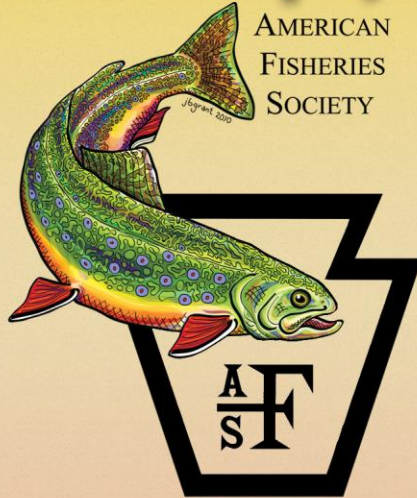


Pennsylvania Chapter American Fisheries Society

Spring 2014 Meeting

Friday
April 25



Pizza



Jim McKenna

PENNSYLVANIA
CHAPTER

Tony Honick

Steve Seiler



Stackhouse

PENNSYLVANIA
FISH AND BOAT
AND FISHING
COUNCIL OF FISHERY
AND WILDLIFE

AGENDA

- 4:30 – 5:30 p.m. Executive Committee Meeting.
- 5:30 – 6:30 p.m. Social – Pizza and drinks provided!
- 6:30 – 6:45 p.m. Chapter Meeting.
- 6:45 – 7:15 p.m. **The design and implementation of environmental DNA (eDNA) techniques for threatened and endangered darters of the upper Ohio River watershed.**
Anthony S. Honick and Brady Porter, Ph.D.
Department of Biological Sciences
Duquesne University
Pittsburgh, Pennsylvania
- 7:15 – 7:45 p.m. **Trout versus trout: Competition or coexistence?**
James E. McKenna, Jr., Ph.D.
Tunison Laboratory of Aquatic Science
Great Lakes Science Center
U.S. Geological Survey
Cortland, New York
- 7:45 – 8:00 p.m. Break & 50 / 50 Drawing
- 8:00 – 8:30 p.m. **Use of digital photography in monitoring fish populations.**
Steven M. Seiler, Ph.D.
Department of Biological Sciences
Lock Haven University
Lock Haven, Pennsylvania
- 8:30 p.m. Adjourn

PRESENTATION ABSTRACTS

The design and implementation of environmental DNA (eDNA) techniques for threatened and endangered darters of the upper Ohio River watershed.

Anthony S. Honick and Brady Porter, Ph.D.

Proper conservation management of imperiled riverine darters requires reliable sampling methods to assess population distribution. However, currently mandated traditional sampling methods such as Missouri benthic and electrified benthic trawling are labor intensive, require costly equipment, can be dangerous to operators, and often harm fish from abrasion due to rocks and debris entering the trawl – which is particularly problematic when sampling imperiled species. Recently, the application of environmental DNA (eDNA) has increased with the technique being applied across a range of species from fish to insects with a major focus on the utility of monitoring invasive species. In our study, we are developing and testing eDNA sampling methods to detect the presence and absence of five darter species (Bluebreast, Tippecanoe, Spotted, Gilt, and River Darters) inhabiting the large-river benthic habitats of the Allegheny, Monongahela, and Ohio rivers. This new technique has the potential to be a powerful management tool, but there are many unanswered questions and concerns. This presentation will cover an introduction to eDNA methodology, our current eDNA design, and how we are testing the limits of darter eDNA detection.

Trout versus trout: Competition or coexistence?

James E. McKenna, Jr., Ph.D.

Native Brook Trout *Salvelinus fontinalis* are declining and possible causes include competition with Brown Trout *Salmo trutta*, habitat alteration, and repetitive stocking practices. It is widely believed that Brown Trout push Brook Trout out of preferred habitat. We used synoptic empirical models that predict good stream habitat for Brook Trout, Brown Trout, or both; and several analyses to examine direct effects between these species, habitat differences, influence of disturbances, and possible impact of stocking practices on Brook Trout. We found evidence for the decline of Brook Trout in the presence of Brown Trout across many watersheds. However, a model of the direct relationship between Brook Trout and Brown Trout abundance explained less than 1% of data variation. Ordination showed extensive overlap of Brook Trout and Brown Trout habitat conditions. Only rare combinations of conditions were distinctive, but Brook Trout abundances were higher in heavily forested areas, while Brown Trout were more abundant in agricultural areas. Simulations showed that effects of heavy repeated stocking of Brown Trout into Brook Trout habitat could quickly eliminate resident Brook Trout. Ecological differences, harvest behavior, and other habitat changes can exacerbate Brook Trout losses. Brook Trout and Brown Trout are valuable sport fish that coexist in many parts of the world due to stocking introductions. Custom stocking scenarios may be able to sustain healthy populations of both species within their present range.

Use of digital photography in monitoring fish populations.

Steven M. Seiler, Ph.D.

Digital photography can easily be added to standard fish survey techniques as a digital archive of fish populations and as the raw data to conduct morphometric analyses. I will provide an overview of how to collect high quality photographs of fish for morphometric studies. To conclude, I will provide examples of traditional and geometric morphometric analyses applied to salmonid fishes that illustrate: (1) body shape variation associated with habitat; (2) shape variation among sympatric species and their hybrids; and (3) how shape variation is correlated with swimming performance.

Please RSVP via email to pachapterafs@gmail.com if you are planning to attend the meeting (so we know how much pizza to order).

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