Fish Identification Workshop

Michigan Inland Lakes Convention - Sept 16, 2020

Presented by: Dr. Brian Roth, Michigan State University

Workshop Summary:

The goal of this course is to learn how to identify fish. There are too many fishes in Michigan and the Great Lakes in general to learn in three hours. However, there are techniques that can be learned to arm you with the ability to identify fish. This includes learning aspects of morphology, anatomy, evolution, and ecology. These are the clues that I use to help me narrow down what an unknown fish could be, which makes further narrowing down much easier. I also use digital and analog resources when I don't know what a species is.

Objectives:

By the end of the workshop you should be able:

1) To learn key fish anatomy and morphology features that help with fish ID

2) To identify how key trends in fish evolution and taxonomy help to identify fish

3) To identify species from four families commonly found throughout the Midwest

4) To increase knowledge of how ecology affects fish communities

5) To know where to find identification resources on the internet and in books.

Schedule

1) Introductions and Preworkshop survey 9:00-9:10
2) What is a fish? 9:10-9:50
    a. External morphology and structures
    b. Evolution and Taxonomy
3) Break and quiz 9:50-10:00
4) Quiz feedback 10:00-10:05
5) Great Lakes fish ID 10:05-11:00
    a. Percids
    b. Centrarchids
    c. Salmonids
    d. Cyprinids
6) Break and quiz 11:00-11:10
7) Quiz feedback 11:10-11:15
8) Ecology and Resources 11:15-11:55
    a. Fish communities and ecology
    b. Digital and analog resources for fish ID
9) End of workshop survey 11:55-end

Identification Resources:

Online:

1) Wisconsin Fish ID (Wisconsin Sea Grant)
    a. Note: This is my go-to resource, but sometimes there may be too much information! There are keys and thousands of pictures.
2) Fishes of the Great Lakes (Inaturalist):
    a. A good, but very incomplete list of Great Lakes fishes. You can click on a taxon to see where they're found.
    b. Become involved, you can help increase their coverage!
3) FishBase:
    a. A very dense source, including biological and scientific data. Not great for fish ID, but good if you're interested in more detailed information
4) Streamfishes of Ohio (Ohio DNR):
    a. This is a guide through the Ohio DNR, but I could not find an active link for it through their website. I know it's Ohio, but we share many of the same fishes. This guide is well put together and beautiful to look at. It's a challenge to navigate if you don't know what you're looking for, however.
5) Michigan fishes (Michigan DNR):
    a. This is a broader view of sportfishes found in Michigan.
6) Non-indigenous species database (USGS):
    a. An authoritative source for information on invasive species, including species occurrences and ranges. Contains little information on ecology and effects, and you must know the species you're looking for or stand the chance of getting lost in the sea of invasive species.
7) Trout and salmon of the Great Lakes (Michigan Sea Grant):
    a. Great guide for trout and salmon, but nothing else.

Books:

1) Fishes of the Great Lakes Region (2004). Hubbs, Lagler, and Smith.
    a. A good book for those fishes in the Great Lakes region. It is complete, and includes all species. Has some color plates, but contains subspecies that are not agreed upon universally.
2) Fishes of Wisconsin (1980, 2001). George C. Becker.
    a. This is the regional authoritative book. It's HUGE (>1000pp). This is the basis for the Wisconsin Fish ID website, but contains range and occurrence data as well.
3) Peterson Field Guide to Fishes of North America (1998). Page and Burr.
    a. Beautiful book that contains all fishes in North America. Not all species have plates, but most do. It can be hard to find a species if you don't know what you're looking for.
4) Peterson Field Guide to Freshwater Fishes, 2nd edition (2011) Page and Burr.