



Gill Raker Gazette

The Newsletter of the Idaho Chapter of the
American Fisheries Society

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Editor: Ryan Hardy

President's Message - "On The Road To Arizona"



On a recent out-of-state work-trip, I was sitting on a plane pondering all the grim things going on in our nation at present. Unprecedented wildfires are ravaging California with record loss of life and property, hurricanes and rainstorms devastating the East. Many of the above catastrophes have been linked to climate change by experts yet a large percentage of the nation remains unwilling to accept its anthropogenic

nature. Alas, our fearless national leader considers global warming a "Chinese Hoax". Perhaps even more concerning, the nation is more divided politically than perhaps at any time since the civil war. Closer to our fisheries "home", during this period of division, there is a largescale assault being successfully waged on environmental laws and protections across the country.

After pondering all of these gloomy tidings in rapid-fire succession (as us half glass empty folks are prone to do), I sat down in my airline seat, cracked a newspaper to try and change the bad narrative, and promptly ran across an article entitled "Smile - things aren't as bad as your brain thinks they are". In it, USA today Columnist Jeff Stibel began with a similarly grim outlook as my first paragraph above, though he was more global in scope. However, Stibel then went on to describe a phenomenon called "availability bias", the tendency of human brains to focus more on negative than positive information. If you think about it, we have likely evolved to pay more attention to "bad things" because paying attention to danger is necessary for survival. For this reason, Stibel notes that bad things will naturally loom larger in our minds than good things and he then went on to make a convincing case that the world of humans is better off than at any other time in history. For example, he notes it was recently reported that life expectancy is way up and child mortality down stated that there are fewer wars happening now than any point in recorded human history.



President's Message - continued

This perspective is a good reminder as we fish types ponder the challenging world of fisheries we are currently working in. Yes, climate change is negatively affecting our finny charges, habitat is being destroyed by development and on and on. BUT, a small but growing army of scientists, more gender diversified than ever before, and armed with exploding technologies like the "new" genetics are here, and as dedicated as ever to protecting and managing our resources. While the ocean's stocks are clearly being commercially overharvested, a very large percentage of freshwater sport-species are being managed for little to no harvest due to public demand. What grey-haired fish manager would have predicted 20 years ago that bass anglers would adopt "catch-and-release" to the degree now commonplace! Yes, work on our non-game species is still chronically underfunded BUT, more and more of us are studying them regardless and new funding options are being vigorously pursued.

In short, despite the fact that some aspects of the fisheries world are difficult and "bad", by golly many happenings in fisheries are good! We (or more properly the youth in our ranks) will, as always, carry the ball forward. They have the skills and the drive...and besides they have no choice. As a recent retiree (and self-described *closet* optimist) I'll enjoy watching this show from the reserve bench. While doing so, it will behoove myself and others in the glass-half-empty club to remember, things in fisheries aren't always as bad as our brains think they are..... They really are pretty darn spectacular.

- Dan Schill



FIRST CALL FOR ABSTRACTS!!

ICAFS ANNUAL MEETING 2019 - BOISE

It's that time!! The 2019 Annual Idaho Chapter of the American Fisheries Society Meeting will be held March 5-8, 2019 in Boise at the Boise Centre. The plenary session theme is "Science-based regulations and angler ethics...Are tools missing from the toolbox?". All submissions for the meeting are welcome and needed! The presentation choices are poster, 20-minute talk, or a 5-minute IGNITE! talk. The deadline for abstract submission is Friday, December 21, 2018. Visit the ICAFS website (www.idahoafs.org/index.php), click on 2019 Annual Meeting and select Mtg Info in the menu bar. In the drop-down menu, select Overall Meeting Info to get access to the Abstract Submission Form (350 word limit). Before submitting your abstract, please use the drop-down menu and read the guidelines for presenting a poster or talk, just so you know what is expected. When you submit your abstract, you should receive a confirmation containing the responses you gave in the form. Save the notification because you can edit your submission if necessary. We look forward to receiving your abstract!

You will get a second call for abstracts and more information via email as the date gets closer.

Please submit abstracts on the chapter website and direct questions to Tony Lamansky tony.lamansky@idfg.idaho.gov or Eric Stark eric.stark@idfg.idaho.gov



Call for Award Nominations!!

**There are many people who deserve recognition!!
Have you been putting it off?
Take the time to nominate them this year!!**

The Executive Committee is soliciting nominations for awards to be presented at the 2019 Annual Business meeting in Boise. These awards are independent from awards presented by the Native Fish, Mentoring, Fish Habitat and Aquaculture committees. This is a great opportunity to recognize those who have made important contributions to improve the conservation and sustainability of fishery resources and aquatic ecosystems.

Please send nominations to Helen Neville no later than **January 11, 2019**. If you have any questions please contact Jim at (208) 345-9800 or email at hneville@tu.org.

Lifetime Achievement Award:

Criteria: Awarded to individuals who are either retired or within five years of retirement and have made significant and sustained contributions to improve the conservation and sustainability of fishery resources and aquatic ecosystems. This work may include but is not limited to making significant contributions in advancing fisheries and aquatic science, implementing important fish and aquatic management, or promoting the development of fisheries professionals.

Nomination Process: Submit a one to three page nomination detailing how the individual meets the criteria. The nomination must be supported by at least five Chapter members; their names and contact information should be listed on the nomination.

Distinguished Service Award:

Criteria: Awarded to individuals who have made significant contributions in furthering the work of the Chapter. This award is specific to service within the Chapter.

Nomination Process: Submit a nomination not longer than one page detailing how the individual meets the criteria. Although not required, nominations supported by more than one Chapter member will receive the strongest consideration. List the names and contact information of Chapter members supporting the nomination.

Outstanding Fish Professional:

Criteria: Awarded to individuals who have made a significant contribution to improve the conservation and sustainability of fishery resources and aquatic ecosystems. This award is specific to service outside of the Chapter.

Nomination Process: Submit a nomination not longer than one page detailing how the individual meets the criteria. Although not required, nominations supported by more than one Chapter member will receive the strongest consideration. List the names and contact information of Chapter members supporting the nomination.



Call for Award Nominations!!

Help us acknowledge the deserving efforts of our Idaho Chapter members in their service to the Chapter and to the resource.

Please take the time to nominate someone

R.L. Wallace Native Fish Conservationist of the Year Award

The Richard L. Wallace Native Fish Conservationist of the Year Award is sponsored by the Native Fish Committee. The award was created by the Native Fish Committee in 2004 and is presented annually to an individual, group, or organization for outstanding achievement in native fish conservation in Idaho. Please send nominations (that outline the nominee's accomplishments) to Patrick Kennedy (pat.kennedy@idfg.idaho.gov) or Nicole Graham (nicole.graham@idfg.idaho.gov) no later than January 25, 2019.

Excellence in Aquaculture Award

The Excellence in Aquaculture Award is sponsored by the Aquaculture Committee. The award was created by the Aquaculture Committee in 2008 and is presented annually to an individual or aquaculture facility for outstanding achievement in the field of aquaculture or aquaculture related research. Nominations can be emailed to Shawn Young (young@kootenai.org), Erik Pankau (eric.pankau@idfg.idaho.gov) or Ken Cain (kcain@uidaho.edu) no later than January 25, 2019.

Habitat Improvement Award

The ICAFS Habitat Improvement Award is given either to individuals or a team who have demonstrated significant contributions towards improving fish and aquatic habitat, restoring floodplains, and enhancing riverine systems for fish spawning and rearing. This work may include, but is not limited to, landowner coordination efforts, design and implementation of habitat features, restoring fish passage, and restoring conditions closer to natural and native river landscapes. Please submit a nomination not longer than one page detailing how the team or individual meet the criteria to Jeanne McFall (jeanne.mcfall@idfg.idaho.gov) or Ryan Hillyard (ryan.hillyard@idfg.idaho.gov) no later than January 25, 2019. Nominations supported by more than one Chapter member will receive the strongest consideration. List the names and contact information of Chapter members supporting the nomination.

Outstanding Mentor Award

It is time once again to consider those amongst us who have gone above and beyond the call in mentoring students and/or young professionals during their career. The Idaho Chapter annually recognizes one member with the Outstanding Mentor Award. Please take a few minutes to nominate one (or more) of your peers who have invested their time over the years to make a difference in the development of folks within our profession. The recipient of this award should meet or exceed the following criteria: A current or previous fisheries professional. Provided substantial assistance to Idaho fisheries professionals/students, with preference given to those who are or were active in ICAFS. Demonstrated a sincere interest/devotion in seeing students and professionals succeed. Provided ample learning and training opportunities for students and professionals to gain experience otherwise unobtainable without the assistance of the nominated professional. Please send nominations to Lance Hebdon (lance.hebdon@idfg.idaho.gov) or Jessica Buelow (Jessica.buelow@idfg.idaho.gov), no later than January 25, 2019.



Student Spotlight

John Loffredo



John Loffredo has been a member of the Palouse Subunit of the Idaho Chapter of the American Fisheries Society since 2016 and currently serves as Vice-President. Originally from East Hampton, Connecticut, John is a Master of Science student at Washington State University in the School of Environment. John has a long-standing interest in the study of aquatic systems and fisheries management, and is currently applying his expertise to examine spatial and foraging behavior of non-native Northern Crayfish in Buffalo Lake, managed by the Colville Confederated Tribes. John has used stable isotope methods and an innovative camera system to observe ontogenetic trophic shifts and distribution of crayfish throughout the year. He plans to use this information to document the long-term foraging and abundance trends for crayfish under varying habitat conditions and life stages for more informed

sport fish prey abundance estimates. Upon completion of his degree, John plans to pursue a career in fish and wildlife management as a biologist for an agency or NGO.



Student Spotlight

Darby Rogers



Darby Rogers is the current vice president of the BYU-Idaho Subunit of the Idaho Chapter of the American Fisheries Society, and currently a senior at BYU-Idaho. When she started at BYU-Idaho, Darby had plans to be a marine ichthyologist. However, her studies of Idaho's native fishes, especially sculpin, have caused a change of heart: she now aspires to be a freshwater fish ecologist. Darby has spent much of her undergraduate career studying sculpin in the Lost River drainages. Currently, she is wrapping up a project studying the effects of a trematode parasite on growth, reproduction, and mortality of Shorthead Sculpin in Birch Creek. Darby is also collaborating with fellow student Shawnie Geisler and Bart Gamett (USFS) on an age and growth analysis of Paiute Sculpin in Antelope Creek (Big Lost River drainage). With graduation on the horizon, Darby is looking forward to continuing her education in graduate school. If she has her way, Darby will continue to pursue her new-found love of Idaho's charismatic benthic fishes.

- Eric Billman



BYU Idaho Student Unit Update

Members of the BYU-Idaho Student Subunit have enjoyed a beautiful fall in southeast Idaho. The past few months have seen students busy with a variety of research and monitoring projects studying native mussels, invasive crayfish, sculpin, Yellowstone Cutthroat Trout, Kokanee Salmon, Brook Trout, Brown Trout, and Bluehead Suckers. These projects have provided senior members of the Subunit opportunities to recruit and train new students. With the onset of winter weather, we have wrapped up field sampling for the year, and we have moved indoors to process samples, analyze data, and prepare for the Idaho Chapter meeting in Boise.

We have enjoyed a variety of seminars this past semester from regional biologists from USFS, IDFG, and NRCS. Students had the great opportunity to hear from Jon Flinders (IDFG) who presented an update of current status and management plans for the Henrys Lake fishery. Jon's presentation provided an excellent case study of fisheries techniques and principles applied to a popular fishery. Students are looking forward to hearing from Dan Schill, current Idaho Chapter president, in December.



Picture caption: BYU-Idaho Student Subunit members working with Jim Gregory to salvage fish from St. Anthony Canal.

Subunit members also had a chance to expose freshmen to the joys of fish sampling in our annual fish salvage from St. Anthony Canal. Each fall we team up with Jim Gregory (Lost River Fish Ecology) to salvage fish from the St. Anthony Canal to mitigate fish killed in a privately owned hydropower plant. We returned over 1,000 fish to Henrys Fork this year and have inspired a new cohort of students! - Eric Billman



Palouse Unit Student Update

PUAFS Vice President John Loffredo works the outreach booth at the University of Idaho annual "Get Involved" Fair.



The Palouse Unit of the American Fisheries Society has been busy this fall! We welcomed back our members in September with several membership drives around the University of Idaho campus and with our annual Welcome Back Barbeque held at Ghormley Park in Moscow. We also held our semi-annual stream clean up at Paradise Creek in Moscow where members filled three grocery bags with trash found along Paradise Creek and the Bruce Chipman Trail. In October our

members volunteered at Animals of the Night, an outdoor education event organized by the Palouse Clearwater Environmental Institute (PCEI). Members worked with PCEI to educate children about native fishes and aquatic invertebrates of Idaho. In early November PUAFS hosted Idaho Fish and Game biologist Markia Dobos for an evening lecture about ongoing research in the



PUAFS President Kat Gillies-Rector educates children about aquatic invertebrates at the PCEI Animals of the Night event.

Clearwater River basin. Before the end of the semester PUAFS plans to co-host an educational movie night with the University of Idaho Wildlife Society subunit and to organize a fly-tying event. We are also pleased to announce that five of our members completed successful defenses this semester. Congratulations Tucker Brauer, Stacey Feehan, Laura Jenkins, John Loffredo, and Austin Anderson!

- Kat Gillies-Rector



Portneuf Unit Student Update

As summer ends and a new semester begins, graduate students slither back into their labs and undergraduates slump to their classes diminishing the chances of being outdoors. But our members of the Portneuf subunit have taken time out of their busy schedules to make sure they get out. They have participated in activities such as enjoying a fly fishing course or helped with the annual Portneuf river cleanup, where a dumpster was filled with garbage from the river banks and waterway. Members have also taken the opportunity to take Ichthyology and stream ecology to gain more information about fishes and the streams they live in. Our members have even combined with Trout Unlimited club at the university and local South East Idaho Fly Fishers club to pass on more information about fisheries research within the area. Portneuf subunit members were also able to assist with the Trout Unlimited introduction to fly fishing clinic as well.

Rachel Brinkley preparing for a hard day in the field.



Recently graduate students were able to present at the Pacific Northwest Chapter of the Society for Freshwater Science in Ketchum Idaho. Members have also been preparing their talks and posters for the upcoming chapter meeting. Finally, the annual American Fisheries Society Ice Fishing Derby will be held on January 26, 2019 at Sportsman's Park on the American Falls Reservoir. Registration will be opening online on December 1, 2018!

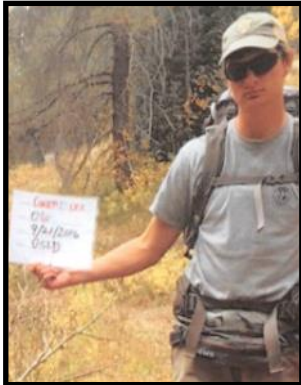


*Taking out the trash! AFS and community members
At the annual Portneuf River clean up*

- Jorge Rosales



Idaho Chapter Student Subunit Presidents



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Skyler Smith
Phone: 720-317-4827
smi13070@byuidaho.edu



Palouse Student Subunit President
Kat Gillies-Rector
gill5769@vandals.uidaho.edu



Portneuf Student Subunit President
Jorge Rosales
rosajorg@isu.edu

Habitat Committee Update

Reminder to think about the upcoming nominations for the annual Habitat Improvement Award given to individuals or projects for making achievements in fish survival and habitat. We are also welcoming ideas for a workshop at the 2019 Idaho Chapter meeting. If there are some topics you would like to see taught or discussed, please email Jeanne (jeanne.mcfall@idfg.idaho.gov).

Thanks!

- Jeanne McFall



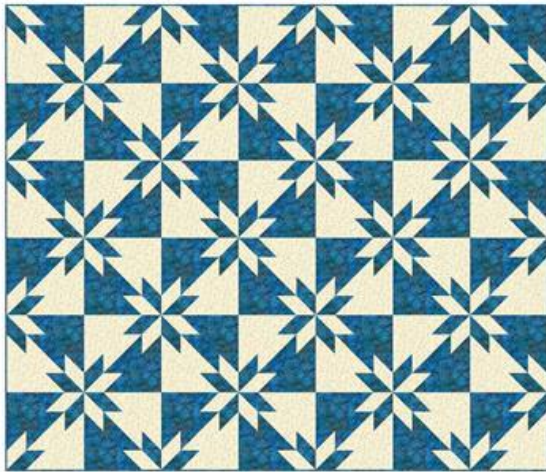
Fundraising Committee Update

—Calling all Idaho Chapter AFS members—

There's still plenty of time to procrastinate....

...but we need your help maintaining the financial success of your chapter!

Please consider donating items and/or trips for the live auction, silent auction, and general raffle.



Do you quilt lovely blankets?
We'd Love to auction it off!



Do you tie flies? Please donate
some hand-crafted beauties!

Are you an artist? Or do you know an artist? Let us know!

Please contact Rebecca Rogers (Rebecca.rogers@idfg.idaho.gov), Joe Thiessen (joe.thiessen@idfg.idaho.gov), or Phil Branigan (phil.branigan@idfg.idaho.gov)



Public Education Committee Update

ICAFS Scholarships

The Idaho Chapter is pleased to announce four annually awarded scholarships for students attending Idaho schools. These are as follows:

- Idaho High School Student Scholarship** - This \$500 scholarship will be awarded annually to an Idaho High School senior that is planning to attend a college or university located in Idaho.
- Idaho Undergraduate Student Scholarship** - This \$1000 scholarship will be awarded annually to any Idaho college or university or involved with the Idaho Chapter including student units.
- Idaho Graduate Student Scholarship** - This \$1000 scholarship will be awarded annually to a graduate student that is enrolled at any Idaho college or university or involved with the Idaho Chapter including student units.
- Susan B Martin Graduate Student Scholarship**- This \$2000 scholarship will be awarded annually to a graduate student that is enrolled at any Idaho college or university or involved with the Idaho Chapter including student units.

These scholarships were developed by the Executive, Mentoring and Public Education Committees, are funded by the Idaho Chapter, and are administered by the Public Education Committee. Information and application materials are available on the Chapter website (<http://www.idahoafs.org/scholarships.php>). Download and complete the application form and obtain a copy of your college transcripts (unofficial transcripts are acceptable). Email your completed application form and your transcripts to Lauri Monnot at scholarships@idahoafs.org. A letter of recommendation to support the application must be emailed to scholarships@idahoafs.org from a biology professional, faculty advisor, school administrator, or supervisor. Applications must be received by January 31, 2019. Winners will be announced during the business luncheon at the annual meeting. For more information, please visit the Chapter website (<http://www.idahoafs.org/>) or contact Lauri Monnot, Public Education Committee Chair, at lauri.monnot@deq.idaho.gov or (208) 373-0203.

ICAFS Grant Opportunity

An Idaho Chapter of the American Fisheries Society's Training Opportunity and Project (TOP) Grant up to \$750 is available for students. The grant money can support attending a professional conference, workshop, or training; conducting research outside typical degree requirements; implementing education projects; or other activities that support the Idaho Chapter mission and goals. For more information please visit <http://www.idahoafs.org/ICAFStopGrant.php> or contact Lauri Monnot @ (208) 373-0203.

Aquatic Education/Trout in the Classroom Grants

Please pass the word to educators. The Idaho Chapter of the American Fisheries Society has a long history of promoting aquatic education efforts. In 2013, the Chapter formally established an Aquatic Education/Trout-in-the-Classroom Grant. These \$50-1250 grants are available to Idaho K-12 teachers to assist them in their aquatic education efforts. This may include the Trout-in-the-Classroom program or other aquatic education efforts. The number of grants awarded annually is dependent on available funding and need. For more information contact Lauri Monnot @ (208) 373-0203 and please visit <https://www.idahoafs.org/documents/AquaticEducationGrantOverviewInstructions.pdf>.

- Lauri Monnot



"Shaving for Simpler Solutions" - Jim Reynolds

Ockham's razor is a principle attributed to the Franciscan friar William of Ockham (c. 1287-1347). Ockham, a village in the English county of Surrey, was William of Ockham's birthplace. William said, "Entities should not be multiplied unnecessarily." In science, the principle has been interpreted as saying that "among competing hypotheses making the same prediction, the simpler one (the one with fewer assumptions) is better" - presumably because it is easier to understand. The term "razor" refers to distinguishing between two hypotheses by "shaving away" unnecessary assumptions. A popular version, that "the simplest explanation is usually the correct one," seems to have its origin in Ockham's razor.

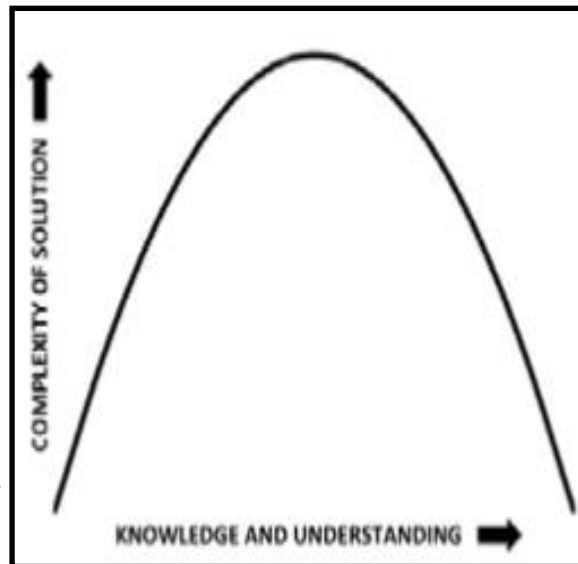
As scientists, in our attempts to understand nature, our answers (solutions) depend on the extent of our knowledge and understanding. We extend our understanding by building on previous work; this is the way of science. I've come to view this relationship between solutions, and the understanding on which they depend, like the graph of a parabola. Near the origin of the graph, we have limited knowledge; our answers are simple because we have little understanding of the objects or processes under study. As we develop and test hypotheses, our knowledge increases but so does the complexity of our solutions. Data noise increases, making the signal harder to detect. It's like a multivariate regression, adding variables to a statistical stew and tasting it for acceptability at each step. But, science is often more about asking the right questions than getting the right answers. Eventually, our hypotheses are more pointed and experiments are more directed. Our understanding then advances to an extent that allows us to ask better questions. Shaving with Ockham's razor removes the extraneous. We descend the right limb of the parabola and insight is our reward.

One parabolic experience for me occurred during a study of the effects of jet boats on salmon reproduction in the early 1990s. Conflicts between fishing guides using jet boats and traditional users were occurring in western Alaska. The study, serving as the basis of a M.S. thesis for my student Gregg Horton (*Horton 1994*), focused on incubating eggs that might be vulnerable to jet boat traffic in shallow waters. We were deluged with ideas concerning the effects of boat speed, hull



Shaving for Simpler Solutions—continued

type, engine type and size, water depth, substrate, and so on. Our position near the origin of the graph was quite apparent. We went to Katmai National Park to study the effects of our jet boat on spawners and eggs we had artificially fertilized and planted in cages. We also went to the Rogue River in Oregon to measure pressure waves under 50+ passenger jet boats. Working with hydrologists at the UAF Institute of Water Resources, we developed simulation models to predict effects of various factors. Our efforts took us up the parabola of learning, but with additional complexity. As we gained insight, the right questions became apparent. In the end, the answer was straightforward, something that any hatchery manager might have told us: eggs are killed when the substrate is disturbed, regardless of turbidity. We had come off the parabola and achieved a simpler solution as a result of greater understanding. (By the way, a little effect on spawning the redds soon after we had the advantage of knowledge with a simpler solution to



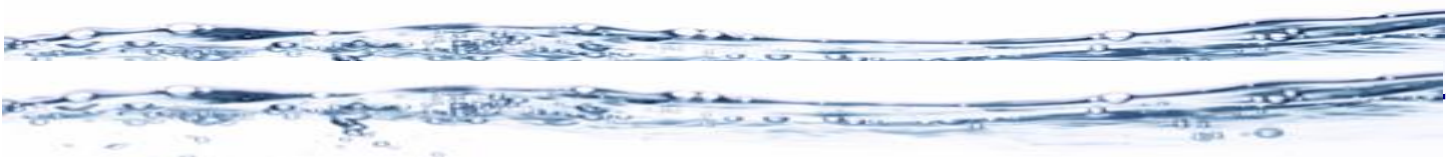
hatchery manager eggs are killed when the substrate is disturbed, regardless of turbidity. We had come off the parabola and achieved a simpler solution as a result of greater understanding. (By the way, a little effect on spawning the redds soon after we had the advantage of knowledge with a simpler solution to

*Tradeoff between solution complexity and knowledge/understanding.
Figure from James Reynolds*

Heeding William's advice is a challenge. Not all solutions are immediately simple. We must keep building knowledge until we start asking better questions. Then, we get out the razor and the simpler, elegant solutions will, hopefully, reveal themselves.

- Jim Reynolds

*During 2017-2018, Jim Reynolds wrote a series of philosophical articles for *Oncorhynchus*, the AFS Alaska Chapter newsletter. These articles revolve around the role of uncertainty in fisheries science and largely use Alaskan examples based on Jim's experiences. With approval of the Alaska Chapter Excom, these articles are being reprinted in the Gill Raker Gazette.*



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The EXCOM wants your ideas ...

Please do not hesitate to contact any EXCOM Member about questions or ideas

This is your Chapter !

