



COPPER RIVER
WATERSHED PROJECT

COPPER RIVER

Runner

SPRING 2019



Photos by Chelsea Haisman, CDFU Executive Director

COPPER RIVER SALMON HARVESTERS COME TOGETHER FOR A DAY

BY KRISTIN CARPENTER, EXECUTIVE DIRECTOR

What happens when you get Copper River subsistence fish wheel operators, sportfishing guides, dipnetters and commercial drift gillnetters in one room together? I asked this diverse group to meet and take some time to hear each other's concerns because in my work throughout the watershed, I hear lots of finger-pointing directed among user groups about who is taking whose fish. But this habit of blaming others is distracting, taking *all* salmon harvesters' attention away from the challenges facing the entire Copper River system.

The second Copper River Salmon Harvesters Roundtable was held in Tazlina in February, with two dozen participants. Each salmon harvest group was represented, as well as state and federal agencies and regional organizations. Funding for people to travel and meet in person came from Patagonia and from the Copper River/Prince William Sound Marketing Association (CR/PWS MA), which has funded other data collection that contributes to fisheries management on the Copper River.

Salmon harvesters, fish biologists and other stakeholders spent the day talking about what they want people to know about the Copper River, what changes they've seen in their fisheries over their fishing seasons, and what their most pressing questions are about what's happening on the river.

Stakeholders want people to know that the Copper River “connects us to the ocean,” that “it’s actually so many different stocks,” that “it’s a dangerous place,” and that “it’s a sacred place that is critical to the culture of those who call it home.” Some of the trends observed by fisheries managers, commercial fishermen, sportfishing guides, and fish wheel users over time include: increase in uncertainty of forecasts for sockeye, dramatic decreases in the time and area fished commercially, greater river level fluctuations (used to be that when it rained, water level dropped because temperatures were cooler, now it’s the opposite), and smaller fish size (sockeyes, not necessarily Chinook). Last year’s weak sockeye salmon returns certainly caught people’s attention. Chelsea Haisman of Cordova District Fishermen United observed “while the past several runs have been weaker in comparison, we’ve also had record sockeye runs in the past ten years, and upriver escapement was the highest it’s ever been in 2013 and 2014.”

We also had a good exchange with Alaska Department of Fish & Game biologists about their “portfolio” management approach: the strength of the Copper River system is its many different sockeye salmon stocks from a range of tributaries (although it’s not practical to have an escapement or spawning goal for each Copper River tributary because there are so many). We also learned that ADF&G forecasting models don’t account for marine survival right now because of a lack of data.

At the end of the day, participants reflected on the value of coming together in a non-regulatory setting. Dennis Zadra, President of the CR/PWS MA, commented “I

Continued from page 1

thought it was so valuable, I'd never been up there and it was great to be in the Copper Basin and meet face to face with other salmon fishermen, especially in a non-confrontational setting."

LETTER FROM CRWP DIRECTOR

Dear friends,

As you know from reading these pages and hearing about our programs, I make a lot of decisions with regard to the direction and health of the Copper River Watershed Project as an organization. Last fall I made a really big decision, to step aside as its Executive Director after 20 years with the organization.

This job has been the greatest privilege for me, truly. I came to it by happenstance, really, having landed in Cordova on a summer Alaska vacation (in between jobs in the lower 48) and getting involved in the sustainable development workshops held by CRWP founder Riki Ott in the late 90s. The ideas being talked about were right in line with my community and economic development background. I knew nothing about salmon and their fundamental significance to the coastal ecosystems and economies, but there must be some inherited imprint from my late fishing-obsessed father that led me to this work.

For the next six months, CRWP Board of Directors and I will be working to ensure that this transition to a new executive director is as smooth and as supported as possible. We're planning for 6 – 8 weeks of overlap in late summer between the new executive director and myself to allow for introducing a new leader to our partners, and a thorough going-over of our programs and our fundraising practices. I hope to continue to be involved in this critical work as a CRWP Board Member myself in the next election cycle if the Board of Directors and voting members agree.

"I really didn't want to be here, I've been involved with the Board of Fish meetings in the past and it's contentious, but I always knew that this is what was needed and it's very encouraging to me" said Mark Hem of Hem Charters, a dipnet fishing transporter on the Copper River.



Visiting McNeil River Bear Sanctuary with friend Thea Thomas, August 2018.

I'm not going anywhere, not leaving Cordova, and don't have the next step lined up (at least, not beyond an extended road trip with my husband). I took this decision because all the nonprofit leadership guidance will tell you that 20 years is a long time for one person to be leading an organization, and I was afraid of becoming one of those teaching case studies that talk about how calcified an organization has become. I made this decision because I could make it without jeopardizing the organization: we have an outstanding, committed staff who are always on the lookout for good projects and opportunities to work with partners. Our Board of Directors works hard to be strategic about safeguarding the Copper River watershed and to be good stewards of the CRWP's resources.

And I am counting on you, our key supporters and partners, to sustain your commitment to the abundant Copper River watershed, to wild salmon and the cold, clean streams they depend on, to keep this place the thriving natural system that it is today.

Thank you for the privilege of your support,

Kristin

CRWP BOARD OF DIRECTORS

Robin Mayo, *Board Chair, Kenny Lake*
Pete Mickelson, *Vice President, Cordova*
Jackie McMahan, *Secretary, Gakona*
Matt Piche, *Treasurer, Cordova*

Kendra Harder, *Copper Center*
Nik Merlino, *McCarthy*
Matt Piche, *Cordova*
Amanda Wiese, *Cordova*

CRWP STAFF

Kristin Carpenter, *Executive Director*
Kate Morse, *Program Director*
Chantel Adelfio, *Invasive Plants Coordinator*
Shae Bowman, *Operations Manager*



CLASSROOM CURRENTS

FISH TO SCHOOLS: Building a watershed community over a shared meal

BY KATE MORSE, Program Director

For thousands of years, people in the Copper River watershed have come together to harvest, process and consume salmon. This experience deepens relationships with the natural resource as well as with those among whom the experience is shared. Coming together for a meal can unite people, a time for face to face talking and learning from each other.

Since 2014, the Copper River Watershed Project has partnered with Cordova School District and Cordova District Fishermen United (CDFU) to host an annual salmon luncheon. Community members representing a broad range of jobs directly and indirectly connected to the salmon fishery visit the 5th grade classroom where they are interviewed by students interested in learning more about their job, how it is connected to salmon, and how their job would be different if there were no more Copper River salmon. After students introduce their guests and share what they learned about their jobs with the rest of the class, they head to the lunchroom for a delicious salmon lunch.

Gretchen Carpenter, an elementary school teacher in Cordova, shared “What students gain from the luncheon is a deeper appreciation for the salmon industry and a better understanding of the wide-reaching impact it has on every member of our community. Providing students with an authentic audience to answer the age-old question, “Why am I learning this?” not only supplies them with valuable information, but also communication skills that will be useful for them in the future.”

The salmon drawing community members and students together to share a meal has been generously donated by fishermen of the Copper River/Prince William Sound commercial gillnet fleet and processed free of charge by local processors. The salmon donated during CDFU’s annual Fish to School donation drive not only provides for this luncheon but also enables our students to enjoy locally sourced food on a weekly basis throughout the year.

CDFU received an overwhelming response in the 2018 season from generous commercial fishermen wanting to donate local food to feed local students. With a surplus of donated Prince William Sound salmon, we saw an opportunity to expand this community-building experience to the entire watershed. We are working with partners to coordinate up to five additional salmon luncheons in the Copper Basin, coordinating with the Copper River School District and partners at the Copper River Native Association, Wrangell St. Elias National Park, and WISE. We hope to bring together students, elders, and community members for a shared meal and learning experiences in May 2019, allowing everyone to leave with a greater connection to each other and the role salmon has played in our communities for generations.



CORDOVA 5TH GRADERS INTERVIEW GUESTS FROM THE COMMUNITY TO LEARN MORE ABOUT HOW THEIR JOBS ARE CONNECTED TO SALMON



ELODEA AT THE VALDEZ FLY-IN AND AIR SHOW

Elodea was Alaska's first freshwater aquatic invasive plant. Outside of its native range, Elodea impedes navigability of waterbodies, decreases dissolved oxygen, increases sediment accumulation, displaces native aquatic plants, and degrades fish habitat. Efforts to stop the spread of Elodea and eradicate established populations are being made throughout the state.

For the past four years, the Copper River Watershed Project has been hosting an informational Elodea booth at the Valdez Fly-In and Air Show, the premier bush flying event in Alaska. Most attendees are surprised to hear a vendor talking about an aquatic invasive plant at an air show. And that's why the two questions I hear the most are:

1. **“WHAT DOES IT LOOK LIKE?”** Elodea grows in large mats. A single stem of Elodea contains short, broad leaves in whorls of 3. The stem tends to be a lighter green than the leaves.
2. **“WHAT DOES IT HAVE TO DO WITH BUSH PLANES?”** Elodea reproduces primarily through stem fragmentation. This means that broken plant fragments, potentially carried by humans, boats, and floatplanes, can root and establish new populations in previously uninfected waterbodies. Due to heavy float plane traffic, Alaska has a unique challenge in treating and preventing the spread of Elodea.

Treatment can be time-consuming and expensive, so the best line of defense is prevention! You can decrease the spread of Elodea by inspecting and cleaning your gear, especially float planes, boats, and trailers. Please remove all aquatic vegetation before traveling to a new waterbody, particularly if you know you have been in infested waters.

ALASKA'S INVASIVE PLANT MINI-GRANT PROGRAM

In an effort to help organizations control and track invasive species across the state, the Copper River Watershed Project has partnered with State USDA and Private Forestry to implement “Alaska's Invasive Plant Mini-Grant Program”. Program funds are provided by the U.S. Forest Service and are administered by the CRWP and a committee. The Mini-Grant program provides small grants, around \$16,000, to non-federal organizations. Mini-grant projects may use funds to survey and treat terrestrial invasive plants, purchase field supplies, host educational events, and travel to invasive plant meetings or conferences.

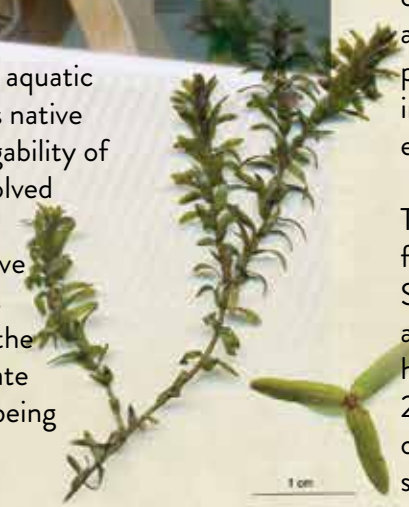
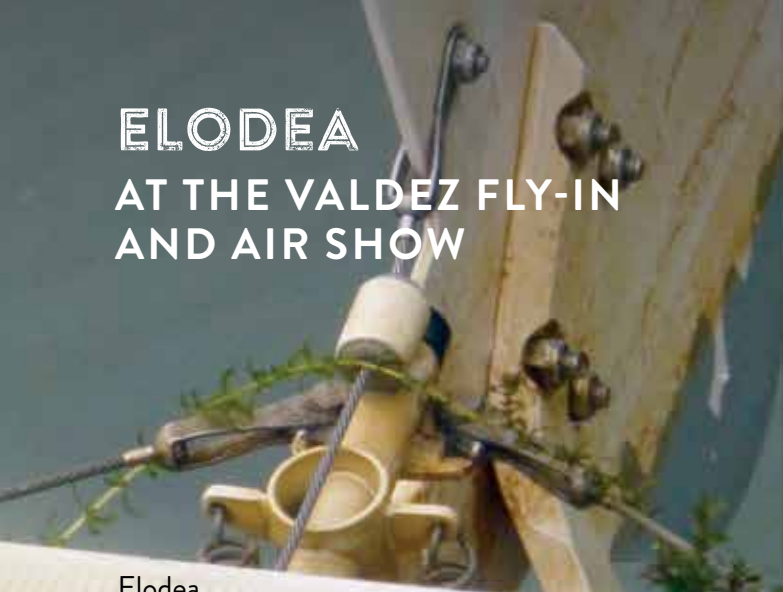
The Mini-Grant Program funded a total of \$60,000 for invasive plant control in 2018 covering areas in Southeast and Southcentral Alaska. We are excited to announce that the Invasive Plant Mini-Grant Program has funded 9 projects, totaling \$95,000, for the 2019 field season! These projects will control a total of 16 terrestrial invasive plant species in southeast, southcentral, and central Alaska.

As summer is gearing up and plants are leafing out, be vigilant for invasive plants, and talk with your community about the Invasive Plant Mini-Grant Program. We will be distributing \$125,000 for invasive plant control in 2020! We are hopeful to see even more applications from non-federal organizations that have, or want to start, invasive plant control in Alaska.

If you are interested in learning more about the Mini-Grant Program, please contact me at the CRWP.

For more information about Elodea visit the Programs page on our website, copperriver.org.

CHANTEL ADELFFIO, *Invasive Plants Program Manager*
chantel@copperriver.org



Since partnerships are at the core of our programs, this year we wanted to share our work with you through the eyes of some of the partners with whom we collaborate. You'll also hear from a student who benefited from our strong watershed education partnership.

Cathy Renfeldt

Executive Director,
Cordova Chamber of Commerce



It's so refreshing to work with an organization that places such a high value on partnerships. Copper River Salmon Jam is a perfect example of this. A diverse array of organizations and individuals come together to orchestrate this complex event. A wide swath of businesses, corporations, volunteers and patrons are rallied each year. Each have their own goals, and success of the event might look a little different to each. The CRWP provides leadership and facilitation among these varied missions to focus on a common goal of a destination weekend festival celebrating what sustains us: salmon and art!

Kari Rogers

Gakona, Vice-President,
Copper Basin 300 Sled Dog Race,
former CRWP Board Member,
and uber volunteer invasive weed-puller



Because of our strong commitment to keep alive the awe-inspiring tradition of travel by sled dog across the frozen landscape and leave no trace of our passing in the process, we use only certified weed-free straw for bedding down 600+ sled dogs at each of the race's four checkpoints along the 300-mile long trail. Achieving this high standard of excellence each year is made possible by our financial partnerships with Copper River Watershed Project and Copper Country Alliance. Our common goal to eliminate the spread of invasive plant species here in the Copper River Valley has been and will continue to be a howling success, thanks to our generous partners!

Megan Marie

Fish Habitat Biologist IV,
Alaska Department of Fish & Game



The Copper River Watershed Project has been a driving force for fish habitat restoration and improvement, promoting citizen science, and building community awareness about the importance of a healthy Copper River watershed. The work they do has relevance and impact throughout the state, not just within their watershed. I have worked with CRWP on habitat restoration and improvement projects for more than 10 years and the staff and volunteers are amazing at building partnerships to help bring the right tools and resources together to help carry out their mission.

Emmie (VanWyhe) Jackson

Copper River Stewardship Program
participant 2009 & 2011, CRWP
Scholarship Student, 2015, BA in
Rural Development (Natural Resource
Management Concentration) and
Political Science, UAF.



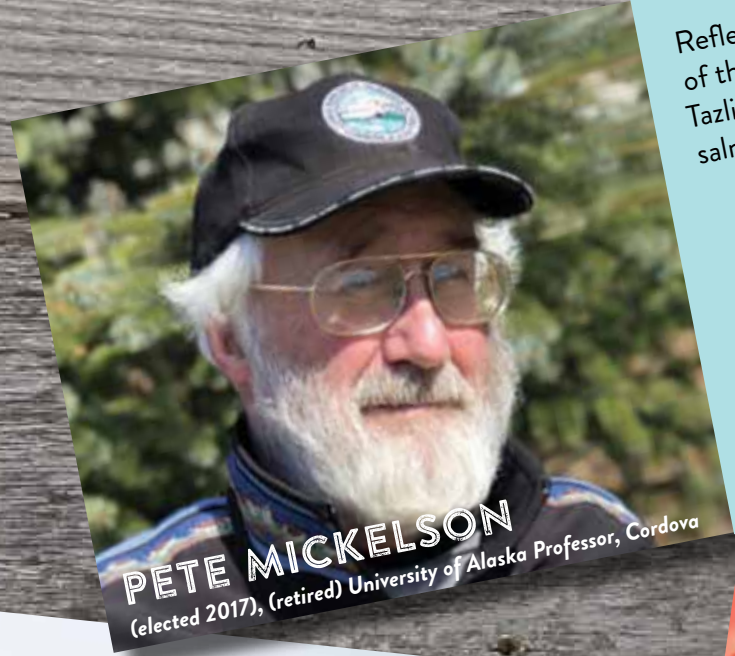
In January, I accepted a position in Juneau working in the Senate President's office as a legislative staffer. As a high school student, I could never fathom how unique Copper River Stewardship Program opportunities such as floating the Copper River, flying over Mt. Blackburn, visiting fish weirs, and developing friendships with students from different regions would play a role in where I am today. Growing up in rural Alaska and having these once-in-a-lifetime opportunities were a reminder of how important environmental stewardship is. By far, the greatest thing these programs offered me was the opportunity to learn how to think critically, . . . and the role (young people can) play in determining how we move forward (at the State level) despite the challenges.



My most recent watershed moment was a conversation between two young boys from our area. Some good friends of ours are moving to Cordova. Although excited for their coming adventure, we will greatly miss them here. These two young boys were also super sad to be losing their buddies, but when they learned that they could get in a raft in Gakona and end up at their friend's new house in Cordova, the sadness turned to excitement! Because of their Huck Finn-wired brains and time they have spent on local rivers, they were seeing those rivers connecting our communities as clear as a highway. I told Kristin Carpenter this story and she lit up and said, "That's a watershed!"

JACKIE MCMAHAN
Jackie McMahan (elected 2017) and her family, Gakona

MY MOST RECENT WATERSHED MOMENT WAS ...



Reflecting on the importance of the Tonsina, Klutina, and Tazlina rivers and lakes to king salmon spawners and fry.

PETE MICKELSON
(elected 2017), (retired) University of Alaska Professor, Cordova



AMANDA WIESE
(elected 2019), Mother and part-time staff at Cordova District Fishermen United, Cordova



A favorite all-time watershed moment came on one of our rafting trips, at about 10 p.m. We were camped on the back of the Tana River on a large dryas plain, with the Wrangell Mountains filling the skyline to the north. It was just after July 4, about 70 degrees with the sun setting, and seven bison swam the river then walked through our camp, no more than 50 yards away.

NIK MERLINO
(elected 2nd term, 2019), Owner and Guide, McCarthy River Tours & Outfitters, McCarthy



ROBIN MAYO

(elected 2nd term, 2017), Wrangell Institute for Science and Environment, Executive Director, Kenny Lake

A recent winter backcountry trip in Wrangell-St. Elias National Park. You can be in the "middle of nowhere" and find relics from native travelers and the mining days. It is always humbling to be reminded of the incredible toughness and determination it took to live and explore here.

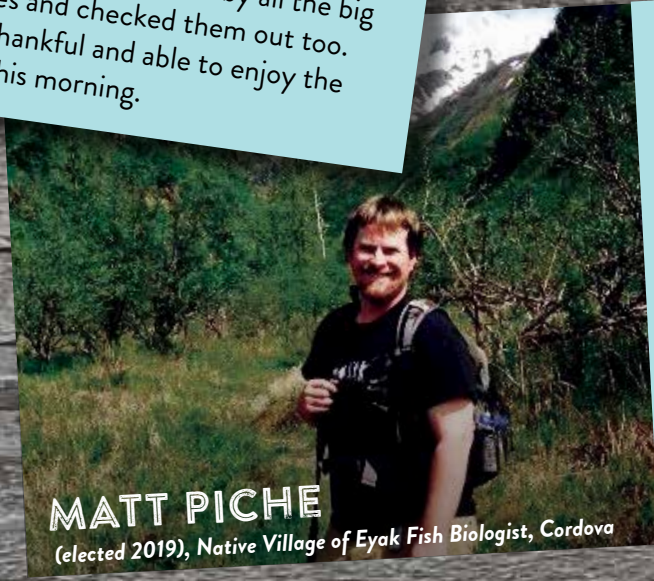


KENDRA HARDER

(elected 2019), Owner, Kendra's Kreations Salon, Copper Center

My most recent watershed moment was my favorite time of year, now! I love to walk the beautiful Klutina river all year but spring breakup is typically the most dramatic and exciting. While on my most recent walk, I saw the many changes this last year has brought to the banks and channels. How the fishing spots have morphed and moved, the access spots have changed and all the signs of the wildlife that need the watershed to survive. I also saw the earliest pussy willows I can remember. I love how the season changes here are so different every time and the only truly predictable change every year is the length of daylight. Bring on the sunshine!!

My most recent watershed moment was on a morning when I was taking a quick drive to see if the fog had lifted. After weeks of rain, my kids and I have been dying to enjoy ourselves outside. This morning finally provided that opportunity. Here is my son at 9-mile with an appropriate smile about climbing the sand hill with no wind or rain. We walked by all the big puddles and checked them out too. I felt thankful and able to enjoy the delta this morning.

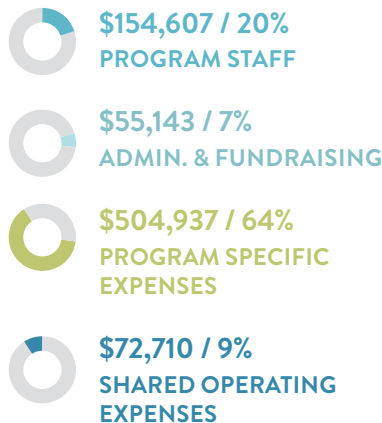
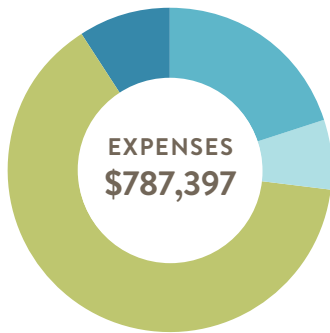
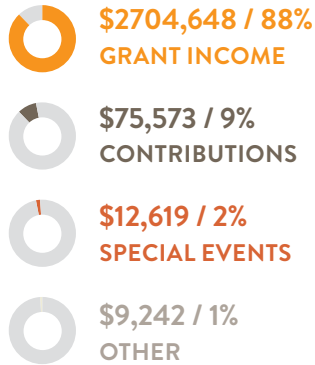


MATT PICHE

(elected 2019), Native Village of Eyak Fish Biologist, Cordova

I recently attended the Roundtable meeting hosted by CRWP. We talked a lot about our fisheries, but what stands out most in my memories are the side conversations: the coffee talk about trap lines, moose hunts, Copper River silt storms, troubleshooting boat motors, "kids these days", harsh winters or lack thereof, the good ole' days, and of course the fish stories. User groups often disagree and the idea of a Copper River salmon utopia with a conflict-free fisheries regulatory process may be a long way off, but having a venue to gather, share stories, and find common ground in life seems like a good start to finding common ground with salmon.

2018 ANNUAL REPORT



ASSETS

Current Assets	
Checking/Savings	41,425.59
Accounts Receivable	61,512.92
Other Current Assets	27,488.00
Total Current Assets	130,426.51
Fixed Assets	7,214.32
Investment Reserve	50,102.92

TOTAL ASSETS \$ 187,743.75

LIABILITIES & EQUITY

Liabilities	
Current Liabilities	
Accounts Payable	17,532.83
Credit Card	1,778.46
Other Current Liabilities	
Vacation Accrual	12,365.26
Deferred Revenue	8,000.03
Payroll Liabilities	884.68
Sales Tax Payable	47.17
Total Liabilities	40,608.43
Equity	
Retained Earnings	129,625.30
TR Net Assets Contributions	17,531.06
Net Income	-21.04
Total Equity	147,135.32

TOTAL LIABILITIES & EQUITY \$187,743.75

2018 FUNDERS

- Alyeska Pipeline Service Company
- Bureau of Land Management
- Copper River/Prince William Sound Marketing Association
- Copper Valley Electric Association
- Exxon Valdez Oil Spill Trustee Council
- National Fish & Wildlife Foundation
- Native Village of Eyak
- Patagonia
- U.S.D.A. Forest Service
- U.S. Fish & Wildlife Service
- Wild Salmon Center

We'd like to recognize the following businesses who generously supported CRWP events and educational programs with significant gifts in 2018. We hope you can support these businesses that contribute to sustainable economic development in the Copper River region.

WATERSHED STEWARDS, \$500+



TRIBUTARIES, \$250 - 499



RIDGELINES: AROUND THE WATERSHED

VARIATION IN BODY SIZE AND ENERGY CONTENT OF SOCKEYE SALMON RETURNING TO THE COPPER RIVER

Sockeye salmon are an economic cornerstone of the commercial and subsistence salmon fisheries in southcentral Alaska. Data show a long-term decline in size at age of adult Copper River sockeye, with recent years (2015-2017) showing dramatic reductions in body size of returning adults. In other river systems, body size and energy density of sockeye have been negatively related to sea surface temperature during the last year of ocean residency, and recent studies have confirmed growth impacts to sockeye, and other Pacific salmon species, due to density-dependent factors at sea. Dr. Kristen Gorman and Dr. Pete Rand are interested in how changes in body size and energy content—measures of fish quality that are shaped during their time in the ocean—might influence the energetics of migration and spawning performance in the Copper River, a large, glacially dominated watershed. Dr. Gorman concludes “it appears the spawning migration is energetically expensive.” In a 2016 pilot study, they determined upriver sockeye used about 50% of their total energy to reach the spawning grounds, and up-river energy levels were low compared to other studies. She explained “we think that changes in the ocean conditions that have impacts on energy content or somatic condition of the fish might

have greater implications for survival and spawning success for longer distance migrants because they have to invest more simply to get on the spawning grounds” (CR Roundtable, 2/9/19). **Contact:** [Dr. Kristen Gorman, kgorman@pwssc.org](mailto:kgorman@pwssc.org), and [Dr. Pete Rand, prand@pwssc.org](mailto:prand@pwssc.org), Prince William Sound Science Center.

COPPER RIVER WATERSHED CALENDAR:

[Copper River Stewardship Program, July 16 - 27](#)

[Salmon Jam Festival, July 12 - 13](#)

[Kenny Lake Fair, August 17](#)

[Slana River Canoe Day, mid-August](#)

RANGE-WIDE VARIATION IN THE EFFECT OF SPRING SNOW PHENOLOGY USING DALL'S SHEEP AS AN ICONIC INDICATOR

Factors that limit species persistence are often assumed to be constant across species' ranges, but may vary spatially. Researchers examined the consistency of climate effects on population success across the global range of Dall sheep, including Wrangell St Elias National Park (WRST). Using satellite imagery from 2000 - 2015, researchers developed measures of snow cover: snow disappearance date, snow cover duration, and spring snowline elevation. Detailed, local-scale field observations were also taken to measure the effects of temperature, precipitation, and snow cover on lamb-to-ewe ratios using data from 1,570

sheep surveys in a total of 24 mountain units across Alaska and western Canada. Findings show that snow cover extent (measured with satellite imagery) strongly affected lambs, whereas temperature and precipitation had weaker effects. Average snow cover did not decline in mountain units from 2000 – 2015, but inter-annual variability increased. Late spring snow cover negatively affected lambs, and this effect amplified with latitude. Field work in the Wrangells has shown that the density of snow strongly affects energetics of sheep, highlighting the importance of snow properties such as depth and density that cannot easily be obtained from satellite imagery. The research team's snow surveys in the Wrangells will help to improve a model of these snow properties. These results highlight the importance of spring snow phenology on the dynamics of iconic northern wildlife and suggest that northern Dall sheep populations may be more sensitive to changing snow conditions than their southern counterparts. Source: M. van de Kerk et al., 2018, Environmental Research Letters, and additional research led by Dr. Laura Prugh, funded by NASA's Arctic Boreal Vulnerability Experiment (ABOVE).

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

THANK YOU, MEMBERS

ANCESTORS' LEGACY, \$1000+

Alaska Glacial Mud
Bill and Marion Alexander
Alyeska Pipeline Service Co.
Arthur J. Donald Family
Foundation
Allison & Chris Bovard
Diane & Mark Colleran
Colby & Jeremy Doyle
Drifters Fish
John & Liz Garner
Dr. Elizabeth McLoughlin
Dan Hull & Nancy Pease
Connie & Bill Jones
Curt & Betty Jones
Bill Leighty & Nancy
Waterman
Midnight Sun Environmental
Riki Ott
Russell & Joan Smith
Cece Stack & Britt Pedicord
Dr. James Staszewski
Lorna Stern
Trident Seafoods
Triton Foundation
Violet & Joe Whaley
Charles Wilson
Wilson Construction

WATERSHED

STEWARDS, \$500-999

Alaska Railroad Corporation
Leo Americus
Keri & Vince Bailey
William Beattie & Evonette
Aponte-Beattie
Jonathan Bigley
Phil & Rich Blumstein-Ervin
Karen Hyer & Ken Carlson
Susan Clausen
Stuart & Margery Elsborg
Deirdre Henderson
Ken Hodges
Marie & Charles Hoffman
Gary & Cynthia Jacobs
Curt & Betty Jones
lyad & Carol Khalaf
Jack & Lynn Locker
McCarthy River Tours
& Outfitters
David Reiser
Bert Stammerjohan &
Liz Senear
Brad & Denise Stern
Timeless Beauty, Endless
Health
Wells Fargo Bank Alaska

TRIBUTARIES, \$250-499

ACE Hardware
Alaska Marine Lines
Alaska Marine Response LLC
Rich & Shannon Alloway
A Rogue's Garden
Carol Bailey & Dr.
Steve Medwell
BioFish LLC
Dr. Chris & John Booren
Tim Brabets
Chugach Alaska Corp.
Debbie & Dino Ciabattoni
Alexis Cooper
Cordova Telephone Cooperative
Cordova Wireless
Communications
Jessica Dunn
G. Warren & Donna Elliott
Tony Gasbarro

Janet & Donald Groschel
Mary & Steve Hall
Jeff Guard & Dorne Hawhurst
Anne & John Herschleb
Todd Hess
Alaska Wildland Adventures
Natural Resources Foundation
of WI
Peter & Tanya Johnson
Curtis H. Jones, Jr.
Doug Landgraf
Lake Louise Lodge
Ian Lindsay
Mike Mahoney
Donna McBain Evans &
Sam Evans
Cliff Eames & Ruth McHenry
Nik Merlino
Debra Miller D.M.D.
Peter Mjos
Pamela Moe
Diane & Greg Morgan
Mary Jane & Alan Morse
NAPA/Anchor Auto Marine Inc.
Dr. James & Katie Nelson
Kelly Neuman
Becky Nourse
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Arlene & Danny Rosenkrans
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Sena Sea Seafoods
Cathy & Dixon Sherman
Shoreside Petroleum
Kate & Reid Smith
Sandra & Rich Staples
Terry & Ann Talcott
Lisa & David Totemoff
Dan & Monica Ryan
Cliff Ward
Eric & Janice Warga
Charlotte & Lance Westing

WRANGELL PEAKS

CIRCLE, \$100-249

Luca and Chantel Adelfio
Alaska Wild Seafoods
Rob Alexander & Chip Brown
Thomasina Anderson
Kristy Andrew
Vicki & Jerry Blackler
Lee Rolfe & Tony Angell
Carroll Barclay
Dr. Howard & Jean Baumann
Robin & Skip Jensen
Chris & Mimi Beck
Elinor Beck
Jeremiah & Kristie Beckett
Bob & Joanie Behrends
Judy & Mark Berger
Laurie Berger & John Jenkins
Mary Anne & Nancy Bishop
David Blount
John & Patty Bodner
Tim Bowman & Judy Engh
Jenny Brandt
Gabrielle Brown
Sharon Brumbley
Wade Buscher
Jim & Marilyn Chu
Becky Clausen & Dirk Lang
Beth & Al Clayton
Mary & David Little
Copper Oar Rafting
Copper Valley IGA
Cordova Outboard
Andy Craig & Seawan Gehlbach
Linda Crider
Mark Heidbrink & Becca Dodge
Sarah Ecolano & Rick Ballas
Sue Farzan
Carole Fisher
Forget Me Not Fabric
Rick and Cindy Fox

Sandra Friendshuh
Mark & Cindy Frohnapfel
Glennallen Rustic Resort B&B
Cheri & John Grocott
Dick & Kay Groff
Denton & Tamara Hamby
Kent & Lynda Hamby
Harborside Pizza
Richard Harper
Stormy & Mary Haught
Laurie & Bruce Hauptli
Jeff Hawley & Nancy Peterson
Sarah Hayes
Bruce & Carol Hazeltine
Diane & Kent Herschleb
Dr. Phil Hess
Isabel's Inn
Meg Jensen & Mike McQueen
Cynthia Jones & Phil Oman
Patti Kallander
Ray & Linda Kelley
Cathy & Fred Keuthen
Father Tom Killen
R.J. & Barclay Kopchak
Tim Landis
Cory & LeAnn Larson
Laura's Liquor Shoppe
Bill Leighty & Nancy Waterman
Bill & Renee Lindow
Becci & Hamilton Long
Kevin & Suzanne McCarthy
Sally McGuire
Dan McIntosh
Jackie & Bryan McMahan
Johnny & Johana McMahan
Henry & Marcia Milette
Virginia & Jack Miller
Bill Mohrwinkel and Carrie Klein
Howard Mozen &
Elizabeth Schafer
MTI Adventurewear
New North Consulting LLC
Ocean Beauty Seafoods
Orca Adventure Lodge
Peterson Welding & Machine
Michelle Qualls
Monika Raghetti
Laura & Neal Resnick
Jonathan Riehle &
Angela Bohmann
Larry Rinder
Bruce & Kari Rogers
Rich Rogers
Bill & Mary Earl Rogers
Thomas Rohweder
Hugh Rose
David Rosenthal
Al Rule & Jane Browning
Elizabeth Schafer
Beth & Rich Schluter
Clair & Steffan Scribner
Sena & Rich Wheeler
Silver Fox Jewelry
Dawn & Jeff Smallwood
Jennifer Sutton & Todd Smith
Wayne & Diann Smith
Jim Stratton
Karen & Paul Swartzbart
The Hub of Alaska
Becky & Cory Swanke
Sarah Ecolano & Rick Ballas
Gonzalo Villalon
Barry Whitehill
John & Kate Williams
Marissa Wilson
Dave & Tanya Zastrow

RAVEN'S CLAN, \$50-99

Dave & Annette Janka
Heidi Babic
Alan & Diann Bailey
Baja Taco
Dave & Laura Beam
Karl Becker & Nancy Bird
Brittany Blain-Roth & Brett Roth
Paul Boos & Janelle Eklund
Alys Bowman
Bruce & Karen Butters

Dr. Rob Campbell
Casa de la Arte
Barbara Cellarius
John Cholith III
Yoke-sim Choong
Bill & Diane Cobb
Susanna Colloredo-Mansfeld
Joe and Belen Cook
Arne Erickson
Rachel Ertz
Micah Ess & Michelle Dockins
Michael Ferraro
First National Bank Alaska
Shawn Gilman
Robert Glennon
Toni Godes
Kristen Gorman
Michelle Hahn & Andrew
Smallwood
Claudia Hartley
Dr. Donald & Louise Heyneman
Phil and Audrey Huffman
Margaret Hunt
Dave & Annette Janka
Julie Jessen
Kendra's Creations
Adam Kenyon
Denis Keogh
Alyssa Kleissler & Curtis
Herschleb
Knot Crazy!
Rodger & Gerri Koechling
Ben & Kaitlin Kramer
Pete & Loreen Kramer
Peter Kramer
Ray Landgraf
Liz & Bill Larzelere
Sue Kesti & Dan Logan
Molly McCormick
Caitlin McKinstry
Julia McMahan
Pete Mickelson
Steve Moffitt
Kate & Andy Morse
NAPA Auto Parks/Alaska Auto
Center
Jeremy Olen
Pam Ore
James Pomplun
Beth Poole
Julie & Brad Reynolds
Rob's Woodcraft
Randy & Darlene Robertson
Elizabeth & Jim Robinson
Sarah Robinson & Chris Arp
Alex & Tamara Russin
Brian & Vera Rutzer
Dan Schmalzer
Eileen & Andy Simons
Matt Sloat
Jed Smith
Dustin Solberg & Ann Harding
Carla & Mark Somerville
John Stack & Barbara Solomon
Leif Stavig & Denna Francischetti
Glenn Ujjoka
Barbara Vaile
Kirsten Valentine
Rick Van De Poll
Danielle Verna

KINGFISHERS, \$25-49

Ron Andersen
Kris Anderson
Mike Babic
Ria Beedle
Andres Benitez Ospina
Mark & Janet Bloch
Jacquelyn McMahan
& LeAnn Larson
Shae Bowman & Joe Hamm
Tyler Bowman
Stan Bradshaw
Ezekiel Brown
Angela & Brian Butler
Danny & Kristin Carpenter
Casa de la Arte

Brian Charlton
Erica & Dan Clark
Cordova Realty
Peyton Coyner
Pere Davison
John Egger
Crocket's
Signe & Jim Fritsch
Doug Fulton
Chris & Leah Grey
Tom Haddock
Heidi Hatcher
David & Judy Heller
Teresa & Jim Holley
Elizabeth & Martin Hubbe
Mark Johns
Kara Johnson
Kathleen & Chris Jones
Kinsey Justa
Marita Kleissler
Kate & Hamish Laird
Tom McGann & Sue Laird
Blooms on the Bluff
Cory & LeAnn Larson
Les & Joan Larson
Joyce Levine
Kristin Link
Robin Mayo
David McLaughlin
Marleen Moffitt
Stanton Moll
Linden O'Toole
Glen Park
Sarah & Stephen Phillips
Matt Piche
Frederic Reid
Cathy & Micah Renfeldt
Dick & Sue Shellhorn
Amelia Sikes
Melissa Sikes
Robert & Chrissy Skorkowsky
Dana & Anita Smyke
The Quilting Studio
Norma and Doyle Traw
Mark Vail
Kenneth Van Gilder
Linda & Henry Wall
WaterGrass
Gay & David Wellman
Amanda & James Wiese
John Page Williams

SUBSISTENCE LIVING,

\$10-24

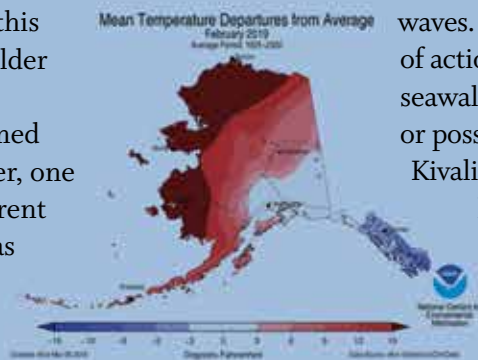
Sam Aslan
Carla Bloomquist
Jake Borst
Kayla & Sonny Bruno
Barb & Bill Bryson
Carlos Comparan
Copper River Record
Sam Cox
Shelly Crowe
Miriam and Roger Dunbar
John Hofmeister
Jim Jachetta
Jared & Vivian Kennedy
Kitty LaBounty
Amy Lanser
Jocelyn Layte
Jeannine Luce
Jared Martin
Mountain View Grocery, Gas &
Liquor
John Myers
Paul & Mary Newcome
Katie Phillips
Bob Ralphs
Robben Taylor
Lori & Rob Van Sleet
Jim Williams

CLIMATE CHANGE THREATENS THE ALASKAN WINTER

BY CHANTEL ADELFIGIO, *Invasive Plants Program Manager*

Southcentral Alaskans were reminded what a “normal” Alaska winter feels like this past February during a stretch of colder weather. We gladly broke out our heavier hats and gloves, and welcomed the crisp, blue-sky weather. However, one month is only a snapshot of the current climate situation. Most of Alaska has been experiencing warmer than normal winter temperatures. The average temperature in Alaska has increased roughly 3° F over the past 60 years and is projected to increase an additional 2° to 4° F by the middle of the century (U.S. Global Climate Change Research Program, 2014). Increasing temperatures have already had an impact on many Alaskans’ way of life. In northern and western Alaska, residents have noted a decrease in winter ice cover, creating dangerous conditions for travel and hunting.

In February, when Southcentral was reaching normal wintertime temperatures, western Alaska was experiencing anomalously warm temperatures. The unseasonably warm temperatures, coupled with a powerful storm, led to the breakup of sea ice in the northern Bering Sea and Bering Strait. The Bering Sea daily ice extent in early March was at levels typically found in June, according to climatologists who host the Alaska weather blog. The rapid loss of two-thirds of its ice area (National Snow and Ice Data Center) has large



implications for many villages in western Alaska. One village that has been at the center of our rapidly changing climate is Kivalina. This village is located on a barrier island in northwest Alaska, and has been struggling to hold on to their land as the sea rises and rapidly erodes their shorelines. Over the past years, shore ice has formed later and broken up earlier, leaving shorelines exposed to strong storms and high waves. This has forced Kivalina to take a variety of actions from building a rock revetment seawall to relocating sections of the village, or possibly the entire village. Unfortunately, Kivalina’s challenges are not limited to loss of seashore: like most of Alaska, its permafrost is melting. As the permafrost melts it releases sediment into local water sources, increases erosion of streambanks, and increases moisture in underground food cellars.

Having to adapt to a changing climate is something that all Alaskans are learning to do, even our beloved Iditarod dog teams. Recent headlines highlighted an Iditarod checkpoint, Shageluk, where it was 37° F and raining as mushers and their teams arrived. Running the dogsled teams in warmer temperatures worried some of the mushers, who stated that they would run at night to avoid 40° F temperatures. More importantly, at least to the dogs, some of the frozen meat had thawed and spoiled, leaving the dogs with only snacks and dry kibble.

As our climate continues to change, it will be important to stay flexible in travel methods, hunting, gathering, and recreation. By supporting research on climate change, species shifts, and invasive species we can stay current and help protect Alaska’s resources.



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COPPER RIVER
WATERSHED PROJECT



Newsletter

SPRING 2019



- * Salmon harvesters come together
- * Fish to Schools
- * Invasive Plants
- * 2018 Annual Report
- * Changing Climate of Alaska winters

TO

[Redacted recipient address area]

CRWP MISSION

The Copper River Watershed Project promotes a salmon-rich, intact watershed and culturally diverse communities by forming partnerships for watershed-scale planning and projects.



WHY I SUPPORT CRWP



The summer after I graduated from college, I rafted the Copper River and that was the beginning of my lifelong love affair. Coming from the midwest US, the vast beauty and rich intact ecosystem of the Copper River watershed blew my mind. There was a spirit there I wanted to connect with and make it a part of my life. And that is the same spirit I want to support with Alaska Glacial Mud Co. I started my business to be able to stay in Cordova, Alaska and use commerce as a force for good to help preserve the Copper River watershed and the salmon lifestyle for all creatures in perpetuity. Supporting land preservation, habitat restoration and environmental education projects is my mission and passion.

LAUREN PADAWER

ALASKA GLACIAL MUD CO.