



## COPPER RIVER WATERSHED PROJECT

COPPER RIVER

# Runner

FALL 2017



## FLOATING THROUGH THE COPPER RIVER WATERSHED

*Community Canoe outings hosted in Mentasta Lake and Slana*

BY SHAE BOWMAN, OPERATIONS MANAGER

As I floated in a canoe on the Slana River, I reflected on how amazing it was that I was three hundred or so miles from my home of Cordova, but I was still in the same watershed! Even though there is no ocean, the trees are a different species, and I don't recognize the fungi in the forest, there is still one thing that I know and recognize . . . the salmon, and this thought makes me feel at home. Salmon that were at the mouth of the Copper River this spring could be the same salmon that are swimming in the river I am floating on right now.

This summer, we hosted two days of recreational canoeing and watershed-themed activities at Mentasta Lake and the Slana River.

In Mentasta, approximately 40 youth and elders attended the community canoe day. The day began by getting everyone out in a canoe to explore Mentasta Lake from the surface. After a delicious BBQ lunch, the youth were invited to don chest waders, become citizen scientists, and investigate what was living beneath the surface of the water. The citizen scientists were excited to discover a few longnose suckers in the minnow traps that were set the night before. They also recorded data about the stream including temperature, pH, width and depth

of the stream, and streambed composition. We all enjoyed observing the exciting number of salmon spawning in Fish Creek, a reminder of the intact watershed we live in that allowed those salmon to travel from the Gulf of Alaska all the way to their place of hatching.

The following day, residents of Slana and the surrounding communities met to float the Slana River. As we prepared to launch the canoes, Ahtna Elder Wilson Justin told stories about how the Copper River and its tributaries connected the communities of the Ahtna ancestors. The fastest way to send a message to another community was through people traveling on the river. Jack Gustafson, a longtime Slana resident, reflected that he knows his region of the watershed very well, however many communities are very isolated and he rarely connects with them personally, "but we are all connected by the Copper River and it is all about maintaining that connection." One way to maintain that connection is to ensure that the Copper River watershed thrives as an intact watershed for many generations to come.

Along the way, we stopped for a picnic lunch. While eating a delicious lunch purchased from the grocery store, I was reminded of what Elder Wilson Justin said about the Copper River and the surrounding land serving as the only "shopping center" for the Ahtna ancestors. The salmon from the Copper River are an important food source for people and they also provide food and nourishment ... [continue next page](#)

### CRWP MISSION

*The CRWP promotes a salmon-rich, intact watershed and culturally diverse communities by forming partnerships for watershed-scale planning and projects.*



... continued

for all the other plants, animals, and fungi that live in the surrounding land. Today residents of the Copper River watershed maintain their connection to the land and to the generations that preceded them by harvesting and preparing the food that the watershed provides.

Both canoe days were full of fun and adventure getting to know and love the Copper River watershed a little more. CRWP would like to thank WISE, Mentasta Tribal Council, Bureau of Land Management Glennallen Field Office, Huck Hobbit's Homestead and everyone who joined us for making these days so enjoyable.

## LETTER FROM EXECUTIVE DIRECTOR

Dear friends,

When I walk the dogs in the morning now, I wear a headlamp. Our never-ending Alaskan summer days are behind us, and thoughts on dark fall and winter mornings easily run to images of a trip to Hawaii (a 5 hour plane flight from Alaska, about the same as it takes us to get anywhere east of Seattle).

Hawaii comes to mind for other reasons too. Here in Alaska, we're facing the greatest challenge of our time, climate change. Permafrost is thawing, pack ice isn't forming, and glaciers are retreating. What does this mean for salmon, which support our subsistence, sport-fishing, and commercial fishing economies in the Copper River watershed? What does it mean for wildlife such as moose and caribou on which many households depend for food?

Wait, how does this come back to Hawaii? What it really comes back to is "history begins with geography." I didn't hear this phrase until I was in college, but it became the dominant framework for me as soon as I absorbed it. For traditional Hawaiians, geography governed how they managed their lands, following a system of land division by chiefs into wedge-shaped sections – ahupua'a -- that ran from mountain ridgelines to salt water: "[F]ollowing the natural boundaries of the watershed. . . [e]ach ahupua'a contained the resources the human community needed, from fish and salt, to fertile land for farming taro or sweet potato, to koa and other trees growing in upslope areas. Villagers from the coast traded fish for other foods or for wood to build canoes and houses" ([hawaiianhistory.org](http://hawaiianhistory.org)).

For us here in the Copper River drainage, we have an ahupua'a of sorts: the Copper River watershed is an intact corridor for fish and wildlife, and the communities that make use of those resources, extending from 16,000' peaks to tidewater. As our Copper River Stewardship high school students experience on their watershed exploration trips, the river travels from a dry, interior basin, cuts a canyon through the Chugach Mountains, and drains out to the Gulf of Alaska on the edge of a dripping coastal rainforest.

The Copper River's integrity, its wholeness as a connected watershed system, is what will help it adapt to climate change. We are dedicated to ensuring that fish and wildlife can continue to be able to move up and down stream as they adapt.

Aloha from the Copper River watershed,

*Kristin Carpenter*



### CRWP STAFF

Kristin Carpenter, *Executive Director*  
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Chantel Adelfio, *Invasive Plants Program Manager*  
Shae Bowman, *Operations Manager*  
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# CLASSROOM CURRENTS

STUDENTS FROM THE WATERSHED, IMMERSED

"IN EVERY WALK WITH NATURE ONE RECEIVES  
FAR MORE THAN HE SEEKS." -JOHN MUIR

WITH MUIR'S WORDS AS INSPIRATION, CRWP expanded its field-based explorations to two additional schools in the Copper River watershed, Mentasta Lake and Slana, with the goal of getting more youth from the region literally immersed in their learning. We believe that by stepping into chest waders and wading into local streams, students become inspired learners, more connected to place, and that these positive experiences outside the classroom can have life-long impacts for students.

While it's too soon to track longer term outcomes from our recent field trip participants, feedback from Liz Fabian, a Mentasta Lake teacher, speaks to the value of these sorts of field-based programs for students: "I could see how engaged the kids were when measuring with a purpose and digging through the sediment to find bugs."

Ms. Fabian also explained how the positive impact of field-based programming extends beyond the obvious and direct science lessons: "... throughout the year, we will be able to connect many concepts to the experience. For example, we were reading about caves and came across a word with the prefix micro-, so I reminded them about micro vs. macro when we were looking for macro-invertebrates."

Field trips can provide context for vocabulary, patterns, relationships, analysis, interpretation, calculation and many other classroom lessons. Partners like CRWP are crucial to helping make these sorts of field-based experiences happen. Ms. Fabian added, "the field trip was excellent because your organization was able to provide all the equipment and gear needed for students to get out in the field. We have a very limited amount of scientific equipment and honestly for me to find the time to research and organize the lessons we did out in the field, it never would have happened." Wrangell Institute for Science and Environment (WISE), another frequent outdoor education partner, also provided staff to help lead these outings.

CRWP intends to visit these schools again in May to continue outdoor explorations with students. Our hope is that by continuing to take the youth of the watershed into nature, they will continue to receive far more than the direct lessons that we teach them. We hope they will be awed, inspired, and form deep connections with the watershed that sustains them and connects us, upriver and down.



When students were asked what they liked about the field trip, they referenced educational components like "catching the different kind of bugs, especially seeing the leeches" and "testing the dissolved oxygen."



Students loved walking in the shoes of scientists ... literally, as one student said, the best part of the field trip was "putting on waders and walking in the water."



**THANKS** to the generous support of the BLM/Glennallen Field Office and the Copper Valley Electric Association Community Foundation that allowed for these new programs. Additional watershed education patrons include Alyeska Pipeline Service Company, Copper River Seafoods, Cordova Telephone Cooperative, Cordova Wireless Communications, Currant Ridge Cabins, Trident Seafoods, Wilson Construction, and individual contributors.



## giving from the WATERSHED

With the holidays not far around the corner, we thought we'd share some ideas for holiday gift giving from businesses that support the Copper River Watershed Project!

Drifters  
Fish



**DRIFTERS FISH** is the husband and wife team Nelly and Michael Hand. The Hands have been fishing together for four years, and started their own “community supported fishery” business to be able to supply high quality, sustainably caught salmon directly to consumers. They give back 1% of their annual sales to support the CRWP’s salmon habitat and watershed education programs because “Protecting and advocating for the wild Watershed where our fish return is important to us.”

[driftersfish.com](http://driftersfish.com)



### COPPER RIVER SEAFOODS

is today the largest Alaska-owned seafood processor in the state of Alaska. Copper River Seafoods supports the CRWP by donating salmon to our community events, contributing directly to our watershed education programs, and sharing 8% of proceeds from seafoods sales directed to CRS by the following link on our website:

[copperriver.org](http://copperriver.org) > [about us](#) > [buy fish](#)



**ALASKA GLACIAL MUD** is a Cordova-born business offering pure glacier-derived natural and organic spa therapy products for face and body, including purifying mineral mud masks and exfoliating mud soap bars using Alaska glacier mineral mud. Visit [alaskaglacialmud.com](http://alaskaglacialmud.com) for product bundles and gift sets. Alaska Glacial Mud Co. shares 10% of its annual proceeds with local organizations that work for maintaining wild salmon habitat, including the CRWP, and often donates mud products for prizes and silent auctions at our community events.

## CB-CWMA ANNUAL WEED SMACKDOWN

BY CHANTEL ADELFO, *Invasive Plants Program Manager*

Partners of the Copper Basin Cooperative Weed Management Area (CB-CWMA) have been joining forces to control invasive plants in the basin since 2011. Our main target is the invasive biennial, white sweetclover. White sweetclover has the potential to invade gravel bars and stream banks of large glacial rivers. Once this invasive has become established it can change sedimentation rates of rivers, leading to shifts in stream habitats and flow. The Copper River Watershed Project works with partners and the CB-CWMA to monitor and treat white sweetclover. Our goal is to prevent the establishment of white sweetclover on the Copper River and decrease the spread of this invasive plant in the Copper Basin.

In efforts to prevent the establishment and dispersal of white sweetclover in Copper Basin rivers, the CB-CWMA held its fifth Annual Weed Smackdown near the Gakona River. A total of 18 volunteers pulled 1,839 pounds of white sweetclover from the Gakona River bridge crossing! The CB-CWMA is thankful for all the volunteers that make large treatment efforts possible!

BEFORE

AFTER





# PERMAFROST ACROSS ALASKA: THE HIDDEN LAYER AND ITS VISIBLE CHANGES

BY CHANTEL ADELFIGIO, *Invasive Plants Program Manager*

NATIVE ALASKANS HAVE WITNESSED climate change effects for decades. They talk about it through their seasonal observations, and memories. Wilson Justin, an Ahtna Native from Nabesna and Chistochina, remembers the summer he was six, in the early 50s, at his family's cabins in Nabesna: "I could not see downriver because of the trees and the creaking alders, but I could see upriver and it was a child's forever right from the front of the cabin to the top of the sparkling glacier. It was there, it was always there" (Alaska Park Science, June, 2014).

But later, just after high school in 1968: "The first time I could look up the river again . . . I could see a lot of brush and new growth along the airfield. I could also see clearly the glacier was crumbling, and with it all of the sounds of youth and freedom. The why of being left behind was never answered and never spoken. No one said anything about the glacier eating itself up finally to seep into the rocks under its once mighty wings."

The average temperature in Alaska has increased about 3° F over the past 60 years and is projected to increase an additional 2 - 4° F by mid-century (U.S. Global Change Research Program, 2014). Increasing temperatures are predicted to increase stream and lake temperatures dramatically, lengthen growing seasons, shorten the duration of ice cover, and increase melting permafrost. Although it's hidden, the shrinking permafrost, which covers roughly 80% of Alaska, is having very visible effects.

Permafrost is earth that is not covered with ice, but contains a mixture of soil, rocks, and organic matter that has remained frozen for at least two years. The "active" layer of soil above permafrost undergoes seasonal freezing and thawing. Due to climate change, and the associated higher than average temperatures, active layers across the northern hemisphere have been expanding in depth. Ranging from a few centimeters to a few meters, the active layer thickness influences plant rooting depth, water movement, and the quantity of organic matter exposed to above-freezing temperatures.

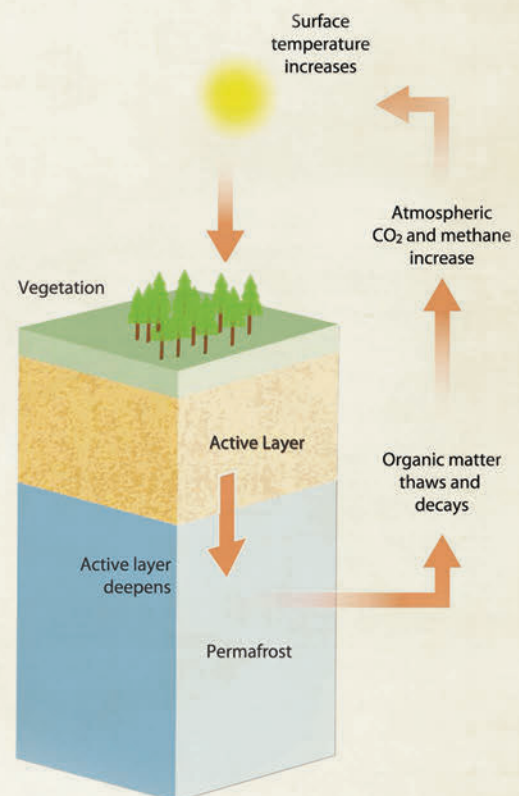
When permafrost thaws, the active layer grows deeper and more organic matter becomes available to microbes as food. This decomposition of the previously frozen organic matter releases carbon dioxide into

the atmosphere. Researchers estimate that the world's permafrost may contain three times the amount of carbon that is presently in the entire atmosphere. Melting permafrost will thus be a major source of greenhouse gases over the next century. This means that as temperatures continue to warm (largely due to the increase of greenhouse gases from burning fossil fuels) permafrost will continue to thaw, releasing large quantities of carbon into the atmosphere, accelerating changes to the climate.

What changes have Alaskans noticed? As permafrost thaws, cavernous pits form where water that was previously frozen drains from the soil. This leads to changes in water table and lake levels, collapsing roads and buildings, and increased maintenance costs as water and sewer pipes shift. Permafrost degradation can also affect people that live off the grid. Areas that previously supported ice cellars (a natural freezer dug directly into permafrost) have started to thaw and no longer provide proper food storage. Operators of the Trans-Alaska Pipeline System (TAPS) are looking at ways to reinforce footings under the pipeline's vertical support members, which have rested on permafrost for decades.

As long as temperatures continue to rise, the active layer will continue to increase in depth. It is important to begin a community dialog, record observations, and seek input on possible adaptations.

Learn more at: <https://seagrant.uaf.edu/map/climate/>.



Source: UNEP report *Policy Implications of Warming Permafrost*

## RIDGELINES: AROUND THE WATERSHED



Paul Scannell Photography

### TREE SWALLOWS: WINDOWS INTO CHANGING ENVIRONMENTS

Why do some tree swallows, and other birds, make the long journey to McCarthy when closer breeding sites are available? When conditions are good, birds breeding at high latitudes have access to an enormous quantity of flying insects – as anyone who has spent a summer in McCarthy can attest! This abundance of insects, combined with the longer days that let them continue foraging long after southern birds have retired for the night, mean that Alaskan breeding birds have access to more food than lower-latitude birds. However, McCarthy birds also have to contend with more extreme and more variable weather than their southern counterparts. Researchers from four universities are studying local tree swallows in the McCarthy, Alaska area to learn what helps birds who breed at the edge of their habitat range, in extreme conditions, cope with environmental challenges. Wrangell Mountains Center staff monitored over 50 nest boxes in McCarthy, Alaska from May – July in 2016 –

2017. Researchers and volunteers banded parents who settled in these boxes with uniquely numbered tags, and used recording equipment to study how often each parent returned to the nest to care for their young under different conditions. Data showed that 2016 was a very productive year for McCarthy swallows: while 50 – 80% of tree swallow nests typically contain young that survive to independence, over 90% of swallow nests in McCarthy in 2016 had young who fledged successfully. To compare how swallows cope with stress across their broad geographic range, data are being collected on swallow populations from Alaska to Tennessee. “Understanding what makes some individuals better able to cope with stressors than others has important implications for predicting how different species will respond to changing environments” explains Dr. Maren Vitousek. *Contact: Maren Vitousek, Asst. Professor, Ecology and Evolutionary Biology, Cornell University, (607)254-4529, vitousek.weebly.com.*

### AHTNA CORPORATION AND STATE OF ALASKA REACH SETTLEMENT ON KOTSINA RIVER ACCESS'

In July 2017, the Ahtna Corporation and the State of Alaska agreed to terms that provide both parties access to lands underlying and adjacent to the Kotsina River. This area has been in dispute because of its popularity as a site for operating fish wheels on the Copper River, a method of subsistence fishing that is available to all Alaska state residents.

While the Native corporation originally filed a lawsuit against the State in 2008 challenging State access to a gravel site and public camping and boat launch uses on the Kotsina River delta, the State asserted ownership of lands underlying the Kotsina River because it is navigable. Ahtna and the State now agree that the Kotsina River is navigable from its confluence with the Copper River, and extending eight river miles upstream.

Continued access to the fish wheels is agreed to on State land. Ahtna will grant DOT easements to build and maintain dikes to protect the right-of-way, material site and public access. The State Department of Natural Resources will grant Ahtna two easements to provide access to Ahtna property on the other side of the river and to build dikes to protect its access routes. *As reported by Margaret Bauman, mbauman@thecordovatimes.com, August 4, 2017.*



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WATERSHED PROJECT

watershed  
(wa'ter-shed)

the region or area drained  
by a river or stream:  
all the land that carries  
rain to the same river system



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Sarah Robinson & Chris Arp  
April Horton  
Heidi Sheldon  
Dick & Sue Shellhorn  
Dave Siegal  
Melissa Sikes  
Trey Simmons  
Robert & Chrissy Skorkowsky  
Jed Smith  
Dana & Anita Smyke  
Jessica Speed  
Kathryn Stoltzfus  
Tazlina River Trading Post  
Tolsona Lake Resort  
Doyle & Norma Traw  
Mark Vail  
David & Chris VanCleve  
Mae Vansant  
Linda & Henry Wall  
Gay & David Wellman  
Amanda & James Wiese  
John Page Williams

## SUBSISTENCE LIVING, \$10+

Dave & Sarah Abbott  
Carla Bloomquist  
Jake Borst  
Barb & Bill Bryson  
Elizabeth Collins  
Matt & Judith Lorenz  
Nick Docken & Lisa Kennedy  
Rachel Ertz  
Melissa & Jason Gabrielson  
Heidi Hatcher  
Jim Jachetta  
Kathleen & Chris Jones  
Jared and Vivian Kennedy  
Marita Kleissler  
Kitty LaBounty  
Tom Lanini  
Mikie McHone  
Henry & Marcia Milette  
Larey & Lisa Miyatake  
Andrew Morin  
John Myers  
Paul & Mary Newcome  
Ruby & Cody Oatman  
Jim & Charleen Pitta  
Bob Ralphs  
Pete Rand  
Robert Scribner  
Matt & Sherry Shaw  
Tim Skiba  
Theresa Tanner  
Lori & Rob Van Sleet  
Marissa Wilson



P.O. BOX 1560, CORDOVA, ALASKA 99574  
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# Newsletter

## FALL 2017

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inside  
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Field education programs

Weed smackdown

Holiday gift ideas

Permafrost across Alaska



TO

## WHY WE SUPPORT CRWP

**JEFF & MICHELLE QUALLS**  
McKINNEY, TEXAS



THROUGH A COLLABORATION with the Copper River/Prince William Sound Marketing Association, Guest Chef Jeff Qualls and his wife Michelle visited Cordova to learn about the Copper River fishery. Chefs are influencers by way of what they offer on their menus, and inviting them to get to know the fishermen and the community behind the salmon they serve is a way of explaining the Copper River's sustainable fishing management and practices to chefs around the country.



Chef Jeff, his wife Michelle, and some kitchen volunteers prepared a grand meal of miso roasted salmon, wild mushroom & green onion bread pudding, and collard greens and roasted carrots with pork bellies for 120 guests for the CRWP's Wild Harvest Feast this past September. Jeff and Michelle own *rye.craft food and drink* in McKinney, Texas ([ryemckinney.com](http://ryemckinney.com)).

*"Copper River Salmon and the Copper River Watershed Project were an easy fit for us. They share a lot of our core values about sustainability, knowing where your food comes from, and making a positive impact on the local communities in which we both live and work."*