SPRING 2024 TECHNICAL MEETING

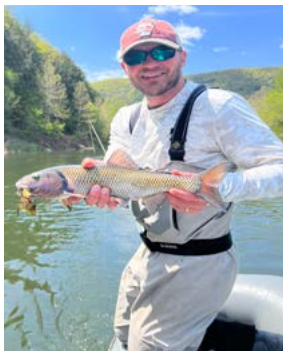
WORKSHOPS

FRIDAY, FEB. 9, 2024

REGISTER

Geospatial Operations in R

Matt Shank - PA DEP



Topics covered include:

- R basics; tidy coding principles
- Projections and transformations
- Point, line, polygon spatial features
- Clip, buffer, calculate statistics
- Presentation quality static maps
- Interactive maps
- Exporting geospatial features as shapefiles

Freshwater mussels of the French Creek (Ohio basin) watershed

Rick Spear
PADEP

Dakota Raab
PFBC

Nevin Welte
PFBC

Joe Brancato
PADEP

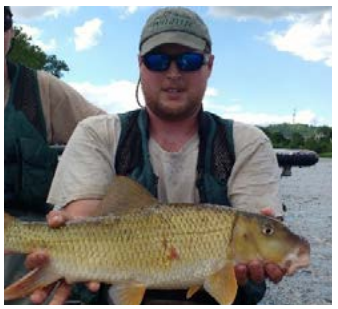
Topics covered include the ecology, biogeography, and identifying characteristics of French Creek's freshwater mussels.

The first portion of the workshop will include a presentation and the second will include hands-on identification

Rick, Nevin, Dakota, and Joe have surveyed mussels in each of PA's river basins and serve as experts for their agencies, as well as on various technical committees and societies.

The Identification of Central Appalachian Darters

In this workshop, participants will receive hands-on training on fixing, preserving, and identifying the Mid- Atlantic darter fauna found on both sides of the Appalachian Divide. If possible, students should bring regional identification keys to actively participate the training session. Also, it is recommended that participants bring problematic/unknown specimens to the workshop so that the instructors may confirm their identification.



Nate Owens - WVDNR

We'll see you there! - The PA AFS Executive Committee

PA AFS 2024 Spring Technical Meeting Workshop Descriptions:

1. R as GIS – Geospatial operations and workflows in R

Description
R is a versatile programming language widely used in the data science and geospatial communities. This workshop will focus on leveraging R to perform simple, but powerful geospatial operations, including spatial clips and selections, buffers, and calculation of point, line, and polygon statistics. Accessing and importing spatial data from various sources will be covered. Presentation quality and interactive map creation will be included. Projections, transformation, and exporting geospatial features developed in R as shapefiles will also be covered. The workshop will follow tidy coding principles, utilizing sf and tidyverse packages. Workshop materials will be available online and fully reproducible. Participants will ideally have some experience with R, but newcomers are welcome.

Facilitator Information and Bio
Matt Shank
Water Program Specialist
PA Department of Environmental Protection

Matt is a Certified Fisheries Professional with BS and MS degrees from Gettysburg College and Penn State University, respectively. He is currently employed at the PA Department of Environmental Protection, where he wrangles large datasets to answer complex environmental questions. In his free-time, Matt enjoys catching large trout on small flies, hunting, and taking photographs in Penn's woods.

2. Freshwater mussels of the French Creek (Ohio basin) watershed

Description
Learn about the ecology, biogeography, and identifying characteristics of French Creek's freshwater mussels. Workshop will include a lecture portion followed by a hands-on identification exercise and test of your knowledge.

Facilitator Information and Bios
Rick Spear
Rick Spear is an Aquatic Biologist Supervisor for the PA DEP Pittsburgh Office. He earned a B.S. degree in Marine Biology from Stockton University. He has been working with mussels for 21 years and he is Dep's expert on freshwater mussels. He is the President of PA Biological Survey Mollusk Technical committee and is a member of the Freshwater Mollusk Conservation Society. He thinks mussel are fascinating animals and enjoys collecting, teaching, and learning about freshwater mussels.

Dakota Raab
Dakota Raab is a fisheries biologist with the Fish and Boat Commission. He earned an undergraduate degree at SUNY Cobleskill and a Master's at Kentucky State University. Originally interested in non-game fish management, he shifted interests to freshwater mussels after spending a summer surveying

federally listed species with the Georgia DNR. As a member of the PFBC Division of Environmental Services, Dakota has surveyed mussels in each of Pennsylvania's major river basins.

Nevin Welte
Nevin Welte is a mussel biologist for the Pennsylvania Fish and Boat Commission. He earned his degrees at Mercyhurst and Tennessee Tech University and had his first mind blowing experiences with mussels while snorkeling 123 miles of the upper Delaware River with the U.S. Geological Survey. Nevin began working with PFBC in 2006 and currently helps guide agency mussel conservation actions. He is a member of the Pennsylvania Biological Survey Mollusk Committee and is a member of the Freshwater Mollusk Conservation Society.

Joe Brancato
Joe Brancato is an Aquatic Biologist Supervisor with the PA DEP Northwest Regional Office. He earned a BS Degree from Penn State University in Wildlife and Fisheries Science and an MS in Aquatic Biology from Clarion University. While primarily a bug guy, his interest shifted to freshwater mussels and how it relates to NPDES permits in the Allegheny River, Shenango River and French Creek watersheds. He has conducting extensive mussel survey work in these watersheds over the last several years and now finds it impossible to walk into a stream without picking up every piece of shell material on the river bottom.

3. **The Identification of Central Appalachian Darters**

Description
In this workshop, participants will receive hands-on training on fixing, preserving, and identifying the Mid- Atlantic darter fauna found on both sides of the Appalachian Divide. If possible, students should bring regional identification keys to actively participate the training session. Also, it is recommended that participants bring problematic/unknown specimens to the workshop so that the instructors may confirm their identification. Dissecting scopes will be available for workshop participants.

Facilitator Information and Bio
Nate Owens
Nathaniel (Nate) Owens is the Wildlife Diversity Fish Program Leader with the West Virginia Division of Natural Resources in Elkins, WV. He earned both his B.S. and M.S. degrees at West Virginia University. Nate has worked within the WVDNR wildlife diversity fish program since 2014 and while doing so he has conducted a variety of fish community, habitat, and genetic evaluations to document the distributions and status of fishes within WV. His master's research focused on assessing the benthic fish assemblages and habitat use of small bodied benthic fishes in the large rivers of West Virginia. Currently, he spends a considerable amount of his time developing and implementing conservation plans and actions to conserve the fishes of greatest conservation need within West Virginia. In his off time he enjoys fishing, hunting, skiing, working on his family's farm and hunting property, scuba diving, and snorkeling. His favorite part of his current position is being able to provide as many learning opportunities as he possibly can to his employees, especially temporary ones, to help foster them into the next stage of their careers to hopefully become a contributing member of our profession.