



PISCATORIAL PRESS

OREGON CHAPTER OF THE AMERICAN FISHERIES SOCIETY

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PRESIDENT'S CORNER:

OR AFS Colleagues,

While I am honored and excited to be writing my first President's Corner for you, it is nonetheless a task I approach with a great deal of trepidation. Looking back at the excellent letters written by many past-Presidents, this is usually a space to list the accomplishments of the previous year and highlight the many wonderful activities planned for the coming year. However, as we struggle to contain a rapidly shifting pandemic and to come to grips with systemic racial injustice and violence and forge a path forward, it is hard to focus on "business as usual." As we wonder when, indeed if, things will ever return to "normal", we're forced to ask the question "should they?"

Even the pandemic itself has laid bare the glaring inequalities in our system. The CDC has estimated that death rates from COVID-19 are twice as high for black people as for white people and 50% higher for Latinos. Underlying, chronic medical conditions, concentration in "essential" work sectors, lack of access to the healthcare system and reasonable distrust of healthcare all contribute to these statistics. However, at their core all these factors remain a product of systemic injustice.

It's no longer enough to form Diversity, Equity and Inclusion Committees, fund D.E. & I. scholarships and provide trainings and symposia once a year at meetings. These are necessary but not sufficient steps. The challenge before us is to make diversity, equity and inclusion an integral part of everything we do as an organization and as professionals. It is not just a part of our professional endeavors but central to them. Our professional training and lived experience teach us that highly diverse systems are more adaptable, sustainable and resilient. Why should this be any less true for our social, political and cultural systems than it is for our physical, biological and ecological systems? Our professional and personal lives can only

be enriched by embracing the varied experiences, perspectives and talents of as diverse a cross-section of people as our world offers.

Over the next year, with the support of the Executive Committee, I expect to take concrete steps to move OR AFS further down the path of becoming an open, welcoming organization for ALL fisheries and aquatic professionals regardless of their race, ethnicity, gender, religion, disability or any other personal particular. I strongly encourage all members to take advantage of resources and opportunities and to share them with friends and colleagues. We all have work to do examining our own conscious and unconscious biases, learning how to be effective allies and striving to promote justice, equity and inclusion.

In closing, let me reiterate that OR AFS stands unequivocally against all forms of bias, injustice and the violence it engenders. We continue to aspire towards the never finished goal of creating a welcoming space where diversity, equity and inclusion are at the core of and integral to all that we do. This is a journey that will require humility, open-mindedness and compassion and one I look forward to taking with all of you.

Please stay safe, healthy and supportive of one another during these challenging and transformative times!



Peter Stevens, President
President@orafs.org

EXTERNAL DIRECTOR'S REPORT

Hello fellow OR AFS members,

First, I'd like to introduce myself. My name is Ryan Branstetter, and I am your new External Director. I was born and raised in the Pendleton area (NE Oregon). My family has been a part of the Pacific NW area for a very long time. I am a member of the Confederated Tribes of the Umatilla Indian Reservation and my non-Indian side were Pioneers who homesteaded the area in the late 1800's. I attended Oregon State University (1995-2001) where I earned my bachelor's in Wildlife Science and had the opportunity to intern with some really great staff in the Fish and Wildlife program. After graduation I worked for both the Nez Perce and my own tribe primarily on riparian habitat restoration and monitoring. In 2003, I was offered the opportunity to work for the Columbia River Inter Tribal Fish Commission (CRITFC) for the Fish Science Department studying and mitigating for steelhead kelt loss, initially in the Yakima River, and then later the Snake, Hood, Warm Springs, and the Columbia from the mouth to the Canadian border. I've also had the opportunity to work on some of our other CRITFC projects such as sea lion hazing, sockeye reintroduction and monitoring in both the Yakima and Okanogan river basins, the Adult Monitoring Fish Facility (Bonneville Dam), Hanford coded wire tagging of Chinook, and Pacific Lamprey collections at Willamette Falls.

I know I have big shoes to fill, as I heard from many of you that Jason did a great job prior to my entrance. I promise I will try to give it my best to serve as a good External Director. Concurrently, this year has been the oddest and most challenging I think I've experienced in my 40+ years on planet earth in both my career and personal life. With that said, the timing of my new OR AFS responsibilities has also been impacted due to this pandemic since I've only met a handful of my fellow officers and committee chairs in person. Even with the oddness and challenges presented this year, I'd like to express that I am blessed to have been able to retain my employment during these turbulent times, while also having the flexibility to work from home. I know there are many federal, state, tribal, and NGO staff that are not afforded this luxury. Some of these employees have found themselves unemployed, while some others are out selflessly putting the health and welfare of themselves and their families on the line to insure the protection of our region's natural resources. In some cases, some of these employees have been exposed to the virus and have had to resort to quarantine, hospitalization, or sadly, paid the ultimate price. I'd like to take a moment and acknowledge these individuals for their sacrifice and pray for the continued good health for both them and their families.

As previously stated, I've been starting to establish connections with our OR AFS Committee Chairs. I apologize that I was late trying to obtain those details with which to provide a thorough update on all the business of the committees, but I hope to provide a more detailed update in the fall. There are likely several legislative actions in the works in Salem that will need updating.

The status of the Nongame Native Fish workshop is that it is still scheduled to occur, but the situation is fluid and uncertain. There will be an announcement with an update in August to determine if it is still ongoing or will be postponed until 2021, so please keep an eye out for that. All participants will be notified if there is a change in status.

Also, I've had some good conversations with Gabe Sheoships our Diversity, Equity, and Inclusion Chair based on how we can improve access for our underrepresented Oregon communities of color. We both felt that a good start is providing some informative literature with which to provide context as to why many of these communities have historically been excluded from participating in outdoor activities/entry into Fisheries and Wildlife. This exclusion has led to a lack of representation in our industry, higher education, science participation, and legislation creation. I think it's important to stress that all of us have a responsibility to try to reconcile this deficiency by providing advocacy and outreach to include these communities, because if all the citizens of Oregon care about our natural resources the stronger our state and all our communities are as a result. Here are some good articles that Gabe has recommended:

[Racism in the great outdoors:](#) Oregon's natural spaces feel off limits to Black people.

[Systematic racism in outdoor and urban spaces.](#) How do we move forward?

[Thoughts on the killing of George Floyd:](#) Systematic racism is everywhere. Even in the great outdoors. Chad Brown.

[Birding while Black:](#) Does it really matter?

[Black birders call out racism, say nature should be for everyone](#)

[Birding while Black, a candid conversation \(video\)](#)

EXTERNAL DIRECTOR'S REPORT—CONT'D

Key organizational websites to engage with:

theblueprintfoundation.org

wilddiversity.com

outdoorafro.com

grist.org

soulriverinc.org

tappinrootsinternship.org

latinooutdoors.org

The Chairs of the committees have asked me to relay that if you hear the calling to volunteer and have the means to contribute to OR AFS, please reach out and do so, they could always use some new and different perspectives. If you are interested, please feel free to contact me at externaldirector@orafs.org or see the committee chairs on the last page of this issue. Also, if you have any questions or concerns that you would like either relayed to the Executive Committee or myself, feel free to contact me with those as well.

Thank you for your time and consideration, for It is an honor to serve OR AFS and I look forward to sharing my next entry to the Piscatorial Press, until then, stay safe and healthy.



*Ryan Branstetter, External
Director*
ExternalDirector@orafs.org

IN MEMORY: PATRICK L. LUKE “YETATAMANISHT.”

DECEMBER 7, 1962 – JUNE 22, 2020

The Oregon Chapter of the American Fisheries Society wishes to honor the life and memory of Patrick Luke; lifelong fisherman, USMC veteran, OSU graduate, Fisheries Biologist and elected Tribal leader. Patrick was an enrolled member of the Yakama Nation, his father's lineage, his mother hailing from Nixyaawaii - the Confederated Tribes of the Umatilla Indian Reservation (Cayuse, Walla Walla, and Umatilla Tribes). Coming from a traditional fishing family, one with a relationship spanning thousands of years on the Columbia River, Patrick's education began at a young age. Patrick channeled his



cultural traditions and knowledge towards a career as a fisheries biologist to protect and preserve the First Foods of his people. His academic career began as a returning student at Blue Mountain Community College, then to Oregon State University as a Ford Family Scholar, finally working on an M.S. from Evergreen State College at the time of his passing. After earning his B.S. in Fisheries and Wildlife from OSU, Patrick took a position with the Yakama Nation, where he was instrumental in starting their Pacific lamprey (Asum) conservation program. After many years of service as a biologist, Patrick was elected to the Yakama Nation Tribal Council. From his position as a council member, Patrick continued his service towards fish, traditional rights, and the big river (N'chi Wana). In 2016-17, Patrick was elected to serve as the chairman of the Columbia River Inter-Tribal Fish Commission. Patrick lived a full life, grounded in the values of the River Tribes and Longhouse traditions, but was taken far too soon. We have asked several colleagues to share personal details of their time spent with Patrick, who will be remembered as someone who

valued relationships with family, friends, and colleagues over everything else.

Guiding Us from Up Above...

“The creator knows our heart. When the bell tolls, we raise our hands, showing great respect to honor the creator - yes we are his children living under that great law and ‘Tiichum’ (Land) we’re promised at the beginning of time. Strong spirits / power lives within us, all of us, including you, Ralph.” These were some of the last words that Patrick shared with me in late June, 2020, only a couple days before he passed away. In this

exchange, he shared the importance of cleansing one's spirits (i.e. praying for our hearts, our spirit, our walk in life) in a sweat lodge prior to hunting and fishing, and he explained how he was looking forward to “ramping up for summer Chinook season” on “N'chi Wana” (The Mighty River, i.e., the Columbia River), his favorite place of all... unfortunately, those words became the last ones I ever heard from him.

I worked closely with Patrick for 5 years on the Yakama Nation Pacific Lamprey Project between 2012 and 2016. He helped build this burgeoning new project from literally “zero” and truly established the foundation and backbone of this program, which continues to flourish each successive year, thanks to him and the people that he trained (myself included). We are seeing remarkable increases in Pacific Lamprey numbers within the Yakama Nation ceded lands in recent years and I sincerely hope our program is living up to his “original visions” when he helped start this program. As many of his friends and families know, Patrick had a very intimate and close relationship with Asum

IN MEMORY: PATRICK L. LUKE - CONT'D

(Sahaptin word for Pacific Lamprey), perhaps closer and stronger than anyone else on this Tiichum (hope y'all are learning these Sahaptin words, like I did from him). I often caught him naturally talking to Asum in our hatchery holding tanks, as if they were his "best buddies" or "family members." As a matter of fact, they probably were, because Asum seemed to know how to talk right back to him... :)

I know life was not always simple for him and his walk of life wasn't always easy. He had experienced many ups and downs and internal struggles over the years (and he was quite adept at hiding them or "locking them away"). However, despite these struggles, or perhaps because of it, he was kind to others surrounding him, no matter what their backgrounds were. He had great affinity and empathy to all those around him (even when that kindness was not always reciprocated). "He always greeted us with a smile and a laugh and was so positive and supportive of what we were doing – I always appreciated that about him, always such a nice guy" said a former U.S. Fish and Wildlife Service staff who often encountered him on the mainstem Columbia River. Wish there was more time...for all of us to greet Patrick once again on "N'chi Wana," exchange a few laughs together, and glean from him the true principles of life, "Tamanwit" (natural law, "the way"), for which he had so much respect, admiration, and appreciation. I am, however, hopeful that he will continue to guide us from up above...just like those days when he was befriending and embracing our beloved Asum in the hatchery tanks; I know his big heart will always be right there (for all of us to learn from).

Ralph Lampman
Yakama Nation Fisheries Resource Management Program, Pacific Lamprey Project
lamr@yakamafish-nsn.gov

Happiness

I spent a fair amount of time reflecting on what to say about Patrick Luke, but my thoughts kept returning to one thing; there was never a time I interacted with him where it wasn't an uplifting experience. Honestly.

I first met Patrick years ago as his teacher, and we had numerous opportunities to chat and be together since that time, first when he was still at OSU and subsequently as colleagues. But why did he make me happy? I guess first and foremost was the fact that he struck me as a genuinely nice, good person. We had many chats about resources, primarily centering on lamprey of course. We also chatted

about things social, the current happenings both locally and nationally. We saw eye to eye on these, but what was particularly uplifting was that Patrick was always positive. While these sorts of topics can lead to discussions that are downers, they never were with Patrick. In addition, it was obvious that Patrick cared. He wanted to make a difference, and he did.

Carl Schreck

Department of Fisheries and Wildlife, Oregon State University

Learning from Patrick Luke

Patrick was a student in one of the first course offerings I gave at Oregon State University – FW 473 Fish Ecology. Notice that I did not describe my role as "teaching" the course. Schools and universities are rightly designated as institutions of learning, and I have always approached my course offerings with the view that I should learn at least as much as the students. If you want to learn something, prepare to teach it to others.

Patrick was one of the best learning opportunities I've had in my courses at Oregon State University. He was honest, determined, dedicated and committed to the task at hand. He did not hesitate to take on any task or assignment, no matter how complicated or difficult. He did not hesitate to acknowledge that he did not understand something, and that he could not see how to make progress on the matter at hand. But he never gave up on anything or anyone. He was patient, persistent and polite – a remarkable combination. Nothing was too big a challenge for Patrick. He was never satisfied with giving less than his best. He was honest, never hesitated to admit that he did not understand something and was never satisfied until he really understood both the problem and the answer. Nothing intimidated Patrick; he was ready to take on any challenge and see it through to the successful conclusion. I never once heard Patrick complain about anything, although he had many more opportunities and reasons to complain than anyone.

Patrick was completely open and honest in everything he did. He was more mature than the others in the course, in every sense of the word mature. Chronological age is just an inevitability, intellectual and personal maturity is an accomplishment. He had vastly more life experiences than others. His personal background was infinitely more complex and complicated. He had complete respect for others and was ready to give anything he could to help in any way. Patrick introduced us to our first West Coast tribal Pow-Wow, held in the McAlexander Field House at Oregon

IN MEMORY: PATRICK L. LUKE - CONT'D

State. It was an incredible experience for us, highlighted by the enormous personal pride and involvement of Patrick in the activities. It was an amazing opportunity for us to learn about the diversity and richness of the Northwest tribal peoples. That was clearly a fundamental personal strength for Patrick.

Following his graduation Patrick took every opportunity to stay in touch with us at Oregon State, both individually and collectively. He devoted incredible effort and endless time to the conservation and restoration of lampreys in the Pacific Northwest. He brought the best available science to the most important conservation concerns of his tribal people. He was responsible as part of the team that sought new and innovative ways to restore lampreys to their native habitat. Quite deservedly that effort was highlighted in the feature production, "The Lost Fish" by Freshwaters Illustrated. Patrick was recognized by his colleagues when he was appointed as the Chair of the Columbia River Intertribal Fisheries Commission in 2016 in recognition for his lifetime of dedication to the River, the fishes and the people.

Patrick helped us all to learn.

David L. G. Noakes
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and Oregon Hatchery Research Center
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Pacific lamprey, block print by Lenya Quinn-Davidson
<https://fireadaptednetwork.org/no-more-prescribed-fire-barriers-lessons-from-lamprey/>

The Native Fish Committee of the
Oregon Chapter American Fisheries Society
and
The Earth Sciences Department of the University of Oregon
Presents
The 2020 Nongame Native Fish Workshop
The 2020 Featured Species
Sabretooth Salmon



Sabretooth Salmon (*Onchorhynchus rastrosus*)
Illustration courtesy of UO

September 2-3, 2020 Near Madras, Oregon

The Native Fish Committee of the Oregon Chapter American Fisheries Society organizes annual field workshops featuring nongame native fish in Oregon. This year, the committee and Paleontologists from the University of Oregon will study the Sabretooth Salmon (from the paleontological record) near Madras, Oregon. We will hear presentations and engage in discussions regarding the species, dig for their fossils in a nearby pit, and observe their past habitat to assist workshop participants' understanding of the species.

There is no charge to participate in the workshop. All biologists and paleontologists are welcome to participate and students are encouraged to attend. The pit is located on private land, so all participants must be covered by health insurance, per landowner requirement. Presentations and camping will occur at the Trout Creek property, owned by Portland General Electric. It is 4 miles down a dirt road beyond a locked gate at the intersection of NE Clemens Dr. and NE Coleman Rd. We will meet in Madras at noon September 2nd at the NE corner of the Madras Safeway parking lot and caravan behind the gate together. Electricity, and a restroom occur at the PGE site. Our presentations will occur in a barn onsite. Bring your own water, camping gear, and a camp chair for the presentations in the barn. Dinner and evening refreshments will be provided September 2nd (Courtesy of OR AFS), but bring your own food for other meals.

The workshop will start noon September 2 at the NE corner of the Madras Safeway parking lot (80 NE Cedar St, Madras, OR). We will proceed to the PGE property, 4 miles behind a locked gate, where we will engage in presentations and camp. The morning of September 3, we will dig for Sabretooth Salmon fossils at a nearby pit, under the guidance of paleontologists from the University of Oregon. The workshop will end at 1:00 PM on September 3. If you plan to attend, please RSVP James Capurso, OR AFS Native Fish Committee Chair, at james.capurso@usda.gov, by August 15, 2020.

OSU STUDENT SUBUNIT UPDATE

The Oregon State University Subunit made the best of the Spring term due to limitations involving COVID-19. Unfortunately, the pandemic caused the cancellation of many anticipated events that were originally planned. During these difficult times, the subunit was able to adapt and maintain an active virtual presence.

Leadership team members worked to create videos with tips from faculty and E-campus students for achieving success during remote learning, which was new to most. These videos can be found on our YouTube channel (OSU FW Club). The subunit also started a social media campaign to show how club members were staying busy during quarantine by social distancing with responsible recreational activities which can be found on Instagram (@osufwclub) and Facebook (The Fisheries and Wildlife Club).



Sarah Busmire, former Secondary AFS Subunit Liaison, spending her free time fly fishing during quarantine.

gether again. If you would like to contribute to our activities and learning experiences as a guest speaker or through an activity (with limitations due to COVID-19), please contact Caleb Yann or Annika Carlson.



Smolt trapping on the John Day River. Photo by our former club President Lizz Duhn who has been enjoying her position with the Oregon Department of Fish and Wildlife.

Bi-monthly meetings were held throughout the Spring term over Zoom, and officer elections were held. There are still a few positions open to those who may be interested in joining the leadership team. Caleb Yann became the Primary AFS Subunit Liaison and Annika Carlson became the Secondary AFS Subunit Liaison.

The subunit is looking forward to planning events for the Fall and for what the next school year holds for us. We look forward to when we can all be to-



Caleb Yann – OSU Primary AFS Liaison
yannc@oregonstate.edu

Annika Carlson – OSU Secondary AFS Liaison
carlanni@oregonstate.edu

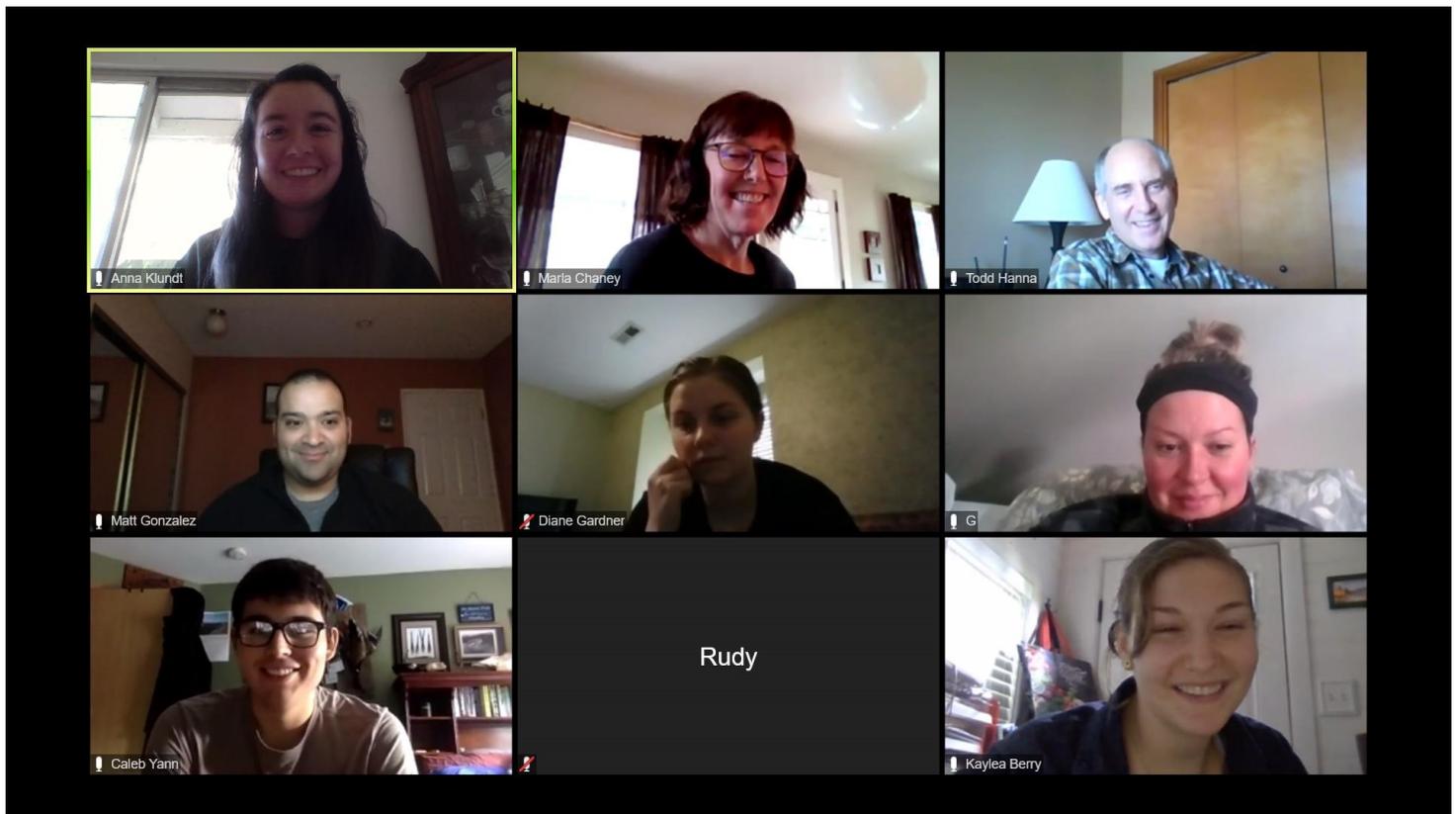


Sage Fox, former Primary AFS Subunit Liaison, taking social distancing to a new level at the bottom of Clear Lake, Oregon near the McKenzie River.

MHCC STUDENT SUBUNIT UPDATE

Despite the challenges we all faced during the spring term, the MHCC student subunit found ways to evolve and adapt to an ever-changing situation. Our instructors, Todd Hanna and Marla Chaney converted all classes to online and the students stepped up to the challenge as well. However, this term was more than just a change of pace. We were able to hold two subunit meetings this spring where we got opportunities to learn from some experts in many different fields of the fisheries industry. These included Smith Root's Director of Electrofishing Science Patrick

We are tentatively planning for the upcoming school year. We are maintaining an optimistic outlook for our annual events, such as the Multnomah Falls Salmon Festival, whether they will take place in person, virtually, or be postponed indefinitely. Our dedication to providing opportunities for growth in the fisheries field for students may involve a little more creativity in this upcoming year, however, we are committed to trying our best.



Cooney, supervisor for the Northern Pikeminnow Sport-Reward Fishery Program Ruthie Shirley, and an incredible photographer whose photos look like they were captured through the eyes of our beloved salmonids, Mary Edwards (www.maryedwardsphotography.com). We were fortunate enough to get the time with each of these amazing people to listen and ask questions about their professions as they shared their insightful knowledge with us.

On the 25th of June we held a new student orientation meeting to familiarize incoming first year students with the program, the student subunit, and encourage them to get involved. We had a great turnout and hope to see some new members this fall. As students, we are hungry to learn more from people in the field.

MHCC Fisheries meeting, April 30, 2020

As we sign off for a summer of seasonal jobs, volunteering, and internships, we'd like to give a big 'thank you' and 'congratulations' to our graduating Fisheries Technology students of the Mount Hood Community College OR AFS student subunit. You have gone above and beyond to make this club a welcoming and valuable resource for students, and we can't wait to continue your legacy.

If you or somebody you know would like to share your experiences with us as a guest speaker, please contact our fisheries club President, Kaylea Berry, at k.berry4@saints.mhcc.edu or our Vice President, Rudy Busch, at r.busch2@saints.mhcc.edu.

FISHERY FEATURE

Borax Lake Chub: Fourth Oregon Fish Recovered From the Federal Endangered Species Act

BRIAN BANGS (ODFW), ALEX HARRISON (ODFW), PAUL SCHEERER (ODFW, RETIRED), CHRIS ALLEN (USFWS), AND ALAN MAUER (USFWS)

Borax Lake, a natural lake perched 10 meters (30 feet) above the Alvord Desert floor atop large sodium-borate

deposits and fed by the waters of several geothermal springs, is one of the most unusual and unique fish habitats in Oregon. It is a small lake, about 4 hectares (10 acres) in size, and shallow (<2 meters), except for a deep geothermal vent.

Spring inputs near the bottom of the 32 meter (100 ft) deep vent range from 40 to 148°C (104 to 298°F). Surface water temperatures typically range from 16 to 38°C (61 to 100°F), and are variable throughout the lake.

Water temperatures in Borax Lake are driven by shifting inputs from a deep geothermal aquifer.

Water temperature is also influenced by air temperature, inflow from smaller geothermal and cool water springs, ephemeral thermoclines between areas of relatively cooler and warmer water, and wind. Shallow wetland channels and an outflow channel provide additional, and often cooler, habitat connected to the lake.

Borax Lake Chub are small minnows, typically under 100 mm (4 in) total length, endemic to Borax Lake. They are thought to be short-lived (under two years), able to spawn within their first year, and have a protracted spawning period with spring and fall peaks. Surveys to determine population abundance have been conducted regularly since 1986, and abundance is highly variable; estimates range from 1,240 (95% confidence interval: 1,080-1,460) in 2012 to 80,270 (95% confidence interval: 74,290-88,210) in 2019.

In 1980, the Borax Lake Chub was emergency listed as endangered under the federal Endangered Species Act (ESA), due to proposed development of the aquifer supporting Borax Lake for geothermal energy. Additional threats identified in the listing decision included grazing by livestock, vehicle use in the fragile habitat around the lake, and manmade habitat alterations. On June 11, 2020, the



Borax Lake, facing west

Borax Lake Chub was removed from the list of Endangered and Threatened Species (delisted) due to recovery.

The Borax Lake Chub is the fourth fish to be delisted due to recovery, following on the success of three other Oregon nongame species: Oregon Chub, Modoc Sucker, and Foskett Speckled Dace. Partnerships and collaboration have been the foundation of the recovery of these species, including the Borax Lake Chub.

For Borax Lake Chub, the threats and potential threats identified at the time of listing have been reduced or eliminated through the acquisition and management of Borax Lake and surrounding lands. The Nature Con-

servancy (TNC) purchased the 160-acre parcel containing the lake and an adjacent 160-acre parcel (320 acres in total) in 1993, and the Bureau of Land Management (BLM) provided additional conservation



Borax Lake and Borax Lake Chub, photo courtesy of Alex Harrison.

FISHERY FEATURE

Borax Lake Chub: Fourth Oregon Fish Recovered From the Federal Endangered Species Act—cont'd



Borax Lake, ODFW bio setting traps, photo courtesy Collver.

protection by designating the adjacent 600 acres an Area of Critical Environmental Concern in 1983. The passage of the Steens Mountain Cooperative Management and Protection Act of 2000 withdrew 900,000 acres of BLM administered lands, including Borax Lake and surrounding public lands, from mineral development. TNC and BLM installed, and now monitor and maintain fencing and gates around the lake that restrict vehicle access and exclude cattle. In 1991, The Oregon Department of Fish and Wildlife (ODFW) obtained a water right to maintain the lake pool elevation. In 2018, BLM, ODFW, and the US Fish and Wildlife Service (Service) finalized a Cooperative Management Plan for the Borax Lake Chub. The plan outlines the long-term management actions necessary to ensure this conservation-reliant species and its unusual habitat persist. This plan has no termination date.

A component of the ESA is that species will be monitored following delisting to ensure that they remain secure without the protections of the ESA. The Service prepared the Borax Lake Chub post-delisting monitoring (PDM) plan, in coordination with ODFW, BLM, and TNC, based largely on monitoring methods refined by these agencies during the recovery of the species. The PDM plan outlines monitoring Borax Lake Chub population abundance, lake elevation, unauthorized vehicle access, geothermal permit applications, the presence of nonnative species, and potential thermal stress during unusually warm periods. The PDM provides thresholds and suggested responses to potential impacts, should they occur, and outlines how the status of

the species will be determined at the conclusion of the PDM. The PDM will be implemented for a ten year period, after which monitoring and management of the species will continue through the Cooperative Management Plan.

The conservation success of the Borax Lake Chub demonstrates that recovery is possible even in the harshest environments. This recovery emphasizes an element common with Oregon's three other recovered fish: cooperation and partnership among State and Federal agencies and conservation groups is key to the successful implementation of a recovery plan, and the conservation of ESA listed species.

For more information:

[Borax Lake Chub: A Tiny but Tough Fish. USFWS outreach website.](#)

[Federal Register. 2020. Endangered and Threatened Wildlife and Plants; Removing the Borax Lake Chub From the List of Endangered and Threatened Wildlife. 85:35574-35594.](#)



Paul Scheerer, retired ODFW bio, retrieving minnow traps.

FISHERY FEATURE

Using a Side Scan Sonar to Describe Habitat Features in Non-Wadeable Systems

Matt Strickland, Eric Bailey, Dan Coffman, and Emily Loose. Oregon Department of Fish and Wildlife, Corvallis Research Lab

Every year field biologists, volunteers, and summer interns walk headwater creeks gathering information about their habitats. Numerous peer-reviewed protocols exist giving agencies and individuals alike a plethora of sampling options depending on their particular interest. These habitat data are used to assess status, trends, and associations with fish use and assemblage. In contrast, large river habitats across the Pacific Northwest have been largely understudied, and when sampling does occur, it is often focused primarily along the bank margins. A major constraint to sampling mainstem rivers and non-wadeable habitat is the inability to consistently describe submerged features using traditional ocular observation techniques due to depth or turbidity.

The Oregon Department of Fish and Wildlife's Aquatic Inventories Project has been working to develop methods that describe habitat condition across all non-wadeable systems using a hybrid design of traditional techniques and new technology. These methods utilize a unit-scale classification system (Moore et al. 2018) and a Humminbird 1199 CI HD side imaging sonar (Kaeser and Litts 2010). We are applying a flexible approach in how heavily we weigh on each of these, depending on seasonal conditions and habitat type.

During the summer of 2018, we surveyed over 41 miles of the Siletz River mainstem during base flow conditions and adequate visibility. We used traditional sampling techniques to describe 521 habitat units and seven distinct reaches over the course of 16 days. We measured area and cover and visually estimated substrate. Surveyors returned the winter of 2019 with the side-scan sonar during normal seasonal flow conditions and when visibility was not adequate across most of the wetted areas. We were able to map all habitat across the same boundaries over a five day period. We compared substrate results from the two methods across sampling reaches using a simple linear regression. R^2 values ranged from 0.30 (% boulders) to 0.98 (% bedrock). These results gave us the

confidence to approach a non-wadeable system that does not have discernable unit-scale changes: the Columbia Slough. That spring we used Google Earth imagery to define reach boundaries and sonar imagery to describe habitat features within each reach (Figure 1). We described surface area, depth (max, min, and average), wood volume, substrate, and artificial structures (e.g. bridge abutments, rip-rap banks, and shopping carts) (ODFW 2019). We are now taking this hybrid sampling design to the Clackamas River as part of a long-term monitoring assessment of restoration effectiveness in large river systems.

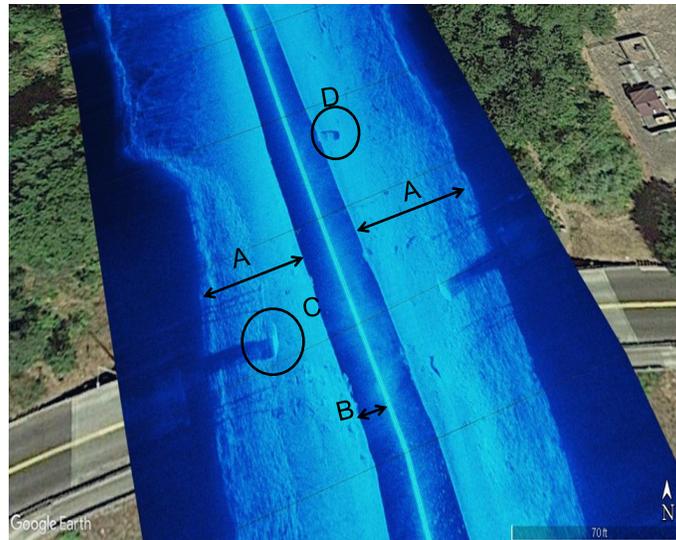


Figure 1. Sonar imagery from the Columbia Slough. (A) Represents the wetted channel width, (B) represents the depth, (C) is a bridge abutment and (D) is a car.

Our current approach to sampling non-wadeable habitat is sufficient to describe habitat features, but it is not complete, nor is it especially efficient. A sonar imagery substrate key that illustrates each substrate type is in production. Our goal with this will be to eliminate surveyor-to-surveyor variability by using computer vision tools to describe imagery features and improve precision at the habitat unit scale. We are also looking to utilize existing habitat quality models in order to evaluate adult salmonid spawning and juvenile rearing availability and condition. Moving forward, we hope to be able to integrate

non-wadeable data with existing habitat data from wadeable stream surveys to give us a complete picture of basin-scale habitat.

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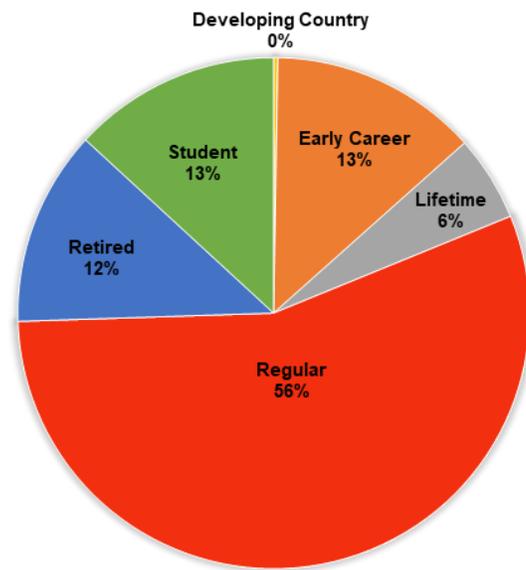
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MEMBERSHIP UPDATE

We currently have 388 members in the Oregon Chapter of the American Fisheries Society as of June 2020, comprising of over 65 organizations. Along with all of the benefits of being a member of OR AFS, dues provide opportunities for professional workshops, student scholarships and experiences, and events that promote OR AFS fisheries science missions. To this end, please refer us to colleagues or new contacts that could enrich our chapter. We are always looking to increase the diversity of our members, add to the scope of our fisheries work, and grow in the knowledge of all things fishy. If you have membership questions or an idea of how to diversify and broaden our membership base, please contact our chapter secretary.



Andrea Carpenter
Secretary@orafs.org

Oregon Chapter of the American Fisheries Society membership breakout. As of June 2020, there are 388 members in the Chapter.

BECOME A LIFETIME MEMBER OF ORAFS

Are you an AFS Life Member and interested in showing your life-long dedication to the Oregon Chapter? We have an Oregon Chapter Life Membership that allows you to do just that! The Oregon Chapter Life Membership costs \$125 or 12.5 times the Oregon Chapter annual membership rate. This relative cost difference mirrors the AFS Life Member cost. Show your dedication to the OR AFS legacy and invest in a membership that will pay off for a lifetime! Please contact Andrea Carpenter (secretary@orafs.org) for more information.

PISCATORIAL PRESS: CALL FOR SUBMISSIONS

Do you have something newsworthy to share?

Hot Topics, Fishery Features, Upcoming Events...

Submissions from OR AFS members are welcome!

Do you have an update on interesting work you would like to share with the membership? Are you interested in providing a Fishery Feature or a Hot Topic to tell the membership about your recent project? Do you have an upcoming event that you would like to advertise to the membership? If so, please submit your story or thoughts to Stacy Strickland at: stacy.a.strickland@state.or.us. **Submission deadlines** for news items are: September 15; December 15; March 15; and June 15. The newsletter is published approximately three weeks after submissions are received. Submissions are used as time and space allows.

SAVE THE DATE



AMERICAN FISHERIES SOCIETY VIRTUAL ANNUAL MEETING SEPTEMBER 2020

ANNUAL MEETING MOVES TO VIRTUAL

The coronavirus has changed our lives in many ways and the AFS Columbus Annual Meeting is the latest to be impacted. The AFS Governing Board voted on Monday, May 11, to address the obvious health and safety concerns by moving to a virtual fisheries event later this year. There will be no physical AFS meeting in Columbus, August 30 – September 3, 2020.

Intense work is already underway to design and deliver a compelling and exciting new event. This “Virtual Annual Meeting” will incorporate the always amazing sharing of fisheries science, engaging keynote speakers, valuable student activities, award presentations, and much more. Those who have submitted abstracts and symposia for the AFS Columbus meeting will be contacted in the near future about their continued interest in sharing their science as part of this new event. The tentative dates for the Virtual Annual Meeting are September 14-25, 2020.

As plans are developed for both the virtual conference and our 150th anniversary celebration, they will be shared through the AFS newsletter, emailed to AFS members, and provided on the AFS website at [fisheries.org](https://www.fisheries.org). Also, please be sure to mark your calendars now for the 2021 Annual Meeting in Baltimore, Maryland, August 8-12, 2021. We hope to return to Columbus in 2026.

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Oregon Chapter of the American Fisheries Society Mission

Improve the conservation and sustainability of Oregon fishery resources and their aquatic ecosystems for long-term public benefit by advancing science, education, and public discourse concerning fisheries and aquatic science and by promoting the development of fisheries professionals.

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Oregon Chapter of the American Fisheries Society

www.orafs.org

CHANGE OF ADDRESS & MEMBERSHIP APPLICATIONS:

To join or change address, go to www.fisheries.org and be sure to sign up for the Oregon Chapter. Also visit www.orafs.org/membership to join our listserv and get other Chapter information.