WILDLIFE, FISH, & CONSERVATION BIOLOGY (WFC)

WFC 010 — Wildlife Ecology & Conservation (4 units)

Course Description: Introduction to the ecology and conservation of vertebrates. Complexity and severity of world problems in conserving biological diversity.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Scientific Literacy (SL); Writing Experience (WE).

WFC 050 — Natural History of California's Wild Vertebrates (3 units)

Course Description: Examination of the natural history of California's wild vertebrates (fish, amphibians, reptiles, birds, and mammals), including their biogeography, systematics, ecology and conservation status.
Learning Activities: Lecture 2 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Scientific Literacy (SL); Writing Experience (WE).

WFC 051 — Introduction to Conservation Biology (3 units)

Course Description: Introduction to conservation biology including both biological and social issues related to the loss of species and habitats. Intended for students with no background in biological sciences.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Scientific Literacy (SL).

WFC 070 — Data Literacy for Wildlife Biologists (3 units)

Course Description: Working with data in wildlife research. Programming in R with a focus on manipulating, summarizing, and visualizing data. Creating reproducible reports that combine code, visualization, and interpretive text. Reading scientific literature and interpreting common types of experimental and field data in ecology and wildlife biology.
Learning Activities: Lecture 2 hour(s), Laboratory 1 hour(s).
Grade Mode: Letter.

WFC 092 — Internship (1-6 units)

Course Description: Work experience off and on campus in all subject areas offered in the department. Internships supervised by a member of the faculty.
Prerequisite(s): Consent of instructor; lower division standing.
Learning Activities: Internship 3-18 hour(s).
Grade Mode: Pass/No Pass only.

WFC 098 — Directed Group Study (1-5 units)

Course Description: Group study on focused topics in Wildlife, Fish, & Conservation Biology. Topic varies according to instructor.
Learning Activities: Variable.
Grade Mode: P/NP only.

WFC 099 — Special Study for Undergraduates (1-5 units)

Course Description: Special study for undergraduates.
Prerequisite(s): Consent of instructor.
Learning Activities: Variable 1-5 hour(s).
Grade Mode: Pass/No Pass only.

WFC 100 — Field Methods in Wildlife, Fish, & Conservation Biology (4 units)

This version has ended; see updated course, below.
Course Description: Introduction to field methods for monitoring and studying wild vertebrates and their habitats, with an emphasis on ecology and conservation. Required weekend field trips.
Prerequisite(s): EVE 101 (can be concurrent) or ESP 100 (can be concurrent); (BIS 002A, BIS 002B, BIS 002C); or equivalent course of EVE 101 or ESP 100 (can be taken concurrently), and consent of instructor.
Learning Activities: Lecture 2 hour(s), Laboratory 3 hour(s), Fieldwork 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).

WFC 100 — Field Methods in Wildlife, Fish, & Conservation Biology (4 units)

Course Description: Introduction to field methods for monitoring and studying wild vertebrates and their habitats, with an emphasis on ecology and conservation. Required weekend field trips.
Prerequisite(s): (BIS 002B or BIO 001); EVE 101 or ESP 100 recommended.
Learning Activities: Lecture 2 hour(s), Laboratory 3 hour(s), Fieldwork 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).
This course version is effective from, and including: Spring Semester 2026.

WFC 101 — Field Research in Wildlife Ecology (2 units)

Course Description: Field research in ecology of wild vertebrates in terrestrial environments; formulation of testable hypotheses, study design, introduction to research methodology, oral and written presentation of results. Limited enrollment.
Prerequisite(s): Consent of instructor. One upper division course in each of ecology, statistics, and either ornithology, mammalogy, or herpetology.
Learning Activities: Lecture/Discussion 2 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Visual Literacy (VL); Writing Experience (WE).

WFC 101L — Field Research in Wildlife Ecology: Laboratory (4 units)

Course Description: Field research in ecology of wild vertebrates in terrestrial environments; testing ecological hypotheses through field research, application of research methodology, supervised independent research projects. Held between Labor Day and fall quarter.
Prerequisite(s): WFC 101 (can be concurrent); and consent of instructor.
Learning Activities: Lecture/Discussion 2 hour(s), Fieldwork 15 hour(s).
Enrollment Restriction(s): Limited enrollment.
Grade Mode: Letter.

WFC 102 — Field Studies in Fish Biology (1 unit)

Course Description: Emphasis on theory of quantitative fish capture methods and design of individual research projects on ecology, behavior, physiology or population biology of fishes.
Prerequisite(s): Consent of instructor. Upper division course in each of ecology, aquatic biology, fish biology, and statistics.
Learning Activities: Lecture/Discussion 1 hour(s).
Grade Mode: Letter.

WFC 102L — Field Studies in Fish Biology: Laboratory (6 units)

Course Description: Field investigations of fish biology are emphasized including quantitative capture methods and individual research projects on ecology, behavior, physiology or population biology of fishes at the field site in relation to their habitats.
Prerequisite(s): WFC 102 (can be concurrent); and consent of instructor.
Learning Activities: Fieldwork 15 hour(s), Laboratory 12 hour(s), Discussion/Laboratory 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Writing Experience (WE).

WFC 103 — Applied Statistics for Wildlife Research (4 units)

This version has ended; see updated course, below.
Course Description: Introduction to basic statistical concepts and methods as tools for fish and wildlife research. Application of general guiding principles of developing research questions and projects, basic probability theory, statistical estimation (correlation, regression, ANOVA, Chi-square test) and hypothesis testing. Introduction of some specialized analytical techniques, such as population dynamics modeling and time series analysis.
Prerequisite(s): (MAT 016B or MAT 017B or MAT 021B); (WFC 010 or WFC 050); or consent of instructor.
Learning Activities: Lecture 3 hour(s), Laboratory 1 hour(s).
Credit Limitation(s): Only 2 units credit allowed to students who have completed STA 013, STA 100, or PLS 120.
Grade Mode: Letter.

WFC 103 — Applied Statistics for Wildlife Research (4 units)

Course Description: Introduction to basic statistical concepts and methods as tools for fish and wildlife research. Application of general guiding principles of developing research questions and projects, basic probability theory, statistical estimation (correlation, regression, ANOVA, Chi-square test) and hypothesis testing. Introduction of some specialized analytical techniques, such as population dynamics modeling and time series analysis.
Prerequisite(s): (MAT 016B or MAT 017B or MAT 021B) or equivalent course; or consent of instructor.
Learning Activities: Lecture 3 hour(s), Laboratory 1 hour(s).
Credit Limitation(s): Only 2 units credit allowed to students who have completed STA 013, STA 100, or PLS 120.
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 110 — Biology & Conservation of Wild Mammals (3 units)

This version has ended; see updated course, below.
Course Description: Origins, evolution, diversification, and geographical and ecological distributions of mammals. Morphological, physiological, reproductive, and behavioral adaptations of mammals to their environment.
Prerequisite(s): (BIS 002A, BIS 002B, BIS 002C); (EVE 101 (can be concurrent) or ESP 100 (can be concurrent)); or equivalent course to ESP 100 or EVE 101.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 110 — Biology & Conservation of Wild Mammals (3 units)

Course Description: Origins, evolution, diversification, and geographical and ecological distributions of mammals. Morphological, physiological, reproductive, and behavioral adaptations of mammals to their environment.
Prerequisite(s): (BIS 002A or BIO 002); (BIS 002B or BIO 001); (BIS 002C or BIO 003); upper division ecology course recommended.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 110L — Laboratory in Biology & Conservation of Wild Mammals (3 units)

Course Description: Laboratory exercises in the morphology, systematics, species identification, anatomy, and adaptations of wild mammals to different habitats.
Prerequisite(s): WFC 110 (can be concurrent); and consent of instructor.
Learning Activities: Laboratory 6 hour(s).
Enrollment Restriction(s): Limited enrollment.
Grade Mode: Letter.

WFC 111 — Biology & Conservation of Wild Birds (3 units)

This version has ended; see updated course, below.
Course Description: Phylogeny, distribution, migration, reproduction, population dynamics, behavior and physiological ecology of wild birds. Emphasis on adaptations to environments, species interactions, management, and conservation.
Prerequisite(s): BIS 002A; BIS 002B; BIS 002C; upper division ecology course recommended.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).

WFC 111 — Biology & Conservation of Wild Birds (3 units)

Course Description: Phylogeny, distribution, migration, reproduction, population dynamics, behavior and physiological ecology of wild birds. Emphasis on adaptations to environments, species interactions, management, and conservation.
Prerequisite(s): (BIS 002A or BIO 002); (BIS 002B or BIO 001); (BIS 002C or BIO 003); upper division ecology course recommended.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).
This course version is effective from, and including: Spring Semester 2026.

WFC 111L — Laboratory in Biology & Conservation of Wild Birds (3 units)

Course Description: Laboratory exercises in bird species identification, anatomy, molts, age and sex, specialized adaptations, behavior, research, with emphasis on conservation of wild birds. Several weekend field trips, after class bird walks, and independent bird study are required.
Prerequisite(s): WFC 111 (can be concurrent); and consent of instructor.
Learning Activities: Laboratory 6 hour(s), Fieldwork 3 hour(s).
Enrollment Restriction(s): Limited enrollment.
Grade Mode: Letter.

WFC 119 — Freshwater Ecology (3 units)

This version has ended; see updated course, below.
Course Description: Freshwater ecosystems with an emphasis on the physical, chemical, and biological organization of riverine systems. Interactions of freshwater ecosystems with neighboring riparian and terrestrial systems, food web dynamics, salmon ecology, fluvial geomorphology, and reconciliation ecology.
Prerequisite(s): EVE 101 or ESP 100; or equivalent.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 119 — Freshwater Ecology (3 units)

Course Description: Freshwater ecosystems with an emphasis on the physical, chemical, and biological organization of riverine systems. Interactions of freshwater ecosystems with neighboring riparian and terrestrial systems, food web dynamics, salmon ecology, fluvial geomorphology, and reconciliation ecology.
Prerequisite(s): (BIO 001 or BIS 002); EVE 101 or ESP 100 recommended; or consent of instructor.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 120 — Biology & Conservation of Fishes (3 units)

This version has ended; see updated course, below.
Course Description: Evolution, ecology, and conservation of marine and freshwater fishes.
Prerequisite(s): BIS 002A; BIS 002B; BIS 002C; upper division ecology course recommended.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 120 — Biology & Conservation of Fishes (3 units)

Course Description: Evolution, ecology, and conservation of marine and freshwater fishes.
Prerequisite(s): (BIS 002A or BIO 002); (BIS 002B or BIO 001); (BIS 002C or BIO 003); upper division ecology course recommended.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 120L — Laboratory in Biology & Conservation of Fishes (2 units)

Course Description: Morphology, taxonomy, conservation, and identification of marine and freshwater fishes with emphasis on California species.
Prerequisite(s): WFC 120 (can be concurrent); and consent of instructor.
Learning Activities: Laboratory 3 hour(s).
Enrollment Restriction(s): Limited enrollment.
Grade Mode: Letter.

WFC 121 — Physiology of Fishes (4 units)

Course Description: Comparative physiology, growth, reproduction, behavior, and energy relations of fishes.
Prerequisite(s): Upper division courses in nutrition and physiology or consent of instructor.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Writing Experience (WE).

WFC 122 — Population Dynamics & Estimation (4 units)

This version has ended; see updated course, below.
Course Description: Description of bird, mammal and fish population dynamics, modeling philosophy, techniques for estimation of animal abundance (e.g., mark-recapture, change-inratio, etc.), mathematical models of populations (e.g., Leslie matrix, logistic, dynamic pool, stockrecruitment); case histories.
Prerequisite(s): (MAT 016A, MAT 016B); (STA 013 or STA 013Y); (BIS 002A, BIS 002B, BIS 002C); or the equivalent of STA 013; an upper division course in ecology.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s).
Grade Mode: Letter.

WFC 122 — Population Dynamics & Estimation (4 units)

Course Description: Description of bird, mammal and fish population dynamics, modeling philosophy, techniques for estimation of animal abundance (e.g., mark-recapture, change-inratio, etc.), mathematical models of populations (e.g., Leslie matrix, logistic, dynamic pool, stockrecruitment); case histories.
Prerequisite(s): (WFC 103 or STA 100 or PLS 120); (MAT 016B or MAT 017B or MAT 021B); (BIO 001 or BIS 002B); an upper division course in ecology.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 124 — Sampling Animal Populations (4 units)

Course Description: Introduction to major statistical modeling approaches for estimating animal population parameters, including: sample counts, distance sampling, repeated point counts (N-mixture modeling), capture-mark-recapture for closed and open populations, static and dynamic occupancy modeling, and richness estimation. Methods are embedded in the context of obtaining reliable estimates of abundance, survival, occurrence and other ecological parameters for management and conservation.
Prerequisite(s): (STA 100 or WFC 103 or PLS 120); (EVE 101 or ESP 100); or equivalent; upper division standing.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s).
Grade Mode: Letter.

WFC 125 — Tropical Ecology & Conservation (4 units)

This version has ended; see updated course, below.
Course Description: Ecology and natural history of the tropics. Challenges and opportunities associated with tropical conservation. Design and communicate course-based research project.
Prerequisite(s): EVE 101 or ESP 100.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Credit Limitation(s): Only 2 units credit allowed to students who have completed EVE 138.
Grade Mode: Letter.

WFC 125 — Tropical Ecology & Conservation (4 units)
Course Description: Ecology and natural history of the tropics. Challenges and opportunities associated with tropical conservation. Design and communicate course-based research project.
Prerequisite(s): BIO 001 or BIS 002B; or consent of instructor. EVE 101 or ESP 100 recommended.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Credit Limitation(s): Only 2 units credit allowed to students who have completed EVE 138.
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 126 — Conservation in Working Landscapes (4 units)

This version has ended; see updated course, below.
Course Description: Ecology, natural history, and conservation of working landscapes. Critical evaluation of tradeoffs (and potential synergies) that arise when simultaneously pursuing conservation, food production, and human livelihood objectives in crop fields, pastures, settlements, forestry systems, and patches of semi-natural habitat.
Prerequisite(s): BIS 002B; or consent of instructor; EVE 101 or ESP 100 recommended.
Learning Activities: Lecture 3 hour(s), Discussion/Laboratory 1 hour(s).
Grade Mode: Letter.

WFC 126 — Conservation in Working Landscapes (4 units)
Course Description: Ecology, natural history, and conservation of working landscapes. Critical evaluation of tradeoffs (and potential synergies) that arise when simultaneously pursuing conservation, food production, and human livelihood objectives in crop fields, pastures, settlements, forestry systems, and patches of semi-natural habitat.
Prerequisite(s): BIS 001 or BIS 002B; or consent of instructor. EVE 101 or ESP 100 recommended.
Learning Activities: Lecture 3 hour(s), Discussion/Laboratory 1 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 130 — Physiological Ecology of Wildlife (4 units)

This version has ended; see updated course, below.
Course Description: Principles of physiological ecology, emphasizing vertebrates. Ecological, evolutionary, and behavioral perspectives on physiological mechanisms used by animals to adapt to their environment, including consideration of climate-change and other threats to biodiversity. Tropical, temperate, and polar ecosystems are highlighted.
Prerequisite(s): EVE 101 or ESP 100; (BIS 002A, BIS 002B, BIS 002C); or equivalent course to ESP 100.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).

WFC 130 — Physiological Ecology of Wildlife (4 units)
Course Description: Principles of physiological ecology, emphasizing vertebrates. Ecological, evolutionary, and behavioral perspectives on physiological mechanisms used by animals to adapt to their environment, including consideration of climate-change and other threats to biodiversity. Tropical, temperate, and polar ecosystems are highlighted.
Prerequisite(s): (BIO 001 or BIS 002B); EVE 101 or ESP 100 recommended; or consent of instructor.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).
This course version is effective from, and including: Spring Semester 2026.

WFC 134 — Herpetology (3 units)

This version has ended; see updated course, below.
Course Description: Evolution and ecology of the world's diverse reptiles and amphibians. Emphasis on adaptations to environments, species interactions, management, and conservation.
Prerequisite(s): BIS 002A; BIS 002B; BIS 002C; upper division ecology course recommended.
Learning Activities: Lecture 2 hour(s), Term Paper.
Grade Mode: Letter.

WFC 134 — Herpetology (3 units)
Course Description: Evolution and ecology of the world's diverse reptiles and amphibians. Emphasis on adaptations to environments, species interactions, management, and conservation.
Prerequisite(s): (BIS 002A or BIO 002); (BIS 002B or BIO 001); (BIS 002C or BIO 003); upper division ecology course recommended.
Learning Activities: Lecture 2 hour(s), Term Paper.
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 134L — Herpetology Laboratory (3 units)

Course Description: Diagnostic characteristics and functional attributes of amphibians and reptiles, emphasizing ecological, bio-geographic and phylogenetic patterns. Field experience with common species of reptiles and amphibians in the Davis area.
Prerequisite(s): WFC 134 (can be concurrent); and consent of instructor.
Learning Activities: Laboratory 6 hour(s).
Grade Mode: Letter.

WFC 135 — Wetland Ecology & Conservation (4 units)

Course Description: Ecology of wetlands, including wetland formation and physical factors, types of wetland ecosystems, and restoration, law, and climate change.
Prerequisite(s): BIO 001 or BIS 002B; or consent of instructor; EVE 101 or ESP 100 recommended.
Learning Activities: Lecture 3 hour(s), Laboratory 1 hour(s).
Credit Limitation(s): Not open to students who have previously completed ESP 155.
Grade Mode: Letter.

WFC 136 — Ecology of Waterfowl & Game Birds (4 units)

Course Description: Detailed examination of distribution, behavior, population dynamics, and management of waterfowl and upland game birds.
Prerequisite(s): WFC 111; or consent of instructor. WFC 111L strongly recommended.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s), Fieldwork 1 hour(s).
Grade Mode: Letter.

WFC 137 — Applied Fisheries Conservation (3 units)

Course Description: Fisheries, water, and natural resource management. Emphasis on freshwater, estuarine and anadromous fisheries in California.
Prerequisite(s): WFC 120; WFC 120L; or the equivalent.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 141 — Behavioral Ecology (4 units)

This version has ended; see updated course, below.
Course Description: Basic theories underlying the functional and evolutionary significance of behavior, and the role of ecological constraints. Supporting empirical evidence taken mainly from studies of wild vertebrates.
Prerequisite(s): EVE 101 or ESP 100 (can be concurrent); (BIS 002A, BIS 002B, BIS 002C); or equivalent course.
Learning Activities: Lecture 3 hour(s), Film Viewing 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).

WFC 141 — Behavioral Ecology (4 units)

Course Description: Basic theories underlying the functional and evolutionary significance of behavior, and the role of ecological constraints. Supporting empirical evidence taken mainly from studies of wild vertebrates.
Prerequisite(s): (EVE 101 (can be concurrent) or ESP 100 (can be concurrent)); ((BIS 002A or BIO 002);(BIS 002B or BIO 001); (BIS 002C or BIO 003)); or equivalent course.
Learning Activities: Lecture 3 hour(s), Film Viewing 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).
This course version is effective from, and including: Spring Semester 2026.

WFC 144 — Marine Conservation Science (4 units)

Course Description: Key differences between marine and terrestrial ecosystems, major stressors of marine ecosystems (e.g., fisheries, pollution, bioinvasions, climate change and habitat destruction) and their consequences. Laws and agencies responsible for addressing problems, and the policies used.
Prerequisite(s): Course in introductory ecology.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Enrollment Restriction(s): Limited to 30 students.
Grade Mode: Letter.

WFC 150 — Urban Wildlife Ecology (3 units)

Course Description: Introduction to the behavior, ecology, and evolution of wild animals in urban environments. Effects of urbanization on disease, fitness, and dynamics of animal populations. Conservation and conflict management efforts in urban settings.
Prerequisite(s): BIS 002A; BIS 002B; BIS 002C; or the equivalent.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 151 — Wildlife Ecology (4 units)

This version has ended; see updated course, below.
Course Description: Ecology of wild vertebrates, including habitat selection, spatial organization, demography, population dynamics, competition, predation, herbivory, energetics, and community dynamics, set in the context of human-caused degradation of environments in North America.
Prerequisite(s): BIS 002B; or equivalent.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.

WFC 151 — Wildlife Ecology (4 units)

Course Description: Ecology of wild vertebrates, including habitat selection, spatial organization, demography, population dynamics, competition, predation, herbivory, energetics, and community dynamics, set in the context of human-caused degradation of environments in North America.
Prerequisite(s): BIO 001 or BIS 002B; or equivalent.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 152 — Ecology of Human-Wildlife Conflicts (3 units)

This version has ended; see updated course, below.
Course Description: Ecological approaches to managing wild vertebrates that come into conflict with agriculture, public health, or the conservation of biodiversity.
Prerequisite(s): BIS 002B; or equivalent.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 152 — Ecology of Human-Wildlife Conflicts (3 units)

Course Description: Ecological approaches to managing wild vertebrates that come into conflict with agriculture, public health, or the conservation of biodiversity.
Prerequisite(s): BIO 001 or BIS 002B; or equivalent.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 153 — Wildlife Ecotoxicology (4 units)

Course Description: Various forms of environmental pollution in relation to fish and wildlife, the effects and mechanisms of pollutants, effects on individuals and systems, laboratory and field ecotoxicology, examples/case histories, philosophical/management considerations.
Prerequisite(s): Introductory courses in organic chemistry, ecology, and physiology, or consent of instructor; ETX 101 recommended.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Writing Experience (WE).

WFC 154 — Conservation Biology (4 units)

This version has ended; see updated course, below.
Course Description: Introduction to conservation biology and background to the biological issues and controversies surrounding loss of species and habitats.
Prerequisite(s): BIS 002B; or the equivalent.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.

WFC 154 — Conservation Biology (4 units)

Course Description: Introduction to conservation biology and background to the biological issues and controversies surrounding loss of species and habitats.
Prerequisite(s): BIO 001 or BIS 002B; or the equivalent.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 155 — Wildlife Space Use & Habitat Conservation (4 units)

Course Description: Relationships between habitat characteristics and wildlife behavior/ecology, principles of habitat conservation and management.
Prerequisite(s): EVE 101 or ESP 100; or the equivalent of EVE 101 or ESP 100.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s).
Grade Mode: Letter.

WFC 155L — Habitat Conservation & Restoration Laboratory (2 units)

Course Description: Analysis of the characteristics of wildlife and fish habitats, application of restoration methods, and evaluation of conservation and restoration projects in the field. Participate during the term in a restoration project.
Prerequisite(s): (EVE 101 or ESP 100); WFC 155 (can be concurrent); or the equivalent of ESP 100 or EVE 101.
Learning Activities: Fieldwork 3 hour(s), Laboratory 3 hour(s).
Grade Mode: Letter.

WFC 156 — Plant Geography (4 units)

Course Description: Survey of the geographical distribution of vegetation types and habitats, with consideration of the environmental and historical factors that determine these patterns. Conservation and management approaches. Analytical field and lab techniques introduced.
Prerequisite(s): ESP 100 or EVE 101; PLB 102 or PLB 108 strongly recommended.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s), Term Paper.
Grade Mode: Letter.
General Education: Science & Engineering (SE); Visual Literacy (VL); Writing Experience (WE).

WFC 157 — Coastal Ecosystems (4 units)

Course Description: Overview of coastal ecosystems, physical and biological elements and processes, and coastal zone dynamics, including sandy, rocky and muddy shorelines, estuaries, dunes and coastal watersheds. Discussion of the role of historical factors and conservation, restoration, and management approaches.
Prerequisite(s): EVE 101; course work in organismal biology, physical geography, and geology recommended.
Learning Activities: Lecture 3 hour(s), Laboratory 3 hour(s), Fieldwork 3 hour(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE); Visual Literacy (VL).

WFC 158 — Infectious Disease in Ecology & Conservation (3 units)

Course Description: Introduction to the dynamics and control of infectious disease in wildlife, including zoonotic diseases and those threatening endangered species. Basic epidemiological models and their applications. Role of scientists in developing disease control policies.
Prerequisite(s): EVE 101 or ESP 100 or VET 409; or the equivalent.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 160 — Animal Coloration (3 units)

Course Description: Evolutionary and ecological significance of coloration in mammals, birds, reptiles, amphibians, fish, cephalopods, crustaceans, spiders, insects, humans as well as color in fashion, plants and the military. Topics include history, protective coloration, warning coloration, mimicry, sexual dichromatism and color change.
Prerequisite(s): BIS 002A; BIS 002B; BIS 002C.
Learning Activities: Lecture 3 hour(s).
Grade Mode: Letter.

WFC 168 — Climate Change Ecology (4 units)

This version has ended; see updated course, below.
Course Description: Ecological responses to current and expected future climate change, across levels of biological organization from individuals to ecosystems.
Prerequisite(s): BIS 002B; (EVE 101 or ESP 100); or consent of instructor.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.

WFC 168 — Climate Change Ecology (4 units)
Course Description: Ecological responses to current and expected future climate change, across levels of biological organization from individuals to ecosystems.
Prerequisite(s): (BIO 001 or BIS 002B); EVE 101 or ESP 100 recommended; or consent of instructor.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.
This course version is effective from, and including: Spring Semester 2026.

WFC 190 — Departmental Research Seminar (1 unit)

Course Description: Reports and discussions of recent advances related to wildlife and fisheries biology.
Prerequisite(s): Upper division standing in the Biological Sciences.
Learning Activities: Seminar 1 hour(s).
Repeat Credit: May be repeated 3 time(s).
Grade Mode: Pass/No Pass only.

WFC 191 — Museum Science (2 units)

Course Description: Principles and methods required to preserve and present biological specimens for research, teaching collections, and museums.
Prerequisite(s): Consent of instructor. Upper division standing.
Learning Activities: Lecture 1 hour(s), Laboratory 3 hour(s).
Grade Mode: Pass/No Pass only.

WFC 192 — Internship (1-12 units)

Course Description: Work experience off and on campus in all subject areas offered in the department. Internships supervised by a member of the faculty.
Prerequisite(s): Consent of instructor. Completion of 84 units.
Learning Activities: Internship 3-36 hour(s).
Grade Mode: Pass/No Pass only.

WFC 195 — Field & Laboratory Research (3 units)

Course Description: Critique and practice of research methods applied to field and/or laboratory environments of wild vertebrates. Work independently or in small groups to design experimental protocol, analyze data, and report their findings.
Prerequisite(s): (WFC 110L or WFC 111L or WFC 120L); (WFC 121 or WFC 130); EVE 101; or the equivalent of EVE 101, and consent of instructor.
Learning Activities: Laboratory 6 hour(s), Discussion 1 hour(s).
Repeat Credit: May be repeated 2 time(s).
Grade Mode: Letter.
General Education: Science & Engineering (SE).

WFC 197T — Tutoring in Wildlife & Fisheries (1-5 units)

Course Description: Experience in teaching under guidance of faculty member.
Prerequisite(s): Consent of instructor. Major in Wildlife, Fish, and Conservation Biology.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

WFC 198 — Directed Group Study (1-5 units)

Course Description: Directed group study.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

WFC 199 — Special Study for Advanced Undergraduates (1-5 units)

Course Description: Special study for advanced undergraduates.
Learning Activities: Variable.
Grade Mode: Pass/No Pass only.

WFC 223 — Conservation Biology & Animal Behavior (3 units)

Course Description: Influences of concepts of animal behavior (functional, evolutionary, developmental, mechanistic, and methodological issues) on conservation biology theory and practice.
Prerequisite(s): ECL 208 or ANB 221; and consent of instructor.
Learning Activities: Lecture 1.50 hour(s), Discussion 1.50 hour(s).
Grade Mode: Letter.

WFC 230 — Advanced Physiological Ecology of Wildlife (4 units)

Course Description: Advanced principles of physiological ecology. Ecological, evolutionary and behavioral perspectives on physiological mechanisms used by animals to adapt to their environment in the context of climate change and other threats to biodiversity. Primary literature will form the basis of discussion.
Learning Activities: Lecture 3 hour(s), Discussion 1 hour(s).
Grade Mode: Letter.

WFC 262 — Advanced Population Dynamics (3 units)

Course Description: Logical basis for population models, evaluation of simple ecological models, current population models with age, size, and stage structure, theoretical basis for management and exemplary case histories. Emphasis on development and use of realistic population models in ecological research.
Prerequisite(s): Graduate standing; advanced course in ecology (e.g., EVE 101), population dynamics (e.g., WFC 122), and one year of calculus; familiarity with matrix algebra and partial differential equations recommended.
Learning Activities: Lecture 3 hour(s).
Cross Listing: ECL 262.
Grade Mode: Letter.

WFC 290 — Seminar (1-3 units)

Course Description: Seminar devoted to a highly specific research topic in any area of wildlife or fisheries biology. Special topic selected for a quarter will vary depending on interests of instructor and students.
Prerequisite(s): Consent of instructor.
Learning Activities: Seminar 1-3 hour(s).
Grade Mode: Satisfactory/Unsatisfactory only.

WFC 290C — Research Group Conference (1 unit)

Course Description: Weekly conference on research problems, progress and techniques in wildlife and fishery sciences.
Prerequisite(s): Consent of instructor.
Learning Activities: Discussion 1 hour(s).
Repeat Credit: May be repeated.
Grade Mode: Satisfactory/Unsatisfactory only.

WFC 291 — Seminar in Aquatic Ecology (2 units)

Course Description: Presentation and analysis of assigned topics in aquatic ecology emphasizing fish, fisheries and aquatic conservation.
Prerequisite(s): Graduate standing in Biology.
Learning Activities: Seminar 2 hour(s).
Grade Mode: Satisfactory/Unsatisfactory only.

WFC 292 — Physiology of Fishes Seminar (1 unit)

Course Description: Seminar devoted to current topics concerning the physiological functioning of fishes.
Prerequisite(s): Consent of instructor. Graduate standing and at least two courses in physiology.
Learning Activities: Seminar 1 hour(s).
Repeat Credit: May be repeated 2 time(s).
Grade Mode: Satisfactory/Unsatisfactory only.

WFC 294 — Seminar in Behavioral Ecology of Predators & Prey (3 units)

Course Description: Presentation and analysis of research papers on social and foraging behavior of predatory animals, antipredator strategies of prey species, co-evolution of predators and prey, and ecology of predator prey interactions.
Prerequisite(s): Graduate standing.
Learning Activities: Seminar 2 hour(s).
Repeat Credit: May be repeated 2 time(s).
Cross Listing: ANB 294.
Grade Mode: Letter.

WFC 295 — Seminar in Wildlife Ecotoxicology (3 units)

Course Description: Presentation and analysis of assigned and searched research papers on transport, exposure, and effects of environmental contaminants on wildlife-associated ecosystem components, especially at individual/population levels. Specific subjects vary each offering.
Prerequisite(s): Graduate standing in Biology.
Learning Activities: Seminar 2 hour(s), Term Paper.
Grade Mode: Satisfactory/Unsatisfactory only.

WFC 297T — Supervised Teaching in Wildlife & Fisheries Biology (1-3 units)

Course Description: Tutoring and teaching students in undergraduate courses in Wildlife, Fish, & Conservation Biology. Weekly conferences with instructor; evaluations of teaching; preparing for and conducting demonstrations, laboratories, and discussions; preparing and grading examinations.
Prerequisite(s): Consent of instructor. Meet qualifications for teaching assistant; graduate standing.
Learning Activities: Tutorial 3-9 hour(s).
Repeat Credit: May be repeated 6 unit(s) when a different course is tutored.
Grade Mode: Satisfactory/Unsatisfactory only.

WFC 298 — Group Study (1-5 units)

Course Description: Group study.
Learning Activities: Variable.
Grade Mode: Letter.

WFC 299 — Research (1-12 units)

Course Description: Research.
Learning Activities: Variable.
Grade Mode: Satisfactory/Unsatisfactory only.