

# MAJOR IN FISH, WILDLIFE, AND CONSERVATION BIOLOGY, FISHERIES AND AQUATIC SCIENCES CONCENTRATION

## Major Completion Map

**Distinctive Requirements for Degree Program:** The curriculum for the Fish, Wildlife and Conservation Biology major – Fisheries and Aquatic Sciences concentration assumes students enter college prepared to take calculus. Students who have not met the prerequisites for calculus, will be required to successfully complete the prerequisites in their first year. A minimum grade of C (2.000) is required in all

biological, mathematical/ statistical, physical science, fish, wildlife, and conservation biology, and natural resource courses used to meet graduation requirements for the fish, wildlife, and conservation biology major. The minimum applies to courses taken as substitutions for meeting degree requirements. NR 220 is a summer course in which students reside at CSU's Mountain Campus. Students must choose ONE of two CHEM + PH paths: (Path A) CHEM 107/CHEM 108 and PH 121/PH 122 OR (Path B) CHEM 111, CHEM 112, CHEM 113, CHEM 114 and PH 110/PH 111. Students must also choose ONE biology group A) BZ 110/BZ 111/BZ 120 or B) LIFE 102/LIFE 103. Students choosing the Fisheries and Aquatic Sciences concentration are also required to complete at least 80 clock hours in an internship experience related to fishery and aquatic biology. Students must sign up for 1 credit of FW 487 during the semester in which they are completing their internship or work experience requirement.

### Freshman

Semester 1	Critical	Recommended	AUCC	Credits
CO 150 College Composition (GT-CO2)			1A	3
FW 104 Wildlife Ecology and Conservation (GT-SC2)			3A	3
FW 179 New-to-the-Major Seminar				1
Select one group from the following:	X			4
Group A:				
BZ 110 Principles of Animal Biology (GT-SC2)			3A	
BZ 111 Animal Biology Laboratory (GT-SC1)			3A	
Group B:				
LIFE 102 Attributes of Living Systems (GT-SC1)			3A	
Select one group from the following:	X			5
Group A:				
PH 121 General Physics I (GT-SC1)			3A	
Group B:				
CHEM 111 General Chemistry I (GT-SC2)			3A	
CHEM 112 General Chemistry Lab I (GT-SC1)			3A	
MATH 117, MATH 118, and MATH 124 must be completed by the end of Semester 1.	X			

Total Credits				16
Semester 2	Critical	Recommended	AUCC	Credits
Select one course from the following:	X			4
BZ 120 Principles of Plant Biology (GT-SC1)			3A	
LIFE 103 Biology of Organisms-Animals and Plants (GT-SC1)			3A	
Select one group from the following:	X			8-10
Group A:				
CHEM 107 Fundamentals of Chemistry (GT-SC2)			3A	
CHEM 108 Fundamentals of Chemistry Laboratory (GT-SC1)			3A	
PH 122 General Physics II (GT-SC1)			3A	
Group B:				
CHEM 113 General Chemistry II				
CHEM 114 General Chemistry Lab II				
PH 110 Physics of Everyday Phenomena (GT-SC2)			3A	
PH 111 Physics of Everyday Phenomena Laboratory (GT-SC1)			3A	
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )			3B	3

CO 150, AUCC 1B (Quantitative Reasoning), and MATH 125 must be completed by the end of Semester 2. X

<b>Total Credits</b>					<b>15-17</b>
<b>Sophomore</b>					
<b>Semester 3</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
CHEM 245	Fundamentals of Organic Chemistry				4
CHEM 246	Fundamentals of Organic Chemistry Laboratory				1
FW 204	Introduction to Fishery Biology		X		3
Select one course from the following:					3-4
BZ 220	Introduction to Evolution				
BZ 346	Population and Evolutionary Genetics				
BZ 350	Molecular and General Genetics				
SOCR 330	Principles of Genetics				
Select one course from the following:					4
MATH 155	Calculus for Biological Scientists I (GT-MA1)	X		1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)			1B	
<b>Total Credits</b>					<b>15-16</b>
<b>Semester 4</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
FW 260	Principles of Wildlife Management		X		3
LIFE 320	Ecology		X		3
Select one course from the following:					3
HONR 499	Senior Honors Thesis				
SPCM 200	Public Speaking				
Select one course from the following:					3
STAT 301	Introduction to Applied Statistical Methods		X		
STAT 307	Introduction to Biostatistics				
Social and Behavioral Sciences ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences</a> )				3C	3
<b>Total Credits</b>					<b>15</b>
<b>Semester 5</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
NR 220	Natural Resource Ecology and Measurements	X			5
<b>Total Credits</b>					<b>5</b>
<b>Junior</b>					
<b>Semester 6</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
FW 487	Internship				1
Select four credits from the following:					4
GEOL 120	Exploring Earth - Physical Geology (GT-SC2)			3A	
GEOL 121	Introductory Geology Laboratory (GT-SC1)			3A	
GEOL 122	The Blue Planet - Geology of Our Environment (GT-SC2)			3A	
GEOL 124	Geology of Natural Resources (GT-SC2)			3A	
GEOL 150	Physical Geology for Scientists and Engineers			3A	
GR 204/ WR 204	Sustainable Watersheds (GT-SC2)			3A	
NR 319	Geospatial Applications in Natural Resources				
SOCR 240	Introductory Soil Science				
Select one course from the following:					3
CO 300	Writing Arguments (GT-CO3)		X	2	
CO 301A	Writing in the Disciplines: Arts and Humanities (GT-CO3)			2	
CO 301B	Writing in the Disciplines: Sciences (GT-CO3)			2	
CO 301C	Writing in the Disciplines: Social Sciences (GT-CO3)			2	
CO 301D	Writing in the Disciplines: Education (GT-CO3)			2	
JTC 300	Strategic Writing and Communication (GT-CO3)			2	

Select one group from the following:				X		4
Group A:						
BSPM 302	Applied and General Entomology					
BSPM 303A	Entomology Laboratory: General					
Group B:						
BSPM 445	Aquatic Insects					
Group C:						
BZ 212	Animal Biology-Invertebrates					
Plant Biology Elective (See Department List on Concentration Requirements tab)						3-4
STAT 301 or STAT 307, FW 260, and LIFE 320 must be completed by the end of Semester 6.				X		
<b>Total Credits</b>						<b>15-16</b>
<b>Semester 7</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>		<b>Credits</b>
FW 300 (Spring only)	Biology and Diversity of Fishes	X				2
FW 301	Ichthyology Laboratory	X				1
FW 370	Design of Fish and Wildlife Projects		X	4A,4B		3
Select one course from the following:						3-4
BZ 214	Animal Biology-Vertebrates					
BZ 329	Herpetology					
BZ 330	Mammalogy					
BZ 335	Ornithology					
Historical Perspectives ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )					3D	3
<b>Total Credits</b>						<b>12-13</b>
<b>Senior</b>						
<b>Semester 8</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>		<b>Credits</b>
FW 401 (Fall only)	Fishery Science	X		4C		3
Select one group from the following:						3-4
Group A:						
BZ 471	Stream Biology and Ecology					
BZ 472	Stream Biology and Ecology Laboratory					
Group B:						
ESS 474	Limnology					
Group C:						
FW 304	Conservation of Marine Megafauna					
Group D:						
FW 430	Waterfowl Ecology and Management					
Group E:						
FW 568/ BZ 568	Sustaining River Ecosystems in Changing World					
Group F:						
NR 370	Coastal Environmental Ecology					
Select one course from the following:						3-4
FW 400	Conservation of Fish in Aquatic Ecosystems					
FW 402 (Spring only)	Fish Culture					
FW 405 (Spring of odd years only)	Fish Physiology					
Human Dimensions Elective (See Department List on Concentration Requirements tab)						3

BSPM 302 /BSPM 303A, or BSPM 445, or BZ 212 must be completed by the end of Semester 8.

<b>Total Credits</b>					<b>12-14</b>
<b>Semester 9</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
Select one course from the following:		X			3-4
FW 400 (Fall only)	Conservation of Fish in Aquatic Ecosystems				
FW 402	Fish Culture				
FW 405 (Odd years only)	Fish Physiology				
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )		X		3B	3
Diversity, Equity, and Inclusion ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion</a> )				1C	3
Guided Elective ( See Department List on Concentration Requirements tab.)		X			3
Electives		X			0-3
The benchmark courses for the 9th semester are the remaining courses in the entire program of study.		X			
<b>Total Credits</b>					<b>12-15</b>
<b>Program Total Credits:</b>					<b>120</b>