



Wildlife in the West

College Field Program

Wildlife in the West, a 9-credit summer semester, immerses students in the complexities of wildlife conservation with attention to policy, ecology, and human community issues. We take a case study approach, focusing on wolves, bull trout, lynx, and grizzly bears to examine the realities of wildlife management in working landscapes. The Crown of the Continent is the perfect classroom for learning about emerging solutions to human-wildlife conflicts, solutions that are relevant across the country and the world.

Please direct comments or inquiries to:

Taylor Tewksbury
Education Program Manager
Swan Valley Connections
6787 MT Highway 83
Condon, MT
406-754-3137
taylor@svconnections.org

Field Ecology of Threatened and Endangered Species in the Northern Rockies

Environmental Studies, ENST 395

3 Credits, University of Montana

Course Description

Field Ecology of Threatened and Endangered Species in the Northern Rockies focuses on four target threatened or endangered species: grizzly bears, wolves, lynx, and bull trout. Students learn life history, habitat needs and population status of these species in the specific environments mentioned above. Students learn to interpret wildlife behavior and the natural history of these species in the field, study conservation issues facing each species and learn about current wildlife biology research techniques, and finally study and evaluate management activities and their effects on these species. Through the course, students gain first-hand experience with strategies for studying, managing and restoring wildlife populations in the Northern Rockies.

Student Learning Outcomes

- To understand the general and site-specific ecology of the case study species
- To learn to interpret wildlife sign and habitat conditions
- To investigate how land management activities, such as forest management, road building, and development affect specific habitat conditions
- To gain field skills necessary to conduct research and monitoring efforts related to the recovery and management of threatened and endangered species.
- To effectively communicate conservation science information to diverse audiences

Assignments/Evaluation/Grading

30% - Group Project

Students will work collaboratively to develop a field guide to the Swan Valley identifying plant and animal species with written and illustrated descriptions. This assignment will challenge students to work together in an exercise that synthesizes the knowledge gained over the summer semester, while showing an ability to communicate scientific information to a public audience.

20% - Field Practicum

Students are assessed multiple times on their abilities to interpret wildlife tracks and sign in the field. An initial field practicum is used to assess a baseline of existing knowledge and experience level of each individual student. 3-4 subsequent field practicums will serve as teaching tools for students to expand their interpretation skills. At the end of the semester, students take a final field practicum exam to demonstrate their proficiencies in interpreting wildlife tracks and sign and their overall improvement throughout the semester.

20% - Field Journal

Students are required to make individual field entries in a journal throughout the program. These entries are focused field notes designed to record observations in the field. Each entry is focused on one species or landscape element that students wish to take the time to study in more depth. Because most animals are elusive and difficult to observe in nature, most wildlife entries are developed around sign, such as scat or tracks. Landscape entries can focus on forest conditions, stream structure, or plant and animal associations.

Minimum Requirements:

- A field sketch of the specimen or landscape feature
- Both common and scientific names of the specimen
- Orienting information
- Location, elevation, aspect, habitat type, date, time, weather, etc.
- Identifying characteristics

10% - Final Project

Students will prepare a 10-minute oral presentation summarizing their learning processes over the course of Wildlife in the West, with attention to how their experiences have affected their own perspectives on wildlife management in working landscapes. They will support their positions with personal experience, interactions with speakers, and published work from the program, and combine elements of policy, community, and ecology to demonstrate their understandings. The presentation will be given to Swan Valley Connections staff and local community members on the last day of the program, giving students the opportunity and challenge to effectively communicate their positions to an audience of broad perspectives.

10% - Landscape Map

Students will prepare a landscape map identifying the Crown of the Continent ecosystem and personalized to include field sites, study areas, and travels through the semester.

10% - Participation

Description of topics	Lecture	Lab
<i>Geography of the Crown of the Continent</i> Field activity to orient students to their surrounding and introduce the complexity of human landscapes using a variety of maps to describe the many land uses and political designations in the Swan Valley.	2	6
<i>Natural History of the Swan</i> Description of field observation and journaling techniques. Students are introduced to the flora and fauna of the Swan Valley with attention given to the effects of elevation and aspect in species distribution	2	6
<i>Introduction to Tracks and Sign</i> Techniques for reading the landscape through the identification of tracks and sign left by the faunal species of the Swan. Tracking skills and wildlife safety techniques are presented through lecture and field laboratory work.	2	6
<i>Grizzly Bear Ecology</i> Overview of grizzly bear ecology and current population status in the Northern Continental Divide Ecosystem, the ecological role of the Swan Valley for bears	2	6
<i>Grizzly Bear Research and Monitoring</i> Population trend monitoring, review research data from GPS collared bears in the Swan Valley, invasive vs. non-invasive methods for population monitoring	4	4
<i>Lynx Ecology</i> Lynx habitat, predator / prey relationships, and management in the Crown of the Continent with a focus on forest ecology and succession.	2	6
<i>Lynx Research and Monitoring</i> Case study of lynx management in the Seeley-Swan ecosystems.	4	4
<i>Wolf Ecology</i> Wolf habitat, predator / prey relationships, and management in the Crown of the Continent	2	6
<i>Wolf Monitoring</i> Practice wolf location techniques and aid Montana FWP in monitoring wolf reproduction	2	6
<i>Bull Trout Ecology</i> Bull trout natural history and ecology. Explore bull trout habitat in the Swan watershed with an emphasis on stream ecology.	3	5
<i>Bull Trout Research and Monitoring</i> In depth habitat study with forest and stream interactions. Students will also conduct snorkel surveys of fish populations.	2	6
<i>Total</i>	27	61

Wildlife Policy and Rural Communities

Environmental Studies, ENST 395

3 Credits, University of Montana

Course Description

In Wildlife Policy and Rural Communities, students study federal policies in place to manage and recover threatened and endangered species with a strong focus on the Endangered Species Act and its many provisions. The course focuses on the impacts of the ESA in rural communities as well as both regulatory and incentive-based approaches to ESA implementation. Students study definitions of “critical habitat” while investigating the role of both public and private lands in conservation of federally threatened species. Finally, students learn about the issues involved in federal vs. state management of species. During the course, students meet with ranchers, loggers, outfitters and other rural residents in the Southwest Crown of the Continent as well as with public land managers, legal scholars, and public interest groups to gain a full appreciation for diverse views in western communities on the ESA and wildlife conservation policies more generally.

Learning Outcomes

- To develop an understanding of the dynamics of wildlife conservation across intermingled public and private lands in the west.
- To explore the differential mandates that local, state and federal government agencies have for the conservation of wildlife in the inland northwest.
- To learn firsthand about the opportunities and barriers for private landowners to partner in the conservation and restoration of threatened and endangered species.
- To learn from wildlife professionals about how their jobs involve the Endangered Species Act (ESA).
- To understand other federal laws such as the National Environmental Policy Act (NEPA), and how wildlife issues on public lands are addressed through NEPA.
- To consider both the intended and unintended consequences of various environmental initiatives that utilize the ESA and NEPA to promote wildlife conservation.
- To explore the working definition of critical habitat and how it is being applied in the case of bull trout and Canada lynx.
- To learn how to communicate policy information accurately and concisely and promote mutual understanding between academia and public discourse.
- To improve critical thinking and writing skills by engaging in real wildlife policy issues unfolding in the Southwest Crown of the Continent.

Assignments/Evaluation

40% - Policy Essays

Students will be prompted to write two essays that asks them to engage with difficult policy themes or conflicts, using examples from each of the four case study species. Students must demonstrate their understanding of policy and their ability to think critically and creatively about solutions to wildlife-human conflict and threatened species management.

20% - Threatened and Endangered Species “whitepapers”

Students will prepare reports about the essential aspects of each of the case-study species: grizzly bear, wolves, bull trout, and lynx. Each report will cover ecology and life history, social factors, recovery goals / demographic criteria for recovery, and work being done to recover the species. These papers will account for 20% of both the Policy and Community courses.

10% - Quizzes

Short quizzes are used to highlight important aspects of U.S. environmental legislation

10% - Stakeholder Role Play

At the end of the course, students will participate in a group role play exercise. Each student will be assigned a stakeholder perspective to represent in a facilitated scenario on a wildlife management topic. Students are graded on their ability to synthesize and verbally demonstrate their understanding of the topics covered during the course. The role play will account for 10% of both the Policy and Community courses.

10% - Final Project

Students will prepare a 10-minute oral presentation summarizing their learning processes over the course of Wildlife in the West, with attention to how their experiences have affected their own perspectives on wildlife management in working landscapes. They will support their positions with personal experience, interactions with speakers, and published work from the program, and combine elements of policy, community, and ecology to demonstrate their understandings. The presentation will be given to Swan Valley Connections staff and local community members on the last day of the program, giving students the opportunity and challenge to effectively communicate their positions to an audience of broad perspectives.

10% - Participation

Grade is based on a quantitative behavior, judgment and attitude scoring rubric

Description of topics	Lecture	Lab
<i>Introduction to the Endangered Species Act</i> Overview of the ESA – legal provisions, critical habitat designation, species listing and delisting. Focus on listed or proposed species in Montana.	4	4
<i>Environmental History of the U.S.</i> A timeline of environmental policy in the U.S. and its relation to wildlife management in the modern era	6	3
<i>Federal Land Management Policies</i> A study of public lands and management agencies in the U.S. with attention given to NEPA, NFMA, and Wilderness.	6	4
<i>Ethical Foundations of Wildlife Law and Policy</i> A survey of the ethical considerations that inform environmental laws and policies. This section looks at Leopold’s <i>Land Ethic</i> , The North American Model of Wildlife Conservation, modern conservation challenges, and the relationship between public and private ownership of natural resources.	5	5
<i>Challenges of ESA Implementation and Species Recovery</i> Study of the social, legal, and political challenges facing the ESA and how these affect species recovery	3	7
<i>History of Listed Species in Montana</i> A survey of the social, ecological, and political events surrounding the listed species within the Crown of the Continent	3	7
<i>Recovery of Listed Species in Montana</i> A survey of past and ongoing efforts to recover listed species and the management implications of delisting.	2	6
<i>Management Across Scales of Governance</i> Study of the interrelated roles of management and policy making at local, state, federal, and tribal scales of governance.	4	6
<i>Total</i>	33	42

Community-Based Approaches to Wildlife Conservation

Natural Resource Science & Management, NRSM 395

3 Credits, University of Montana

Course Description

Community-Based Approaches to Wildlife Conservation focuses on emerging strategies for reducing human-wildlife conflicts, keeping in mind the “triple bottom line” of ecology, economy, and society. While the Crown of the Continent presents a rugged and wild landscape protected by federal laws, there are also many rural communities and working landscapes interspersed throughout the region. It is in these landscapes, where human and wildlife communities overlap, that management issues are most complex in ecological, economic, and social terms. This course surveys national, regional, and local conservation strategies with an emphasis on several community projects across the Crown of the Continent attempting to manage and recover threatened species in working landscapes. Students contrast and critically analyze different conservation approaches through lectures, discussions, and interactions with guest speakers. The course emphasizes the multiple perspectives of stakeholders, as well as both the importance and difficulty of striving for collaborative solutions to conflicts over wildlife management and controversial species.

Learning Outcomes

- To understand and contrast different types of conservation strategies, and critically analyze the abilities of each to maintain healthy ecosystems, economies, and communities.
- To understand the role that communities play in wildlife conservation.
- To evaluate community-based approaches designed to promote coexistence with wildlife.
- To understand how wildlife habitat transcends land ownership boundaries, and how both public and private lands are integrated in wildlife conservation.
- To develop communication skills for interacting with diverse stakeholders with different values towards wildlife.
- To appreciate the challenges of managing for wildlife species that may conflict with working landscapes, and develop the critical thinking needed to move intractable conflicts towards creative solutions.

Assignments/Evaluation

40% - Community Essays

Students will be prompted to write essays that ask them to engage with difficult community-based themes or conflicts, incorporating examples from each of the four case study species. Students must demonstrate their understanding of community dynamics and their ability to think critically and creatively about solutions to wildlife-human conflict and threatened species management

20% - Threatened and Endangered Species “whitepapers”

Students will prepare reports about the essential aspects of each of the case-study species: grizzly bear, wolves, bull trout, and lynx. Each report will cover ecology and life history, social

factors, recovery goals / demographic criteria for recovery, and work being done to recover the species. These papers will account for 20% of both the Policy and Community courses.

10% - Stakeholder Role Play

At the end of the course, students will participate in a group role play exercise. Each student will be assigned a stakeholder perspective to represent in a facilitated scenario on a wildlife management topic. Students are graded on their ability to synthesize and verbally demonstrate their understanding of the topics covered during the course. The role play will account for 10% of both the Policy and Community courses.

10% - Bear Fair Project

Students will participate in gathering data for Swan Valley Bear Resources (SVBR) during the annual Bear Fair. The Bear Fair brings visitors and community members together to learn about bear ecology and reducing the potential for human-wildlife conflicts. Data gathered helps SVBR better allocate its resources to further reduce conflicts in the Swan Valley.

10% - Final Project

Students will prepare a 10-minute oral presentation summarizing their learning processes over the course of Wildlife in the West, with attention to how their experiences have affected their own perspectives on wildlife management in working landscapes. They will support their positions with personal experience, interactions with speakers, and published work from the program, and combine elements of policy, community, and ecology to demonstrate their understandings. The presentation will be given to Swan Valley Connections staff and local community members on the last day of the program, giving students the opportunity and challenge to effectively communicate their positions to an audience of broad perspectives.

10% - Participation

Grade is based on a quantitative behavior, judgment and attitude scoring rubric

Description of topics	Lecture	Lab
<i>Community-Based Approaches to Wildlife Conservation</i> Learn about local conservation efforts from organizations and individuals	2	6
<i>Indigenous Wildlife Management</i> Learn about wildlife management and conservation on the Confederated Salish and Kootenai and Blackfeet reservations	2	6
<i>Community Development and Planning</i> Study how the communities of the Swan Valley incorporate considerations for wildlife and natural resources into plans for future growth and development.	2	6
<i>The Role of Citizen Science</i> Explore data gathered from a variety of citizen science and volunteer projects to understand the value of local knowledge and individual engagement.	2	6
<i>Public/Private Partnerships in Conservation</i> Study the intersection of public and private rights and responsibilities and how these can be used for conservation. Specific case studies focus on conservation easements in the Crown of the Continent.	4	4
<i>Ranching and Habitat Conservation</i> Study of the resources available for large private landowners to promote habitat conservation at the landscape scale. Lecture on policy and management is supported by site visits to regional ranching operations where habitat conservation efforts are in place or planned for.	3	7
<i>Collaborative Conservation in Cattle Country</i> Study of the role of community based collaboration in maintain healthy economies and ecosystems. Students meet with representatives and participants of the Blackfoot Challenge, a nationally recognized collaborative with proven results.	3	7
<i>Wolves, Grizzlies, Cattle and Sheep</i> Students meet with wild life conflict specialists from Montana Fish, Wildlife and Parks. Attention is given to management of Montana’s expanding populations of wolves and grizzly bears into the traditional agricultural lands of the Rocky Mountain Front.	2	6
<i>A Legacy of Conservation</i> A look at the role of conservation efforts through U.S. history and the effect these have had in shaping the modern social and environmental landscape.	4	4
<i>Stream and Fisheries Restoration</i> A survey of the efforts implemented to sustain native cutthroat and bull trout populations in the Swan, Blackfoot, and Flathead Rivers.	4	4
<i>Total</i>	28	56

SVC Credit Definitions and Policy

Swan Valley Connection's college field programs are accredited through the University of Montana's School of Extended and Lifelong Learning (SELL). The University of Montana's credit hour definitions are stated in procedure 201.35, adopted 5/8/14 and revised 2/11/16 in accordance with the Academic Standards and Curriculum Review Committee (ASCRC) procedures 201.40, 201.55, 203.6, the Board of Regents Policies 303.3, 309.1, and Code of Federal Regulations 34 (C.F.R.) 600.2. Approved by ASCRC, Graduate Council, and Faculty Senate

Credit Hour Definitions

Credits for all coursework completed at the University of Montana shall be awarded in accordance with the Department of Education's regulations as set forth in 34 C.F.R. [§ 600.2](#).

A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately fifteen weeks for one semester; or
2. At least an equivalent amount of work for other academic activities as established by the institution, including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

The one hour of work referred to above is approximate and may be reasonably met with a 50-60-minute time period.

This definition is not intended to require a minimum amount of time in class, nor limit the scope or distribution over time of activities that may count toward the credit hour. Moreover, it only specifies the minimum amount of time. Departments and programs are free to apply higher workload requirements per credit hour.

Applications of the Definition

Credits awarded for short courses and workshops shall comply with ASCRC procedure [201.40](#) and BOR policy [309.1](#).

Laboratory work, practica, studio work, and similar activities may be awarded 1 credit per at least 3 hours of organized or independent academic activity per week for 15 weeks. Departments may establish a higher minimum time requirement per academic credit hour earned.

Activities may include a variety of items, but they should develop or apply student abilities consistent with the institution's or program's learning objectives.

Compressed Courses

Swan Valley Connections' field programs are designated as compressed courses and adhere to the policies under the University of Montana's Faculty Senate procedure number 201.40, adopted 9/13/11, in accordance with the Board of Regents Policy 309.1.

Compressed courses (i.e. courses which do not meet at the standard scheduled times for fall semester, wintersession, spring semester, or one of the summer sessions) must adhere to BOR Policy 309.1- Course Credits: Short Courses and Workshops. This policy states that "The method for awarding credit for short courses and workshops should be consistent with the method used in the regular academic programs".

Swan Valley Connections Semester Credit Hours

Swan Valley Connections' college field programs award semester credit hours for courses using both traditional and experiential instruction methods in a compressed course format. The University of Montana's definitions of a credit hour are applied to Swan Valley Connections instructional methods as not less than:

1. Fifteen hours of traditional instruction in the form of direct faculty instruction and a minimum of 30 hours of out-of-class student work over the duration of the field program; or
2. Forty-five hours of experiential instruction in the form of laboratory work, site visits, service projects, practica, or other organized or independent academic activities that develop or apply student abilities consistent with the program's learning objectives.

To maintain the academic integrity of our college field programs, Swan Valley Connections will maintain the policy of requiring a minimum credit ratio of direct faculty instruction to experiential learning of 1:2 for each college field program course.

1. 3-credit courses will at minimum include 15 hours of direct faculty instruction with an accompanying 90 hours of experiential learning and 30 hours of out-of-class work in the form of graded assignments, course preparation, or readings.
2. 4-credit courses will at minimum include 20 hours of direct faculty instruction with an accompanying 120 hours of experiential learning and 40 hours of out-of-class work in the form of graded assignments, course preparation, or readings.

Swan Valley Connections instruction format requirements

Hours of Instruction			Hours of Instruction		
Direct Faculty	Experiential		Direct Faculty	Experiential	
	3 credits	4 credits		3 credits	4 credits
15	90	-	38	21	66
16	87	-	39	18	63
17	84	-	40	15	60
18	81	-	41	12	57
19	78	-	42	9	54
20	75	120	43	6	51
21	72	117	44	3	48
22	69	114	45	-	45
23	66	111	46	-	42
24	63	108	47	-	39
25	60	105	48	-	36
26	57	102	49	-	33
27	54	99	50	-	30
28	51	96	51	-	27
29	48	93	52	-	24
30	45	90	53	-	21
31	42	87	54	-	18
32	39	84	55	-	15
33	36	81	56	-	12
34	33	78	57	-	9
35	30	75	58	-	6
36	27	72	59	-	3
37	24	69	60	-	-