**Professional Master’s Degree in Spatial Data Analysis**

This track in the Wildlife and Fisheries Conservation program is designed to train students in a number of new technologies for collecting, storing, and analyzing spatially tagged data on natural resources. These technologies include digital remote sensing, Global Positioning Systems (GPS), radio telemetry, and Geographic Information Systems (GIS). There are also a number of new statistical tools for analyzing spatial data and describing animal-habitat relationships. The student will take a core of courses in basic techniques of spatial analysis, and may choose among a number of courses for enriching their background in biology, ecology, statistics, or modeling. (Concentration Advisor: Dr Finn)

**A. Prerequisites:**

Candidates for this program will be judged on their academic and professional experience. At minimum, candidates will be expected to have:

1) Bachelor’s degree in
   - a natural resources field, or
   - any field with a minor in natural resources, or
   - any field with at least two year’s experience as a natural resources professional.

2) In addition to the above, candidates must have at least two semesters of college level mathematics, and one semester of statistics. More preparation in mathematics and statistics (e.g., calculus, multiple regression, etc.) would be useful.

3) A publishable-quality professional paper presenting the results of the degree project,

4) Two semesters’ registration in WFCON graduate seminars on Research Methods and communicating science related to the student’s degree project/internship,

5) Knowledge in at least one area of each “core” subject area required for completion of a masters degree in WFCON, and

6) A general Master’s examination by a committee composed of three persons, including your major advisor’ two of these persons must have a masters degree in WFCON graduate faculty status (one of which must be a university employee).

**C. Curriculum**

1) Core Courses (13 credits)
   - FOREST 531 Aerial Photogrammetry
   - WFCON 587 Digital Remote Sensing (offered even years in Spring)
   - WFCON 592G Introduction to GIS
   - Statistics I (e.g. Stat 501 or Stat 515)
2) Elective Courses (≥ 15 credits)
   - WFCON 597 Readings in GIS (offered in odd years in Spring)
   - Statistics II (e.g. RESEC 702, STAT 516, PUBHTh 640)
   - Multivariate Statistics (e.g., EDUC 4-771, PUBHTh 747, or STAT 511)
   - WFCON 577 Intro. To Ecosystem Modeling (offered even years in Fall)
   - Any 600+ level natural resources course

3) Internship/Project (6 credits)
   - WFCON 698 Practicum

4) Seminars (2 credits)
   - WFCON 600- or 700-level graduate seminars on Research Methods and Communicating Science

D. Internship/Project

An internship with a natural resources agency or an appropriate N.G.O. must be done after the first two semester of residency. Internships should provide hands-on experience in spatial data to help solve natural resource problems. Internships may be arranged by the students with approval of their advisor, or students may take advantage of a number of internship opportunities arranged through the program. Internship arrangements are expected to be made with the U.S. Fish and Wildlife Service, the National Biological Survey, the National Marine Fisheries Services, the Massachusetts Division of Wildlife Division of Wildlife and Fisheries and other agencies.

The student shall complete a six-credit project on a spatial analysis problem in natural resources. It is expected that this problem will usually arise from the student’s internship experience, but other problems will also be acceptable. The student will produce a project report, and present it before an examining committee of three professors.