

BIOL-UA 16 Ecological Field Methods

Instructor:

Katie Schneider-Paolantonio

Course Description:

The main objective of this course is to provide you with the skills needed to design and implement field experiments, interpret data and present ecological research. While investigating real habitats, such as forests, salt marshes and urban landscapes, you will gain experience in all parts of the scientific method. Examples of data collected include spatially referenced biological surveys and measurements of abiotic parameters. Ecological techniques will be nested within greater contexts of questions in biodiversity and community structure, invasion biology, urban ecology, habitat alteration and climate change. Scientific communication skills will be strengthened through written assignments and discussion of peer-reviewed scientific literature. A significant component of this class will be an independent group research project. During approximately half of our lectures, we will be meeting at off-campus field sites. Please inform me if you need any specific accommodations to access or visit these sites. You will be responsible for your own transportation to some of these locations (accessible via public transportation). Some classes may run a little late or early with required travel time. Students should not schedule meetings or classes either directly before or after our class time. During alternating weeks when we will not be in the field, we will have shortened class periods and meet in the laboratory.

Pre-requisite:

Principles of Biology II (BIOL-UA 12) or
Environmental Systems Science (ENVST-UA 100)

Co-requisite:

Fundamentals of Ecology (BIOL-UA 63)

Textbook and Required Materials:

Budliger, R. and G. Kennedy. 2005. Birds of New York State. Lone Pine Publishing. 384 pgs or
Sibley, D.A. 2003. The Sibley Field Guide to Birds of Eastern North America. Knopf Publishing.
432 pgs.

Barnard, E.S. 2002. New York City Trees: A Field Guide for the Metropolitan Area. Columbia
University Press. 240 pgs.

Evans, A.V. 2007. National Wildlife Federation Field Guide to Insects, Spiders and Related
Species of North America. Nature. 496 pages

Grading:

Writing assignments	43%
Team project	44%
Participation	14%

Topics:

Introduction to the course; lab safety, tour of campus green space Field
guides, keys, GPS, Introduction to bird and tree identification

Tree identifications, survey methods Define Groups

Birds, Restoration Ecology & Invasive species 8: 30 birds, 9:30 hallet - 11, 11:30 amnh

Introduction to water chemistry kits and biological sampling Campus Ecology Group Questions

Disturbance, Climate Change Freshwater vs. Saltwater Habitats

Time designated for group work or Jamaica Bay RAIN DATE



Microbiome of Salamanders

Demography

Discussion of demography, Jamaica Bay, Preparation for the Bronx Project Update

Presentation/Consultations

Urban Stream Ecology, River continuum concept Aquatic decomposition and food webs

RAIN DATE Field trip OR

Intro to knots, Jamaica Finalize, Group time

Discussion of Bronx Findings, Soil dwelling invertebrates, Terrestrial decomposition, food webs,

Species Accumulation Curves

Bronx Data Overview/Knots/Any questions on group work