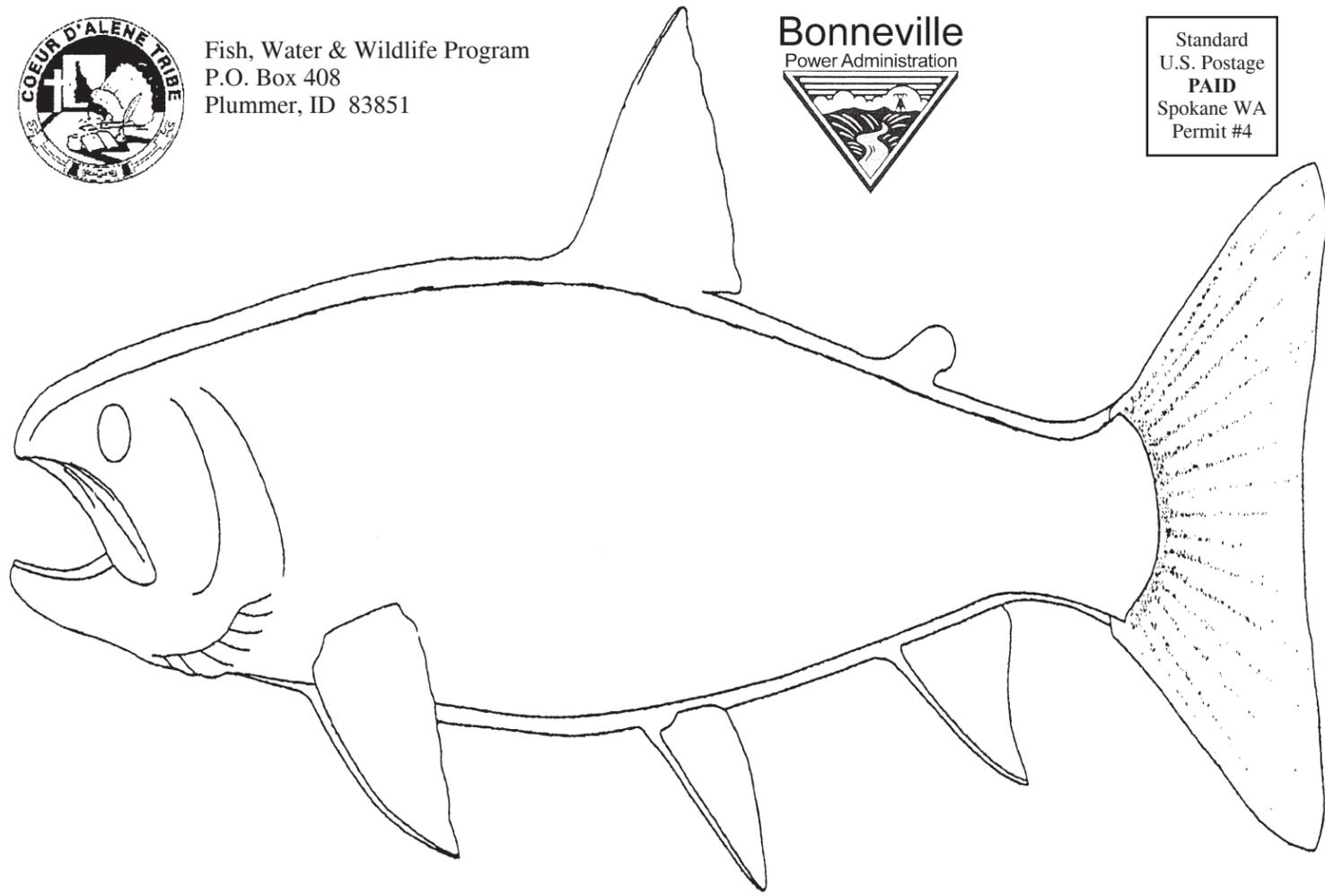




Fish, Water & Wildlife Program
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WATERSHED WRAP

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!

Autumn / Winter 2012

(Vol. 14 No. 2)

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.



An example of one of our antenna sites in Benawah Creek

Bag'em and Tag'em

By Tom Biladeau, Habitat Biologist

Throughout our lives, and especially in the last few decades, advancements in technology are constantly being introduced. This is also true in the field of fisheries research. We, as fish researchers and managers, are constantly looking for new ways to gain more insight to fish migrations without sacrificing their well-being. New technology can help researchers to gain information about fish without applying as much effort or spending as much money. Technological industries have recognized this need and new products, as well as improvements on older products, are being introduced at high rates. One such product that is being used throughout fish and wildlife research is the passive integrated transponder (PIT) tag.

PIT tags are based on an older technology using radio waves called Radio-Frequency Identification (RFID). They are very small microchips encased in glass or plastic that when energized by an electromagnetic field, emit a unique identification code that can be detected from several yards away. More recently, PIT tags are being developed that can be detected using low cost receivers and "home-made" antennas. The Coeur d'Alene Tribe Fisheries Program has taken advantage of this technology to track trends and habits of westslope cutthroat and redband trout throughout reservation watersheds. Specifically, to monitor the effects of our stream restoration program in Benawah, Lake, and Hangman creeks.

During the past decade, the Fisheries Program has been using PIT tags to monitor westslope cutthroat trout as they migrate downstream as juveniles to Coeur d'Alene Lake, and as they return as adults to spawn. We use this information to estimate juvenile to adult survival and spawner abundance on a watershed scale from year-to-year. This information is great for determining how life in the lake is influencing cutthroat, but it does not tell us what is happening upstream where adults are spawning and juvenile fish are spending their first year(s) of life. This information is especially important to the Fisheries Program in determining how past and future stream restoration projects in the upper watershed are impacting westslope cutthroat trout in Benawah and Lake creeks, and more recently, redband trout in Hangman Creek.

We have installed a number of strategically placed antennas throughout our study watersheds. We implant the PIT tags into a small percentage of fish within each study area and record the unique identification number associated with each fish. As these tagged fish swim by the antennas, the tag ID along with the date and time are recorded and stored in a data-logger. We can access this data to determine when and where fish are moving without having to physically handle these fish again. This method of passive interrogation is a great way to gain large amounts of information throughout the life of a fish without having to capture them over and over again, minimizing the stress caused by multiple capture/release events.



PIT tags (like the one shown) are being used to track fish and measure the effects of stream restoration.

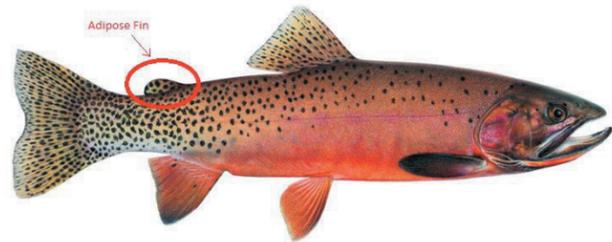
How You Can Help

Each cutthroat trout that is implanted with a PIT tag is also marked by the removal of their adipose fin. This method of marking gives us an immediate visual cue that the individual has been tagged in the past. If



**WATER POTATO DIGGING TIME! JOIN THE NATURAL RESOURCES DEPARTMENT
OCTOBER 23, 24, 25, 2012
OPEN TO THE PUBLIC 9:00 AM - 2:30 PM
IN HEYBURN STATE PARK AT ~~COTTONWOOD POINT~~ HAWLEYS' LANDING**

you happen to harvest a trout within the Coeur d'Alene basin that has an adipose fin missing, it is likely there is a PIT tag inside their body cavity. While cleaning the fish, keep an eye out for this tag. If you do find a PIT tag and are interested in helping the Coeur d'Alene Tribe Fisheries Program, hold on to the tag and don't hesitate to call Jon Firehammer (208)686-7037 or myself (208)686-6307. We would appreciate retrieving the data from the tag as well as the location of harvest. We would also present you with the complete life history of that particular fish as a small token of our appreciation. ♦



Westslope cutthroat showing the location of the adipose fin.



Newly installed structures in Sheep Creek emulate the effects of natural beaver dams.

Restoring Sheep Creek: Leave It to Beaver!

By Bruce Kinkead, Fisheries Biologist

For the last five years now, the Fisheries and Wildlife Programs have been shifting the emphasis for restoration projects on the Coeur d'Alene Reservation to include a strategy focused on using beaver to add wood and structure to stream channels to recover a suite of interrelated natural processes. In part, the inspiration for the idea comes from Tribal elder Felix Aripa who urges us to understand how to work with *hnmulshench* (beaver) - nature's wetland engineer - to manage the Tribe's natural resources. The principle is that helping beaver to thrive and build persistent dams in degraded streams

will store sediment and promote more frequent flooding of near-stream habitats, speeding the process of recovery at a fraction of the cost of other more conventional treatments. Restoring the natural flood frequency will, in turn, support important native riparian plants such as willow, cottonwood, alder and aspen, which are well adapted to these conditions and help reduce erosion even while they sustain beaver populations.

Construction began on Sheep Creek within tribal allotments A336/340 in late August 2012 to assist beaver in restoring the stream channel and surrounding riparian zone. Sheep Creek had previously been identified as a high priority for this work due to the presence of several large, active beaver dams, the relatively undisturbed forest surrounding the stream and the many cooperative landowners. We used the engineering expertise of a subcontractor to develop a design with the following objectives:

- Restore a stable channel and floodplain;
- Reestablish native plant communities;
- Use natural materials to minimize the risk of erosion and provide habitat diversity;
- Enhance wetland habitat and improve off-channel water sources;
- Optimize instream habitat for redband trout; and
- Create conditions that support and enhance current beaver activity.

The design called for a total of eight locations to receive one of three types of treatment: 1) construct engineered wood structures that emulate the effects of beaver dams in streams; 2) anchor and stabilize large wood already in the channel; and 3) reinforce existing natural beaver dams.

The intention out in Sheep Creek was to use our in-house construction expertise to provide on-the-job training for the Hangman Fisheries team, including Bruce Kinkead, Glen Lambert, and Todd Johnson. George Aripa and Jeff Jordan played key roles as heavy equipment operators after previously installing these types of structures in Benewah Creek and its tributaries. The challenge in building the Sheep Creek design was the height of the engineered structures - standing nine feet high from the base log to the top log, it is the largest of the structures built so far by the Coeur d'Alene Tribe. With the cooperation of landowners, Douglas fir logs, 10"-16" diameter, were selected within the allotment boundaries and cut to match the design specifications. Logs were buried in excavated trenches to provide a base framework for the logs visible above the streambed. Cobble and gravel was installed downstream of the structure to a depth of three feet to prevent scouring under the logs. These structures are designed to provide beaver with a framework tied into the streambanks for them to build

electric-like shock when he accidentally grabbed the sharp spines of this fish while fishing with his hands. Felix Aripa was also familiar with this fish and described it being found with *'eltumish* (cutthroat trout) in places where the water was clean and pure. In fact, this fish is distributed throughout small, swift streams in the Coeur d'Alene and St. Joe River basins in Idaho, where it tends to be more abundant than any other fish. The history of mine pollution spreading from the Silver Valley, however, may have more recently reduced its distribution. Seemingly, the species has long been confused by various authors with the shorthead sculpin, mottled sculpin, or torrent sculpin. "We identified this species by accident," Dr. Young joked. "Although easily identifiable based on genetic data, it was a bit of an ordeal to find characteristics that would delineate this species from everything else."

With regard to assigning a Tribal name to this original native, the elders discussed the Coeur d'Alene clans who have inhabited these river systems, mountains, lakes, and prairies for eons. They talked for some time specifically about the *hnych'mchinmsh* people from the mouth of the St. Joe and St. Maries rivers, and about the *sq'wt'utmsh* people from the area along the Coeur d'Alene River where the Old Mission was built. Before the large-scale organizations uniting different bands of extended families, it was more likely that people referred to themselves as "People of (a place)", and they were very proud of their clan

associations. It was decided in the end that it would be most appropriate to give the new sculpin species the general name, the native term for the Coeur d'Alene people, in recognition of the collective peoples and the landscape of the Coeur d'Alene Tribe. It is probably a happy historical coincidence that the term *schitsu'umsh* may actually originate in the region of the sculpin's habitat.

The process of recognizing a new species is complex and involves publishing a paper that names the fish, describing how it differs from all other species, and discussing what is known of the range and ecology of the new species. A scientific paper is being finalized to submit for publication at the time of this writing. If all goes well during this review process, a new species designation will be recognized and published, officially adding the Coeur d'Alene to the Latin classification in renaming *Cottus schitsuumsh*. A common name will also be chosen by the scientists publishing this work. It is exciting to think about a time in the future when all the text books issued to students studying fisheries science will include this species name and description. We couldn't be happier to cement a Coeur d'Alene language name to a fish that will hereafter be known officially, among all scientists, as co-inhabitant with the *Schitsu'umsh*, the Coeur d'Alene people. ♦

Native Pride: *Cottus schitsuumsh*



The Coeur d'Alene sculpin, *Cottus schitsuumsh*, newly named after the Coeur d'Alene People and the landscape of the *Schitsu'umsh*, may become one of the latest additions to the growing list of new species.

d'Alene terms, sch'lwis was used as the word for September, honoring that time of year when they came back from Celilo Falls with the dried salmon.

At this event, two traditional ways of cooking salmon were demonstrated. In one method the salmon were sliced into a single fillet connected by the skin and meat of the belly, then skewered with cedar sticks to hold the fish open while it cooked. The cedar sticks were then fixed to peeled willow branches, stuck into the ground, and leaned over the cooking pit. For the second method the salmon were filleted from the back and left connected by the tail. The meat was then cut into thin strips without cutting through the skin and hung over sticks high above the fire in order to be cooked slowly by a combination of wind drying and smoking. Many community members came out just to observe while others enjoyed getting their hands dirty to learn traditional ways of filleting salmon. This was an all-day event which was enjoyed by many youth and adults alike. Many of the fish were still cooking late into the night. Fresh sockeye salmon were also distributed to community members throughout the day as well. An estimated 200 people came to participate in the day's events including students from Rockin the Rez summer camp who rotated through the grounds throughout the morning and afternoon. Smoked fish were distributed throughout the community to tribal elders and staff. The day came together due to the hard work and combined effort of many, including employees from the Fisheries, Forestry and Fire programs, and members of the community with the intent of making this an annual event. Lim lemtsh to George Torpey and his crew for sharing the tribal traditions he learned from his grandmother and revitalizing our past traditions with the future generation. Job well done! ♦

***Cottus Schitsuumsh* – ne' ulchiit'i'ch**

By Angelo Vitale, Fisheries Program Manager

Scientists have found and described approximately 1.75 million species on Earth and new species are being discovered every day. If you just consider fish, there are almost too many species in the world to count and there are still some yet to be discovered; so far over 24,500 species. Far from being completely documented, the natural world continues to be a source of wonder. "It is estimated that

The Coeur d'Alene language expression, ne' ulchiit'i'ch, refers to the sunrise, especially as it "pokes (its head) over the horizon, again." In this case it suggests a future event - the return of the language.

well fewer than half the Earth's species have been described and named," says Bruce Beehler, Ph.D., senior research scientist with Conservation International, a research and environmental advocacy group based in Arlington, Va. "These many living species - known and unknown - support the well-being of humankind." The World Wildlife Fund says in a new report that at least 1,068 new species, including 519 plants, 279 fish, 88 frogs, 88 spiders, 46 lizards, 22 snakes, 15 mammals, four birds, four turtles, two salamanders and a toad, were discovered or newly identified from 1997 to 2007. Despite all of these recent discoveries, it is almost second nature to assume that this new frontier in science is being shaped in faraway lands and the most inaccessible corners of the world. Much closer to home, however, a newly described species may have found a name that forever links it to the Coeur d'Alene Tribe and the landscape of the *Schitsu'umsh*.

A story worth telling began to unfold early this summer when the Fisheries Program received an unusual request from Michael Young, a research fisheries scientist with the USDA Forest Service Rocky Mountain Research Station in Missoula, Montana. Dr. Young and several research associates had recently completed a comprehensive survey of sculpins, a family of small, benthic fishes, in the Upper Columbia and Missouri river basins. After sampling nearly 400 streams to identify sculpin distributions and looking at DNA to assign individuals to particular species, they concluded that a wholesale revision of the classification of the species was warranted. His request to the Coeur d'Alene Tribe was simple, "We gratefully seek your assistance in naming an undescribed species." Field biologists, like Dr. Young and his associates, increasingly are using interesting new tools to identify and catalog new species. Advanced microscopes can now be operated via remote control by scientists thousands of miles away. DNA analysis allows specimens to be precisely identified. And online digital images of plants and animals allow naturalists in developing countries access to the same information that was once available only at prestigious universities.

The Language Department staff and tribal elders met on June 28, 2012 to review the request and deliberate. Perhaps, not surprisingly, the elders present were able to recollect seeing and hearing about such a small fish which inhabits fast water and has a characteristic darting motion, even though it was not a part of the traditional subsistence diet. Irene Lowley recalled hearing stories from her paternal grandmother, *Sch'lmta'l* (nee Julia Ann Sol Louis, widow of Chief Andrew Seltice), about a fish that "disappeared into the rocks" and remained hidden at certain times of the year. Also, her brother Herman reportedly felt an

stable dams that will withstand peak flows and get flood waters out of the banks and into adjacent side channels, thereby increasing groundwater infiltration.

The second treatment involved a simpler installation of three root wads that will also serve as a possible framework for more stable natural beaver dams. The root wads were installed and stabilized with vertical poles driven deep into the channel bottom to prevent movement. The last treatment consisted of installing 4" diameter poles vertically into existing beaver dams to reinforce them, with the hope that spring floods will not wash them out.

Following all the in-channel work, the site was planted with native plants such as aspen, alder, cottonwood, and willow, which are essential to beaver communities. Once the stream channel has developed a more natural form these plants will thrive and the beaver and his environment will be self sustaining, providing deep pools that will benefit the native redband trout. Further details on the success of this restoration treatment will be provided in an upcoming issue of the Watershed Wrap. ♦

Collaborative Project Restores Passage for Trout

By Stephanie Hallock, Habitat Biologist and Angelo Vitale, Fisheries Program Manager

The Coeur d'Alene Tribe Fisheries Program and Stimson Lumber Company recently completed a collaborative project to remove a barrier that has long kept fish from reaching the headwaters of the Benewah Creek watershed. The West Fork Benewah Creek is one of a handful of tributaries in the watershed that historically was a source of clean water that also provided important spawning and rearing habitats for cutthroat trout. Each of these streams provided a home for fish that were permanent residents as well as temporary refuge for the larger adult trout that migrated from Coeur d'Alene Lake and back during the spring spawning run. That migratory life cycle was temporarily severed in this part of this watershed when a logging road was built to cross the stream and an undersized culvert was used to pass the water draining from 742 acres that make up the headwaters on the southeast side of where the Benewah Road crosses Lolo Pass.

The exact history of this logging road is a little murky, but it was likely constructed prior to 1974 when forest practices rules, intended in part to protect aquatic resources, were first promulgated in Idaho. It was not uncommon for roads of the era to miss the mark in accommodating aquatic resource concerns and in many areas fish passage may not have even been a consideration. The road accessed lands formerly owned by Potlatch Corporation and more

recently acquired by Stimson Lumber Company in 2010. The road received little use following timber harvest and had been abandoned for nearly two decades. The Coeur d'Alene Tribe Fisheries Program identified the problem during a 2008 road inventory when the culvert was classified as a complete barrier to fish trying to move upstream. Ironically, a large number of resident trout were recently found upstream of the barrier, with these fish apparently living in isolation from other trout in the watershed, separated by what amounted to a one-way ticket downstream.

The project was completed in August and September 2012 and involved removing much of the forest road infrastructure and constructing a fish friendly channel through the former road alignment. The undersized 24 inch diameter culvert, which was perched nearly 2 feet above the streambed at its outlet, was removed and a new channel was created. The challenge was to bridge what amounted to an abrupt 8.5% change in channel slope to match the natural 3% channel slope of the longer project reach with as little disturbance as possible. Five grade control structures comprised of large boulders were constructed to form a series of step-pools to re-establish the more gradual channel grade within the vicinity of the stream crossing. One-hundred feet of stream channel was impacted by these structures. Additional road fill was removed to create a new floodplain consistent with the floodplain widths upstream and downstream of the former crossing. Approximately 0.02 acres of wetlands were temporarily disturbed during construction and existing vegetation was preserved as much as possible. Seeding and planting occurred in all disturbed areas, including access roads, once construction was completed. The new stream channel allows for passage of all sizes of westslope cutthroat trout with fish gaining access to nearly two miles of potential rearing and spawning habitats upstream.



Photos show the old WF Benewah Creek stream crossing that was identified as a fish barrier and the new "fish friendly" channel that was constructed after the existing culvert and road was removed.

This work is part of the on-going effort by the Tribe to recover native westslope cutthroat trout in the watershed. Although fishing is currently closed in Benewah Creek the hope is that these types of projects will allow fish populations to recover to the point where harvest can once more occur. Improving fish passage is likely one of the least costly restoration alternatives available with a high likelihood of success that promises a rapid response from trout. This is the first of nearly 20 projects that are intended to be implemented under a cooperative agreement signed with Stimson Lumber Company earlier this year. ♦

Education and Outreach Update

By Gina Baughn and Bobbie White, Outreach Specialists

The Outreach branch of Fisheries has been busy since the last newsletter organizing activities such as Water Awareness Week, an annual fishing derby, our summer youth employment program, and the Natural Resources Youth Camp. We are now looking forward to planning our next upcoming event, in celebration of Water Potato Day, to be held the week of October 26th. Please watch the tribal website (www.cdatribe-nsn.gov) for more details as we get closer to the date.

Water Awareness Week was successful again this year, with nearly 350 students from surrounding local schools coming to participate in educational activities emphasizing the work being done in our Natural Resources Department. The learning stations included primers on water quality, fisheries, aquatic invertebrates, soils, wildlife, forestry, fire safety, and the Coeur d'Alene language. We were especially glad to have the folks from Fire Management join us this year adding a new station to our lineup!



Participants in the Natural Resources Youth Camp smile for the camera at the Kooskia Fish Hatchery.

The annual intertribal Natural Resources Youth Camp was hosted by the Nez Perce Tribe and was held June 18-23 at the Kooskia Fish Hatchery, which is owned and operated by the Nez Perce Tribe. We attended the camp with 42 students and adult chaperones. Students had the opportunity to listen to presentations from Tribal elders, as well as National Park Service and Forest Service employees. They completed service learning projects, such as pulling noxious weeds, took nature hikes, received training in tree and plant identification, learned about the local watershed, practiced orienteering, saw a portable weather station, learned about tribal histories, and visited historic sites. As camp ended on Friday, awards were given out to individual campers based on merit to recognize their good attitude, cooperation and leadership. The camp was a success with many kids asking about “next year’s camp” before the week had even ended!

This year’s fishing derby, held on the 29th of June, was well attended with an estimated 65 participants fishing and competing for prizes. In our kids competition our largest fish came in at whopping 19.8 pounds and the adult competition winner wrestled in a 15.4 pound rainbow trout. A special thank you to our summer youth who had a hand in all aspects of planning and running the derby including shopping and distributing prizes to the lucky participants!

Our summer youth intern program was especially busy this year with the Fisheries program taking on eight young people, two of which were returning youth from the previous year. We were again able to provide them with opportunities to learn about stream restoration, camas mapping and inventory, stream habitat monitoring, and fish population census techniques. One of this year’s new youth summed up his summer experience by saying, “During my time at fisheries I learned a lot of things like tagging fish, stocking ponds, and shocking fish. The one I really enjoyed was shocking. It was interesting to see how it was done. I also like to work around the ponds; I pulled weeds out of the Worley pond. We had a boat and we got into the water and filled up the boat with weeds and dumped it when it was full. I think I learned a lot from fisheries and enjoy doing the work that you guys have for me and appreciate this program and most definitely want to come back next summer.” We certainly enjoyed having some youthful energy in the building and hope that some of them will decide to return next summer to continue building on what they learned this year from our great staff.

In addition to the summer youth working here in our building, we had the opportunity to collaborate with Museum of Arts and Culture (MAC) in Spokane by overseeing two teen Docents, Trevor Abrahamson

and Jake Brown. Both of them became “certified tourism ambassadors” and were tasked with leading visitors through the Lasting Heritage American Indian exhibits. Jake and Trevor received much positive feedback from the guests and have been well received by museum staff and it is our hope to collaborate with the MAC again next year.

Lastly, a quick update on our work out in the schools: the students in our 4-H Camas Club beading class have accomplished what some adults cannot do! We started out with 8 students and finished with 5 completing their very own moccasins. Although this activity was very difficult and the students at times were very frustrated with the task, it gave them a sense of accomplishment, raised their self-esteem and most of all a feeling pride in learning a tradition from their own native culture. We are also very proud of two of our students Talon Twoteeth and Emmitt White who entered their moccasins into the Benewah County Fair and won Grand Champion and Reserve Grand Champion ribbons! ♦



Payton Biles fillets fish at the khwele' Grounds.

“How We Honor From the Heart”

By Bobbie White, Gina Baughn and Angelo Vitale

It is common knowledge that the policy that resulted in construction of the hydropower facilities on the Spokane and Columbia rivers - dating back to 1905, when the U.S. Congress authorized the construction of the Little Falls Dam approximately 30 miles upstream of the Spokane River’s confluence with the Columbia River – had the devastating effect of keeping Pacific Salmon and steelhead from reaching their spawning grounds in Coeur d’Alene country and from the traditional fishing grounds utilized by the

Schitsu’umsh for millennia. This tragic history has made every opportunity to harvest fish and share the gifts of the river a reminder of a rich cultural legacy, as well as an opportunity to reflect upon the inherent sovereign rights of tribes. This year witnessed a sockeye salmon return to the Columbia River that exceeded the largest number of fish counted at Bonneville Dam since 1938; the count reached 515,255 by late July. The sockeye are the smallest of the salmon species that return to the Columbia River Basin, averaging less than 4 pounds as adults. More than 90% of these fish are destined for the Okanogan River bordering on the Colville Reservation, with the vast majority of those Okanogan fish spawning naturally in the river in Canada just above Lake Osoyoos reservoir, which bridges the U.S.-Canada border. Osoyoos-bound sockeye returning from the Pacific Ocean must clear nine mainstem Columbia dams during their spawning run. The final hurdle the sockeye pass before turning off into the Okanogan River is Douglas County Public Utility District’s Wells Dam at river mile 515.8 on the Columbia.

In this year of abundance the Colville Confederated Tribes instituted a modern version of sharing the salmon harvest that directly benefitted the Coeur d’Alene Tribe. The Colville tribes began netting sockeye near the mouth of the Okanogan in record numbers using their purse seine boat in early July. During the peak of the harvest tribal fishermen were catching from 800 to 2,000 of the 3-4-pound sockeye daily. Five employees of the Coeur d’Alene Tribe Fisheries Program made the trip to the mouth of the Okanogan River and worked for nearly three days to assist with the harvest. Some of the fish they helped to catch were sent off in totes of 400-600 fish to other Northwest tribes and they returned to Plummer on July 27 with approximately 350 fish to distribute locally.

Rather than simply distribute these fish out of the back of a truck at the headquarters, it seemed appropriate to focus on a more traditional preparation of these fish to honor the gift. Accordingly, with help from many people in the Tribal community, the Fisheries Program co-hosted a community salmon smoking event, which was held at the khwele’ Grounds. This was an opportunity for us to step back in time and honor our ancestors by preparing salmon in a traditional way. Typically this type of traditional preparation would not have taken place on the reservation; instead fish would have been preserved where they were caught. This type of preservation allowed Tribal members to bring home the salmon so they would have fish available in the winter. The Coeur d’Alene people called dried salmon “sch’lwis”, and this was such an important part of the culture that when it came time to devise a 12-month calendar using Coeur