



SUMMER 2022 ISSUE

# THE CONFLUENCE

NEWSLETTER OF THE WASHINGTON-BRITISH COLUMBIA  
CHAPTER OF THE AMERICAN FISHERIES SOCIETY

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# Letter from the Presidents

## *WA-BC Chapter Executive Committee*



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*Alf Haukenes*

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*Paul Spruell*

### *Secretary*

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*Josh Murauskas*

### *Student Representative*

*Alex Lopez*

Greetings from the Presidents of WA-BC Chapter and Western Division of AFS,

Well, it's time. We've all known the meeting has been on the calendar and the AFS Annual Meeting in Spokane has taken shape. We are excited about the program and hope all of you are considering registering and attending the event. This AFS meeting will be important as face-to-face interactions among our membership have been limited over the past two years. While technology has allowed for great gains in virtual connectivity, the absence of in-person engagement with our AFS family has taken a toll. We look forward to our annual meeting as a place where these interactions can occur again. A broad range of specific disciplines will be covered by continuing education workshops, symposia, and contributed talks that provide something for all. Our multidisciplinary family will have multiple opportunities to connect over one of several social events planned.

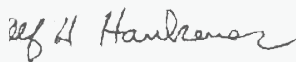
Part of the unceded lands of the Spokane Tribe, Spokane provides a gathering place on the spaces adjacent to the Spokane Falls. Our meeting will be held at the Spokane Convention Center, Riverfront Park, and Pavilion, the site of the 1974 World's Fair, the International Exposition on the Environment. We are excited to work with the City of Spokane to make your time in Spokane meaningful beginning with our opening social on Sunday night, August 21 and ending at the Grand Networking Event at the Pavilion on August 25th. We also are excited to offer 12 continuing education sessions and workshops on the opening weekend, August 20 and 21st. The meeting's broad theme, "What Do Fish Mean to Us" will allow for fisheries professionals and enthusiasts to come together to share diverse perspectives on fish and fisheries. Other exciting events include the 2022 Aquatic Film and Photography Festival, where we will be exhibiting many great films and photo submissions during two viewing sessions and, of course, a Spawning Run and Carcass Crawl. We are also excited to host the Climate Communications Training Track Program at the Spokane meeting, a program that will help attendees to develop skills and proficiencies needed for meaningful dialogues on the impacts that our changing climate is having on our fisheries science and aquatic resources.

As Presidents of the host chapter and the division we have been humbled by the level of volunteer support by our membership in planning this meeting. Each of the associated events of our meeting require an enormous amount of thought and planning and it has been a compressed schedule as the Baltimore meeting was completed later in the fall of 2021. In fact, it's just been within the last few weeks that we could safely say, "this looks like a meeting." This progress could not have been accomplished without the energy provided by the army of members volunteering their time. While the annual meeting structure is familiar, it is the people volunteering their time and planning various events and activities that will have created special memories from Spokane for our membership. A special thank you to all the folks active on the numerous committees that have built this meeting.

Finally, like any family there are always new members arriving to the fold. Like many of us the AFS annual meeting will be their first experience at a Society meeting. Please seek these first timers out and make them feel welcome. We will rely on them as we grow older to continue the traditions developed by the generations of AFS members before us. To these new members of the family, veterans of this meeting look forward to these conversations and please remember, Alf's not nearly as grumpy as he looks.

So, see ya in Spokane.

Cheers,



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## Announcements and Upcoming Events



The American Fisheries Society, President Leanne Roulson, the AFS Western Division, and the Washington – British Columbia Chapter are excited to host the 152nd AFS Annual Meeting, August 21-25, 2022, in the second largest city in Washington State, Spokane. The city of Spokane is on the Spokane River, part of the Snake and Columbia River system, making it ideal for examining the variety of roles and meanings of fish in science and culture. The Spokane area, part of the unceded lands of the Spokane Tribe, is rich in resident and migratory fish and wildlife important to indigenous peoples of the area. We hope that you will take advantage of this opportunity to experience and explore this focal area for fish, fisheries conservation and management, and human resource use.

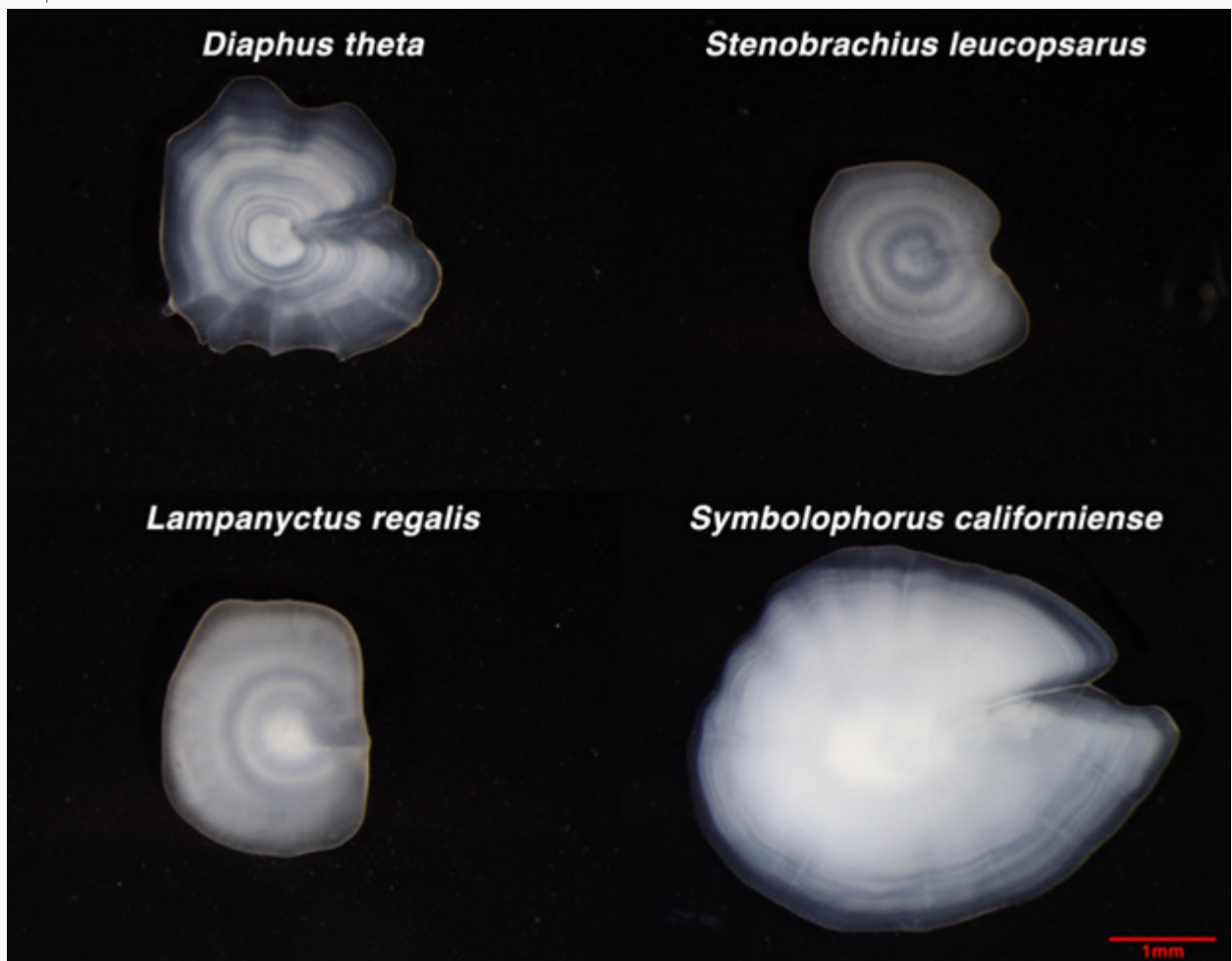
We will bring together professionals from across North America and countries around the world under the theme of “What Do Fish Mean to Us?” In the spirit of exploring differing perspectives, we are soliciting symposia topics, collaborative efforts, contributed papers, and posters that exemplify the latest research in fisheries science and that will benefit a range of audiences with the aim of advancing the science of fisheries ecology, conservation, and management.

# Otoliths from the Depths

by Lydia Walton and Micha Quindazzi

Myctophids are one of the most diverse families of mesopelagic fish species. There are over a dozen species that often occur along the WA-BC coast as either plankton or nekton. These species are differentiated from one another by their photophores, fin size, and fin placement. However, individuals can often be damaged during collection thus making species identification through exterior morphology challenging. Genetic identification of myctophids can be a useful tool to help alleviate some of the challenges caused by damaged samples. These genetic samples typically cost \$10 CAD each which can quickly add up when processing hundreds of samples.

An alternative strategy is to identify these myctophid species through the morphometrics of their otoliths. Otolith morphometrics is a useful technique for species and stock identification, especially through more modern morphometric techniques using shape contours. Differences in otolith shape manifest due to differences in genetics as well as environmental conditions, such as temperature.



We have taken on a project this summer to compare identification through these three methods: exterior morphology; genetics; and otolith morphometrics. If otolith morphometrics can successfully differentiate species, individuals could be routinely identified via a computer program. This would eliminate the uncertainty that comes with external morphology, and the high cost of genetic techniques.

Thus far, we have found the otoliths of these different myctophid species differ substantially from one another. A paper will be submitted for publication by the fall of 2022 which will be Lydia's first publication.

## Quick Hits

### HAVE TIME TO SUPPORT AFS IN SPOKANE?

We are seeking volunteers to support the national meeting in Spokane. AFS is providing compensation of \$15/hour to those who are able to fill important roles to make the meeting a success. We are currently recruiting for the registration table, information booth, trade show setup, poster show setup, symposia volunteers, and meet and greet, among others. Sign up at <https://signup.com/go/tMPqTQy> or contact Brian Missildine at [Brian.Missildine@dfw.wa.gov](mailto:Brian.Missildine@dfw.wa.gov) for more information.

### SPOKANE TRIBE TO RELEASE JUVENILE SALMON ON AUGUST 24TH

Our ancestors gathered on the banks of the Spokane River near s'x'étkw (Spokane Falls) for generations. They would enjoy the bounty of salmon and the life provided by the river. It has been over a century since we have had reason to gather, rejoice, and share in this bounty. That's about to change!

Please join the Spokane Tribe of Indians and our partners at People's Park in downtown Spokane on August 24th at 12:30 pm to honor the return of salmon to the Spokane River. Help us Bring Them Home!

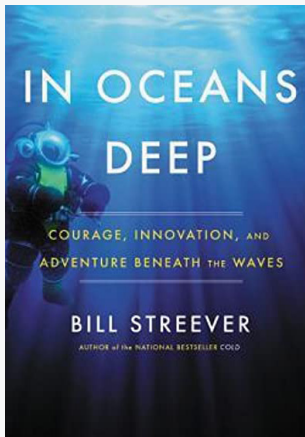
Check out the video here: <https://vimeo.com/678362130/71b16e7164>

### SILENT AUCTION

Please consider contributing a silent auction donation to AFS2022 in Spokane, WA! The auction will raise funds for the John E. Skinner Memorial Fund and the Washington/British Columbia Chapter. The John E. Skinner Memorial Fund was established in memory of John Skinner, former California-Nevada Chapter and Western Division AFS President. The fund provides monetary travel awards for deserving graduate students or exceptional undergraduate students to attend the AFS annual meeting. Silent auction donations are typically a donated item (artwork, fish related gear, wine, smoked salmon, other items representative of the great place we live) or perhaps there are licensed guides out there interested in donating a trip or a gift certificate (fishing trip, cast and blast trip, whitewater rafting, tour). To participate, please send an email describing the item, trip, gift certificate or experience to [alex.lopez@wsu.edu](mailto:alex.lopez@wsu.edu) and [tamarak@spokanetribe.com](mailto:tamarak@spokanetribe.com). Thank you!

### RECRUITING NEW OFFICERS

We are recruiting candidates for our election of officers to our Executive Committee. Serving with the EXCOM is a unique opportunity to volunteer with other passionate professionals, expand your network and contribute to decisions that make the chapter stronger. Currently, we are seeking a new secretary, treasurer, and vice president. Please reach out to Alf ([ahaukenesafs@gmail.com](mailto:ahaukenesafs@gmail.com)) or Paul ([SpruellAFS@gmail.com](mailto:SpruellAFS@gmail.com)) if you are interested.



# In Oceans Deep by Bill Streever

*Book Review By Orlay Johnson*

Well written book on the history and the drama of human exploration of the oceans, covering the science and history of humans underwater including diseases, submarines, submersibles, and robots or

drones. However, as the book progresses it evolves into a well-documented plea to both explore and protect our ocean depths.

As Streever writes in the introduction

*"I never intended to write an unabridged treatise on humanity's presence underwater. I meant to instead to create the kind of book that would leave a lasting impression. I wanted readers to finish the last page with a newfound or rejuvenated motivation to free dive, to scuba dive, to consider passage in one of the increasingly common tourist submersibles... to consider buying an underwater robot of their own, and to talk to marine scientists and submariners and the engineers whose work lies beneath the surface of the sea. In other words I wanted readers to embrace the part of our world that is shrouded by depth."*

The greatest strength of the book, aside from Streever's intensive research and experience, is that he is an excellent storyteller.

As an example, the first chapter begins "Early on January 23, 1960, a thirty-seven-year-old Italian engineer named Guiseppe Buono looked out at the Pacific and worried." Turns out he was lead engineer on the Trieste and was observing a very choppy ocean that could delay the historic dive – the Trieste was great underwater, but not so much on the surface where it bounced around like a Ping-Pong ball and already had several delicate instruments damaged.

The book describes different aspects of being underwater presented through historical accounts and interviews with the people who are involved in underwater activities and includes the history of various underwater endeavors from sponge diving to nuclear submarine. He is a fantastic storyteller and excellent interviewer who seems to take you underwater both to see the wonders of the oceans, but also to experience its dangers. Streever was a commercial diver on Gulf oil wells, and he delves deeply into science of diving and its problems, with chapters on nitrogen narcosis, diseases caused by both mild and extreme pressure, leaky dive suits, personal submersibles, etc.

Chapter 1 begins with the 1960 dive by the submersible Trieste to bottom of the Challenger Deep the deepest part of the world's ocean. The chapter also features a 2016 interview with Don Walsh, who in 1960, along with Jacques Piccard, were in that submarine. Walsh now in his 80s lives on a farm near Myrtle Point, Oregon near the Coquille River and Coos Bay. The interview may easily one of the best parts of the book and it asks a very important question – the Trieste set a record dive in 1960, but ocean exploration almost vanished in the intervening 60s and 70s with years and no one repeated going to that depth for 16 years. As you read the book you see sense more and more his emphasis on the importance of reigniting our early fascinating with the deeps.

The second chapter discusses a recurring theme in the book – the fascination many divers have with free diving and setting records for the deepest dive on a single breath and still surviving (the record is 702 ft set 2007 by Herbert Nitsch). Streever returns to free diving throughout the book, especially in the last chapter and notes it has recently become the "in thing" with many SCUBA and other divers only free diving.

The third chapter "Under Pressure" goes into the evolution of diving equipment to prevent the many egregious disasters that plague divers over the years and starts with a great story that involves the US Navy's nuclear sub the USS Halibut and how it carried divers 400 feet beneath the surface of the Soviet Union's' Sea of Okhotsk. The operation was called "Ivy Bells" and might still be active if not for a financially strapped government employee who sold info on the secret program to the Soviets.

He also interviews Phil Nuytten, President of the BC company that created the Newtsuit and Exosuit and that also makes submersibles. In the next chapter he interviews the captains and crew of US nuclear subs at Bangor Naval Station in Washington as well as visits the holder of the worlds free diving record. In the final chapters he discusses his interview Silvia Earle and how she changed the direction of the book from just a history of underwater activities to and especially the epilogue a plea to both protect the oceans and to get yourself underwater and explore this vast aquatic realm.

A good and worthwhile read.

## WASHINGTON-BRITISH COLUMBIA CHAPTER OF THE AMERICAN FISHERIES SOCIETY

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

### Contact Information

Want to join AFS and the WA-BC Chapter?

<http://membership.fisheries.org/>

Questions? Suggestions?

Contact President Alf Haukenes at [ahaukenesofs@gmail.com](mailto:ahaukenesofs@gmail.com)

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

Contact the Communications Officer Josh Murauskas at [jmurauskas@fourpeaksenv.com](mailto:jmurauskas@fourpeaksenv.com)

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

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