

# Tributary

The newsletter of the Western Division of the American Fisheries Society since 1975

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Credit: Jon McFarland

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**President:** Jackie Watson **Vice President:** Todd Pearsons  
**Sec.-Treasurer:** Tracy Wendt **Past-President:** Brian Missildine **President-Elect:** Daniel Dauwalter  
**Student Representative:** Britta Baechler **Tributary Editors:** Niall Clancy & Tim D'Amico

# PRESIDENT'S HOOK

*Jackie Watson*

Greetings Western Division!

Well, it's that time of year again, the super busy, I'm pulling my hair out time. Between traveling to chapter meetings, putting together presentations, developing a work plan, ordering equipment, hiring technicians, and starting a creel, I wonder how it's possible to get it all done. Yet, if I didn't have so much going on at once, I'd be less inclined to be productive, in addition to being bored. I know many of you are in the same boat, always looking to be busy and challenged. If you are looking for an opportunity to challenge yourself beyond your day-to-day please consider joining the WDAFS ExComm. We are looking to fill the Student Representative, Secretary-Treasurer, and Vice President roles with talented and motivated folks like yourself. Please contact me directly at [jackiewatsonafs@gmail.com](mailto:jackiewatsonafs@gmail.com) if you have an interest or would like more information.

I would like to give a shout out to Eric Fetherman, COWY President, and his team for hosting an incredible meeting in Ft. Collins. The Chapter placed a huge emphasis on aquaculture this year with the "We All Need a Little Culture" opening session followed by a second culture focused plenary and several hatchery presentations. Aquaculturists were the heart of our Society, creating the American Fish Culturists Association in 1870 (which would later become AFS). In addition, our culturists are leading efforts to develop fisheries-related technology that makes my fisheries management job possible in today's environment. And finally, we need to recognize that our culture folks are continually doing research to maximize production and condition by testing water temperatures, water quality parameters, feed formulations, etc. Despite all of this, the Society has seen a decline in partici-



pation from culture personnel over the years and that needs to change. I commend Eric's effort to reinvigorate the COWY Chapter's aquaculture folks and encourage other chapters to follow this focus.

We are still hard at work on the joint TWS/AFS meeting in Reno. Abstract submissions will be opening soon so please visit <https://afstws2019.org> often for the latest information.

Spring reading recommendation – *Reflections: A Photographic History of Fisheries and the American Fisheries Society in North America* by Christine Moffit and Tracy Akin. Which can be downloaded here:

<https://s3-us-west-2.amazonaws.com/fisheries/new+site+links/REFLECTIONS-the+history+of+AFS.PDF>

Have a safe and productive field season! Please let me know if you have any questions, comments, thoughts, or concerns.

Jackie Watson

WDAFS President

Utah Division of Wildlife Resources

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Western Division  
American Fisheries Society

# EDITORIAL

## *New Scientific Names for Western Fishes*

With ever-increasing genetic and taxonomic resolution comes the continuous need to reevaluate evolutionary trees and reorganize species into new families, genera, and species. In a recent paper in the journal *Zootaxa*, researchers from Auburn University and the University of Illinois found that the minnow-family, Cyprinidae, actually constitutes two separate lineages, each deserving of a family-level designation (Tan & Ambruster 2018). While old-world minnows such as Common Carp (*Cyprinus carpio*) are still part of Cyprinidae, new-world minnows, including those in western North America are now considered a standalone family coined Leuciscidae. Minnows aren't the only group getting rearranged. North American sculpins of the genus *Cottus* have been split into four different genera: *Uranidea*, *Cottopsis*, *Cephalocottus* (restricted to Eurasia), and *Cottus* (restricted to Eurasia, except *C. ricei*), (Smith & Busby 2014). The species epithet for Columbia Slimy Sculpin was also changed from *cognatus* to *cognata* (Adams, Schmetterling & Neely 2015). More research concerning sculpins is ongoing and future revisions are likely.

Perhaps most importantly to anglers, Bob Behnke's classic Cutthroat Trout (*Oncorhynchus clarkii*) phylogeny is being reevaluated. While the breakdowns of his four major lineages,



*Uranidea cognata* (formerly *Cottus cognatus*)

Lahontan, Yellowstone, Westslope, and Coastal, remain largely unchanged, a new symposium proceeding from AFS recommends that each of these four groups should be considered separate species (Trotter et al. 2018). Within the species, the contributors to the book suggest that 25 distinct evolutionary units are distinguishable—up from the 14 proposed by Behnke (2010). Whether these units should be classified as separate subspecies, independent evolutionarily significant units, or otherwise, is unclear, and an area of future research need. Should each of the four major lineages be classified as full species, the West would now contain Westslope Cutthroat Trout (*Oncorhynchus lewisi*), Coastal Cutthroat Trout (*Oncorhynchus clarkii*), Lahontan Cutthroat Trout (*Oncorhynchus henshawi*) and Yellowstone Cutthroat Trout (*Oncorhynchus virginalis*).

However, the latter name remains mired in controversy even within the book itself, as various authors also proposed renaming this lineage the Black-Spotted Cutthroat Trout or the Rocky Mountain Cutthroat Trout. Time will tell what we are to call this native fish. According to two contributors to the symposium, the final determination for Cutthroat Trout could take anywhere from 3-years to a decade (Brett Roper and Dennis Shiozawa, personal communication).

Niall Clancy  
Utah State University

Ryan Kovach  
Montana Fish, Wildlife & Parks

### References

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- Behnke, R. 2010. Trout and salmon of North America. Simon and Schuster.
- Smith, W. L., & M. S. Busby. 2014. Phylogeny and taxonomy of sculpins, sandfishes, and snailfishes (Perciformes: Cottoidei) with comments on the phylogenetic significance of their early-life-history specializations. *Molecular Phylogenetics and Evolution* 79:332-352.
- Tan, M., & J. W. Ambruster. 2018. Phylogenetic classification of extant genera of fishes of the order Cypriniformes (Teleostei: Ostariophysii). *Zootaxa* 4476:6-39.
- Trotter, P., P. Bisson, L. Schultz, & B. Roper, editors. 2018. Cutthroat Trout: evolutionary biology and taxonomy. American Fisheries Society, Special Publication 36, Bethesda, Maryland.

# 2019 RIPARIAN CHALLENGE

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## ***Call for Award Nominations***

The Western Division of the American Fisheries Society (WDAFS) established the annual Riparian Challenge to encourage the conservation and sound management of riparian habitat in the western United States. Each year, the WDAFS recognizes outstanding achievements in riparian management by bestowing “Excellence in Riparian Management” awards on three projects, including one from each of the following categories: U.S. Forest Service projects, Bureau of Land Management projects, and projects completed by other entities.

We are currently seeking nominations for the 2019 Riparian Challenge Awards. To be considered, the nominated project must have positively affected one or more of the following riparian-related resources:

Stream bank stability	Water quality	Subsurface water supply	Recreation/aesthetics	Stream flows	Education
Aquatic/fish habitat	Vegetative diversity & recovery		Forage Production		Terrestrial Wildlife Habitat

## **Eligibility**

To be considered for an award, the nominated project must have directly resulted in improved riparian habitat conditions. Projects that did not directly result in on-the-ground improvements, such as land use plans, research projects, handbooks or technical guidelines, are not eligible. Winners from the past two years are not eligible. Projects must be completed; projects in planning do not qualify. To simplify comparisons across entries, individual projects (as opposed to programmatic accomplishments) are preferred.

To enter or nominate a project, please complete the below form. Entries must be type written and must not exceed 6 pages of text (this instruction page does not count towards that total). An additional 3 pages may be included for photographs and maps and should be submitted as a separate document. All entries must be submitted as electronic Adobe pdf documents (preferable) or Microsoft Word documents. To reduce file sizes, please compress photographs prior to emailing or converting to pdf files. Hard copies will not be accepted.

The WDAFS Riparian, Watersheds, and Habitat Committee will select award winners based on the mean number of points awarded by multiple judges. Points will be awarded based on responses to questions and issues raised on the form. The Committee reserves the right to disqualify entries that are incomplete or do not follow instructions. One winner will be chosen from each category.

***Please email entries to [asacry@geumconsulting.com](mailto:asacry@geumconsulting.com).  
All entries must be received by 5:00 pm, April 15, 2019.***

Nominees will be notified of the outcome of the award selection process by May 15, 2019. All nominees are encouraged to attend the upcoming WDAFS annual meeting, to be held September 29-October 3, 2019 in Reno, Nevada ([www.afstws2019.org](http://www.afstws2019.org)). The Winners of the award who attend the meeting will receive \$500 to offset their travel costs and will be publicly recognized at the WDAFS business luncheon on Wednesday, October 2, and in the 2019 summer or fall issue of the Tributary, the WDAFS' quarterly newsletter. If you have any questions, please contact WDAFS Riparian, Watersheds, and Habitat Committee Chairperson, Amy Sacry ([asacry@geumconsulting.com](mailto:asacry@geumconsulting.com); 406-381-0858).

***For a complete application form visit:***

***[https://drive.google.com/file/d/1IPYL0FVrZs\\_eamJFr7NKr8efL2f50r7a/view?usp=sharing](https://drive.google.com/file/d/1IPYL0FVrZs_eamJFr7NKr8efL2f50r7a/view?usp=sharing)***

### In-Situ Evaluation of Benthic Suffocation Methods for Suppression of Invasive Lake Trout Embryos in Yellowstone Lake

Nathan A. Thomas, Christopher S. Guy, Todd M. Koel, Alexander V. Zale

**Abstract:**

Suppression of invasive Lake Trout *Salvelinus namaycush* is an important management tool to use in native fish and ecosystem conservation throughout the U.S. Intermountain West. Lake Trout suppression, primarily by gill netting, has been ongoing in Yellowstone Lake, Yellowstone National Park, Wyoming, since 1995. Additional methods that cause mortality of Lake Trout embryos could be used simultaneously with gill netting to enhance suppression. Our objective was to evaluate the in-situ efficacy of two benthic suffocation methods—tarping with gas-impermeable tarps and Lake Trout carcass deposition to increase the mortality of Lake Trout embryos. Tarping did not increase embryo mortality; mean control mortality was  $21 \pm 1.9\%$  (mean  $\pm$  SE), and mean tarp-treatment mortality was  $20 \pm 2.9\%$ . Lake Trout carcass deposition caused  $98 \pm 1.2\%$  mean mortality of embryos at the substrate surface and  $100 \pm 0.1\%$  mean mortality of embryos 20 cm below the substrate surface. Hypoxic conditions in the carcass treatments were probably the cause of the high embryo mortality; dissolved oxygen concentrations at the substrate surface declined from 7.74 to 0.06 mg/L when carcasses remained on the treatment locations. The deposition of Lake Trout carcasses shows potential to be an additional suppression method that can induce mortality in Lake Trout embryos through benthic suffocation and could be implemented at Lake Trout spawning sites in Yellowstone Lake.



A Park Service fisheries team dumps carcasses on Lake Trout spawning sites.  
Credit: USGS Montana Cooperative Fishery Research Unit

**Citation:**

Thomas, N. A., C. S. Guy, T. M. Koel, and A. V. Zale. 2019. In-situ evaluation of benthic suffocation methods for suppression of invasive Lake Trout embryos in Yellowstone Lake. *North American Journal of Fisheries Management* 39:104-111.

# WESTERN DIVISION OFFERS GRADUATE STUDENT SCHOLARSHIPS

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## *Call for Applications*

The Western Division is pleased to announce that applications for its graduate-level student scholarships are now being solicited. The Eugene Maughan Graduate Student Scholarship fund provides up to \$5,000 annually to masters or doctoral students in the general area of fisheries science with one to three awards to individual students. Beginning in 2002, the Sustainable Fisheries Foundation established the William Trachtenberg Memorial Scholarship Fund, which augments the Western Division scholarship program. This fund provides up to \$600 annually to a graduate-level student conducting studies on fisheries sustainability. Applications for the Western Division scholarship program will automatically be considered for the Sustainable Fisheries Foundation scholarship program as well. An award committee of five fisheries scientists from the Western Division will make the decision regarding the award of scholarships from both programs. Selection criteria include demonstration of:

1. Excellent scholarship as evidenced by grades in rigorous course work during the last 60 hours as an undergraduate and during graduate studies.
2. Potential for future contributions to the fisheries profession through management, research, or teaching.
3. Significant progress toward attaining a graduate degree in fisheries science with a defined thesis or dissertation project.

***The 2019 scholarships will be awarded at the annual meeting of WDAFS in Reno, Nevada, September 29 – October 3, 2019.***

### **APPLICATION CRITERIA AND PROCESS**

1. Applicants must be a member of the American Fisheries Society or have submitted 2018 membership materials by the time of application. ***AFS Member number should be placed on application.***
2. Applicants must have completed one semester or two quarters in a graduate degree program at a university within the geographic boundaries of the Western Division.
3. Applicants must have a major field of study that is related to fisheries or aquatic science.
4. Applicants must submit an application package (***electronically preferred***) that contains of each of the following:
  - A. A letter to the award committee that includes (***three separate items***):
    - A brief description of the student's degree program and the anticipated date of completion.
    - A statement of the applicant's career goals and reasons for applying for the scholarship (up to 200 words).
    - A statement of the academic and professional activities and contributions to AFS and the fisheries science profession (up to 200 words).
  - B. Copies of a resume (including professional activities, pertinent publications, and scientific presentations) and graduate transcripts. Please list GRE scores in your resume; a copy of the original form is *not* necessary.
  - C. A one-page abstract outlining the goals, objectives, design, methods and expected outcome from the thesis or dissertation project.
  - D. Letters of reference from two faculty members (one must be the graduate students advisor) familiar with the student's background and abilities. Letters may be sent separately by the individual providing the reference.

**The application package should be sent electronically (or postmarked) no later than May 31, 2019 to:**

Bob Gresswell, Western Division Scholarship Award Committee  
226 Silver Cloud Cir  
Bozeman, MT 59715  
C: (406) 570-1486  
bgresswell@usgs.gov

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# JOIN US IN RENO!



## COMMON PATHWAYS FOR CONSERVATION

The 2019 Western Division meeting will be held in conjunction with AFS and TWS, and is hosted by the Cal-Neva Chapter of AFS in Reno, Nevada, September 29 – October 3, 2019. This is the first-ever joint meeting of AFS and TWS, and will likely be the largest gathering of fisheries and wildlife professionals and students ever. Proposals for Continuing Education workshops and symposia opened December 14, 2018. Please see the meeting website at <https://afstws2019.org/> for more information.



## AFS Member Photos



Credit: Patrick Sumrell



Credit: Jon McFarland



Credit: Kyrsten Wolterstorff

## Important Dates

March 15 Call for WDAFS Officer deadline

March 15 Outstanding Chapter Award deadline

March 15 Deadline to submit symposium proposals for 2019 Reno Meeting

March 19-21 Alaska Chapter Annual Meeting

April 1 WDAFS Division Award nominations deadline

April 1 WDAFS Small Grants deadline

April 12 Paper & Poster Deadline for 2019 Reno Meeting

June 5 Early registration deadline for 2019 Reno Meeting

## Have a story you'd like to share?

*Submit project updates, opinion letters, photos, and more to*

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**westerndivnewsletter@gmail.com**