CURRENTS

Newsletter of the Kenai Watershed Forum

Fall 2012

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Photo courtesy of Becky Hutchinson

Working together for healthy watersheds on the Kenai Peninsula

Sacred Water, Sacred Salmon

By Alan Boraas, Ph.D.
Professor of Anthropology
Kenai Peninsula College

Anthropologist Roy Rappaport has written: "people raise to the sacred that which is most important in their lives." For traditional Dena'ina water, as Elder's Clare Swan and Alexandra Lindgren have written, was considered to be sacred.

When Russian Orthodoxy was adopted and indigenized by Dena'ina *in the 19th century, The Great* Blessing of the Water began to be practiced yearly in a January ritual carried out on frozen rivers. The first recorded ceremony on the Kenai River was in 1863 and was like the modern ceremony still practiced in the Lake Clark and Nushagak (Yup'ik) areas. A hole is cut in the ice and, with the people gathered around, the priest baptizes the water in a ceremony similar to an infant baptism.

At the moment the priest dips the cross into the river for the third time

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The journey of a thousand miles begins with the flap of a tail.

Kenai Watershed Forum
Working together for healthy watersheds on the Kenai Peninsula

Walking the Walk and Talking the Talk: Stream Watch Makes a Difference for Fish!

By Lisa Beranek, Stream Watch Coordinator

Since the program's inception in 1994, trained Stream Watch volunteers have made a big impact sharing river protection and fishing regulation information with over 60,000 river users, both visitors and locals, through on-the river conversations. And the 2012 season was no exception. In addition to packing out over 800 pounds of garbage (including more than 65

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Kenai Watershed Forum (KWF) is a local 501(c)(3) non-profit organization dedicated to maintaining the health of the watersheds on the Kenai Peninsula, Alaska. KWF is recognized as the regional watershed organization of the Kenai Peninsula, Alaska, successfully identifying and addressing the needs of the region by providing high quality EDUCATION, RESTORATION, and RESEARCH programs.

Our mission is "working together for healthy watersheds on the Kenai Peninsula". KWF is a dynamic and maturing organization that is poised to serve the Kenai Peninsula and the State of Alaska with increasing effectiveness in the near and distant future.

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What's Your River Story...

We all know a river. What is your river story? What have the waters and watersheds on the Kenai Peninsula meant to you and your family this year?

It is clear all residents and visitors of the Kenai Peninsula gain from the natural resources this great land holds. From recreational to economic opportunities - *we all live and play in a very special place!*

Generous friends like you enable us to touch the lives of hundreds of children through our summer day camp connecting them with nature, open hundreds of miles of fish habitat by replacing problem culverts, bring agencies and organizations together to discuss fish habitat priorities through the Kenai Peninsula Fish Habitat Partnership, and make lasting impacts through the expanded Stream Watch program, just to name a few. **Thank you!**

This past year KWF made a huge leap, we moved into our new home at the Soberg Building in Soldotna Creek Park. We couldn't be happier with the facility. We sailed through this field season and because of the additional space and design we were able to accomplish more than we ever have. This building is a 30-year commitment and is a testament to our commitment to you and the communities we serve on the Kenai Peninsula. We promise to continue focusing on hard issues facing our watersheds and touching lives across the Kenai Peninsula making our watersheds healthy for the next generation.

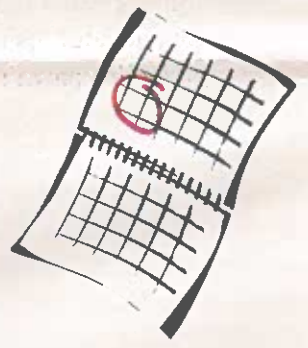
I urge you to ask yourself if you want your river story to be told again? I hope the answer is yes and that you continue making healthy watersheds a priority in your life.

Best wishes for a bright holiday season!

Josselyn O'Connor - KWF Development Director

My river story... Cora, age 4 - I want her to take her daughter fishing on the Kenai in 25 years.

KWF Calendar of Events



November 7 • 7pm • A Celebration of Salmon from all Perspectives

You won't want to miss this lively evening filled with stories, poems, songs, and much more from local fishing legends and educators. We'll travel down the rivers and out to the ocean celebrating the salmon. We'll be sharing smoked salmon appetizers and everyone is encouraged to bring a side dish to share.
Details - Event is FREE and open to the public. Folks are encouraged to bring a side dish to share. Event will be held at the Kenai Peninsula College Commons.

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December 12 • KWF Holiday Open House

Hot drinks & hors d'oeuvres with a side of holiday cheer! Please join us for a casual celebration to raise a glass to this year's successes and connect with new and old friends.
Parking: Please park in the main parking area at Soldotna Creek Park and follow the luminaries back to the building. We will have greeters at the end of the driveway. There will be a drop-off/pick-up area at the front door. Handicap parking will be back near the building. Happy Holidays from all of us at Kenai Watershed Forum!

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April 18 & 19, 2013 • Watershed Symposium

The Kenai Peninsula Fish Habitat Partnership will be hosting a Watershed Symposium on April 17 and 18 at the Island and Oceans Visitor Center in Homer, Alaska.
Guest speakers, presentations and discussions on marine and freshwater habitats across the Kenai Peninsula Borough will be on the agenda. You don't want to miss this!

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May 16-19, 2013 • Kenai Birding Festival

Highlighting the natural wonders that draw thousands of birds and visitors to the Kenai Peninsula, the annual Kenai Birding Festival is designed for birders of all levels and interests. With guided hikes, river trips, presentations, children's activities, and self guided tours there is an opportunity for every interest and level! For more information, visit www.kenaiwatershed.org or find the festival on Facebook!

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June TBA, 2013 • Stream Watch Ambassador Orientation

Make a difference this summer: Become a Stream Watch Ambassador! Ambassadors provide a stewardship presence on the river by sharing information on ethical angling, bear safety and river health. Meet river enthusiasts from across the state, enjoy a volunteer campsite and make a difference by protecting local rivers. For more information contact StreamWatch@kenaiwatershed.org or (907) 398-4304.

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June 7, 8, 9, 2013 • Kenai River Festival

Let's Celebrate! Free, Family Fun for Everyone! The 23nd annual Kenai River Festival, June 7-9, grew out of the Kenai Watershed Forum's desire to provide a free, fun setting for the community to celebrate the river, that gives so much. Learn how to give back to the river keeping it healthy and productive for generations to come. Legendary festival highlights include 20 foot long magical Łuq'a the salmon, world famous pioneer salmon dinners, Run for the River 5K/10 mile race, free riverside entertainment and more. To learn more, visit www.kenaiwatershed.org.
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Home Is Where the Habitat Is

By Lisa Beranek, Stream Watch Coordinator

When asked what salmon need to survive, any 3rd grader worth their Pokemon trading cards will tell you water. Ask a fisheries biologist and expect to spend a few days going over the delicate dance of the entomologic world juxtaposed with the finer details of geomorphology. There are many factors to consider when discussing salmon habitat but somewhere in the middle there is a digestible answer: Fish need more than water. A lot more.

All Alaskan salmon are anadromous which means they spend a portion of their life cycle in fresh water and salt water. All species hatch from eggs in fresh water, migrate to salt water, and at some point return to the fresh water where they hatched to spawn and close the life cycle loop. In general, anadromous fish have a number of habitat needs since they live in a variety of areas, each area providing critical habitat features.

Salmon need cool, clean water to survive. In areas that salmon inhabit outside of Alaska, cool, clean waters are not as common but in Alaska cool waters are more abundant as many streams are glacially or spring fed. Cold water is important because of the amount of oxygen it can hold. The colder the water temperature, the more oxygen available to fish. While salmon can survive within an oxygen concentration range, they become stressed and less likely to survive outside of their optimal range. In addition to water temperature, water clarity plays a role in the quality of salmon habitat.

Turbidity or water clarity can impact both developing salmon and adult fish. If large amounts of sediment are suspended in spawning waters, the soil can settle out, blanketing eggs and smothering them before they are able to fully develop. Suspended soil in the water can also create issues for adult fish including gill damage, inability to successfully find food, unsuccessful migration and even mortality from increased water temperatures. The roots of streamside plants play a critical part in anchoring soil to prevent erosion while providing bank overhangs for salmon to stave off predators and rest in slow moving waters.

In addition to erosion prevention, plants play an important role in slowing fast moving waters. Salmon need gravel to successfully reproduce and each species has a preference as to gravel size. Streams naturally act like a conveyor belt for sediment and gravel. However when waters move quickly, gravel is moved downstream at a much quicker rate. Downed trees not only help slow streams, which allow sediment to settle out improving water clarity and sustaining gravel supplies, but in stream downed trees also provide areas for fish to find protection from predators both in and out of the water. Plants slow waters while providing a food source for aquatic bugs, which in turn provide fuel for salmon and their anadromous lifestyle.

Riverside plants are critical for healthy salmon habitat. Plants prevent erosion, provide protective areas and slow water for gravel recruitment.

Salmon Lingo

Anadromous: a classification of fish that spends a portion of its life cycle in both fresh water and salt water environments.

Erosion: loss of soil or rock by wind or water.

Habitat: the area in which a species is commonly found due to the area providing elements for critical biological needs (food source, protection, etc.) specific to that species.

Spawn: the salmon reproductive process of laying eggs and milt in a stream bottom nest or redd.

Species: a biological classification of living organisms. Example: Chinook salmon and Pink salmon are two different species.

As salmon make their way to and from the sea, protective areas (backchannels, downed trees, boulders) become more and more important as predators are aplenty. Birds, bears and humans are skilled predators that can end the migration, so too can a stream obstruction like an improperly fitted culvert. Culverts that are perched too high, are not large enough, or are set at an angle that is too steep can create fish passage barriers as fish migrate.

Just as the freshwater habitats of their youth and reproduction are critical for survival, so too are ocean and estuary conditions. Upon arrival in the estuary, salmon start to go through an intense change to prepare for life in salt water. The estuary is important in that it provides an ample food source and an area to hide while adapting to sea conditions. Each species of salmon spends a different amount of time in the estuary before migrating to the ocean; some spending months while others may stay for a year or more.

Once in the ocean, salmon still need cold water. Warming ocean conditions can result in changes in food supply, increased metabolism and increased predation. All of which increase stress levels in the fish and can lead to a decrease in survival. After spending 2 to 5 years in the ocean, depending on species, salmon make their way back to their spawning waters. On their return trip, habitat components like water temperature, water clarity, availability of protective areas and for some species, food supply will again play major roles in their survival as they make their way upstream to the spawning gravels of their natal streams.

Home is where the habitat is. Since salmon habitat varies throughout their life cycle from freshwater streams to ocean conditions, it is important to protect all of these habitats in order to ensure the continued health of salmon.

Plants, streamside or midstream, are important to fish habitat. Downed trees create slow water areas, become a food source for bugs and provide predator protection.

A Recent History of Cook Inlet Salmon

By Catherine Cassidy

One hundred and thirty years ago the first salmon cannery was built in Cook Inlet. A company from San Francisco chose a site at the mouth of the Kasilof River to construct a large facility for canning fish and housing, feeding and caring for all of their employees during the fishing season. That was in 1882 and the Kasilof cannery was one of only two that operated in Alaska that year.

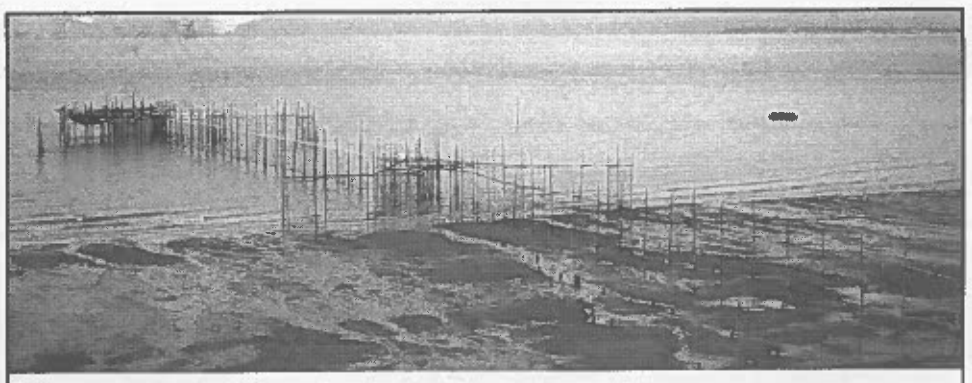

Photo 1 A Cook Inlet Salmon trap at low tide. Courtesy of Kasilof Regional Historical Assoc.: Petersen-Arness Collection.

It was very profitable - even with the high capital investment and the costs of hauling everything back and forth from San Francisco. Ten years later there were 37 canneries in Alaska (three in Cook Inlet), the market was glutted and the profits disappeared. Owners of 31 of the canneries negotiated a profit-sharing consolidation, mothballed most of the facilities, cut their production in half and went back to making money.

Harvesting, processing and selling salmon has always been a tough business. The runs of spawning fish can fluctuate wildly. The markets and the technologies change constantly. Lots of money has to be spent each season before the first fish shows up. The history shows a roller coaster of ups and downs, bankruptcies and new investment. But the salmon keep coming. Six hundred thousand sockeye salmon were harvested in Cook Inlet in 1900. From 1911 through the mid-1960s the annual sockeye harvest averaged over two million. Commercial King salmon catches in Cook Inlet from 1900 to 1960 averaged over 40,000 fish per year.

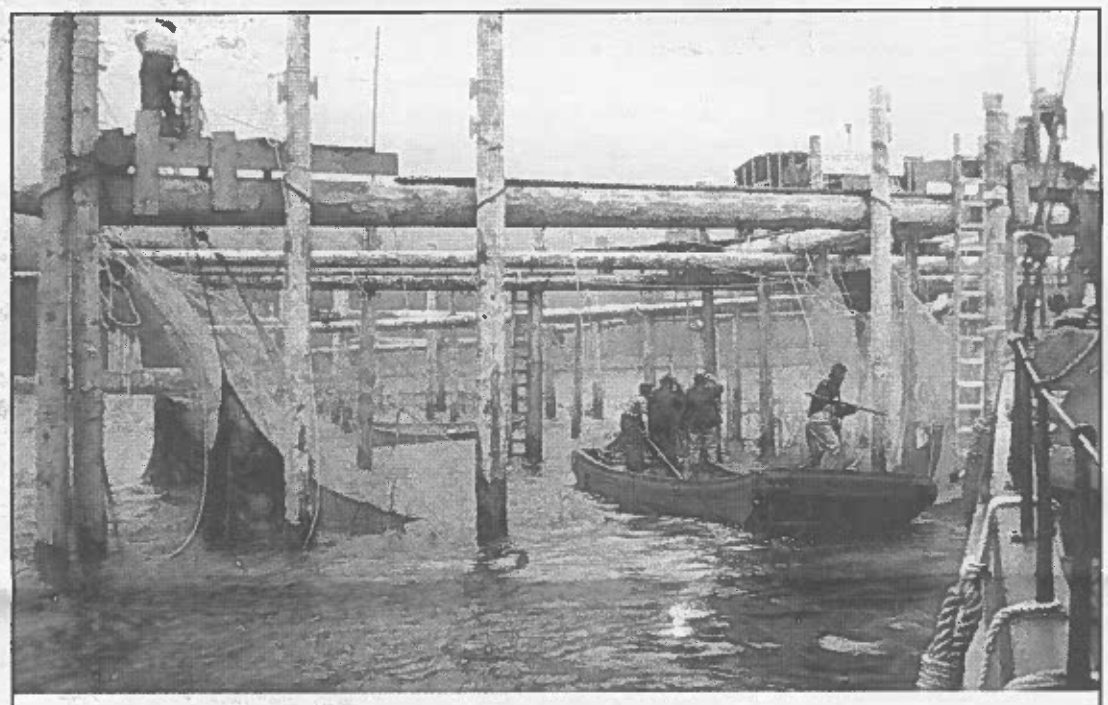

Photo 2 Preparing to transfer salmon out of the trap. Courtesy of KRHA: Johansen Collection.

The salmon fishery was under federal management during this time. They enacted basic conservation measures but it was a cumbersome process. Regulations had to be adopted six months prior to implementation. The regulators were back in Washington D.C. with little local knowledge and minimal enforcement capability.

One hundred and thirty years later the salmon are still coming but the how and who of harvesting and processing has changed dramatically. Until the 1950s most of the salmon in Cook Inlet were caught in fish traps. The traps were expensive to build and use and they required permits from the government. Almost all of them were owned and operated by seafood processing companies based outside of Alaska. The companies could afford federal lobbyists to guide legislation regarding fisheries regulations and Alaska Territorial policies in their favor. It is well documented that they obstructed the granting of statehood for Alaska in an effort to retain control of the salmon resource.

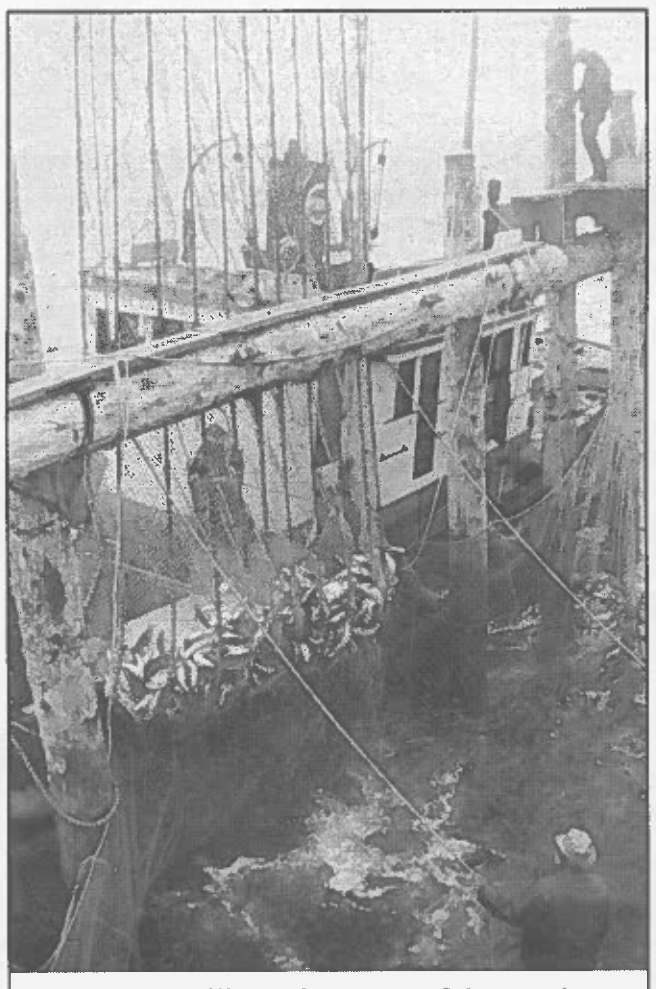

Photo 3 Brailing salmon out of the trap into the tender. Courtesy of KRHA: Johansen Collection.

Prior to WWII local residents fished their own "set gillnets" along the beaches of Cook Inlet - in between the giant fish traps. There were no trucks, no roads and fishermen were dependent on the cannery companies to pick up their catches and deliver their supplies to the fishing sites by boat. During the peak of the season the canneries would shut down the independent fishermen because the company-owned fish traps were catching all they needed.

After WWII some canneries without established fish trap locations started competing for the fish by encouraging fishermen to "drift gillnet" for salmon from boats. In 1947 four drift gillnetters fished in Cook Inlet. By 1951 there were over 500 drift boats fishing.

Alaskan's hard feelings toward the exploitation of the salmon resource by Outside companies centered on the fish traps. The brand-new State of Alaska moved swiftly to ban the commercial use of traps. Canneries were suddenly dependent on the individual fishermen for the harvest.

During the 1960s Alaska's population was growing rapidly. The number of salmon licenses issued by the state in this decade increased from 5,000 to 9,000. The state could see the handwriting on the wall. As more and more people get into any kind of fishing, average catches decline, total costs increase and fishing time has to shrink to prevent over-harvesting. Governor Bill Egan and the state legislature chose limited entry as the solution to the impending crisis. The state decided on an optimum number of permits for each salmon fishery and then distributed the new permits based on an individual's actual history in a particular fishery. This was enacted in 1973.

Limited entry was highly controversial and considered unfair in many quarters. But the program's designers made it as fair as they could to both protect the resource and keep it accessible to the people. Permits could only be held by an individual who had to be physically present while fishing. One fishery permit was allowed per person. Corporations and rich people couldn't scoop up masses of permits. The permits were made transferable so families could pass them on to younger generations and investments in fishing businesses could be recouped. Permits are bought and sold in the open market.

In Cook Inlet there are 571 drift permits and 737 setnet permits. The majority of the permit holders here are Alaska residents. They are all small business owners who purchase goods and services from other local businesses.

While the state was working out the limited entry program, Senator Ted Stevens was working at the federal level on the "Fishery Conservation and Management Act," passed in 1976. We now refer to this as the "Magnuson-Stevens Act." Among other things, this act expanded America's jurisdictional border from 12 miles to 200 miles off-shore. Foreign fishing fleets had been pillaging fish stocks, including salmon, in the Gulf of Alaska, North Pacific and Bering Sea for decades. Creating the 200 mile exclusive economic zone had a huge positive effect on salmon populations in Cook Inlet and the rest of Alaska.

Also during the 1970s the sportfishing boom and industry began in Cook Inlet. Since then, thirty more years of population growth and development have created the types of threats to our salmon that could put an end to the long run if we are not careful. Damage to spawning and rearing habitats, pollution, poor management and northern pike could eliminate a resource that has been industrially exploited, yet sustained, for 130 years.

Prioritizing Problematic ATV Stream Crossings

By Bill Garthwaite, KWF Environmental Specialist

The Kenai Peninsula and the watersheds that span the extent of its geography offer excellent opportunities for recreation as well as important migration and spawning habitat for anadromous fish species. Local economies on the Peninsula rely on recreation and tourism (including trail use), and especially salmon fishing. Although it is possible for these things to occur and coexist in harmony, some human activity can drastically affect the fragile ecosystems that spawning and juvenile fish rely on to grow, reproduce and survive. In particular, when high-traffic human trails, especially ATV trails, intersect with salmon streams, there is a large risk of degrading important salmon habitat and hurting fishery yields in the future.

Unstable exposed sediment where a frequently used ATV trail crosses a wetland and salmon stream corridor.

The Alaska Department of Fish and Game (ADF&G) currently maintains the Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes, which contains over 17,000 streams, rivers and lakes documented as being important habitat for some life stage of anadromous fishes. In general, crossing catalogued streams is prohibited unless allowed by a general or specific permit, because the physical act of driving through a stream can potentially affect sensitive life stages of fish (AS 16.05.871). General permits have been issued for a few common stream crossings around the Peninsula, and these permits contain requirements such as that ATVs may only cross perpendicular to the flow and only at the location specified, and that there shall be no removal of bank vegetation or filling of the streambed. However, there are many trails around the Peninsula and many (unpermitted) crossings of catalogued streams still occur. The question thus becomes how to start to identify and improve the crossings which are causing the most damage to anadromous fish habitat.

A close-up of boards piled in the stream to create a makeshift crossing.

Accordingly, with support from the Kenai Soil & Water Conservation District, KWF set out this summer to develop an efficient protocol for identifying and prioritizing stream crossings around the Peninsula most in need of restoration or repair and to test the protocol on a small scale so as to provide key guidance and recommendations for a future, larger-scale restoration program. Using GIS software, KWF staff members initially identified 22 potential salmon stream trail crossings where trail-like features visible in the imagery intersected with known, catalogued salmon streams. For the majority of these crossings, KWF staff visited the identified sites and took photographs, noting any issues associated with the trail crossing. For seven sites that were broadly representative of the full set, KWF staff conducted a detailed survey. The survey methodology was designed for identifying usage intensity, risk of erosion and sediment inputs to the stream, and any major differences between trail crossing sites and reference stretches of the stream.

The pallet and logs used at another crossing site likely help to reduce sediment erosion into the stream, but they also might negatively affect salmon passage.

Several recommendations have come to light as a result of this pilot project. First, for a larger-scale program of identifying and restoring problematic stream crossings, partnering with trail-related user groups will be essential. Identifying possible intersections using satellite imagery and GIS software has the potential to be under-inclusive and over-inclusive – identifying crossings that don't actually exist and missing some actual crossings. But, ATV and foot-trail user groups, as well as

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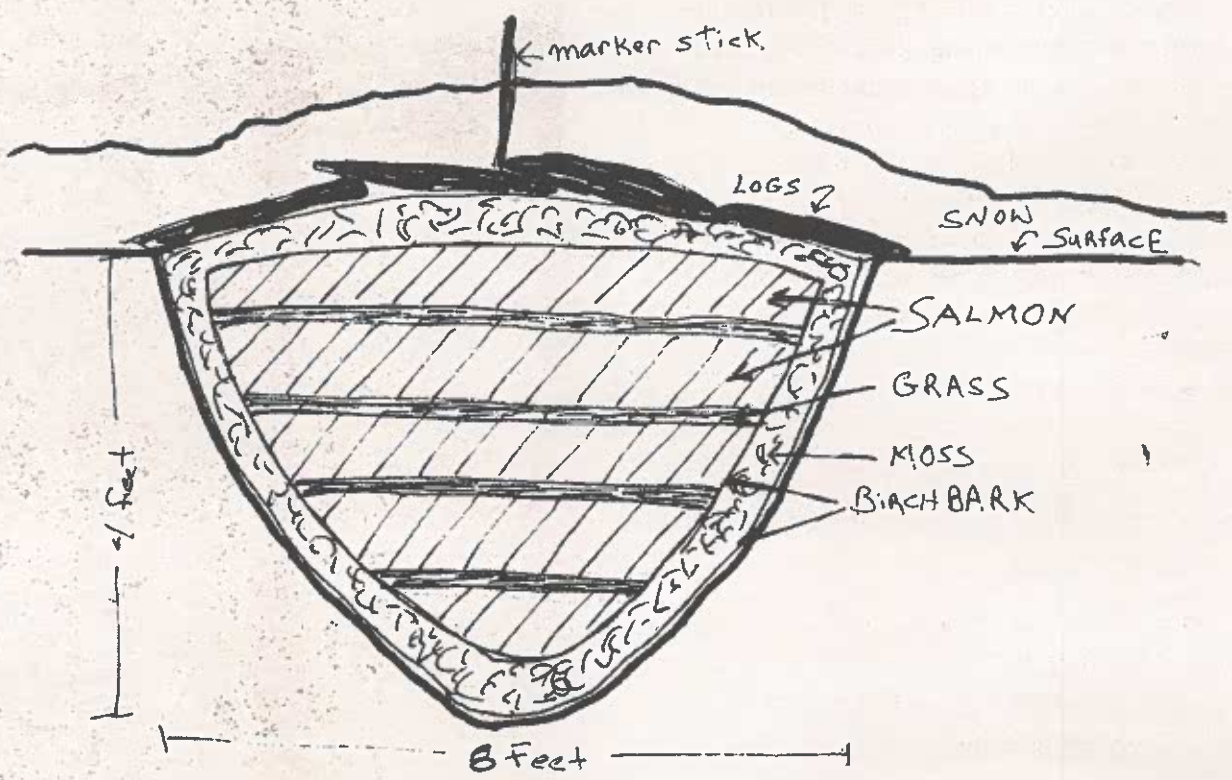
the people believe God sanctifies the water. Whereas human baptism removes original sin, baptism of the water symbolically removes sin in the form of human caused contamination. The sanctified water is then holy and used in blessing ceremonies and for healing. The Dena'ina word for such water is miłni qil beggesh, literally "water without impurity." The sanctified water is now ready for the return of the salmon.

Clean water is, of course, important to all peoples. But the reason pure water was, and is, sacred to the Dena'ina is because the lifeblood of the people, salmon, also depend on pure water.

The present archaeological record suggests people have been utilizing salmon in south-central Alaska for at least 4000 years. Salmon are not hard to catch but they are hard to store. A florescence of indigenous cultures in south-central Alaska occurred in A.D. 1000 when the Dena'ina invented a natural freezer system called ełnen tugh, literally "underground pit."



The Dena'ina invented a natural freezer system called ełnen tugh, literally "underground pit in A.D. 1000.

The elegantly simple structure was a conical pit three to four feet deep and about six feet across lined with insulating moss sandwiched between two layers of waterproofing birch bark. As freeze-up began in October a layer of fish was placed in the bottom to freeze. It was then covered with grass and another layer of fish placed in the pit to freeze. Days later, when the pit was full, it was covered with a birch-bark/moss layer and then logs. The birch-bark kept the insulating moss and fish dry and, once frozen, the fish would last throughout the winter until it was consumed. The stored fish would be described as yethidi heyi niiłtu meaning "then its for winter," a metaphor of Dena'ina life.

At the Dena'ina site at Slikok Creek (Shlatnukaq, "Little Creek Mouth") there are almost a hundred cold-storage pits among the remains of six houses. The houses were primarily for sleeping and cooking; the "living room" was outside, as it should be. We can estimate 6-10 people per house for a village population around 50. It was one of many villages on the Peninsula.

A rogue bear or wolverine would be a threat to the food supply, but the principle threat was bacteria. To reduce the problem of food rot the time between catching and freezing the fish was minimized. Therefore, the Dena'ina targeted the late-run silver salmon which spawn in lakes at the head of tributary creeks such as Slikok and were fished with a weir.

Digging and maintaining the cold storage pits and catching, processing, and placing the fish in the pits was labor intensive. The cooperative effort involved a village composed of families linked by marriage alliances called "clan helpers." The clan helpers owed their labor to the salmon storage system and, in return, received the substantial benefits that come with a stable, sustainable, healthy food supply.

Villages such as the one at Slikok Creek were sedentary. The people went on hunting, trapping, berry picking and other subsistence forays but always returned to the main village. The people were sedentary because they knew the fish would return to their home creek.

Three elements are necessary for this adaptive system to work: predictable salmon runs, frozen ground in winter, but no permafrost. Much of Alaska has (or had) predictable salmon runs, but few places have frozen ground but no permafrost. Southeast Alaska, Kodiak and the Aleutians have large salmon runs but lack frozen ground. Southwest Alaska also has large salmon runs but rock-hard permafrost limits digging extensive underground storage pits. Only in the Mulchatna, Lake Clark, Iliamna, Cook Inlet and middle Copper River areas are these conditions present: Dena'ina and Ahtna territory.

Our modern culture can take a lesson from the indigenous occupants of this place. To be sustainable we need to be explicit about what is most important in our lives and clean water and wild salmon are at the head of the list. Like the Dena'ina of old, the rivers and salmon need to be treated as though they are sacred.

Speaker Series Presented by
Kenai Watershed Forum
KPC Showcase

SALMON SCIENCE, STORIES & CELEBRATION

Fish, Family, Freedom, and Sacred Water
Thursday, November 1 · 7pm
Dr. Alan Boraas and Dr. Catherine Knott will discuss their recent work with the EPA on the cultural importance of salmon to the people of Bristol Bay. This is sure to be an interesting evening as we gain insight to the significance of salmon to the survival of people in western Alaska and reflect on the importance of salmon in our lives. *Details - Event is FREE and open to the public. Event will be held at the Kenai Peninsula College Commons.*

A Celebration of Salmon from all Perspectives
Wednesday, November 7 · 7pm
You won't want to miss this lively evening filled with stories, poems, songs, and much more from local fishing legends and educators. We'll travel down the rivers and out to the ocean celebrating the salmon. We'll be sharing smoked salmon appetizers and everyone is encouraged to bring a side dish to share. *Details - Event is FREE and open to the public. Folks are encouraged to bring a side dish to share. Event will be held at the Kenai Peninsula College Commons.*

Continue from Page 1 - Stream Watch

pounds of fishing line), Stream Watch volunteers discussed river protection concepts and activities with more than 4,500 people this summer.

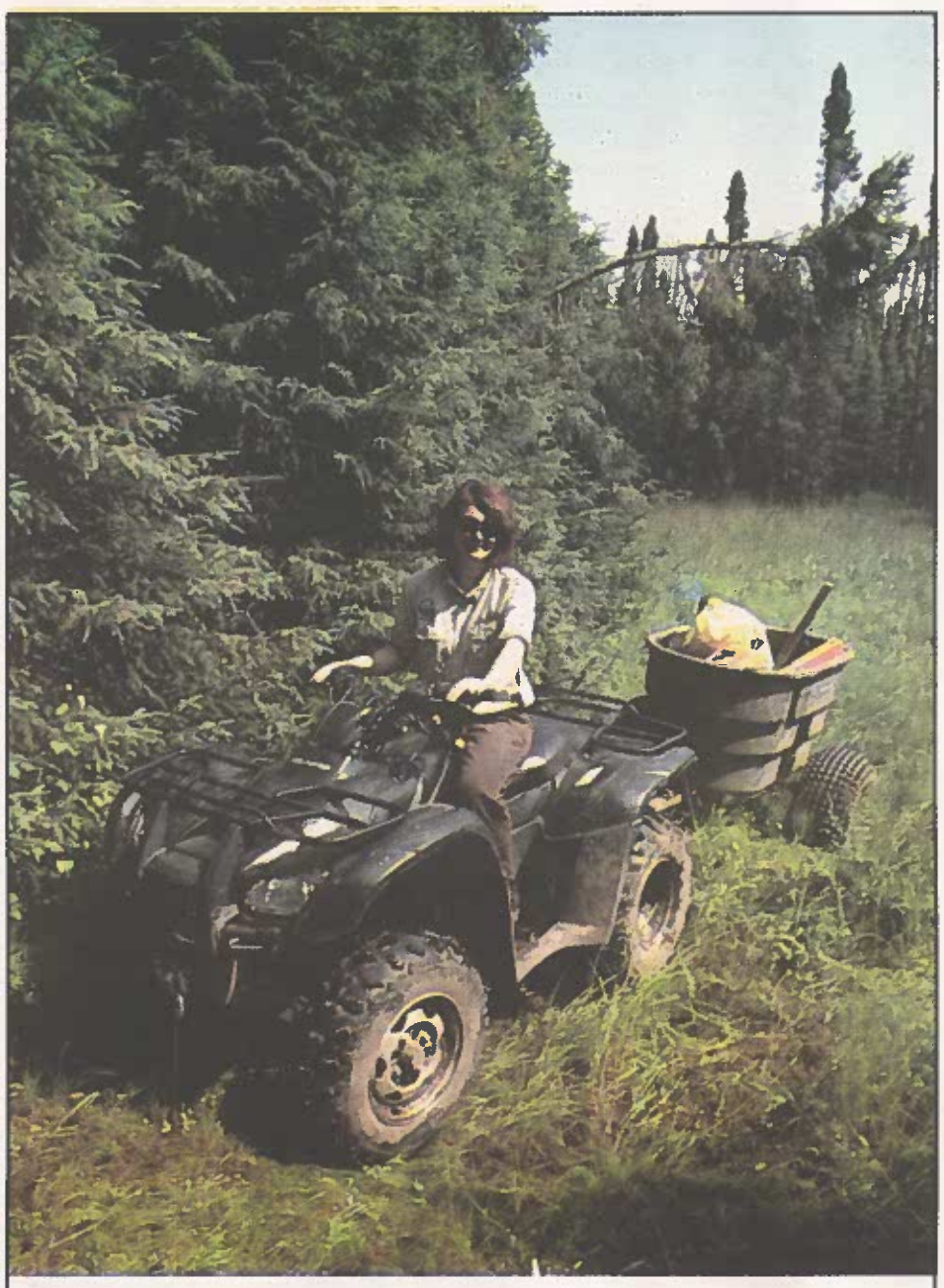
In addition to talking, the program also does a lot of walking, both figuratively and literally. The program completes a variety of projects each season that aim to protect fish habitat. A common sight along popular Kenai Peninsula rivers is the temporary, habitat protection fencing that volunteers install early in the summer season. Each summer, volunteers spend approximately 400 hours installing fencing to protect critical riverside plants from deadly footsteps and gear. The fencing provides a protective barrier for the plants so that their root systems can continue to anchor riverside soils, reducing erosion and the amount of dirt entering nearby waters. Soil in streams can greatly impact fish survival. Riverside plants also play an important role in in-stream habitat for young fish as they make their way to salt water and for adults by providing protective areas on their return to spawn. Please see the article "Home is Where the Habitat Is" in this newsletter for more detailed information on fish habitat.

During the 2012 season, Stream Watch volunteers went the distance and increased their walking by leaps and bounds! Through a partnership with the Kenai Peninsula Borough's Debris Removal Program, Stream Watch volunteers worked with program staff to remove three fish passage barriers on local streams.

A downed fence was effecting fish passage in Soldotna Creek for years. In May the fence was removed through the help of dedicated volunteers and an event sponsored by Trout Unlimited. After three short hours, the fence was removed and fish can now freely move up and down Soldotna Creek.

Stream Watch volunteers removing an old fence blocking salmon on Soldotna Creek.

On Nikiski's Leaf Creek, 45-minutes off of the road system, fish faced not one but two impediments--a transient culvert and a dilapidated, downed bridge. The loose, 5 foot diameter culvert was washed out, causing stream passage issues. Since the culvert was out of its intended position, downed tree limbs were getting hung up on the culvert creating a blockage. The abandoned culvert was removed using an ATV winch and some critical thinking.



Stream Watch coordinator, Lisa Beranek, removing debris from a site this summer.

Further upstream, a rotting wooden foot bridge had collapsed across the creek, creating a barrier for fish passage. To remove the bridge it was broken down into sections and pulled from the creek. Materials that would not readily decompose were hauled out in ATV trailers. Leaf Creek is now fish friendly.

These are just a few examples of ways that Stream Watch has partnered with local organizations and agencies to make a difference on the Kenai Peninsula. Local businesses are encouraged to partner with the program to facilitate projects, sponsor events and to volunteer time and supplies to complete on-the-ground projects. Stream Watch is proud to partner with agencies and organizations to increase cost effectiveness, restore fish habitat and protect local rivers for the future.

The Stream Watch program offers a variety of volunteer opportunities for all ages and abilities from one day experiences to seasonal opportunities. All of the training and supplies, including free volunteer campsites, are provided for a great day in the great outdoors. To learn more about the Stream Watch program and how you can make a difference on the Kenai Peninsula next summer, contact StreamWatch@kenaiwatershed.org or find us on Facebook!

Continued from Page 5 - ATV Crossings

local property owners, have substantial and useful knowledge about the current status of trails and oftentimes have an interest in working towards improved trails. Second, a single photograph of a stream crossing can provide a lot of valuable information necessary for determining the priority status of a given crossing. From a photograph, it is possible to glean rough characterizations of the trail's usage intensity, the risk for erosion and sediment release, and the presence of any structures or debris which might impede fish travel. In many cases, a photo is as useful as or even more useful than a detailed survey for differentiating between and prioritizing sites. Here again, a partnership with user groups may be immensely helpful if trail users are encouraged to submit photographs of stream crossings. Lastly, it is recommended that three of the sites surveyed in this pilot project be given high priority for immediate restoration and improvement.

For more information on issues related to stream crossings on the Kenai Peninsula, please contact Bill Garthwaite at bill@kenaiwatershed.org, or 1.907.260.5449, extension 1209.

KWF Membership
Help shape our Future

Thank you from the bottom of our hearts!

It is more important than ever to become engaged and help shape the future of our watersheds. Everyone that lives and plays on the Kenai Peninsula is responsible for its future. Membership in the Kenai Watershed Forum gives you an opportunity to help shape the future of our watersheds and celebrate KWF's ongoing commitment to healthy natural resources. Please participate and support KWF through our membership drive; become part of the largest community united by a common mission of "working together for healthy watersheds on the Kenai Peninsula."

We encourage you do your part and make a financial contribution to KWF. We continue to provide quality education, restoration, and research to the residents and visitors to the Kenai Peninsula and need your help to continue serving our communities.

$4500 - Clayton & Jean Brockel in memory of John C. Brockel

9/4/12 - 10/31/12

Benefactor $500
Scott Davis & Regina Daniels
Kenai Riverbend Resort -
Dohn Cho

$200-$250
Doug & Denise Newbould
Dave Keating
David & Kathy Wartinbee

River Steward $100
Northcountry Fair - Bob
Correia and Liz Schmitt
Dave & Jane Stein
David & Ginny Litchfield
Heather Floyd & Ben Hanson
Barbara & Kurt Olson
Jerry & Kathy Herring, CAEC
Gary & Judy Hinkle
Bill & Lois Nelson
Ken & Judy Marlow
Scott & Lela Rosin
Tim Taritas
Doug Schwab
Bill Stockwell
Joe Ray Skrha

Chinook $50
Toby & Laura Burke
Becky & Bill Hutchinson
Zonk! Productions - Larry
Csonka & Audrey Bradshaw
Frank Mullen
Kimberly & Avery Hansen
Larissa Phillips
Chris Degernes & Bill Shuster

Sockeye $25
Chet Vincent
Wayne & Margaret Jones
Jacqueline Barsis
Jim & Muriel Richardson
Cathy Williams
Burch Fisher & Lindsay Leach
Stuart Webb

Dear Friend,

My connection to KWF began as a freshman during the Caring for the Kenai competition when the Kenai Watershed Forum supported my project to protect birds on airport runways and helped me make my project a success. Throughout the years I have watched KWF support many other high school students who, like me, work hard to try to improve the environment on the Kenai Peninsula.

For the last two summers I have been fortunate to work for KWF alongside a group of wonderful people who are dedicated to protecting the peninsula's unique ecological treasures. KWF's mission is "working together for healthy watersheds on the Kenai Peninsula." KWF envisions a future where the Kenai Peninsula community works together effectively to protect and improve our watersheds, and we need your help!

Here are just a few of the accomplishments I've personally seen made possible through membership support:

- The Anchor River was restored to its original channel
- The award-winning Stream Watch Program doubled in size, allowing devoted volunteers to spend more than 1000 hours removing hundreds of pounds of litter and fishing line along with educating fishermen and visitors
- Invasive plant eradication has continued in key areas to protect salmon habitat
- The Kenai River Festival continues to be as educational, as it is fun, for the whole family

KWF's efforts to maintain and increase the health of the watersheds depend solely on the support of people like you! Everyone who lives and plays on the Kenai Peninsula is responsible for the health of our watersheds. Membership in the Kenai Watershed Forum allows you the opportunity to shape the future of our river and celebrate KWF's commitment to healthy natural resources. A contribution allows you to join a family of individuals committed to providing quality education, restoration, and research so that our watersheds thrive well into the future.

Thank you for allowing me the opportunity to share why I love the Kenai Watershed Forum. Please reflect on how important the river has been to you and your family throughout the years and consider becoming a member to ensure the future of our watersheds remains bright.

Best wishes for a happy and healthy year,

Olivia Pfeifer

Yes! I want to support KWF!

Here is your chance to give something back! Help support our mission through a financial contribution. Everyone who lives and plays on the Kenai Peninsula benefits from remarkable natural resources. Your membership gift gives you a role in shaping the future of the Kenai Peninsula watersheds. You will enjoy our newsletter, Currents, invitations to special events, and many other unique benefits.

Contact Information
Name: _____
Address: _____
City: _____ *State:* _____ *Zip:* _____
Phone: _____
Email: _____

Level
___ *$500 Benefactor*
___ *$100 River Steward*
___ *$50 Chinook*
___ *$25 Sockeye*
___ *$10 Smolt*
___ *$Other* _____

Payment
___ *Enclosed is my donation*
___ *Please charge my credit Card*

Credit Card Number _____ *Exp. Date* _____
Signature _____

Mail to: Kenai Watershed Forum
44129 Sterling Hwy • Soldotna, AK 99669

Federal Tax ID: 91-1829284

_____ *Please keep my contribution anonymous.*

Pick.Click.Give.

KWF received $4028 this year from generous folks giving a portion of their Alaska Permanent Fund Dividend through the Pick.Click.Give. program! A huge thanks goes out to these individuals who continue to make healthy watersheds a priority in their lives. Thank you!

Cheryl Anderson
David Anderson
Jennifer Bell
James Butler
Carolyn Cannava
Sam Carlson
Howard Ferren
Anna Fisher
Kyle Fisher
Phyllis Frates
Amadeo Gonzales
Michael Haggerty
Becky Hutchinson
Edward Ireland
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Pauline Strong
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Johanna West
Cathy Williams
Gary Williams
and 17 Anonymous Supporters!