Summary: Field Ecology at Black Rock Forest is a concentrated spring graduate field course in ecology and biology. Students become familiar with the flora and fauna of the Hudson Highlands region of NY as they study the major natural habitats within the area. (A visit to Central Park before the trip permits comparison of urban versus rural issues in ecology.) Field exercises have included plant community sampling, paleoecological analysis of sediment cores, characterization of shrub communities using diagnostic keys, and surveys of birds/insects/amphibians/aquatic invertebrates. Readings from *Science*, *Nature*, *Ecology* and other literature are carefully coordinated with our field studies.

Course objectives: Students will gain a strong practical experience in field botany and ecology such as familiarity with the local flora and fauna, use of topographic maps and the global positioning system, methods for sampling natural communities, water sampling, familiarity with the format of a scientific paper, and enhanced understanding of complex ecosystems. Their experience will also provide a physical framework within which they will conduct their future teaching and conservation activities.

Course outline: Two pre-trip classes in NYC. PLUS TRIP: 22-28 May 2010 (There is a lodging fee at the forest.)

At NYU:

Class 1: Friday 4/23/10 5:00 – 7:30. Room TBA. Course plan (journaling, reading, studying), equipment/supplies, travel arrangements (train/cars?), book-keeping.

Lecture: Grinnell Method: field notes, field journals; plant/bird/insect id.

(These will be on quiz on this on Saturday, the first day at Black Rock Forest.)

Class 2: Friday 4/30/10 5:00 – 7:30. FIELD TRIP TO CENTRAL PARK FOR URBAN ECOLOGY. We will meet on the front steps of the American Museum of Natural History on CP West.

At Black Rock Forest:

SAT Laboratory: Distribute equipment and maps; how to use binoculars; identification of poisonous snakes (timber rattler, n. copperhead); how to avoid swarms of hymenoptera, ticks. Quiz 1

Lecture: Distribution of biomes and link to climate; eastern deciduous forest subregions; Hudson Highlands vegetation, climate, soils, and geology. “Birding by Ear” (Audio).

Laboratory: Forest edge (Reservoir Road).

SUN Laboratory: Shrub thicket (Jim’s Pond). (meet at Science Center at 0900; return from field at 1400)

Lecture: Basic morphological traits used in plant identification. Classification of plants. Five plant families well represented in BRF. Quiz 2

MON Laboratory: Ridge (Black Rock summit). (meet at Science Center at 0900; return from field at 1400) and Vegetation transect (Data collection for final report)

Lecture: Population and Community ecology; community sampling methods. Quiz 3

TUES Laboratory: meet at 1 pm; collection of forest floor samples for seed etc analysis

Lecture: Paleoeckology. Quiz 4

Evening Laboratory: owls et al. (9 pm)
WED  **Laboratory**: Burned sites (Mt. Rascal). FEN (south of Sutherland Pond).
(meet at Science Center at 0900; return from field at 1400)
**Lecture**: Functional anatomy of trees; major forest processes.  Quiz 5

THURS **Laboratory**: Storm King Art Center
**Lecture**: Biodiversity and forest ecosystem services. Anthropogenic and biotic impacts on forests.  Quiz 6

FRI  Bird Migration and Final Exam  TBA

**Grading policy:**
1. Final practical exam: identification of specimens. 25 %.
2. Quizzes. 30 %.
3. Field journals will be graded. 30 %.
4. Vegetation transect paper 15%  Due one week after trip

**Texts:**
- *Newcomb's Wildflower Guide* (L. Newcomb),
- *Peterson Guide to Trees and Shrubs* (G. Petrides),
- *Eastern Birds* (RT Peterson)