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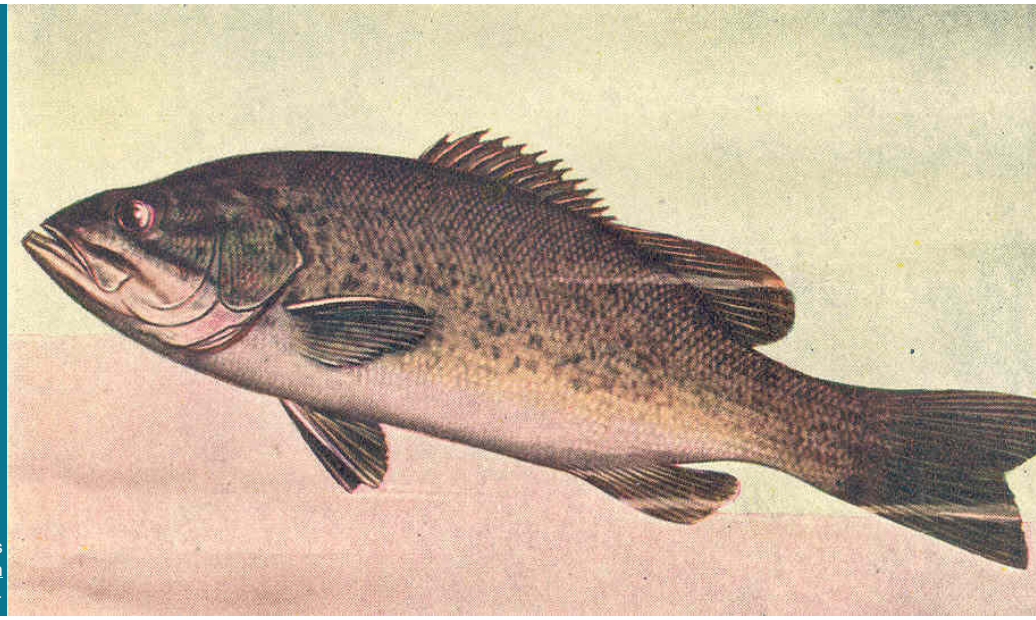
THE Open Reading Frame

Newsletter of the
Genetics Section of the American Fisheries Society

In this issue



A Black Bass specimen featured in James A. Henshall's publication Bass, Pike, Perch and Other Game Fishes of America (1919).

President's Message

Greetings and welcome to the summer edition of the *Open Reading Frame.*

It has been a productive 2025 for the Genetics Section executive committee. Much of our work has focused on improving the continuity of information flow as our committee membership evolves, aiming for smoother transitions of knowledge and initiatives. This has involved more carefully cataloging our work and rationale behind decisions and charting goals for the future. We have also worked to update the section's bylaws, a crucial step to modernize our governance and better serve our members. I am proud of the dedication and hard work contributed by everyone involved in these tasks.

Members of our section's various standing and *ad hoc* committees have also been busy. In particular, I'd like to share a word of thanks to our awards committees. Their work in reviewing nominations and selecting recipients ensures that outstanding contributions within our discipline are recognized.

For those seeking more involvement in our section, we are recruiting a new webmaster. This is a crucial role in maintaining our online presence and facilitating communication within and beyond our section. Please reach out to me if you are interested. I want to extend gratitude to Kristen Gruenthal for her service as our webmaster for nearly a decade.

Dr. Jared Homola
AFSGS President

The 155th American Fisheries Society Annual Meeting is approaching, taking place from August 10–14, 2025, in San Antonio, Texas.There are two exciting genetics-themed symposia at the conference: *Applications of Fisheries Genetics and Genomics* on Monday and Tuesday and *Highlighting the Cutting Edge: Graduate and Early Career Research in Genomics* on Wednesday. More details on the Annual Meeting and those symposia follow in the newsletter.

And of course, it would not be an AFS meeting without a chance to catch up with friends and colleagues. Please mark your calendars for our Genetics Section Social at Prost – Alchemy Lounge & Patio Bar on Tuesday from 6–8pm. This will be an opportunity to connect with old and new friends in a relaxed setting, and

President's Message cont'd

all Genetics Section members are welcome!

For our academic colleagues, I extend my best wishes as you shift into a new academic year. May it be filled with successful research, engaging teaching, and thriving students. I also want to express continued support for federal employees and all those affected by ongoing uncertainties across the federal funding landscape.

I look forward to seeing many of you in San Antonio. Until then, thank you for your continued involvement in the Genetics Section of the American Fisheries Society. Sincerely,

Jared Homola
President, AFS Genetics Section

155th Annual Meeting – American Fisheries Society

Applications of Fisheries Genetics and Genomics
Monday & Tuesday, August 11–12 | 8:00 am | Rivercenter Conference Room 19

This symposium is intended to highlight research focused on genetic or genomic tools in fisheries applications and may range from genetic monitoring with traditional approaches to those implementing state of the art genomic methods and analyses. We aim to promote a space for discussion on research that uses genetic or genomic approaches to answer relevant questions on evolutionary and ecological aspects of either freshwater or marine organisms. Presentations cover a wide variety of fish species across geographic regions, but there are several talks focused on species in the southwest region of USA to provide local flavor to the symposium. Presenters include researchers across all career stages with insights on focal species with both established and innovative approaches.

Organizers: Guilherme Caeiro-Dias, University of New Mexico; Shawn Narum, Columbia River Inter-Tribal Fish Commission

Contact: Guilherme Caeiro-Dias, gcaeirodias@unm.edu

PROST RIVER WALK PATIO & ALCHEMY BAR

AFS Genetics Section Social
Tuesday, August 12 from 6:00–8:00 pm
Prost–Alchemy Lounge & Patio Bar

Sponsored by: illumina

Highlighting the Cutting Edge: Graduate and Early Career Research in Genomics
Wednesday, August 13 | 1:30–5:30 pm | Rivercenter Conference Room 19

Conservation Genomics is a burgeoning field due to the rapid evolution and recent advancements of 'omics' technologies. The use of high-throughput and long-read sequencing methods is changing both what we can ask and how we ask it. This symposium highlights the cutting edge of genomics research in fisheries and aquatic sciences by profiling the current research of graduate students and early career professionals. These researchers, who represent the next generation of evolutionary and conservation scientists, are often using the latest in genomic sequencing and analytic methodologies to answer important questions about the conservation of marine and aquatic ecosystems in the face of global change, while also leading the field in new directions.

Organizers: Mary Peacock, University of Nevada Reno; Jared Homola, Department of Fisheries and Wildlife, Michigan State University; Sam Straus, Department of Fisheries and Wildlife, Michigan State University

Contact: Mary Peacock, mpeacock@unr.edu

James E. Wright Award Winners

The James E. Wright Graduate Award is given in the memory of Jim Wright, one of the founders of fish genetics research and education in North America. This award is presented annually to recognize excellence in graduate-level work in fisheries genetics, as well as assist graduate students with travel to the national meeting. For 2025, our student winners were Emily Tryc, Allison Weber, Emily Bierer, and Erik Pawelski. Emily T. and Erik introduce themselves and their research below.

Emily Tryc, Michigan State University

I am a second-year MS student in Michigan State University's Fisheries and Wildlife program working with Drs. Jared Homola of MSU and Benjamin Marcy-Quay of USGS. My thesis focuses on the application of close-kin mark-recapture (CKMR) to Lake Whitefish (*Coregonus clupeaformis*) in Lake Michigan to estimate population abundance. Lake Whitefish recruitment and adult abundance have been declining over the past few decades, likely due to food web changes driven by invasive species. Current abundance models rely on data from commercial fisheries, but confidence in these estimates decreases with lower catch limits. CKMR offers an alternative approach to abundance estimates by using the discovery of kin pairs identified through genotype analysis. Previous attempts at using CKMR have been successful with less stringent sampling assumptions and higher statistical power. I am currently working on optimizing a genetic panel to deduce kinship and build a CKMR model for Lake Michigan Lake Whitefish.

Emily Tryc

I am extremely grateful to have received a James E. Wright Award this year, as it has enabled me to attend and present my research at this year's AFS conference. This will be my first talk at a society-wide meeting, so I am looking forward to the opportunity to share my work and hear about the exciting projects others are working on in the field.

Erik Pawelski, Michigan State University

I am a first-year MS Fisheries & Wildlife student co-advised by Dr. Jared Homola and Dr. Sam Brunner. My research focuses on developing genetic tools for assessment and management of White Sucker and Longnose Sucker. For my thesis, I am designing genotyping-in-thousands by sequencing (GT-seq) panels for the two species, which I will then use for pedigree reconstruction to quantify successful spawners in the Boardman River, a tributary of Lake Michigan. This river is the site of FishPass, a new selective passage facility which will replace an old dam, and my work will provide an important baseline to evaluate the success of selective passage for native suckers. Additionally, I have developed a PCR-restriction fragment length polymorphism assay for identifying White Sucker and Longnose Sucker in mixed batches of larval samples. This uses a PCR reaction followed by restriction with two different enzymes, each of which restricts one sucker species to positively identify it from the other. White and Longnose suckers are important migratory fish in the Great Lakes, bringing energy and nutrients into tributaries during their annual spawning runs, and I hope my research will be part of a continuing emphasis on developing our understanding of non-game fishes.

Erik Pawelski

I am grateful to have received the James E. Wright Award as the award will allow me to attend the annual AFS meeting in San Antonio, which will be my first time attending a conference out of state. I will present research for the first time and meet new fisheries professionals, as well as connect with other students and develop new ideas for my research project. I am excited to learn about the wide range of fisheries research happening across the country within genetics and other specialties.

2025 Stevan Phelps Memorial Award - Announcement

After reviewing 15 papers across 6 journals, our committee has unanimously chosen a paper for this year's Stevan Phelps Memorial Award for a genetics paper published in an AFS journal:

JJ Winkowski, JD Olden, & S Brown. 2024. Integrating spatial stream network models and environmental DNA to estimate current and future distributions of nonnative Smallmouth Bass. Trans Am Fish Soc 153: 180–199.

This paper was a well-written explanation of a project of management and conservation significance with a methodology that could be applied across species and systems. Using eDNA data with spatial stream network models required extensive fieldwork, up-to-date laboratory methods, and spatial modeling to provide valuable insight to managing an invasive species threatening at risk species of cultural and commercial value. This work will help forecast future distribution of smallmouth bass as their range changes with ongoing climate change.

Stay tuned for a message from the authors in the winter edition of Open Reading Frame*!*

A reflection on Coastwide Salmonid Genetics Conference 2025

The Coastwide Salmonid Genetics Conference (CSGC) gathers salmonid geneticists and genetics-inspired scientists, managers, and stakeholders to share recent research and methods. CSGC 2025 was hosted by the ADF&G Gene Conservation Lab (GCL) from 12–15 May in Anchorage, Alaska. The Genetics Section and Alaska Chapter co-sponsored the event. Despite uncertainty at multiple agencies and the threat of an active volcano, over 100 people registered from across western North America.

Sara Gilk-Baumer, GCL's Director, welcomed attendees and emceed. A keynote covering the history, context, and characters for the Coastwide meeting-turned-conference was prepared by Drs. Lisa and Jim Seeb and presented by Dr. Lisa Seeb. Thirty-six talks were divided among sessions on close kin mark-recapture/parentage, eDNA, genetic stock identification/population genetics, genomics, lab infrastructure, and straying. A poster session was held on the second night, a breakout group discussed the completion of a revised coast-wide Chinook Salmon SNP baseline, and 10 sponsors presented their latest goods and services. Attendees were also treated to a social at nearby Kincaid Park and a few optional Alaska-themed excursions. Under a cloud of an unpredictable future for science, CSGC 2025 was a success, thanks to those who made gathering a priority.

Rumors point to Washington State for 2027!

In case you missed it...

Recent genetics papers from AFS journals and beyond

Click citations for link to papers

Brooks et al. Genetic analysis of Missouri's Topeka Shiners with implications for the propagation of understudied small-bodied freshwater fishes. Transactions of the American Fisheries Society.

Trombley et al. Conserving genetic and morphological potential: Preserving larval fish for downstream analysis. North American Journal of Fisheries Management.

Smith et al. Linking genetic and morphological data to identify closely related and co-occurring catostomid fishes. North American Journal of Fisheries Management.

LeBlanc et al. Development of a high-throughput single nucleotide polymorphism panel for genetic stock identification of Striped Bass. Transactions of the American Fisheries Society.

Dzul et al. Genetic structure of an expanding population of Humpback Chub in Grand Canyon. North American Journal of Fisheries Management.

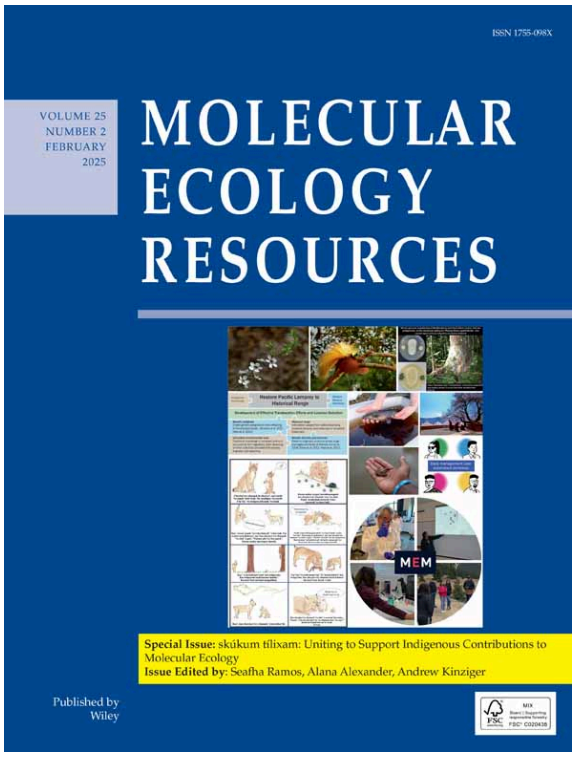
Kovach et al. Defining hybridization thresholds for native species conservation in the genomic era. Fisheries.

Mamoozadeh et al. A practical introduction to effective population size for fisheries management. Transactions of the American Fisheries Society.

Horn et al. Genomic insights into local adaptation and migration success in reintroduced Coho Salmon of the Wenatchee River basin. Transactions of the American Fisheries Society.

Oakley et al. Eel ramps and environmental DNA reveal a preliminary recruitment window of the American Eel in Texas. Marine and Coastal Fisheries.

CJAFS collection of genomics in fisheries conservation: https://cdnsciencepub.com/topic/genes-genetics-genomics-fish-conservation-fisheries



Elmore et al. The riverscape on a chip: high-throughput qPCR enables basin-wide fishery assessments. Canadian Journal of Fisheries and Aquatic Sciences.

Andersen et al. Advancing genetic improvement in the omics era: status and priorities for United States aquaculture. BMC Genomics.

Babaei et al. Genome-wide SNPs reveal novel genetic relationships among Atlantic cod (*Gadus morhua*) from the south coast of Newfoundland, Canada (subdivision 3Ps), Northern cod stock complex, and Gulf of St Lawrence. PLoS ONE.

FiveCrows et al. Sharing biological information across generations: Parallels between indigenous knowledge and genetics for fisheries recovery in the Columbia River Basin. Molecular Ecology Resources.

Karachaliou et al. Urbanisation Is Associated With Reduced Genetic Diversity in Marine Fish Populations. Molecular Ecology.

Kho et al. Life history implications of kinship structure in an Atlantic Herring aggregation. Canadian Journal of Fisheries and Aquatic Sciences.

Calendar

Click listings for more info

August 2025

10–14: 154th American Fisheries Society Annual Meeting, San Antonio, TX.

September 2025

1–4: 22nd International Conference on Diseases of Fish and Shellfish, Meraklion, Greece.

7–10: Pathways Conference on Humans Dimensions of Wildlife, Estes Park, CO.

15–18: ICES Annual Science Conference 2025, Klaipeda, Lithuania.

21–24: Association of Fish and Wildlife Agencies Annual Meeting, Tucson, AZ.

21–25: North American Sturgeon and Paddlefish Society Annual Meeting, Nelson, BC.

28: 20th World Rivers Day

October 2025

6–9: 7th International Symposium on River Science, Davis, CA.

November 2025

4–7: North American Lake Management Society 45th International Symposium, Myrtle Beach, SC

To find dates and information for AFS chapter meetings, visit fisheries.org/about/units/

Job Postings

Click ads for more info

Stock Assessment Technician - Fisheries and Oceans Canada
Fisheris and Oceans Canada has opened a hiring pool for future vacancies in fisheries positions. Duties may include Participating in fishery monitoring programs for Recreational, Commercial and First Nations fisheries; participating in juvenile and adult salmon enumeration programs; working with Senior Technician and Area Biologist to collect field data and biological samples. Includes assisting with stream surveys, catch sampling, and data entry, compilation and review. Open until March 31, 2026.

Fisheries Management Intern - South Dakota Department of Game, Fish, & Parks
Applicant must be enrolled as a part-time/full-time student at a college, university, or technical institute within 6 months of application. The candidate will assist managers and biologist conducting fisheries management and research activities on waters of the Upper Missouri River Fish Management Area. Activities include, but are not limited to: fish population sampling, angler creel surveys, fish stocking, trap and transfer of fish, basic water chemistry, research projects, fish spawning and tagging, aquatic invasive species monitoring, and access and habitat development. Intern will operate boats and motors, utilize fisheries sampling equipment (gill nets, frame nets, seines, electrofishing equipment, etc.), weight and measure fish, record, input, and analyze data, and provide preliminary management recommendations. Open until September 26, 2025.

Assistant Professor in Ecosystem Ecology - University of Georgia
The Odum School of Ecology at the University of Georgia invites applications for four tenure-track positions in Ecosystem Ecology at the Assistant Professor level. We seek to hire two colleagues with expertise in aquatic ecosystems (i.e., freshwater, marine, or wetland), and two with expertise in terrestrial ecosystems. We are willing to consider one hire at the Associate Professor level for an exceptional candidate who is a recognized leader in their field. Successful candidates will build on the long-standing legacy of ecosystem ecology in the school and will have opportunities to forge collaborations with faculty in other units on campus, such as Forestry and Natural Resources, Marine Sciences, Crop and Soil Sciences, Plant Biology, Entomology, and Geography. Open until September 5, 2025.

Grays Harbor District Biologist - Washington Department of Fish & Wildlife
As the lead expert for fishery management, the successful candidate will oversee stock assessment activities for anadromous salmonids, with a focus on salmon and steelhead. Collaborating with tribes, industry, and stakeholders, they will manage resources to balance conservation and utilization goals while promoting sustainable fisheries. The candidate's expertise will also shape policy decisions and contribute to technical reports that guide the future of fisheries management in Washington. Open until August 20, 2025.

Rio Grande, NM. Bob Wick.

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