Wildlife and Fisheries Resources

Degree Offered
- Master of Science

Nature of the Program
The Wildlife and Fisheries Resources Program at WVU is dedicated to developing the next generation of young fisheries and wildlife professionals. This program offers two levels of advanced degree with a master of science in wildlife and fisheries resources and a Ph.D. in forest resources available. At the M.S. or Ph.D. level, students work closely with their faculty advisor and mentor to develop a unique research program that will prepare them for a career in this field. Students typically focus on either wildlife or fisheries for these advanced degrees. Coursework for these degrees varies depending upon the career goals of the student, past course history, and educational needs for the intended research project. Since 2011, we have required that all graduates complete necessary coursework to obtain professional certification as a biologist by The Wildlife Society or The American Fisheries Society by the time of graduation. Typically all students take two semesters of statistics (STAT 511 and 512) and an advanced GIS class. Students interested in graduate study in our program can apply online through the graduate admissions office but are encouraged to contact faculty members who may share their research interests.

Admissions
Students seeking admission for the degree of Master of Science in wildlife and fisheries resources should have completed an undergraduate curriculum emphasizing wildlife and/or fisheries sciences. A student whose undergraduate degree is in a field other than this discipline will ordinarily be required to take supplemental undergraduate courses as part of their degree work. Students selecting this graduate program may emphasize in either wildlife or fisheries resources in their studies. The candidate must complete thirty hours of approved study, six hours which shall constitute a thesis, or thirty-six hours of approved study without a thesis but including a three-hour problem paper. For more information, go to: http://wildlife.wvu.edu/.

A candidate for the M.S. degree in Wildlife and Fisheries Resources must meet all University, College, Division, and Program requirements as outlined in the WVU Graduate Catalog.

Program Requirements
All M.S. degree candidates are required to follow a planned program of study. The student develops the plan of study during their first year in the program in conjunction with the graduate committee. The plan must be approved by the Director of the Division and the Associate Dean for Academic Affairs of the Davis College.

A minimum cumulative GPA of 3.0 is required in all courses applied toward degree requirements.

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<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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<td>WMAN 694A</td>
<td>Seminar</td>
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<tr>
<td>WMAN 770</td>
<td>Wildlife Seminar</td>
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<td>FOR 698</td>
<td>Thesis or Dissertation</td>
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<td>FOR 797</td>
<td>Research</td>
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<tr>
<td>500, 600, or 700 level in BIOL, ENVP, ENTO, FMAN, FOR, GEN, GEOG, GEOL, RESM, STAT, WMAN</td>
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Thesis Proposal
Oral Examination
Thesis
Thesis Defense

Total Hours 30

* Students must complete a minimum of 30 total hours, of which at least 24 hours must be coursework other than research, thesis, project, internship, etc. credits.

Major Learning Outcomes
WILDLIFE AND FISHERIES RESOURCES
Upon the successful completion of a Wildlife and Fisheries Resources degree students will be able to:

- Demonstrate mastery of historic and contemporary wildlife or fisheries topics.
- Critique and assess peer-reviewed literature and apply research findings to the conservation and management of wildlife and fisheries resources.
• Conduct and defend original research focused on wildlife or fisheries that includes project design, collecting, analyzing and interpreting data, publishing results in scientific journals, and presenting results to scientific audiences.

COURSES

WMAN 512. Advanced Wildlife Population Ecology. 3 Hours.
PR: WMAN 313 or equivalent, or consent. Case history approach to wildlife population ecology with emphasis on ungulates, gallinaceous birds, large predators; forest invertebrates and their vertebrate predators; endangered species; genetics and conservation of wildlife populations. Emphasis on current and historical literature. (3 hr. lec.).

WMAN 534. Ecology and Management of Upland Wildlife. 4 Hours.
PR: Consent. Ecology and management of upland game birds and mammals with emphasis on recent literature. (Offered in fall of even years.)

WMAN 536. Ecology and Management of Wetland Wildlife. 4 Hours.
PR: Consent. Ecology and management of waterfowl and wetland fur bears with emphasis on recent research and management literature.

WMAN 547. Applied Wetlands Ecology and Management. 3 Hours.
The management and ecology of wetland vegetation, soils, hydrology, and wildlife. (Cross listed as CE 547 and PLSC 547.)

WMAN 550. Fish Ecology. 3 Hours.
PR: WMAN 445. Study of the interrelations between fish and the biotic and abiotic environment and the influence of these interactions upon fisheries. Includes trophic dynamics, reproductive ecology, predatory-prey interactions, and anthropogenic factors.

WMAN 593A. Special Topics. 1-6 Hours.

WMAN 530. Conservation Genetics. 3 Hours.
Study of population genetic concepts relevant to small fish and wildlife populations, with a focus on interpretation of the management implications of genetic data and current application of conservation genetics.

WMAN 533. Quantitative Ecology. 3 Hours.
PR: STAT 511 or equivalent, and WMAN 313 or equivalent. A survey of techniques and strategies for the quantitative analysis of complex ecological data sets.

WMAN 539. Conservation Biology. 3 Hours.
Discussion of current topics in conservation biology, the applied science of maintaining earth’s biological diversity. Emphasis is on current literature with some guest lectures by topic experts.

WMAN 640. Fish Physiology. 3 Hours.
This course will cover all of the physiological systems in fish. Included are sensory, digestive, circulatory, nervous and endocrine, feeding, osmoregulation, movement, reproduction, and development systems.

WMAN 641. Aquatic Toxicology. 3 Hours.
Class will cover toxicity testing, the environmental fate of contaminants and toxicological assessment. The class will emphasize fish toxicity.

WMAN 642. Advanced Fish Management. 3 Hours.
Class covers important topics in fisheries assessment and management. Primary areas discussed include fish sampling, indices, and exploitation and harvest regulations.

WMAN 643. Advanced Ichthyology. 3 Hours.
An in-depth study of fishes, with emphasis on ecology, morphology, systematics, and zoogeography. Identification of fishes within the Appalachian region is emphasized through lab and field study.

WMAN 644. Wildlife Data Analysis 1. 3 Hours.
This course will cover data interpretations, statistical power, data techniques, use of correct data methods and alternatives, and interpretation of results.

WMAN 645. Wildlife Data Analysis 2. 3 Hours.
PR: WMAN 644. This course will cover statistical power and sample size, selection of proper methods, identify assumptions of methods and use of proper alternatives, and identify results.

WMAN 691. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

WMAN 692A-Z. Directed Study. 1-6 Hours.
Directed study, reading, and or research.

WMAN 693A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

WMAN 694A-L. Seminar. 1-6 Hours.
Seminars arranged for advanced graduate students.

WMAN 695. Independent Study. 1-6 Hours.
Faculty supervised study of topics not available through regular course offerings.
WMAN 696. Graduate Seminar. 1 Hour.
PR: Consent. Each graduate student will present at least one seminar to the assembled faculty and graduate student body of his or her program.

WMAN 697. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading may be S/U.)

WMAN 770. Wildlife Seminar. 1 Hour.
Per semester; PR: Consent. May be repeated for a maximum of 4 credit hours.) Discussion of current developments in wildlife management.

WMAN 790. Teaching Practicum. 1-3 Hours.
PR: Consent. Supervised practice in the college teaching of wildlife and fisheries management. Note: This course is intended to insure that graduate assistants are adequately prepared and supervised when they are given college teaching responsibility. It will also present a mechanism for students not on assistantships to gain teaching experience. (Grading will be S/U.)

WMAN 791. Advanced Topics. 1-6 Hours.
PR: Consent. Investigation of advanced topics not covered in regularly scheduled courses.

WMAN 792. Directed Study. 1-6 Hours.
Directed study, reading and/or research.

WMAN 793A-Z. Special Topics. 1-6 Hours.
A study of contemporary topics selected from recent developments in the field.

WMAN 797. Research. 1-15 Hours.
PR: Consent. Research activities leading to thesis, problem report, research paper or equivalent scholarly project, or a dissertation. (Grading will be S/U.)

WMAN 798. Thesis or Dissertation. 1-6 Hours.
PR: Consent. This is an optional course for programs that wish to provide formal supervision during the writing of student reports (698), or dissertations (798). Grading is normal.

WMAN 799. Graduate Colloquium. 1-6 Hours.
PR: Consent. For graduate students not seeking coursework credit but who wish to meet residency requirements, use of the University's facilities and participate in its academic and cultural programs. Note: Graduate students who are not actively involved in coursework or research are entitled, through enrollment in their department's 699/799 Graduate Colloquium to consult with graduate faculty, participate in both formal and informal academic activities sponsored by their program, and retain all of the rights and privileges of duly enrolled students. Grading is S/U; colloquium credit may not be counted against credit requirements for masters programs. Registration for one credit of 699/799 graduate colloquium satisfies the University requirement of registration in the semester in which graduation occurs.

WMAN 900. Professional Development. 1-6 Hours.
Professional development courses provide skill renewal or enhancement in a professional field or content area (e.g., education, community health, geology). The continuing education courses are graded on a pass/fail grading scale and do not apply as graduate credit toward a degree program.