MAJOR IN FISH, WILDLIFE, AND CONSERVATION BIOLOGY, CONSERVATION BIOLOGY CONCENTRATION

The Conservation Biology concentration focuses on understanding the ecological processes necessary to conserve biological diversity, with an emphasis on fish and wildlife species and their habitats. This concentration has a broader coverage across both the fish and wildlife disciplines, including the systems that support them (soils, water, forests, fire, geology). There is also a more focused exploration of the human, historical, and political aspects that have shaped conservation efforts and what can be done to ensure sustainable practices and management of natural resources.

Requirements Effective Fall 2024

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 these requirements.

Freshman

		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:			8
Group A:			
BZ 110	Principles of Animal Biology (GT-SC2)	3A	
BZ 111	Animal Biology Laboratory (GT-SC1)	3A	
BZ 120	Principles of Plant Biology (GT-SC1)	3A	
Group B:			
LIFE 102[1]	Attributes of Living Systems (GT-SC1)	3A	
LIFE 103[1]	Biology of Organisms-Animals and Plants (GT-SC1)	3A	
Select one set of chemistry and physics courses from the following:			13-15
Group A:			
CHEM 107	Fundamentals of Chemistry (GT-SC2)	3A	
CHEM 108	Fundamentals of Chemistry Laboratory (GT-SC1)	3A	
PH 121	General Physics I (GT-SC1)	3A	
PH 122	General Physics II (GT-SC1)	3A	
Group B:			
CHEM 111	General Chemistry I (GT-SC2)	3A	
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	
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	
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		1C	3
	Total Credits		**31-33**

Sophomore

FW 260	Principles of Wildlife Management		3
LIFE 320	Ecology		3
Select one course from the following:			3-4
BZ 220	Introduction to Evolution		
BZ 350	Molecular and General Genetics		
SOCR 330	Principles of Genetics		
Select one course from the following:			3
HONR 499[2]	Senior Honors Thesis		

SPCM 200[2]	Public Speaking		
Select one course from the following:			4
MATH 155	Calculus for Biological Scientists I (GT-MA1)	1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	
Select one course from the following:			3
STAT 301	Introduction to Applied Statistical Methods		
STAT 307	Introduction to Biostatistics		
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	6
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)		3C	3
	Total Credits		**28-29**
Summer			
NR 220	Natural Resource Ecology and Measurements		5
	Total Credits		**5**
Junior			
FW 370	Design of Fish and Wildlife Projects	4A,4B	3
Select one group from the following:			4-7
Group A:			
BSPM 302	Applied and General Entomology		
BSPM 303A	Entomology Laboratory: General		
Group B:			
BZ 212	Animal Biology-Invertebrates		
NR 312	Applied Insect Ecology		
Select two courses or course pair for 6-7 credits not taken elsewhere from the following:			6-7
BZ 214	Animal Biology-Vertebrates		
BZ 329	Herpetology		
BZ 330	Mammalogy		
BZ 335	Ornithology		
FW 300 & FW 301[3]	Biology and Diversity of Fishes		
Select one Plant Biology course from the following:			3-4
BZ 223	Plant Identification		
BZ 325	Plant Systematics		
BZ 450	Plant Ecology		
F 311	Forest Ecology		
RS 300	Rangeland Conservation and Stewardship		
RS 313/F 313	Dendrology and Herbaceous Plant ID		
Select one course from the following:			3
CO 300	Writing Arguments (GT-CO3)	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 course from the following:			3-4
FW 310	Mapping Diverse Perspectives in Conservation		
FW 325	Spatial Ecology--Applications with R		
NR 319	Introduction to Geospatial Science		
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
	Total Credits		**25-31**

Senior

Select one Aquatic Biology course or course pair not taken elsewhere from the following:			3-4
BZ 415	Marine Biology		
BZ 471 & BZ 472	Stream Biology and Ecology		
ESS 474	Limnology		
FW 300 & FW 301	Biology and Diversity of Fishes		
FW 400	Conservation of Fish in Aquatic Ecosystems		
FW 401	Fishery Science		
FW 402	Fish Culture		
FW 405	Fish Physiology		
FW 430	Waterfowl Ecology and Management		
FW 568/BZ 568	Sustaining River Ecosystems in Changing World		
Select one Wildlife Course not taken elsewhere from the following:			3-4
FW 310	Mapping Diverse Perspectives in Conservation		
FW 325	Spatial Ecology--Applications with R		
FW 375	Field Wildlife Studies		
FW 430	Waterfowl Ecology and Management		
FW 455	Principles of Conservation Biology		
FW 465	Managing Human-Wildlife Conflicts		
FW 467	Wildlife Disease Ecology		
FW 468	Bird Ecology and Conservation		
FW 469	Conservation and Management of Large Mammals		
FW 471	Wildlife Data Collection and Analysis	4C	
FW 472	Issues in Animal Conservation and Management		
FW 475	Conservation Decision Making		
FW 477	Wildlife Habitat Use and Management		
FW 544	Ecotoxicology		
FW 573	Travel Abroad-Wildlife Ecology/Conservation		
FW *** Travel Abroad upper-division course[4]			
Select one course from the following:			3-4
FW 401	Fishery Science	4C	
FW 471	Wildlife Data Collection and Analysis	4C	
Select one course from the following:			3
FW 455	Principles of Conservation Biology		
FW 472	Issues in Animal Conservation and Management		
Select two Human Dimensions courses not taken elsewhere from the following:			6
FW 310	Mapping Diverse Perspectives in Conservation		
FW 472	Issues in Animal Conservation and Management		
HIST 355[5]	American Environmental History		
NR 320	Natural Resources History and Policy		
NR 400	Public Communication in Natural Resources		
NRRT 320	International Issues-Recreation and Tourism		
NRRT 330	Social Aspects of Natural Resource Management		
NRRT 400[5]	Environmental Governance		
NRRT 440[5]	Applications in Environmental Communication		
PHIL 320	Ethics of Sustainability		
PHIL 345	Environmental Ethics		
POLS 361	U.S. Environmental Politics and Policy		
SOC 320	Population-Natural Resources and Environment		

SOC 322	Environmental Justice	
SOC 460	Environmental and Natural Resource Sociology	
SOC 461	Water and Social Justice	
Guided Electives [6]		6
Elective[7]		0-1
	Total Credits	**24-28**
	Program Total Credits:	**120**

1 Students taking this biology selection should choose a botany-related course in the department elective options to meet the botany/plant course requirements for certain federal positions related to wildlife, fisheries, and/or conservation biology.

2 Students in the Honors Track 1 program must take HONR 499.

3 FW 300 and FW 301 count together as one selection in this choice.

4 Restricted to FW subject code, department travel abroad courses, taught by FWCB faculty. No transfer or substitute courses will be accepted.

5 Students may need to obtain a registration override from the appropriate department to take this course.

6 Guided electives are courses intended to expand a student's depth and breadth in wildlife biology and include any 300- or 400-level regular course with a BC, BMS, BSPM, BZ, CHEM, ESS, F, FW, GES, MATH, MIP, NR, NRRT, PH, RS, SOCR, STAT, or WR subject code (excluding courses ending in -80 to -99); CHEM 245 and CHEM 246; SOCR 240; other courses with prior approval by department and advisor. Courses may not double-count as Guided Electives and for other requirements in the major.

7 Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).

Major Completion Map

Distinctive Requirements for Degree Program:

The curriculum for the Fish, Wildlife and Conservation Biology major – Conservation Biology 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 resources 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 or B) LIFE 102/LIFE 103.

Freshman

Semester 1		**Critical**	**Recommended**	**AUCC**	**Credits**
CO 150	College Composition (GT-CO2)	X		1A	3
FW 104	Wildlife Ecology and Conservation (GT-SC2)	X		3A	3
FW 179	New-to-the-Major Seminar	X			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 path from the following:		X			5
Path A:					
PH 121	General Physics I (GT-SC1)			3A	
Path B:					
CHEM 111	General Chemistry I (GT-SC2)			3A	
CHEM 112	General Chemistry Lab I (GT-SC1)			3A	
	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 path from the following:		X			8-10
Path 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	
Path 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	
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)			X	1C	3
	Total Credits				**15-17**

Sophomore

Semester 3		**Critical**	**Recommended**	**AUCC**	**Credits**
FW 260	Principles of Wildlife Management	X			3
Select one course from the following:		X			3-4
BZ 220	Introduction to Evolution				
BZ 350	Molecular and General Genetics				
SOCR 330	Principles of Genetics				
Select one course from the following:		X			4
MATH 155	Calculus for Biological Scientists I (GT-MA1)			1B	
MATH 160	Calculus for Physical Scientists I (GT-MA1)			1B	
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			X	3B	3
	Total Credits				**13-14**

Semester 4		**Critical**	**Recommended**	**AUCC**	**Credits**
LIFE 320	Ecology	X			3
Select one course from the following:		X			3
HONR 499	Senior Honors Thesis				
SPCM 200	Public Speaking				
Select one course from the following:		X			3
STAT 301	Introduction to Applied Statistical Methods				
STAT 307	Introduction to Biostatistics				
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			X	3B	3
Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)			X	3C	3
FW 260 must be completed by the end of Semester 4.		X			
	Total Credits				**15**

Semester 5		**Critical**	**Recommended**	**AUCC**	**Credits**
NR 220	Natural Resource Ecology and Measurements	X			5
	Total Credits				**5**

Junior

Semester 6		**Critical**	**Recommended**	**AUCC**	**Credits**
Select one course from the following:		X			3-4
FW 310	Mapping Diverse Perspectives in Conservation				
FW 325	Spatial Ecology--Applications with R				
NR 319	Introduction to Geospatial Science				
Select one course from the following:		X			3
CO 300	Writing Arguments (GT-CO3)			2	
JTC 300	Strategic Writing and Communication (GT-CO3)			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	
Select one group from the following:		X			4-7
Group A:					
BSPM 302	Applied and General Entomology				
BSPM 303A	Entomology Laboratory: General				
Group B:					
BZ 212	Animal Biology-Invertebrates				
NR 312	Applied Insect Ecology				
Select one group from the following:					3-4
Group A:					
BZ 214	Animal Biology-Vertebrates				
Group B:					
BZ 329	Herpetology				
Group C:					
BZ 330	Mammalogy				
Group D:					
BZ 335	Ornithology				
Group E:					
FW 300	Biology and Diversity of Fishes				
FW 301	Ichthyology Laboratory				
STAT 301 or STAT 307 and LIFE 320 must be completed by the end of Semester 6.		X			
	Total Credits				**13-18**

Semester 7		**Critical**	**Recommended**	**AUCC**	**Credits**
FW 370	Design of Fish and Wildlife Projects	X		4A,4B	3
Select one group from the following:		X			3-4
Group A:					
BZ 214	Animal Biology-Vertebrates				
Group B:					
BZ 329	Herpetology				
Group C:					
BZ 330	Mammalogy				
Group D:					
BZ 335	Ornithology				
Group E:					
FW 300	Biology and Diversity of Fishes				
FW 301	Ichthyology Laboratory				
Plant Biology Elective Course (See Department List on Concentration Requirements tab)		X			3-4
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			X	3D	3
Choose FW 300 / FW 301 if taking FW 401					
	Total Credits				**12-14**

Senior

Semester 8		**Critical**	**Recommended**	**AUCC**	**Credits**
Select one course from the following:		X			3-4
FW 471	Wildlife Data Collection and Analysis			4C	
FW 401	Fishery Science			4C	
Select one course from the following:		X			3
FW 455	Principles of Conservation Biology				
FW 472	Issues in Animal Conservation and Management				
Aquatic Biology Elective (See Department List on Concentration Requirements tab)		X			3-4

Human Dimensions Elective (See Department List on Concentration Requirements tab)	X			3
FW 370, BSPM 302 / BSPM 303A or or BZ 212 / NR 312 must be completed by the end of Semester 8.	X			
Total Credits				**12-14**
Semester 9	**Critical**	**Recommended**	**AUCC**	**Credits**
Human Dimensions Elective (See Department List on Concentration Requirements tab)	X			3
Wildlife Elective (See Department List on Concentration Requirements tab)	X			3-4
Upper Division Guided Electives (See Department List on Concentration Requirements tab)	X			6
Elective		X		0-1
The benchmark courses for the 9th semester are the remaining courses in the entire program of study.	X			
Total Credits				**12-14**
Program Total Credits:				**120**