

Bachelor of Science in Natural Resources: Wildlife Conservation and Management

FALL			SPRING		
Course Title	Units	Prerequisite?	Course Title	Units	Prerequisite?
CHEM 151 OR CHEM 141 AND 143	4	MATH 112 or placement	CHEM 152 OR CHEM 142 AND 144	4	First semester CHEM
ENGL 101 or 109H	3		ENGL 102	3	
Tier 1 Traditions and Cultures (160s)	3		ECOL 182R General Biology Lecture	3	
Tier 1 Individuals and Societies (150s)	3		ECOL 182L General Biology Lab	1	
RNR 200 Conservation of Natural Environments	3		Calculus: MATH 113, 122A/B, or 125	3-5	MATH 112 or placement test
TOTAL	16		TOTAL	17/19	
Tier 2 Individuals and Societies	3		Physical Science: CHEM 241a, 243a or PHYS 102, 181 or ENVS 200, 201 or GEOS 251	4	varies
RNR 316 Natural Resources Ecology	3	ECOL 182R, ECOL 182L, RNR 230	Tier 1 Traditions and Cultures (160s)	3	
Statistics: MATH 163 or 263, PSY 230 or SBS 200	3	MATH 112 or placement	Tier 2 Arts or Humanities	3	
RNR 230 R and RNR 230L Field Botany	3		Technical Elective	3	
MCB 181L General Biology Lab	1	MATH 112 or placement; CHEM 151	RNR 384 Natural Resources Management Practices	3	
MCB 181R General Biology Lecture	3	MATH 112 or placement; CHEM 151	TOTAL	16	
TOTAL	16				
ECON 200 (Economics)	3		RNR 321: Ecological Surveys and Sampling	3	Statistics
Technical Writing: ENGL 308, 313, 340, ENVS 408, 415	3		RAM 382 Rangeland Plant Communities	3	RNR 230R and RNR 230L
ECOL "ology" elective (e.g. ECOL 485-Mammology)	4	RNR 316 recommended	ECOL "ology" elective (e.g. ECOL 483-Herp or ECOL 484 Orn)	4	RNR 316 recommended
Technical Skills Elective	3		Oral or Media Communication: ALC 422, COMM 113, COMM 119, JOUR 455, JOUR 472, SBE 202, SCI 401, RNR 495A	3	
TOTAL	13		Technical Electives	3	
			TOTAL	16	
WFSC 444 Wildlife Ecology, Conservation, and Management	4	ECOL 182R, ECOL 182L, RNR 316 and RNR 321; Junior/Senior standing.	WFSC 445 Population Ecology	3	ECOL 182R, ECOL 182L, RNR 316, RNR 321 and WFSC 444
SNRE requirement	≥1		Genetics PLS 312 or ECOL 320	4	MCB 181R and MCB 181L; 2 semesters CHEM
Technical Electives	10		Technical Electives	3	
TOTAL	15		RNR 480 Natural Resources Policy and Law	3	RNR 200
			TOTAL	13	

Diversity requirement - One general education course must have the non-Western Civilization, Gender, Race, Class, Ethnicity designation

2nd semester language proficiency required--not included in this plan.

Suggested Technical Electives (those marked with an * already fulfill major requirements)

Ecology/Zoology/Animal Health

WFSC 385 Zoo and Aquarium Conservation
ACBS 400A/B Animal Anatomy and Physiology
ECOL 335 Evolution
ECOL 473 Topics in Behavioral Ecology
ECOL 487 Animal Behavior
ECOL 403 Biology of Animal Parasites
3rd "Ology" of ECOL 483 (Herpet), 484 (Ornith),
485 (Mammal), 482 (Ichthy)
ACBS 336A Applied Animal Nutrition
ACBS 449 Diseases of Wildlife

Tools/Techniques/Internships

RNR 403 -- Applications of GIS (3)
RNR 417 – GIS for Natural Resources (3)
RNR 419 -- Cartographic Modeling for Nat
RNR 420 -- Advanced GIS (3)
RNR 422 -- Resource Mapping (3)
RNR 473 Spatial Analysis and Modeling (3)
RNR 493 Internship
RNR 499 Independent Study
RNR 322 Field Methods in Nat Resources

Fire Ecology and Natural Resources Management

RNR 448 Conservation Planning & Wildland Recreation
RNR 355 Intro to Wildland Fire
RNR 438 Wildland Fire Management
RNR 440 Climate Change Adaptation
RNR 441A - Natural Resource Management in Native Communities

Other Ecology/Conservation

RNR 458 Ecosystem Ecology
ECOL 438 Biogeography
ECOL 406R Conservation Biology
GEOS 478 Global Change
RNR 495A Study Abroad Namibia/Australia/Ecuador
WFSC 430 Conservation Genetics
WFSC 447 Wildlife Conservation Behavior

Economics/Policy/Planning

RNR 485 Economics and Social Connections to Nat Resources
AREC 217 Resources & Environmental Econ
AREC 476 Environmental Law and Economics
POL 481 Environmental Policy
PLG 472 Environmental Land Use Planning
GEOG 404 The Politics of Nature

Certificate in Rangeland Management courses

RAM 382 Rangeland Plant Communities*
RAM 436A Grazing Ecology and Management
RAM 446 Management + Restoration of Wildland Vegetation
RAM 456 Rangeland Inventory & Monitoring
RAM 487 Rangeland Management Planning

Marine Sciences Minor courses

ECOL 496O- Galapagos Marine Ecology
GEOS 212 Introduction to Oceanography
ENVS 475 - Freshwater and Marine Algae
ECOL 404R and L Biology of the Oceans (Fall)
ECOL 412A and B Ocean Sciences
ECOL 360 Marine Ecology and Conservation
ECOL 450 Marine Discovery

Pre-Veterinary courses (based on CSU requirements¹)

CHEM 241A and 243A Organic Chemistry (4)*
MATH 263 (3)*
BIOC 384 Foundations in Biochemistry (3)
PHYS 102 and 181 Physics (4)*
PLS 312 Genetics or ECOL 320 (4)*

¹Check each vet school for their specific requirements

Courses Required for Certification by the Wildlife Society

1. Biological Sciences: 36 semester hours; must include subcategories a-e. (Sum of hours in a-e is 33, the other 3 hours may be in any of the 5 subject areas):
 - a. Wildlife Management: Courses emphasizing principles and practices of wildlife management. (6 hours)
 - b. Wildlife Biology: Biology and behavior of birds, mammals, reptiles, or amphibians; must include 1 course concerning birds or mammals. (6 hours)
 - c. Ecology: Courses in general plant or animal ecology (not human ecology). (3 hours)
 - d. Zoology: Taxonomy, biology, behavior, physiology, anatomy, and natural history of vertebrates and invertebrates. Courses in genetics, nutrition, physiology or plant taxonomy. (9 hours)
 - e. Botany: Courses in general botany, plant genetics, plant morphology, plant physiology, or plant taxonomy (9 hours). Course descriptions, immediately following course listing, are required. One of the following courses – dendrology, silvics, or silviculture are accepted. At least one course must be primarily concerned with plant taxonomy or identification (this course must be taken at a college/university and cannot be substituted by another course or experience). (9 hours)
2. Physical Sciences: 9 semester hours in chemistry, physics, geology, or soils, with at least 2 disciplines represented.
3. Quantitative Sciences: 9 semester hours that must include:
 - a. Basic Statistics (3 hours)
 - b. Quantitative Sciences: calculus, biometry, advanced algebra, systems analysis, mathematical modeling, sampling, computer science, or other quantitative science (6 hours)
4. Humanities and Social Sciences: 9 semester hours in economics, sociology, psychology, political science, government, history, literature, or foreign language.
5. Communications: 12 semester hours designed to improve communication skills such as English composition, technical writing, journalism, public speaking, or use of mass media.
6. Policy, Administration, and Law: 6 semester hours in courses that focus on natural resource policy and/or administration, wildlife or environmental law, or natural resource/land use planning; and courses that focus on the understanding of social, political and ethical decisions for wildlife or natural resource management. Tools supporting professional practice (e.g., photogrammetry, Land-Sat mapping, GIS) or more general courses such as criminology, political science, and introductory survey courses in conservation will *not* apply.