FISH, WILDLIFE AND CONSERVATION ECOLOGY

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M. Desmond, interim department head, Ph.D., (Nebraska) avian ecology and conservation; M. Andersen, Ph.D. (Washington) - ecological modeling; W. Boeings, Ph.D. (Louisiana State) - aquatic ecology; K. G. Boykin, Ph.D. (New Mexico State University) - spatial ecology and conservation; J. W. Cain, Ph.D. (University of Arizona) - large mammal ecology, conservation, and management; C. A. Caldwell, Ph.D. (Tennessee) - fish biology; S. A. Carlton, Ph.D. (University of Wyoming) - physiological ecology and avian ecology; D. E. Cowley, Ph.D. (Wisconsin-Madison) - fish conservation genetics; J. K. Frey, Ph.D. (University of New Mexico) - ecology and conservation of mammals; G. W. Roemer, Ph.D. (UCLA) - behavioral, population and community ecology and conservation biology; R. Saleenave, (University of Guelph) - aquatic benthic ecology, outreach, education; R. Valdez, Ph.D. (Texas A&M) - wildlife ecology;

DEGREE: Master of Science
MAJOR: Wildlife Science

The Department of Fish, Wildlife and Conservation Ecology offers graduate work leading to the Master of Science degree with a major in wildlife science. The fishery science major is an option within wildlife science. Faculty members in the department also may advise Ph.D. candidates through the graduate program in the Department of Biology, the Department of Animal and Range Sciences, and other Ph.D. granting departments. For additional information please see the graduate catalog entries for the respective departments.

By selecting appropriate courses, the student can meet basic requirements for becoming a Certified Wildlife Biologist and/or a Certified Fisheries Professional. Minimum qualifications for admission to the graduate program include the following:

• 3.0 grade-point average in the last two years of undergraduate work
• Combined score of 1000 (using the previous ETS scale) on the verbal and quantitative parts of the Graduate Record Exam (GRE), with at least 450 in each of the two parts or a combined score of 297 (on the new ETS scale) with at least a 150 and 141 on the verbal and quantitative portions, respectively.
• Course work in zoology, botany, vertebrate biology, genetics, and animal ecology and a basic appreciation of sustainable use of natural resources, with supporting courses in mathematics, chemistry, physics and written and oral communication.

Applicants should submit a writing sample of approximately 350 words in the form of an essay or letter of application. It should indicate the applicant’s reasons for pursuing advanced study, personal and educational goals, and additional experiences (e.g., military or career) or skills that might provide additional preparation for graduate studies. The writing sample should be sent to the department. Three letters of recommendation (or reference forms) should also be submitted to the department (it is preferred that at least two letters come from university instructors) along with GRE scores. Applicants should also contact a faculty member in the department that they would like to work with as an advisor, and that faculty member needs to agree to serve as the students’ advisor and fund their research. Application forms, application fee and transcripts should be sent to the Graduate School.

Successful applicants will be selected from those who meet the criteria of grade-point average, GRE scores, and educational background described above and who appear to have professional promise as indicated by personal history and written references.

For the Master of Science degree, a minimum of 30 semester credits of graduate work in the major and related subjects is required, together with a thesis for most students. Of these credits, at least 15 must be in courses numbered 500 and above, and at least 15 must be for courses with the FWCE prefix. Those programs involving a thesis or research project include 4 to 6 credits of research (FWCE 598 or 599). Students electing a minor are required to take at least 8 credits in the minor field. A non-thesis option is available to some students, depending on prior training and experience, and subject to approval by the advisor and department head.

All students in the program must complete the following requirements:

• A ST 505 or equivalent
• One semester of Graduate Seminar (FWCE 515 - may be repeated for credit)
• Minimum of 6 credits from the Quantitative Methods category (eligible courses listed below)
• One course each from the Ecological Concepts, Organismal Biology, and Ecological Techniques categories (eligible courses listed below)
• 4 to 9 credits from the Independent Study category (eligible courses listed below)

In addition, a student may petition to have up to 3 credits of special topics courses (FWCE 548) apply to one of the three areas. Courses other than those listed may be acceptable, given permission of the student’s supervisory committee.

Quantitative Methods: Eligible courses

A ST 503, SAS Basics .................................................. 2
A ST 506, Statistical Inference II .................................. 3
A ST 507, Advanced Regression .................................. 3
A ST 523, Biological Sampling ................................... 3
A ST 550, Special Topics .......................................... 3
FWCE 509, Population Ecology ................................ 3
FWCE 455, Environmental Risks and Decisions ........... 3
(Other courses, particularly in Applied Statistics, may be eligible with consent of the advisory committee)

Ecological Concepts: Eligible courses

BIOL 467, Evolution .................................................. 3
BIOL 484, Animal Communications .......................... 3
BIOL 489, Genetic Aspects of Population Biology ........ 3

Courses other than those listed may be acceptable, given permission of the student’s supervisory committee.
Organismal Biology: Eligible courses
BIOL 547, Advanced Ornithology ................................................................. 4
FWCE 466, Advanced Management of Mammals ........................................ 3
FWCE 482, Ichthyology ............................................................................... 4
FWCE 532, Environmental Biology of Fishes ............................................. 3
(Other courses may be eligible with consent of the advisory committee)

Ecological Techniques: Eligible courses
GEOG 487, GIS Practicum ........................................................................... 3
GEOG 521, GIS Applications ....................................................................... 3
RGSC 452, Rangeland Analysis .................................................................. 4
RGSC 516, Watershed Methods and Management .................................... 3
FWCE 464, Management of Terrestrial and Aquatic Systems ............... 4
FWCE 534, Aquatic Contaminants and Toxicology ................................... 3
FWCE 522, Research Methods .................................................................. 3
FWCE 537, Wildlife Damage Management ................................................ 3
(Other courses may be eligible with consent of the advisory committee)

Independent Study: Eligible courses:
FWCE 548, Special Topics ........................................................................... 3
FWCE 598, Thesis Research ......................................................................... 4-6
FWCE 599, Thesis ....................................................................................... 4-6

Graduate work in the department is intended to prepare students for careers in research, teaching, extension, and management. Facilities available to graduate students include two ranches of approximately 90,000 acres, a large suite of shared laboratories, and a large fish-culture facility. We actively cooperate with state and federal natural resource management agencies, and graduate students have access to national forests and extensive public lands, as well as the Jornada Basin Long-Term Ecological Research site and associated databases (see http://jornada-www.nmsu.edu for details). Additional research opportunities for graduate students are available in the New Mexico Cooperative Fish and Wildlife Research Unit, located in the department since 1988.

Additional information on the graduate program and faculty is available at http://aces.nmsu.edu/academics/fws