

## TRIBAL PROGRAM NEWS

### Natural Resources Water Projects News

by Stan van de Wetering

#### 1999 Eel Project

During the summer of 1999, we examined the distribution of baby eels throughout the Alsea River Basin. The U.S. Fish and Wildlife Service funded the project, which originally was intended for the Siletz area, but poor land access forced us to move to the Alsea Basin. In doing so, we didn't gain information on specific tributaries of interest within the Siletz Basin, but we did increase our understanding of how eels are distributed throughout our mid-coast region (a portion of the original reservation).

We divided the Alsea Basin into areas based on characteristics such as distance from the ocean, substrate geology (gravels made from sandstone versus hardrock), stream gradient, and land cover (timber, ag, and rural). Next, we hopped in the stream with our electroshocker and began collecting eels.

An electroshocker is a small device that sends an electrical current through the water and substrate that make up a stream, irritating the baby eels and causing them to swim up to the surface. We counted how many eels we found per square meter. We looked for both Pacific and brook lamprey. Brook lamprey are those small (6-inch long) light brown eels you may have seen spawning in small streams with sandy bottoms.

We found eels in all of our Alsea Basin sample streams except those that reached gradients greater than 2 percent and or were smaller than about 2 to 3 feet wide. An example of where eels would not occur would be the upper reaches of Little Rock Creek about one mile above the end of the pavement on Logsdan Road.

We also did not find any eels in good habitat above the North and South Fork falls or any culverts with more than a few inches of drop. The absence of eels above the North and South Fork falls was surprising based on how well eels can climb vertical falls. This may simply reflect their current low numbers.

Our greatest densities were in larger waters. This suggests that those areas where we have surveyed and found many baby eels, such as the mainstem Siletz from Twin Bridges to Cedar Creek, should be considered areas of ecological interest to the tribe.



*The old office building at the tribal hatchery stands no more.*

We received a third tiny grant (\$6,000) to continue eel work in 2001. We plan to use these funds to develop a new statistical method to estimate the number of baby eels in a complete sub-basin such as Rock Creek.

#### Well Head and Stream Flow Project

John has entered most of the well log data (location, depth of water, type of substrate) and has been collecting surface flow information more recently. He has spent a lot of time learning how to use our fancy new computer software, which will allow us to describe aquifers and stream flows in a three-dimensional format. This project ends in February 2001, so we should have some results for you by early winter.

#### EPA 106 Project

During summer 2000, we have focused on collecting data for our stream modeling process. This has involved using small computers that measure water and air temperature every 60 minutes at 47 sites within the Siletz Basin. We also will use satellite photos and stream flow measurements for this model.

The model works this way. First, you measure how much light is reaching each mile of stream for all streams. Next, you measure what the water temperature is for

that mile of stream. Lastly, you measure, using stream flows, how much water is passing through that mile of stream. The model can then estimate what temperature any given stream will be, based on air temperature, amount of sun or shade, and amount of water in the creek. You also can estimate how cooling one creek can affect another or vice versa.

#### Estuary Project

We chose to focus this year's funding on mapping all available habitat types so we can do a more extensive job of sampling the bay in the future. We will use our new GIS software to map depths, salinities, temperatures, marsh plants, and critters that live in the bay's mud and sand. We are utilizing infrared photography to map plant communities and it's been quite interesting.

Chlorophyll, which makes plants look green, shows up as different shades of red when using infrared photography. This technique will allow us to define small changes in plant communities in a quick manner. We recently received new funding for this project from the National Marine Fisheries Service and hope it will increase our annual work effort in the bay, allowing us to better monitor our fish stocks.

#### Hatchery Update

Tommy arranged for the installation of the first section of the new fence in July. A contract also was set up to demolish the old office building next to the road. We have three outstanding contracts to dig an additional rearing pond, to refurbish the adult trap, and to build a pole barn where the old office used to stand. We hope to complete this work by the end of October.

We sampled the coho presmolts in early July and they looked very healthy. Their size and condition were as good or better than those of wild fish with which I've had experience. Although we are unsure of their survival rate (how many are still alive), we are hopeful at this point in our experiment.