

# WATERSHED WRAP

Semi Annual Newsletter from the Coeur d'Alene Tribe's Fish & Wildlife Program describing watershed management efforts. Offering readers food for conversation and paper for wrapping!

Spring Equinox / Summer Solstice 2009

(Vol. 12 No. 1)

The Coeur d'Alene Tribal Fish and Wildlife Programs work in a variety of cooperative, governmental and educational arenas in efforts to protect, enhance and restore our fish and wildlife resources. This publication is intended to provide all people interested in Fish and Wildlife of the Coeur d'Alene Reservation information about our program, and to solicit your support as well as constructive criticism. Thank you for your interest.



Camas growing in the upper Benewah Valley

## Ne' ulchitsqi'ts Project Update

By Angelo Vitale, Fisheries Biologist

Work began in earnest last spring and summer on the “*Ne' ulchitsqi'ts*” project, which translates as “it will grow again” or “re-seeding”, and is an effort to study and restore camas fields on property owned by the Coeur d'Alene Tribe in the upper Benewah Valley. The work is supported through a Tribal Landowner Incentive Program grant from the U.S. Fish and Wildlife Service, awarded in May 2007.

The initial emphasis of the project is to map and inventory camas (*p'ekhwpu'khw*) growing in the upper Benewah valley and develops a plan to increase the overall distribution and number of plants throughout the valley, and especially in areas associated with stream channel restoration. The work of mapping existing camas will provide the necessary information to understand why plants are growing where they are, help identify sources of seed and/or bulbs for transplanting, and to provide information to families interested in subsistence gathering. Several Tribal members working as summer interns were instrumental in completing this fieldwork, including

Samuel Torpey, Kris Arthur, Lyle Meshell, Jr. and Nathan Weaselhead.

The mapping effort began in late May as soon as the camas growing on the site began to bloom. We found camas growing on approximately 28 acres (6.8%) of the 411 acres that were surveyed, with distinct patches widely scattered across the larger property. These mapped patches of camas varied in size from as small as 435 square feet to as large as 3 acres. Once the mapping was complete, surveyors began counting individual plants in a subsample of the mapped area in order to estimate the density and total number of plants on the property. This work was often tedious and repetitive, but it provided some of the most interesting results. Counts were completed in more than 1,500 plots, which covered about 70% of the total area where camas was growing. From these counts, we estimated the total numbers of camas at between 1.0-1.1 million plants. The density of camas varied quite a bit and averaged a little over 1-plant/sq. ft. across the entire site, but was as high as 17-plants/sq. ft in places. Additional counts will be made in the spring of 2009 to finalize this estimate.

Perched groundwater and the proximity to groundwater sources, like seeps and springs, seemed to be an important factor in sustaining the existing camas in the valley. Because the stream is degraded and floods less frequently than in the past, very little camas was found near the channel. These areas seem like particularly good opportunities for increasing camas in the wake of stream restoration efforts that are ongoing. There was considerable evidence of browsing by deer and elk for a brief period in the early spring, and areas that were subjected to more intense, long-term grazing pressure had no evidence of remaining camas. The surveyors, however, noted many areas where young camas plants were common, indicating that the distribution and number of plants is slowly rebounding following purchase of the property by the Tribe in 2001.

Camas seed and bulbs were collected from the property and are being stored until late fall, when

students from the Coeur d’Alene Tribal School and Plummer/Worley School District will help plant it on the property. The Coeur d’Alene words *pekhúmkhw* translates as “scattering seeds” and *shu’lúkw* translates as “pushing it into the ground”, and is a phrase used to describe planting camas. We hope that this project will help recall some good memories and spark continued interest in the root foods that were such a critical resource for the native peoples. An old story printed in *The Coeur d’Alene Teepee* (1939) refers to the delicious flavor of camas, saying, “It makes the Coeur d’Alenes smack their lips when eating”. Keep your ears open for the sound of more lip smacking to come!

Question and comments can be directed to the Coeur d’Alene Tribe Fisheries Program, main office 208-686-5302. ♦



**Construction of Trail link between ECLC and Wellness Center**

*By Jason Brown, Recreation Management Program*

**T**he Tribe has made it easier for people to get around the reservation thanks to a new walking trail in the heart of Tribal facilities.

People now have access to a new pedestrian link trail that connects Elder Housing, the Early Childhood Learning Center, the Wellness Center, and the City of Plummer.

The project was overseen and completed by Jim Kackman, Public Works Department and Jason Brown, Recreation Management Program at the request of the Coeur d’Alene Tribe Chairman Chief Allan, Tribal Council, and Administrative Director, Robert Matt.

Prior to construction, pedestrians were left to walk through the small wetland. “There was a lot of standing water during the spring and following heavy rains,” Brown said. “Several boards had been laid

down and served to attempt to get walkers out of the water.”

The trail wasn’t the only area of improvement made. The Tribe expanded and paved the ECLC parking lot due primarily to the need for additional parking. The Public Works Department played a key role. “This is a project we had outlined as needing to be completed, I was excited to see it move forward, and I’m pleased with the final product” said Jim Kackman, Public Works Director.

Through the design phase it was determined that a raised boardwalk spanning the wetland would be most reasonable and would allow pedestrians to be up out of the wetland and continue to allow the flow of water through the wetland. The boardwalk would then transition into a meandering raised asphalt trail and border the new parking lot to the west of the ECLC. Bordering the parking lot would keep pedestrians and cars separated and provide an additional link to the Trail of Coeur d’Alenes.

The parking lot provides an additional 40 parking spaces for employees and greatly reduced the dirt and debris tracked into the ECLC.

The construction phase took nearly a month and was met with its usual construction road bumps but for the most part proceeded relatively smooth. It was very apparent that the need for the trail existed as many pedestrians were walking through the area during construction.

With construction now complete, maintenance of the Trail will lie with the Recreation Management Program. Plans are in place and have been implemented for snow removal, mowing of shoulder edges, and weed spraying. Lighting was recently added and the intent is to develop directional signage and interpretive panels along the trail and have those placed in the spring.

“I hope everyone uses the new walking trail,” Chairman Allan said. “It looks great and people can keep their feet dry.” ♦

**Water Awareness Week Successful Again**

*By Ronald Peters, Fisheries Program Manager*

**E**ach year as part of the State of Idaho’s Water Awareness Week the Tribe puts on an event that specifically targets raising the awareness of local students to issues surrounding our environment including water, fisheries, wildlife, ecology, soils and plants. This year was no different. During the week of May 4 to May 9, 2009 over 200 students braved the elements and engaged in a hands-on experience where instructors showed them what types of activities are going on to preserve fish, wildlife, ecosystems and life in general in North Idaho.

Members of the Tribe's Natural Resource and Lake Management Departments staff were, "instructors for the day", at seven different stations providing each student a personalized learning experience. We also had Felix Aripa provide a welcome and cultural talk at the start of each day. Felix is a Coeur d'Alene tribal elder who graciously gives his time each year to work with the students.

The Coeur d'Alene Tribe has hosted this event since 1996 and it is getting better each year. This event has reached more than 5,000 kids over the last 14 years. Many of the teachers from around the area say that this is the best field trip of the year for the kids. Hard economic times have hit the school districts and we only had one school that could originally attend this year. However, the Bonneville Power Administration (BPA) was able to come up with some much needed support and some of the other schools that showed an interest were able to make the trip. We thank the BPA for their support in making this year's event extremely successful. Finally, we thank the students whose interest and participation made the whole event worthwhile.

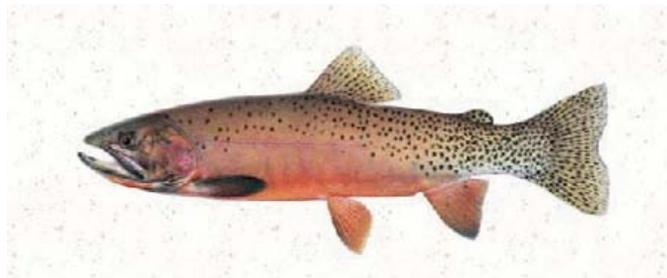


Felix Aripa talking to Water Awareness Week students ♦

### Species Profile: Westslope Cutthroat Trout (*Oncorhynchus clarki lewisi*)

By Stephanie Hallock, Habitat Biologist

A native fish that is the focus of research and restoration efforts by Coeur d'Alene Tribal biologists is the westslope cutthroat trout (*Oncorhynchus clarki lewisi*). Westslope cutthroat trout are present mainly in Idaho and Montana and have some distribution in parts of Canada, Wyoming, Washington, and Oregon. This fish coexisted historically with bull trout and mountain whitefish. The fish is recognizable by its two red slashes on the lower jaw. Small black spots are also present mainly on the back and by the tail.



Westslope cutthroat trout have a variety of life histories. These include resident, fluvial, and adfluvial. Resident westslope cutthroat trout live in small tributaries their entire lives. Fluvial westslope cutthroat trout are born in tributaries and then move, after 1-4 years, to the Coeur d'Alene, St. Joe, or St. Maries Rivers and live there. Adfluvial populations are also born in small tributaries but live their adult lives in Coeur d'Alene Lake. Adult spawners move up into smaller tributaries in the spring to spawn. They spawn in pool tailouts or in riffles with gravel substrate. Cutthroat trout fry then emerge in June-mid July. These fish do not die after spawning but can spawn again. Adfluvial spawners can reach an age of 8 years and a length of 450 mm.

The life history of these fish determines when they will mature and how productive they will be in terms of growth and reproductive potential. Resident westslope cutthroat trout mature at age 4-6 at a size of 180-250 mm (Bjornn 1954, Downs et al. 1997, Vitale et al. 2004). Adfluvial fish, on the other hand, mature at age 5-6 and have a mean length of 330 mm at age 6. The larger size leads to an increase in the number and size of eggs that are released during spawning. This in turn leads to potentially a greater number of fry hatching.

Westslope cutthroat trout are adapted to cold-water environments and exhibit the highest growth rates in water that is between 10-17 °C (50-63°F). Their survival is affected when they are exposed to temperatures as high as 20°C (68°F) for extended periods of time (more than 30 days) and can't survive in 26°C (79°F) water. They feed on a variety of aquatic invertebrates and require complex habitat with cover and deep pools as well as riffle habitats. Westslope cutthroat trout can hybridize with rainbow trout.

Today, populations of westslope cutthroat trout are much lower than they were historically. Habitat loss is a factor leading to the decline in populations. One of our goals is to increase populations of westslope cutthroat trout to sustainable and harvestable levels. In the past, fish was one of the primary protein sources for Coeur d'Alene tribal members. Westslope cutthroat trout was the most abundant fish inhabiting the tributaries and rivers of Coeur d'Alene Lake. Fish traps were operated on smaller streams as well as the

bigger rivers to catch adult fish as they moved to and from the lake. Today, westslope cutthroat trout face competition from nonnative species including brook trout in tributaries and with kokanee and small mouth bass in the lake when their habitats and food sources overlap. They also face predation from nonnative species like the northern pike. ♦

## **Plummer Creek Watershed Nutrient Load Assessment Project nearing completion**

*By Dave Lamb, Lake Ecologist*

**A**n assessment of nutrient loading to Chatcolet Lake and Coeur d'Alene Lake from the Plummer Creek watershed (located in Benewah County and within the Coeur d'Alene Tribe's Reservation) is nearing completion. This assessment, which is being performed by the Coeur d'Alene Tribe and a modeling contractor, is supported with Clean Water Act funds provided through the Basin Environmental Improvement Project Commission (BEIPC).

The project has been designed to update the current understanding of nutrient loading sources within the Plummer Creek watershed and to delineate appropriate nutrient loading controls in the form of a Watershed Nutrient Management Plan. The result of this effort will serve as the basis for developing nutrient and water quality management efforts within the context of the Coeur d'Alene Lake Management Plan, as well as other Tribal, State, and Federal water quality regulatory actions.

Work completed to date on this project includes two years of water quality and flow monitoring at eight sites spread through the Plummer and Little Plummer basins. This monitoring and associated water data tabulation was performed by Tribal Water Resources Program staff. Water data from this effort, as well as from earlier work by Idaho Department of Environmental Quality (IDEQ), was then provided to a modeling contractor for use in validating outputs of the computer model ("Surface Water Assessment Tool" or SWAT 2.0). The modeling effort completed to date has utilized available data on watershed soil types and land cover, with regional air temperature and precipitation, to generate estimates of flow and sediment, nitrogen and phosphorus loads. These outputs have been compared to the measured data and modifications to the input parameters (particularly runoff "curve numbers") are being made to improve the accuracy of the outputs. Ultimately, the outputs will show sub-watersheds where sediment and nutrient loads should be controlled.

In December, 2008 and February, 2009 public meetings were held by Tribal staff and the modeling contractor to inform people, especially watershed landowners, about the project. Also, the Tribe's intention of seeking funding to implement conservation practices in key areas of the watershed, along with landowner cooperators who are willing to have runoff / erosion control measures installed on their lands, was made known.

The final efforts of this project include preparation of a Watershed Nutrient Management Plan and a final project report. The Plan will contain an overview of the types of efforts that might be used to reduce sediment and nutrient loading from this watershed. For additional information on this project contact David Lamb at 208-686-6206 or dlamb@cdatribe-nsn.gov. ♦



## **New Staff in Fisheries Research Monitoring & Evaluation**

*By Jon Firehammer*

**M**y name is Jon Firehammer and I accepted the Research, monitoring, and evaluation (RME) Biologist position with the Fisheries Program in March 2008. The position was formerly held by Dale Chess. My primary responsibilities will entail evaluating the effectiveness of habitat restoration projects that have been implemented to enhance fisheries resources. This will include examining the linkages among the implemented projects, the changes in the quality and quantity of preferred habitats, and the changes in abundance of resident fish populations.

I've been involved in various fisheries research and management programs over the last 15 years. My experience has ranged from the collection of data aboard commercial fishing vessels off the coast of Alaska to examining the migratory behavior of large-river fish in reaches of the Missouri River in eastern Montana. The fishes I've studied have ranged from

cold-water salmonids to warm-water paddlefish (an ancient relative of the sturgeons).

I grew up in the Midwest near the shores of Lake Michigan, and ever since my father threw me into the lake to encourage swimming, I've enjoyed being around water and both understanding and appreciating aquatic systems. My wife and I have been living in the Palouse area for the past 12 years and truly enjoy the opportunities northern Idaho provides. We both love to go hiking and fishing along with our four-legged family member; usually, it is much more difficult to retrieve him from the river than to retrieve a caught fish.

I look forward to helping the Tribe fulfill the goals of their Fish and Wildlife Program, and all the challenges and rewards that this position brings. Although I've only been here a short while, everyone I've met has been accommodating and supportive. I'm sure future informal opportunities will arise where I can get to know others better. My door is always open, and I'll be certain to put a nametag on the door so people will be able to place a name with the new face in the office. ♦

### Not Fish 'N' Chips -- Chips In Fish

*By Jon Firehammer, RME Fisheries Biologist*

**A**s you may have gathered from reading past issues of the Watershed Wrap, various riparian and channel improvement projects have been implemented over the last several years by the Coeur d'Alene Tribe's Fisheries Program to improve in-stream habitats in both the Lake and Benewah creek watersheds. The goals of these restoration projects have been to not only restore natural stream processes and improve water quality, but also to provide more favorable habitats for native westslope cutthroat trout. As you may also remember from past articles, many of the cutthroat trout in these two watersheds move downriver to the lake as 1-3 year olds, and use the more abundant food resources in the lake to reach large sizes when they return to the streams to spawn as adults several years later. We hope that by increasing the capacity of the habitat to support more juvenile trout, we will be able to increase the number of fish moving out of the tributaries, and likewise increase the number of large, returning spawning adults.

This assumes that there are no 'stumbling blocks' along the way for these young trout when they move out of their natal streams. However, determining what happens to these juveniles when they migrate downriver and into a large body of water like Lake Coeur d'Alene can be difficult. Compared to stream environments, it is often much harder to understand the

factors that may be limiting fish survival in lakes. Lakes are typically more challenging to sample than streams primarily because lakes are much greater in size, and, as is frequently the case, you can not see where the fish are and what habitats they are using.

Fortunately, with the recent advances in technology, we have some techniques available to us that can help us gain a better understanding of some of the processes that may be impacting survival rates of cutthroat trout during the time they grow to adults in Lake Coeur d'Alene. Over the past couple of years, personnel from the Fisheries Program have been implanting PIT (Passive Integrated Transponder) tags into juvenile cutthroat trout in both Lake and Benewah creek watersheds. These PIT-tags are about the size of a grain of rice and are uniquely coded to identify individual fish. These tags are very similar to the micro-chips that can be implanted into your dog or cat so that if your pet gets lost the tag can be scanned to provide ownership information to help bring it back home. In a similar manner, the Fisheries Program is also concerned about bringing the cutthroat trout 'back home'. By scanning adult cutthroat when they migrate back upstream in the spring, we can determine how many of the PIT-tagged juveniles returned to spawn, and from that information get a better idea of survival rates in the lake.



*Picture 1. PIT-tag antenna array underneath old Highway 95 bridge on Lake Creek. Antennas are enclosed within the black housing structures secured to the supports.*

The juvenile cutthroat are PIT-tagged when they are captured by our traps during their downriver migration in the spring. We use a needle to inject the small tag into the body cavity of the fish, and also clip the adipose fin so that when the fish returns as an adult we can identify it as having received a PIT-tag when it was a juvenile. In order for the PIT-tag code in the returning adult cutthroat to be scanned, the fish needs to pass close to a receiving antenna. If we can capture

the fish in one of our traps, we can pass it through a handheld antenna to retrieve the unique code. However, we can also retrieve PIT-tag codes without ever handling the adult cutthroat. We've installed antenna arrays underneath the old Highway 95 bridge on Lake Creek, and underneath the 9-mile bridge on Benewah Creek. PIT-tagged adult fish that swim upstream past these bridges will move through these antennas, get scanned, and have their codes relayed to a recording device. So far we have implanted around 3500 PIT-tags into juvenile cutthroat trout in Lake and Benewah creeks. We have started to detect some of these fish returning as mature adults over the past two years and hope to detect a lot more in upcoming years to start learning more about survival rates of cutthroat trout in Lake Coeur d'Alene. Stay tuned to future issues of Watershed Wrap for updates regarding this important research. ♦

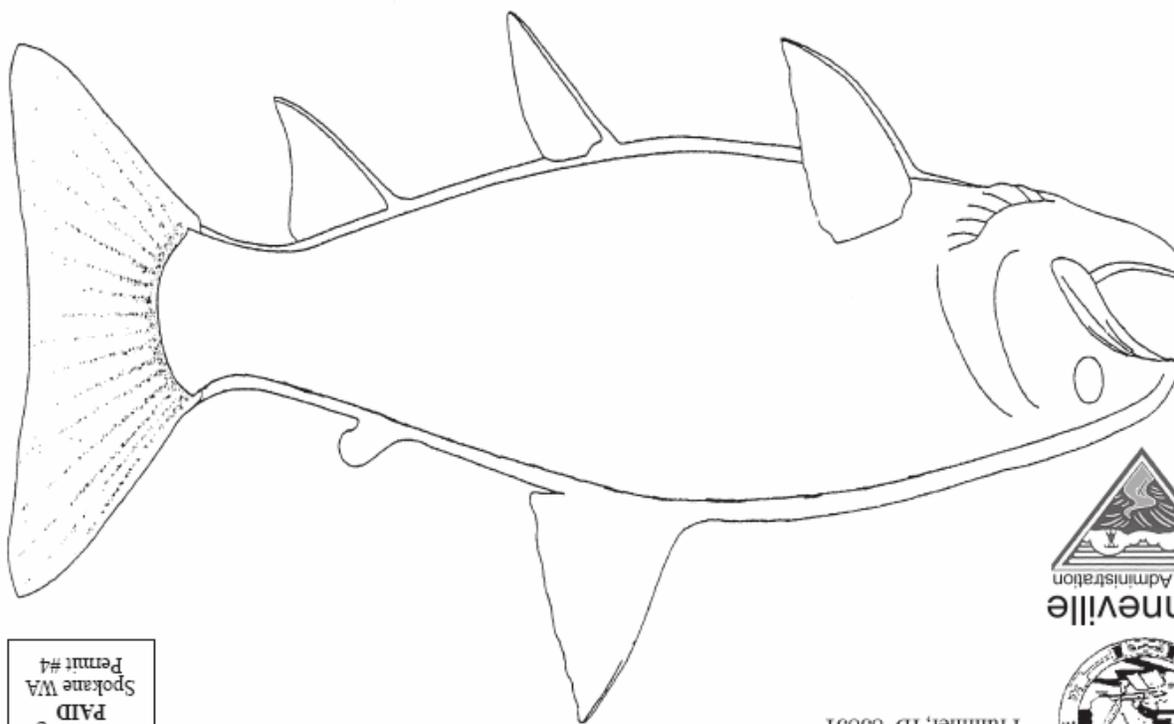
### Major Milestone Reached – Coeur d'Alene Lake Management Plan Signed

By Don Martin, EPA, Region 10 First printed in the EPA Basin Bulletin, Issue No. 22, April 2009. Reprinted by permission.

**T**his March, the Coeur d'Alene Tribe and the State of Idaho signed the Coeur d'Alene Lake Management Plan. This is a critically important accomplishment and the result of a steadfast commitment to collaboration. EPA says "thank you" to everyone that participated in the process.

The plan assesses the current state of the lake's water quality and outlines strategies to protect it. It calls for continued monitoring and a nutrient source of inventory to identify where nutrients, like fertilizer and wastewater, are originating and being deposited into the lake. It prioritizes bank stabilization along the Coeur d'Alene and St. Joe rivers. The plan includes a stewardship center located in the Coeur d'Alene area which would be used to increase public awareness about protecting the lake. A key milestone reached is an agreement among the Tribe, the State, and Kootenai, Benewah, and Shoshone counties to hold quarterly meetings. At the meetings, the parties will work through specifics of the plan.

Now that Lake Management Plan has been finalized, the question has been asked if EPA first must approve it. EPA does not have an approval role. The plan was developed by the State and Tribe and will be implemented under their own authorities. EPA has "been at the table" with the Tribe and State for the past three years as the plan was being developed. EPA will stay current with the plan's implementation, including having conversations about how the results of implementing the plan will be considered by EPA as Superfund cleanup actions continue in the Coeur d'Alene Basin. ♦



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