

Advisor: Dr. Margaret O'Connell

## **GENERAL INFORMATION**

What do wildlife biologists do? Wildlife biologists work in a variety of jobs including research biologists, educators, law enforcement personnel, planners, impact analyzers, and supervisors or administrators. Wildlife biologists can work for a wide array of employers. Many wildlife biologists work for local, state, or federal agencies. State agencies include the Washington Department of Fish and Wildlife, Washington Department of Natural Resources, and Washington Department of Ecology. Federal agencies that hire wildlife biologists can be with the Department of Interior (U.S. Fish and Wildlife Service, Parks, Bureau of Land Management; Environmental Protection Agency), the Department of Agriculture (U.S. Forest Service; APHIS; Natural Resource Conservation Service), the Department of Commerce (Customs); the Department of Defense (Army Corps of Engineers, many military bases have wildlife biologists on their staff). Others wildlife biologist are employed in the private sector by local utility companies, forestry product companies, and private consulting firms. Many tribal organizations hire wildlife biologists. Different non government organizations (e.g., Audubon Society, Nature Conservancy, World Wildlife Fund) at the regional, national, and international levels hire wildlife biologists. Zoological parks can have research wildlife biologists on their staff.

## **CHOOSING A MAJOR**

Although Eastern Washington University does not have a degree in Wildlife Biology/Management, we do provide that courses that are required by the agencies or organizations that hire wildlife biologists. These agencies will look at the student's coursework; the title of the degree is not the deciding factor. Students interested in Wildlife Biology career typically major in Biology or in Environmental Science with the Biology emphasis. The Biology degree affords a student somewhat more flexibility in selecting electives. If these electives are selected with close consultation with an advisor, the student can design a program that fulfills the basic requirements for employment with different agencies. The course program for the Environmental Sciences with Biology option includes many of these courses that would be recommended for a student and ensures that students receive exposure to a breadth of disciplines in environmental science (e.g., geology, chemistry).

## **PREREQUISITES**

In planning your academic program, you should be aware of your individual needs and career aspirations, but view your preparation from three perspectives: 1) major requirements, 2) graduation requirements, and 3) requirements of different hiring agencies.

**BS IN BIOLOGY WITH ELECTIVES RECOMMENDED FOR WILDLIFE  
BIOLOGY/MANAGEMENT/CONSERVATION**

**Required Biology Courses: 28 credits**

BIOL 171 Biology I	(5)
BIOL 172 Biology II	(5)
BIOL 173 Biology III	(5)
BIOL 270 Biological Investigation	(3)
BIOL 310 Fundamentals of Genetics	(5)
BIOL 490 Department Senior Capstone	(5)

**Select one of the following courses: 5 credits**

BIOL 304 Vertebrate Zoology	(5)
BIOL 302 Botany	(5)
BIOL 303 Invertebrate Zoology	(5)
BIOL 301 Microbiology	(5)

**[Note: Listed in order of applicability for wildlife major, additional course will count towards elective credit for Biology BS (see below)]**

**Select one of the following courses: 4-5 credits**

BIOL 423 Evolution	(5)
BIOL 440 Ecology	(4)

**[Note: Both are recommended, additional course will count towards elective credit for Biology BS (see below)]**

**Select one of the following courses: 5 credits**

BIOL 436 Cell Biology	(5)
BIOL 438 Molecular Biology	(5)

**Select one of the following courses (4–5 credits)**

BIOL 334 Human Anatomy and Physiology III for Biology Majors	(5)
BIOL 351 Principles of Animal Physiology	(4)
BIOL 352 Principles of Plant Physiology	(4)
BIOL 353 Principles of Microbial Physiology	(4)

**Required Supporting Courses: 20 credits**

CHEM 171 General Chemistry	(4)
CHEM 171L General Chemistry Lab	(1)
CHEM 172 General Chemistry	(4)
CHEM 172L General Chemistry Lab	(1)
CHEM 173 General Chemistry	(4)
CHEM 173L General Chemistry Lab	(1)
MATH 161 Calculus I <b>or</b> MATH 380 Elementary Probability and Statistics <b>or</b> BIOL 380 Data Analysis for Biologists	(5)

**ELECTIVE COURSES:** 36 credits (21 must be Biology electives) of upper division (300- or 400-level) courses **with advisor's consent**. Courses recommended for wildlife biologists include

BIOL 411 Field Botany	(5)
BIOL 442 Conservation Biology (alternate years)	(4)
BIOL 443 Wildlife Management (alternate years)	(4)
BIOL 445 Stream Ecology	(5)

BIOL 446 Riparian Ecology	(5)
BIOL 450 Mammalogy (alternate years)	(5)
BIOL 454 Ornithology (alternate years)	(5)
BIOL 462 Ichthyology	(5)
BIOL 481 Freshwater Invertebrate Zoology	(5)
GEOG 323 GIS for Environmental Science	(3)
PLAN 431 Environmental Impact Statements	(3)

The federal register and U. S. Fish and Wildlife Service job requirements can serve as a general guide for preparing oneself for a career in wildlife biology. The course requirements for a wildlife biologist position through the U. S. Fish and Wildlife Service are as follows:

- Entry Wildlife Biologist – 30 semester hours = 45 quarter hours
  - 12 [18] hours – general biology, zoology/biology (vertebrate + invertebrate zoology; physiology; genetics; ecology; cell biology, molecular biology)
  - 9 [13.5] hours – wildlife subjects (wildlife management; mammalogy; ornithology; conservation biology)
  - 9 [13.5] hours – botany or related plant courses (botany, field botany, limnology)
- Research Wildlife Biologist – Additional courses
  - 15 [22.5] hours – statistics; chemistry; physics; geology; GIS

The requirements for the different GS (government service) levels are as follows:

- GS-5 Bachelor's degree
- GS-7 One year experience beyond BS
- GS-9 Two years experience or Masters
- GS-11 Three years experience or PhD

Your academic record is the best indication that potential employers or graduate schools will have in their assessment of your ability. It is very important to maintain as high a GPA as possible.

## **BEYOND THE COURSEWORK**

While you are at EWU you should always work closely with your advisor. In addition to academic advice, he or she can help you identify scholarships and potential avenues to gain hands-on experience in wildlife biology. This experience is often a critical factor and can include independent research, work study, and internships.

While you are a student:

- Become aware of scholarship opportunities. In addition to general university scholarships, there are several for Biology and Environmental Science majors. Check out the scholarship information center near the Biology Office in SC 258. There are two scholarship opportunities specifically for students interested in wildlife careers: the Safari Club Scholarship and the Richard Fitzner Memorial Scholarship.
- Investigate opportunities for volunteer work with local agencies. Turnbull National Wildlife Refuge, Conservation Northwest, WA Department of Fish and Wildlife, and Inland Northwest Land Trust are a few possibilities for volunteer work. Such work gives you a sense of the different types of jobs available as well as introduces you to local professionals.
- Look into different opportunities for summer jobs or internships in wildlife areas. Be proactive and plan ahead. For example, The National Science Foundation (NSF) funds Undergraduate

Research Programs around the country, many of these have a wildlife biology/conservation component. Visit the NSF [http://www.nsf.gov/crssprgm/reu/list\\_result.cfm?unitid=5047](http://www.nsf.gov/crssprgm/reu/list_result.cfm?unitid=5047)

- Join organizations both on campus and in the community (e.g., Audubon Club,) these help you get involved and meet people.

## **GOING ON FOR A GRADUATE DEGREE**

Many positions in the wildlife conservation field, especially the more challenging ones, require education beyond the bachelor degree level. Often, these positions offer greater opportunities for advancement. They include positions in research, teaching, management and administration. At an early date in your training, consider the desirability of taking graduate studies to secure a master's or doctor's degree. It is very important to work with your advisor at each step (e.g., planning for, finding a school and graduate advisor, identifying funding sources to support your graduate studies, and applying to the schools). Again, your academic record is the best indication that potential graduate schools will have in their assessment of your ability. It is very important to maintain as high a GPA as possible; most schools require a GPA of  $\geq 3.0$ . Most schools will also require that you take the general GRE exam. Some schools might also require that you take the Biology Subject GRE. It is a very good idea to obtain a study guide book for the GRE and take practice exams.

## **USE THE WEB**

There are many resources available on the internet to help you identify jobs (e.g., <http://www.ecojobs.com/>, the websites of the different agencies or organizations) and internships (<http://www.thesca.org/>; <http://www.americorps.org/>; <http://www.peacecorps.gov/>). Also use the web to research different university graduate programs.

## **QUESTIONS, contact:**

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***Biology ETS Field Exam required for graduation.***

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