

WATERSHED WRAP

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

Summer Solstice 2007

(Vol. 11 No. 2)



The Tribe's Fish & 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 program work efforts and to solicit your support as well as constructive criticism.

Thank you for your interest.



Beached moose carcass

Lake Cleanup Begins in Preparation for Upcoming Boating Season

By Jason Brown, Recreation Management Program
Cameron Heusser, Wildlife Program Managers

Efforts are already underway to remove debris from Coeur d'Alene Lake and make the upcoming boating season a more safe and pleasant experience. The Recreation Management and Wildlife Programs recently cooperated on the removal of a bull moose carcass that had beached itself south of Harrison. Due to its size, it took nearly two hours to tow the carcass to an out of the way area so that nature could take its course. A determination could not be made as to the nature of the animal's death but it appeared to be by natural causes. "Coordination efforts such as these are really what make it such an enjoyable experience working for the Tribe," states Jason Brown, the Recreation Management Program Manager for the Tribe. "Outdoor recreational enthusiasts are once again recreating on the Trail of the Coeur d'Alene's without the strong odor that was present in the area and the unsightly nature of the carcass." In addition to the removal of the moose carcass, several duck blinds located on the Lake have been removed in the past and others are targeted for removal this upcoming season.

"We receive complaints from lakeshore homeowners about duck blinds every year. They can be an eyesore, and could be potential hazards for boaters as well as other wildlife species" states Cameron Heusser, the Tribe's Wildlife Program Manager. ♦



New Wildlife Habitat Biologist

By Tom Prewitt, Wildlife Habitat Biologist

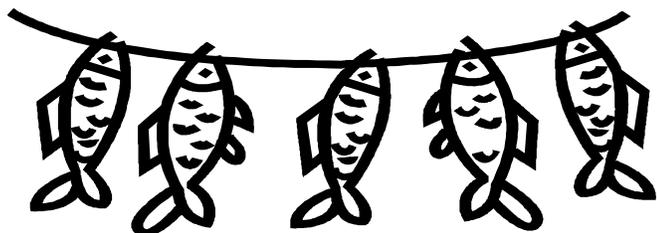
Hi, my name is Tom Prewitt and I was recently hired as the new Wildlife Habitat Biologist for the Wildlife Program. My duties will consist of managing properties acquired for the Albeni Falls Mitigation Project.

Originally from Boyd, Wisconsin, I grew up enjoying the outdoors and its wildlife. After serving 4 years on active duty for the Army as a Heavy Construction Equipment Operator and a tour in Afghanistan with the 101st Airborne Division, I pursued my dream of becoming a wildlife manager. This past May I received my Bachelors of Science degree in Wildlife Resources from the University of Idaho.

In addition to my education, my natural resource experience includes one summer cruising timber for the Idaho Department of Lands and one summer volunteering for a UI graduate student conducting a

forest fuels reduction study at Starkey Experimental Forest, Oregon, and also with the Coeur d'Alene Tribe's Forest Carnivore Survey.

I believe that my education along with my diverse experience has well prepared me for my new job and I look forward to the beginning of my professional career as a biologist for the Tribe. I have already met most of you within the Fish and Wildlife Program and hope to meet the rest of you throughout my career. ♦



Tribal Ponds are Stocked with Giant Trout in 2007

By Jeffery Jordan, Fisheries Biologist

Ronald Peters, Fisheries Program Manager

The Coeur d'Alene Tribe Fisheries Program stocked the Tribal Ponds with giant rainbow trout on the 16th of April and the 17th of May. These fish range in size from fourteen to seventeen inches long and weigh one to two pounds however, there are some that weigh as much as five pounds. As many of you may have already noticed, and most likely took advantage of, there are portable facilities (Honey Buckets) at each of the Ponds for angler convenience. Fishing is open during daylight hours only and you must comply with all Coeur d'Alene Tribal Fishing Regulations.

One thing to remember, as long as fish are being harvested we will keep on planting them so get out and catch a bunch.

You will notice something new this year at the fishing ponds: windmills. These windmills are used to aerate the ponds, which allow us to stock more fish for harvest. The Worley Pond was fitted with a flagpole-style windmill early this spring (2007). A second flagpole type windmill has been purchased for the DeSmet Pond. The Agency Pond is fitted with an electric aeration unit, as it was more efficient.

Comments and questions concerning the Tribal Trout Pond Program can be answered by calling the Fish, Water, Wildlife and Lake Management Building at 208-686-5302. ♦

CHECK OUT OUR WEB PAGE AT:
<http://www.cdatribe-nsn.gov/fisheries.shtml>

Summer Intern to Conduct Undergraduate Research in Benewah Creek

By Chris Peery, Assistant Research Professor, University of Idaho

Restoration of Benewah Creek by the Coeur d'Alene Tribe provides a unique educational opportunity for one undergraduate student interning this summer at the University of Idaho. The University, with funding through the National Science Foundation, is conducting a research experience for undergraduate (REU) program which is designed to provide real-world research opportunities for undergraduate college students to stimulate their interest in pursuing future careers in the sciences. This particular REU program was developed by the Environmental Science program at the UI and focuses on issues related to water resources in the region. Johanna Weston, the student intern, and her mentor, Chris Peery, assistant professor in the Department of Fish and Wildlife Resources, will be working with Angelo Vitale and Dale Chess, Tribal biologists, to develop methods to evaluate how the stream habitat and biological community has responded to restoration efforts in progress in a previously degraded segment of Benewah Creek. Vitale, Chess and their staff have been incrementally working upstream and physically rebuilding this section of creek for the past two summers. An award from the Bonneville Power Administration helps fund the restoration work, with additional funding coming from the US Fish and Wildlife Service, Bonneville Environmental Foundation and the National Fish and Wildlife Foundation/Jackson Hole One Fly Foundation.

The tentative plan for this summer field season is to measure several key indices of stream condition such as flow, including groundwater characteristics, water temperature, habitat quality, and aquatic insect and fish communities. The goal is to determine if these indices vary among the control (relatively undisturbed section of stream), un-restored, and restored sections of the stream. As the student investigator, Johanna will take an active role in developing the study design, collecting data, and summarizing the results. At the end of the summer program she will present her findings to Tribal staff, UI faculty and student members of the REU program and possibly develop a scientific manuscript for publication. Anyone interested in finding out more about the REU program can contact Kay Kavanagh, UI Associate Professor of Forest Resources, at katyk@uidaho.edu.



Building a Better Fish Trap

By Daniel Jolibois, Fisheries Technician

For over 15 years, the Coeur d'Alene Tribe Fisheries have been monitoring adfluvial westslope cutthroat trout spawning migrations in Lake Creek. This trout is one of the few species of salmonids native to this area. The word adfluvial is used to describe the annual return of the adult fish from a lake environment to their stream of origin for breeding purposes. Most native cutthroat uses the higher flows of spring to start their migration to the stream headwaters. Because of the adult trout's unique adfluvial behavior, the Fisheries staff is able to install catch and release fish traps in the stream for data gathering purposes.

Lake Creek is a medium-sized stream compared to other tributaries of Coeur d'Alene Lake, except during winter and spring high flows. These high flows to flood conditions have been the biggest obstacles to the trout research-trapping project. The objectives of the project are 1) to install a fish tight and fish friendly trap before the spawning migration starts, 2) to keep the trap fishing through all weather conditions as the fish move upstream, and 3) to remove the trap when the migration ends.

Data collection includes catching, processing, and releasing 100% of the fish run. In reality, even with much thought and effort into the details of construction improvements, the traps would need constant repairs ranging from minor to total rebuilds. With the former design, rebuilds could take many days as water levels needed to drop to begin a reconstruction. Some spring seasons with many high flows saw multiple trap washouts and rebuilds in cold, wet conditions. With any breach in the trap an unknown number of fish could and do pass through the trap site reducing the accuracy of the data for the season. Meaning we must

estimate the fish count for the time that the trap is not fishing.

A stronger, better trap design has been on the minds of the fisheries staff for some time. Fisheries staff, after many frustrating trapping seasons, came across some research literature from a salmon trapping design being used by the Alaska Department of Fisheries. It was decided that we would challenge ourselves with the construction of one trap on Lake Creek. As the Alaskan trap was built to catch salmon, a much larger sized fish, we would need to modify the design to catch our smaller sized adult cutthroat. This proved to be quite a challenge, taking most of the winter off-season to complete. The older style traps were constructed of rebar and chicken wire mesh, while the new design utilized electrical conduit (gray PVC pipe), UHMW plastic, aluminum, and cable.

First, an area of the stream bottom had to be leveled and an aluminum sill plate had to be installed. The sill plate is permanently anchored to the bottom with long pins and acts as a hinge for the removable panels. The panels are constructed of ½" PVC pipe with plastic and aluminum supports. They are 10' in length and 20" wide, when clipped into the sill plate. They form a barrier to adult cutthroat while allowing water to pass through. The panels are designed to guide fish through a raceway into a live box for safe holding, which is similar to the old system. And the panels also can self-regulate to fish during differing stream flow levels with the use of resistance boards and hinge to the bottom when flows reach flood stage, saving the trap from being damaged or washing out. This allows the trap to start fishing with minimal down time and saves much effort in reconstruction. Thus we have increased the fishing time of the trap and the number of fish caught. After making a few modifications, the new trap design has proven itself to be a worthwhile endeavor. Now in our third season at Lake Creek, the plan is to construct several more similarly designed traps for use in other priority streams with cutthroat trout populations. ♦

hnt'k'wipn update

By Gerald I. Green, Wildlife Biologist

A 2003 American Fisheries Society Symposium (37:213-233) reviewed the effects of beaver and their dams on stream hydrology, the shape of valley floors, and fish populations based on a paper published by Michael Pollock and others. The paper indicated that our idea of looking to "nature's engineers" to repair the entrenched channel of Hangman Creek may not be far fetched at all. According to the article, beaver dams slow the loss of water from the landscape after snow melt or rainfall,

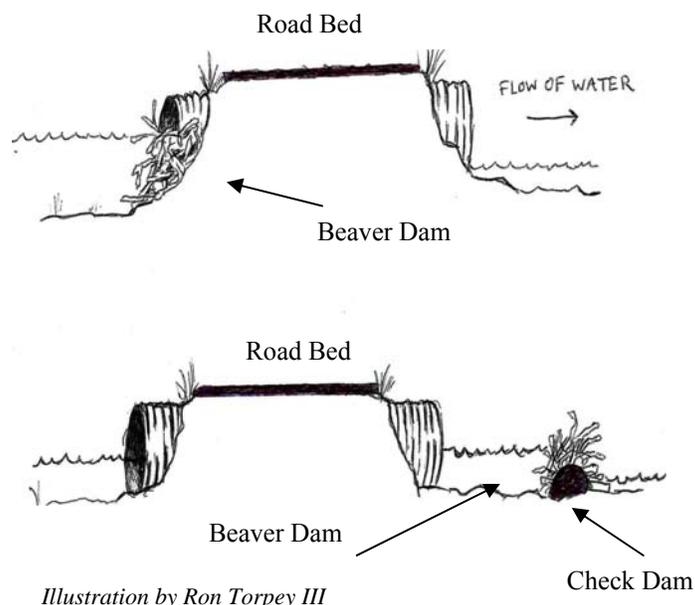
which in the case of Hangman would reduce the force of the floods and hold the water on the landscape longer into the dry season. The paper reports that, in some cases, streams that ran dry during the summer months began to flow year round when beaver were allowed to build dams along the stream's length. In some cases beaver dams resulted in sediments deposited upstream that, over time actually evened out the shape of valley bottoms creating conditions favorable to diverse forest and meadow habitats.

For all the benefits beaver bring to the ecology of streams and valley bottoms, there remains the issue for which beaver are most notorious. Beaver prefer to build their dams wherever a stream is constricted. This means that the uphill sides of road culverts and bridges are favored locations for dams. Right now beaver in Hangman Creek are struggling because there is little forage for them. Even at these low populations levels, however, they cause headache and consternation by blocking the intake of culverts and bridges that allow water to pass under roads. With the upstream blocked by a beaver dam, there is a very real danger of a road washing out during a flood event. Keeping our roads safe from flood events becomes a considerable problem when we find ourselves working at odds with such a determined builder of dams. If we are going to look to the beaver for assistance in restoring natural habitats, we are going to have to find a way to live with their inclinations for choosing locations for building dams.

Studies have shown that the primary stimulus that guides beaver to choose a sight to build a dam is the sound of water flowing over a riffle or through a constriction. In other words, beaver are not necessarily surveying a watercourse and carefully choosing a sight because of landscape characteristics or hydrologic functions. They don't have the eyesight or ability to safely conduct an overview of a watershed to use broad scale characteristics to determine locations to build. In a new area, beaver simply listen for the gurgle, lapping or tumbling of water and build wherever it's the loudest. So theoretically, if we can prevent the sound of flowing water from being generated at the intake of culverts and bridges, beaver will tend not to build there. This is a theory we are testing on a limited scale in Hangman Creek.

In order to discourage a beaver from filling the entrance of a culvert with debris, we are trying to slow the flow of water through a culvert to the point where it flows quietly. We are trying to create slack water conditions through a culvert that has a long history of being blocked by beaver. We create the slack water by placing what could be called a small check dam downstream of the culvert (see illustration). Theoretically, we only need to raise the water levels

through the culvert just enough to prevent rapid water movement. The beaver should find the small check dam downstream of the culvert a preferable spot for locating its dam. So long as floodwaters can move through a culvert, it shouldn't matter that there is a small obstruction downstream. The beaver has his dam, we have a road that is not under threat of being washed away, and we can both go about our business without getting in each other's way. It sounds easy, but our early trials indicate there is something besides the sound of flowing water that needs to be taken into consideration. We will keep you informed of our progress.



Currently the Hangman Restoration Project is writing a management plan for the hnt'k'wipn property in Hangman Creek. The management plan must deal with the immediate future of the property and the steps that the Coeur d'Alene Tribe's Natural Resources Department will take to restore native habitats. The issue of enlisting the beaver to restore fish habitats will not likely be covered in the Plan since it will be largely restricted to the work humans can accomplish. But the management plan can certainly state a course of action that can allow for the beaver to function in their natural capacity. We know in advance that carrying out any restoration in Hangman will directly effect the populations of beaver and we need to find a way of happily coexisting before beaver populations increase.

If you would like to discuss the management plan being developed for the Hangman Mitigation Properties or have some thoughts on the role of beaver in restoration, there will be a public meeting in Tensed on March 27th at 6:00 p.m. at the Tensed Community Center. Also, please feel free to call Gerald Green at

208-686-0312 or Cameron Heusser at 208-686-5521 to discuss these or other Hangman related issues. ♦

Grant Awards Increase Support for Habitat Restoration

By Angelo Vitale, Fisheries Biologist

Fisheries Program staff spent a lot of time this winter writing grant proposals in an attempt to diversify the funding base for the Program and increase the overall support for habitat restoration initiatives on the Reservation. These proposals targeted a wide range of funding initiatives sponsored by federal agencies as well as private foundations. That effort has seemed to pay off with recent announcements by the U.S. Fish and Wildlife Service and a conservation partnership consisting of the National Fish and Wildlife Foundation and Jackson Hole One Fly Foundation. Together these organizations will contribute more than \$125,000 over the next 2 years to Tribal led efforts directed at restoring habitat and providing education opportunities for local schools.

Both grant awards will provide matching funds for an ongoing effort to improve conditions for native fish and wildlife in the Benewah Creek watershed called the 'Eltumish Project. This project looks to restore lost wetland functions and stable stream habitats in a critical area of the watershed for westslope cutthroat trout production. The project has already benefited enormously from several significant partnerships with Bonneville Power Administration, University of Idaho,

Bonneville Environmental Foundation and several private landowners.

The additional funding will allow the Fisheries the Program to begin incorporating the study and restoration of culturally significant plants in the overall effort. This work was recently given the Coeur d'Alene language name "Ne' ulchitsqi'ts", which translates as "it will grow again" or "re-seeding". The initial emphasis will be to inventory and map camas (p'ekhwukhwn) growing in the upper Benewah valley and develop a plan to increase the number of plants in areas associated with stream channel restoration, as well as provide management tools for identifying sources of seed and/or bulbs for transplanting, and to provide information to families interested in subsistence gathering. Camas bulbs planted this fall will be followed by efforts aimed at gathering and planting seed or additional bulbs in the future. The grant funds will also support monitoring of growth and survival of camas and other wetland plantings completed on the site.

As the focal point of all this work, increased emphasis will be placed on involving local schools and students in the project. In preparing the grant proposals, we received pledges of support and participation from the Coeur d'Alene Tribal School, Plummer/Worley School District, Kootenai School District, and the University of Idaho Extension Office. We will look to provide hands on opportunities for all these partners to experience wetland and stream restoration in action! Many thanks to all those who helped make these proposals a success. ♦

University of Idaho
Extension



SPECIAL EVENTS

MARK YOUR CALENDARS

SUMMER EVENTS, DATES, TOPICS, LOCATIONS

JULY

July 13-15, Friday-Sunday, WestSide Rendezvous, Coeur d'Alene Reservation Community Celebration.

AUGUST

August 16, Thursday, 11:30 a.m.-1:00 p.m. Co-Management Roundtable discussion with Chip Corsi, IDFG and Ronald Peters, Coeur d'Alene Tribe Fisheries at North Idaho College, Molstead Hall Room 258

SEPTEMBER

September 26, Wednesday, 6:00-8:00 p.m. Native flora and fauna of Hangman Creek. Presenters Gerald Green & Bruce Kinkead, Coeur d'Alene Tribe Fish & Wildlife, St. Maries Federal Building

To enrich education through diversity, the University of Idaho is an equal opportunity/affirmative action employer and educational institution

West Side Rendezvous 2007



July 13th, 14th, and 15th

Many Cultures, One Community

Food!

Friday, July 13th

10:00 – 3:00
Kiddie Carnival
Plummer Football
Field
Free!!

6:00-10:00
Street Dance
Benewah Market
Parking Lot
Plummer

Saturday, July 14th
6:00–9:00 Legion Breakfast
Plummer Legion Hall
(\$3.50 adults/kids under 5
free, family discount)

9:00 Kiddie Parade
Plummer Football Field

10:00 Parade & Car Show
Trail of the Coeur d'Alenes
to Plummer Football Field
(Meet at the Trailhead)

11:00–3:00 Fishing Derby
Worley Fish Pond – Prizes!!

11:30 Picnic / Kid's games
Plummer City Park

**11:00–3:00 3-on-3 Youth
Basketball Tournament**
Wellness Center

3:00–8:00 Native Village
Vendors, Stick Game, Fry
Bread, Tee Pees, and other
cultural demonstrations
Worley City Park

Prizes

Sunday, July 15th

TBA:
**Interdenominational
Community Service**
DeSmet

1:00
Community Potluck
Plummer Park

Plummer

Worley

6

Tensed

DeSmet



Minor flooding in Benewah Creek

Stream Restoration 101: The Importance of Stream Channel/Floodplain Connectivity

By Dale W. Chess Ph.D., Fisheries Biologist

A primary goal of the Coeur d'Alene Tribe Fisheries Program is restoring the native westslope cutthroat trout to historical population sizes in watersheds throughout the Tribe's usual and accustomed areas. Stream habitat restoration is one strategy being used to increase the productivity of streams and produce increased numbers of native westslope cutthroat trout. In past Watershed Wrap newsletters (2003 Vol7 no3, 2004 Vol8 no3), Angelo Vitale, a habitat restoration biologist and project leader in the Fisheries Program described the restoration of stream channel, and floodplain habitats in the Benewah Creek watershed to increase the production of westslope cutthroat trout. Although, westslope cutthroat trout is the priority species, the philosophy behind the restoration is of a holistic nature that addresses the large-scale, natural function of the stream and floodplain as habitat for all species in the watershed. This article describes the physical processes between a stream and floodplain that maintain high quality habitat, how this process has been severed in the Benewah Creek watershed, and the work being done to restore the natural floodplain functions in the watershed.

Natural functioning streams are connected to their floodplains. The floodplain is the generally flat land adjacent to the stream channel that can be flooded any time of the year, but normally floods during spring snowmelt runoff, or floods in winter when it rains on top of snow in the upper watershed. The part of the floodplain nearest to the stream is the riparian zone. The riparian zone is the transition zone between the stream and the larger floodplain terrace, and is sometimes more densely vegetated than the floodplain. Floodplains that are well connected to the adjacent stream channel tend to be some of the most productive habitats in a watershed because when flooded they are supplied with fresh sediments and organic materials that build rich soils. These rich soils support many types of vegetation that provide habitat for insects,

birds, mammals and fish. This vegetation in the floodplain also increases the "roughness" of the floodplain, which helps slow floodwaters, reduces erosion and increases sediment deposition during flood events. Flooding maintains floodplain and riparian zone productivity and the stream habitat required by many native species. Minor flooding in the mainstem segments of streams the size of Benewah Creek should occur often, approximately once every 1 to 2 years. These are small flood events and usually last only a few days then recede back into the channel. More intense flooding generally occurs less often, for example, a "20-year flood" recurs on average once in twenty years.

A process called "channel entrenchment" reduces the connectivity and flooding between a stream channel and floodplain and can severely affect the above-mentioned floodplain/riparian zone maintenance process. Stream channels become entrenched when unnaturally high erosion rates lower the channel elevation in relation to the adjacent floodplain. As a channel becomes entrenched, stream flows that would normally spill over the stream banks and onto the floodplain are instead captured and isolated within the stream banks. When higher flows do not escape the channel, stream velocity increases and creates forces that erode the channel beyond natural rates. As the channel becomes more eroded, the channel elevation continues to drop, becoming more entrenched and more isolated from the floodplain. Over time, some stream channels become so entrenched that even the higher intensity flows will not spill into the floodplain. This is illustrated in above and below photos. Above photo shows minor temporary flooding in a segment of Benewah Creek where the channel and floodplain were reconnected. The photo below (next page) shows a stream segment above the site in the above photo that is entrenched. The same amount of water is flowing in each stream segment, but the flooding in the above photo is building and maintaining the floodplain, whereas the channel in the photo below (next page) is eroding and becoming more entrenched. If unfixed, the entrenchment process proceeds up the stream valley

and habitat degradation happens at a rapid rate, creating steep, eroded banks.

Benewah Creek is affected by entrenchment and associated habitat degradation in many main stem segments. This habitat degradation limits the production of westslope cutthroat trout and other native fishes in the watershed. The Coeur d'Alene Tribe Fisheries Program is taking an active role in restoring the natural functions of Benewah Creek and the floodplain. The main restoration strategy is to connect the channel with the adjacent floodplain and "kick

start" the natural processes that are absent in the entrenched stream system. The methods being used are: elevating the channel by importing gravels into riffle sections, realigning the channel into historic meanders and planting the floodplain with native vegetation. The restoration process will take many years but the benefits will be great. In future Watershed Wrap articles, I will describe how we are evaluating our progress and describe additional benefits from the restoration projects. ♦



A floodplain stream segment that is entrenched in the Benewah Creek watershed (January 2007)

Watershed Wrap Reader Survey WINNER is SHANNON TAYLOR!!!



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