Ecology of Fishes

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University of Pittsburgh BioSc 1270
Session 3, 2008
Pymatuning Laboratory of Ecology

Mon. 6/23 The Physical Stage: Limnology
Lab: Limnological Methods, Conneaut Lake (Skimmer)

Tues. 6/24 Stream Ecology, Effects of Fish on Invertebrate Assemblages
Lab: Invertebrate Sampling, Local Ponds and Lakes

Wed. 6/25 Historical Factors: Fish Diversity I: Taxonomy
Lab: Measuring Species Richness, Linesville Creek

Thur. 6/26 Fish Diversity II: Biogeography
Lab: Fish Diversity of Sugar Lake

Fri. 6/27 Functional Morphology and Food Habits
Lab: Morphology and Diet Analyses, Pymatuning Reservoir

Mon. 6/30 Habitat selection in fishes
Lab: trapping study, Linesville Creek

Tues. 7/1 Competition and Predation in Fish Communities
Lab: Fish Survey, Linesville Creek
Test 1: 9:00 AM

Wed. 7/2 S and N Deposition, Stream Acidification, and Fish Communities
Lab: All-day, field trip, Allegheny National Forest

Thur. 7/3 Eutrophication and Fish
Lab: mesocosm experiment

Fri. 7/4 Mon. 7/7 Behavioral Cascades and Indirect Effects in Fish Communities
Lab: Fish Surveys, Payden Creek

Tues. 7/8 Productivity/Diversity Relationships in Fish Communities
Lab: All Day Field Trip, French Creek

Wed. 7/9 Humans and Fish: Case Studies of Lake Victoria and Lake Erie
Lab: All Day Field Trip, Presque Isle

Thur. 7/10 **Test II: 9:00 AM**
Lab: Tour of Linesville Fish Hatchery. Afternoon: Independent Projects

Fri. 7/11 Morning: prepare presentations
Presentation of Class Projects: 1:00 PM

About the Course

Daily Schedule: In general, we will begin lecture each day in the fish lab at 8:30 AM, and we will try to conclude the days activities at 5:00 PM. The van will leave the dining hall for the lab site at 8:15 AM sharp. We may deviate from this schedule from time to time.

How to Dress: Fish live in water, and sometimes in murky, muddy water, so we too will spend most of this course in the water, and sometimes in murky, muddy water. You will want to wear waders when you are electrofishing (the waders provide your only insulation from the electric current). You may borrow hip boots from PLE, or you may elect to purchase your own. I suggest wearing jeans and socks with your waders in order to avoid falling victim to the dreaded "wader rash". It is generally most comfortable to wear shorts and old but sturdy shoes when performing field activities other than electroshocking. Finally, if you own a mask, snorkel, and fins, you may want to bring them along for the Presque Isle field trip.

Safety: Nothing in more important than your personal safety. If you are uncomfortable with the water, wear a life jacket. Use caution and common sense when using the boats, electrofishing gear, etc.

Grades: You are responsible for all material covered in lecture, laboratories, and in the field. You should know the common name and family of all fish we encounter. Final scores will be calculated as follows:
Test I: 20%
Test II: 20%
Pop Quizzes 20%
Final Project 20%
Contribution to Class: 20%
Grades will be assigned as 90-100 = A, 80-89 = B, etc.

Independent Project: a substantial portion or your grade will be based on your independent project. Here you are required to conduct research aimed at answering an original question. You will present a 10-20 minute long lecture on your project the final day of the course, and you will prepare a paper in the usual scientific format. You are expected to support your work with the excellent library resources here at PLE. The ideal project will use data collected by the entire class, and perhaps augmented by your own additional data collection, but synthesized by yourself. You may help your classmates collect additional data in return for their help on your project, but the write-up and presentation should be your own.

Class Projects: We will run the laboratory portion of the class as a series of class projects. The class will be divided into three groups, and each day one of the three groups will be responsible for recording and synthesizing all the data collected that day. We will then start the next day with a brief (15 minute?) presentation of the previous days project by the responsible group. Each presentation should be accompanied by a short handout summarizing the data collected the previous day. A note about writing things down and keeping them organized: because data collected early in the course may be used later in the course for independent projects, it is important that we carefully record and organize the all data from our field trips. Indeed, a critical step in becoming a scientist is merely learning to write things down so that others can make use of your observations.

Attitude: Fish are a source of endless fascination, and there is much yet to be learned about them. I expect the students in this course to approach the material with enthusiasm, and I trust that students that do so will perform well in this course. Help your classmates with the fieldwork, and help organize the data. This should be a fun course.