



## **Human Ecology**

### **Field Project**

Oct. 19, 2007

## **Coho Survey, Trail Maintenance & Biodiesel Tour with Stillaguamish Tribe of Indians**

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### **SERVICE OBJECTIVES:**

- Work with the Natural Resources Department of the Stillaguamish Tribe of Indians to survey Coho Salmon returning to spawn in the Stillaguamish River. Here is a summary of the project:
  - Last autumn the Stillaguamish Tribe began a three to four year project designed to accurately measure numbers of coho salmon returning to spawn in the Stillaguamish watershed. For years, fishery managers have had to manage the popular commercial, tribal, and sport fisheries for Stillaguamish coho with a Snohomish-derived escapement baseline. It is unclear if this management regime has allowed over or under harvest of Stillaguamish coho, and the goal of this new project is to recalibrate the escapement baseline with Stillaguamish specific data. While the lead on the project, the Tribe is working collaboratively with the Tulalip Tribes and Washington State Department of Fish and Wildlife.
  - From September to November of last fall and this fall (and likely the autumns of 2008-2009), a crew will capture and tag live coho salmon in the lower Stillaguamish main stem. In the first year of the project, two capture methods were evaluated - beach seines and a modified hoop trap - with the goal of tagging 2000 coho (both male and female). The fish captured will be anesthetized, measured, tagged with a numbered hog ring in the lower jaw, and have a circular hole punched through both opercles (gill covers). From November through January, crews will survey dozens of small creeks throughout the watershed and recover these tagged fish after they have spawned.
  - By comparing the ratio of tagged to untagged fish in the survey creeks, and factoring in how many tags were applied, we will be able to accurately estimate the total number of coho that "escaped" to spawn in the Stillaguamish. Several years of accurate escapement estimation will allow us to develop a relationship between numbers seen in the survey creeks

and total escapement to the Stillaguamish watershed. This new information will allow for much better management of the valuable Stillaguamish coho fishery, and perhaps more opportunities for fishers.  
-Jason Griffith, Fisheries Biologist (with some editing by Tom Murphy)

- Assist the Natural Resources Department of the Stillaguamish Tribe of Indians with some trail maintenance and cleanup of Lower Pilchuk Park.

## **LEARNING OBJECTIVES:**

- Tour a biodiesel plant on the Stillaguamish Reservation. Describe Standard Biodiesel, benefits of biodiesel for the environment and reasons for locating on an Indian reservation.
  - Describe the significance of relationships between human social systems and the ecosystems in which they participate.
    - Describe the Boldt Decision of 1974 and its impact on the management of fisheries in the state of Washington.
    - Explain the connection between the Boldt Decision and the service being provided for the Stillaguamish Tribe.
  - Explain how the quantitative data collected in this survey will be used to project more accurately the total number of Coho salmon returning to spawn in the Stillaguamish watershed.
  - Identify and assist government agencies and non-profit organizations involved in sustainable development (group interaction, critical thinking).
    - Identify the Stillaguamish Tribe of Indians and their role in the management of natural resources in the Stillaguamish watershed.
    - Describe the partnerships with Washington Department of Fish and Wildlife and Tulalip Tribes involved in this survey.
  - Maintain field notes recording your activities in the Stillaguamish watershed.
    - Start a new page of field notes for each day of service. Do not remove pages. If you make an error, cross it out, and proceed.
    - Include the following information for each service project:
      - Name of site where you are working.
      - Date and time of day.
      - Weather conditions.
      - Latitude, longitude, and altitude of one or more reference points. Include a description of the reference point(s) and relationship(s) to the work site.
      - Names of other volunteers with whom you worked.
      - One to two page description of the day's activities and how they helped you meet the objectives outlined above.
      - Whether or not you carpooled (and with whom).
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## **DESCRIPTION AND LOCATION:**

We will meet Franchesca Perez at Standard Biodiesel.

Take I-5 North  
Exit 210 (236<sup>th</sup> St)  
Head West.  
Turn right or north on Old Hwy 99.  
Standard Biodiesel will be on the left at 23810 Old 99.

Directions to Stillaguamish Tribe of Indians Department of Natural Resources.

Take I-5 North.  
Exit 210 (236<sup>th</sup> St)  
Head west.  
Turn left or south on 6th Av NE (also signed as Nygaard)  
Turn down second driveway.  
The Natural Resource Department is the building on the right.

We will travel from Standard Biodiesel to the park, tribal offices & a site on the river.

### **TRANSPORTATION:**

In the interest of minimizing pollution and enhancing your learning experiences we recommend traveling to and from the site in pre-arranged carpools. Carpools will depart at **8:00 am** from the loading zone at the south entrance to Snohomish Hall. If you miss your carpool it is your responsibility to get to and from the site on your own.

In an emergency you may contact Tom Murphy via cell phone, 425-478-5567.

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### **WHAT TO BRING:**

**Please come prepared to get wet and bring a change of clothes.** Francesca Perez, Outreach Coordinator for Stillaguamish Tribe, wrote: "Have them wear things that can get wet, such as: gloves, chest or hip waders, or old shoes with wool socks and long underwear under quick dry shorts, or thin wet suits. And any weather dependent gear."

We will provide some chest waders but bring your own if you have them. Bring a change of clothes in case you get wet.

Bring the following items.

- This field packet in a three-ring binder.
  - "Rite in the Rain" All-Weather Spiral Notebook and pencil.
  - One pair of leather gloves.
  - One pair of rubber-palmed gardening gloves.
  - Water-resistant coat and pants (if raining).
  - Boots or sturdy shoes.
  - Hat (recommended).
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## **PRE-FIELD ASSIGNMENTS:**

- Read this field packet.
- Complete assigned reading indicated in the syllabus.
- Visit the Stillaguamish Tribe's website and review its description of the Boldt Decision. Be prepared to identify the tribe and Boldt Decision on a quiz.
- Learn to identify five species of Pacific salmon. Be prepared to identify them on a quiz. See the link below.
  - [http://wdfw.wa.gov/fish/identification/pac\\_salmon.htm](http://wdfw.wa.gov/fish/identification/pac_salmon.htm)
- Visit the website for Standard Biodiesel. Be prepared to describe this business on a quiz.
  - <http://www.standardbiodiesel.com/>