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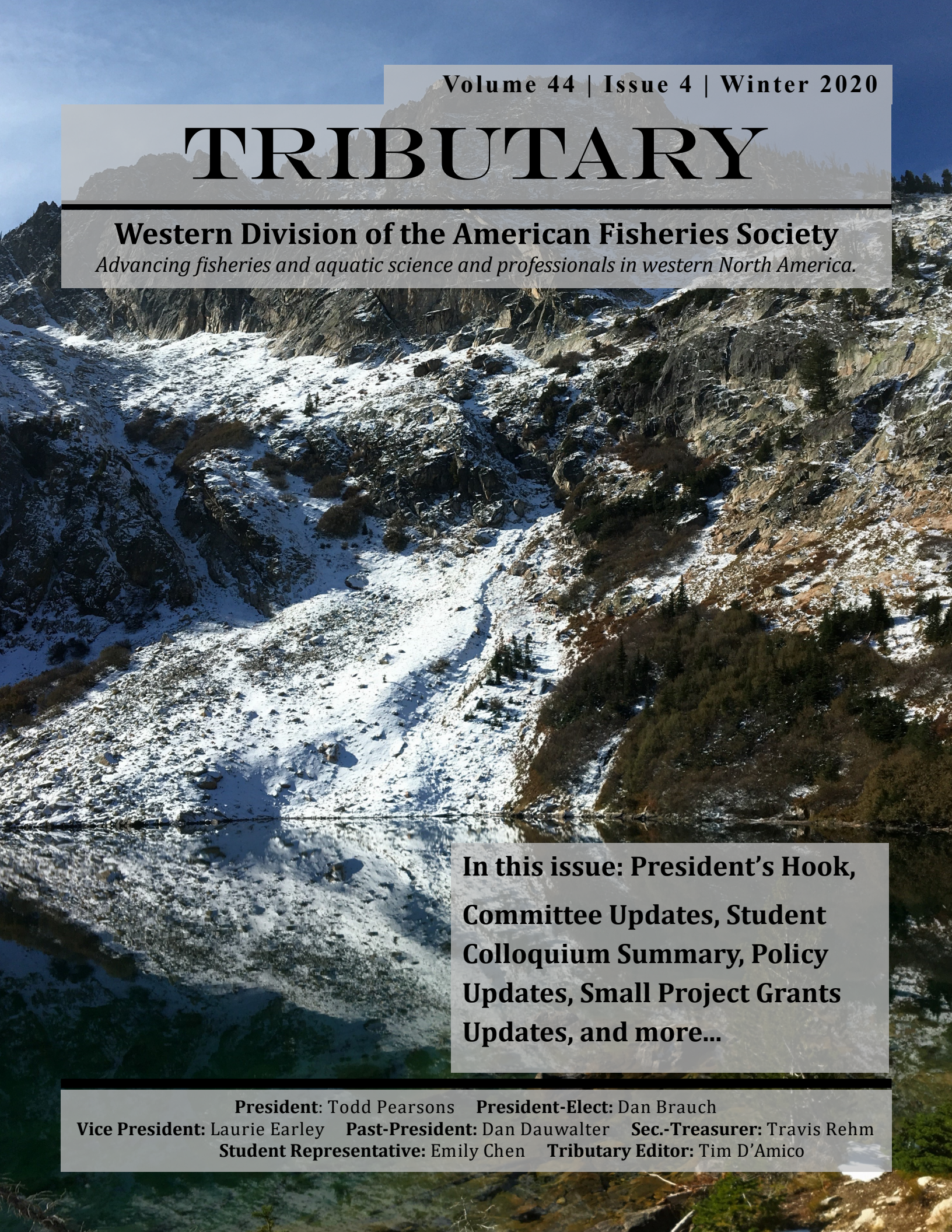
TRIBUTARY

Western Division of the American Fisheries Society

Advancing fisheries and aquatic science and professionals in western North America.



In this issue: President's Hook, Committee Updates, Student Colloquium Summary, Policy Updates, Small Project Grants Updates, and more...

PRESIDENT'S HOOK

Todd Pearsons

Greetings Western Division,

What a year it has been. So many of our plans have been dashed and we have had to adapt to new ways of doing our noble profession. Some activities that were routine and easy are now stressful and difficult. For example, planning committees are all wrestling with how to host annual meetings virtually; something we have never done before. We have been separated from many of our colleagues who inspire and encourage us. It is times like these that make us recognize the importance of relationships.

With so much going on, it would be tempting to swim under a rock and wait it out. However, trying times are also times of opportunity; opportunity to try new things, to look at our work in a new way, to step back and dream about how we might come out of this better than when we came in. Although many of us would like to get back to how things were, I challenge you to aspire to something better than what we had in the past.

In light of aspiring to a better future, I dedicate this hook and this issue of the Tributary to calling us towards envisioning a new Devonian; an age of fishes that is fruitful for humans and aquatic species alike. More specifically, I hope that you will join the ranks of courageous futurists who will help shape this new Devonian.

One of the best ways to improve our future is to set aspirational, inspirational, and motivational goals. Meaningful goals are strange beings. Mysteriously they pull us towards something we aspire to. Without them beckoning to us from the future, we frequently fritter away our time on less weighty pursuits. Goals call us to prioritize our actions, discipline our behavior, and focus our thoughts. Goals cheer us on when we are tired and incentivize us to sacrifice the pleasures of the moment for the glory of the future.

Noble goals are one of the greatest gifts that we can give to ourselves and to others; let's be generous with our gifts in this holiday season and beyond. They will make us better people and the world a better place. The time that we put into goalsetting is perhaps the best use of our time because they help shape how we spend our limited time.

Setting goals is an art. Some people are gifted at setting goals whereas others work hard to learn the art. Regardless of your current goal setting prowess, you can always get better by practicing. One goal for the coming year could be to grow in skillfulness in goal setting by learning from expert goal setters.

One of my goals for the Western Division was to develop mission and vision statements to help focus and unify our efforts. I am pleased to report that this goal was recently achieved (see article in this issue). Perhaps these organizational statements can inform some of your goals.

I encourage you to participate in your chapter and division virtual meetings (see article in this issue about why you should attend). Your colleagues are working diligently to put together programs for you that are interesting, engaging, and useful. Please reward their voluntary efforts by helping out where you can. How about doing something new and courageous? Serve on a committee, organize a symposium, give a talk, or do a meeting triathlon and do all of them.

Onwards and upwards. This can be your best year yet. Let's lean into a new and better Devonian by aiming our lives at the things that matter most. Challenge yourself and those around you. Let this year's goal setting pull you into a more desirable future filled with an abundance of fish and other aquatic species.

Carpe Diem,

Todd Pearsons, Ph.D., FP-C

President, Western Division of the American Fisheries Society

WDAFS MISSION/VISION STATEMENTS

Mission and vision statements can help us to focus our efforts on what is important, unify our aspirations, and inspire us to do something bigger than ourselves. To my knowledge, the Western Division of the American Fisheries Society has never developed, adopted, and formalized mission and vision statements. In order to fill the gap and to communicate why we exist and what we are aiming towards, the Executive Committee of the Western Division of the American Fisheries Society has recently approved the statements below.

WDAFS MISSION: The mission of the Western Division of the American Fisheries Society is to: 1) improve the conservation and sustainability of unique fishery resources and aquatic ecosystems in western North America by advancing fisheries and aquatic science and promoting the development of fisheries professionals, and 2) serving as an effective bridge between the Society and Chapters within the Western Division, promoting communication among and support of the Chapters and membership, and being the American Fisheries Society's representative to the public in western North America.

WDAFS VISION: The Western Division of the American Fisheries Society seeks to be recognized as the pre-eminent organization providing fisheries information to decision makers in all arenas of western North America. While fulfilling our vision, we will recruit and develop new fisheries professionals by offering learning and training opportunities crucial to maintaining a well-trained profession, support programs and efforts to increase diversity and inclusion, and enhance the value of American Fisheries Society professional certification.

WDAFS SLOGAN (for use on letterhead): Advancing fisheries and aquatic science and professionals in western North America.

WDAFS CHALLENGE: Ignorance of fisheries and aquatic ecosystems is our arch enemy. We will fight against ignorance by communicating science to other scientists, decision makers, influencers, and the Public, and we will advocate for conducting and using science to achieve sound management and policy decisions. We will expose suppression and misuse of science and enhance scientific credibility by attempting to maintain purity of the scientific enterprise. It is our hope that elevating science will help influencers and decision makers to achieve what is best for current and future generations.

I hope that these short organizational statements will aid in your understanding of the Western Division and that you will find your niche in helping us achieve our mission and vision. No individual can accomplish these statements alone, however we can do great things together as we strive together for a better future.

Piscatorially yours,

Todd Pearsons, Ph.D., FP-C

President, Western Division of the American Fisheries Society

UPCOMING DATES & DEADLINES

January 15, 2021—WDAFS 2021 annual meeting call for symposia. https://wdafs.org/2020/11/02/2021-western-division-meeting-call-for-symposia/

January 15, 2021—Idaho AFS 2021 annual meeting abstract deadline (first call). https://www.idahoafs.org/2021/

February 1, 2021—WDAFS Travel Grants & Small Projects Grants deadline. https://wdafs.org/awards/

March 1, 2021—WDAFS Scholarship deadline. https://wdafs.org/students/scholarship-travel-award-information/

March 1, 2021—WDAFS Riparian Challenge award applications deadline. https://wdafs.org/awards/information-deadlines-applications/riparian-challenge-award/

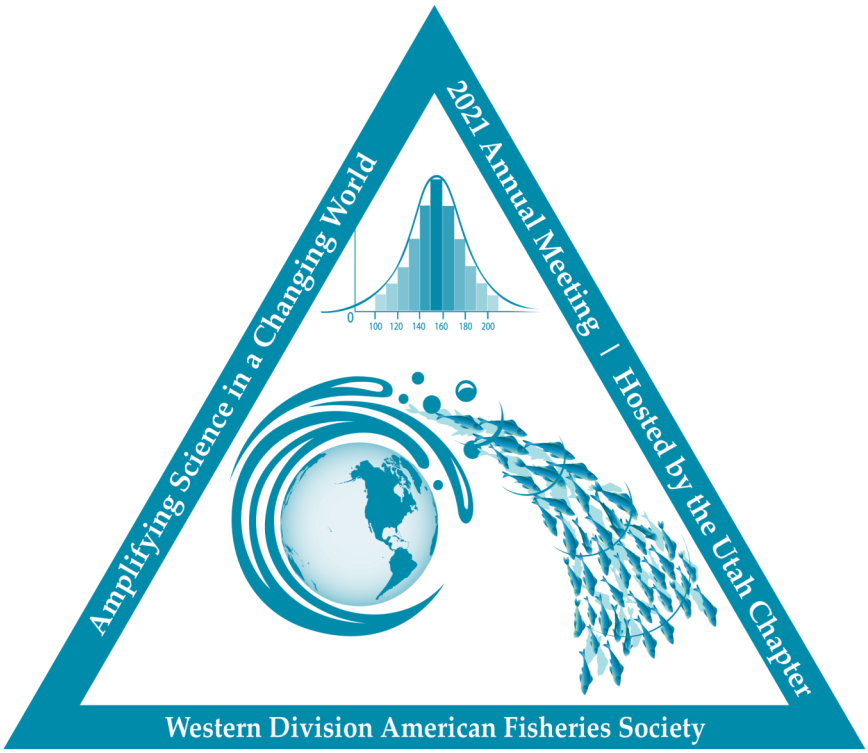
UPCOMING 2021 WDAFS VIRTUAL MEETING

2021 WDAFS Annual Meeting Theme : Amplifying Science in a Changing World

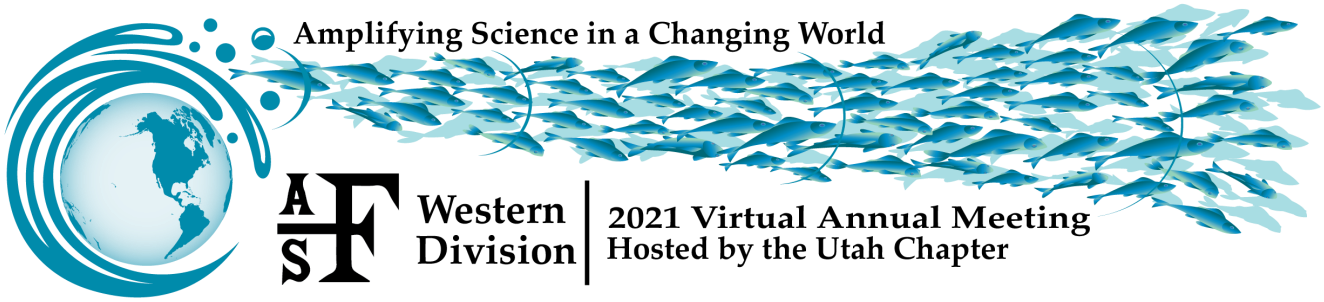
Aquatic resources and the professionals who research and manage them face dynamic challenges. Now more than ever, scientists need to adapt and inform our approach to sustaining aquatic stewardship. However, the advancement and amplification of science has been hindered recently by multiple causes. Science is being threatened from without and within: credible science is being minimized by some in influential positions and some scientists are misrepresenting science in order to advance their personal values. How should professionals prioritize, conduct, and communicate science so that it is amplified while also advancing credibility of the profession?

We welcome symposia and presentations that highlight how science is changing our understanding of the dynamics of the resources we study and our approach to management. Symposia topics could include: climate change, hatcheries, habitat, harvest, recreation, native species, genetics, interactions, ecology, invasive and introduced species, endangered species, water policy, historical perspectives, new technologies, diversity and inclusion, science communication, and others. We are also interested in how science can be used to advance decisions that result in good stewardship such as in resource management, policy development, and best practices. We encourage participation and submissions from people of diverse backgrounds and experiences.

A special focus will be given to generating outcomes from the diversity of symposia presented. Outcomes may include publications, proposals, recommendations, agreements, identification or clarification of uncertainties, and other action items. Generating outcomes within our meeting will leverage collective talent and help us to amplify science for the betterment of our fisheries profession and advancement of aquatic stewardship.



UPCOMING 2021 WDAFS VIRTUAL MEETING, cont.



Why you should attend the 2021 WDAFS Virtual Annual Meeting

Todd Pearsons (WDAFS President) & Sarah Seegert (Utah Chapter AFS President)

We heartily invite you to attend the first ever virtual Western Division of the American Fisheries Society (WDAFS) annual meeting May 10-14, 2021. The planning team consisting of representatives of the WDAFS and the Utah Chapter has been working together to put together an innovative, informative, and memorable meeting and we hope you will attend. Our meeting theme is "Amplifying Science in A Changing World."

You might ask yourself why you should attend this meeting when there are so many other meetings that you could attend? Here are 10 reasons that we hope will sway you to attend.

1) You will learn a lot – hundreds of presentations and films that cover the latest fisheries and aquatic science and management throughout the western division and beyond

2) You can contribute your expertise – share your information and experiences so that others can benefit

3) You can beef up your resume – you can host a symposium or give a talk that you can add to your resume or use in your application for AFS fisheries certification

4) You will have fun – live plenary sessions including debates, aquatic monsters, science, art, and futures

5) You can binge watch aquatic films and photos – enjoy the aquatic film and photography festival

6) You will have opportunity to develop and build relationships – establish and build connections through common interests and social events

7) You don't have to dress up or sit in uncomfortable chairs – enjoy the meeting from the comforts of home

8) You won't have to spend much – the cost of the meeting will be inexpensive and for many it will be free through a plethora of registration grants

9) You will be a part of WDAFS history – this will be our first virtual meeting and will help set the stage for the future

10) You will have access to some of the best minds in the business

This meeting is not just for fish heads! A diverse array of topics across aquatic sciences will be covered. So, come join us.

UPCOMING 2021 WDAFS VIRTUAL MEETING, cont.

Call for 2021 WDAFS Travel Grants

Laurie Earley (WDAFS Vice President)

The Western Division of the American Fisheries Society and the Utah Chapter will be hosting the 2021 WDAFS Annual Meeting virtually. Given the new format, funding usually available for travel grants will be used in the form of registration assistance. The Virtual Meeting will be held May 10-14, 2021. The deadline for applications will be January 31, 2021 and recipients will be notified by February 28, 2021.

The grant categories are the following:

Student

Early Career Professionals (graduated since May 2016)

Professionals

Emeritus

International Members

*Indigenous/Tribal Members *New Opportunity**

Requirements for WDAFS Travel/Registration Awards:

1. Current Society and WDAFS membership required (exception given to the Indigenous/Tribal Member category). You will be asked to provide your AFS membership number.

Applicants will be ranked on the following criteria:

1. Applicants who will actively participate at the 2021 annual meeting. This can include presenting an oral or poster presentation, assisting the planning committee, moderating a session, etc.

2. Applicants who are active (or interested in becoming active) in a sub-unit, Chapter, Western Division, or the Society.

3. Indicate a strong interest in fisheries, oceans, aquatic science and management

International only: Applicants must reside outside the United States. If you reside outside of WDAFS boundaries, Provinces of British Columbia and the Yukon Territory in Canada; Mexico; U.S. associated entities in the Eastern Pacific Ocean, please contact Doug Austen (dausten@fisheries.org) and request to become a Western Division member.

Indigenous/Tribal Member: Those who self-identify as being American Indian, Alaska Native, First Nation, Native Hawaiian, or Pacific Islander. Preference will be given to Society and WDAFS members, but membership is not required and award will cover non-member registration.

Please visit our website for more information.

UPCOMING 2021 CHAPTER VIRTUAL MEETINGS

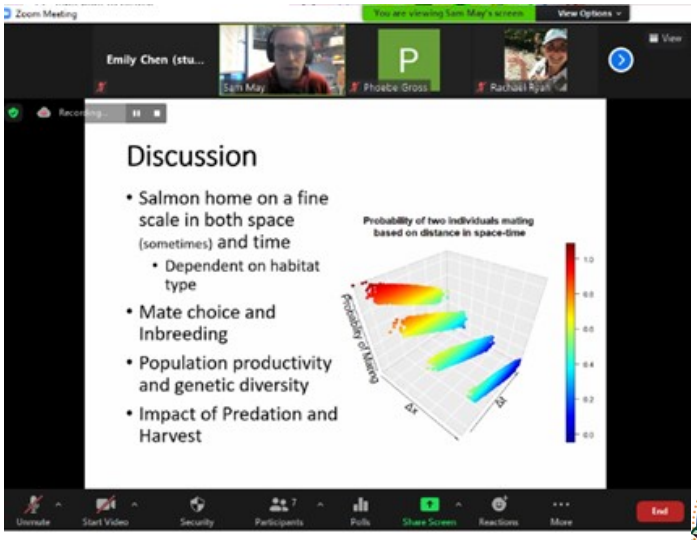
Dan Brauch (WDAFS President-Elect)

CHAPTER	MEETING DATES	MEETING WEBSITE
Alaska	March 22—25, 2021	https://afs-alaska.org/alaska-chapter-annual-meeting-march-22-25-2021-virtual/
Arizona—New Mexico	February 5, 2021	https://arizona-newmexico.fisheries.org/jam-2020-virtual-meeting/
Cal-Neva	March 1—5, 2021	Coming soon! https://afs-calneva.org/save-the-date-cal-neva-2021-annual-chapter-meeting/
Colorado—Wyoming	February 23—25, 2021	Coming soon! https://units.fisheries.org/cowyafs/
Idaho	March 1—5, 2021	https://www.idahoafs.org/2021/
Montana	TBD	Coming soon! https://units.fisheries.org/montana/
Oregon	March 3—5, 2021	https://web.cvent.com/event/4d63e12e-4c43-4f7a-84a3-5e6e74729bf0/summary?rp=00000000-0000-0000-0000-000000000000
WA—BC	March 1—3, 2021	https://wa-bc.fisheries.org/2021-meeting/
Utah/WDAFS	May 10—14, 2021	https://utah.fisheries.org/afs-western-division-2021/

2020 WDAFS STUDENT COLLOQUIUM SUMMARY

Emily Chen (WDAFS Student Representative)

The Annual Western Division Student Colloquium was held November 13-14 virtually on Zoom. This was the first time the Student Colloquium was not held in-person in one of the Western Division chapters. Attendees zoomed in from eleven states/provinces, four countries (Canada, US, Mexico, UK), and fifteen universities. The virtual format allowed for new and unique events such as a student sub-units officer forum and fisheries professional panel.



On Friday morning, sub-unit officers from five different university sub-units convened to discuss ideas and strategies for encouraging sub-unit growth during remote learning. Three panels were held Friday afternoon on the topics of job networking and virtual presentations. Local, state, federal, and tribal fisheries professionals from multiple states provided and synthesized invaluable advice for students on developing their careers. As always, fish trivia was a fun time for students to show off their fish knowledge and hang out with students from other chapters in an informal setting.

During the second day of the colloquium, students gave fifteen minute presentations and five minute lightning talk on their research. Talks spanned a wide array of topics and species including juvenile salmon foraging behavior, lobster fishery impacts, hatchery influence on endangered populations, and dispersal effects on population genetics and fitness. Prizes provided by donors and from sub-units and local non-profit fundraisers were raffled off to presenters and attendees. Overall this year's colloquium capitalized on the virtual format by bringing together students and professionals from a broad geographic range and enhanced the accessibility of the student colloquium to all.

Thank you to the donors to 2020 Western Division Student Colloquium:

Interested in becoming involved with or hosting the 2021 student colloquium? Contact student representative Emily Chen (emily-chen@berkeley.edu)

WDAFS COMMITTEE UPDATES

Diversity & Inclusion Committee

Laura Slater (WDAFS Diversity & Inclusion Committee)

The WDAFS Diversity & Inclusion Committee is proud to offer two Diversity & Inclusion awards: one for Mentorship and one for Service.

The D&I Mentorship Award will be presented to a promising student or early career professional interested in developing diversity, equity, and inclusion leadership skills. We highly encourage nominations, including self-nominations, for individuals belonging to historically underrepresented minority groups in the fisheries field. AFS membership is not required to apply to this award.

The D&I Service Award will be presented to an AFS

WDAFS COMMITTEE UPDATES, cont.

Western Division Member who has exhibited service and commitment to diversity, equity, and inclusion initiatives within the fisheries profession. The purpose of the award is to celebrate everyday, unsung heroes who dedicate their time and passion to diversity, equity, and inclusion efforts.

For more information about the D&I awards and how to submit a nomination, visit: https://wdafs.org/awards/information-deadlines-applications/individual-awards/.

Please send your nominations to wdafsdiversityinclusion@gmail.com by February 1, 2021.

Funds to support attendance for an AFS meeting in 2021 are available to award winners (up to $500).

Early Career Professionals Committee

Alexander Tasoff (WDAFS Early Career Professional Committee)

The Early Career Professional committee had a productive meeting in October 2020. We created 2 positions, a media manger and financial manager, to advance committee agendas and event planning. We also developed and distributed a survey to understand how we can design webinars that will best suit the needs of our members.

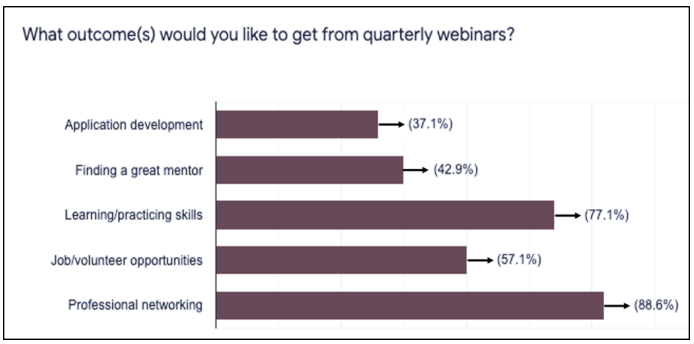


Figure 1: Responses to question 9 on the WDAFS ECP Committee survey.

Most of the responding members were students and early career professionals, who expressed interest in panels and workshops with question-and-answer sessions. Skill maintenance and professional network development were high on people's list of priorities. As a result, the committee leadership is working on webinars that focus on teaching early career professionals new skills and introducing them to established fishery scientists. Members were also eager to hear from fishery scientists, mangers, and academics, people who could speak on the most recent research trends in fishery science and ichthyology.

For a full copy of the survey please feel free to contact me (a.tasoff.wdafs@gmail.com). Also, if you would like to co-host a ECP webinar, please contact me or the committee media manager Emily Lescak (elescak@alaska.edu). We look forward to hearing from you!

Western Native Fishes Committee

Timothy D'Amico & Luke Schultz (WDAFS Western Native Fishes Committee)

After a busy season in which many of our members were frequently in the field, the WDAFS Western Native Fishes Committee looks forward to a little time in the office where we can warm up, dry out and maybe most importantly, continue our mission to foster a network of fisheries professionals with expertise and interest in native fishes of western North America. Prior to field season, we made serious headway on completing our Western Native Fishes database, a monumental task which we have received technical assistance and professional input from fisheries professionals across the West. In keeping with the theme of this edition of the Tributary, this will continue to be one of the major goals we plan to accomplish and look forward to sharing the results of this endeavor with members of WDAFS. Additionally, we are planning to host our annual Western Native Fishes symposium at the upcoming 2021 WDAFS meeting, and we look forward to reviewing relevant submissions to our symposium. As always, anyone interested in participating in the Western Native Fishes committee, feel free to email us

WDAFS COMMITTEE UPDATES, cont.

Resource Policy & Environmental Concerns Committee

Bob Hughes (WDAFS RPECC Committee)

Following President Todd Pearsons' appointment of Bob Hughes as chair of the Resource Policy & Environmental Concerns Committee (RPECC) in October, Hughes began recruiting a member to represent each WDAFS chapter. Those members are: Joel Markis (Alaska), Colleen Caldwell (Arizona/New Mexico), Gary Sprague (California/Nevada), Eric Fetherman (Colorado/Wyoming), Dan Dauwalter (WDAFS/Idaho), Norman Mercado-Silva (Mexico), Adam Strainer (Montana), Brett Roper (Utah), and Bob Vadas (Washington/British Columbia). The Committee's first order of business was to develop guidelines and a process for streamlining environmental concerns letters, which is now being reviewed by the WDAFS Executive Committee. The RPECC will next meet virtually to determine a limited set of priority concerns for which to write those letters and for serving as a session topic for the 2021 WDAFS annual meeting. Please feel free to contact any RPECC member or Bob (hughes.bob@amnisopes.com) if you become aware of concerns deserving of WDAFS attention. You all are our eyes and ears, although the RPECC and ExCom cannot comment on all environmental concerns arising in western North America.

WDAFS RPECC: Environmental Concerns Letter Guidelines & Process

An environmental concerns letter is a formal expression of views of the Western Division of the American Fisheries Society (WDAFS) membership as represented by its Executive Committee (ExCom) or Officers. The purpose of such a statement is to call attention to an issue of environmental concern and place the WDAFS on record as recognizing the need for action or a change in perspective by appropriate institutions. Unlike policy statements, environmental concerns letters typically must be developed quickly and be relatively succinct. Unlike resolutions, they do not require membership approval.

Environmental Concerns Letter Criteria: 1) The issue should be pertinent to AFS Objective-*a ("promote the conservation, development and wise use of fisheries"). For examples of AFS letters, see: https://fisheries.org/policy-media/policy-letters/. For the AFS advocacy policy, see: https://fisheries.org/policy-media/advocacy-guidelines/. 2) The issue should be relevant to the WDAFS mission to "Improve the conservation and sustainability of . fishery resources and aquatic ecosystems in western North America by advancing fisheries and aquatic science. 3) The potential consequences of the issue should make it appropriate for WDAFS action, including Identifying when science is being misinterpreted, suppressed or altered. 4) Appropriate peer-reviewed technical information should be available for supporting the statements made in the letter. 5) The letter should represent the diversity of the WDAFS membership as indicated by its leadership and amplify the importance of sound science in decision making.*

Environmental Concerns Letter Prioritization: WDAFS cannot comment on all environmental concerns arising in western North America; therefore, the following factors should be used to set priorities: 1) environmental consequences of a proposed action, 2) likelihood of an action setting a precedent, 3) proposed action crosses multiple WDAFS Chapter borders, and 4) potential effects on science budgets or science purity.

Environmental Concerns Letter Process: The Resource Policy and Environmental Concerns Committee (RPECC) shall follow 6 steps with its letters: 1) RPECC raises a concern; 2) RPECC seeks approval from Officers to proceed; 3) if approved to proceed, RPECC develops the letter; 4) RPECC submits the draft letter to the ExCom and/or Officers and the AFS Policy Director for review and comment; 5) RPECC revises the letter in response to the review and comments; and 6) RPECC returns the revised letter to the president for a final review, signature, and submission to the appropriate institution.

POLICY UPDATES

National Fish Habitat Partnership is Codified with President Trump's Signature of the America's Conservation Enhancement Act (S. 3051)

FOR IMMEDIATE RELEASE: October 30, 2020
Contact: Ryan Roberts, rroberts@fishwildlife.org

(Washington, DC) ---- Today, President Trump signed S. 3051, The America's Conservation Enhancement Act (ACE Act) into law at the White House. The ACE Act passed the House and Senate with bipartisan support and unanimous consent.

Now enacted into law, this bill reauthorizes the North American Wetlands Conservation Act (NAWCA) and codifies the National Fish Habitat Partnership (NFHP), two of the most successful voluntary conservation efforts in the nation. The law also reauthorizes the Chesapeake Bay Program and creates funding authorizations for other crucial conservation programs.

The National Fish Habitat Partnership is an unprecedented effort to protect, restore, and enhance fish and aquatic communities in the U.S. Since 2006, NFHP has completed over 1,000 projects in 50 states. From freshwater to estuarine and coastal projects, NFHP protects, restores, and enhances fish habitat nationwide, leveraging federal, state, tribal, and private funding resources. NFHP is comprised of 20 individual Fish Habitat Partnerships, which focus on improving fish habitat and aquatic communities at regional and local levels. Annually, the U.S. Fish and Wildlife Service provides funding and technical assistance to the 20 Fish Habitat Partnerships to implement aquatic conservation projects nationwide. The work of the National Fish Habitat Partnership is also supported by many federal, state, and local agencies as well as regional and national conservation organizations.

Upon signature into law, the National Fish Habitat Partnership is authorized from FY21- FY25 at $7.2 million annually. The National Fish Habitat Board will report to Congress, particularly the Committee on Commerce, Science, and Transportation and the Committee on Environment and Public Works of the Senate, and the Committee on Natural Resources of the House of Representatives.

The law expands the National Fish Habitat Board to 26 members, broadening the membership to include representation from the following groups: a national private landowner organization, an agricultural production organization, local government involved in fish habitat restoration, corporate industries, and a private sector or landowner representative of an active Fish Habitat Partnership. On an annual basis, the Board will submit a priority list of projects for funding consideration to the Secretary of the Interior. Technical and Scientific Assistance funds are authorized to be appropriated for FY21 – FY25 up to $400,000 annually to each of the following agencies: National Oceanic and Atmospheric Administration, Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Forest Service, and U.S. Geological Survey in support of the National Fish Habitat Partnership. Within one year of enactment, the agencies receiving Technical and Scientific Assistance funds, led by the Department of the Interior, will develop an interagency operational plan outlining the implementation needs and interagency agreements.

Today, with President Trump's signing of the ACE Act, we celebrate the culmination of over a decade of effort to codify the National Fish Habitat Partnership

POLICY UPDATES, cont.

with organic legislation. The Partnership, and the thousands of people involved in local, grassroots projects, have done remarkable work protecting, enhancing, and restoring fish habitat across the country," said Ed Schriever, Chairman of the National Fish Habitat Board. "This Congressional recognition of the program marks the beginning of an exciting chapter for the Partnership and the American people whose pleasure, passion and livelihoods are derived from healthy habitat and vibrant fishery resources."

Americans are continuing to utilize public lands and waters in record numbers, many of them for the first time," said Sara Parker Pauley, Director of the Missouri Department of Conservation and President of the Association of Fish and Wildlife Agencies. "The ACE Act will be indispensable to our natural resources, enabling stewards to ensure our citizens experience the outdoors the way they deserve, with healthy habitats and flourishing species. We thank Congress for recognizing the success and necessity of existing programs while taking steps to address urgent needs such as chronic wasting disease through this bill."

NOAA Fisheries is excited for the National Fish Habitat Partnership to be recognized by Congress," said Samuel Rauch, Deputy Assistant Administrator for Regulatory Programs, NOAA Fisheries. "We look forward to continuing to protect, enhance, and restore important fish habitats across the coastal U.S. in support of sustainable fisheries and communities as a proud NFHP partner."

A coalition of conservation organizations commended the sponsors of this bipartisan legislation for their commitment to fish and wildlife conservation: Sen. John Barrasso (R-WY), Sen. Thomas Carper (D-DE), Sen. John Boozman (R-AR), Sen. Benjamin Cardin (D-MD), and Sen. Martin Heinrich (D-NM) as well as Rep. Mike Thompson (D-CA), Rep. Robert Wittman (R-VA), Rep. Joe Cunningham (D-SC), Rep. Marc Veasey (D-TX), and Rep. Debbie Dingell (D-MI) in getting it to the President's desk for signature during this Congressional session.

About the National Fish Habitat Partnership:

Since 2006, the National Fish Habitat Partnership has supported over 1,000 projects benefiting fish habitat in all 50 states. The National Fish Habitat Partnership works to conserve fish habitat nationwide, leveraging federal, state, tribal, and private funding resources to achieve the greatest impact on fish populations through priority conservation projects of 20 regionally-based Fish Habitat Partnerships. For more information, visit: http://fishhabitat.org/

ASSOCIATION *of* FISH & WILDLIFE AGENCIES

Association of Fish & Wildlife Agencies Water Data Webinar

Christopher Estes (Instream Flow Council)

On August 10, 2020, the Association of Fish & Wildlife Agencies (AFWA) Fisheries Water Resources Policy Committee (FRWPC) Subcommittee on Water (SOW) hosted a national water data webinar that featured presentations on the Internet of Water (IoW), Western Association of Fish & Wildlife Agencies (WAFWA) Crucial Habitat Assessment Tool (CHAT), Western States Water Council (WSWC) Water Data Exchange (WaDE), National Fish Habitat Partnership (NFHP) Data Initiative, U.S. Geological Survey (USGS) and Interstate Council on Water Policy (ICWP) water programs. The webinar recording, agenda, and other supplemental information can be accessed with this public portal link:

SPECIES SPOTLIGHT

Chinook Salmon *Oncorhynchus tshawytscha*

Matt Campbell & Alexander Tasoff (WDAFS Early Career Professional Committee)

Chinook salmon are coastal migrants with a diversity of life histories. In the Northeast Pacific, juvenile Chinooks from Washington enter the ocean and remain within 200 km of their natal streams for a year or more (Trudel et al. 2009, Beamish et al. 2005). In contrast, juvenile Chinooks from Oregon often migrate north, and travel over 2,000 km, within a year after entering the ocean (Trudel et al. 2009).

Likewise, a stream may host several ecotypes of a Chinook population. Different Chinook ecotypes may be described around early and late migration timing. Spring-run fish exhibit various phenotypic differences from fall-run fish, and therefore are often considered to be separate or distinctive.

Scientists recently demonstrated that the underlying genetic basis of the spring-run and fall-run ecotypes is attributable to a single gene region called a Mendelian polymorphism (Thompson et al. 2020). The complex spring-run phenotype is a result of change in the seasonality of migration. Body condition and maturity are not directly affected by this gene region, and environmental effects of freshwater versus ocean occupancy during the summer appear to contribute to the outward differences observed between spring- and fall-run fish.

Focusing directly on the Klamath River, scientists found that descendants of extirpated spring-run fish are present, and resurrection of a historically accurate Klamath River spring-run may be possible (Thompson et al. 2020). To do so, fishery managers may need to increase in frequency of the early-migrating haplotype in that river from migration.

References:

Thompson, et al. (2020) *A Complex Phenotype in Salmon Controlled by a Simple Change in Migratory Timing*. Science 7[1] 4: [0] 4[3] -613.

Trudel, et al. (2009) *Distribution and Migration of Juvenile Chinook Salmon Derived from Coded Wire Tag Recoveries along the Continental Shelf*. T Am Fish Soc 138: 1369-1391.

Beamish, et al. (2005) *Migratory patterns of pelagic fishes and possible linkages between open ocean and coastal ecosystems off the Pacific coast of North America*. Deep-Sea Res II 52: 739-755.

WDAFS SMALL GRANT UPDATES

Improving Fish Habitat in the Henry's Fork of the Snake in Idaho: A Growing Problem

Jack McLaren, Utah State University

The Henry's Fork just downstream of Big Springs near Mack's Inn, Idaho, is spring-fed, as the name suggests, and serves as a potential refugia for coldwater salmonids, including rainbow trout and kokanee salmon, and their recreational fisheries in the face of climate change. Recreational fishing for these charismatic coldwater salmonids is worth about $30 million in local economic impact. Unfortunately, local anglers and the Idaho Fish and Game indicate the fishery, and the aquatic plants that support fish habitat, has been in decline since the 1980s.

Figure 1: The Henry's Fork of the Snake River immediately downstream of Big Springs, near Mack's Inn, Idaho

To reverse the decline of this fishery, the Western Division of the American Fisheries Society awarded a $1,000 grant to be used on a project to study the section of the Henry's Fork River near Big Springs. I am Utah State University Watershed Sciences Ph.D. student Jack McLaren, working in partnership with local nonprofit The Henry's Fork Foundation and my PhD advisors Dr.s Soren Brothers and Phaedra Budy. Through this project, we are studying what limits fish habitat availability and use in the Henry's Fork. Figuring out the limits on fish food and shelter could help us work with our many public and private partners to develop effective adaptive management strategies to increase fish habitat and return great fishing to the Henry's Fork near Big Springs.

Driven by the Clean Water Act, local homes switched from leaky septic systems to a sewer system in the mid-1980s. Although the nutrient reduction efforts were successful in improving this river's water quality, there's a lot we still don't know about how aquatic vegetation interacts with nutrient loading in shallow spring-fed rivers, or what that subsequently means for local fisheries. We suspect that the submerged vegetation in the Henry's Fork could provide critical habitat for local fish – acting as kelp forests do in the ocean – but nutrients can potentially have positive or negative impacts on vegetation depending on the type of river, the type of vegetation, and the loading rate of the nutrients. Historically, the Henry's Fork between Big Springs and Island Park Reservoir supported popular fisheries for trout, kokanee salmon, and whitefish.

Figure 2: Jack McLaren holding a large, mature kokanee salmon *Oncorhynchus nerka*.

We have started this project by studying how important aquatic vegetation is to fish. We are interested in the extent to which aquatic vegetation provides shelter and food for fish in the Henry's Fork, and whether increasing macrophyte growth through nutrient enhancement could be effective in improving fish growth and survival. In summer and fall of 2020, we completed snorkeling surveys, physical habitat

WDAFS SMALL GRANT UPDATES, cont.

assessments, drone photography, and invertebrate drift sampling. The WDAFS grant paid for invertebrate collection and identification supplies, including two dissection microscopes, keys to western invertebrate species, and other supplies, allowing me and the Henry's Fork Foundation to reduce data turnaround times and lowering short- and long-term cost of analysis. Reduced cost also allowed me to collect additional invertebrate drift data in the fall of 2020, and we will be able to collect again in the spring of 2021. Increased collection will help us determine how fish habitat availability and quality changes across seasons throughout the year.

With summer and fall sampling complete, we are getting closer to answering questions regarding how nutrients and aquatic vegetation affect fish habitat availability and use. Macroinvertebrate sampling, funded in part by WDAFS, helped us investigate how nutrients and aquatic plants could affect invertebrate drift and thereby overall food availability for fish. Invertebrate drift may also be able to tell us something about overall productivity and the ability of fish to grow and survive. Combined with our snorkeling surveys, physical habitat assessments, and drone photography, we are beginning to uncover a complex picture of fish habitat availability and use.

We will be using the microscopes purchased with WDAFS funding for years to come. We will continue working to clarify links between nutrient availability, aquatic plant growth, invertebrate populations, and physical habitat. In addition, we will expand the reach of our study to understand how fish habitat changes over time. Final steps include comparing our ongoing local, microhabitat-focused studies to larger investigations into watershed-wide controls on fish habitat, including the impacts of drought and climate change.

We are confident our results will help managers address past and future changes to the Henry's Fork ecosystem. And since drought, climate change, and nutrient changes due to human development are common problems across the West, we're hopeful this work will help us manage our fly-fishing rivers and maximize our ability to catch beautiful trophy fish, while ensuring that river ecosystems remain healthy throughout the West.

Figure 3: Jack McLaren and Bryce Oldemeyer of the Henry's Fork Foundation conducting a snorkeling survey to observe fish and fish habitat in the Henry's Fork of the Snake River near Mack's Inn, Idaho

Meet Your WDAFS Officers

President
Todd Pearsons
Hometown: Woodland Hills, CA (via Boston, MA)
Education: PhD, Oregon State University
Employer: Grant County Public Utility District (Science), Ephrata, WA
Interests: Underwater photography, Biblical archaeology, Krav Maga, human powered transportation, water sports, drums, blues harmonica

Past-President
Dan Dauwalter
Hometown: Carver, MN
Education: PhD, Oklahoma State University
Employer: Trout Unlimited (Science), Boise, ID
Interests: My interests center on outdoor recreation: mountain biking, rafting, fishing, hiking. I also play hockey, and I traveled Spain, Wales, and Switzerland for two months in 2019. It was the trip of a lifetime (photo from Spain)!

President-Elect
Dan Brauch
Hometown: Meeker, CO
Education: B.S, Colorado State University
Employer: Colorado Parks and Wildlife, Gunnison, CO
Interests: With two high school kids, I enjoy participating in their activities (4-H, science-o, drama, etc) but also find time for hiking, hunting, fishing, and motorsports. My wife, kids and I look forward to expanded travel opportunities.

Vice President
Laurie Earley
Hometown: Colchester, VT
Education: BS, University of Rhode Island and MS, Auburn University
Employer: U.S. Fish and Wildlife Service, Red Bluff, CA
Interests: I love outdoor recreation activities in the sun, snow, and water with my husband and two dogs. I also love to travel and when at home I like to spend time gardening, cooking, listening to music, and reading.

Secretary-Treasurer – Travis Rehm
Hometown: Dillon, MT
Education: MS, South Dakota State University
Employer: Spokane Tribal Fisheries
Interests: I enjoy spending my leisure time outdoors. The majority of that time is spent chasing anything that swims with a fly rod or hunting western big game.

Student Representative – Emily Chen
Hometown: Oak Creek, WI
Education: MS, Humboldt State University
Current PhD Student in Carlson Lab at UC Berkeley
Interests: I enjoy *leisurely* outdoor activities such as camping, hanging by the river, crabbing. When indoors I like to paint, strength train, read statistics, and ponder the future of salmon in California

Stay tuned for our next issue that will be developed around the theme of "amplifying science." Better yet, please think about what content you can contribute to help our membership amplify science. Do you have science that you want to report on? Do you have suggestions about how we can communicate our science better? How about some thoughts about how we maintain objectivity when communicating science. Do you have photographs that you can contribute that would tie into the theme? The world is your oyster. Thanks for considering how to contribute to your newsletter.