Yukon Fisheries News

THE OFFICIAL PUBLICATION OF THE YUKON RIVER DRAINAGE FISHERIES ASSOCIATION

FALL 2019

2019 Summer Season Recap

BY HOLLY CARROLL, ADF&G SUMMER SEASON YUKON AREA MANAGER

Well, I think we can all agree this season was an unusual one! We went into the season with forecasts for above average Chinook and summer chum runs. Our management strategy was to take a conservative approach until our assessment indicated the actual run strength was good enough to relax restrictions. Our main management action the past few years has been to put districts on reduced regulatory fishing schedules equal to half the number of hours in the full schedule. This provides some regular opportunity to fish, while giving frequent 'windows' of closure to allow some fish to pass through, thus spreading the harvest across multiple fish groups. To be more conservative, we cancelled one of the periods each week, or we layered on a 6" restriction, which should have increased chum catches and caused slightly lower catches of kings, especially in areas with summer chum. This year we allowed pretty liberal fishing on the early trickle of fish that came before the first pulse, which had many more fish than last year.

Dr. Peter Westley (U.A.F) measures dead chum in an eddy along the Koyukuk River, July, 2019. Photo courtesy ADF&G

Prior to the season, we observed an very early retreat of the Bering Sea icepack which is commonly viewed as an indicator for early instream migration for salmon. However, in contrast, the summer chum were so late getting started moving into the river that we worried that we were seeing the weakest run on record. This impacted management, because when there are no chum in the river, but pretty good numbers of Chinook, it can be easier for fishermen to meet their Chinook needs. This seemed to be the case based on fishermen reports on the YRDFA calls. So, we continued with a slightly more conservative approach

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HOW DO I BECOME A YRDFA MEMBER?

Call 1-877-999-8566 Ext. 5 for membership information.

Protecting and promoting all healthy wild fisheries and cultures along the Yukon River drainage.

Yukon River Region Calendar

Western Interior Subsistence Regional Advisory Council Mtg
October 8-9, 2019
McGrath

Indigenous Peoples Day
October 14, 2019
Nationwide

Eastern Interior Subsistence Regional Advisory Council Mtg
October 15-16, 2019
Fairbanks

Alaska Federation of Natives
October 17-19, 2019
Fairbanks

Board of Fish Work Session
October 23-24, 2019
Anchorage

Yukon Kuskokwim Delta Subsistence Regional Advisory Council Mtg
November 5-7, 2019
Bethel

Alaska Tribal Conference on Environmental Management
November 19-22, 2019
Anchorage

BIA Providers Conference
December 3-5, 2019
Anchorage

Yukon River Panel Meeting
December 6-10, 2019
Whitehorse, Yukon, Canada

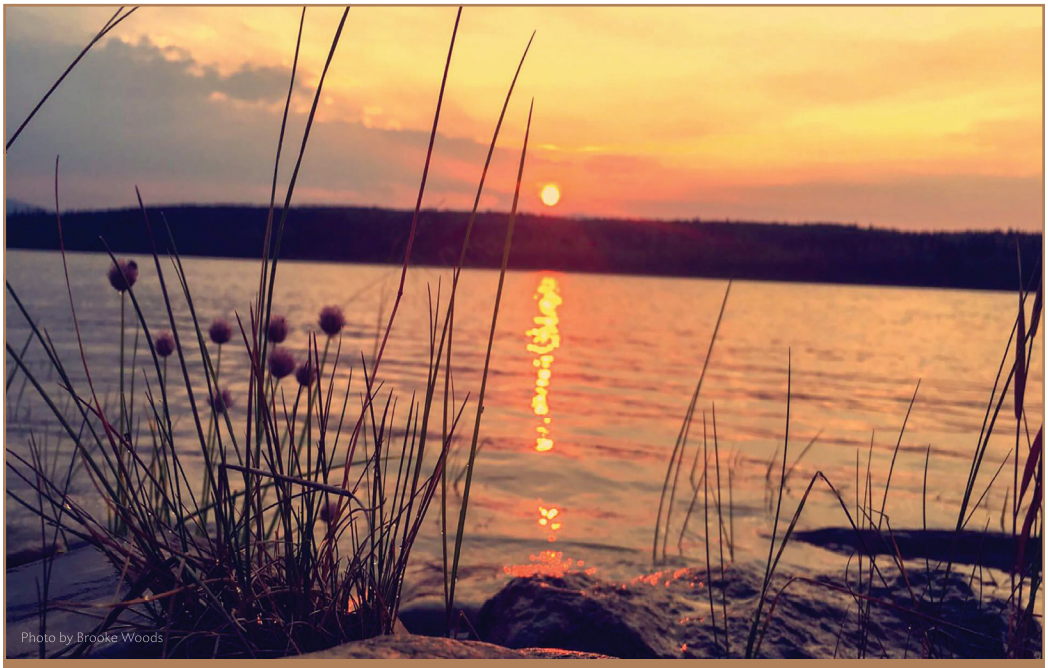
Photo by Brooke Woods

Inside This Issue

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Message from the Director

WAYNE JENKINS, EXECUTIVE DIRECTOR

Phew! What a Summer - *High ocean & freshwater temps - Late pulses - Changes in species run mixes - High water & debris at odd times - Low water - Fish mortalities - Low returns.*

Are these and others a harbinger of things to come? How do fishermen plan for fishing seasons that seem so unpredictable? What happens when past trends are no longer reliable. How can fishers provide for their families in a climate changing landscape?

If past data trends, sonar counts, and test fisheries are less dependable, what do fishery managers use for information to guide decision making? Fisheries management has never been an exact science; usually part science, experience, assumption and intuition. Perhaps we are entering that new era where past trends do not hold and what we have counted on is no longer useful.

For several years Alaska has been at the forefront of climate change, referred to by many as ground zero. We have heard that far northern and southern hemispheres of the earth are experiencing climate change at twice the rate of other, more temperate areas. Communities in Alaska already know this; suffering from rising seas, greater strength and frequency of storms, disappearing sea ice, warming winters, permafrost thaw, early thaws, late freeze ups, weak winter ice…….on and on.

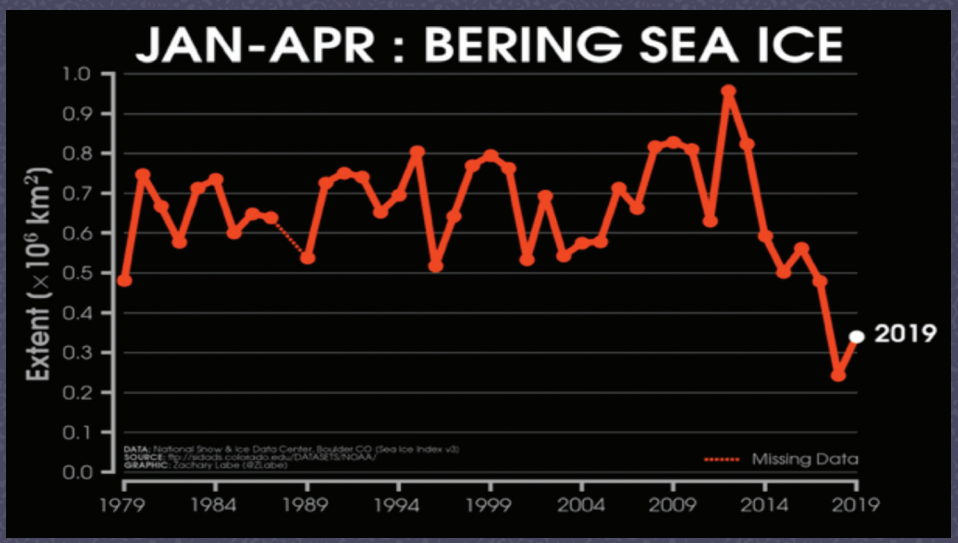
For years, we've been pummeled by graphics and data from scientists sharing their research of tracking past trends and recent extremes. The graphic at the bottom of the page showing the extent of Bering Sea ice is striking and indicative of so many others. Put them all together, I would say, "Alaska, we have arrived". Our new normal is abnormal. Unpredictable!

There are trends to these unsettling changes. Although all regions will likely be affected in some way - how they will be affected and what the impacts will be, will likely be local and regional. Within that understanding lies hope. It is vital to maintain hope as we deal with changes.

Two major themes have emerged around the world in relation to these questions that may apply to how we collectively think and act in the face of this unpredictability and the future; Adaptation and Resilience. These terms overlap in definition; adaptation is how we get to more resilient lives in the face of such large-scale change. Individuals, leaders and communities must take time to think and discuss the very basics. How vulnerable is our water supply? How fire exposed is my house, my community? How dependable is the food supply, the electric grid? What are the increased chances of frequent floods, severe storms, etc. Once regional and local challenges have been identified and agreed upon, then solutions and ideas can be planned and implemented. We work together and individually to adapt our way into resilience.

Is this approach applicable to fishing and fisheries management on the Yukon River? Yes. Fishers, community leaders and other stakeholders on the Yukon now have decades of working together for dealing with the challenges and scope of various issues on the River. It hasn't been easy, simple or even successful in all areas. But it has brought key people together to ponder, discuss and plan on an annual basis. This is adaptation.

If our current fisheries history, data, solutions and approaches are less dependable, what should our approach be? It would seem more caution is in order. And perhaps for this fishery that means using a more precautionary approach then we have been using. What that would look like and how it could be implemented will take reflection, discussion, planning and trials. It will require sacrifice, patience, open minds and a "we're all in this together" spirit. If we have truly crossed over into a new climate regime, essentially changing the very processes we depend on for food and survival, we must adapt to soften the blow. And to be successful, we need to adapt together.



In-Season Survey Program Continues to Thrive

BY CATHERINE MONCRIEFF, YRDFA ANTHROPOLOGIST

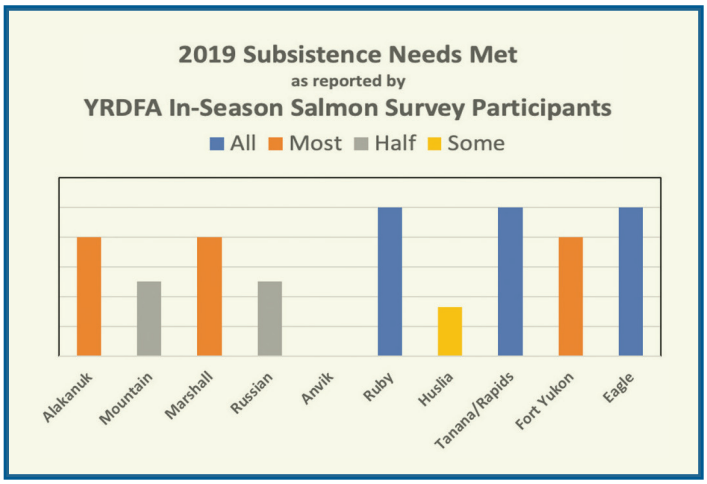
The 2019 In-Season Subsistence Salmon Survey Program had a great season, wrapping up in August with an evaluation survey. The evaluation reported that surveyors value the opportunity to participate in this program, felt well-trained and supported, and most believe the program represents fishers in their community well. Some reported that they value being able to anonymously represent voices in their community who usually do not want to speak up. Others appreciate that the program involves community, tribal councils, fishers, and managers.

Highlights

- Surveyors hired in all 10 communities;
- Expanding teleconference participation to 7 weeks;
- Longevity in surveyor retention and capacity building;
- Surveyor participation in important events:
  - Annual Surveyor Training Event,
  - Yukon River In-Season Salmon Management Teleconferences &
  - Yukon River Pre-Season Planning Meeting (where they learn about current YR fishery issues, network, & receive training.)

Preliminary 2019 In-season Salmon Survey Results

Surveyors conducted interviews with active fishers in their community once a week for 6 weeks while Chinook salmon passed their villages. The end-of-season wrap up is a final interview form that asks if fishers met their needs; how fishing compared to last year; if they think opportunity was provided, if they have suggestions; and if they received enough notice of openings. Results show the following:



Alakanuk: Most participants met their needs but had mixed comparisons to last year. They all felt they had enough notice of fishing openings.

Mountain Village: About half of the participants met their needs for Chinook and all participants said they had enough notice of openings. They liked being able to use nets instead of dipnets and most said fishing was better than last year for Chinook but light on chum salmon.

Marshall: Fishers reported fishing was about the same as last year, but some thought there were more and bigger Chinook salmon. They were concerned about dead sea mammals and they commented on the very hot summer. Most participants reported meeting their needs.

Russian Mission: About half of the participants met their needs and those that did not had personal issues that prevented their success. More than half of the participants requested to stay on their weekly schedule and reported they did NOT receive enough notice about openings.

Anvik: No survey data collected this season.

Ruby: All participants met their needs. Most said that fishing was the same as last year, while some said it was better. Participants commented on low water levels, larger Chinook, good quality fish, and parasites.

Huslia: Three fishers participated in the final interview; two of them did NOT meet their needs - one had personal issues and the other reported poor fishing. One participant said it was better fishing this year.

Tanana/Rapids: All participants in the final interview said that they met their needs and most said fishing was better than last year. They reported low water problems for nets and travel issues, as well as larger Chinook and a slow start to the run. Most were opposed to the use of 7.5" mesh nets until the run is healthy again.

Fort Yukon: Most participants met their needs and said fishing was good, but fires prevented some from getting more salmon. Their suggestion for management was "no closures."

Eagle: All participants met their needs. They reported that fishing was about the same or better than last year but came in

2019 Surveyor Team in Fairbanks for Annual Training and Pre-Season Planning Meeting. From Left: Catherine Moncrieff, Zoe Ballard-Huffman, Sherry Kruger, Pamela Cook, Kara'lissa Tremblay, Andrew Firmin, Nita Stevens, Basil Larsen, Norma Evan, Ariella Derrickson.

late. They thought management did a good job of providing opportunity and balancing conservation. One asked about pulse protection and some requested that closure notices have "Closure" in the subject line and 48-hours' notice of changes.

This survey program provides a voice for Yukon River fishers to anonymously share their observations, fishing success and/or challenges, and suggestions for management on a weekly basis during the fishing season. This data enables managers to make timely decisions allowing the maximum number of fishers to meet their subsistence needs. YRDFA summarizes this information by village to ensure it is anonymous and shares it weekly with Yukon River managers.

Thank You...

...Surveyors, fishers, Tribal Councils and communities for supporting and participating in this program.

...Office of Subsistence Management Fisheries Resource Monitoring Program for funding this program through March 31, 2020!

Pamela Cook in Fairbanks modeling the Surveyor Coat and YRDFA beanie.

Progress on the Draanjik River Salmon and Whitefish Study

BY CATHERINE MONCRIEFF, YRDFA ANTHROPOLOGIST

Over the past year, YRDFA and Tanana Chiefs Conference (TCC) worked with Venetie and Chalyitsik to learn about salmon and whitefish locations in the Draanjik River basin. The goal of this project is to learn from local people about areas they have seen salmon and whitefish. Interviews are followed with biological field work to confirm the anadromous fish locations and enable nominations to the Catalog of Waters Important for the Spawning, Rearing, or Migration of Anadromous Fishes and protection as water bodies supporting life function of salmon or whitefish.

Continuing the ethnographic interviews and mapping begun in Fort Yukon in August of 2018, I traveled to Venetie with Nicole Farnham of TCC to interview Venetie residents who have spent time in the Draanjik River basin. With the help of the Venetie Traditional Council, we worked with Jose Ramos who showed us around Venetie and helped us interview 3 participants. The field work in Chalkyitsik took place in February 2019. I traveled to Chalkyitsik and, through the Village Council, worked with Everett Herbert as a local research guide. Together, we interviewed 5 knowledgeable participants, bringing the total number of interviews for this project to twelve. We created a list of species and locations to inform the biological field work planned for 2019.

The results from the eDNA biological field work conducted in the fall of 2018, came back with all samples showing positive results for salmon. Our biological team, Brian McKenna and Paige Drobny of Spearfish Consulting, plan to work with the Chalkyitsik Village Council and travel by helicopter to sampling sites along the Draanjik River. The August 2019 work was postponed until 2020 due to the heavy fire activity in the area.

Additional biological field work is planned for October of 2019 when our team will look for evidence of Coho salmon in the Draanjik River basin. If participants are available, ethnographic interviews and mapping activities may continue in the fall of 2019.

The goal of this project is to provide information critical to the management of anadromous fish and the habitat that supports them. Next steps include interviewing a few more key participants and ground truthing locations identified by participants. Biological field work will take place in the fall of 2019 and the spring and summer of 2020.

We greatly appreciate the people and tribal councils of Fort Yukon, Venetie and Chalkyitsik for supporting and participating in this project. Thank you to the Office of Subsistence Management Fisheries Resource Monitoring Program (FRMP) for funding this project through March 31, 2021.

Local research assistant, Jose Ramos, and Nicole Farnham of TCC in Venetie, Nov 2018.

Catherine Moncrieff on the banks of the Draanjik River, Chalkyitsik, February 2019

Community of Chalkyitsik, February 2019

CALLING YUKON RIVER YOUNG FISHERS!

Do you want to have a stronger voice in your fishery?

Are you looking for a place to learn about the Yukon River fishery?

WE NEED YOU!

On our 30th year of speaking with & for Yukon River fishers, we invite you to join us as a Young Fisher board member!

The YRDFA board has newly created two (2) youth seats on their board. These seats are currently open for election.

The purpose of creating youth seats on the YRDFA Board of Directors is to foster the next generation and prepare them to take over as the current board members retire from their positions.

- *The **youth seats will have a term of 2 years**.*
- *They will **represent the upriver or the downriver**.*
- *They will be **mentored by the board members of their district, their region and finally the entire board and staff**.*
- *The youth positions are **non-voting seats**.*

To select the youth board members, a nomination or interest form has been created. Youth fishers who are interested in serving on the YRDFA Board of directors should complete the form and submit it to YRDFA. We will be reaching out to current board members, Tribal Councils, UAF, and others for nominations. This opportunity will be announced on the YRDFA in-season teleconferences and selections will be made in the fall. The selected youth will attend the YRDFA's 30th annual meeting in 2020. All travel costs are covered by YRDFA.

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YRDFA BOARD OF DIRECTORS YOUNG FISHER SEAT Nomination/Interest Form

Are you a YRDFA member? ☐ Yes ☐ No *(if no, please submit a membership application)*

Are you applying for the upriver or down river seat? ☐ Upriver ☐ Downriver

Are you between the ages of 18 and 35? ☐ Yes ☐ No

Name: _____

Mailing Address:_____

Community: _____

State:_____ Zip Code:_____

Phone: _____

Email:_____

1. Why are you interested in participating in the YRDFA Board of directors?

2. Do you agree to be fully engaged and participate in all required board activities (annual board meeting Feb-April, other meetings and phone calls as needed)?
   ☐ Yes ☐ No

3. Do you agree to report back to your Tribal Council and/or your community on what you learn? ☐ Yes ☐ No

4. What type of fishing are you engaged in (check one)?
   ☐ Subsistence ☐ Commercial

5. How would you rate your current knowledge level of Yukon River fisheries?
   Please circle: (LOW) 1 2 3 4 5 (HIGH)

6. Give an example of activities or involvement you have had with Yukon River fisheries.

7. Position Statement: What would you like to learn about Yukon River fisheries? What do you hope to gain from participation in the YRDFA Board? Do you have any pressing issues or hot topics you are concerned or passionate about?

Please return this form to Wayne Jenkins or Catherine Moncrieff at YRDFA (see address above). Please contact us or your local Board member with any questions. YRDFA phone 907-272-3141, 1-877-999-8566; fax 907-272-3142; or wayne@yukon-salmon.org or catherine@yukonsalmon.org

Thank you for your interest in Yukon River fisheries and the efforts of YRDFA to protect and sustain them!
To learn more about our efforts please go to www.yukonsalmon.org.

What are Alaska's Landscape Conservation Cooperatives (LCCs)?

BY DANIELLE STICKMAN, NETWORK COORDINATOR FOR WESTERN ALASKA LANDSCAPE CONSERVATION COOPERATIVE

Since leaving YRDFA in December, I journeyed to India and completed a 200-hour level yoga training. After the training I continued to Nepal and successfully made it to the basecamp of Everest. This has been a dream of mine for some time. The hike is magnificent, the mountains are powerful, the people and culture are beautiful, and the sacredness of Everest is indescribable. It was an experience of a lifetime and truly one of the hardest things I have done – altitude sickness is no joke. After reaching basecamp I came back to Alaska to spend time with my grandma Gladys Evanoff before she passed. She was the matriarch of our family, one of the last speakers of the Pedro Bay (inland) dialect of Dena'ina language, and one of the main supporters throughout my life. It has been a transition period for me, from my experiences abroad, to the passing of my grandma, to experiencing drastic environmental change over the summer in Alaska. I'm sure I'm not the only one who has felt the changes in our environment and our animals. That is how and why I ended up working for the **Western Alaska Landscape Conservation Cooperative (WALCC) which is housed at the Alaska Conservation Foundation (ACF)**. In a time where much of our country and the world seems to be in opposition with each other, I believe the LCC partnerships can be one of the solutions. I believe in the work LCCs do across a wide landscape with multiple entities. I believe in the connections built in these groups, just as I believe in the connections I have established on the Yukon River. Creating and fostering connections across entities, communities, and borders is what drew me to YRDFA and what has drawn me to the WALCC. Below is a brief summary that highlights the importance these partnerships.

INDIGENOUS NAMES OF EVEREST

Sagarmatha - Forehead in the sky

Chomolungma - Goddess mother of mountains

Landscape Conservation Cooperatives (LCC) bring partners together to work on conservation solutions that help communities and decision makers adapt to a rapidly changing world. Alaskans face many challenges as the climate warms, erosion accelerates, storms & flooding intensify, sea and freshwater ice water changes, & subsistence resources shift. These challenges are too large for any one entity to address along. **By working together, we are better able to protect natural & cultural heritage for future generations.**

Alaska's LCCs

Western Alaska LCC – Network Coordinator: Danielle Stickman
Northwest Boreal LCC – Partnership Director: Leanna Heffner
Aleutian & Bering Sea Initiative – Program Officer: Aaron Poe

The LCCs & Our Partners are Working to:

- Reduce risk to human lives
- Enhance collaboration among tribes & government agencies
- Mitigate disaster impacts
- Protect Alaska's cultural heritage
- Enhance vitality of hunting & fishing resources
- Leverage government resources to support local decision making

Connecting Science to Communities & Decision Makers

The Alaska Climate Adaptation Science Center, NOAA, the U.S. Geological Survey, U.S. Fish and Wildlife Service, National Park Service, BOEM, ADF&G, DEC, Alaska Seagrant, BLM are a few key partners that connect the LCCs with researchers in Alaska & around the world. Together we help to create, coordinate, & communicate relevant science that is vital for tribes, communities, & decision-makers.

Danielle at Everest Basecamp February 2019

Danielle hiking with the Himalayas in the background

Together We Have Achieved:

- Expanded community-based observation networks
- Empowering local decision-makers to adapt to environmental change
- Promoting safe vessel transit to reduce marine hazards
- Reducing risks from storms & flooding through new data, new tools, & adaptation strategies
- Proactive planning efforts that allow resource use while maintaining connectivity of important habitats
- More efficient monitoring streams, lakes, erosion, & other important key indicators

Fostering Diverse Partnerships

- Tribes & Tribal Organizations
- Communities
- Alaska State Agencies
- Federal Agencies
- Research Institutions
- Non-Government Organization

Map of Alaska's LCCs

Conservation Beyond Boundaries

- Diverse partnerships
- Joint funding & common priorities
- Science-based decision making
- Immediate priorities that are integrated w/a long-term outlook

The Yukon River lies within two LCCs – The NWBLCC and the WALCC – if you'd like to learn more about either of these LCCs or more about LCCs in general please reach out to Leanna at leanna@nwblcc.org or Danielle at dstickman@alaskaconservation.org.

www.northernlatitudes.org

Can Salmon Take the Heat?... Reflections of Warming Waters

BY STEPHANIE QUINN-DAVIDSON, DIRECTOR OF THE YUKON RIVER INTER-TRIBAL FISH COMMISSION

The Yukon River Inter-Tribal Fish Commission first received reports of dead chum salmon on the Koyukuk River near Huslia on July 20 from a fisherman, Ricko DeWilde, boating upriver. We began mobilizing a team of scientists to travel to the Koyukuk River to more thoroughly document the die-off event, inviting Alaska Department of Fish and Game manager, Holly Carroll, and University of Alaska – Fairbanks fisheries professor, Dr. Peter Westley, to join the trip.

Huslia residents began noticing dead salmon floating and washing up on shores on July 12 and noted that the peak appeared to be around July 20. Starting around July 7, air temperatures reached nearly 90° F in Huslia for several days, which was more than 20° F above average.

The die-off event of chum salmon observed on the Koyukuk River was significant and concerning. We estimate that the total die-off is likely in the thousands, and possibly in the tens of thousands. Based on genetic sampling and sonar counts near Pilot Station, there should have been approximately 200,000 Koyukuk River chum salmon that entered the Yukon River. However, counts at escapement projects on the Koyukuk River (located on the Gisasa and Henshaw Rivers) were near record lows. Harvest, alone, would not explain the difference between the sonar estimates and what was observed at the escapement projects.

While no tissue samples were analyzed, the three scientists agreed that the dead chum salmon appeared to be in healthy condition. There were no visible signs of disease, infection, tumors, or parasites. Pollution was likely not a factor, as this area is very pristine with only one small placer mining operation in the Hogatza River drainage. No chemicals are used in the mining process and no water is discharged back into the river. Additionally, pollution would have likely killed off other species of fish (i.e. king salmon and resident species) and no other species of fish were found dead.

The timing of the extreme heat event in early July, with the first noted dead chum salmon by locals on July 12, points to heat stress as the likely reason for the die-off. It is reasonable to assume that air temperatures of 90° F significantly warmed the waters, especially during a low water year. Dr. Vanessa Von Biela with USGS has been studying the impacts of heat stress on salmon in the Yukon River; her initial results show that salmon become very lethargic and disoriented when water temperatures reach 70° F (personal communication, paper in review). Additionally, Sue Mauger with Cook Inlet Keeper noted that water temperatures above 80° F are lethal to salmon (personal communication). Given that water temperatures were already in the low 60s during our trip when air temperatures were in the 60s, it is quite possible that water temperatures were in the 70-80° F range in early July, causing considerable stress to chum salmon migrating. Additionally, locals noted this was a low water year, which could have resulted in a lack of deep-water, cold refugia that would have allowed the chum salmon to wait out the hot days.

Pre-spawned chum salmon were also reported dead on the Andreafsky River, located in the lower part of the Yukon River drainage. However, no dead chum salmon were observed on the Salcha River, located in the Tanana River drain-

Male and female chum salmon found dead before spawning. Photo by YRITFC

age. Tanana Chiefs Conference fisheries biologists traveled to the Salcha River numerous times in late July and early August and never observed pre-spawned dead chum salmon. This is of particular interest because the Tanana River chum salmon stocks enter the Yukon River later than the lower river and Koyukuk River chum salmon stocks. In fact, the majority of the Tanana River chum salmon enter the Yukon in mid-July, which would have been after the extreme heat event and would explain why the Tanana River chum salmon stocks did not experience any die-offs.

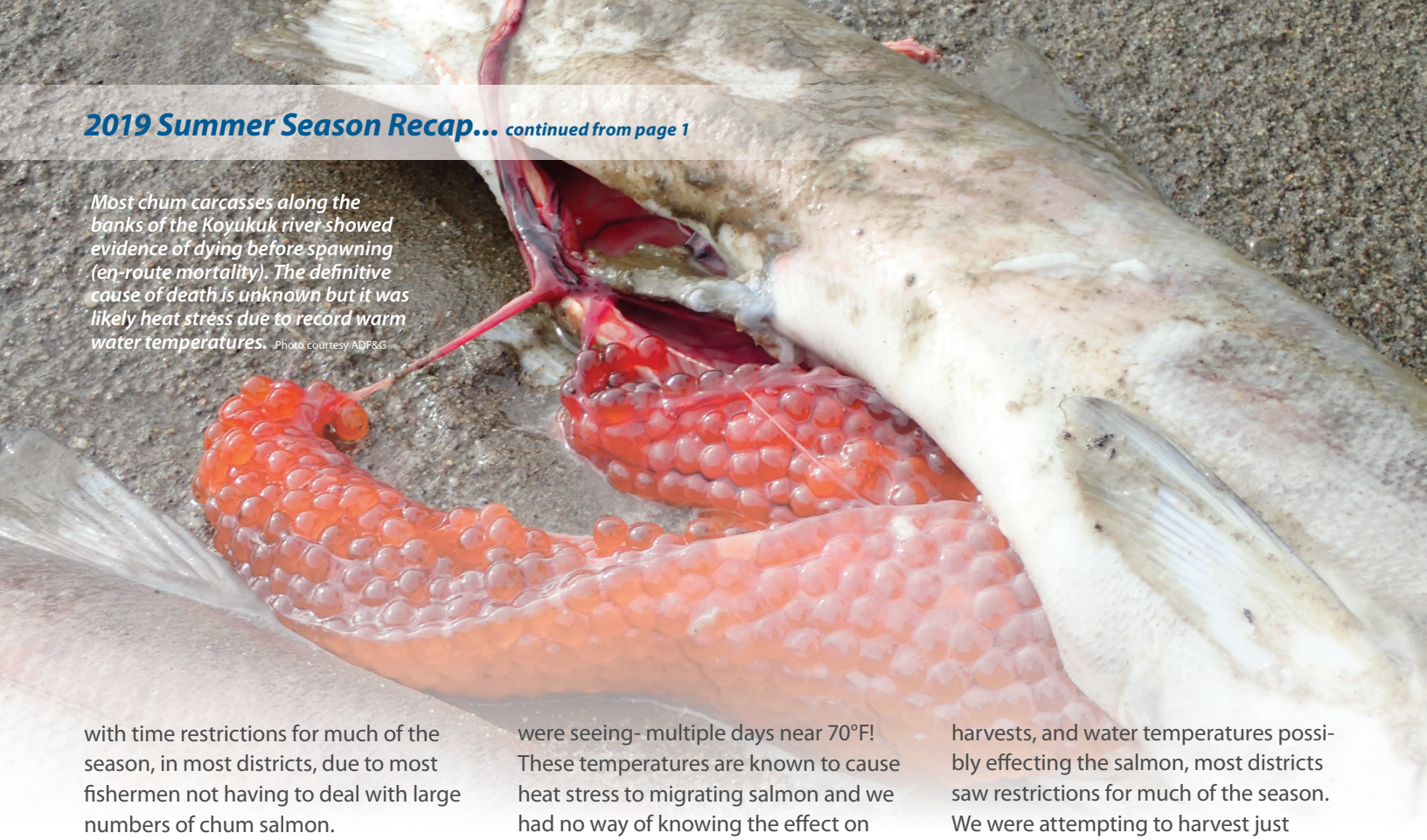
Chum carcasses along the Koyukuk River. Photo by YRITFC

Flat dry chum carcass with eggs. Photo by YRITFC

The Yukon River chum salmon run entered the river about a week later than expected. Once salmon begin their migration back to their natal streams, they stop eating and rely on the fat stores built up over years in the ocean to provide them the energy to swim hundreds of miles upriver to their spawning grounds. If the chum salmon were holding at the mouth of the Yukon River for a week longer than expected, it is possible they were already using up some of these energy stores. Add to that, during their upriver migration, they encountered extraordinarily warm water temperatures, which increase body metabolism, causing the chum salmon to burn through their energy stores even faster. This could explain the lag-time observed from the extreme heat event July 7-10 and the peak of the die-off around July 20.

Currently, the impact on future returns to the Koyukuk River is hard to predict. Over 1.4 million summer chum salmon entered the Yukon River this year and several other escapement goals were met throughout the drainage. Low escapement years have produced high returns in the past, so it is possible the low escapements on the Koyukuk River may not result in lower run sizes in the future. It will be important, however, to remain cautious 4 to 5 years from now, when producing run estimates knowing that this die-off could impact those return years.

2019 Summer Season Recap... continued from page 1



Most chum carcasses along the banks of the Koyukuk river showed evidence of dying before spawning (en-route mortality). The definitive cause of death is unknown but it was likely heat stress due to record warm water temperatures. Photo courtesy ADF&G

with time restrictions for much of the season, in most districts, due to most fishermen not having to deal with large numbers of chum salmon.

We had good numbers of Chinook, so we did not require 6-inch mesh in most of the lower districts to reduce the probability of targeting summer chum, until we had more certainty that chum run strength was improving. We also had concerns about the extended record warm mainstem river temperatures we were seeing- multiple days near 70°F! These temperatures are known to cause heat stress to migrating salmon and we had no way of knowing the effect on how many would escape to spawning grounds. By mid-June, we had a projected season total at Pilot station sonar of nearly 200,000 Chinook salmon (and using genetics, 95,000 Canadian-origin). This is a run size at the upper end of the forecast and above the recent average. But because of concerns about chum abundance affecting increased Chinook harvests, and water temperatures possibly effecting the salmon, most districts saw restrictions for much of the season. We were attempting to harvest just slightly more than last year, in the hopes of allowing for a little extra escapement.

Members of the Yukon Summer management team in Emmonak from left to Right: Fred Bue (USFWS), Gerald Maschmann (USFWS), Holly Carroll, Deena Jallen, Fred West, Mick Leach and "Blackie". Photo courtesy ADF&G

Due to the late and seemingly weak chum run, there was no commercial fishing with selective gear (dipnets) and the use of commercial chum gillnets didn't occur until July. The commercial fishermen took a large financial hit because of the reduced harvest that resulted. The Chinook salmon caught incidentally in the summer chum commercial gillnet fishery are usually retained for subsistence. But they were fishing during the tail end of the Chinook run and many fishermen had already met their needs for subsistence; therefore, these retained fish were allowed for sale. These already dead fish would help fishermen regain revenue from having many fewer commercial periods in the summer season. The incidental harvest and sale of Chinook salmon in the commercial season (summer and fall combined) was 3,100 fish, which was similar to the 5-year average for number usually retained in this fishery. Thankfully, summer chum came in strong enough to ultimately give us a run size of 1.8 million fish.

Local people are intimately knowledgeable about the salmon and habitat throughout the drainage and when they actively document and share information about any changes; that data helps us all more effectively manage this precious resource.

Our concerns about heat stress became vividly realized when 1,000's of summer chum salmon failed to arrive at the weirs on the Koyukuk River. Thanks to local fishers who documented and reported dead chum salmon in the Koyukuk and its tributaries, a trip organized and funded by the YRITFC was quickly arranged (see YRITFC's article). Stephanie Quinn-Davidson; director of the YRITFC, invited Dr. Peter Westley from UAF, and me out to Hughes to boat down the river to investigate the situation. Seeing all those chum dead (before spawning) was disturbing, however, we won't know the effects of the low escapements on the future chum returns to the Koyukuk for another 4 or 5 years. A fisherman reported similar mortalities on the Andreafsky River as well, though that river was able to meet its escapement goal for summer chum salmon. I'm hopeful that the drainage-wide chum run this year was large enough to withstand these kinds of losses. Salmon have a way of confounding us: often years with poorest escapements end up yielding the strongest returns 4 and 5 years later.

It's too early to do a proper 'report card' of management, because we need to see what the overall Alaskan harvest of Chinook salmon was, which we won't know until the subsistence harvest survey is completed. But it's safe to say that we are pretty baffled and concerned by the lower than expected escapement of Chinook salmon into Canada. The Eagle sonar counted a season final passage of 45,500 fish, which is barely above the minimum escapement goal of 42,500 Chinook. On top of that, our management actions strive to put additional fish into Canada for their fishermen to harvest as part of a harvest share agreement and this year that goal will not be fully achieved. Now, one might try to find the answer early and say: well if there were 95,000 Canadian origin fish estimated at Pilot Station, and 45,000 made it to the border, it's simple, Alaskans harvested almost 45,000 Canadian fish. But this would be nearly impossible since our average harvest over the last 3 years with similar restrictions has been 17,000 Canadian fish. I don't think our harvest of that stock could have tripled. So, we are not sure why escapements weren't better. And some of our Chinook escapements in Alaska were pretty good and met their goals.

It's possible that what happened to the summer chum could have happened to the Chinook salmon, but there were no significant reports of dead Chinook. And here's where we fall short as scientists ~ when we don't have evidence or data, sometimes we must speculate. We don't always have the answers and that can be frustrating. As we continue to see climatic changes such as record warm water temperatures, flooding, lack of sea ice cover in the Bering Sea, we can expect that management of salmon stocks is going to be increasingly complicated. That's why I was so heartened by the active citizen science we saw from Yukon fishermen and women, where folks documented and reported the chum die-offs they were seeing. Citizen science will need to be an ongoing and growing effort. Local people are intimately knowledgeable about the salmon and habitat throughout the drainage and when they actively document and share information about any changes; that data helps us all more effectively manage this precious resource.

Lower Yukon Drift test fisher, Lorraine Murphy, with the long-awaited first big catch of summer chum. Most fish caught in the test fishery are distributed within local communities. Photo courtesy ADF&G

2019 Fall Season Updates

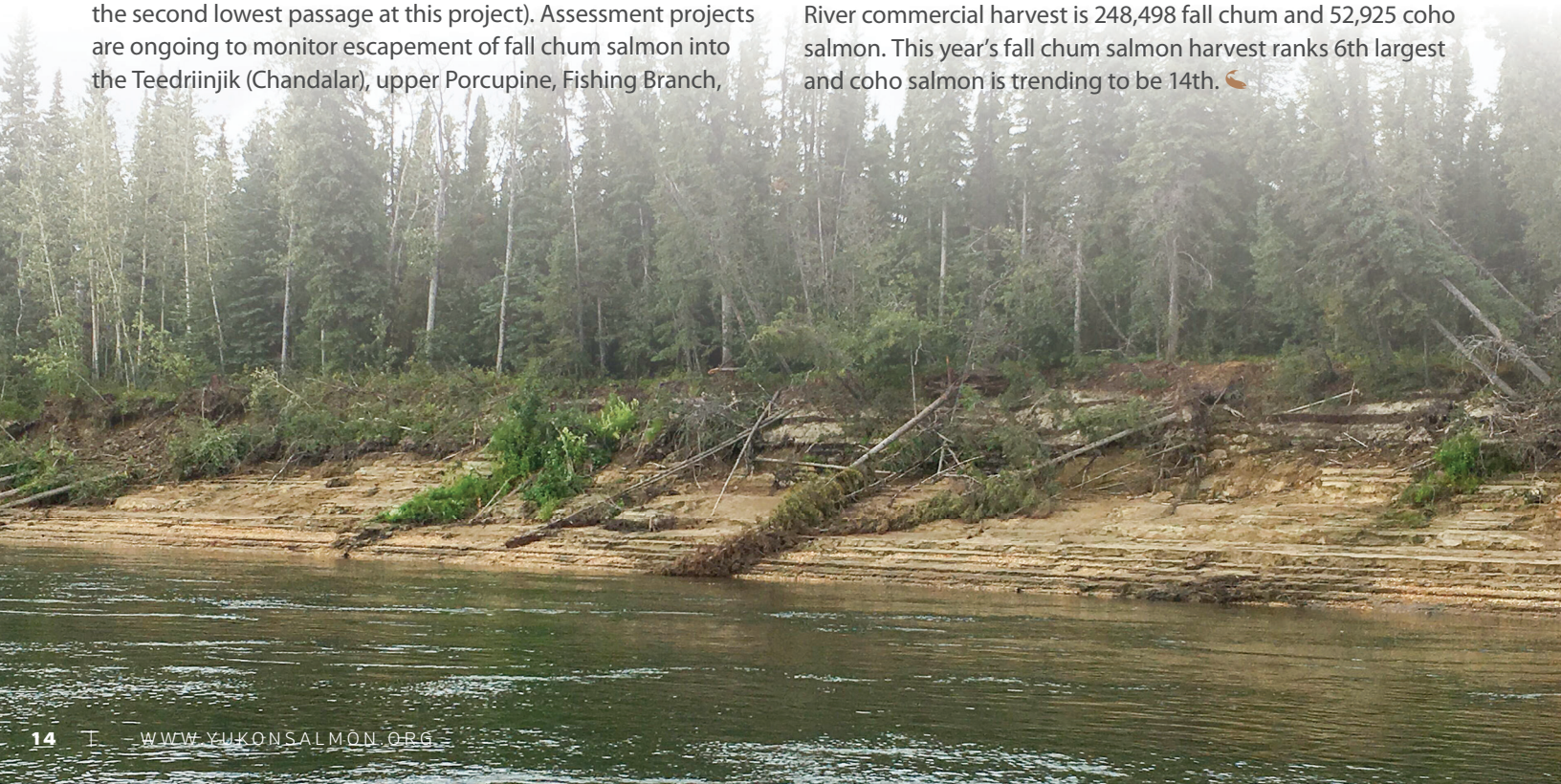
BY JEFF ESTENSEN, ADF&G FALL SEASON YUKON AREA MANAGER

The Yukon Area fall season management has wound down in the lower districts of the river and is ongoing as fall salmon continue to pass through the upriver sections on their way to the spawning grounds. Subsistence harvest is ongoing in the upper Yukon River as well as commercial fishing in District 6. Initial fall season management was based on the 2019 fall chum salmon preseason run projection of 625,000 fish with a range of 500,000 to 750,000. Across that range of abundances, the run was expected to provide enough fish to meet escapement, the mainstem Yukon River treaty objective, and subsistence use.

The 2019 fall season started by regulation on July 16 at the mouth of the Yukon River with four distinct pulses of chum salmon entering throughout the season. The combination of late summer chum salmon run timing and the late arrival of upper Yukon River fall chum salmon stocks, resulted in the first pulse being dominated by summer chum salmon to the extent that inseason adjustments were required to determine run sizes for management purposes. The proportion of fall chum salmon in the second pulse was more typical of the normal transition time period. The second pulse was approximately 200,000 fall chum salmon and the successive pulses were only slightly smaller. The preliminary cumulative passage at the mainstem sonar, operated near Pilot Station from July 19 through August 31, was 843,000 chum salmon (unadjusted for summer component), which tracked above the historical median. The preliminary cumulative passage of 86,000 coho salmon at the mainstem sonar was tracking well below the historical median of 155,000 fish throughout the season (ended the second lowest passage at this project). Assessment projects are ongoing to monitor escapement of fall chum salmon into the Teedriinjik (Chandalar), upper Porcupine, Fishing Branch, mainstem Yukon at U.S./Canada border, and Delta rivers, which will conclude between the end of September and the end of November.

The transition of districts and subdistricts to the fall season was based on the migration timing of fall chum salmon. Subsistence salmon fishing all Yukon River mainstem districts and subdistricts was opened to 7 days per week, 24 hours per day upon transitioning to fall season management. Subsistence salmon fishing in the mainstem Porcupine River was closed beginning August 23 because of chronic inability to meet the interim management escapement goal agreed upon by U.S. and Canadian representatives. The closure is an attempt to increase the number of fall chum salmon reaching the Canadian portion of the Porcupine River drainage.

Because of the wide range and uncertainty in the preseason projection, a cautious approach was taken early in the Districts 1 and 2 commercial seasons. The number of periods and fishing time were reduced to begin the season. Both were increased as inseason run assessment indicated the run fall chum salmon run was above the upper of the preseason projection range. There was a total of 25 commercial periods in Districts 1 and 2 in 2019. Commercial salmon fishing is ongoing in Subdistricts 5-B and 5-C, and District 6 for the fall season. The majority of fall season commercial harvest occurs in the lower river districts. The preliminary commercial harvest in District 1 is 147,830 fall chum and 39,238 coho salmon, and 100,668 fall chum and 13,687 coho salmon in District 2. The Lower Yukon River commercial harvest is 248,498 fall chum and 52,925 coho salmon. This year's fall chum salmon harvest ranks 6th largest and coho salmon is trending to be 14th.



2019 YRDFA Board Resolutions

Resolutions:

The YRDFA Board passed 7 resolutions at their 2019 meeting summarized as follows:

- **2019-01** – Protect Salmon Escapement for one full life cycle and manage for the upper end of the Canadian Agreement escapement goal.
- **2019-02** – Continued opposition to the Ambler Road proposal due to concerns around impacts to salmon habitat, water quality, potential pollution and impacts to our traditional way of life.
- **2019-03** – Support for the Pollock fishery conservation of Yukon River Chinook & chum salmon and request to continue lowering of bycatch.
- **2019-04** – YRDFA to join South East Transboundary mining group and request it include Yukon River concerns in their efforts.
- **2019-05** – Continued opposition to Frankenfish and support for requiring labeling of genetically altered or farmed salmon.
- **2019-06** – Opposition to large scale hatcheries on the Yukon River and that being included in the draft Alaska Comprehensive Salmon Plan and setting specific limits on Alaska hatchery releases.
- **2019-07** – Continued concerns per the potential impacts of the proposed Donlin Mine on the Kuskokwim River.
- **2019-08** – Continues support of Yukon River communities that have nominated Traditionally used watersheds on Bureau of Land Management lands for protection of resources they have used for thousands of years.

YRDFA Board of Directors. Pictured left to right: Tim McManus, Richard Burnham, Bill Alstrom, Stan Zuray, Andrew Firmin, Fred Huntington Sr., Victor Lord, Pollock Simon, Robert Okitkun, Michael James, Charlie Wright, Alfred Demientieff Jr.

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DISTRICT	NAME	CITY
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Y-1, Seat 1	Robert Okitkun	Kotlik
Y-1, Seat 2	Allen Hansen	Alakanuk
Y-1, Seat 3	Michael James	Alakanuk
Y-2, Seat 1	Bill Alstrom	St. Marys
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Y-2, Seat 3	Nick Andrews Sr.	Marshall
Y-3, Seat. 1	Alfred Demientieff Jr.	Holy Cross
Y-4, Seat 1	Fred Huntington, Sr.	Galena
Y-4, Seat 2	Richard Burnham	Kaltag
Y-5, Seat 1	Charlie Wright	Rampart
Y-5, Seat 2	Stan Zuray	Tanana
Y-6, Seat 1	Tim McManus	Nenana
Y-6, Seat 2	Victor Lord	Nenana
Koyukuk River	Pollock Simon, Sr.	Allakaket
Flats, Seat 1	Andrew Firmin	Fort Yukon

ALTERNATES

DISTR./SEAT #	REPRESENTATIVE	COMMUNITY
Coastal, Alt. 1	Vacant	
Coastal, Alt. 2	Clifford Kaganak Sr.	Scammon Bay
Y-1, Alt 1	Joe Afcan	Nunum Iqua
Y-1, Alt. 2	Camille Augline	Alakanuk
Y-2, Alt. 1	Stanislaus Afcan	St. Marys
Y-2, Alt. 2	Duane Thompson	Mountain Village
Y-3, Alt. 1	Basil Larson	Russian Mission
Y-4, Alt. 1	Dick Evans	Galena
Y-4, Alt. 2	Robert Walker	Anvik
Y5, Alt. 1	Vacant	
Y-6, Alt. 1	Candace Charlie	Minto
Y-6, Alt. 2	Dorothy Shockley	Manley Hot Springs
Koyukuk River	William Derendoff	Huslia
Flats, Alt. 1	Jan Woodruff	Eagle

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Photo by Brooke Woods (also appears on cover)