

WILDLIFE AND FISHERIES ECOLOGY - DOCTOR OF PHILOSOPHY

Candidates are accepted into the department to work with a specific faculty member that serves as their major advisor and committee chair. Students will develop their dissertation committee before the end of the second semester of study. Students will form the dissertation committee in consultation with their advisor and the committee must include a minimum of four members with at least two other members from the FWCE graduate faculty and a Dean's Representative that must come from outside the FWCE department. Students will select courses in consultation with their major advisor and committee members based on their background and interests.

A total of 66 credits will be required for students entering the Doctoral program in Wildlife and Fisheries Ecology, including 18 doctoral dissertation credits. Students who have already completed a Master of Science can transfer a maximum of 24 credits from their Master of Science program to the doctoral program. Additionally, students that enter the program having only completed a bachelor's degree must also complete the Master of Science degree requirements for Fish, Wildlife and Conservation Ecology as part of their coursework requirements. This includes 6 credits of quantitative foundations and three courses from Ecological Concepts, Organismal Biology, and Ecological Techniques (see graduate catalog for eligible courses). A maximum of 9 credits of course work below 500 but at or above 450 can count toward doctoral coursework.

Doctor of Philosophy students must:

- Complete a minimum of 6 semesters, with at least two occurring after the comprehensive exam.
- A maximum of 6 credits of FWCE 699 Doctoral Research doctoral research may apply toward graduation.
- Complete a minimum of 30 credits of graduate work excluding dissertation credits (FWCE 700 Doctoral Dissertation). This must include 2 credits of FWCE 690 Doctoral Seminar and BIOL 540 Science and Ethics (2 credits).
- Complete 18 credits of FWCE 700 Doctoral Dissertation after passing the comprehensive exams.
- At least 15 credits of the required elective courses must come from FWCE courses numbered 500 or above.
- Maintain a minimum grade point average of 3.0.
- Enroll in at least 1 credit/semester or 9 credits if full-time.
 - Full-time domestic students may file a request for waiver permitting them to enroll for only 6 credits in their second to last semester and to enroll for only 1 credit during their final semester if coursework and comprehensive exam requirements have been fulfilled.
- Successfully complete a qualifying exam (if a Ph.D. student without a master's degree), proposal defense, comprehensive exam, and dissertation defense. (see below)

Other recommendations for Ph.D. students:

- Ph.D. candidates are encouraged to do the following:
 - Consider including a committee member from outside NMSU, whether from a non-governmental organization, state/federal agency, or other university.
 - Gain experience as a teaching assistant for at least one semester and/or enroll in FWCE 510 Wildlife Ecology Teaching Practicum.
 - Present research at least once in a poster or oral format at a regional, national, or international conference.
 - Submit at least one manuscript as first author for publication in a peer-reviewed journal.

Exams

Qualifying exam – Students with an Master of Science degree do not need to take a qualifying exam. Students with a bachelor's degree must take a qualifying exam after completion of at least 18 credits. The qualifying exam will consist of an oral exam administered by the student's committee. If a student does not pass the qualifying exam, they can coordinate with their major advisor to potentially pursue a Master of Science degree.

Proposal defense – The student should defend their proposal to their committee no later than the end of the fourth semester of their studies. The students will prepare a short presentation summarizing the proposal chapters and will then answer questions related to their proposal from the committee.

Comprehensive exam – This exam covers all phases of the major and minor fields of study and is given after passing the proposal defense and before the end of the sixth semester, and when sufficient progress has been made toward fulfilling agreed upon research goals. The examination will have both written and oral portions. The written portion may be in the form of a research proposal (that does not overlap with their existing dissertation research) or may consist of questions presented by the students' committee. The student must pass their graduate committee's expectation on the written portion before taking the oral portion. Students will not be allowed to register for 700 level courses until both parts of the comprehensive exam have been passed. If a student does not pass the comprehensive exam, they will have the opportunity to retake their comprehensive exam no sooner than three months and no later than 12 months after their initial attempt.

Dissertation Defense – The dissertation defense shall be completed after all degree requirements are satisfied. However, dissertation credits can be taken during the same semester as the dissertation defense. A minimum of 2 semesters must elapse between the comprehensive exam and dissertation defense.

Failure to pass an exam does not necessarily mean removal from the Ph.D. program. Students may be given the option to continue the program or pursue a Master of Science degree after discussion with their major advisor and (or) academic dean. Note that for each of the exam stages (e.g., qualifying exam, comprehensive exam, and dissertation defense), when an Master of Science degree-holding student does not pass, they may not be allowed to continue in the program. Such a case will be dealt with on an individual basis with active participation from the graduate dean.

Students should consult the Graduate School website for specific information regarding the completion of the degree and submission of the dissertation.

Prefix	Title	Credits		
Required Courses			RGSC 575	Climate Studies, Water and Society
BIOL 540	Science and Ethics	2	RGSC 585	Land Cover Analysis for Natural Resources
Take 2 credits of Doctoral Seminar			Independent Study: Eligible courses	
FWCE 690	Doctoral Seminar	2	FWCE 535	Special Topics
Take 18 credits of Doctoral Dissertation after Comprehensive Exam			FWCE 548	Graduate Problems
FWCE 700	Doctoral Dissertation	18	FWCE 699	Doctoral Research
Elective Courses - Courses from 450-600			Total Credits	
Other courses that can count towards electives for degree requirements:			66	
A ST 505	Statistical Inference I			
A ST 506	Statistical Inference II			
A ST 507	Advanced Regression			
A ST 509	Statistical Models for Complex Data Structures			
A ST 511	Statistical Methods for Data Analytics			
A ST 515	Statistical Analysis with R			
A ST 540	Predictive Analytics			
A ST 550	Special Topics			
A ST 555	Applied Multivariate Analysis			
A ST 568	Applied Linear Models II			
FWCE 509	Population Ecology			
FWCE 523	Model Selection and Multimodel Inference in Ecology			
FWCE 526	Demographic Modeling and Bayesian Inference in Modern Wildlife Management			
FWCE 557	Ecological Biometry			
Ecological Concepts, Organismal Biology, Ecological Techniques				
BIOL 562	Advanced Genomics Technology			
BIOL 566	Advanced Bioinformatics and NCBI Database			
BIOL 568	Communities and Ecosystems			
BIOL 587	Behavioral and Evolutionary Ecology			
BIOL 581	Physiology of Animals			
FWCE 510	Wildlife Ecology Teaching Practicum			
FWCE 512	Scientific Writing			
FWCE 524	Structured Decision Making in Fish and Wildlife Management			
FWCE 525	Evidence-Based Conservation and Management			
FWCE 530	Large Mammal Ecology, Conservation and Management			
FWCE 531	Mammalogy			
FWCE 532	Environmental Biology of Fishes			
FWCE 537	Wildlife Damage Management			
FWCE 541	Conservation Genetics			
FWCE 542	Wildlife Disease Ecology and Management			
FWCE 546	Conservation Social Sciences			
FWCE 547	Wildlife Law and Policy			
FWCE 559	Aquatic Ecology			
FWCE 567	Herpetology			
FWCE 571	GIS for Natural Resource Scientists			
FWCE 582	Ichthyology			
GEOG 552	Landscape Ecology			
GEOG 557	Biogeography			
GEOG 573	Introduction to Remote Sensing			
GEOG 578	Fundamentals of GIS			
RGSC 513	Advanced Rangeland Ecology			
RGSC 516	Arid Land Management			
RGSC 518	Watershed Methods and Management			