

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 2011

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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.



Bobbie White and Gina Baughn

Outreach and Education: New Staffers

By Gina Baughn and Bobbie White

Hello, I am Gina Baughn and I recently accepted the co-position of Natural Resources Education Specialist with the Fisheries Program. I have a Bachelors degree in Wildlife Biology from the University of Montana in 2004 and spent time working in the Wildland Fire Chemicals Department of the Forest Service as well as some time doing song-bird research with the Montana Cooperative Wildlife Research Unit. I am married with two beautiful daughters and our family has spent a lot time exploring

Northern Idaho camping and fishing. I consider myself lucky to be able work every day in such beautiful surroundings. I recently decided to go back to school and attended Whitworth University in Spokane, where I received a Masters in Teaching. I then spent some time teaching middle school math and science for the East Valley School District in the Spokane Valley. I was excited when an opportunity arose to work with the Tribe where I could mesh both of my educational backgrounds into one position. I find the work going on in the Natural Resources Department as a whole, to be extremely valuable to not only the reservation, but the surrounding community. It is a privilege to be tasked with “getting the word out” to the schools and community about all of the great projects and achievements that I see going on here on a daily basis. I was able to participate in my first community event, Diabetes Prevention: Family Fun Night, on behalf of the Natural Resources department held February 24th and enjoyed getting out and meeting people. I look forward to continue helping provide the community with educational opportunities on behalf of the Tribe’s Natural Resources Department and appreciate all of the support and kindness that I have received thus far.

In this Issue:

- *Buy Fresh, Buy Local*
- *Hnmulshench Project*
- *CdA Lake Management Plan*
- *Where have all the children gone?*
- *St. Maries Cresote River Sampling*
- *Using Beaver as a restoration method*
- *Elk Radio Collaring Effort*
- *Hangman Wildlife Restoration*
- *Trout Pond Update*

Hi, I am Bobbie White; I transferred over to Natural Resources from the Tribal Police Department. I graduated from North Idaho College with my Associate of Science degree in 2006; I am currently pursuing my bachelors in Agricultural, Science, Communication and Leadership studies at the University of Idaho. I enjoy giving back to my reservation community, such as serving on the One Sky Art Council as Chairwoman; Co-Chair of Julyamsh Powwow Celebration; Benewah Medical Health board member; a member of

Healthy Native Community Fellowship team, Tehnk'wasq'it One Sky; during the summer months teaches beading classes to the Rockin' the Rez Summer Youth; and as one of the Co-Founders and directors of the Shooting Star Dance troupe, a youth group that exhibits their Native American Heritage through various styles of traditional and fancy dancing, whilst promoting a drug and alcohol free lifestyle. I am married to my best friend Larry White Jr. Our home is here in Plummer with our three beautiful children. Our family is very active in the powwow circuit we travel all over the US and Canada during the summer months. I am very excited to work in the Natural Resources department to assist in the education and outreach on the already exciting projects and programs that you have all worked hard on. I look forward to working with each of you.

Over the past few months our co-positions have us busy applying for grant opportunities that involve local schools and community in camas restoration. We are planning for events such as Water Awareness Week (May 9-13, 2011), Rockin' the Rez's science and culture camp, and chaperoning local students at the Native Storytelling Conference. We are also working on student internships within our program, and are spending time on early release days at the Lakeside Elementary's Success Center, teaching students about the importance of sustaining our areas natural resources. ♦

Buy Fresh, Buy Local at the One Sky/KWIS Sustainability Fair, April 23rd

By Laura Laumatia, U of I Extension

Come celebrate Earth Day with local community members this spring at the first ever Sustainability Fair, to be held at the county lot next to the Gateway Café in Plummer on Saturday, April 23rd from 9:30 – 3:30. The event is being co-hosted by One Sky North Idaho and KWIS radio station, and hopes to promote the many resources that we have in our own community. The planning committee has a full day planned, including live entertainment, demonstrations, and a service project that will create a new community garden and enhance our public spaces.

Anyone who has a product that they make or grow within 100 miles of Plummer, Idaho is encouraged to consider selling at the event. Vendors are asked to pay a \$10.00 registration fee, and donate an item for raffle or silent auction. All proceeds benefit KWIS radio station.

Demonstrations will include how to build a simple solar panel, solar cooking, raised-bed gardening, composting and vermicomposting. Come learn how you can cut back on trash removal costs while improving your gardening soil, or see how you can decrease utility costs by harnessing the power of the sun!

The committee is also hoping to share tips for making our community stronger and more sustainable. Do you and your family have a great way that you reduce, reuse and recycle, or produce your own food and goods? Please share your creativity with us! Email your ideas to OneSkyNI@gmail.com. Anyone sending a great idea will have their name submitted for a raffle prize on the day of the fair.

For information about the fair, contact Leslie Louie at 686-2090, or Laura Laumatia at 686-1716. If you are interested in being a vendor, please contact Bobbie White or Gina Baughn at Coeur d'Alene Tribal Natural Resources, 686-0131 to reserve a space.

Join us for a day of learning and fun! ♦

“Hnmulshench” Restoration Project on West Fork Lake Creek

By Stephanie Hallock, Habitat Biologist

The Fisheries and Water Resources programs are combining forces to restore and enhance a degraded section of West Fork Lake Creek with a focus on improving fish habitat and improving water quality. The West Fork Lake Creek has been identified as an important spawning stream for westslope cutthroat trout. This section of the West Fork Lake Creek had an average trout density, from 2002-2008, of 1.1 fish per 100 square meters while fish densities further upstream were nearly 20 fold greater.

Tribal elder Felix Aripa has given the project the name “Hnmulshench”, which means “beaver” and is the Coeur d'Alene language name for Rockford, WA. Planning for the project began in May 2008. The Fisheries Program worked

closely with the landowners, Glen and Judy Ruark, to develop a design that would maximize habitat potential at the site and accommodate some of the landowner needs. The design took into account what existed on the site historically and the land use of the area today. The design was finalized in June 2009. The project will improve conditions for fish and wildlife by creating in-stream habitat, reducing stream bank erosion, increasing the extent of wetlands on the site and improving water quality.

The project involves constructing a new stream channel that can access the historic floodplain and is located close to where the historic channel once flowed. Historic photos show the channel having been straightened and ditched before 1937. One consequence of this change in alignment has been a legacy of severe bank erosion, choking stream gravels with sediment, and a progression of habitat degradation advancing upstream and downstream of the project site. Two thousand feet of existing incised West Fork Lake Creek channel will be completely filled and flows will be diverted into the new channel that is 3,025 feet long, increasing the stream length by more than 50%. Upstream of the newly constructed channel, imported wood will be placed in the existing channel to create habitat. A seasonal stream will be partially filled to repair the degradation that has occurred and will be extended to the newly built West Fork Lake Creek stream channel. Native plants will be planted in riparian and adjacent upland areas.

Construction for the project began in September 2009 and continued in summer 2010. Tribal employees George Aripa, Jeff Jordan, Bryan Harper, Mark Stanger, and Mike Allen, Sr. were involved with the construction. New channel habitat was constructed over the channel subgrade by using imported gravels and logs to create streambed and streambanks. Rock was placed in the channel combined with logs to form riffles and pools. Logs were placed on the new floodplain to provide erosion protection and will be anchored or buried. A total of 1,500 feet of channel subgrade was excavated and 300 feet of stream channel was finished in 2009. In 2010, one-thousand feet of new stream channel subgrade was excavated, a total of 1,700 feet of channel was constructed to final grade, and another 500 feet of channel was

partially completed. Temporary stockpiles of topsoil and general fill were created to store material that will fill the existing channel. These areas and the construction site were seeded after work was complete. A total of 3,670 woody plants and 14,663 herbaceous plugs were planted in September-October 2010. Water will be permanently diverted into the new stream channel in 2011.

We would like to thank Glen and Judy Ruark for working with us to develop and complete the project on their property. Their landowner cooperation is one of the best examples of community support for the Tribe's resource management goals. Funding for the project is through the Bonneville Power Administration and Environmental Protection Agency. ♦

Coeur d'Alene Lake Debris Removal Project

By Rene' Wiley, Avista Corp. Recreation, Land Use, and Cultural Resource Specialist & Jason Brown, Coeur d'Alene Tribe Recreation Management Program Manager

The shoreline along Coeur d'Alene Lake is critical to the area's quality of life and recreational appeal, and we all play a part in maintaining its health and beauty.

We've all seen the occasional tree, abandoned floating dock, discarded building materials and even trash, making its way down the tributaries and eventually coming to rest on the shoreline of Coeur d'Alene Lake. It leaves one wondering where the debris will end up and who will take the initiative to remove it.

Removing debris in and around Coeur d'Alene Lake after spring runoff, and throughout the recreation season, requires a well planned and coordinated effort among local government, property owners and others who have a stake in the lake and its shoreline. For boaters the debris can be a hazard, while for shoreline recreationalists and lakefront homeowners it can be an eyesore, degrading the visual quality of the view-scape and diminishing property values for the homeowner.

For the last four years the Coeur d'Alene Tribe has undertaken a tribal funded debris removal effort that began with inventorying and mapping hazardous debris using GPS. The next phase of the project included removing shoreline trash (i.e. beaded foam, plastic/metal barrels, etc.),

and hazardous deadheads and abandoned pilings within the navigational channel with the use of an underwater chainsaw and SCUBA divers.

In the spring of 2010, in an effort to maximize the quality of recreation on the Lake and improve navigational safety, the Coeur d'Alene Tribe, Avista, Idaho Department of Parks and Recreation, and Idaho Department of Fish and Game kicked off an annual cooperative effort to remove abandoned docks, other human-made structures and debris from the Lake. This collaborative effort, funded primarily by Avista and the Tribe, is part of the settlement agreement Avista reached with these stakeholders during the Federal Energy Regulatory Commission relicensing of its Spokane River Hydroelectric Project.

The Coeur d'Alene Tribe took the lead in managing the effort on the southern portion of the Lake; with close collaboration with the Idaho Department of Parks and Recreation. Over the 2010 summer recreation season Harrison Dock Builders handled the removal of large abandoned docks and eliminated twenty-eight totaling 5,500 square feet of abandoned dock debris. In addition, Tribal staff removed an equal number of abandoned pilings that were identified through previous surveys and posed a hazard to navigation.

A similar project was also launched for the northern portion of the Lake led by Kootenai County Parks and Waterways which involved the removal of a large number of abandoned pilings adjacent to the North Idaho College beach and several in Cougar Bay. That removal project has resulted in a significant improvement to the navigability of the entrance to the Spokane River at Coeur d'Alene Lake. This year's effort is in the early planning stages but the agencies anticipate a project of similar scale.

By protecting our shoreline resources, we can all work together to maintain the beauty and character of the lake for locals and visitors alike. For more information on the effort at the South end of Coeur d'Alene Lake, contact Jason Brown, Coeur d'Alene Tribe Recreation Program Manager, at (208) 686-1800. ♦



May 2008 flood at Harrison Coeur d'Alene River confluence

Coeur d'Alene Lake Management Plan, Needs Assessment (polling survey)

By Rebecca Stevens, Lake Management Plan Coordinator

In 2009, the Coeur d'Alene Tribe (Tribe) and Idaho Department of Environmental Quality (DEQ) finalized the Coeur d'Alene Lake Management Plan (LMP). The Tribe and DEQ worked diligently in finalizing this joint document (which involved participation by a mediator through the U.S. Institute of Conflict Resolution) and are presently in the process of implementing the actions identified in the document. The stated goal of the LMP is *“to protect and improve lake water quality by limiting basin-nutrient inputs that impair lake water quality conditions, which in turn influence the solubility of mining-related metals contamination contained in lake sediments.”*

There were five beginning objectives identified in the ‘core LMP program’ which are: 1) Improve the Scientific Understanding of Lake Conditions; 2) Establish and Strengthen Partnerships; 3) Develop and Implement a 3-Year Nutrient Source Inventory; 4) Increase Public Awareness of Lake Conditions; and 5) Establish Funding Mechanisms to Support the LMP Goals, Objectives, and Strategies. The First 3 objectives are ongoing however in order to assess the 4th objective “increase public awareness”, the Tribe and DEQ decided to conduct an Education/Outreach Needs Assessment or “polling survey.”

In 2010, the Tribe and DEQ contracted with Robinson Research and Dunau Associates out of Spokane, WA to conduct the Needs Assessment. The following explains the methods used and some of the key findings. The

consultants met with the LMP Coordinators from the Tribe and DEQ and compiled a list of 25 Community Opinion Leaders in order to assess their current perception on water quality in Lake Coeur d'Alene. The Tribe's very own Felix Aripa was part of this interview session where he shared his candid concerns regarding the future of contaminated lake bed sediments as well as concerns that nutrients and chemicals running off of roadways could disrupt the chemistry of metals laden sediments and the water column. The consultant also held Focus Group sessions in Plummer, Harrison, and Coeur d'Alene. The sessions were made up of citizens that were asked questions about what they think the current status of water quality is and who would be the best government or entity to manage water quality. The other methods used consisted of an internet self-administered survey and a telephone survey. The results of the Needs Assessment were finalized and currently, Tribal and DEQ LMP staff are going through those results.

The following are just a few highlights from the Needs Assessment study:

- The majority of Focus Group respondents felt that the best way to deal with heavy metal pollution in the lake is to allow for the natural sedimentary process to cap them.
- There was some awareness of mining however, a number of respondents felt that mining wastes no longer enter the lake from the Coeur d'Alene River. **Fact:** Recent data from the U.S. Geologic Survey found that in January 2010, water quality samples collected at Harrison showed the second highest levels of lead entering the lake. The highest levels ever detected were in 1996.
- Some respondents felt that development and growth were the biggest threats to water quality while others felt that the invasive aquatic plant *Eurasian Watermilfoil* posed the biggest threat.
- Overall, the public felt that the Coeur d'Alene Tribe was doing the best at protecting water quality and the public felt that the Tribe should stay at the fore-front of water quality protection. DEQ and EPA ranked second in the public's eyes as having some jurisdiction over water quality protection authority.

- The majority of the public felt that governments and agencies need to coordinate more and meet with the public face-to-face.

The last bullet item is exactly what the Tribe Lake Management Department staff and DEQ intend to do over the next few years. Other ongoing items that are key components of the LMP include: water quality monitoring in the Lake and St.Joe / St.Maries Rivers watershed, aquatic weed (native and invasive) and riverbank erosion surveys, debris removal, coordination with other entities that have land use management authorities, and searching for supplemental funds to assist in future LMP implementation activities.

If you would like to know more information about the LMP, the needs assessment, or how to become more involved in lake protection activities, contact the LMP Coordinator at (208) 667-5772. ♦

Where have all the children gone?

By Jon Firehammer, Fisheries Biologist

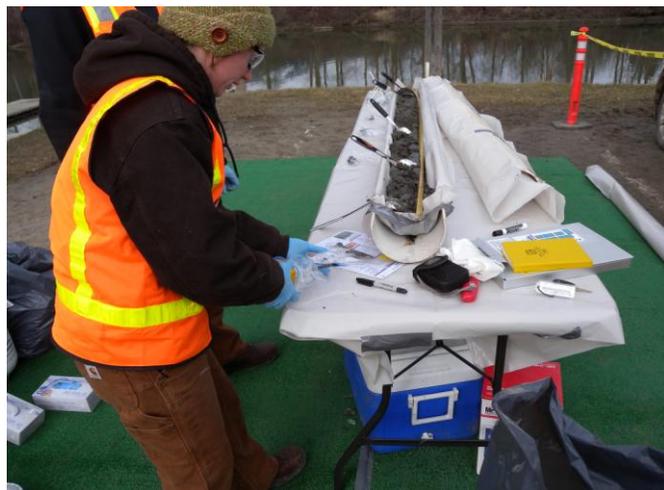
As you may recall from a past article of the Watershed Wrap, the Fisheries Program has been conducting research to better understand processes that could be impacting juvenile cutthroat trout during that time of their life-cycle when they are feeding and maturing to adulthood in Lake Coeur d'Alene. Over the past six years, Fisheries Program personnel have implanted uniquely coded microchips (PIT tags) into over 5000 juvenile cutthroat from Benewah and Lake creek watersheds that have been captured in the spring during their downriver migration to the lake. Various detection devices have then been used to scan adult cutthroat when they come back upstream in the spring several years later to determine how many of the tagged juveniles have returned home to spawn. The data that we have collected over the past several years have been revealing and have begged the following question: *Where have all the juvenile trout gone?*

Of all those tagged juvenile trout that moved out of their natal streams and migrated downriver into the lake, less than 2% have been found to come back later as adults to spawn. These rates of juvenile-to-adult survival are two to three times lower than those that have been reported for

cutthroat trout in other lake systems. At this time, it is difficult to determine what is contributing to these apparent low survival rates in the lake. However, the Fisheries Program feels that it is necessary to examine whether predation by certain non-native fish in the lake could be a predominant factor in limiting the number of adult cutthroat that return to our streams.

Both northern pike and smallmouth bass are not native to the Coeur d'Alene basin, but have become established game fishes in Lake Coeur d'Alene. In fact, according to a recent lake-wide survey, numbers of smallmouth bass apparently have even substantially increased over the last decade. Previous studies examining feeding habits of these two species have also been conducted on the lake, and have indicated that cutthroat trout can be a major dietary item, especially for northern pike. In addition, northern pike and smallmouth bass commonly use shallow-water shoreline habitats during the spring when they are engaged in spawning activity. Because shallow-water habitats in Lake Coeur d'Alene are primarily located in the bays into which tributary streams enter, there is the potential for both juvenile and adult cutthroat trout to encounter large numbers of these predators when migrating between stream and lake habitats during the spring. As a result, predation on cutthroat trout by northern pike and smallmouth bass may be great and could occur over a relatively brief time period.

Over the next three years, the Fisheries Program will be supporting an intensive study to investigate the impact of both northern pike and smallmouth bass on cutthroat trout in Lake Coeur d'Alene. Specifically, sampling efforts will be focused in both Windy Bay, into which Lake Creek enters, and the southern end of the lake where Benewah Creek enters to capture and collect stomach contents from both these non-native predators. From these intensive sampling efforts, we intend to get an idea of how many pike and bass are present in these bays and how many cutthroat trout are being consumed annually by these predators. In the end, results from this study can then be used to inform strategies that will allow us to more effectively manage both non-native species and our native cutthroat trout in Lake Coeur d'Alene. ♦



Arcadis staff processing vibracore samples

St. Maries Creosote River Sampling

By Sandra Raskell, Project Engineer Lake Management

During the cold hours of February 12th and 13th, crews began arriving in St. Maries, ID to begin conducting in-water sediment sampling for the St. Maries Creosote site clean-up. It was a historical day as the long awaited clean-up is beginning.

St. Maries Creosote site is immediately adjacent to, and south of, the St. Joe River in the city of St. Maries, Idaho. From 1939 through 1964, the site was used for peeling and treating logs to be used for poles. Historically, as the treated poles were loaded onto rail cars by the stiff arm, creosote dripped onto the soil around the butt vats and rail cars. If several cars were loaded at the same time, poles would drip creosote onto the soil beneath the rail line. In late 1998 and early 1999, the site was noted to have soil staining, creosote odor, and product sheen, thus began the process of clean-up actions.

For the next decade, the United States Environmental Protection Agency (USEPA), the Coeur d'Alene Tribe (Tribe), and the potential responsible parties (PRP) worked through reports, meetings, consent decrees, court documents, etc. Finally, over the last 2 weeks, Arcadis Voluntary Remediation Party (VRP) and its associated subcontractors began the process of sampling sediments to determine the extent of contamination within the St. Joe River. Upland soil sampling will commence later this spring/early summer.



Vibracore sample being removed for processing

Sampling activities consisted of using a technology called Vibracore. This process involves collecting continuous core samples through a vibrating mechanism. Attached to the mechanism is a core tube which is driven into the sediment by the force of gravity, enhanced by vibration energy. Once the sample is obtained, the vibracorer is turned off and the tube is withdrawn with a hoist onto a support vessel to process the sample for analysis. Approximately 30 samples were collected from the river bottom, which were then sent to approved laboratories for analysis. Surface grab samples were also completed during this sampling period with the sampling method consisting of lowering a “clamshell” sampler into the river sediments. Once the sample is obtained, it is placed in a sampling jar and shipped to an approved laboratory for analysis. These samples will be used to run bio-assay tests. Finally, three Geotechnical borings were completed, and additional borings will be completed in the future as weather allows. These samples will be used to help design the sheet pile wall to be installed during clean-up as well as to get a better understanding of the geotechnical aspects of the sediments.

During these sampling events each crew team took extra caution to protect the fisheries through equipment protection, boom installation, having spill-response kits on hand, and provided regular visual inspections. During Geotechnical boring, sheen was noticed being released from the casing during sampling. Booms and absorbent pads were immediately deployed. After consultation with team members, Arcadis placed

additional booms downstream to catch any additional spills that could potentially occur. The crews were very meticulous in watching for additional problems.

Overall, the sampling went well. The crews were friendly, professional, and very patient considering rain, snow, ice, cold temperatures, and the St. Joe River dynamics. It will be interesting to receive and review the results of this sampling period and to move forward with the clean-up actions. It is very exciting to be part of this historical time as the Tribe continues to push forward to clean-up their lands.

For more information on this project, contact Sandra Raskell, P.E. (208) 667-5772. ♦

Coeur d’Alene Tribe looks to nature’s busiest worker: using beaver as a restoration method

By: Bruce Kinkead, Fisheries Biologist

The Coeur d’Alene Tribe contracted Herrera Environmental Consultants Inc. to provide technical assistance in developing a watershed wide strategy for using beaver (*Castor canadensis*) as a cost effective means of restoring Hangman Creek by improving instream and riparian conditions to support the recovery of native redband trout (*Oncorhynchus mykiss gairdneri*). Instream habitat for fish and other aquatic species has been severely degraded in the Hangman Creek watershed due to large scale land-use changes that included forest clearing, conversion of native habitats to agriculture, and the introduction of invasive vegetation. Because the degradation was so widespread a cheaper means of restoration was needed that did not involve the use of heavy equipment. To do so, the Tribe wants to encourage the natural expansion of beavers and establishment of beaver influenced geomorphic conditions within the watershed.

Beaver used to thrive in the watershed, but they now inhabit a fraction of their historic range. Beaver are capable of altering their surroundings to create their preferred habitat conditions, which also benefit native fish and other aquatic species. Beaver dams and the riparian vegetation required by beaver improve surface water and hyporheic (groundwater surface water interface) connectivity. In other words, beaver activity trap sediments and water behind dams, allowing a

deeply cut channel like those found in Hangman to rebuild back up to where there is a connectivity of overbank flows that keep soils moist for riparian vegetation such as sedges, willows, aspen, alder, and cottonwood. It also results in the groundwater being recharged so a more natural flow regime results in increased summer time flows, as well as reducing instream temperatures, and providing the complex habitat conditions used by redband trout and other cold water aquatic species. Although beaver are active in the upper Hangman Creek watershed, existing watershed conditions, such as flashy hydrology, channel confinement, and lack of native riparian vegetation, result in frequent damage to beaver dams and their associated aquatic habitat.



Beaver dam on a tributary of Hangman Creek, 2010.

To assist the Tribe in identifying restoration areas and appropriate restoration actions, Herrera conducted reach- and watershed-scale assessments of upper Hangman Creek and its tributaries to characterize existing habitat and geomorphic conditions, document conditions associated with existing beaver dams, and develop criteria to rank the restoration potential of individual sites. Ranking criteria included reach significance for fisheries, landowner cooperation, degree of floodplain disconnection, unit stream power, and the potential to restore native vegetation used by beaver for food and dam construction. Site attributes compiled in a GIS database developed from field and map data were used to rank potential project sites in terms of their suitability for the restoration of beaver habitat. Five priority reaches were selected, for which conceptual restoration strategies aimed at restoring beaver habitat were developed. A suite of recommended restoration actions are included in

this document. They include: a) placement of instream structures to encourage beaver dam construction; b) floodplain and channel excavation to reconnect the floodplain; c) modification of existing infrastructure to improve hyporheic conditions; and d) restoration of native riparian vegetation.

Site-specific application of the restoration actions is recommended for each of the five priority reaches. The recommendations are intended to guide the Tribe in restoring the reaches with regard to their unique characteristics. Although numerous reaches ranked high for the restoration of beaver habitat, Herrera’s findings indicate that landscape-scale changes that work toward restoring the pre-settlement hydrologic regime would be necessary if habitat conditions are to be restored to their full potential. If such landscape-scale changes are made, beaver may be able to construct and maintain persistent dams that would rebuild floodplain connectivity and provide the desired habitat conditions for redband trout throughout the upper Hangman Creek watershed. ♦



Cow elk in corral trap and GPS collar

Elk Radio-collaring Effort

By Nathan Albrecht, Fish and Wildlife Biologist

In January 2011, the Tribal Wildlife Program once again spent time trapping and radio-collaring elk on the Reservation. In cooperation with Idaho Fish and Game, we installed a corral trap in the Lake Creek drainage on the north end of the Reservation. After two weeks of trapping, we equipped one female elk with a GPS collar, and released two young bulls. Typically, only female elk are collared, as their movements are more indicative of the entire herd. This is the first time either the Tribe or IDFG has deployed a collar on an elk in this area.

The purpose of collaring elk on the Reservation is to gain a better understanding of their seasonal movements and population attributes. Most residents of the Reservation see elk periodically and may have a pretty good idea of where the local herds congregate at different times of the year. The benefit of radio-telemetry is that we can document their movements and identify which areas in particular are important at critical times within the elk's life (i.e. calving areas, winter range, migration corridors, etc).

This marks the fourth session of successful elk trapping for the Wildlife Program. In 2004, we collared two elk in the Moctileme Creek area, and four more near Sanders. In 2008, we collared four elk in Lovell Valley, including two that were equipped with GPS collars, instead of the standard VHS collars.

GPS collars have the potential to provide a wealth of data with significantly less effort than VHS collars. VHS collars transmit a signal that can be heard with a telemetry receiver and antenna. In order to locate the elk, the researcher needs to travel either on ground or by airplane and locate each elk manually with the receiver. Consequently, the amount of data is limited to the amount of time we can spend looking for the elk. GPS collars are pre-programmed to log the coordinates of the elk's location as often as you wish. These locations are then stored on the collar, which we can program to release at a given time, after which the collar transmits a standard VHF signal so that we can find it and download the data. The GPS collars we use are programmed to log a position every seven hours for about 18 months, yielding hundreds of locations given good conditions. Because of this, deploying even one GPS collar on an elk is significant, given the amount of data we can recover from it.

We are optimistic that the GPS collar we deployed this year in the Lake Creek drainage will yield important information on the movements of the Lake Creek herd. The two GPS collars deployed in Lovell Valley in 2008 logged a total of 2949 locations, and documented the movements of the elk herd from Minaloosa Valley westward all the way to Rock Lake, near Rosalia, Washington. We hope that the amount of locations we get from this collar will be similar. ♦

Hangman Restoration Wildlife Project Update

By Gerald I. Green, Wildlife Biologist

Sheep Creek flows northward out of the mountainous ridgeline that forms the southern boundary of the Coeur d'Alene Reservation. Currently, it flows into Hangman Creek about 2 miles upstream along Hangman Creek from DeSmet, Idaho. The last three quarters of a mile of Sheep Creek flows straight north down a channel that was dug into the landscape along a parcel boundary. The channel was dug sometime during the middle of the last century in an attempt to maximize the amount of acres that were cultivated for crop production. Digging this straight line channel helped to achieve the goal of increasing the area of land under cultivation, but a whole new set of problems were created when the channel was straightened and deepened.

The soils along the constructed ditch were quick to erode and waters that were once clear and clean began eating away at the banks and carrying the soil downstream. As a result of straightening, the temperature in Sheep Creek fluctuates too greatly to support native trout, dissolved oxygen levels are wrong, sediment levels are too high, and in the dry season, it often stops flowing entirely. These problems get added to Hangman Creek, which currently has a whole list of its own problems.

In response to these and other problems, the Coeur d'Alene Tribe purchased approximately 1,195 acres surrounding the meeting of Sheep and Hangman Creek waters. The land was purchased and is managed with funds provided by the Bonneville Power Administration. These lands are to be managed to support native wildlife and fish populations and Tribe's Wildlife Program is currently working to restore the habitats within the property to achieve the management purpose of the property. Putting Sheep Creek back into an alignment that is close to its original is one of the priorities for the management of property.

If you look over the fields along lower Sheep Creek, you will see no indication of where the original channel was located before it was straightened. But photos taken from the air in 1933 and made available for viewing through the Tribe's GIS department show that Sheep Creek once flowed to the north and west of its current

alignment. There is a stand of timber between where the waters of Sheep Creek meet Hangman Creek and DeSmet. Within these forests are the remains of the channel that once carried the waters of Sheep Creek year round. These channels meander through the forest and eventually meet with Hangman Creek about 250 yards upstream of the Highway 95 bridge that crosses over Hangman.

In the summer of 2010, the Wildlife Program began constructing a channel that will reconnect the waters of Sheep Creek with the channels that meander through the forest (Figure 1). Twenty six hundred cubic yards of dirt were removed from a line that meandered across the field on the west side of Sheep Creek and a new channel for Sheep Creek was created. The dirt was stock piled along the straight line Sheep Creek Channel for later use. The newly constructed channel is about 630 yards long and the channel that meanders through the forest extends for another mile and three quarters. By constructing the 630 yards of channel, Sheep Creek will be lengthened by almost 2 miles.

This newly constructed stream channel was not opened to the waters of Sheep Creek. The field that the new channel crosses is completely stripped of any living vegetation. In its current state, it too would be highly susceptible to erosion. So the new channel must be reinforced and actively planted with native trees and shrubs in order to stabilize. As soon as the channel was constructed this last summer, the banks were covered with blankets made from the fibers of coconut trees to hold the soils in place. The blankets are thin enough that planted vegetation can easily grow up through them. This coming summer, the entrance to the newly constructed channel will be opened to the waters of Sheep Creek and a temporary dam will be placed across the current Sheep Creek channel. The dam will divert waters into the new channel during the dry, or low water season. Then, when the wet season arrives in the fall, the temporary dam will be removed and flow will return to the current straight line channel. The diverted waters through the summer will provide the moisture needed to establish the new shrubs and trees along the newly constructed channel. This will be repeated until the banks of the new channel are populated with

enough native trees and shrubs to provide stability.

Once the new channel is completely stabilized with native vegetation, the 2,600 cubic yards of dirt that was removed to form the new channel will be pushed into the old, straight line channel and Sheep Creek will once again flow the additional 2 miles to meet with Hangman Creek near Highway 95. This return of Sheep Creek to its original path of flow will slow those waters and reduce the amount of eroded soils carried by Sheep Creek. The newly establishing native vegetation will shade waters of Sheep Creek and help to reduce the high temperatures that currently plague that stream. Most of all though, the new alignment will reconnect the waters of Sheep Creek with its extended flood plain that will help to hold water and recharge the stream during the dry season. ♦

Trout Ponds Update

By Jeff Jordan, Fisheries Biologist

Well it is that time of year to dust off and clean/oil those reels, sharpen those hooks and get ready for the 2011 Angling season.

Relatively new for the Trout Pond program is the stocking of triploid strains of rainbow trout, which are fish that are genetically altered to prevent reproduction. These triploids will also live longer and grow larger, that is if they are not caught and consumed. The program utilizes these triploid fish to ensure or curtail the possibility of these fish crossbreeding with native stocks of fish within the systems associated with each pond. We have already gone to some length to minimize interactions by locating ponds within semi-closed systems where there is very little chance for escapement from any pond and interacting and having negative impacts on native resident stocks. Nevertheless, the triploid strains will minimize any unwanted bucket biology (unauthorized transportation and planting of non-native fish in native fish areas) effects.

Several improvements have been made during the last year. The Program has treated each pond with $\frac{3}{4}$ minus crushed gravel. Treatment areas consisted of the perimeter and parking areas.

Worley pond had a Mazzei device installed inline of the supplemental well water supply. The Mazzei is a device similar in nature to a carburetor, although it mixes/introduces air into the waterline creating oxygenated water.

The DeSmet pond has seen improvements to its water supply by having a well drilled near its windmill. It had a second hole drilled and lined to a depth of thirty feet to be utilized as a U-tube aerator. The U-tube design used atmospheric pressure to force supplemental oxygen into solution within the water. Although, the well drilled is an artesian and produces approximately seven gallons of water per minute without the aid of mechanical devices to further enhance the near void of oxygen well water, a diffuser was

submerged into the well at a thirty-foot depth and created at or near 9.5 parts per million oxygen content.

The Agency pond had a new perimeter trail established on the west side of the Pond.

All ponds have been updated with signage and first fish plantings are planned, weather permitting, in March. Enjoy your next angling experience further by including a youth on the fishing trip and create memorable experiences for you and the youth.

Questions and/or concerns can be addressed by contacting the Coeur d'Alene Tribe Fisheries, 208-686-5302. ♦

Tribal Hunt/Fish Permit Vendors

HiWay Motel and Sports Shop

310 10th Street
Plummer, ID 83851
Phone: (208) 686-1310

St. Joe Sport Stop

402 W College Avenue
St. Maries, ID 83861
Phone: (208) 245-4417

Blue Goose Sporting Goods

621 Main Avenue
St. Maries, ID 83861
Phone: (208) 245-4015

Steamboat Trader

100 Coeur d'Alene Avenue
PO Box 172
Harrison, ID 83833
Phone: (208) 689-9372

Fins and Feathers Tackle Shop

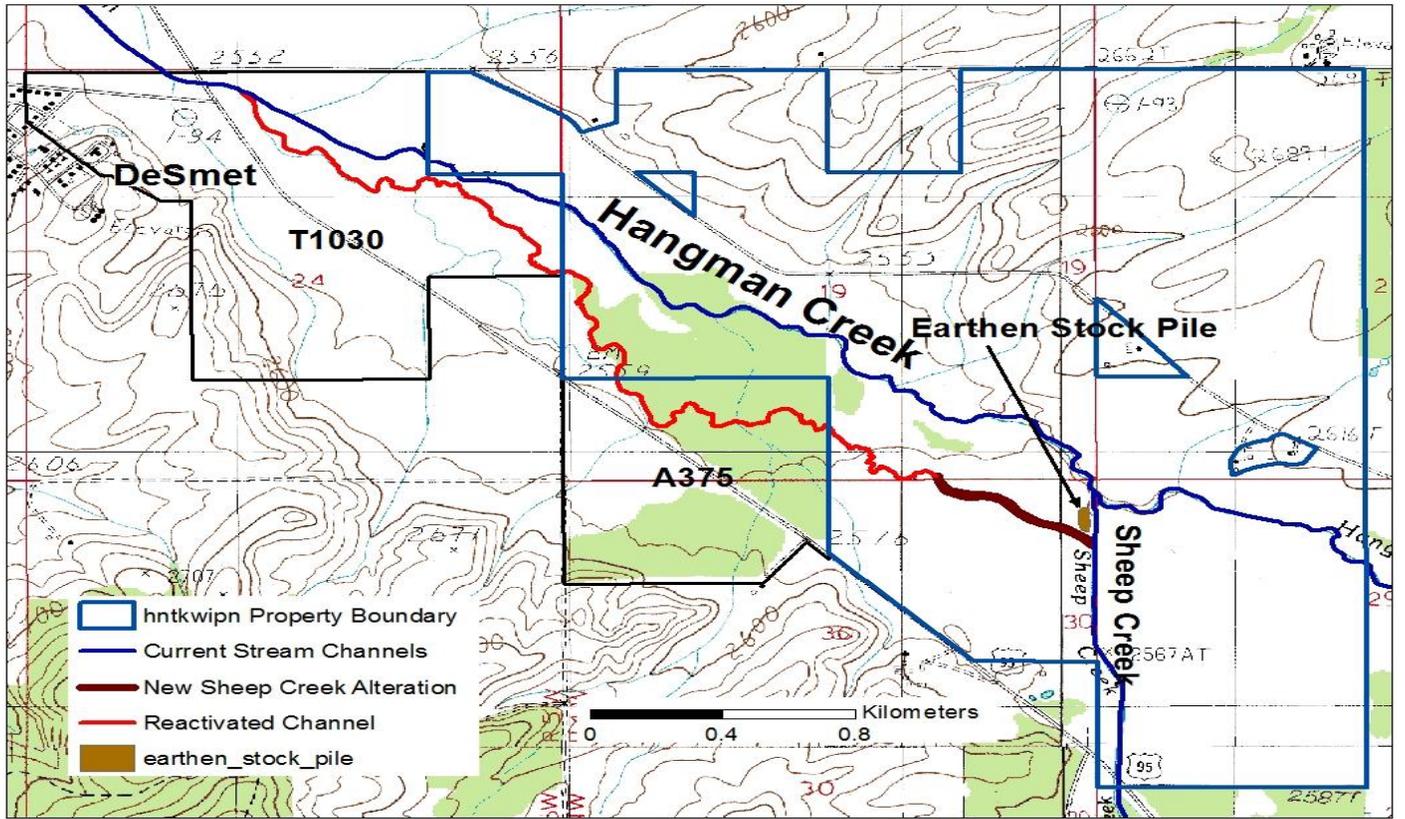
1816 ½ E Sherman Avenue
Coeur d'Alene, ID 83814
Phone: (208) 667-9304

Coeur d'Alene Tribe Fish and Wildlife Office

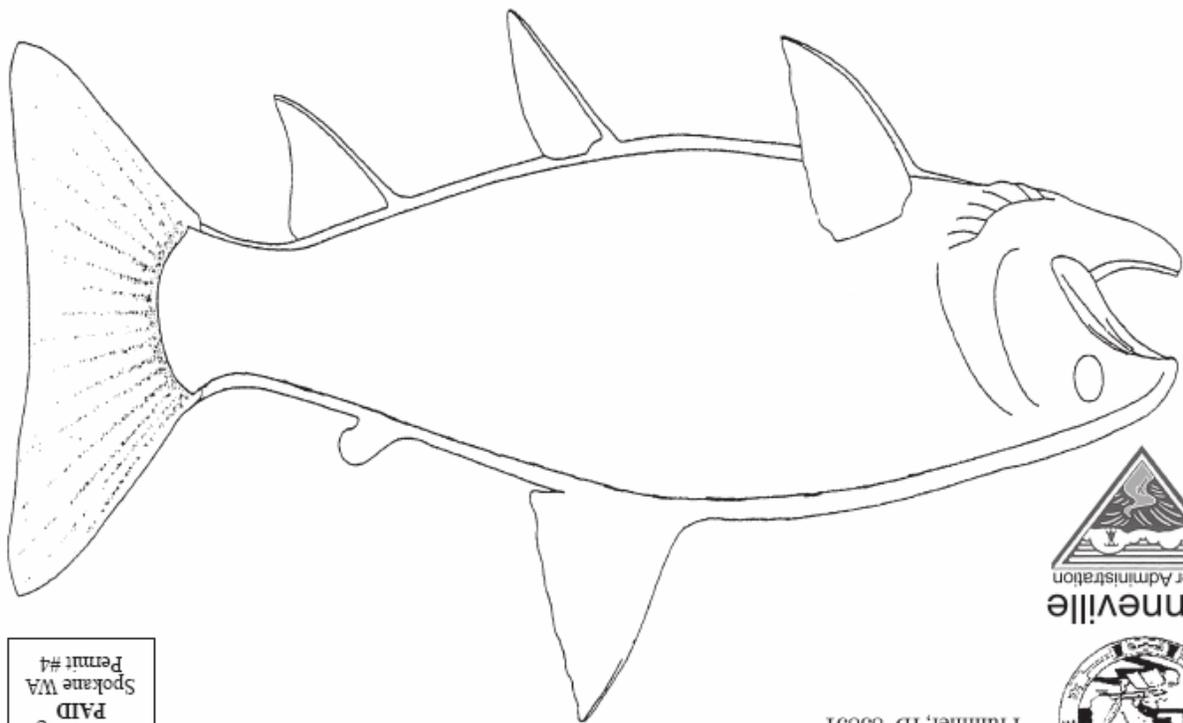
401 Anne Antelope Road
Plummer, ID 83851
Phone: (208) 686-5302

| Tribal License Fee schedule | <i>Fishing Permit</i> | <i>Hunting Permit</i> |
|--|-----------------------|-----------------------|
| Coeur d'Alene Tribal Member | | |
| | Permits not required. | |
| Resident Non-member Indian (1 year residency requirement) | | |
| Under Age 14 | Permits not required. | |
| Junior (14-17) yearly license | \$10.00 | \$5.00 |
| Regular (18-54) yearly license | \$10.00 | \$10.00 |
| Senior (55+) yearly license | \$5.00 | \$5.00 |
| *Disabled/Military yearly license | \$5.00 | \$5.00 |
| Daily license | \$5.00 | N/A |
| Non-Indian | | |
| Under Age 14 | Permits not required. | |
| Junior (14-17) yearly license | \$10.00 | \$5.00 |
| Regular (18-54) yearly license | \$25.00 | \$10.00 |
| Senior (55+) yearly license | \$5.00 | \$5.00 |
| *Disabled/Military yearly license | \$5.00 | \$5.00 |
| Daily license | \$5.00 | N/A |

For more information, please visit our websites at:
www.cdatribe-nsn.gov/fisheries
www.cdatribe-nsn.gov/wildlife



Hangman Restoration Wildlife Project Update article's Figure 1



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