Wildlife and Fisheries Science, B.S.

Program Description
The purpose of the Wildlife and Fisheries Science major is to develop the knowledge, skills, and professional ethics of undergraduates interested in the conservation and management of fish and wildlife and their environments. The curriculum is designed to provide a broad-based science background that incorporates natural resource management principles that prepare our students for a diverse array of opportunities such as graduate school, natural resource management agencies, consulting firms, non-profits, etc. Students can choose from two options:

1. Wildlife Option
2. Fisheries Option

Each option enables students to gain greater depth of knowledge in one area of the discipline. Coursework required for the Wildlife option meets The Wildlife Society's requirements for professional certification, and coursework required for the Fisheries option meets the American Fisheries Society's requirements for professional certification.

What is Wildlife and Fisheries Science?
Wildlife and Fisheries Science includes study of the conservation, management, ecology, behavior, and identification of wildlife and fish species; the terrestrial and aquatic habitats where they live; and application of that knowledge to conserve and manage biodiversity and ecosystems. The program includes applied outdoor lab experiences that complement course work, and bird, mammal, reptile, and amphibian collections facilitate hands-on learning and species identification.

MORE INFORMATION ABOUT WILDLIFE AND FISHERIES SCIENCE (http://ecosystems.psu.edu/majors/wfs)

You Might Like this Program If...
- You are concerned about society's impact on biodiversity and ecosystems.
- You are interested in conservation and management of wildlife and fish species.
- You want a career that combines indoor and outdoor activities with the opportunity to work in settings such as state or federal natural resource agencies, nonprofits, zoos and aquaria, or consulting firms.

Entrance to Major
In order to be eligible for entrance to this major, a student must:

1. attain at least a C (2.00) cumulative grade-point average for all courses taken at the University; and
2. have third-semester classification (http://www.registrar.psu.edu/registration/semester_classification.cfm).

READ SENATE POLICY 37-30: ENTRANCE TO AND CHANGES IN MAJOR PROGRAMS OF STUDY (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/37-00-entrance-to-a-college-or-major)

Degree Requirements
For the Bachelor of Science in Wildlife and Fisheries Science, a minimum of 120 credits is required for the Wildlife option and a minimum of 122 credits is required for the Fisheries option:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Electives</td>
<td>3-9</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>87-95</td>
</tr>
</tbody>
</table>

21 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 9 credits of GN courses; 6 credits of GQ courses; 3 credits of GS courses; 3 credits of GWS courses.

General Education
Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (http://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program) section of the Bulletin and consult your academic adviser.

The cornerstone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required.)
- Quantification (GQ): 6 credits
- Writing and Speaking (GWS): 9 credits

Knowledge Domains
- Arts (GA): 6 credits
- Health and Wellness (GHW): 3 credits
- Humanities (GH): 6 credits
- Social and Behavioral Sciences (GS): 6 credits
- Natural Sciences (GN): 9 credits

Integrative Studies (may also complete a Knowledge Domain requirement)
- Inter-Domain or Approved Linked Courses: 6 credits

University Degree Requirements
First Year Engagement
All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.
Cultures Requirement
6 credits are required and may satisfy other requirements
- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80). For more information, check the Suggested Academic Plan for your intended program.

Requirements for the Major
To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44. To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44.

Common Requirements for the Major (All Options)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 110</td>
<td>Biology: Basic Concepts and Biodiversity</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 240W</td>
<td>Biology: Function and Development of Organisms</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>Chemical Principles I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>Experimental Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 202</td>
<td>Fundamentals of Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 104</td>
<td>Introductory Macroeconomic Analysis and Policy</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 202C</td>
<td>Effective Writing: Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>PHYS 250</td>
<td>Introductory Physics I</td>
<td>4</td>
</tr>
<tr>
<td>SOILS 101</td>
<td>Introductory Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>WFS 446</td>
<td>Wildlife and Fisheries Population Dynamics</td>
<td>3</td>
</tr>
</tbody>
</table>

Prescribed Courses: Require a grade of C or better

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 220W</td>
<td>Biology: Populations and Communities</td>
<td>4</td>
</tr>
<tr>
<td>WFS 209</td>
<td>Wildlife and Fisheries Conservation</td>
<td>3</td>
</tr>
<tr>
<td>WFS 300</td>
<td>The Vertebrates</td>
<td>2</td>
</tr>
<tr>
<td>WFS 301</td>
<td>Vertebrate Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>WFS 310</td>
<td>Wildlife and Fisheries Measurements</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 350</td>
<td>Forest Ecosystem Monitoring and Data Analysis</td>
<td>3</td>
</tr>
</tbody>
</table>

or STAT 460 Intermediate Applied Statistics

| MATH 111 | Techniques of Calculus II                      | 2-4     |
| or MATH 141 | Calculus with Analytic Geometry II           |         |
| STAT 240 | Introduction to Biometry                      | 3       |
| or STAT 301 | Statistical Analysis I                  |         |

Select 3-4 credits of the following: 3-4

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSC 322</td>
<td>Animal Genetics and Selection</td>
<td></td>
</tr>
<tr>
<td>BIOL 133</td>
<td>Genetics and Evolution of the Human Species</td>
<td></td>
</tr>
<tr>
<td>BIOL 222</td>
<td>Genetics</td>
<td></td>
</tr>
<tr>
<td>BIOL 230W</td>
<td>Biology: Molecules and Cells</td>
<td></td>
</tr>
</tbody>
</table>

Select 3 credits of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
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<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AEE 440</td>
<td>Communication Methods and Media</td>
<td></td>
</tr>
<tr>
<td>ENGL 416</td>
<td>Science Writing</td>
<td></td>
</tr>
<tr>
<td>ENGL 418</td>
<td>Advanced Technical Writing and Editing</td>
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</tr>
</tbody>
</table>

Additional Courses: Require a grade of C or better

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 110</td>
<td>Techniques of Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>or MATH 140</td>
<td>Calculus with Analytic Geometry I</td>
<td></td>
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</tbody>
</table>

Supporting Courses and Related Areas
Select 6 credits in natural resource economics, policy, planning, law, administration, or human dimensions from departmental list.

Requirements for the Option
Select an option 18-23

Requirements for the Option
Fisheries Option (22-23 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFS 410</td>
<td>General Fishery Science</td>
<td>3</td>
</tr>
<tr>
<td>WFS 452</td>
<td>Ichthyology</td>
<td>2</td>
</tr>
<tr>
<td>WFS 453</td>
<td>Ichthyology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>WFS 463</td>
<td>Fishery Management</td>
<td>3</td>
</tr>
<tr>
<td>WFS 407</td>
<td>Ornithology</td>
<td></td>
</tr>
<tr>
<td>WFS 408</td>
<td>Mammalogy</td>
<td></td>
</tr>
<tr>
<td>WFS 447</td>
<td>Wildlife Management</td>
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</tr>
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</table>

Select 3 credits of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENT 425</td>
<td>Freshwater Entomology</td>
<td>3</td>
</tr>
<tr>
<td>FOR 470</td>
<td>Watershed Management</td>
<td></td>
</tr>
<tr>
<td>WFS 422</td>
<td>Ecology of Fishes</td>
<td></td>
</tr>
<tr>
<td>WFS/ERM 435</td>
<td>Limnology</td>
<td></td>
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</table>

Select 3 credits of the following: 3

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>GEOG 160</td>
<td>Mapping Our Changing World</td>
<td>3</td>
</tr>
<tr>
<td>GEOG 363</td>
<td>Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>GEOG 303</td>
<td>Introduction to Environmental Geology</td>
<td></td>
</tr>
<tr>
<td>GEOG 340</td>
<td>Geomorphology</td>
<td></td>
</tr>
<tr>
<td>GEOG 412</td>
<td>Water Resources Geochemistry</td>
<td></td>
</tr>
</tbody>
</table>
WFS 400  Animal Ecology
WFS 406  Ornithology Laboratory
WFS 407  Ornithology
WFS 452  Ichthyology
WFS 453  Ichthyology Laboratory
WFS 463  Fishery Management

Select 3 credits of the following:
- BIOL 414  Taxonomy of Seed Plants
- FOR 308  Forest Ecology
- HORT 101  Horticultural Science
- HORT 138  Ornamental Plant Materials
- HORT 445  Plant Ecology

Program Learning Objectives

1. Students will be able to evaluate the potential population level effect of alternative management actions based on development of appropriate population dynamics models; for example, students might explore the effect of supplementing an endangered species or the effect of different harvest regulations on a game species.

2. Students will be able to identify wildlife and fish species and quantify relevant attributes of their life history and critical habitat.

3. Students will have the ability to select and use appropriate techniques for a given purpose such as selection of field samples, observation of biota in the field or lab, measurement of habitat attributes, and analysis of data.

Academic Advising

The objectives of the university’s academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee’s unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

**Wildlife Option (18-19 credits)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 203</td>
<td>Field Dendrology</td>
<td>3</td>
</tr>
<tr>
<td>WFS 407</td>
<td>Ornithology</td>
<td>3</td>
</tr>
<tr>
<td>WFS 408</td>
<td>Mammalogy</td>
<td>3</td>
</tr>
<tr>
<td>WFS 447</td>
<td>Wildlife Management</td>
<td>3</td>
</tr>
</tbody>
</table>

**Additional Courses**

- WFS 406  Ornithology Laboratory
- or WFS 409  Mammalogy Laboratory

Select 2-3 credits of the following:
- WFS 410  General Fishery Science
- WFS 422  Ecology of Fishes
- WFS 452  Ichthyology
- WFS 453  Ichthyology Laboratory
- WFS 463  Fishery Management

**Academic Advising**

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**University Park**

**Ellen A. Rom**
Coordinator of Undergraduate Programs and Alumni Relations
114 Forest Resources Building
University Park, PA 16802
814-863-0362
exr2@psu.edu

**Suggested Academic Plan**

The suggested academic plan(s) listed on this page are the plan(s) that are in effect during the 2019-20 academic year. To access previous years’ suggested academic plans, please visit the archive (http://bulletins.psu.edu/undergraduate/archive) to view the appropriate Undergraduate Bulletin edition (Note: the archive only contain suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin).

**Fisheries Option, University Park Campus**

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

**First Year**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 110†</td>
<td>4</td>
<td>CHEM 110†</td>
<td>3</td>
</tr>
<tr>
<td>MATH 110 or 140*†</td>
<td>4</td>
<td>CHEM 111†</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 15, 30, or ESL 15†</td>
<td>3</td>
<td>General Education Course</td>
<td>3</td>
</tr>
<tr>
<td>General Education Course</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>First-Year Seminar</td>
<td>1-3</td>
<td>MATH 111 or 141</td>
<td>2-4</td>
</tr>
<tr>
<td>WFS 209†</td>
<td>3</td>
<td></td>
<td></td>
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<td></td>
<td>15-17</td>
<td></td>
<td>15-17</td>
</tr>
</tbody>
</table>

**Second Year**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSC 201, BIOL 141 and BIOL 142, or BIOL 446</td>
<td>3-4</td>
<td>PHYS 250</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 220W†</td>
<td>4</td>
<td>BIOL 240W</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 202</td>
<td>3</td>
<td>CAS 100, 100A, 100B, or 100C††</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 133, 222, 230W, or ANSC 322</td>
<td>3-4</td>
<td>SOILS 101†</td>
<td>3</td>
</tr>
<tr>
<td>STAT 240 or 301†</td>
<td>3</td>
<td>General Education Course</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>16-18</td>
<td></td>
<td>17</td>
</tr>
</tbody>
</table>

**Third Year**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WFS 300†</td>
<td>2</td>
<td>FOR 350 or STAT 460</td>
<td>3</td>
</tr>
<tr>
<td>WFS 301*</td>
<td>2</td>
<td>ENT 425, FOR 470, WFS 422, or WFS 435</td>
<td>3</td>
</tr>
<tr>
<td>WFS 310*</td>
<td>3</td>
<td>Wildlife Selection</td>
<td>3</td>
</tr>
<tr>
<td>WFS 452</td>
<td>2</td>
<td>ECON 104†</td>
<td>3</td>
</tr>
</tbody>
</table>

**Note:**
- The archive only contain suggested academic plans beginning with the 2018-19 edition of the Undergraduate Bulletin.
- Read Senate Policy 32-00: Advising Policy (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy)
- Suggested Academic Plan
- Academic Advising
- Program Learning Objectives
replace both ENGL 30 and CAS 100. Each course is 3 credits.

All incoming Schreyer Honors College first-year students at University

WFS classes are offered only once per year, in the fall or the

• All WFS students should change their campus location to University
  Park by the start of their junior year (fifth semester).
  • When a required course has both a lecture and practicum portion,
    such as PHYS 250L and PHYS 250R, students are required to take
  both portions.
  • Courses that are listed as both US or IL and GA, GH, or GS can count
    for both requirements (i.e., a course listed for both GA and IL will
    satisfy both Arts and International Cultures).
  • Students should monitor their academic progress by checking their
degree audits in LionPATH.
  • Questions about WFS academic plans or degree audits should be
    directed to academic advisers or to WFS Program Coordinator Ellen
    Rom, exr2@psu.edu or 814-863-0362.

Wildlife Option, University Park Campus

The course series listed below provides only one of the many possible

• Course satisfies General Education and degree requirement
  • Course requires a grade of C or better for the major
  † Course requires a grade of C or better for General Education
  # Course is an Entrance to Major requirement
  † Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy
University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used
to designate courses that satisfy University Writing Across the Curriculum
requirement.

GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify
General Education program courses. General Education includes
Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH,
and Integrative Studies). Foundations courses (GWS and GQ) require
a grade of ‘C’ or better.

Integrative Studies courses are required for the General Education
program. N is the suffix at the end of a course number used to designate
an Inter-Domain course and Z is the suffix at the end of a course number
used to designate a Linked course.

All incoming Schreyer Honors College first-year students at University
Park will take ENGL/CAS 137 in the fall semester and ENGL/CAS 138
in the spring semester. These courses carry the GWS designation and
replace both ENGL 30 and CAS 100. Each course is 3 credits.

Advising Notes:

• All supporting course selections are listed in the WFS Handbook,
  which is available on the department’s website (http://
ecosystems.psu.edu), under Student Resources, Student Handbooks.
• In the WFS program, either STAT 200 or STAT 250 is accepted as a
  substitute for the “STAT 240 or 301” requirement. It is important to
  complete STAT before the start of your fifth semester.
• Many WFS classes are offered only once per year, in the fall or the
  spring; plan your schedule accordingly.

Wildlife and Fisheries Science, B.S.
Advising Notes:

- Courses that are listed as both US or IL and GA, GH, or GS can count for both requirements (i.e., a course listed for both GA and IL will satisfy both Arts and International Cultures).
- Students should monitor their academic progress by checking their degree audits in LionPATH.
- Questions about WFS academic plans or degree audits should be directed to academic advisers or to WFS Program Coordinator Ellen Rom, exr2@psu.edu or 814-863-0362.

Fisheries Option, Commonwealth Campuses

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 110†</td>
<td>4 CHEM 110†</td>
<td>3</td>
</tr>
<tr>
<td>MATH 110 or 140‡†</td>
<td>4 CHEM 111†</td>
<td>1</td>
</tr>
<tr>
<td>ENGL 15, 30, or ESL 15††</td>
<td>3 MATH 111 or 141</td>
<td>2-4</td>
</tr>
<tr>
<td>General Education Course</td>
<td>3 BIOL 220W*</td>
<td>4</td>
</tr>
<tr>
<td>First-Year Seminar</td>
<td>3-4 General Education Course</td>
<td>3</td>
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</table>

15-17 14.5-16.5

Second Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANSC 201, BIOL 141 and BIOL 142, or BIOL 446</td>
<td>3-4 PHYS 250</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 202</td>
<td>3 CHEM 250</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 133, 222, 230W, or CHEM 230W</td>
<td>3-4 ENGL 202C††</td>
<td>3</td>
</tr>
<tr>
<td>STAT 240 or 301††</td>
<td>3 ECON 104†</td>
<td>3</td>
</tr>
<tr>
<td>CAS 100††</td>
<td>3 General Education Course</td>
<td>3</td>
</tr>
</tbody>
</table>

15-17 17

Third Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits Spring</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>WFS 209*</td>
<td>3 FOR 350 or STAT 460</td>
<td>3</td>
</tr>
<tr>
<td>WFS 300†</td>
<td>2 ENT 425, FOR 470, WFS 422, or WFS 435</td>
<td>3</td>
</tr>
<tr>
<td>WFS 301†</td>
<td>2 SOILS 101†</td>
<td>3</td>
</tr>
<tr>
<td>WFS 310†</td>
<td>3 Natural Resource Policy, Planning, Law, Administration (PPLA) and Human Dimensions (HD) Course</td>
<td>3</td>
</tr>
<tr>
<td>WFS 452</td>
<td>2 Elective</td>
<td>0-4</td>
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<tr>
<td>General Education Course</td>
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15 12-16

Fourth Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits Spring</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WFS 410</td>
<td>3 WFS 463</td>
<td>3</td>
</tr>
<tr>
<td>WFS 453</td>
<td>2 WFS 446</td>
<td>3</td>
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</tbody>
</table>
AEE 440, ENGL 416, or ENGL 418 3 Physical Science Selection 3
Wildlife Selection 3 Natural Resource Policy, Planning, Law, Administration (PPLA) and Human Dimensions (HD) Course 3
General Education Course 3 Elective 3
General Education Course (GHW) 1.5

Total Credits 119-129

* Course requires a grade of C or better for the major
‡ Course requires a grade of C or better for General Education
# Course is an Entrance to Major requirement
† Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).
W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.
GWS, GQ, GHW, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GHW, GN, GA, GH, GS, and Integrative Studies). Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Integrative Studies courses are required for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

Advising Notes:

• All supporting course selections are listed in the WFS Handbook, which is available on the department’s website (http://ecosystems.psu.edu), under Student Resources, Student Handbooks.
• In the WFS program, either STAT 200 or STAT 250 is accepted as a substitute for the “STAT 240 or 301” requirement. It is important to complete STAT before the start of your fifth semester.
• Many WFS classes are offered only once per year, in the fall or the spring; plan your schedule accordingly.
• All WFS students should change their campus location to University Park by the start of their junior year (fifth semester).
• When a required course has both a lecture and practicum portion, such as PHYS 250L and PHYS 250R, students are required to take both portions.
• Courses that are listed as both US or IL and GA, GH, or GS can count for both requirements (i.e., a course listed for both GA and IL will satisfy both Arts and International Cultures).
• Students should monitor their academic progress by checking their degree audits in LionPATH.

• Questions about WFS academic plans or degree audits should be directed to academic advisers or to WFS Program Coordinator Ellen Rom, exr2@psu.edu or 814-863-0362.

Wildlife Option, Commonwealth Campuses

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

First Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 110†</td>
<td>3</td>
</tr>
<tr>
<td>MATH 110 or 140‡†</td>
<td>4 CHEM 110†</td>
</tr>
<tr>
<td>ENGL 15, 30, or ESL 15‡†</td>
<td>3 MATH 111†</td>
</tr>
<tr>
<td>General Education Course</td>
<td>3 BIOL 220W*</td>
</tr>
<tr>
<td>First-Year Seminar</td>
<td>1-3 General Education Course</td>
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</table>

Total Credits 15-17

Second Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 202</td>
<td>3 PHYS 250</td>
</tr>
<tr>
<td>BIOL 133, 222, 230W, or ANSC 322</td>
<td>3-4 BIOL 240W</td>
</tr>
<tr>
<td>STAT 240 or 301‡†</td>
<td>3 ENGL 202C‡†</td>
</tr>
<tr>
<td>CAS 100‡†</td>
<td>3 ECON 104‡†</td>
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<tr>
<td>General Education Courses (GHW)</td>
<td>1.5 General Education Course</td>
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</table>

Total Credits 13.5-14.5

Third Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>WFS 209*</td>
<td>3 FOR 350 or STAT 460</td>
</tr>
<tr>
<td>FOR 203</td>
<td>3 WFS 407 or 408</td>
</tr>
<tr>
<td>WFS 300*</td>
<td>2 WFS 406 or 409</td>
</tr>
<tr>
<td>WFS 301*</td>
<td>2 SOILS 101†</td>
</tr>
<tr>
<td>WFS 310*</td>
<td>3 Elective</td>
</tr>
<tr>
<td>Natural Resource Policy, Planning, Law, Administration (PPLA) and Human Dimensions (HD) Course</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 16

Fourth Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>WFS 447</td>
<td>3 WFS 446</td>
</tr>
<tr>
<td>ENGL 202C‡†</td>
<td>3 WFS 407 or 408</td>
</tr>
<tr>
<td>AEE 440, ENGL 416, or ENGL 418</td>
<td>3 Natural Resource Policy, Planning, Law, Administration (PPLA) and Human Dimensions (HD) Course</td>
</tr>
<tr>
<td>Fisheries Selection</td>
<td>2-3 General Education Course (GHW)</td>
</tr>
</tbody>
</table>

Total Credits 14
Botany Selection 3 Elective 1-5
General Education Course 3

17-18 11.5-15.5

Total Credits 120-130

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Career Paths

Employment in the wildlife and fisheries professions is highly competitive. Related work experience is often required for post-graduation employment. Students get that experience from summer jobs, internships, or independent study projects. Flexibility in job location and willingness to accept seasonal or part-time work can increase employment prospects. Our curriculum can provide a firm base for graduate study, as well as the opportunity to meet certification standards established by The Wildlife Society and the American Fisheries Society, and the academic requirements set by the U.S. Office of Personnel Management for federal employment as a wildlife or fisheries biologist.

Careers

Wildlife/fisheries technician or biologist, ecologist, conservation officer, environmental educator, habitat manager, and zookeeper are just some of the opportunities pursued by Wildlife and Fisheries Science graduates. Employers include the U.S. Fish and Wildlife Service, the National Park Service, the USDA Wildlife Service, the Pennsylvania Game Commission, and conservation districts, as well as nongovernmental organizations and private industry.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES OF THE WILDLIFE AND FISHERIES SCIENCE PROGRAM (http://ecosystems.psu.edu/majors/wfs/careers)

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (http://ecosystems.psu.edu/graduateprograms/wfs)

Professional Resources

• American Fisheries Society (http://fisheries.org)
• The Wildlife Society (http://wildlife.org)

Contact

University Park

DEPARTMENT OF ECOSYSTEM SCIENCE AND MANAGEMENT
Undergraduate Programs Office
113 Forest Resources Building
University Park, PA 16802
814-865-4237
https://ecosystems.psu.edu