



Paul Smith's College
THE COLLEGE OF THE ADIRONDACKS

School of Forestry and Natural Resources

Fisheries and Wildlife Sciences

Baccalaureate Program Planning Guide

Academic Year 2011-2012

_____ 's guide

Each student follows the requirements for his/her date of entry to his/her program (not entry to PSC).

This is a **GUIDE** to planning. Official designation of courses is maintained by the Registrar's office.

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Program Mission

Prepare students for entry-level positions or graduate school programs in fisheries and wildlife conservation or related fields.

Program Philosophy

The Fisheries and Wildlife Science Program holds to the philosophy that a series or web of experiential learning opportunities provides a means and model for ‘deeper’, effective learning of science and of management as a continuous process and as a means for personal growth, reflection, and development while a student attends Paul Smith’s College. Furthermore, the program encourages fisheries and wildlife science students to become proficient at observation, comprehension, and enjoyment of the landscape where our college resides, embracing Aldo Leopold’s views of a liberal education (1942 essay):

“Liberal education in wildlife is not merely a dilute dosage of technical education. It calls for somewhat different teaching materials and sometimes even different teachers. The objective is to teach the student to see the land, to understand what he sees, and enjoy what he understands. I say land rather than wildlife, because wildlife cannot be understood without understanding the landscape as a whole. Such teaching could well be called land ecology rather than wildlife, and could serve very broad educational purposes.”

Aldo Leopold

Program Themes and Goals

Theme 1. Science Foundations and Fisheries and Wildlife Conservation. *This theme emphasizes learning introductory knowledge, skills, and competencies in lower division and advanced knowledge, skills, and competencies in upper division courses.*

Goals:

1. Apply science as a body of knowledge and as a method of inquiry.
2. Apply key concepts of biology to fisheries and wildlife organisms, populations, communities, and their habitats.
3. Apply key concepts of ecology to fisheries and wildlife organism, populations, communities, and their habitats.
4. Apply basic math skills to problem solving in fisheries and wildlife populations and their habitat.
5. Apply key principles of physics and chemistry to fisheries and wildlife adaptations.

Theme 2. Major Issues facing Fisheries and Wildlife Conservation. *The major issues are habitat loss and fragmentation, air and water quality, non-indigenous species, resource exploitation, and climate change. This theme emphasizes learning about their history and effects, and the rationale and application of assessment and monitoring programs.*

Goals:

1. Develop a comprehensive understanding of the relation between trends in *human population growth* and *major issues* (past, present, and future) affecting fish and wildlife populations, communities, and their habitat.
2. Explain how *major issues* affect the dynamics of fish and wildlife populations, communities, and their habitats.
3. Articulate scientifically a rationale and justification for assessing and monitoring the effects of *major issues* on fish and wildlife populations, communities, and their habitat.
4. Apply gained knowledge of assessment and monitoring protocols to evaluate the effects of *major issues* on fish and wildlife populations, communities, and their habitats

Theme 3. Natural Resource Management Approaches in Fisheries and Wildlife Conservation. *This theme emphasizes the human dimensions of natural resource management: the environment, the process, approaches, and skills.*

Goals:

1. Delineate the management environment in ecological, economic, political, and socio-cultural terms.
2. Define the cyclic management process as related to an organization's mission statement, goals, objectives, strategies, assessment plan (problem definition), implementation plan (action plan), and evaluation/monitoring program.
3. Articulate the appropriateness of management approaches used to address the issues and problems affecting fisheries and wildlife, their habitats, and humans.
4. Define the skills needed to effectively work with a variety of stakeholders in an interdisciplinary management setting as an integrated team.

General Education and Areas of Literacy

Your education at Paul Smith's College is designed to provide you with a well-rounded, liberal arts education. Five areas of literacy are listed and show how you meet them through course requirements (box with 'x') and through choices in general education course offerings (open box).

Area of Literacy	Course(s)
<u>Written Communication (WC)</u>	
<input checked="" type="checkbox"/> Foundational	English Composition 1
<input type="checkbox"/> Reinforcing	<i>Select from General Education Course Listings</i>
<u>Quantitative Problem Solving (QP)</u>	
<input checked="" type="checkbox"/> Foundational	College Algebra (or Pre-Calculus)
<input checked="" type="checkbox"/> Reinforcing	Statistics, Chemistry 2, General Ecology
<u>Analytical Reasoning/Scientific Inquiry (AR)</u>	
<input checked="" type="checkbox"/> Foundational	Biology 1, Biology 2, Chemistry 1
<input checked="" type="checkbox"/> Reinforcing I	Chemistry I, Chemistry 2, General Ecology, Organic Chemistry I, or Physics
<u>Social-Cultural Engagement (SC)</u>	
<input type="checkbox"/> Foundational	<i>Select from General Education Course Listings</i>
<input type="checkbox"/> Reinforcing	<i>FWS-F, Select from General Education Course Listings FWS-W, Conservation Biology fulfills requirement – check box</i>
<u>Responsible Expression (RE)</u>	
<input checked="" type="checkbox"/> Foundational	First Year Experience Course
<input type="checkbox"/> Reinforcing	<i>Select from General Education Course Listings, we suggest Speech and Technical Communications as both also fulfill certification requirements for TWS and AFS</i>

Fisheries Biology and Management (FWS 480) provide integration of all areas of literacy for the Fisheries Concentration.

Techniques in Wildlife Management (FWS 320) provides integration of all areas of literacy (except Socio-cultural which is met by Conservation Biology) for the Wildlife Concentration.

Courses Required by All FWS Students

Program Requirements are courses that **all** students in the Fisheries and Wildlife Sciences program are required to take. Most of the lower division courses should be taken during freshmen and sophomore years.

	Course	Credits
Math		
<input type="checkbox"/>	Algebra (MAT 125) – depending on math placement	3
<input type="checkbox"/>	Pre-calculus (MAT 180)	3
<input type="checkbox"/>	Statistics (MAT 210)	3
Science		
<input type="checkbox"/>	Introduction to Fisheries and Wildlife Management (FWS 101)	4
<input type="checkbox"/>	Biology 141 (BIO 101)	4
<input type="checkbox"/>	Biology 142 (BIO 102)	4
<input type="checkbox"/>	Chemistry I (CHM 141)	4
<input type="checkbox"/>	Chemistry II (CHM 142)	4
<input type="checkbox"/>	Genetics (BIO 225)	3
<input type="checkbox"/>	General Ecology (BIO 210)	4
<input type="checkbox"/>	Landscape Ecology (NRS 432)	3
<input type="checkbox"/>	Natural History of North American Vertebrates (FWS 270)	3
<input type="checkbox"/>	Organic Chemistry (CHM 241)	4
Other		
<input type="checkbox"/>	First Year Seminar (FYS 199)	3
<input type="checkbox"/>	Introduction to Geographic Information Systems (GIS 201)	3
<input type="checkbox"/>	Senior Capstone (several options are available)	4

Fisheries Science Concentration Requirements

Cluster titles match Subject Areas listed by the American Fisheries in their certification requirements; see page 11. Special topics courses will periodically be offered that may meet a cluster requirement.

Fisheries Concentration Requirements – the following courses are required.

<input type="checkbox"/> Aquatic Invertebrates (BIO 457)	3
<input type="checkbox"/> Ichthyology (BIO 362)	3
<input type="checkbox"/> Fisheries Biology and Management (FWS 480)	3
<input type="checkbox"/> Fisheries Techniques (FWS 331)	3
<input type="checkbox"/> Limnology (ENV 361)	3
<input type="checkbox"/> Forest Soils (FOR 330)	3
<input type="checkbox"/> Physics (PHY 241)	4
<input type="checkbox"/> Stream Ecology and Management (ENV 471)	3
<input type="checkbox"/> Watershed Management (NRS 340)	3

Biological Sciences Cluster - choose 2

<input type="checkbox"/> Aquatic Plants	3
<input type="checkbox"/> Comparative Vertebrate Anatomy	3
<input type="checkbox"/> Biotechnology	3
<input type="checkbox"/> Conservation Biology	3
<input type="checkbox"/> Evolution	3
<input type="checkbox"/> Forest Ecology	3
<input type="checkbox"/> Mammalogy	4
<input type="checkbox"/> Microbial Ecology	3
<input type="checkbox"/> Ornithology	4
<input type="checkbox"/> Paleoecology	4
<input type="checkbox"/> Wetlands Ecosystems and Management	3
<input type="checkbox"/> Winter Ecology	3

Human Dimensions Cluster – Choose 2

(note: many of these fill General Education Electives)

<input type="checkbox"/> Environmental Impact Assessment	3
<input type="checkbox"/> Environmental Law/Regulatory Process	3
<input type="checkbox"/> Ethics	3
<input type="checkbox"/> Land Use Planning	3
<input type="checkbox"/> Politics of the Environment	3
<input type="checkbox"/> Resource Economics	3
<input type="checkbox"/> Sustainable Development	3

Wildlife Science Concentration Requirements

Cluster titles are based on Subject Areas listed by the Wildlife Society in their certification requirements; see page 11. Special topics courses will periodically be offered that may meet a cluster requirement.

Concentration Requirements – all required

<input type="checkbox"/> Plant Biology (BIO 204)	3
<input type="checkbox"/> Conservation Biology (ENV 330)	3
<input type="checkbox"/> Techniques in Wildlife Management (FWS 320)	3
<input type="checkbox"/> Wildlife Management (FWS 470)	3

Wildlife Biology Cluster– choose 2

<input type="checkbox"/> Mammalogy (BIO 363)	4
<input type="checkbox"/> Ornithology (BIO 364)	4
<input type="checkbox"/> Herpetology (BIO 365)	4

Biological Sciences Cluster – choose 2

<input type="checkbox"/> Animal Behavior	3
<input type="checkbox"/> Aquatic Invertebrates	3
<input type="checkbox"/> Comparative Vertebrate Anatomy	3
<input type="checkbox"/> Biotechnology	3
<input type="checkbox"/> Entomology	3
<input type="checkbox"/> Evolution	3
<input type="checkbox"/> Fish Biology and Management	3
<input type="checkbox"/> Fisheries Techniques	3
<input type="checkbox"/> Forest Ecology	3
<input type="checkbox"/> Ichthyology	3
<input type="checkbox"/> Microbial Ecology	3
<input type="checkbox"/> Paleoecology	4
<input type="checkbox"/> Winter Ecology	3

Botany Cluster – choose 1

<input type="checkbox"/> Aquatic Plants	3
<input type="checkbox"/> Dendrology	4
<input type="checkbox"/> Plant Physiology	3
<input type="checkbox"/> Understory and Ground Cover Flora	3

Ecosystem Management Cluster – choose 1

<input type="checkbox"/> Forest Management	4
<input type="checkbox"/> Stream Ecology and Management	3
<input type="checkbox"/> Watershed Management	4
<input type="checkbox"/> Wetlands Ecosystems and Management	3

-Wildlife Science Clusters continued-

Physical Sciences – choose 1

<input type="checkbox"/> Atmospheric Science	3
<input type="checkbox"/> Geology	3
<input type="checkbox"/> Physics	4

Policy, Administration, and Law Cluster – choose 1 **(note: many of these fill General Education Electives)**

<input type="checkbox"/> Dispute Management	3
<input type="checkbox"/> Environmental Impact Assessment	3
<input type="checkbox"/> Environmental Law/Regulatory Process	3
<input type="checkbox"/> Land Use Planning	3
<input type="checkbox"/> Politics of the Environment	3
<input type="checkbox"/> Resource Economics	3
<input type="checkbox"/> Sustainable Development	3

Geographic Information Systems (GIS) Certificate Option

GIS and related techniques for spatial data collection and analysis are increasingly important tools in forestry, recreation, natural resources, environmental science, and related disciplines. The GIS Certificate Program is designed to allow students currently enrolled in other programs to develop and demonstrate their skills in this important area. It is also possible for a student to enroll solely in this program on either a part-time or full-time basis.

A minimum of 15 credit hours is required to complete this program, but several of the required courses or restricted electives have prerequisites, so students starting with no applicable college-level course credits will typically have to complete a minimum of 22 credit hours.

GIS Requirements – all are required

<input type="checkbox"/> Intro to GIS	3
<input type="checkbox"/> Advanced GIS Techniques	3
<input type="checkbox"/> GIS Applications	3
Plus one of the following three:	
<input type="checkbox"/> Aerial Photo Interpretation	3
<input type="checkbox"/> Photogrammetry	3
<input type="checkbox"/> Remote Sensing	3

Restricted Electives - choose two of the following

<input type="checkbox"/> Aerial Photography Interaction	3
<input type="checkbox"/> Computer-Aided Design	3
<input type="checkbox"/> Environmental Simulation Modeling	3
<input type="checkbox"/> Forest Mapping	3
<input type="checkbox"/> Forest Mensuration or Forest Measurements	3
<input type="checkbox"/> General Geography or Physical & Cultural Geography	3
<input type="checkbox"/> Geology	3
<input type="checkbox"/> Landscape Ecology	3
<input type="checkbox"/> Land Use Planning	3
<input type="checkbox"/> Surveying, or Intro Surveying, or Surveying, or Environmental Tech Lab	3
<input type="checkbox"/> Watershed Management	3

Requirements for Professional Certification

Open electives are built into the program to provide students with the flexibility to pursue a variety of courses and interests. One potential option is to meet professional certification requirements for the American Fisheries Society or the Wildlife Society. Students are responsible for checking on current requirements as posted on society websites.

Fisheries Professional Associate (FP-A Status) – American Fisheries Society education requirements are provided in the table below. A minimum grade of C is required to receive credit.

Subject Area	Minimal Requirements
A. Fisheries and Aquatic Sciences	12 semester hours -Four courses; two must be directly related to fisheries science and one must cover principles of fisheries science and management.
B. Other Biological Sciences	18 semester hours - When added to Fisheries and Aquatic Sciences courses must total 30 semester hours.
C. Physical Sciences	15 semester hours
D. Mathematics and Statistics	6 semester hours- Must include one calculus and one statistics or two statistics courses.
E. Communications	9 semester hours
F. Human Dimensions	6 semester hours

Associate Wildlife Biologist (AWB)—The Wildlife Society education requirements are provided in the table below. A minimum grade of C is required to receive credit.

Subject Area	Minimal Requirements
A. Biological Sciences: 36 semester hours	
a. Wildlife Management	6 semester hours
b. Wildlife Biology	6 semester hours
c. Ecology	3 semester hours
d. Zoology	9 semester hours
e. Botany	9 semester hours
B. Physical Sciences	9 semester hours
C. Quantitative Sciences: 9 semester hours	
a. Basic Statistics	3 semester hours
b. Quantitative Sciences	6 semester hours, must include one calculus
D. Humanities and Social Sciences	9 semester hours
E. Communications	12 semester hours, does not include literature or foreign language
F. Policy, Administration, and Law	6 semester hours

Minimum Hiring Requirements

Hiring Requirements vary among agencies and are subject to change. You are responsible for knowing the hiring requirements for the agencies for which you wish to work. Check the websites for state governments, for ex.,

New York	http://www.cs.state.ny.us
Pennsylvania	http://www.scsc.state.pa.us
Vermont	http://humanresources.vermont.gov/career_center
United States	http://www.usajobs.opm.gov

The basic requirement to be eligible to be a wildlife biologist for the federal government (including USFWS, USFS, USGS, APHIS) are a degree in a biological science that includes

- At least 9 semester hours in such wildlife subjects as mammalogy, ornithology, animal ecology, wildlife management, or research courses in the field of wildlife biology; and
- At least 12 semester hours in zoology in such subjects as general zoology, invertebrate zoology, vertebrate zoology, comparative anatomy, physiology, genetics, ecology, cellular biology, parasitology, entomology, or research courses in such subjects (Excess courses in wildlife biology may be used to meet the zoology requirements where appropriate.); and
- At least 2 semester hours in botany or the related plant sciences.

Note that wildlife students automatically meet most of these requirements but are short 3 credits of botany. We highly suggest that you take a second botany course from the botany cluster.

COMP#	L	REQUIREMENTS	GE	SEM	COURSE	LV	HRS	GR	ADDITIONAL/REPEAT CRS	GR
BIO 457	X	AQUATIC INVERTS				400	3			
CHM 241	X	ORGANIC CHEM I				200	4			
FWS 331		FISHERIES TECHN				300	3			
FOR 330	X	FOREST SOILS				300	3			
PHY 241	X	PHYSICS I				200	4			
BIO 362	X	ICHTHYOLOGY				300	3			
NRS 340	X	WATERSHED MGT				300	3			
SOC 461	X	**CAPSTONE PLANNING				400	1			
		ELECTIVE					3-4			
		ELECTIVE					3-4			
ENV 361	X	LIMNOLOGY				300	3			
ENV 471	X	STREAM ECOL & MGT				400	3			
		BIOLOGICAL SCI ELECT				300	3-4			
		HUMAN DIMEN ELECT					3			
		OPEN ELECTIVE					2-4			
FWS 480		FISHERIES BIOL & MGT	AR-I WC-I QP-I RE-I SC-I			300	3			
NRS 432	X	LANDSCAPE ECOLOGY				400	3			
		BIOLOGICAL SCI ELECT				300	3-4			
		HUMAN DIMEN ELECT					3-4			
SOC 462	X	**CAPSTONE PROJECT				400	3			

**STUDENT MAY OPT TO TAKE NRS 495 INTEGRATE NATURAL RESOURCE MGT - 4 CREDITS - TO COMPLETE BOTH CAPSTONE REQUIREMENTS

BIOLOGICAL SCIENCE CLUSTER - CHOOSE TWO COURSES	
ANATOMY & PHYSIOLOGY I & II, ANIMAL BEHAVIOR, AQUATIC PLANTS, CONSERVATION BIOLOGY, ENTOMOLOGY, EVOLUTION, FOREST ECOLOGY, MAMMALOGY, MICROBIAL ECOLOGY, ORNITHOLOGY, PALEAOECOLOGY, PHYSIOLOGICAL ECOLOGY, WETLANDS ECOSYSTEMS & MGT, WINTER ECOLOGY	

HUMAN DIMENSION CLUSTER - CHOOSE TWO COURSES	
ENVIRON IMPACT ASSESS, ENVIRON LAW & REG PROCESS, ETHICS, GLOBAL ENVIRONMENTAL STUDIES, LAND USE PLANNING, POLITICS OF THE ENVIRONMENT, NATURAL RESOURCE ECONOMICS, SUSTAINABLE DEVELOPMENT, WILDLIFE LAW ENFORCEMENT	

FISHERIES AND WILDLIFE SCIENCES - WILDLIFE CONC (FWSW) - 121 CREDITS REQUIRED FOR B.S. DEGREE

NAME:						DOE:	ADV:
GRAD:	LEOS:	WD:	SUSP:	REINST:	REENT:		
PROGRAM CHANGE	FROM:	TO:	DATE:	DUAL MAJOR WITH:			
ORIGINAL DOE:	ORIGINAL PROGRAM:		STATUS: FR SO JR SR			T	
TRANSFERRED FROM:						CREDIT HRS TRANSF IN:	

The column with the "L" indicates Liberal Arts/Science Courses

COMP#	L	REQUIREMENTS	GE	SEM	COURSE	LV	HRS	GR	ADDITIONAL/REPEAT CRS	GR
BIO 101	X	BIOLOGY I	AR-F			100	4			
ENG 101	X	ENGLISH COMP I	WC-F			100	3			
FWS 101		INTRO FISH & WILD				100	4			
FYS 101	X	FIRST YR SEMINAR	RE-F			100	3			
MAT 125	X	ALGEBRA	QP-F			100	3			
BIO 102	X	BIOLOGY II				100	4			
MAT 180	X	PRECALCULUS	Q-R			100	3			
	X	SOCIAL CULTURAL -F	SC-F				3			
		COMMUNICATION-R	WC-R				3			
BIO 210	X	GENERAL ECOLOGY	AR-R			200	4			
CHM 141	X	CHEMISTRY I	AR-R			100	4			
FWS 270	X	NAT HIST OF NA VERTS	AR-R			200	3			
		RESPON & EXPRESS-R	RE-R				3			
		SOCIAL CULTURAL - R	SC-R				3			
BIO 204	X	PLANT BIOLOGY				200	3			
BIO 225	X	GENETICS				200	3			
CHM 142	X	CHEMISTRY II				100	4			
GIS 201	X	INTRO TO GIS				200	3			
MAT 210	X	STATISTICS	QP-R			200	3			

	HRS COMPLETED OF THE 121 MINIMUM CREDIT HOURS NEEDED FOR GRADUATION
	HRS COMPLETED OF THE 45 CREDIT HOURS OF UPPER DIVISION 300/400 LEVEL COURSES NEEDED FOR GRADUATION
	HRS COMPLETED OF THE 60 CREDIT HOURS OF LIBERAL ARTS COURSES NEEDED FOR GRADUATION

WIPE OUTS	SEM	ATTEMPTED	COMPLETED	QUALITY POINTS	SEM GPA	CUM GPA	PROB	SUSP

GENERAL EDUCATION REQUIREMENTS					
	WRITTEN COMMUN (WC)	QUANTITATIVE PROBLM (QP)	ANALYTICAL REASON (AE)	RESPONSIBILITY & EXPRESSION (RE)	SOCIAL CULTURAL (SC)
FOUNDATION (F)					
REINFORCING (R)					
INTEGRATED (I)					

COMP#	L	REQUIREMENTS	GE	SEM	COURSE	LV	HRS	GR	ADDITIONAL/REPEAT CRS	GR
CHM 241	X	ORGANIC CHEM I				200	4			
FWS 320		TECH WILDLIFE MGT	AR-I Q-I RE-I WC-I			300	3			
		ECOSYS MGT ELECT				300	3-4			
		BIOLOGICAL SCI ELECT				300	3-4			
		ELECTIVE					3-4			
		RESTRICTED ELECT				300	4			
ENV 330	X	CONSERV BIOLOGY	SC-I			300	3			
		POL, ADM CLUSTER					3-4			
		OPEN ELECTIVE - UD				300	3			
SOC 461	X	**CAPSTONE PLANNING				400	1			
	X	PHYSICAL SCI CLUSTER					3-4			
		BOTANY CLUSTER					3-4			
		BIOLOGICAL SCI ELECT				300	3-4			
		OPEN ELECTIVE - UD				300	3-4			
		OPEN ELECTIVE - UD				300	3-4			
FWS 470		WILDLIFE MGT CAPST				400	3		SERVES AS CAPSTONE PROJ	
NRS 432	X	LANDSCAPE ECOLOGY				400	3			
		RESTRICTED ELECT				300	4			
		OPEN ELECTIVE - UD				400	3			

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BIOLOGICAL SCIENCE CLUSTER - CHOOSE TWO COURSES

ANATOMY & PHYSIOLOGY I & II, ANIMAL BEHAVIOR, AQUATIC INVERT, AQUATIC PLANTS, BIOTECHNOLOGY, ENTOMOLOGY, EVOLUTION, FISHERIES BIOLOGY & MGT, FISHERIES TECHNIQUES, FOREST ECOLOGY, ICHTHYOLOGY MICROBIAL ECOLOGY, PALEOECOLOGY, PHYSIOLOGICAL ECOLOGY, WINTER ECOLOGY

BOTANY CLUSTER - CHOOSE ONE COURSE

AQUATIC PLANTS, DENDROLOGY, PLANT ECOLOGY & SYSTEMANTICS, PLANT PHYSIOLOGY, UNDERSTORY & GROUND COVER FLORA

ECOSYSTEM MANAGEMENT CLUSTER - CHOOSE ONE COURSE

FOREST MANAGEMENT, STREAM ECOLOGY & MGMT, WATERSHED MANAGEMENT, WETLANDS ECOSYSTEMS & MANAGEMENT

PHYSICAL SCIENCE CLUSTER - CHOOSE ONE COURSE

ATMOSPHERIC SCIENCE, GEOLOGY, PHYSICS I

POLICY, ADMINISTRATION & LAW CLUSTER - CHOOSE ONE COURSE

DISPUTE MANAGEMENT, ENVIRON IMPACT ASSESS, ENVIRON LAW & REG PROCESS, LAND USE PLANNING, POLITICS OF THE ENVIRON, NATURAL RESOURCE ECONOMICS, SUSTAINABLE DEVELOPMENT, WILDLIFE LAW ENFORCEMENT

RESTRICTED ELECTIVE - CHOOSE TWO COURSES

HERPETOLOGY, MAMMOLOGY, ORNITHOLOGY

Professional Opportunities

Paul Smith's Student Chapter of The Wildlife Society (TWS) is active: volunteering for NYDEC on wildlife projects and for USFWS at the moose check station in Vermont; attending state and national TWS conferences; and competing against wildlife students at other schools in quizbowl. The student chapter is a great way to begin to build your professional network. For more information on belonging to the national (www.wildlife.org), state, or PSC chapter, see Dr. Jorie Favreau.

Talk to your faculty about other professional societies such as American Fisheries Society, Society for Conservation Biology, Animal Behavior Society, Ornithological Society of North America, American Society of Ichthyologists and Herpetologists, and American Society of Mammalogists.

Career Resources

We encourage students to visit the following websites to learn more about the profession, about the kinds of jobs that are available, and the qualifications employers seek in employees.

Internships, Summer, & Permanent Jobs

- The Environmental Careers Organization has great opportunities. See www.eco.org.
- Subscribe to Fish and Wildlife jobs, a FREE job service that emails jobs to you. Go to http://www.fw.msu.edu/employmentresources/er_email.html and sign up for FWJOBS. Alternatively, regularly check their archived jobs at <http://list.msu.edu/archives/fwjobs.html>.

Wildlife

- One of the best places for job announcements is at <http://wfsc.tamu.edu/jobboard/index.htm>. Internships, seasonal and permanent wildlife jobs are listed here.
- Many more bird jobs exist than mammal jobs simply because birds are abundant, diverse, easy to see and can act as indicators. Do NOT be quick to rule out working with birds. You can learn a lot working with birds! Maybe you don't have the experience to get a telemetry job working with jaguars, but if you had some telemetry experience with red-tailed hawks, you could be competitive for the jaguar job. Check out the job postings at the Ornithological Societies of North America job site (<http://www.osnabirds.org/on/ornjobs.htm>). The same jobs can also be found at <http://www.birdingonthe.net/maillinglists/BJOB.html>.
- The Wildlife Society maintains a job board at (<http://www.wildlife.org/jobs/index.cfm?tname=jobsboard>).

Fisheries and Aquatic Sciences

- American Fisheries Society lists jobs at <http://www.fisheries.org>.
- <http://wfsc.tamu.edu/jobboard/index.htm> for internships, seasonal and permanent wildlife jobs.
- North American Benthological Society lists jobs at <http://www.benthos.org>.
- American Society of Oceanography and Limnology at <http://www.aslo.org>.
- American Water Resources Association at <http://www.awra.org>.
- Society and Water Conservation Society at <http://www.swcs.org>.

Ecology

- Ecological Society of America <http://www.esa.org/opportunities>.
- Society for Ecological Restoration Int'l http://www.ser.org/working_resources.asp.
- Society of Wetland Scientists <http://www.sws.org/jobs>.
- Society for Conservation Biology posts jobs at <http://www.conbio.org/Jobs/search.cfm>.

Gov't agencies

- NYDEC jobs are posted at <http://www.dec.state.ny.us/website/career/vacancy.html>
- The federal government is required to post all jobs such as working for the U.S. Fish and Wildlife Service, National Park Service and the U.S. Forest Service. Go to www.usajobs.com, click search jobs, then search all jobs in biology. Refine your search with words like “wildlife.”
- The Department of Defense often has great jobs for natural resource students. See The Center for Environmental Management of Military Lands (<http://www.cemml.colostate.edu/>) and the Oak Ridge Institute for Science and Education (<http://www.ornl.gov/orisemaryland/projects.htm>).
- <http://www.volunteer.gov/gov/results.cfm>

Other job sites

Other jobs sites exist. If you know a species or organization with which you would like to work, check their websites. For instance,

- Ducks Unlimited posts jobs at <http://www.ducks.org/about/jobopportunities.asp>
- Trout Unlimited at <http://www.tu.org>
- National Wild Turkey Federation at <http://www.nwtf.org>

Some sites let you sign up for email notices of new job openings

- Eco employ <http://www.ecoemploy.com/>
- Ornithological newsletter <http://www.birdingonthe.net/maillinglists/BJOB.html>
- Ecology jobs listserve <https://listserv.umd.edu/archives/ecolog-1.html>

For more career information see

http://www.fws.gov/hr/HR/Careers_FWS.htm

Don't forget career services on Paul Smith's Campus

(http://www.paulsmiths.edu/programs/career_services/index.php?type=current)! Employers send notices to us to post and many of those employers are PSC alum looking for PSC students or alum.

Graduate School Resources

In today's world, many Fisheries and Wildlife Biologists are expected to hold a graduate degree. The good news is that graduate school assistantships provide an opportunity for students to receive a master's degree (MS) or doctorate degree (PhD) AND it pays for the student's tuition, health insurance and a small stipend (around \$18,000/year). Details on available graduate assistantships are often posted at as well as other locations.

Wildlife in general

- <http://wfsc.tamu.edu/jobboard/index.htm>
- <http://www.wildlife.org/jobs/index.cfm?tname=jobsboard>

Birds

- <http://www.osnabirds.org/on/ornjobs.htm>

Fisheries and Aquatic Sciences

- <http://www.fisheries.org>
- <http://www.benthos.org>

For more information on taking the Graduate Record Exam (the GRE is the equivalent of the ACT or SAT to get into undergraduate programs) and applying for graduate assistantships, attend seminars by the PSC career services, FWS program and talk to your advisor and other PSC professors.