

Forestry Course Descriptions – Utah State University

Please go to www.usu.edu/generalcatalog/2007-2009/online/pdf/coursedescriptions/BIOLcrs.pdf for more information.

Wildland Resources (WILD)

See *Department of Wildland Resources*, [click here](#)

WILD 2000 Introduction to Forest, Range, and Wildlife Sciences 1

With a combination of field trips, computer lab exercises, and classroom discussions, students gain an overview of forest, range, and wildlife sciences, including a review of career opportunities for students completing a BS degree in forest, range, or wildlife. (F,Sp)

WILD 2200 BLS Ecology of Our Changing World 3©

Foundations of ecological and evolutionary relationships of organisms with other organisms and with the physical environment, emphasizing populations, communities, and ecosystems. Integration of basic science with applications of science to understanding human interactions with the environment. (F,Sp)

WILD 2250 Introductory Internship/Co-op 1-3®

Introductory-level educational experience in internship/cooperative education position approved by department. Prerequisite: Departmental signature. (F,Sp,Su)

WILD 2300 Mushroom Identification 1

Lecture course covering taxonomy, ecology, and importance of macro and micro fungi. Also taught as BIOL 2300. (F)

WILD 2310 Mushroom Identification Lab 1-2®

Lab course acquainting students with basic fungal taxonomic groups. Students collect, preserve, and identify fungi they collect. Edible fungi prepared and eaten. Also taught as BIOL 2310. (F)

WILD 2500 Computer Applications in Natural Resources 3

Advanced spreadsheet, graphics, aerial photography, and Geographic Information Systems for natural resource management. (F)

WILD 3300 Management Aspects of Wildlife Behavior 3

Principles, concepts, and mechanisms of animal behavior, emphasizing behavioral ecology, development, and comparative aspects of special relevance to management of fish and wildlife. (Sp)

WILD 3600 Wildland Plant Ecology and Identification 4

Autecology and identification of dominant grass, forb, and woody plants of the Intermountain West. Emphasizes native species; however, introduced or noxious weeds are included. Explores plant structure and function, as related to the environment. Enrollment limited to WILD Department majors. Department authorization required for all nonmajors. (F)

WILD 3610 Wildland Animal Ecology and Identification 4

Autecology and identification of important mammals, birds, reptiles, and amphibians of the Intermountain West. Emphasizes native species distribution and habitat requirements in relation to the environment. Prerequisite: NR/BIOL 2220. Enrollment limited to WILD Department majors. Department authorization required for all nonmajors. (F)

WILD 3700 CI Inventory and Assessment in Natural Resource and Environmental Management 3

Lectures, laboratory exercises, and field-based projects introduce students to the concepts, strategies, and analytical methods of natural resource and environmental inventory and assessment. Prerequisites: BIOL/NR 2220; MATH 1100 or higher; STAT 2000 or 3000; and passing score on the University Studies Computer and Information Literacy (CIL) exam. (F)

WILD 3710 Monitoring and Assessment in Natural Resource and Environmental Management 3

Lectures, case studies, laboratory exercises, and field-based projects introduce students to the concepts, strategies, and analytical methods of science-based assessment of natural resources. Prerequisite: WILD 3700 or permission of instructor. (Sp)

WILD 3800 Wildland Ecosystems 3

Structure, function, and dynamics of terrestrial ecosystems in response to natural and anthropogenic impacts, with emphasis on the Intermountain West and Great Plains. Prerequisites: NR/BIOL 2220; and SOIL 3000 (or concurrent enrollment). (Sp)

WILD 3810 Plant and Animal Populations 3

Basics of plant and animal population ecology, including population regulation, life histories, single and multi-species interactions, and metapopulations. Case studies will cover topics of both management and conservation concern. Prerequisites: NR/BIOL 2220, MATH 1100 or higher. (Sp)

WILD 3850 Vegetation and Habitat Management 3

Applying ecological principles and concepts to manipulate the composition, structure, and productivity of wildland vegetation for a range of objectives, including the creation and maintenance of wildlife habitat, using biological, chemical, and mechanical methods, as well as fire. Prerequisites: SOIL 3000;

WILD 3600 (may be taken concurrently). (F)**WILD 3900 Managing Dynamic Ecological Systems 3**

Emphasizes how people from diverse natural resource disciplines benefit from integrating Eastern and Western philosophical and cultural beliefs with behavioral principles and processes to manage dynamic systems with due consideration for the ecological, cultural, and economic values of societies. (Sp)

WILD 4000 Principles of Rangeland Management 3

Modern principles of rangeland management, including history of the profession, ecology, plant physiology, impacts of grazing on individual plants and plant communities, grazing management, range animal nutrition, rangeland watersheds, and the economics and planning of rangeland practices. Also introduces range-wildlife relations and vegetation manipulation. (Sp)

WILD 4050 Urban Fish and Wildlife Management 3©

Concentrates on: understanding impacts of urbanization on wildlife and habitat; developing basic understanding of wildlife needs; completing urban wildlife habitat inventory; and preparing urban wildlife conservation and management plan. (F,Sp,Su)

WILD 4250 Advanced Internship/Co-op 1-9®

Advanced-level educational experience in internship/cooperative education position approved by department. Prerequisite: Departmental signature. (F,Sp,Su)

WILD 4500 Principles of Wildlife Management 3

Provides students with a working knowledge of the application of basic concepts in ecology and animal behavior to the management of wildlife resources to achieve diverse objectives of conservation, control, or cropping. Prerequisites: WILD 3610 and 3810. (Sp)

WILD 4520 Wildland Fire Behavior 3

Comprehensive examination of fuels, weather, and topography and how they interact to determine wildland fire behavior, including rate of spread, energy release, and intensity. This course is being offered in WebCT format. For information, contact the department. (F,Sp,Su)

WILD 4540 Forest Harvest and Utilization 2

Elements of timber harvest systems, including policies and practices for minimizing biophysical impacts. Utilization of wood resources. (F)

WILD 4600 Conservation Biology* 3

Patterns and processes creating biological diversity. Causes and consequences of diversity losses from genes to ecosystems, including habitat fragmentation and exotic invasion. Conservation laws and organizations. Approaches to conserving diversity loss, including reserve design, corridors, and species reintroductions. Prerequisite: NR/BIOL 2220. (Sp)

WILD 4700 Ecological Foundations of Restoration 3

Explores meanings of "restoration," use of reference communities, restoration of processes versus structure, species reintroductions, managing natural processes to meet restoration goals, and fundamentals of physiological, population, community, and ecosystem ecology from a restoration perspective. Prerequisites: NR/BIOL 2220, WILD 3850. (Sp)

WILD 4810 Directed Reading in Wildlife Damage Management 2©

Focuses on wildlife damage management, especially as it reflects on both positive and negative human-wildlife interactions. For this reading course, students work with instructor to develop appropriate and rigorous reading program. (F,Sp,Su)

WILD 4880 Genetics in Conservation and Management 3

Introduces principles of modern genetics, with applications, examples, and assignments related to ecology and management issues. Emphasizes genetic marker systems, gene flow, genetic drift, and adaptation. Prerequisites: CHEM 1110 or 1220; BIOL 1610. (F)

WILD 4950 Special Topics 1-3®

Individual study and research upon selected problems. Prerequisite: Departmental permission. (F,Sp,Su)

WILD 4960 Directed Readings 1-3®

Individual reading research on forest, range, and wildlife science readings. Prerequisite: Departmental approval. (F,Sp,Su)

WILD 4970 Undergraduate Research 1-3®

Individual or team research. Prerequisite: Departmental permission. (F,Sp,Su)

WILD 4980 Undergraduate Seminar 1®

Intended to bring upperclassmen up-to-date on topics in forest, range, and wildlife sciences. Graded Pass/Fail *only*. (F,Sp)

WILD 5000 Predator Ecology and Management* 3

Reviews biology, ecology, theory, management, and policy issues involving large vertebrate predators. Uses case histories to explore predation theory, population ecology, natural history, and management strategies. (Sp)

WILD 5070 Range Wildlife Relations 3

(dual listing 6070)

Explores interactions on rangelands between wild and domestic ungulates, as well as other wildlife forms around the world, but with emphasis on western North America. Prerequisite: WILD 3610 or permission of instructor. (F)

WILD 5100 Wildlife Management Laboratory 3

Familiarizes students with variety of wildlife management and research techniques and strategies, including techniques to catch, mark, and restrain wild animals; monitoring wildlife populations; measuring physiological parameters; measuring habitat variables; assessing and preventing wildlife damage; and interpreting and analyzing biological data. (F)

WILD 5220 Community-based Conservation (dual listing 7220) Partnerships 3**

Seeks to infuse ecology with applied conservation and management approaches. Conservation and management of natural resources requires an understanding of ecological relationships and strategies for working with diverse stakeholders. PhD-level students present their research. (Sp)

WILD 5300 Wildlife Damage Management Principles 3 (dual listing 7300)

Explains current legal, ethical, and biological principles for the control and/or management of problem vertebrate species. (Sp)

WILD 5350 Wildland Soils 3 (dual listing 6350)

Application of basic principles of soil science to wildland ecosystems. Effects of disturbance and land use on wildland soil properties. Role of soils in natural resource management. Prerequisites: CHEM 1110; SOIL 3000, and one additional upper-division Soils course, or permission of instructor. Also taught as SOIL 5350/6350. (Sp)

WILD 5420 CI Forest and Shade Tree Pathology 3

Nature, cause, and management of forest diseases. Also taught as BIOL 5420 and PLSC 5420. (Sp)

WILD 5430 Advanced Forest Pathology 2

In-depth exploration of forest pathology issues, focusing on ecosystem-level processes. (Sp)

WILD 5460 Avalanche and Snow Dynamics 2

Fundamentals of snow and avalanche dynamics. Avalanche safety, forecasting, hazard evaluation, and control. (Sp—first half)

WILD 5510 Forest Entomology 2

Basic insect taxonomy, life histories, structure, and function. Ecological relationships, recognition, and management of insects of economic importance to forestry. This course is not currently being offered. For information about when it may be offered, contact the department.

WILD 5650 Urban/Community Forestry 3

Social, biological, and administrative aspects of managing urban/community forests, including field and classroom exercises and a management planning project. Also taught as PLSC 5650. (Sp)

WILD 5700 Forest Assessment and Management 3

Detailed analysis of forest stand structure and growth. Development of silvicultural prescriptions to meet specific objectives. Analysis of costs and benefits of alternative forest management strategies. Emphasizes forest management to achieve a broad range of objectives. (Sp)

WILD 5710 Wildland Disturbance: Ecology and Management 3

Examines causes, effects, and management options for selected biotic and abiotic agents of disturbance in wildland ecosystems. (F)

WILD 5750 Applied Remote Sensing 3 (dual listing 6750)

Covers the application of remote sensing to landcover mapping and resource monitoring at a quantitative level. Students instructed on the effects of atmosphere and surface interaction on the reflectance collected by electro-optical sensors, as well as on the proper use and interpretation of various calibration and classification algorithms. (F)

WILD 5860 Poisonous Range Plants: Affecting Livestock 3**

Poisonous plants of rangelands and their effects on grazing animals, especially livestock. Management practices to reduce or prevent poisoning. Also taught as ADVS 5860. (Sp)

WILD 6000 Grazing Systems 2**

Overview and analysis of various strategies for managing grazing on rangelands. Special attention given to ecological mechanisms by which a particular grazing system may benefit livestock production or the sustainability of rangeland resources. (Sp)

WILD 6050 Rangeland Fire Ecology and Fire Prescription Development 3

Provides understanding of the role prescribed and natural fires have in western U.S. rangeland plant communities, and when fire can be used to achieve a specific plant community. Students learn basics of fire behavior and ignition techniques, and how to write prescribed fire use plans. This course is not currently being offered. For information about when it may be offered, contact the department.

WILD 6070 Range Wildlife Relations 3 (dual listing 5070)

Explores interactions on rangelands between wild and domestic ungulates, as well as other wildlife forms around the world, but with emphasis on western North America. Prerequisite: WILD 3610 or permission of instructor. (F)

WILD 6200 Biogeochemistry of Terrestrial Ecosystems 3**

Inputs, outputs, and cycling patterns of major nutrients. Emphasis on mechanisms for transformations, factors influencing process rates, and the impacts of management and global change on nutrient cycles and air and water quality. Prerequisites: BIOL 1620, SOIL 3000, CHEM 2300 or 2310, or permission of instructor. Also taught as BIOL 6200 and SOIL 6200. (F)

WILD 6240 Graduate Internship/Co-op 1-9@

Graduate-level educational experience in internship/cooperative education position approved by department. (F,Sp,Su)

WILD 6270 Advanced Silviculture 3

In forestry, there is a trend toward more complex silviculture to implement increasingly complex stand-level objectives. This course covers important techniques used in the development and implementation of silvicultural prescriptions for this sort of stand management. Prerequisite: Permission of instructor. (Sp)

WILD 6350 Wildland Soils 3 (dual listing 5350)

Application of basic principles of soil science to wildland ecosystems. Effects of disturbance and land use on wildland soil properties. Role of soils in natural resource management. Prerequisites: CHEM 1110; SOIL 3000, and one additional upper-division Soils course, or permission of instructor. Also taught as SOIL 6350/5350. (Sp)

WILD 6400 Ecology of Animal Populations* 4

Growth, fluctuation, balance, and control of animal populations. Prerequisite: NR/BIOL 2220 or equivalent. (F)

WILD 6420 Vegetation Sampling Design 4

Advanced intrastand vegetation sampling design and elementary (nonmultivariate) between stand comparisons, primarily for research purposes. Prerequisites: STAT 5200; WILD 6770. (Su)

WILD 6500 Biometry: Design and Analysis of Ecology Research 4

Examines research design from statistical perspective, showing how data analysis is largely determined by research design and its implementation. Reviews statistical tools for analysis of ecological data in the context of design. Prerequisite: Graduate standing. (F)

WILD 6510 Topics in Spatial Ecology 1-3®**

Seminars on analysis and interpretation of spatially explicit ecological data. Topics vary yearly, and range from spatial statistics to assessing uncertainty in environmental information systems to spatial analyses of plant and animal populations. Prerequisites: Graduate-level course in statistics and permission of instructor. (Sp)

WILD 6610 Regional Terrestrial Ecosystems 4

Synthesis of structural functional and regulatory processes and their interactions with humans in terrestrial ecosystems found in the Intermountain West and Great Plains. Prerequisites: NR/BIOL 2220, SOIL 3000; or equivalent courses. This course is not currently being offered. For information about when it may be offered, contact the department.

WILD 6710 Landscape Ecology 3 (dual listing 7710)

Focuses on landscape-scale patterns and processes, and ways of understanding ecological complexity. Explores conceptual underpinnings of larger-scale ecology. Emphasizes understanding of current peer-reviewed literature. (Sp)

WILD 6720 Advanced Conservation Biology* 3 (dual listing 7720)

Examines cases and consequences of population and species declines, including activities such as habitat fragmentation and introduction of exotic species, as well as natural causes due to genetics and demography. (Sp)

WILD 6740 Physical Processes in Remote Sensing 3

Assures that students are well-versed in the science and technology of remote sensing. Covers various algorithms and their ability to extract biophysical information from remotely sensed images. Helps students gain firm knowledge of the capabilities and limitations of these algorithms and their use in understanding landscape level biophysical interactions. (Sp)

WILD 6750 Applied Remote Sensing 3 (dual listing 5750)

Covers the application of remote sensing to landcover mapping and resource monitoring at a quantitative level. Students instructed on the effects of atmosphere and surface interaction on the reflectance collected by electro-optical sensors, as well as on the proper use and interpretation of various calibration and classification algorithms. (F)

WILD 6770 Plant Community Ecology* 3

Theory and concepts of plant community ecology. Plant community composition, distribution in space, and dynamics in time. Species environmental response models, competition theory, statistical predictive models, and concepts of multivariate analysis in plant ecology. Prerequisites: NR/BIOL 2220 or equivalent; and ecology core courses (may be taken concurrently). (Sp)

WILD 6800 Forest, Range, and Wildlife (dual listing 7800) Sciences Departmental Seminar 1®

Review of current research by graduate students and faculty. Graded Pass/Fail *only*. (F,Sp)

WILD 6850 Population Ecology 3 (dual listing 7850)

Using framework of mathematical modeling, reviews basic ecological processes (e.g., competition, predation, and environmental stresses) that determine numbers of individuals in plant and animal populations. This course is not currently being offered. For information about when it may be offered, contact the department.

WILD 6870 Ecology Seminar 1®

The Ecology Center schedules regular seminars throughout the school year with ecological scientists from other institutions participating. Ecology majors are required to attend a minimum of 10 such lectures. Students should register for fall semester, but attend through spring semester. Also taught as BIOL 6870, ENVS 6870, and WATS 6870. (F,Sp)

WILD 6880 Current Issues in Conservation (dual listing 7880) Genetics and Management* 2

Reviews variety of topics in fast-moving field of conservation genetics. Explores management applications and implications, with particular emphasis on current primary literature. Recommended prerequisite: Prior course in genetics. (Sp)

WILD 6900 Graduate Special Topics 1-6®

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses. (F,Sp,Su)

WILD 6910 Directed Study 1-6®

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses. (F,Sp,Su)

WILD 6960 Graduate General Ecology 4

General concepts, history, and issues in all major areas of the science of ecology including: environmental biophysics; and physiological, behavioral, evolutionary, community, ecosystem, and applied ecology in both terrestrial and aquatic environments. Also taught as BIOL 6960, ENVS 6960 and WATS 6960. (F)

WILD 6970 Thesis Research 1-12®

Original research for MS degree on a problem in rangeland resources. Graded Pass/Fail *only*. (F,Sp,Su)

WILD 6990 Continuing Graduate Advisement 1-9®

Graded Pass/Fail *only*. (F,Sp,Su)

WILD 7000 Theory and Applications of Rangeland Ecosystem Management 3

Application of range management principles, new theory, and public policy to on-the-ground decision-making in public and private lands. Field trips required. (F)

WILD 7030 Plant-Herbivore Interactions* 3

Emphasizes principles of self-organization as applied to plant (tolerance and avoidance of herbivory) and herbivore (food and habitat selection) behavior. Stresses importance of history and ongoing interactions with the environment in understanding the dynamics of plant-herbivore interactions. (Sp)

WILD 7200 Plant Physiological Ecology 3**

Plant response to environmental factors; includes environmental biophysics, physical and physiological factors influencing productivity, water use, resistance to stress, reproduction, establishment of plants, and competition with neighboring plants. (F)

WILD 7220 Community-based Conservation (dual listing 5220) Partnerships 3**

Seeks to infuse ecology with applied conservation and management approaches. Conservation and management of natural resources requires an understanding of ecological relationships and strategies for working with diverse stakeholders. PhD-level students present their research. (Sp)

WILD 7300 Wildlife Damage Management Principles 3 (dual listing 5300)

Explains current legal, ethical, and biological principles for the control and/or management of problem vertebrate species. (Sp)

WILD 7400 Plant Population Ecology* 3

Dynamics of plant populations as influenced by interactions with their abiotic and, especially, biotic environments. Topics include dormancy and germination strategies, intra- and interspecific competition, facilitation, disturbance, herbivory, pathogenic and mutualistic fungi, pollination, seed dispersal, and vegetative reproduction. (F)

WILD 7420 Analysis of Ecological Communities 5**

Advanced treatment of classification and ordination of ecological communities, emphasizing ecological data structures and methods of common use in ecological research. Prerequisite: STAT 3000 or WILD 6500 or consent of instructor. (Sp)

WILD 7710 Landscape Ecology 3 (dual listing 6710)

Focuses on landscape-scale patterns and processes, and ways of understanding ecological complexity. Explores conceptual underpinnings of larger-scale ecology. Emphasizes understanding of current peer-reviewed literature. (Sp)

WILD 7720 Advanced Conservation Biology* 3 (dual listing 6720)

Examines cases and consequences of population and species declines, including activities such as habitat fragmentation and introduction of exotic species, as well as natural causes due to genetics and demography. (Sp)

WILD 7800 Forest, Range, and Wildlife

(dual listing 6800) Sciences Departmental Seminar 1®

Review of current research by graduate students and faculty. Graded Pass/Fail *only*. (F,Sp)

WILD 7850 Population Ecology 3 (dual listing 6850)

Using framework of mathematical modeling, reviews basic ecological processes (e.g., competition, predation, and environmental stresses) that determine numbers of individuals in plant and animal populations. This course is not currently being offered. For information about when it may be offered, contact the department.

WILD 7880 Current Issues in Conservation (dual listing 6880) Genetics and Management* 2

Reviews variety of topics in fast-moving field of conservation genetics. Explores management applications and implications, with particular emphasis on current primary literature. Recommended prerequisite: Prior course in genetics. (Sp)

WILD 7900 Graduate Special Topics 1-6®

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses. (F,Sp,Su)

WILD 7910 Directed Study 1-6®

Offers credit for special assignments, reading, and seminars beyond regularly scheduled courses. (F,Sp,Su)

WILD 7970 Dissertation Research 1-12®

Original research and study for PhD degree. Graded Pass/Fail *only*. (F,Sp,Su)

WILD 7990 Continuing Graduate Advisement 1-9®

Graded Pass/Fail *only*. (F,Sp,Su)

®Repeatable for credit. Check with major department for limitations on number of credits that can be counted for graduation.

©This course is also offered by online correspondence and/or CD through Independent and Distance Education.

*Taught 2008-2009.

**Taught 2007-2008.