FISH, WILDLIFE AND CONSERVATION ECOLOGY

Department website: http://aces.nmsu.edu/academics/fws/
(575) 646-1544
fwce@nmsu.edu

*K.E. Stoner-department head, Ph.D. (University of Kansas)– Ecology and conservation of neotropical mammals; M. Andersen, Ph.D. (University of Washington)– ecological modeling; W.J. Boeing, Ph.D. (Louisiana State University)– 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. (*University of *Tennessee)– fish biology; S.A. Carleton, Ph.D. (University of Wyoming)– physiological ecology and avian ecology; D.E. Cowley, Ph.D. (University of Wisconsin-Madison)– fish conservation genetics; M.J. Desmond, Ph.D. (University of Nebraska)– avian ecology and conservation; 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. Sallenave, Ph.D. (University of Guelph)– aquatic benthic ecology, outreach, education.*

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 Sciences**. Students can also minor in **Fisheries Science.** Faculty members in the department may also advise Ph.D. candidates through the graduate program in the Department of Biology, the Department of Animal and Range Sciences, as well as 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

- Students who are most competitive for admission are those with a combined average GRE score >70th percentile on the verbal and quantitative parts of the GRE.
- Course work in zoology, botany, 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 written composition of approximately 350 words that indicates the applicant's reasons for pursuing advanced study, explains personal and educational goals, and any additional experiences (e.g. military or career) or skills that might provide a foundation for graduate study. Applicants should submit three letters of recommendation (it is preferred that at least two letters come from university instructors) along with official GRE scores (the department code is 0115). Applicants should also contact a faculty member they would like to work with as an advisor, and that faculty member needs to agree to serve as the student's advisor. Application forms, application fee and transcripts, GRE scores, letters of recommendation, and letter of application should be submitted online 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 or 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)
- A 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) to apply to one of the three areas. Courses other than those listed may be acceptable, given permission by 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 515, Statistical Analysis with R ……..... 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
GEOG 585, Advanced Spatial Analysis …….. 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
BIOL 567, Individuals and Populations …….. 3
BIOL 568, Communities and Ecosystems …….. 3
BIOL 569, Evolutionary Ecology …… 3
BIOL 570, Ecological Biogeography …….. 3
BIOL 587, Behavioral Ecology …….. 3
FWCE 459, Aquatic Ecology …….. 4
FWCE 488, Conservation Genetics ……. 3
FWCE 540, Wildlife-habitat Relationships ……. 3
GEOG 557, Biogeography ……... 3

Organismal Biology: Eligible courses

BIOL 547, Advanced Ornithology …….. 4
FWCE 530, Large Mammal Ecology, Management,
and Conservation …… 3
FWCE 532, Environmental Biology of Fishes ……. 3
FWCE 536, Advanced Avian Ecology ……. 3
FWCE 538, Vertebrate Physiological Ecology ……. 3
FWCE 539, Game Bird Ecology and Management …….. 3
FWCE 567, Herpetology ……..... 4

FWCE 582, Ichthyology …….…… 4

Ecological Techniques: Eligible courses

FWCE 464, Management of Aquatic and Terrestrial Systems 4
FWCE 522, Research Methods …….. 3
FWCE 534, Aquatic Contaminants and Toxicology … …….. 3
FWCE 537, Wildlife Damage Management ……..... 3
FWCE 571, GIS for Natural Resource Scientists ……... 3
GEOG 521, GIS Applications …… .. 3
RGSC 452, Rangeland Analysis ……. .. 4
RGSC 518, Watershed Methods and Management …….. . 3
FWCE 533, Fisheries Management ……. 3
FWCE 580, Advanced Management of Aquatic Systems ... 3

Independent Study: Eligible courses:

FWCE 548, Special Topics, ……... up to 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/graduate-program.html