



THE CONFLUENCE

Newsletter of the Washington—British Columbia Chapter of the American Fisheries Society

Fall 2020

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"Crossing Boundaries and Navigating Intersections"
2021 WA-BC Chapter Annual Meeting
Hosted Virtually March 1–3, 2021

This year has been very trying and has thrown everyone for a loop. With the current state of the pandemic and a potential extension or change in political office, we likely need a boost in moral. What better way to boost your spirits than planning for the future!

We are slowly approaching the end of the year, and you know what that means...WA-BC's Annual Meeting is just around the corner! Although we will be unable to have a face-to-face meeting, this year has shown that virtual meetings can still be productive and impactful. We are happy to announce that we will be carrying on our previous meeting's theme—"Crossing boundaries and navigating intersections." WA-BC members who were unable to present this year, now is your opportunity.

More details about the meeting will be coming soon, so be sure to check our website for details!

2021 WA-BC Virtual AGM on March 1–3, 2021

More details about the meeting will be coming soon! Check out our website for updates: www.wa-bc.fisheries.org/

WA-BC Chapter Executive Committee



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President's Report

As the saying goes, "Necessity is the mother of invention." Or perhaps "Desperate times call for desperate measures" might be a more appropriate start to this report. As we are all facing new regulations and safeguards in both our personal and professional lives, I would like to encourage us as a chapter to try to focus on what we might learn as we are forced to rethink "normal." This is not to downplay the weeks that many of us spent working to design safe protocols for summer fieldwork. Similarly, working from home can be particularly challenging and inefficient as we struggle with the perception of always being at work and never really being at work. And for all of our members who are facing furloughs and job loss, you have my deepest sympathy.

However, in an attempt to remain productive, I have tried to learn from the new ways in which we communicate and hopefully those lessons will remain valuable even as the phrase "these challenging times" fades into our distant memories like "groovy" and "far out." One thing I have learned as I am teaching on-line is that virtual communication can reduce or at least minimize the barriers that are typically associated with geographic distance. Providing recorded material also circumvents many of the temporal challenges associated with offering content at a single time. The WA-BC ExCom and I are hoping to apply these lessons to our upcoming Annual Meeting in March. We are exploring the possibility of hosting our meeting simultaneously with the annual meetings of the Idaho and Montana Chapters and allowing anyone registered for one meeting to access the materials of all three. We are working on the logistics associated with this concept, but we hope to cross the normal boundaries that separate chapter meetings.

Finally, I'll encourage everyone to think beyond and not be confined by the barriers of the typical format we use for delivering presentations. I am increasingly finding myself out with a GoPro or grabbing my phone to shoot a quick video that will illustrate a point better than a static power point slide. Having the option to pre-record part or all of a presentation allows the freedom to include videos and other formats without facing the terror that there will be technical failure should we try something similar in a live format.

Those are just a few ideas. I'm sure our membership has many more and better examples of "what we have learned." So I would like to encourage you to share your ideas and lessons learned or even the current challenges you are facing on our Chapter Facebook Page or Instagram account. Our collective wisdom will hopefully help us all through "these challenging times."

Be well.

Contact for Paul Spruell

Email: pspruell@ewu.edu or afs.wabc@gmail.com

Salmon Watchers–The Revival

Submitted by Dr. Jeffrey S. Jensen



Coho Salmon in McAleer Creek. Photo Credit: Jeff Jensen

For 20 years King County Washington, in partnership with other organizations, organized an immensely popular [Salmon Watchers](#) program for streams in the Greater Seattle area. Citizen volunteers were trained to identify salmon and to collect data on the distribution, numbers, and behavior of salmon. In addition to the public enthusiasm and education this program provided, it generated a two-decade archive of salmon observations on streams that are continuing to face the challenges of an urban watershed.

Unfortunately, the Salmon Watchers program ended with the loss of funding in 2015, although similar activities continue on a smaller scale (e.g. Bellevue Stream Team). Because of my interest in the biology of North Lake Washington basin salmon, particularly kokanee salmon, I was very eager to resurrect this program. With the assistance of Trout Unlimited and several local non-profits and municipalities, we were to re-engage with several former salmon watchers, and to recruit new citizens and new generations to the effort. Despite the challenges of the COVID-era, we have been able to train (via zoom) and collect reports (via web forms) from over 40 volunteers surveying 12 streams. I have been very gratified both by the enthusiasm and dedication of our volunteers and the observations that would have otherwise gone unrecorded.

Some observations confirm expectations, such as the very low returns of sockeye to the Lake Washington system this year. Other observations, such as a very high number of kokanee/residuals in the lower Sammamish river, raise important questions about the ecological drivers of life history variation in the system. Some observations are hopeful, such as observations of chinook in heavily impacted McAleer creek, while others are downright bizarre, such as the finding of a female pink salmon returning not only as a stray to the wrong system but in the wrong year (pink salmon run in odd years only in the area)! Along the way, volunteers have seen otters, eagles, mink, and have gained a new or renewed connection to our urban biology.

For more information, view the [University of Washington-Bothell website](#) or [Dr. Jensen's blog](#).

Dr. Jeffrey S. Jensen
Division of Biological Sciences
School of STEM
University of Washington, Bothell



Sockeye Salmon in the campus wetlands. Photo Credit: Jeff Jensen

2020: A Banner Year for Puget Sound Pacific Herring

Submission by Todd Sandell and the Marine Fish Science Unit, WDFW

Forage fishes are vital components of the marine ecosystem of the Puget Sound (also known as the southern Salish Sea; SSS) and are a valuable indicator of the overall health of the marine environment. Recognizing the importance of forage fish in the SSS ecosystem, the Washington Department of Fish and Wildlife (WDFW) has monitored the abundance of key Pacific Herring stocks since 1972, and the Puget Sound Partnership (PSP) selected the spawning biomass of SSS herring as an annual [vital sign indicator](#) of ecosystem health.

WDFW monitors Pacific Herring spawning biomass from January through June each year, with 21 stocks in the SSS monitored in 2019 (plus two stocks on the coast, Willapa Bay and Grays Harbor). In Puget Sound, most herring stocks spawn between January and April; in 2020, the survey season was closed by the COVID-19 pandemic on March 16th. Despite that closure, our preliminary estimate for the herring spawning biomass is **17,635 tonnes, the highest since 1980!** For context, over the previous ten years, the average estimated spawning biomass (ESB) was 9,350 tonnes (Figures 1 and 2). This number is clearly an underestimate due to the closure, as only six stocks had full coverage, with another six having moderate coverage and nine stocks with inadequate or no coverage at all, including Fidalgo Bay, Samish Bay, Kilisut Harbor, Sequim Bay, NW San Juan Islands, Interior San Juan Islands, Cherry Point and Point Roberts. Note, the late-spawning Cherry Point stock season is still considered open and we hope to resume boat-based survey coverage soon.

The biggest increases occurred at Purdy (884 mt; South Sound), Quilcene Bay (7,118 mt; Hood Canal) and Port Orchard-Port Madison (6,577 mt; Central Basin); *these were the largest spawning events ever recorded at these sites.*

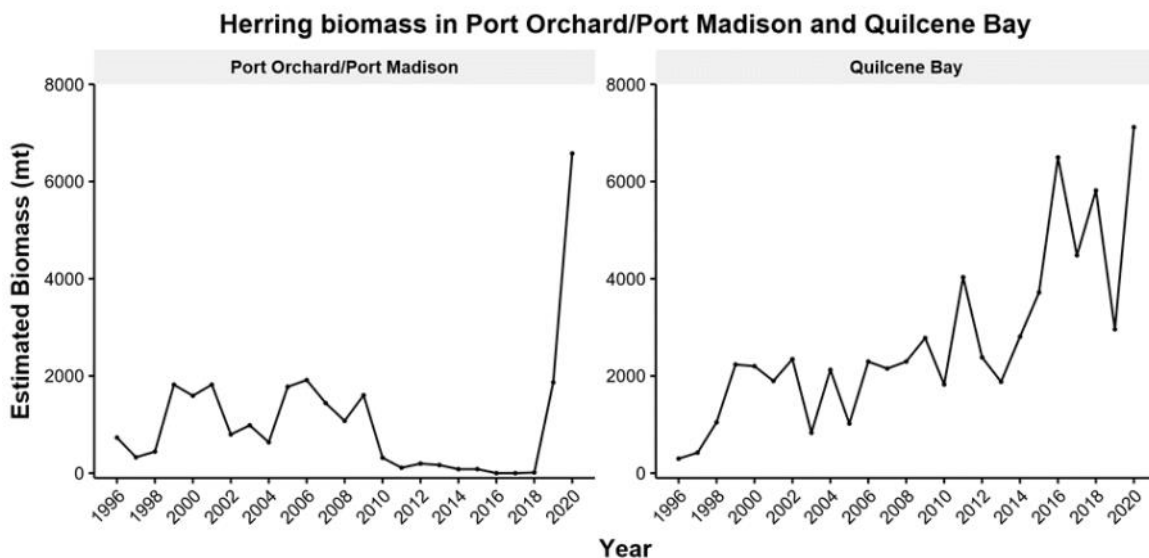


Figure 1: Estimated spawning biomass at two sites with the largest biomass increases in 2020.

Continued on Page 5

2020: A Banner Year for Puget Sound Pacific Herring **(Continued)**

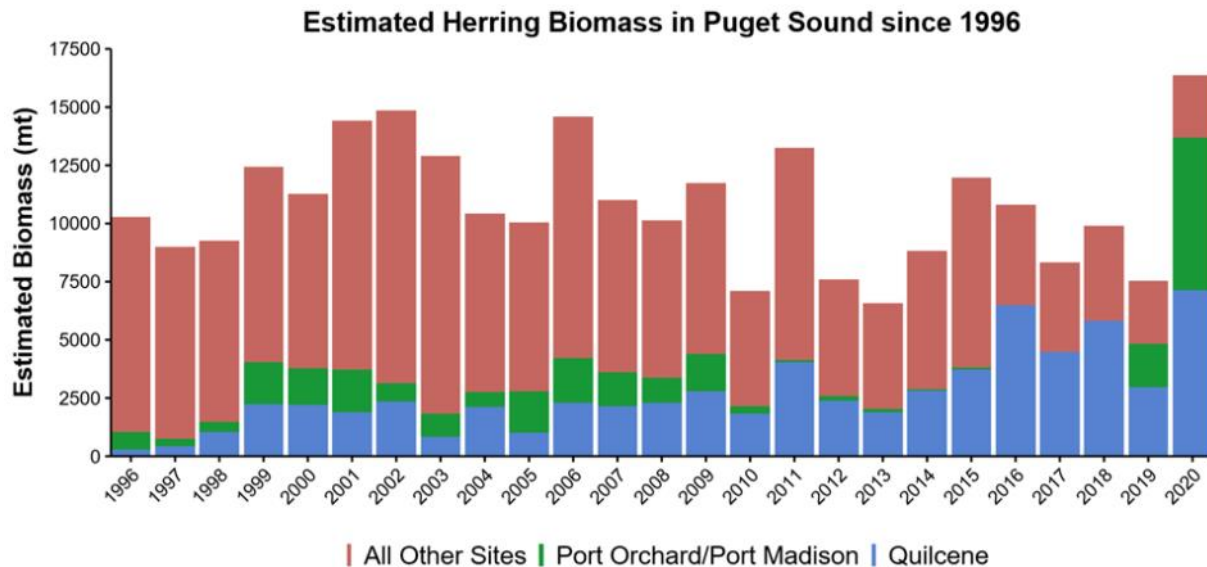


Figure 2: Estimated spawning biomass at two sites with the largest biomass increases in 2020.

There were also large spawning events at Elliott Bay (this year, spawning occurred south of Alki Point, with credible reports- and estimates- of spawning biomass) and off the NW corner of Bainbridge Island (after the PO-PM spawn) captured by citizen reports that were not surveyed due to the closure.

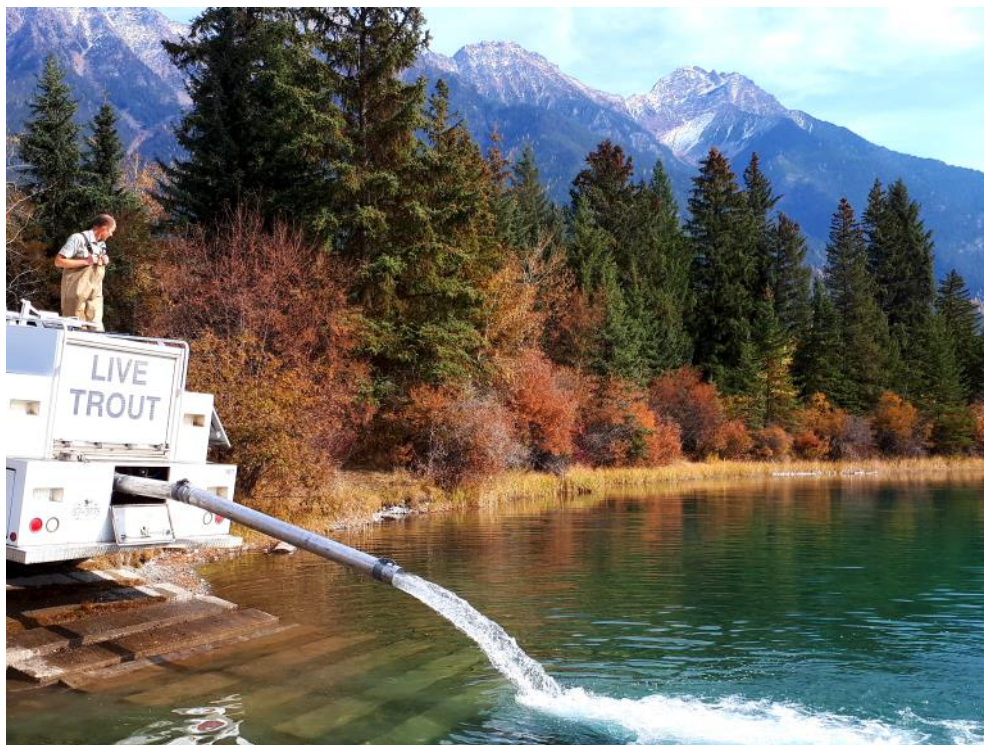
Forage fish populations are notorious for having extreme annual variation in population and recruitment, but the increase seen in 2020 is striking. For explanations on why Pacific Herring biomass has drastically increased, information on Pacific Herring in SSS, and acknowledgements for this work, please refer to the [full document](#).



Pacific Herring spawning event at Greenbank, north of Holmes Harbor of Whidbey Island. Note: the "whitewater" is Pacific Herring milt. Photo credit: Randy Schroder.

Introducing the Freshwater Fisheries Society of BC – My Professional Home

By Kirstin Gale, Secretary, WA-BC Chapter of AFS



If you have ever fished the small lakes of British Columbia, chances are you've encountered trout or kokanee that the Freshwater Fisheries Society of BC has stocked. The Freshwater Fisheries Society was created in 2003 as a not-for-profit organization that partners with the province of British Columbia to deliver various aspects of the provincial fisheries program, most notably maintaining the small lakes stocking program for recreational fishing. Every year, we stock over 800 small lakes around the province with trout, kokanee, and char strains from one of our six hatcheries. While British Columbia is home to 20,000 lakes and 750,000 kilometres of rivers and streams, these small stocked lakes are estimated to generate approximately 50% of all freshwater fishing effort in B.C.

However, that's not all we do. The goal of the Freshwater Fisheries Society of BC is to provide the best freshwater fisheries in North America with a mandate to enhance and conserve B.C.'s freshwater fisheries for public benefit. While a large portion of our resources are dedicated to maintaining the recreational small lakes stocking program, we also work in partnership with local governments, academics, industries and local stewardship groups to seek ways to make fishing in B.C. even better through research and development, assessment and monitoring, restoration and recovery efforts, and outreach and education initiatives. We keep anglers abreast of the best fishing opportunities in their region and regularly update our website and social media channels with the latest information about fishing techniques, access improvements and seasonal opportunities.

You can check out some of our most recent blog posts at gofishbc.com, including:

[Salmon fishing this fall](#)

Image caption: One hundred percent of freshwater fishing license fees in B.C. are put to use stocking over 800 small lakes and supporting recreational angling opportunities in freshwater.

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Introducing the Freshwater Fisheries Society of BC – My Professional Home (Continued)



Our fall call for Native Trout Stewardship Initiative proposals

A project we are supporting to monitor wild bull trout populations in the Skeena

We also have great videos on our [YouTube channel](#), including our [How to Fish](#) series. We have everything from instructional videos to get beginners out on the water, to advice for avid anglers from master stillwater fly fisher and biologist Brian Chan, and our Fishing Advisor Nick Basok, who is one of the best anglers in British Columbia's Lower Mainland.

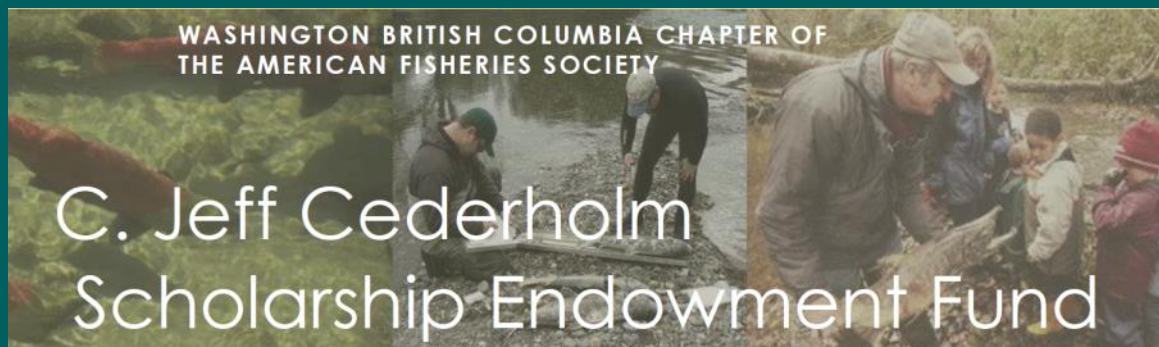
If you're interested in employment with my organization, the Society offers challenging career opportunities in a wide range of areas, including fish culture and fisheries research. We welcome applications from people with a diverse range of perspectives and backgrounds to help us achieve our vision of the best freshwater fisheries in North America. To learn more about our organization and employment opportunities, please visit gofishbc.com or contact jobs@gofishbc.com for general employment enquiries.

Finally, we distribute a regular newsletter to over 20,000 anglers, partners and other interested individuals to provide an update on our activities. If you are interested in getting on this distribution list, please sign-up [here](#).

Image caption: Our mandate is to enhance and conserve B.C.'s freshwater fisheries for public benefit. In addition to stocking Rainbow and Cutthroat Trout, Kokanee, and Brook Char for recreational angling, we also support projects that protect wild fisheries in rivers and large lakes.



**Freshwater Fisheries
Society of BC**



Endowment Brief History

Jeff Cederholm dedicated his career to conservation of salmon and aquatic species and their habitats. Jeff passed away in 2006 leaving a legacy of education, pioneering contributions to scientific literature and periodicals and instilling of passion for wild salmon conservation in many people for decades. After a successful American Fisheries Society Meeting hosted by the WA-BC Chapter in Seattle 2011, the Chapter resolved in 2013 to apply raised funds and subsequent contributions to the endowment to create a permanent source of financial support for educational expenses. The Scholarship is administered by the WA-BC Chapter Endowment Committee.



The Scholarship

The scholarship endowment fund will provide **three \$1000 scholarships in 2020**, one each to an **undergraduate** student (pursuing a bachelor's or associate's degree), a student pursuing a **master's degree**, and a student pursuing a **doctorate**.

The following scholarship criteria apply:

Scholarships are intended for defrayment of educational expenses such as tuition, student fees, lab fees, books, supplies, room and board.

Scholarships will be awarded to students pursuing degrees in fisheries, aquatic sciences, or related fields at an accredited college or university.

Master's and PhD applicants must be Washington-British Columbia Chapter members at the time that their application is submitted.

Undergraduate applicants need not be Chapter members.

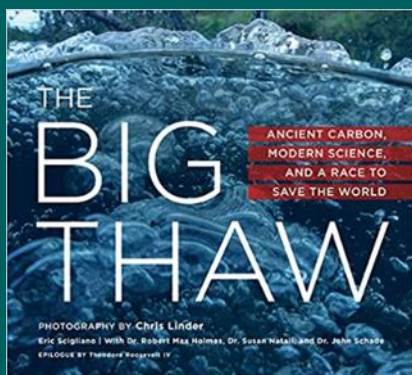
How to Apply

Provide a brief cover letter addressed to the C. Jeff Cederholm Scholarship Committee, fill out the attached application form, acquire two letters of recommendation and e-mail a merged pdf electronic version containing all elements to WA-BC AFS Past President, Brittany Jenewein (btjenewein@gmail.com) or mail to WA-BC chapter American Fisheries Society, P.O. Box 9322, Spokane, WA 99209. E-mail submissions are preferred.

Applications will be accepted through February 15th, 2021



Orlay Johnson,
Reviewer



The Big Thaw: Ancient Carbon, Modern Science, and a Race to Save the World



Eric Scigliano, Lead Author

The Book Nook

College Students Loose in the Russian and Alaskan Arctic — What Could Go Wrong? A review of *The Big Thaw: Ancient Carbon, Modern Science, and A Race to Save the World*

Review by Orlay Johnson

Lead Author: Eric Scigliano. Pub: Braided River. 2019.
Cost: \$35; 100% of royalty supports Woods Hole Research Center

Short Review (Too long; Didn't Read)– Thumbs up. I recommend this book unreservedly – it is well written, easy to read, and full of magnificent full color photographs that tells an uplifting story about students working in eastern Siberia and the Yukon-Kuskokwim area of Alaska. The book is an antidote to the depression and helplessness many of us feel in the face of climate change. It has a “you are there” feel as we follow students designing their own research and then implementing them in the frozen reaches of the Arctic. Also, the main author, Eric Scigliano, worked as a writer for WA Sea Grant on the University of WA campus. Biggest complaint is the lack of an Index.

Full Review – While Eric Scigliano, a well-known climate writer, is the lead author of this book, there are three other writers, plus a banker who wrote the epilogue. So, I expected a fancy coffee table book with pretty pictures of endangered animals, little science, and probably a doom and gloom scenario delineating a catastrophic, irreversible climate disaster. Instead, I found it to be the opposite. The Big Thaw does not pull its punches, but it certainly isn't bleak. The book tells the uplifting story of students, along with researchers and local people in Siberia and Alaska, working together to implement research that can help us understand the impacts of climate change, and what we can do about it. The students, under the auspices of something called the Polaris Project, are doing serious research that they developed. Specifically, the program focuses on studies of the vast quantities of ancient carbon locked-up in Arctic permafrost, investigating its fate as the earth warms. Will it remain in the ground as it has for thousands of years, or will the carbon be released to the atmosphere as permafrost thaws, thereby fueling additional warming?

The photography by Chris Linder is a huge part of why this book is such a pleasure to read. Chris has documented more than 50 expeditions from the Congo to Siberia and spent over two years of his life photographing impacts of climate change on polar regions. He has been involved with the Polaris Project from the first field work in 2008. His photos capture the students in action as well as the expansive beauty of the Siberian taiga and later the Yukon-Kuskokwim River delta. He also documents climate impacts such as the “drunken forests” where permafrost is melting, trees are leaning every-which-way, and methane is bubbling up dangerously into the atmosphere.

Continued on Page 10

The Book Nook (Continued)

So, what is the Polaris Project? It is a student engagement field program began in 2008 under the direction of Drs. R. Max Holmes, John Schade (education director) and Sue Natali with the Woodwell Climate Research Center at Woods Hole in MA. Initially the objective was for the college students on their home campuses to develop their own field research projects on the impacts of thawing permafrost and then to provide them the opportunity to implement those studies on the ground in the Russian Arctic.

Over the summer, they would conduct their research out of the Russian National Academy of Science's North East Science Center (NESC). The NESC had been founded in 2006 by Dr. Sergey Zimov in the city of Chersky in subarctic of eastern Siberia, specifically to study climate change in polar regions. Chersky is also home to Pleistocene Park, a very large, protected area specifically designed for research into global warming, Pleistocene ecology, and permafrost.

The book's descriptions of the difficulties encountered in the first years of the program may be the most moving and inspirational part of the book. Stories by the students and descriptions of the research efforts are hard to believe without the photos that accompany the text. Imagine a group of undergrad students from all over the United States flying thousands of miles, some on ancient Russian planes and helicopters, into Siberia and then hiking across melting permafrost to conduct research in mosquito- and bear-infested swamps and "drunken" forests. But they did, and the NESC was a godsend as it provided a subarctic environment dedicated to research, a lab with equipment to conduct planned research, as well as safe sleeping quarters, hot food, and (best) hot showers. It also provided an indoor haven from the hordes of mosquitoes ubiquitous in the Arctic. One of the most horrific and humorous parts of the book is Chris Linder's description of how relentless Arctic mosquitoes can be to a photographer – regardless of anti-bug gear or spray.

The cooperation of local Siberian townspeople is also amazing. To me, a highpoint of the book is the inspirational story of Anya Suslova, a young teen and daughter of the research ship's captain. She helps the researchers collect water samples when they first scope out the area and she then continued the collections after the researchers leave. The work she did and a gift subscription to the English version of National Geographic from Max Holmes inspired her to learn English and continue to work with the Project. Inspired by her experiences with the Project scientists, she attends college at Uakutsk State University in Russia and then earns a Master's Degree at Teri School of Advanced Studies in India. She now works as a laboratory technician at Woods Hole Marine Labs working on climate change research.

The program ran at the Russian NESC site from 2008-2015 when, during the Ukrainian War, funding constraints for field work in Russia by US funding agencies moved the research focus to the Yukon/Kuskowim Delta in Alaska.



Max Holmes arrives via helicopter.



Russian National Academy's NESC.

Continued on Page 11

The Book Nook (Continued)

This location was a bit easier to get to, and work in (it is further south), but the laboratory and indoor living facilities at NESC gave way to camping and bear fences – although the tents look pretty comfortable and the views shown in Chris Linder’s photos are, again, spectacular.

In many ways, the Polaris Project is similar to the University of Washington’s summer study at their camps in the Wood River System of Bristol Bay (including the mosquitoes). That program focuses on inspiring UW students while they study changes in salmon populations in one of the most productive, but climate change threatened river systems in the world. A system that is now further endangered by a proposed huge mining project.



The Polaris Project is a bit more ambitious, however, in that it “tackles one of humanity’s greatest challenges – global climate change – in one of Earth’s most remote and vulnerable environments: The Arctic.”

What makes the book so readable is not just the science or the beauty of the Arctic, it’s the voices of the students engaged in their research, their enthusiasm, and the first-hand knowledge they will bring back to their home schools. To them, the warming in the Arctic is no longer theoretical, but in-your-face reality.

We are all living through a pandemic that most of us never expected or imagined, but “The Big Thaw” tells the story of something far worse, something that threatens not just humans, but all life on our planet. However, like the COVID-19 pandemic, initially some have chosen to ignore climate change’s chilling dangers—we just hope it goes away, like magic; maybe by next month....

This book shows us that ignoring climate change is a very bad idea. However, rather than simply being a dark and dreary manifesto for disaster, the book gives us numerous pathways that we can work to blunt this disaster. But, it goes well beyond that, and in a warm and engrossing way, it introduces the reader to the Project’s students and leaders who are fighting on the front lines to change the warming trajectory presently occurring.

The faculty and researchers who founded and lead the program are an incredibly dedicated group as the conditions, funding, and transportation must be a nightmare. But this book is about the students whose studies and photos are the backbone of the book.

The stories about the students are honestly fascinating. One example is the story of Claire Griffin, profiled on page 49. She joined the Polaris Project in summer 2009 as an undergrad and returned as a grad student in 2013 with research to measure nutrients and the amount of food available to microbes at various depths in floodplain and thermokarst lakes. They processed the water samples in the field and in the laboratory to measure the temperature, dissolved oxygen, and pH.



Image Captions: Polaris Project camp on the Yukon-Kuskowim Delta (left); UW Bristol Bay Laboratory (right)

Continued on Page 12

The Book Nook (Continued)

However, she writes (similar to most science projects), “the work involved a lot of processing and boring atmospheric corrections” but she persevered. She says [she persevered] due to inspiration from a quote by a Polaris leader John Schade: “Every tope of science involves some type of tedium. Find the tedium you can tolerate or even enjoy and do that” – something maybe we can all appreciate.

And she did persevere – she recently earned her Ph.D. at University of Texas and her post-doc involves studying water quality in lakes of the northern Mid-West.

Finally, if you want to learn more about the work described in the book - the history of the Polaris Project is well documented on web with photos of each year’s activities from 2008 to the present and can be found at this website: <https://www.thepolarisproject.org/news/>

Last and maybe least – the book lacks an index, and with this many student, researchers, locals, and other names, it would be very helpful to be able to refer to an index and find where different people or research projects are discussed in the book.



Photographer

Chris Linder is an award-winning professional photographer. Originally from SW Wisconsin, he earned an undergraduate degree in oceanography from the US Naval Academy and a master’s degree from the MIT and the Woods Hole Oceanographic Institution. After working as a naval officer and an oceanographic researcher, he transitioned to visual storytelling. Since 2002, he has photographed more than 50 scientific expeditions and has spent over two years of his life exploring the polar regions. For more info on the photography check out Chris Linder’s “Field Notes from an Arctic Climate Photographer”.

Lead Author

Eric Scigliano is from Seattle and has a longtime interest in climate change, the Arctic, and the alarming intersection between the two. He has been the science writer for Washington Sea Grant at the University of Washington and is the coauthor, with Curtis Ebbesmeyer of *Flotsametrics and the Floating World*. He has also written *Michelangelo’s Mountain* and *Seeing the Elephant: The Ties That Bind Elephants and Humans*. His work has won Livingston and AAAS awards and has been included in *Best American Science Writing*.



Other Contributors



Dr. Susan Natali (left), John Schade (middle), and Theodore Roosevelt IV (right)

STUDENTS: SAVE THE DATE

Western Division of the American Fisheries Society Student Colloquium 2020



Workshops, presentations, fish trivia,
prizes!

When: November 13-14, 2020

Where: Virtual via Zoom

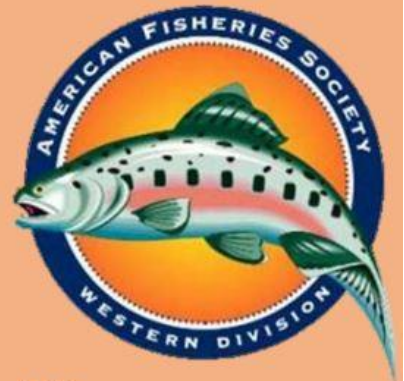
Registration is free and to come
**FOR QUESTIONS AND REGISTRATION
CONTACT:**

Emily Chen
WDAFS Student Representative
emily-chen@berkeley.edu

PANELISTS WANTED!

Annual Western Division Student Colloquium

Friday, November 13, 2020



- Have you been hired since COVID-19?
- Have you hired fisheries professionals recently?
- Have you successfully presented or listened to virtual presentations?

WE WANT TO HEAR FROM YOU!

Contact Student Representative:

Emily Chen (emily-chen@berkeley.edu)

Education Corner

PRACTICAL HATCHERY MANAGEMENT OF WARMWATER FISHES



Practical Hatchery Management of Warmwater Fishes

Jack Snow and Ron Phelps



AMERICAN FISHERIES SOCIETY

Checkout the new publications at the [AFS bookstore](#), including *Practical Hatchery Management of Warmwater Fishes* (available soon) by Jack Snow and Ronald P. Phelps.

This book describes the components of a warmwater fish hatchery and the basic techniques used for commonly cultured freshwater fishes. The book's goal is to enable selection of an appropriate combination of techniques to successfully produce fish species in a hatchery setting.

This work will be a valuable reference for culturists, fisheries scientists, managers, and the interested public. Be sure to pick it up soon!



Eiko Jones Photography



INTERNATIONAL
YEAR OF THE SALMON

2020 North Pacific Photo Challenge

EXTENDED DEADLINE:
November 30, 2020

Submit a photo of salmon with a write up of what salmon means to your community for a chance to win a \$500 grand prize and be featured on our website!

Please send submissions to:

photochallenge@yearofthesalmon.org

Visit our website:

yearofthesalmon.org/2020photo/



Washington-British Columbia Chapter of the American Fisheries Society

Chapter Information

Website: <http://wa-bc.fisheries.org/>

Facebook: <https://www.facebook.com/wabcafs>

Twitter: <https://twitter.com/wabcafs>

Want to join AFS and the WA-BC Chapter? <http://membership.fisheries.org/>

Questions? Suggestions? Contact:

President Paul Spruell at pspruell@ewu.edu

Want to write an article or submit any type of fisheries-relevant information to this newsletter? Contact:

Timothy Taylor at timothytaylor.afs@gmail.com

The WA-BC Chapter of the American Fisheries Society, which includes members in Washington State and British Columbia, is an organization composed of professional biologists interested in the scientific conservation and enhancement of fish populations and their environment.

The mission of the Chapter is to:

1) advance the conservation and intelligent management of aquatic resources within a context of sound ecological principles,

2) gather and disseminate information pertaining to aquatic science and fisheries management, and

3) promote the educational and technical aspects of the fisheries profession.

In pursuit of our mission, we will strive to equitably represent the views of members, develop opportunities for effective leadership and conservation, and generate the resources necessary to carry out our programs.

The next WA-BC Chapter Annual General Meeting will be held in Bremerton, WA on April 8–11, 2019.

Watch for the latest updates!
www.wa-bc.fisheries.org



2020-2021 Executive Committee of WA-BC Chapter

From left to right: top) Paul Spruell, Alf Haukenes, Jeff Fryer, Brittany Jenewein,
bottom) Kirstin Gale, Tamara Knudson, Timothy Taylor, and Caroline Walls