



Major in Biology, B.S.

(Ecology and Conservation Biology Emphasis)

2017-2018

Additional Sources of Information

WEBSITE:

www.swau.edu

DEPARTMENT CONTACTS:

Chair

Arthur Schwarz, Ph.D.

Faculty

Art Chadwick, Ph.D.

Peter McHenry, Ph.D.

Amy McHenry, Ph.D.

Jared Wood, Ph.D.

LOCATION:

Scales Hall

MAIL:

Department of Biological Sciences

100 W. Hillcrest Street

Keene, TX 76059

100 W. Hillcrest Street
Keene TX 76059

(800) 433-2240 TOLL-FREE

(817) 202-6794 PHONE

(817) 556-4712 FAX

www.swau.edu

The need for passionate and skilled ecologists and conservation biologists is increasing as human populations continue to grow, expand, and consume Earth's natural resources. Ecologists study whole organisms and the living and nonliving things around them. Conservation biologists are primarily concerned with preserving biodiversity using applied science. Southwestern Adventist University's Bachelor of Science degree in Biology with an emphasis in Ecology and Conservation Biology offers students the practical and theoretical training necessary for acquiring a job in this highly competitive field. Individuals who want to help protect declining global biodiversity and who enjoy working with animals and in the field will enjoy this hands-on program. Ecology and Conservation Biology students will have the opportunity to take courses in herpetology, ichthyology, ornithology, mammalogy, botany, and wildlife management. In addition, students will receive hands-on training in field sampling techniques such as plant identification, soil analysis, ocean sampling, electrofishing, reptile handling, bird banding, and mammal camera trapping, just to name a few. Furthermore, students will have the opportunity to explore a diverse array of ecosystems on multiday field trips, meet professional field scientists, and work alongside faculty on valuable research projects.

Potential Careers:

Fish/Wildlife Technician, Fish/Wildlife Biologist, Naturalist, Forester, Park Ranger, Game Warden, Natural Resource Manager, Environmental Scientist, Wildlife and Conservation Outreach/Advocacy Specialist, Wildlife Consultant, Environmental Policy Analyst, Environmental Economist, Educator, Zookeeper, Zoo/Museum Curator, Animal Trainer, Aquarist.

Job Market

Zoologists and Wildlife Biologists, Median Pay: \$59,680/year; Job Outlook (next 10 years): 4% growth (slower than average). *Animal Care and Service Workers*, Median Pay: \$21,260; Job Outlook (next 10 years): 11% (faster than average). *Conservation Scientists and Foresters*, Median Pay: \$60,220/year; Job Outlook (next 10 years): 7% (as fast as average). *Environmental Scientists*, Median Pay: \$67,460; Job Outlook (next 10 years): 11% (faster than average).

Source: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, on the Internet at <https://www.bls.gov/ooh/> (visited March 1, 2017).

General Education Requirements:

To view general education requirements for this major please visit catalog.swau.edu/Undergraduate/2017-2018.



CORE CURRICULUM: REQUIRED OF ALL B.S. BIOLOGY STUDENTS

BIOL 111, 112	General Biology.....	8
BIOL 180	Biology Freshman Seminar	1
BIOL 230	Ecology	4
BIOL 320	Genetics.....	4
BIOL 419	Philosophy of Science.....	3

ECOLOGY AND CONSERVATION BIOLOGY EMPHASIS:

BIOL 328	Biostatistics.....	3
BIOL 345	Environment & Mankind	4
BIOL 360	Plant Biology.....	4
BIOL 443	Comparative Vertebrate Anatomy	4
BIOL 475	Fisheries and Wildlife Management	4
BIOL **	Botany Elective	4
BIOL **	Ecology Elective	4
BIOL **	Zoology Elective (x2)	7-8
TOTAL: 36		

**In consultation with the advisor, BIOL 480 Research in Biology, may replace one of the above electives. BIOL 480 is a one credit hour course. In order to count as an elective, it must be repeated three times and a final presentation must be given.

Botany electives:

- BIOL 314 Systematic Botany
- BIOL 465 Plant Physiology

Ecology electives:

- BIOL 335 Limnology
- BIOL 324 Field Ecology

Zoology electives:

- BIOL 312 Ornithology
- BIOL 440 Mammalogy
- BIOL 462 Ichthyology
- BIOL 435 Herpetology

REQUIRED COGNATES

CHEM 111	General Chemistry I.....	4
CHEM 112	General Chemistry II.....	4
COMM 111	Speech	3
CSIS 102	Microcomputer Literacy and Applications <i>or</i>	
CSIS 104	Spreadsheet and Database Applications	1-3
MATH 241	Introduction to Probability & Statistics	3
TOTAL: 15-17		

SAMPLE FOUR-YEAR SCHEDULE

	FIRST SEMESTER	SECOND SEMESTER
First Year	BIOL 111—General Biology I4 CHEM 111—General Chemistry I4 ENGL 121—Freshman Composition.....3 MATH 121—Precalculus	BIOL 112—General Biology II4 CHEM 112—General Chemistry II4 Computer Science Elective.....3 Religion Elective
Second Year	BIOL 230—Ecology.....4 MATH 241—Introduction to Probability and Statistics3 ENGL 220—Research Writing.....3 COMM 111—Speech	BIOL 320—Genetics.....4 BIOL 312—Ornithology.....3 BIOL 328—Biostatistics.....3 History/Social Science Elective.....3 Religion Elective.....3
Third Year	BIOL 443—Comparative Vertebrate Anatomy4 BIOL 462—Ichthyology4 Religion Elective.....3 Literature Elective.....3 KINA Activity Course.....1	BIOL 345—Environment and Mankind.....4 BIOL 360—Plant Biology.....4 BIOL 335—Limnology4 Fine Arts Elective
Fourth Year	BIOL 475—Fisheries and Wildlife Management4 BIOL 435—Herpetology.....4 BIOL 480—Research in Biology1 History Elective	BIOL 314—Systematic Botany4 BIOL 440—Mammalogy.....4 BIOL 419—Philosophy of Science.....3 Religion Elective

= 133 Hours = 42 Hours Upper Division