THE CONFLUENCE

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

Fall 2016

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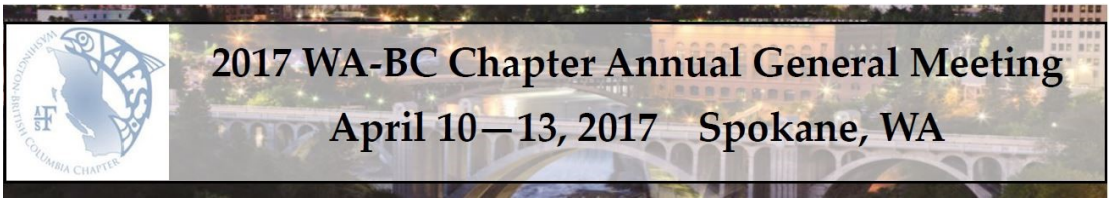

Get your abstracts ready! The 2017 Washington-British Columbia Chapter Annual General Meeting will be held April 10—13 in Spokane, Washington at the Hotel RL (http://www.redlion.com/park-spokane). The theme for this meeting is:

"Fisheries Collaborations: Tipping the Scales Toward Success"

Regular updates will be made on the AGM website (http://agm.wabc-afs.org). You can also contact President-Elect Tamara Knudson (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).

Want to help out? Here's where we can always use some extra hands:

Symposia: Do you have an idea for a symposium that you want to chair and organize?

Fundraising: Contacting potential sponsors and collecting donations for the Silent Auction

Entertainment: Brainstorming ideas and organizing field trips

Trade Show: Contacting vendors and assisting with set-up

Continuing Education: Do you want to teach something to your colleagues or know of someone who might? Help us organize some great sessions!

On-Site organization: Including registration desk, poster/sign setup, A/V assistance, Spawning Run assistant

Publicity: This one is everyone's job! If you know of a great advertising avenue we may have missed, please let us know!

WA-BC Chapter President Alix Blake

WA-BC Chapter Executive Committee

President
Alix Blake
President Elect
Tamara Knudson
Vice President
Gabriel Temple
Past President
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Martina Beck
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AFS-UW President
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AFS-BC President
Katrina V. Cook
AFS-EWU President
Bryan Witte

President's Report

I would like welcome and congratulate our new Vice President Gabriel Temple! Gabe is a fisheries biologist for the Washington Department of Fish and Wildlife out of Ellensburg. Gabe, thank you for serving our chapter.

2016 ExCom Annual Retreat:

On September 24, 2016 the Executive Committee gathered at Bellingham Technical College (BTC) in Bellingham, WA for some face to face chapter business. Special thanks to Bill Nunn from BTC for letting us use the facility and helping organize the meeting. We approved this fiscal year's budget and approved the formation of an exploratory committee with the goal of hosting the 2020 Western Division meeting. We are also working to "clean house" and go through the Chapter's belongings and digitize all important documents. If you want further information about the Chapter's business contact us at alix.blake@spokanetribe.com or afs.wabc@gmail.com.

2017 Annual General Meeting:

Please mark your calendar for your 2017 annual meeting in Spokane, WA April 10 – 13, 2017! A block of rooms will be available at the Red Lion Hotel at the Park located at 303 W. North River Drive Spokane WA 99201. Visit http://agm.wabc-afs.org/ regularly, information will be updated and provided frequently. If you are interested in helping organize the meeting or have ideas for a symposium contact Tamara Knudson or myself at tamarak@spokanetribe.com or alix.blake@spokanetribe.com.

AFS Western Division News:

The 2017 Western Division annual meeting will be held in Missoula, Montana May 21 – 26, 2017. The theme is Change and Continuity: Celebrating 50 Years of Fisheries in the West, I encourage everyone to participate in the meeting! http://wdmtg.fisheries.org/

I am encouraging all Chapter members to submit an article for our newsletter. We want to know what interesting research you are conducting or fun fish related stories. We would accept poems, stories, book reviews, conference reviews, and anything else would like to share. Please submit your work to our communications director Brittany Jenewein (btjenewein@gmail.com or afs.wabc@gmail.com).

I hope to see all of you in Spokane this April!

Alix Blake, President

2016—2017 WA-BC Executive Committee

(most of us, anyway!)

Contact for President Alix Blake

Email: alix.blake@spokanetribe.com or afs.wabc@gmail.com
Cell: (509) 389-1905

Student Subunits: Reports and Activities

The Student Subunits have enjoyed a busy summer of field work and are just starting up their Fall activities. More updates will be available in the Winter newsletter, but you can always contact them directly for the latest info on their activities.

UW Student Subunit President
aadey@uw.edu

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

BC Student Subunit President
katrina.vcook@gmail.com

AFS-BC website:
https://bcstudentafs.wordpress.com/

EWU Student Subunit President
bwitte2012@eagles.ewu.edu

The 8th World Recreational Fishing Conference (WRFC8)

is coming to Victoria, BC, Canada July 16—20, 2017. The conference unites the global recreational fishing community - providing an essential forum to discuss current research. Held every three years, this is the only international conference focused solely on recreational fisheries. The WRFC8 host organization is the Freshwater Fisheries Society of BC, in cooperation with the Sport Fishing Institute of BC.

First call for abstracts is now open. Visit wrfc8.com for information on how to submit an abstract.

Register now for an early bird conference fee discount and reserve your accommodations soon, as Victoria is a very popular tourist destination.

See the official poster on the next page and feel free to share with colleagues and friends, print and post the WRFC8 poster at your workplace or institution, and like and follow @wrfc8.

The World Recreational Fishing Conference unites the global recreational fishing community and provides an essential forum to discuss current research.

Held every three years, this is the only international conference focused solely on recreational fisheries – an event you don't want to miss!

Your ticket includes access to all presentations, breakout sessions, networking events, coffee breaks, lunches, banquet & reception.

FEES

Early Bird - $375 CAD – $425 CAD after April 16, 2017 – Students - $275 CAD

To register, reserve accommodation, or submit an abstract, visit **wrfc8.com**

Freshwater Fisheries Society of BC

SPORT FISHING INSTITUTE OF BRITISH COLUMBIA

PACIFIC SALMON FOUNDATION

For updates, like and follow @WRFC8

WASHINGTON -BRITISH COLUMBIA CHAPTER

AMERICAN FISHERIES SOCIETY

Annual Meeting of the Washington-British Columbia Chapter
April 10-13, 2017
at the Hotel RL, Spokane, WA

HTTP://WWW.REDLION.COM/PARK-SPOKANE
HTTP://AGM.WABC-AFS.ORG

The Washington-British Columbia Chapter of the American Fisheries Society invites you to submit your symposia ideas for the 2017 Annual General Meeting to be held in Spokane, Washington, April 10-13, 2017. The theme this year will be **"Fisheries Collaborations: Tipping the Scales Toward Success"**.

Symposium organizers are encouraged to submit proposals, recruit presenters, solicit presenter abstracts, and direct presenters to submit their abstracts. Organizers are not required to recruit a full symposium at the time of proposal submissions. A symposium should include a minimum of 5 presentations. Time slots are limited to 20 minutes, but multiple time slots (i.e. 40 or 60 minutes) may be offered to keynote symposia speakers or wrap-up panel discussions.

FORMAT FOR SYMPOSIUM PROPOSALS

When submitting your proposal, please include the following:

Organizer's information: Provide first and last name, affiliation, telephone number, and e-mail address of organizer. (More than one person can help organize a symposium, but we will only collect information from the lead person.)

Symposium title: Be brief but descriptive.

Description: Submit a brief (<300 word) abstract that describes your proposed symposium. Deadline for symposia submittals is **Friday November 4, 2016.**

Audiovisual requirements: LCD projectors and laptops will be available in every room. Please list special AV requirements, if any.

Special seating requests: Standard rooms will be arranged theatre-style. Please indicate special seating requests (for example, "after the break, a panel discussion with seating for 10 panel members will be needed").

Email your symposia topics to Gabriel Temple by November 4, 2016 to be considered for the Washington-British Columbia Chapter of the American Fisheries Society 2017 Annual General Meeting in Spokane, WA. For additional information email Gabriel.temple.wabc.afs@gmail.com or call (509) 925-4467 (extension #3).

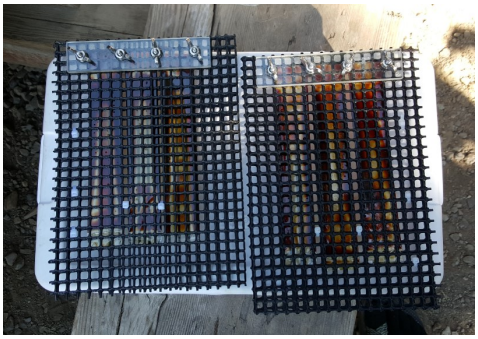
2016 AGM Best Student Paper Award

At the 2016 Chapter AGM in Chelan, WA, Brooke Bannerman gave a stellar presentation that earned her the Best Student Paper Award. She has kindly prepared an extended abstract of her research to share with the Chapter. You can also view her presentation on our website: http://wabc-afs.org/2016-agm-presentations/

The Impacts of Legacy Metal Mining on Streams in the North Cascades

Brooke Bannerman[1], Dr. Leo Bodensteiner[1], Dr. Ruth Sofield[1], Ashley Rawhouser[2]
[1]Western Washington University, Bellingham,WA [2]North Cascades National Park, Sedro Woolley, WA

Ruby Creek and its tributaries provide important habitat for the genetically distinct populations of native trout that occur in the upper reaches of the Skagit River amidst the North Cascade range. The creek now flows into Ross Lake reservoir, and its network of streams serves as the principal spawning grounds for federally Threatened Bull Trout (Salvelinus confluentus) and Rainbow Trout (Oncorhynchus mykiss) south of US/Canada border with both resident and adfluvial populations present. Since the mid-1800's mineral mining has occurred throughout the mountainous region, and, despite its remoteness, the Ruby Creek basin has the highest concentration of mining and prospecting sites in the range. Historically, hard rock gold and silver mines were operated and currently placer mining by use of suction dredges is the most prominent type of mining in this area. Despite the abundance of suitable spawning habitat in these streams, use by fish appears diminished. Therefore, concern about the potential effects of mining on aquatic organisms in this region was the impetus of my thesis research. The objectives of my research were to determine if mining in the Ruby Creek watershed was altering water chemistry, and if so, to evaluate whether benthic communities are being affected.



Stabilized Liquid Membrane Devices

To address my objectives I collected water, periphyton and benthic macroinvertebrates from 13 sites during May through September, 2015. I selected sampling sites throughout the watershed to include reaches upstream and downstream of presumed mining activities so I could identify potential effects on chemistry and benthos associated with mining activities. At each site I collected surface water grab samples monthly and deployed Stabilized Liquid Membrane Devices (SLMDs) that passively accumulated metals over month-long interval to evaluate water chemistry. I deployed Hester-Dendy periphyton samplers for the entire sampling period, and in August I collected benthic macroinvertebrates. I analyzed the surface water samples, SLMDs, and periphyton for concentrations of 25 metals using an Inductively Coupled Plasma Mass Spectrometer (ICP-MS). Benthic macroinvertebrates were identified to the lowest taxonomic level to evaluate diversity and abundance.

The presence of some metals was episodic. Six metals that are toxic to fish, copper, silver, lead, cadmium, zinc, and nickel, were virtually absent in grab samples but were present on the SLMDs. Metal concentrations in grab samples showed one of two patterns: 1) highest during runoff of spring snowmelt and decreasing through summer, or 2) increasing through the spring and summer as stream flows decreased to base flow. Aluminum was the most prominent metal showing the first pattern while sodium, magnesium, potassium, calcium, molybdenum, and barium increased through the summer. All sites downstream of hard rock and placer mines had increasing arsenic concentrations throughout the mining season. Lead was present at low concentrations throughout the watershed, and it exceeded the EPA Aquatic Life chronic criterion at one site downstream of both types of mining operations. Metal presence varied spatially and temporally in relation to areas of mining in the Ruby Creek watershed, and fish could be affected by the kinds and concentrations of metals present.

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 for more information, or find us online at 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 CCFFR 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.

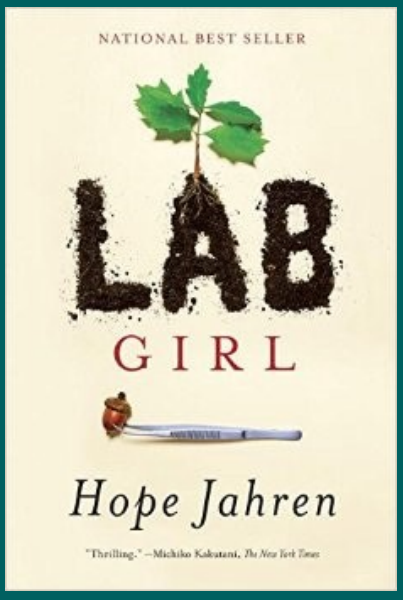
5) Links together the four Canadian-focused AFS chapters.

Photo by Emmanuelle Chrétien

The Book Nook

"Lab Girl" by Hope Jahren -- Review by Orlay Johnson
Bottom-line so you don't have to read the whole thing: This is a wild ride and humorous no-holds barred autobiography by Dr. Hope Jahren, an acclaimed geobotanist at University of Hawaii. It is the story of her rocky trail to research success, fraught with sexism, bipolar depression, amazing students, recalcitrant plants, car and people crashes - but it is also about amazing botanical discoveries, human endurance, field trips from California to Norway and Ireland, raising a child, and a friendship of epic proportions. Told with sly Scandinavian humor that gets her through some very tough times. If you are, or want to be, a scientist, read this book - it may change your life - or at least clarify why you do what you do.

Orlay Johnson
Reviewer



Lab Girl

Hope Jahren,
Author

Full Review: First and foremost, Lab Girl is fun to read and I believe Dr. Jahren has an exquisite literary talent that is rarely found in scientists. The deceptive title might be reminiscent of a 1980s lightweight novel, but it leads to a powerful story of life's frustrations, disasters, battles with mental illness, ignorant sexism, anti-intellectualism and bone-grinding research that would kill a lesser person. Yet, the story is told in a way that sees humor and love in all living things.

Hope Jahren was born into a Norwegian family in Austin, Minnesota on September 27, 1969. Austin's claim to fame is that it has the largest hog processing plant in the US and is home to the SPAM museum (take note Jim Seeb). It also has a surplus of Norwegian reticence, dark humor, and ungodly brutal winters. Her only escape was reading with her Mom and playing with her 3 brothers beneath - and later on - the chemical benches in her father's lab where for 42 years he taught physics and earth science labs at what is now Riverland Community College. All of this may help explain how she ended up on the main campus of the University of Hawaii.

While she lived a tough childhood, like all good Norwegians, she mitigates the horrors with humor: "I suspected that they hadn't relocated to the coldest place on Earth and then taken up disemboweling pigs because things were going well in Europe, but it never occurred to me to ask."

Throughout her life, no matter how bad things get, there is a sense of awe and love for her lab, her students, their research, plants, husband, child, and especially Bill her steadfast friend and lab technician par excellence. Every page in the book reflects a drive to do ground breaking research on why plants do what they do, but it is also about her many (and I mean many) disasters - all inspired by her burning passion to explain what she considers the most fascinating creatures on earth. She sells it well.

It is also the story of her friendship with Bill Hagopian, then a student who she met on a botany field trip in 1994. Bill is full of idiosyncratic, if not plain weird behavior, but he will work all night, live on unhealthy food (in this case candy bars), never give up on a project, and push everyone to do better or get out of the way, including Hope. It was Bill who asked Hope to write this book. We should thank him.

Initially it appears the book's chapters are just independent vignettes or stories and can be read in any order. However, it turns out the chapters are not independent vignettes, but a series of stories cleverly crafted into a united tale. The design (outline, plan) of the book reflects Hope's love of botany and plant development:

Part 1 is Roots and Leaves,
Part 2 Wood and Knots,
Part 3 Flowers and Fruit,
Part 4 Epilogue and Endnote - well worth reading.

Each part is divided into more or less alternating biographical and botanical chapters. The botanical chapters are short (a page or three) and reflect
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plants during a period of development similar to Hope's changing life. As an example, the first chapter is about her family, childhood, and first jobs while the second chapter is about her realization that her favorite childhood tree also went through development stages and was once a child, grew to adult, and in 2013 made a fatal error which resulted in its death. The third chapter is about seeds and begins: "A seed knows how to wait." It reflects Hope's experiences in college and early grad school. It ends with: "Each beginning is the end of a waiting. We are each given exactly one chance to be. Each of us is both impossible and inevitable. Every complete tree was first a seed that waited." It is fun to read the plant stories and reflect on how she sees herself in the subjects she studies.

What makes this book so strikingly different from most other autobiographies or biographies about women scientists is the positive depiction of her never back-down personality in her personal and professional life – and the major focus of the book on her battles with sexism. Hope was born into a world where women were finally entering the world of basic research in steadily increasing numbers. But as happened over and over in the past, these pioneers entered what was a male dominated research field and few would question the overt sexism displayed by many conservative heads of lab.

A huge difference here is that discrimination is faced head on and battled, if not to victory, at least to a stalemate. Not all battles should have occurred, some are due to Hope's personality, but most reflect the sexism and ignorance (such as being banned from entering a lab because you are the first person in the lab to ever get pregnant and the management has no idea how to handle this) of the times.

If you are a young scientist or wanta-be scientist - regardless of gender - the difficulties she faces are different in size and scope to what the rest of us may encounter, but they are not that different in form than what almost all scientists face in school and early career challenges. It isn't an easy life no matter how you cut it.

One important positive is that Hope always had allies, especially Bill, but also her mother, her husband, and her students, who at least in the early years must have seriously wondered what in the hell they had gotten into – her stories of these early years amazing, but more than a little scary.

Part 1 of the book is dedicated her early life and undergraduate studies at University of Minnesota. However, this is a portion of the book I wish Hope had emphasized more. After she leaves home and begins her academic career, her birth family almost drops out of the picture, but it is clear to the reader that Dr. Jahren's life and personality reflects much from her family and I would have liked to know even more about this than she tells us.

She developed her love of science when as a young girl she played for hours and hours with the lab equipment in her Dad's physics lab at the local college. Equally importantly to her career success is the influence of her Mom – a truly remarkable woman, to whom she dedicates all her writings. Her mother grew up in the depression and WWII in a hard scrabble great plains Minnesota family. In high school, she won an honorable mention in the 9th annual Nationwide Westinghouse Science Talent Search and entered the University of Minnesota as a chemistry major. Unfortunately, the honorable mention did not include a scholarship and while she earned tuition/living expenses babysitting, it wasn't enough and she had to withdraw after freshman year. She went home where she married, raised a family, and was able to finish her degree via distance learning after her children were in

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preschool. But distance learning does not lend itself to chemistry labs, so she majored in English literature.

The positive side of this is recounted in a wonderful paragraph, where Hope relays how her Mom taught her to read difficult books, exploring every sentence, every word, and ask difficult, but important questions. "My mother taught me that reading is a kind of work, and that every paragraph merits exertion, and in that way, I learned how to absorb difficult books" (page 16).

Hope also experienced financial difficulty at as an undergraduate and she worked at the University of Minnesota's Hospital, first running prescriptions from the basement to patients throughout the building and later becoming one of the people who put the prescriptions into bottles for the patients. Her mind set in doing her job and her friendships and perspectives on the people she worked reveal her drive and ability to overcome obstacles. Interesting is her observation that she particularly enjoyed not having to talk to anyone and how when she ran drugs up to the hospital she would repeat various lines from David Copperfield for an English term paper. Probably many WABC'ers worked our way through college, but few did double shifts in a hospital, where a single mistake could kill someone, and at the same time quoted lines from David Copperfield.
And yes, like every other friend I've convinced to read this book, I got tired of the Hope-Bill interactions and conversations. It almost seems like we are sneaking in and listening to very personal conversations; on the other hand, we all need someone to have our backs, and Bill was that person.

I would love more info on her husband, who seems like a fascinating individual and awesome scientist on his own, whom she deeply loves, but he is not a botanist and certainly if this book is about anything it is about her love of botany. The accounts of their sharing the joys and tribulations of raising a child are well worth the read.

Her battles with chronic depression, her discovery she is bi-polar, and the horrors she experiences during pregnancy (when unable to take the drugs that control her mental devils) are shocking. It is hard to understand how anyone can function under those conditions but reminds us that life is never easy.

The info on botany is fantastic and I could write the entire review on what I learned about trees, seeds, roots, communications amongst trees, Carbon Dioxide, and how you do experiments with organisms that live for hundreds of years (not easily), and in fisheries we complain about the fact that salmon not only live for several years but disappear into the ocean for most of those years. How about if your results were not even done until you, and probably your children, were long dead. Hard to get funding, that's for sure.

Her love for plants and botanical research shines like a beacon in the night. Her insider accounts of scientific life are excellent, and the best parts of the book are the chapters devoted her research on trees. She loves trees, and her stories, almost poems, are insightful, brief, and informative. I came away with a new appreciation for trees and to some extent it has changed how I look at the world. I no longer only see a tree as it is now, but I consider the seed it started from, how it waited to sprout, how it communicates with other trees, protects itself from disease and pestilence, and how finally reaching adulthood, it still must make difficult decisions to ensure its survival year to year.

Finally, check out her "lab webpage" at the University of Hawaii and Google various news and other items about her - compare them to this autobiography. Look closely at the photo of Bill and his many accomplishments. Plus, Hope has visited Seattle a few times and I met her at a Town Hall talk she gave. In person she comes across as wonderful person and world class scientist who anyone would be proud to call a friend.

Special thanks to Dr. Fred Utter for editing this review, but all the errors and bad sentence structure are mine.

Housekeeping

Free to Good Home

The Executive Committee found this nearly new poster board in our storage and we would like to give it away to a group who could put it to good use. If you are interested, please contact Mark LaRiviere at mglariviere@aol.com. In return, (though not necessary!) perhaps you would consider a donation to our AGM Silent Auction or Student Travel fund!

It's almost time for dues renewal.

Don't forget to check the box to add the WA-BC Chapter to your membership! For the cost of a single Starbucks latte, you'll be supporting our Chapter's activities, including student travel and paper awards, Chapter awards, and AGM activities.

We've updated our listserve!

Many of you may be receiving our emails for the very first time even though you have been a member for a while, and we apologize. The communications folks at the National AFS have been helping us to get our list up-to-date. If you wish to change your email address or be removed from the list, please let us know by emailing Communications Director Brittany Jenewein at btjenewein@gmail.com.

Review of Kansas City AFS Meeting….BBQ, Carp and Connections

By Alix Blake, President of WA-BC Chapter

This August I had the pleasure to attend the 2016 Kansas City, MO AFS Annual Meeting. The welcome social was held outside in the Hallmark Pavilion in Crown Center Plaza with a plethora of local beer and Asian Carp dishes. My favorite was the Asian Carp taco salad! Free admission to the Sealife Aquarium was included at the welcome social. This year one plenary speaker talked each morning, of note was the plenary talk from Dr. Zeb Hogan. Dr. Hogan described the importance of storytelling globally for freshwater fish conservation and included some great footage from his National Geographic show, Monster Fish.
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Dr. Zeb Hogan's plenary presentation

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During the week I listened to many outstanding talks on a number of Midwest issues, from invasive species in the Mississippi River to preparing future fisheries professionals. This year's spawning run was held along the Missouri River and started at sunset which provided a beautiful run. The grand social was held at the exquisite Grand Union Station, at which an amazing barbeque was served. All functions were well attended and experiencing Kansas City BBQ was incredible! I headed home having made new friends, a belly full of BBQ and some awesome Caddis fly jewelry from the tradeshow!

Education Corner

Canadian Rivers Institute

2016/17 WEBINARS/PRESENTATIONS

The **Atlantic Salmon Conservation Foundation (ASCF)**, in partnership with the **Canadian Rivers Institute (CRI)**, is proud to announce our upcoming season of free webinars for the 2016-2017 season (see link below). Engagement in the series has grown rapidly with more than 1,600 participants since its inception in 2012.

To register, please follow the link below each webinar title - register now and you will receive automated emails reminding you when it is 1 week, 1 day, and 1 hour before the webinar.

http://canadianriversinstitute.com/resources/webinars-and-presentations/

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? http://membership.fisheries.org/

Questions? Suggestions? Contact:

President Alix Blake at alix.blake@spokanetribe.com

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

Brittany Jenewein at 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 for the latest updates!
http://agm.wabc-afs.org