top, the hydroriparian ecosystem may extend from valley bottom to ridge top.
>
> The smallest streams are the most dependent upon tree cover to regulate water chemistry, water temperature, water turbidity; and for in-stream structure of fallen trees. Often these streams may be ephemeral, or so small that they do not contain fish. However, they are amongst the most important hydroriparian ecosystems to protect, because their characteristics cumulate to create the characteristics of streams, rivers, and lakes that contain fish.
>
> The majority of the mammals in the Xeni Gwet'in Caretaker Area require healthy, intact hydroriparian ecosystems at either some point in their annual life cycle, or at some point in their overall lives. Therefore, hydroriparian ecosystems are biological hot spots that a large percentage of the species in the Caretaker Area depend upon.

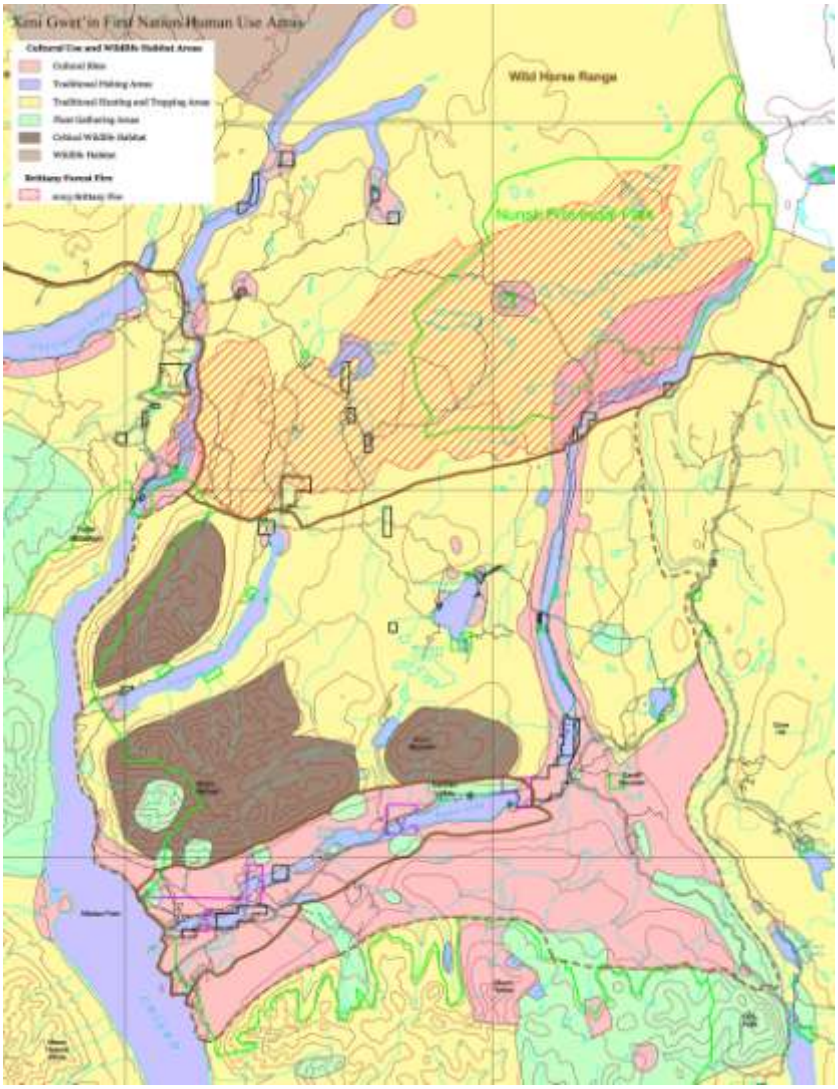
The characteristics, and composition, structure, and function of hydroriparian ecosystems were observed and discussed in the field during the workshop. A range of water course and hydroriparian ecosystem sizes were observed, so that Xeni Gwet'in workshop participants would be able to define and take appropriate conservation measures in various hydroriparian ecosystems.

Review the components of the Xeni Gwet'in EBP, with particular emphasis on applying the interpretive maps from the large landscape scale to the individual site

The components of the Xeni Gwet'in EBP were reviewed through the *Xeni Gwet'in Ecosystem-Based Plan User Guide* and the interpretive maps listed earlier in this report. This section of the workshop was a review for some participants and new information for others.

Through group discussions, all participants gained a more thorough understanding of the practical applications of the EBP and all of its components.

This section of the workshop provided important background to enable review of land use issues in the field, and development of priority activities to implement the EBP.



Apply the EBP, considering both cultural and ecological components, to a variety of "real life" situations in the Xeni Gwet'in Caretaker Area

Sites near the location of the workshop were used to discuss practical application of the EBP. These sites included:

Proposed Chilko Lake Resort Strata Development

By using the interpretive maps to provide an understanding of ecological sensitivity, hydroriparian ecosystems, and networks of ecological reserves, workshop participants prepared themselves to consider the planned development through field assessments.

After review of the proposed development on maps and in the field, the workshop participants found that the proposed development further fragmented an important corridor for fish and wildlife migration along from the outlet of Chilko Lake down the Chilko River. This corridor has been partially fragmented from existing tourism businesses.

As well, the proposed development conflicts with an important ecotone between upland forests and the major hydroriparian ecosystems of Chilko Lake and the Chilko River, and will lead to increased pressure on an important grizzly bear feeding area and migration route.

Fire suppressed Douglas-fir Forests

Due to provincial policies for fire suppression, unnatural and overstocked Douglas-fir forests have developed in many locations within the Xeni Gwet'in Caretaker Area. These forests are high risk for intense wildfires beyond the range of natural variability. Also, these forests are stressed and susceptible to the build-up of Douglas-fir bark beetle. Both of these issues will become more critical in the face of global warming.

The EBP solution is to carry out ecological restoration with guidance from Xeni Gwet'in management systems. Our discussions in the field came to the conclusion that this restoration would involve reducing stand density by removal of the understory, protecting the large old-growth trees, and, through a series of careful preparatory treatments to reduce fuel loading and protect the roots of old-growth trees, reintroducing low intensity periodic ground fire.

Canoe Crossing Cultural Restoration

Canoe Crossing is a traditional Xeni Gwet'in crossing of the Chilko River, located less than 2 kilometres below the outlet of the river in Chilko Lake. This area was also the site of two villages on either side of the Chilko River.

The Human Use Areas report of the EBP identifies Canoe Crossing as an area that Xeni Gwet'in would like to restore for cultural reasons. The planning was initiated by this

workshop through a site assessment of a portion of the Canoe Crossing site on the north side of the Chilko River.

Define a set of priority activities to begin implementation of the Xeni Gwet'in *EBP*

Priority activities to consider for ***implementing the Xeni Gwet'in EBP, establishing the Xeni Gwet'in Forest Guardians,*** and ***training a Xeni Gwet'in Land Manager*** are:

Elkin Creek where there is already a "turn-key" small watershed EBP. There is a need for refinement of the ecological reserves, based on field work by Xeni Gwet'in Forest Guardians, and implementing human uses as recommended by the "Human Use Areas Report" and the Tsaeko-Elkin Ecosystem-based Plan

Teztan Biny (Fish Lake). The EBP provides ecological reasons why the mine in this location is neither culturally nor ecologically sustainable, considering both the site (small area) level and the watershed level.

Chilko River Outlet. Expansion of tourism facilities in this area needs to be evaluated and constrained through the information and requirements of the EBP

Restoration of Old-Growth Douglas-fir Forests needs to focus on reducing unnatural stand densities and reintroducing Xeni Gwet'in management systems to reduce stress in these important and naturally rare forests in the Xeni Gwet'in Caretaker Area. Carrying out this activity is particularly important in the face of global warming, which will place these important forests in jeopardy from fire and insect attack.

Xeni Gwet'in leadership need to give more priority to the EBP. Two specific suggestions were made:

- ***Political support for the EBP being the main guidance for land protection and use in the Caretaker Area.*** In that sense, the EBP needs to be put ahead of the TFA by Xeni Gwet'in political leaders.
- ***Train Xeni Gwet'in political leaders and Xeni Gwet'in technical people in the use of the EBP through carrying out activities under the EBP***

Obtain a Community Forest Agreement (CFA), which provides Xeni Gwet'in with control over the Caretaker Area, or a significant portion thereof, in order to implement the EBP. There are precedents with other First Nations for CFAs that are managed under an ecosystem-based plan and utilize Indigenous knowledge as a primary basis for decision-making in planning and operations.

The CFA would be entered into with B.C. without prejudice to Xeni Gwet'in's Aboriginal Title and Rights, and as an interim measure until the negotiation of a just and honourable treaty agreement.