Twin Cities Campus

Conservation Biology Ph.D.

Fisheries, Wildlife, and Conservation Biology

College of Food, Agricultural and Natural Resource Sciences

Link to a list of faculty for this program.

- **Students will no longer be accepted into this program after Fall 2016. Program requirements below are for current students only.**
- **Conservation Biology program is now Conservation Sciences.**

Contact Information:
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- Program Type: Doctorate
- Requirements for this program are current for Fall 2018
- Length of program in credits: 48
- This program does not require summer semesters for timely completion.
- Degree: Doctor of Philosophy

Along with the program-specific requirements listed below, please read the General Information section of the catalog website for requirements that apply to all major fields.

The Conservation Biology (CB) Program has two complementary objectives leading to a unique multidisciplinary program. The first is to provide students with sound graduate training in the biological sciences relevant to the global conservation of plants, animals, and ecosystems. The second objective promotes the study of social, political, and economic sciences that relate to recognition and solution of conservation problems. Students may select a named track, fisheries and aquatic biology, which offers an aquatic specialization. Students may also pursue a joint degree in law and conservation biology through the joint law degree program. The overall goal of the program is to prepare students to develop solutions or approaches to address problems that are scientifically and environmentally sound and likely to be acted upon or implemented within their social and political context.

Program Delivery

This program is available:

- via classroom (the majority of instruction is face-to-face)

Prerequisites for Admission

The preferred undergraduate GPA for admittance to the program is 3.50.

Other requirements to be completed before admission:
A B.S./B.A. degree in biology or a closely related field is preferred. Applicants with a baccalaureate degree in another field are accepted, but these individuals may be required to take selected courses in biology. In general, Ph.D. applicants holding a baccalaureate degree are first expected to complete a master's degree.

Special Application Requirements:
A statement of career goals and three letters of recommendation evaluating the applicant's potential for graduate study are required. Letters of recommendation should be sent directly to the Conservation Biology Program Office. Scores less than five years old from the General Test of the GRE are required. TOEFL is required for applicants who speak English as a second language. Applicants to the joint law degree program must also apply to the Law School. Application deadline is January 1. Typically, students are admitted only for fall semester.

Applicants must submit their test score(s) from the following:

- GRE

International applicants must submit score(s) from one of the following tests:

- TOEFL
  - Internet Based - Total Score: 79
  - Internet Based - Writing Score: 21
  - Internet Based - Reading Score: 19
  - Paper Based - Total Score: 550

- IELTS
  - Total Score: 6.5
- MELAB
  - Final score: 80

Key to test abbreviations(GRE, TOEFL, IELTS, MELAB).

For an online application or for more information about graduate education admissions, see the General Information section of the catalog website.

Program Requirements

12 credits are required in the major.
12 credits are required outside the major.
24 thesis credits are required.

This program may not be completed with a minor.

Use of 4xxx courses toward program requirements is permitted under certain conditions with adviser approval.

A minimum GPA of 3.00 is required for students to remain in good standing.

At least 1 semesters must be completed before filing a Degree Program Form.

Ph.D. students complete 48 credits, 24 credits in courses and 24 thesis credits. Students are expected to show competency in both the biological and social sciences. With their advisory committee, students develop a program that emphasizes the ecological and social aspects of conservation biology. Dissertation research may require proficiency in supporting areas (e.g., statistics, computing, communications).

Program Sub-plans

A sub-plan is not required for this program.
Students may not complete the program with more than one sub-plan.

Fisheries and Aquatic Biology

Three-quarters of the global ecosystem is water and most is a global commons. Many biologists and economists argue that freshwater is one of the most critical global resources and that the functional integrity and biodiversity within freshwater and marine ecosystems are highly threatened. The Fisheries and Aquatic Biology (FAB) track is available for M.S., Ph.D., and joint degree students wishing to emphasize this concentration within a CB major. The track name can be indicated on the student's transcript (this is optional) and may be useful to the graduate for obtaining jobs with many federal and state agencies where such expertise is specified in job announcements or hiring criteria. The track designation clearly indicates that the student has specialized coursework and research or project experience leading to expertise in fisheries or aquatic biology. Combined with a typical undergraduate degree in biology or natural resource science, careful selection of courses in the graduate program will satisfy the educational requirements for professional certification by the American Fisheries Society.

Students in the track must be advised or co-advised by a faculty member affiliated with the track. Request for admission to the track may be made during the application process or any time after the student is admitted to the CB graduate program. Students in the track must meet all requirements for the Ph.D. in CB.

Students who designate this track will be expected to work closely with their Student Advisory Committee (SAC) to develop an appropriate course of study. The track coordinator will review each student's academic program to examine how track expectations are met and forward it with a recommendation to the DGS for approval.

In addition to course requirements for the conservation biology major, students in the FAB track must take at least three courses from the following list:
EEB 5601 - Limnology (3 cr)
ENT 5361 - Aquatic Insects (3 cr)
FW 4136 - Ichthyology (4 cr)
FW 4401 - Fish Physiology and Behavior (4 cr)
FW 5003 - Human Dimensions of Biological Conservation (3 cr)
FW 5601 - Fisheries Population Analysis (3 cr)
OR FW 5051 Analysis of Populations - (4 cr)
FW 5604 - Fisheries Ecology and Management (3 cr)

FW 8448 - Fishery Science (3 cr)
FW 8459 - Stream and River Ecology (3 cr)
FW 8465 - Fish Habitats and Restoration (3 cr)
ESPM 5061 - Water Quality and Natural Resource (3 cr)
ESPM 5575 - Wetlands Conservation (3 cr)
EPSM 5111 Hydrology and Water Quality Field Methods (3 cr)
EEB 5605 Limnology Laboratory (2 cr)
EEB 8601 Introduction to Stream Restoration (3 cr)
EEB 8602 Stream Restoration Practice (2 cr)
FR 5114 Hydrology and Watershed Management (3 cr)
FR 5153 Forest and Wetland Hydrology (3 cr)

Other advanced courses or colloquia on fisheries or aquatic biology that are not listed here may also satisfy needs of students in the track. In addition, doctoral students are required to enroll for at least two semesters of FW 8200 - Seminar for 1 credit per semester.