



# THE CONFLUENCE

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

Spring/Summer 2016

## Inside this Issue

|                         |    |
|-------------------------|----|
| President's Report      | 2  |
| Student Subunit Updates | 3  |
| Member Survey           | 4  |
| 2016 Officer Election   | 5  |
| 2016 Chapter Awards     | 6  |
| 2016 AGM Review         | 8  |
| 2017 AGM Save-the-Date  | 10 |
| Contributed Writings    | 11 |
| The Book Nook           | 14 |
| Education Corner        | 15 |
| Chapter Information     | 16 |

## 2016 ExCom Officer Election

The Washington-British Columbia Chapter of the American Fisheries Society recently sought candidate statements for the position of Vice President on the Executive Committee (ExCom). We received one nomination for the position. You can read up on the candidate, Gabriel Temple, on page 5. **Voting will be open July 1–17, 2016.**

We encourage all WABC members to participate!

The Vice-President position is a four-year progressive commitment, serving the



**Vice-President Candidate Gabriel Temple**

first year as Vice-President, the second year as President-Elect, the third year as President, and the fourth year as Past-President. During this term of service the Chapter will provide the member an opportunity to represent the Chapter at both a Western Division and Society meeting. Upon completion of the presidential series members are awarded Life Membership to the American Fisheries Society.

## 2016 AGM a Great Success!

Thank you to everyone who attended the 2016 WA-BC Chapter AGM in Chelan, WA. The meeting was a great success and brought together fisheries professionals from Washington, British Columbia, Oregon, and Idaho! This also includ-

ed three inspiring Plenary speakers who each shared a different perspective on our theme, "Building a Future for our Fishes".

A summary of the meeting (and some great photos!) can be found starting on

page 6. After a brief break, the ExCom has already begun to plan the 2017 AGM. Find the Save-the-Date notice on page 8 and please spread the word!

Stay tuned for more info!

## ***In Case You Missed It..***

The plenary speaker and symposia presentations from the AGM are posted on the chapter website! Find them at: <http://wabc-afs.org/2016-agm-presentations/>

## Report on AGM 2016 and Future Plans



**WA-BC Chapter  
President  
Mark LaRiviere**

**WA-BC Chapter  
Executive Committee**

President

Mark LaRiviere

President Elect

Alix Blake

Vice President

Tamara Knudsen

Past President

Matt Klungle

Treasurer

Martina Beck

Secretary

Erin Rechisky

Communications Director

Brittany Jenewein

Student Rep.

Orlay Johnson

AFS-UW President

Joëlle Blais

AFS-UBC President

Katrina V. Cook

AFS-EWU President

Bryan Witte

I would like to thank all the chapter members for their support, assistance and attendance at our 2016 annual general meeting (AGM) in Lake Chelan, WA. A special thanks to Alix Blake, chapter President-Elect for all her hard work organizing the meeting! The Executive Committee (ExCom) is pleased to report an attendance of over 130 people over the four days.

### **2017 Annual General Meeting:**

The 2017 annual general meeting is scheduled for April 10 – 13, 2017 at the Red Lion Inn in Spokane, WA. Expect to hear more soon from Tamara Knudson, our capable Vice-President as she organizes this meeting and calls for assistance. Please offer her your assistance, ideas and support for this meeting. **Mark your calendars now, put in your travel requests and plan to attend this meeting!** The strategic location in eastern Washington

should be attractive to both Canadian and Washington members.

### **AFS Western Division**

**news:** The Western Division (WD) executive committee is “fishing” around for our chapter to host the WD Annual Meeting in 2020. Yup, that is only 4 years away! I have suggested the ExCom form an exploratory committee and see if we can rally enough chapter members behind the idea. A meeting of this size takes a core group of about 15 individuals, and an extended group of 30 or so to be successful. Let the ExCom members know (however you can contact us) what you think of this idea. Look for more information in the future. **Any volunteers or ideas out there?**

### **Chapter Standing**

**Committees:** During my term on the ExCom I am working to resurrect our chapter’s standing committees. They are: AGM Program,

Nominations, Archive, Membership, Resolutions and Awards. *Ad hoc* committees have formed over the years – Scholarships is an example. If anyone has an interest in chairing or participating in a Standing Committee please contact me or any member of the ExCom.

I will be retiring from Tacoma Power on July 1, 2016, but will remain active in fisheries work in the Pacific Northwest. My new contact will be at [mglariviere@aol.com](mailto:mglariviere@aol.com).

As always feel free to contact me regarding our Chapter, the Parent Society or just fish news in general!

Mark LaRiviere,  
President

Washington British Columbia Chapter,  
American Fisheries Society

## **Contact Mark:**

Cell:(253) 381-9657  
Email: [mglariviere@aol.com](mailto:mglariviere@aol.com)

## Student Subunits: Reports and Activities

**Joëlle Blais,  
Outgoing President  
of the UW Student  
Subunit**



### ***UW Student Subunit President's Report***

[joelle.blais21@hotmail.com](mailto:joelle.blais21@hotmail.com)

AFS-UW website:  
<https://afsuw.wordpress.com/>



The University of Washington student subunit of AFS held a career development seminar about a month ago. We had Ben Klasky from IslandWood come talk with students. Due to some miscommunication, the event occurred after a two-day graduate seminar series so our graduate student turnout was lower than expected, but we did have decent participation from our undergraduates.

I have recently graduated and thus finished my Presidential term. Elections were held at the end of the May and we are pleased to welcome our new subunit officers for the 2016-2017 academic year:

- President:** Amaryllis Adey (aadey@uw.edu)
- Vice President:** Kayla Ellis
- Secretary:** Zach Koehn
- Treasurer:** Alex Johanson
- Communications:** Grace Workman
- Membership:** Sam Ghods

The new officers are planning to discuss the activities they would like to do for the upcoming year and set up a budget some time before the school year begins in the Fall. I am excited to see where our new Membership board position takes our chapter with hopes of improved participation at events and the ability to carry out more events throughout the year with a student body.

---

### ***BC Student Subunit President's Report***

[katrina.vcook@gmail.com](mailto:katrina.vcook@gmail.com)  
AFS-BC website: <https://bcstudentafs.wordpress.com/>

Here in BC it seems as though the rains have stopped to make way for long days, sunshine and summer time and Pacific salmon have started thinking about making their

way upstream. Yes, it is a good time of year. Meanwhile students of the subunit are recollecting on their winters spent with data analysis and writing (hopefully) and turning their attention to field work, or maybe perhaps just more writing and data analysis.

The 2015/16 school year marks the growth of the subunit from a base at the University of British Columbia and Simon Fraser University, both in Vancouver, to encompassing ExCom members at the University of Victoria. To mark this momentous development, the subunit hosted the first ever bi-city duelling fish trivia event this winter. Who has the greater fish knowledge: Victoria or Vancouver? The trivia questions, varying from 'name-the-fish' to 'fish geography' and 'fish in the news', resulted in entertainment for all fish nerds involved and we all left the events loving fish even more than we did when we went in. As for who won, Vancouver claimed the top score but Victoria called for a recount due to differences in how scores were tabulated. Therefore, the jury is still out on this one and we might just have to have another trivia event.

Communication officers within the subunit have also been highlighting recently published research from our members on our website and facebook page. The most recent posts include one from Cameron Freshwater (UVic) on latitudinal gradients in body size of sockeye salmon in the ocean and one from David Scott (SFU) on how flood mitigation structures in tidal creeks transform nurseries for native fishes into hotspots for non-native fish. Know of some interesting work recently published by members of the BC Student Subunit? Got some of your own you'd like to share? Let us know and we'll put you in the spotlight! Write us at [bcstudentafs@gmail.com](mailto:bcstudentafs@gmail.com).

(continued on next page)



**Katrina Cook,  
President of the BC  
Student Subunit**



## Student Subunits: Reports and Activities (cont'd)



**Bryan Witte, President of the EWU Student Subunit**

### *EWU Student Subunit President's Report*

*bwitte2012@eagles.ewu.edu*



The Eastern Washington University student subunit of AFS was formed in late September, 2015. We now have six student members with another four that are verbally committed to joining AFS. We had five students attend the annual general meeting in Chelan, and all gave presentations. We plan on having a subunit meeting the second week of June when everyone is done with their finals. At this time, we will also have guest speakers from Trout Unlimited, and the Washington Department of Fish and Wildlife.

There are two graduate students in our subunit, and they will have subunit volunteers helping out on their projects. In addition, the Trout Unlimited Chapter in Spokane has worked with our faculty advisor to plan a subunit project on a rainbow trout PIT tagging project and habitat assessment on a local creek, which will also started in June.

## Member Survey

As many of you know, a while ago we opened a survey to learn more about your satisfaction with the chapter and how the Executive Committee can better serve your needs. Here are a few of the results so far:

- Most prefer to receive WABC information via the newsletter and listserve
- We apparently hit the "Goldilocks" of email frequency—not too much or too little
- Of those not planning to attend the 2016 AGM, the main deterrents were lack of funding or poor exchange rate
- There is interest in more functions/activities for retired fisheries professionals

We have had only a few responses so far, so if there is anything you would like to tell us about anonymously, the survey at the link below is ALWAYS available. The full survey only takes around 10 minutes of your time.

[https://www.surveymonkey.com/r/wabc\\_member\\_feedback](https://www.surveymonkey.com/r/wabc_member_feedback)

**Your feedback is very important to us!**

## 2016 WABC ExCom Election

For this year's Executive Committee election, we are seeking to fill the role of Vice President of the WABC Chapter. We received one nomination from Gabriel Temple, and you can read his candidate statement below.

To cast your vote, please use this link:

<https://www.surveymonkey.com/r/XYCVS6N>

You may vote for Gabriel, abstain, or write-in a new candidate. Voting is open **July 1–17, 2016** and results will be available in time for the change of officers at the 2017 AFS meeting in Kansas **City**.

**Please take 2 minutes to cast your vote!**



### **Gabriel M. Temple**

WA Dept. of Fish & Wildlife  
Ecological Interactions Team

[gabriel.temple@dfw.wa.gov](mailto:gabriel.temple@dfw.wa.gov)

I have always had an affinity for the outdoors, but it was in the 10th grade that I developed a real passion for fish and our aquatic systems. My defining moment was during summer break when a good friend and I got ahold of some snorkeling gear, hiked up the John Wayne trail near my house, jumped in the Yakima River, and snorkeled home. That's the first time I observed fish underwater and I was, well, hooked. I spent every day that summer snorkeling the same river reach over and over, fascinated by the underwater world. I clearly remember thinking I needed to find a career that would allow me to work with fish.

I didn't have money set aside for college following graduation, so I applied for a job with the Washington Conservation Corp as a Teachers Aid at Walter Strom Middle School in Roslyn, WA, which guaranteed a small college scholarship upon completion of the nine-month position. The scholarship was a springboard for me to study aquatic sciences at Central Washington University, while mostly living in my VW van.

I obtained my first temporary technician position with the Washington Department of Fish and Wildlife in 1998 and was fortunate enough to be mentored by several well respected fisheries scientists for the next several years. I have been working with the same



*(candidate statement continued from p.5)*

workgroup for nearly 20 years, and have had the opportunity to author and co-author numerous publications and conference presentations, and design and acquire new research projects that have provided jobs for up-and-coming fisheries biologists (my favorite part).

I have been a member of the AFS since 2003, and since that time have had substantial support from the organization, including travel grants, manuscript reviews, and opportunities to present at regional and national meetings. My primary motivation for running for office with the WA-BC chapter is to give something back to the organization in return for the support I have received through the years. I would like to share that support with others and will make it a priority to stimulate their involvement with the chapter, provide opportunity and professional development for them when feasible, and continue to set an example in natural resource conservation.

I am thankful for this opportunity to share my story, and look forward to serving the WABC Chapter of the AFS as Vice President. – Gabe

## 2016 Chapter Awards

Three awards were presented at the 2016 WABC Chapter AGM in Chelan, WA. Congratulations to the winners! Past award recipients can be viewed on our website: <http://wabc-afs.org/about-us/awards/>

**Tommy Brayshaw Junior Conservation Award:** *In honor of artist and conservationist Tommy Brayshaw; this award was established in 1995 to recognize someone 16 years old or younger who has been meaningfully involved in some form of fish conservation work.*

**2016 Recipient:** Anika Avelino

Anika volunteers with the North Olympic Salmon Coalition's survey of endangered Hood Canal Summer Chum in Chimacum Creek. The survey involves trekking along sections of creek counting fish and taking biological measurements and samples from carcasses. Among a core of extremely capable and knowledgeable volunteers, including fishermen and biologists, Anika stands out as a burgeoning scientist with an enthusiastic approach to restoration involvement. She inspires the utmost confidence in the quality of her work, such that it is easy to think of her as a Lead Surveyor.

Glass fish tanks filled with salmon which lined the hallways of her primary school first exposed Anika to the world of anadromous fishes, and sparked her love of nature. Through her elementary classes, she participated in an outreach program of the United States Fish and Wildlife Service which involved raising Coho salmon from eggs and releasing fry in the Quilcene River on Washington's Olympic Peninsula. Inspired by these projects in school, Anika sought additional involvement in restoring salmon stocks, and participated in fish releases through the Quilcene National Fish Hatchery. The Quilcene NFH celebrated its 100 year anniversary in 2011, marking a century of contributions to local fish runs. Anika spent time volunteering at the hatchery, by helping with feeding and cleaning, to continue her hands-on education and involvement in fish conservation.

Anika demonstrates a holistic understanding of ecosystem processes. She participates in tree plantings to provide salmon habitat with the Northwest Watershed Institute, and conducts beach cleanups with the Washington Coast Savers. Anika recently took on a leadership role and organized a community beach cleanup in February 2016. More than 40 volunteers participated in Anika's event. She is also a

docent for the Marine Exhibit of the Port Townsend Marine Science Center.

A true conservationist in the making, Anika intends to pursue environmental studies in college. She is passionate about preserving habitat to promote the success of native species. I am confident that as her leadership skills continue to accelerate, she will act as a role model among her peers for community involvement in salmon recovery. Her continuing participation in Hood Canal Summer Chum surveys through the Salmon Coalition, tree plantings in riparian zones, and beach cleanups make her a valuable asset to fish conservation efforts on Washington's Olympic Peninsula.

---

**Conservation Organization of the Year:** *This award recognizes an organization that has significantly contributed to a program or activity for conservation of fishery resources or habitats.*

**2016 Recipient:** Washington Conservation Corps—WDFW Intertidal Forage Fish Monitoring Program

The WCC is an AmeriCorps program dedicated to environmental and disaster services. In addition to partnering with 5 major state agencies in conservation work, they partner with over 50 local and federal organizations in Washington to accomplish environmental projects. Fisheries and aquatic restoration work is no exception. Page 8

Washington-British Columbia Chapter of the American Fisheries Society – AGM 2016

Forage fish are an essential component of the Puget Sound ecosystem and many of its vital fishery resources. To inform management policies the WDFW works with local, state, federal and tribal partners to collect information about intertidal spawning forage fish and their habitat. Since 2014 the Washington Conservation Corps (WCC) has dramatically increased the scope of these efforts by providing a crew of 12 competent and enthusiastic individuals to complete year round surveys of forage fish habitat throughout the Puget Sound. This crew is composed of young adults and military veterans from diverse backgrounds who are committed to helping WDFW study, preserve and restore Puget Sound ecosystems. In addition to collecting data, the crew members also act as ambassadors on behalf of the forage fish they are studying by providing information to members of the public they encounter on the beach while doing their surveys and by providing updated information that is accessible to the public on the WDFW website. This project has helped WDFW address critical knowledge gaps regarding this important resource, and with the skills and experience gained through this project several crew members have already gone on to begin their new careers in the field of natural resources.

---

**Worthy Coelacanth Award:** *First presented in 1984, this award goes to a senior member (over 55 years young) of the WA-BC Chapter who has made an outstanding contribution to fisheries management and science.*

**2016 Recipient:** Orlay Johnson

This year's recipient of the Worthy Coelacanth Award is Orlay Johnson for his tireless dedication to the WABC Chapter Executive Committee and advocacy for the Chapter's students.

After receiving a MSc from the University of Idaho in 1973, Orlay was and teacher for seven years in Virginia and on Lopez Island. After getting a taste of the salt life in the San Juan's he had a brief stint as an observer on Soviet fishing vessels in the North Pacific. Realizing that making a living as a teacher or observer were not challenging enough he enrolled at the University of Washington to pursue his Ph.D. and become a fisheries biologist. He achieved that goal in 1986 when he earned his degree and walked across the street began working at NOAA's Northwest Fisheries Science Center where he remained until his retirement in 2013.

Orlay has been a member of the Chapter since 1982 and has been a long serving member of the ExCom as Communication Director and Editor of the "Confluence" and continues to serve as the Student Subunit Representative. He has been a member of the Northwest Aquatic and Marine Educators since 1979 and has served as Communication Co-Director and President. He has been a long time active member of the Pink and Chum Symposium. He was an associate editor for Transactions of the American Fisheries Society from 2005 to 2008. Even in "retirement" Orlay continues to be a NOAA contractor, volunteer at the Seattle Aquarium (since 1979) and for the Chapter.

## **Review of the 2016 Annual General Meeting**

by Brittany Jenewein, Communications Director for WA-BC



Our chapter's Annual General Meeting was held in Chelan, WA from March 28—31. Many of you will remember that we also held the AGM at Campbell's Resort in [year], and we were pleased to have the opportunity to meet at this beautiful lake-side resort again and use our knowledge of the venue to improve upon the previous meeting. Indeed, the meeting was a great success thanks not only to the Steering Committee volunteers, but also to the attendees who put in a great deal of effort to provide high quality presentations and engage in meaningful discussions about all things fish.

We had a total of 133 registrations, including 7 students from University of Washington, Eastern Washington University, Bellingham Technical College, and University of Minnesota. All of the students contributed at least an hour of their time to helping out with the registration desk, the Spawning Run, and selling WABC swag.



The UW and EWU Student Subunit Presidents working hard at the registration desk

The Spawning Run was located along a similar route as the last time we visited Chelan, which provided absolutely gorgeous views of the lake, the river, and the mountains surrounding both. Thirteen early-risers participated in the 5K fun-run, and even though it wasn't a "race", our Vice-President Alix Blake finished first with a great time of 21:28. Congratulations Alix!

There were 3 excellent presentations from our Plenary speakers, which I personally found to be very inspiring views on the future of our fishes and really set the tone for the rest of the meeting. The Executive Committee heard nothing but good murmurings about the quality of all of the meeting's presentations and there were several late-night





Near the turn-around point of the Spawning Run

discussions that stemmed from the talks.

The social events started out a little slow, but by the time the Banquet came around there were more than a handful of attendees (including chapter President Mark LaRiviere!) busting a move on the dance floor. A big thank you goes out to Campbell's Resort for hosting our meeting; the staff did a great job keeping all of us well-fed and "hydrated" at the social

events and throughout the meeting. It was a nice perk to get to enjoy 3 meals a day plus snacks at the resort, which was included in the registration fee.

Barely recovered from planning this meeting, the ExCom is already looking to the next one in 2017. Please see the next page for the Save-the-Date announcement and mark your calendars! Let's all work together to make the next AGM even better.



Great turnout at the Student-Mentor mixer!



A few brave souls got the party started!



The last talk of the conference, with a big audience!

Do you have any photos or comments to share from the AGM? Please send them my way!  
btjenewein@gmail.com

I hope to see many of you again (and many new faces!) at the 2017 AGM!

# 2017 WA-BC Chapter Annual General Meeting

Mark your calendars, folks! The Executive Committee formally announces plans for the 2017 Washington-British Columbia Chapter Annual General Meeting. This meeting will be held **April 10–13, 2017** in Spokane, Washington at the Hotel RL (<http://www.redlion.com/park-spokane>). We are already planning plenty of exciting activities for this meeting, and we will post details as they become available on our website (<http://www.wabc-afs.org>).



Meetings like this take a lot of work from a lot of dedicated people. **Are you interested in volunteering your time to help us put on a great conference?** There are plenty of areas to assist on the AGM Steering Committee, including:

- Program Committee (Plenary, symposia, student papers, continuing education)
- Entertainment
- "Spawning Run"
- Trade Show
- Silent Auction
- Publicity
- Fundraising
- On-site organization (incl. registration desk, poster/notice setup, A/V assistance, etc.)



Typical time commitment is 2-3 hours per month, depending on the role and time remaining until the conference. If you would like to sign up as a volunteer or would like more information, please contact Tamara Knudson ([tamarak@spokanetribe.com](mailto:tamarak@spokanetribe.com)).

**If you are interested in being a sponsor and/or exhibitor at the Trade Show**, please contact Erin Rechisky ([erin.rechisky@kintama.com](mailto:erin.rechisky@kintama.com)).

## Contributed Writings

### Improving Survival For Catch And Release Fish? No More Than 10 Seconds Air Time For Removing Hook

*This article was originally posted in the Columbia Basin Bulletin on Friday, January 15, 2016  
(<http://www.cbbulletin.com/435859.aspx>)*

Ten seconds is all the time an angler should take to remove the hook, take pictures and return a fish to water, according to a recommendation in a recent survey of studies about the impacts of exposing fish to air.

While the length of time of recommended exposure has a lot to do with the condition of the fish, as well as the temperature of the air and water, air exposure has a significant impact on post release survival and behavior, the study says.

Air exposure causes inadequate oxygenation of the blood, known as hypoxia, and damages the gill lamellae, causing physiological stress and physical damage in the fish that increases with the time the fish is exposed to air, the study says.

"Our review outlines how extreme care needs to be taken to reduce air exposure when the landed fish is exhausted, water temperatures are beyond the normal range, or with known sensitive species," Katrina Cook said. She is a PhD student in the Pacific Salmon Ecology and Conservation Laboratory at the University of British Columbia in Vancouver, BC.

As simple as this may sound, catch and release fishing regulations seldom require a precise release procedure that would require a limited exposure to the air, even though air exposure duration is an easy metric to measure and enforce.

"However, with the appropriate tools, there is little need for air exposure at all for unhooking and releasing or even measuring and photographing the fish," Cook said. "To meet the 10 second target, or even eliminate air exposure all together, fish should be hooked superficially in the jaw, not played to or beyond exhaustion, and unhooked while submerged in a knotless mesh net."

Longer exposure to air often occurs when a hook is deeply lodged in the fish, but this can be avoided with the use of tackle appropriate for the target species.

"The bait and hook types that are best for the welfare of the fish will depend on the target species," Cook said. "Generally, however, single barbless circle hooks (if using organic bait) and artificial lures, especially artificial flies, typically result in superficial hooking, short handling times, and limited tissue damage, which will all reduce air exposure."

In addition, Cook recommended using lines of appropriate breaking strength so to not excessively exhaust the fish.

When a fish is removed from water, the study says, "a cascade of physical and physiological disturbances supervene."

- damaged gill lamellae, which are responsible for gas exchange, collapse, gas exchange with capillaries and aerobic respiration stops;
- the fish develops an oxygen debt, carbon dioxide (acidic) accumulates and combined with the lactic acid developed during anaerobic exercise, blood pH drops;
- the heart rate slows until the fish is returned to the water. At that point, the heart becomes

tachycardic and the longer the fish is exposed to air, the longer the heart disturbances occur.

These stress responses can be cumulative. In fact, air exposure is just one issue for a fish that has been hooked or netted: injuries, exercise and environmental conditions also cause stress that are only exacerbated by air exposure, according to the study.

"In fisheries where fish 'fight' to exhaustion burst swimming and the resulting power output from locomotory muscles, fueled by anaerobic metabolism, depletes tissue energy stores and initiates a stress response," the study says.

Rainbow trout mortality has been shown to be highest from air exposure when the trout has struggled to escape. Survival is higher for fish that remain calm.

Temperature is important, the study says. Bringing a fish up from cooler water depths to a warmer surface can cause thermal shock. Summer water temperatures regularly approach critical temperature thresholds "beyond which only passive anaerobic metabolism is possible, a phenomenon that will increase as the climate warms," the study says.

Air exposure can have other affects, as well. A study of Atlantic salmon found that fish not exposed to air – presumably also not exposed to a fight for their life – produced twice as many offspring as fish exposed up to 10 seconds and three times as many offspring as those exposed for more than 10 seconds.

The survey of literature about fish and exposure to air, "Fish out of water: how much air is too much?" was published online in the journal Fisheries <http://www.tandfonline.com/doi/abs/10.1080/03632415.2015.1074570?journalCode=ufsh20>

Cook's co-authors are Robert Lennox, a PhD student in the Fish Ecology and Conservation Physiology Laboratory at Carleton University in Ottawa, Ontario; Scott Hinch, professor of Fisheries Conservation at the University of British Columbia and leader of the Pacific Salmon Ecology and Conservation Laboratory; Steve Cooke, professor of Environmental Science and Biology at Carleton University and leader of the Fish Ecology and Conservation Physiology Laboratory.

Fish exposed to air during commercial fishing operations is more complicated, more difficult to avoid and more often gear dependent, Cook said, but overall the 10 second rule sticks.

There are a number of "interacting factors" at play during capture and handling. While air exposure is a good way to measure fish behavior, other stressors should also be assessed to determine "the severity of the capture event," she said.

"Gillnet capture often results in severe injuries which can have lasting effects and will act as a cumulative stressor in addition to air exposure," she said. "Therefore, as with any fish-capture scenario, probability of survival following gillnet release will be improved if air exposure can be reduced or eliminated."

She went on to say that with severely impaired fish, "on-board facilitated recovery has shown promise in improving survival."

Still, reducing air exposure to less than 10 seconds during commercial fishing is difficult and would require changing methods or gear, the study says.

"Where air exposure cannot be minimized, regulatory agencies should consider the argument of whether it is ethical to release captured fish," the study says. "If a fish suffers physiological or physical trauma from which recovery is unlikely, harvesting the fish may be the more appropriate action."



# GREETINGS FROM THE CANADIAN AQUATIC RESOURCES SECTION OF THE AMERICAN FISHERIES SOCIETY



Make sure to join CARS when you re-new your AFS membership this year  
<http://fisheries.org/membership>



Join CARS at any time if you are an AFS member

Contact CARS at: [carsafs@gmail.com](mailto:carsafs@gmail.com) for more information, or find us online at [cars.fisheries.org](http://cars.fisheries.org).

---

## CARS Highlights

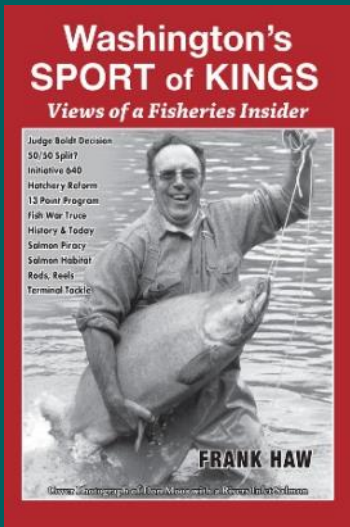
- 1) Created the Legends of Canadian Fisheries Science and Management award in 2014.
- 2) Supports numerous students through the Peter A. Larkin award for excellence in M.Sc. and Ph.D. student research and fisheries leadership, and administers the Clemens-Rigler travel awards to annual CCFR meeting.
- 3) Currently coordinating the writing of a textbook on Canadian fisheries science - watch for it in 2016.
- 4) Advocates for Canadian fisheries professionals through involvement with PAGSE (the partnership group for science and engineering), peer-review publications, and timely letters to environmental approval agencies.
- 5) Links together the four Canadian-focused AFS chapters.

Photo by Emmanuelle Chrétien





**Dr. Richard R. Whitney,  
Reviewer**



**Washington's Sport of Kings:  
Views of a Fisheries Insider**



**Frank Haw,  
Author**

(photo from <http://www.amazon.com/Frank-Haw/e/B00JVLETEC>)

## The Book Nook

A Review of Frank Maw's book "Washington's Sport of Kings: Views of a Fisheries Insider", by Richard R. Whitney, Ph.D.; Retired Professor, School of Fisheries, University of Washington. Professor Whitney taught Fisheries Management (1961 – 1994); and from 1974 – 1979 served as Fisheries Technical Advisor to Honorable George H. Boldt, Senior Judge, United States District Court for Western Washington in the case United States v. the State of Washington.

*Washington's Sport of Kings* is a wonderful book on the history and management of salmon angling in Washington that is reminiscent of some classics in the literature. This book features fish that are the kings of Washington's coastal waters. Frank is uniquely qualified to write this since he has lived through much of what is covered. The reader will be treated to wonderful "fish stories", which in the telling provide a historical account of the development of sport fishing for salmon in Puget Sound and the outer coast, naming "hot spots", original boat houses, and fishing resorts that deserve to be remembered from the "good old days". The reader will be reminded of such classic stories by other authors in other times and places who have reminisced of fishing experiences and have touched a nerve in memory banks where they are happily stored.

It was a pleasure to read the book. I felt as though I was reliving Frank's youthful sport fishing adventures with him. These and his other accounts provide us with a fresh and absorbing history of those early years when the sport fishery was still being established and a lively competition developed among the fishing resorts, boat houses, tackle makers, and merchants. This part of his story carries us along as though we were experiencing it ourselves. At the same time, we are educated on the conservation aspects of the sport as the author draws upon his professional experience to make us aware of our human impact upon this resource and our need to thoughtfully regulate it.

So much for the happy times. However, there is a more serious story lurking in the background of the book, and that part made me worry about whether regulation of our salmon and steelhead fisheries is moving forward in ways that will assure that the populations of these marvelous fish will continue to sustain healthy fisheries. An even more onerous task will be to restore and maintain the productivity of Puget Sound and our inland waters.

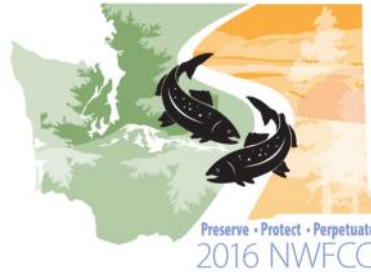
Frank mentions his early experience with the Bergman-Jefferts coded wire tag, an innovation that led to evaluating contributions and migrations and catches of Washington and other salmon from California to Alaska. These migrations and interceptions complicate managing the harvest to achieve the required spawning escapement and Treaty Tribal share as ordered by Judge George H. Boldt. Because I served as Judge Boldt's fisheries technical advisor, I have had an ongoing interest in the outcome. In particular, I wondered how the State and Tribes have been doing with respect to the 50:50 allocation ordered by Judge Boldt. In 1977 as he implemented his decision and gained experience with the complexities of fisheries, Judge Boldt saw the need to specify that the shares were to be calculated for each of the species separately and according to several specified rivers of origin. Well, it turns out, according to Frank, that information is no longer available in the form ordered by Judge Boldt. But in his discussion of "co-management", Frank indicates that the overall catch sharing of the prime recreational species, Chinook and coho salmon, is far from balanced. I am left wondering about larger questions that go beyond his purpose in writing this book. I conclude that, besides being good reading, the book is stimulating.

## Education Corner

(from p.15)

Frank makes the suggestion and I now agree that a dispute resolution system is needed to arrive at documented agreements between the responsible fishery management agencies. It is essential that these agencies work cooperatively to assure the perpetuation of these resources that are so vital to segments of our population, and the industries and cultures that have developed around them. I believe that Frank has done a great public service by calling attention to this issue.

I recommend this book to everyone who has an interest in fish and fishing, no matter which fish or what place, and it should be required reading for every college student studying fisheries, as well as their instructors, and fishery managers who might benefit from a new perspective on their responsibilities.



### 67th Annual Northwest Fish Culture Concepts: A Workshop for Fish Culturists

The Washington Department of Fish and Wildlife is pleased to be hosting the 67th Annual Northwest Fish Culture Concepts: A Workshop for Fish Culturists, December 6 – 8, 2016, in Centralia, WA. We look forward to seeing you and the presentations highlighting this year's theme, "Preserve, Protect, Perpetuate." This event continues to be educational and beneficial for everyone attending, presenting, and exhibiting fish culture products.

The registration deadline is **November 23, 2016**. For more details, see: <http://fishculture.fisheries.org/northwest-fish-culture-concepts/upcoming-nwfcc-workshop/>

## Use — and Abuse — of Science in Water Resource Policy and Management

The 2016 Water Resources Management Association Webinar by Robert Lackey is now available to view online: [https://media.oregonstate.edu/media/t/0\\_u6ku9zwn](https://media.oregonstate.edu/media/t/0_u6ku9zwn)

From the Abstract: "Public confidence that scientific information is technically accurate, policy relevant, and politically unbiased is central to informed resolution of policy and regulatory issues that are often contentious, divisive, and litigious. Especially, scientists should watch for the often subtle creep of normative science (i.e., information that appears to be policy neutral, but contains an embedded preference for a particular policy or class of policies). Failing to do so risks marginalizing the essential role that science and scientists ought to play in informing decisions on important public policy questions."

Be sure to take advantage of this free one-hour seminar from Oregon State University!

## WA-BC Chapter Standing Committees - A Call for Help:

As established in our Chapter bylaws we have the following Standing Committees:

- Program
- Nominations
- Archive
- Membership
- Resolutions
- Awards

Committee chairs are needed from the membership! If anyone has an interest in leading up or serving on one of these committee please contact any member of the Chapter executive committee (ExCom) or the chapter President.

The ExCom is discussing adding an additional Committee – Scholarships – to guide the disbursement of the money set aside in the Chapter’s endowment fund. This fund, the Jeff Cedarholm Endowment Fund was established to award student scholarships. The current balance is approximately \$22,000 and the money is invested with other chapters in a Western Division investment fund. For more information or to assist with our Chapter’s committees contact Mark LaRiviere, President at mglariviere@aol.com or at (253) 381-9657.



## Washington-British Columbia Chapter of the American Fisheries Society

### Chapter Information

Website: <http://wabc-afs.org/>

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

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

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

Questions? Suggestions? Contact: President Mark LaRiviere at [mglariviere@aol.com](mailto:mglariviere@aol.com)

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

Brittany Jenewein at [btjenewein@gmail.com](mailto:btjenewein@gmail.com)

We want to hear from you!

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

The mission of the Chapter is to:

- 1) advance the conservation and intelligent management of aquatic resources within a context of sound ecological principles,
- 2) gather and disseminate information pertaining to aquatic science and fisheries management, and
- 3) promote the educational and technical aspects of the fisheries profession.

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

The next WA-BC Chapter Annual General Meeting will be held at: Hotel RL in Spokane, Washington **April 10–13, 2017**

**Watch our chapter website for the latest details!**