FISHERIES AND WILDLIFE SCIENCE (AQUATIC ECOLOGY AND MANAGEMENT) - BACHELOR OF SCIENCE IN FISH, WILDLIFE AND CONSERVATION ECOLOGY

The Department of Fish, Wildlife and Conservation Ecology prepares you for careers in a variety of natural resource fields related to the management of wild animal populations and the natural systems they share.

To graduate, an overall grade point average of 2.0 is required in courses taken in the major field and in all courses taken at NMSU. In addition, each required course must be passed with a grade of C- or better. The department offers a minor in Fish, Wildlife and Conservation Ecology for students majoring in other disciplines. The minor includes a minimum of 18 credit hours.

The Aquatic Ecology and Management Concentration is for students who want to focus on fish and aquatic systems.

Students must complete all University degree requirements, which include: General Education requirements, Viewing a Wider World requirements, and elective credits to total at least 120 credits with 48 credits in courses numbered 300 or above. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

Prefix	Title	Credits
General Education		
Area I: Communications		
English Composition - Level 1		
ENGL 1110G	Composition I	4
or ENGL 1110H	Composition I Honors	
English Composition - Level 2		
ENGL 2210G	Professional and Technical Communication	3
or ENGL 2210H	Professional and Technical Communication	
Oral Communication		
Select one from the following:		3
ACOM 1130G	Effective Leadership and Communication in Agriculture	
COMM 1115G	Introduction to Communication	
or HNRS 2175G	Introduction to Communication Honors	
COMM 1130G	Public Speaking	
Area II: Mathematics		
MATH 1430G	Applications of Calculus I [1]	3-4
or MATH 1511G	Calculus and Analytic Geometry I	
or MATH 1511H	Calculus and Analytic Geometry I Honors	
Area III/IV: Laboratory Sciences and Social/Behavioral Sciences		*11*
ECON 2110G	Macroeconomic Principles	
or ECON 2120G	Principles of Microeconomics Honors	
BIOL 2610G & BIOL 2610L	Principles of Biology: Biodiversity, Ecology, and Evolution and Principles of Biology: Biodiversity, Ecology, and Evolution Laboratory	
Select one from the following:		
PHYS 1115G	Survey of Physics with Lab	
PHYS 1230G & PHYS 1230L	Algebra-Based Physics I and Algebra-Based Physics I Lab	
Area V: Humanities [2]		*3*
Area VI: Creative and Fine Arts [2]		*3*
General Education Elective		
BIOL 2110G & BIOL 2110L	Principles of Biology: Cellular and Molecular Biology and Principles of Biology: Cellular and Molecular Biology Laboratory	4
Viewing a Wider World [3]		**3**
The second VWW requirment (3 credits) may be filled with the 9-credit hour rule. Please see your advisor for more information.		
Departmental/College Requirements		
Departmental Core Courses (29 credits)		
FWCE 1110G	Introduction to Natural Resources Management [4]	4
or FWCE 1120	Contemporary Issues in Wildlife and Natural Resources Management	
FWCE 2110	Principles of Fish and Wildlife Management	3
FWCE 301	Wildlife Ecology	3
FWCE 330	Natural History of the Vertebrates	4
FWCE 391	Internship	1
FWCE 393	Professional Experience and Communication	3
FWCE 402	Seminar in Natural Resource Management	1
FWCE 409	Introduction to Population Ecology	3
FWCE 457	Ecological Biometry	3
FWCE 464	Fish and Wildlife Management, Law, and Policy	
or FWCE 325	Human Dimensions of Fish and Wildlife	
Departmental Botany Requirements (9 credits)		
BIOL 312	Plant Taxonomy	3
or RGSC 316	Rangeland Plants	
BIOL 313	Structure and Function of Plants	3
Select one from the following:		3
BIOL 314	Plant Physiology	
RGSC 325	Rangeland Restoration Ecology	
RGSC 357	Grass Taxonomy and Identification	
RGSC 440	Rangeland Resource Ecology	
Departmental Physiology Requirements (3-4 credits)		
Select 3-4 credits from the following:		3-4
ANSC 370	System Physiology of Farm Animals	
BIOL 314	Plant Physiology	
BIOL 381	Animal Physiology	
FWCE 432	Environmental Biology of Fishes	
Concentration Coursework		
Techniques		
FWCE 357	Fisheries Management and Analysis	4
Management		
Choose one from the following:		3-4
FWCE 434	Aquatic Contaminants and Toxicology	
FWCE 459	Aquatic Ecology	
RGSC 318	Watershed Management	
Organismal Biology		

Choose one from the following: [5]		3-4
EPWS 462	Parasitology	
FWCE 467	Herpetology	
FWCE 482	Ichthyology	
Wildlife Ecology and Management Electives [6]		*3-4*
Non-Departmental Requirements (in addition to Gen.Ed/VWW) [7]		
AGRO 305	Principles of Genetics	3
or BIOL 305	Principles of Genetics	
A ST 311	Statistical Applications	3
BIOL 322	Zoology	3
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM Majors	4
CHEM 1225G	General Chemistry II Lecture and Laboratory for STEM Majors	4
Select one from the following:		4
GEOL 1110G	Physical Geology	
SOIL 2110 & 2110L	Introduction to Soil Science and Introduction to Soil Science Laboratory	
Second Language: (not required)		
Electives, to bring the total credits to 120 [8]		**4-9**
Total Credits		**117**

1 MATH 1430G Applications of Calculus I or MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1430G or MATH 1511G first.

2 See General Education (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/) section of the catalog for a full list of courses.

3 See Viewing a Wider World (https://catalogs.nmsu.edu/nmsu/general-education-viewing-wider-world/#viewingawiderworldtext) section of the catalog for a full list of courses.
Three credits can be taken inside the College of ACES, but three credits must also be taken outside the College of ACES or 9 credits can be taken within a single department (e.g. Biology) that is outside the College of Aces.

4 Off campus students can take FWCE 1120 Contemporary Issues in Wildlife and Natural Resources Management Distance Education.

5 At least one course chosen must be a vertebrate taxonomy course with FWCE prefix, i.e., one of FWCE 467 Herpetology or FWCE 482 Ichthyology.

6 Wildlife Concentration Electives (any course for 3-4 credits from the Techniques, Management or Organismal Biology areas):

Techniques

- FWCE 355 Wildlife Management and Analysis

Management

- FWCE 437 Wildlife Damage Management
- FWCE 447 Wildlife Law and Policy
- RGSC 325 Rangeland Restoration Ecology

Organismal Biology

- BIOL 484 Animal Communication
- EPWS 303 Economic Entomology
- EPWS 462 Parasitology
- FWCE 430 Avian Field Ecology
- FWCE 431 Mammalogy
- FWCE 467 Herpetology

7 Students intending to pursue graduate studies should also take CHEM 2115 Survey of Organic Chemistry and Laboratory.

8 Elective credit may vary based on General Education course selection, prerequisites, dual credit, AP credit, double majors, and/or minor coursework. The amount indicated in the requirements list is the amount needed to bring the total to 120 credits and may appear in variable form based on the degree. However students may end up needing to complete more or less on a case-by-case basis and students should discuss elective requirements with their advisor.

Additional Electives

Take additional credits so the total adds up to at least 120 credits including 55 credits 300- and 400-level classes.

Students are encouraged to pursue a minor course of study with a department of their choosing.

Compatible minors include, but are not limited to:

- animal science,
- biology,
- chemistry,
- environmental science,
- forensic sciences,
- geography,
- journalism,
- management,
- and range science.

Notes:

1. No more than 6 credits of Physical Education classes will count towards your degree.
2. Maximum of two grades of 'D' in FWCE classes will count towards a student's degree.