

# DEPARTMENT OF FISH, WILDLIFE, AND CONSERVATION BIOLOGY

## Courses

### Fish, Wildlife, and Conservation Biology (FW)

#### FW 104 Wildlife Ecology and Conservation (GT-SC2) Credits: 3 (3-0-0)

**Course Description:** Essentials of wildlife ecology as a foundation for understanding issues on the origins, management and conservation of biodiversity.

**Prerequisite:** None.

**Registration Information:** Sections may be offered: Online.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**Additional Information:** Biological & Physical Sciences 3A, Natural & Physical Sciences w/o lab (GT-SC2).

#### FW 111 Basic Outdoor Skills in FWCB Credit: 1 (.5-1-0)

**Course Description:** Basic outdoor skills for FWCB and outdoor novices. History of wildlife conservation and reasons for declining outdoor participation.

**Prerequisite:** None.

**Registration Information:** Must register for lecture and laboratory. May be taken up to 3 times for a maximum of 3 credits. Required field trips.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

#### FW 179 New-to-the-Major Seminar Credit: 1 (0-0-1)

**Course Description:** Introduces students new to the Fish, Wildlife, and Conservation Biology major to curriculum, faculty, research, key concepts, careers, professional development, and other students.

**Prerequisite:** None.

**Registration Information:** This is a partial semester course.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

#### FW 182A Study Abroad--Mexico: Outdoor Skills Credit: 1 (0-0-1)

**Course Description:** Introduction and development of basic outdoor skills important to fish, wildlife, and conservation biology (FWCB) in environments in Baja California Sur, Mexico (e.g., marine, coastal, tropical, desert). Skills are related to the basic history and philosophies of the FWCB profession. Focus learning through hands-on experience. Does not provide full competence in any skill area.

**Prerequisite:** None.

**Registration Information:** Required field trips. FW 111 and FW 182A may be repeated for a maximum of 3 credits for the two courses.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

#### FW 204 Introduction to Fishery Biology Credits: 3 (2-3-0)

**Course Description:** Exposure to sampling techniques, agencies, and topics in fishery biology careers.

**Prerequisite:** None.

**Registration Information:** Must register for lecture and laboratory. Required field trips.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

#### FW 260 Principles of Wildlife Management Credits: 3 (3-0-0)

**Course Description:** Ecology principles applied to conservation and management of fish/wildlife resources. Quantitative methods, socioeconomic factors, population dynamics.

**Prerequisite:** (BZ 110 or LIFE 103) and (MATH 120 or MATH 124 or MATH 127 or MATH 141 to 161 - at least 3 credits or MATH 229 to 499 - at least 3 credits).

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

#### FW 300 Biology and Diversity of Fishes Credits: 2 (2-0-0)

**Course Description:** Biology and zoology of fishes: anatomy, taxonomy, evolution, physiology, behavior, ecology, zoogeography, and conservation.

**Prerequisite:** BZ 111 or LIFE 103.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

#### FW 301 Ichthyology Laboratory Credit: 1 (0-2-0)

**Course Description:** Anatomy, taxonomy, evolution and ecology of North American freshwater fishes.

**Prerequisite:** FW 300, may be taken concurrently.

**Registration Information:** Required field trips.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

#### FW 310 Mapping Diverse Perspectives in Conservation Credits: 3 (2-3-0)

**Course Description:** Principles and geospatial tools to explore conservation science and practice through diverse social and cultural perspectives. Through discussions and hands-on mapping exercises, develop a spatial understanding of diverse perspectives and social justice issues in conservation, including mapping local ecological knowledge, patterns of environmental injustice, hotspots of biological and cultural diversity, human-wildlife conflict, and non-colonialist geographies. No GIS experience required.

**Prerequisite:** None.

**Registration Information:** Must register for lecture and laboratory. Credit not allowed for both FW 310 and FW 380A1.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 325 Spatial Ecology--Applications with R Credits: 3 (3-0-0)**

**Course Description:** Explore the principles and procedures of spatial ecology and application to contemporary ecological issues. Application of R-based tools for spatial analysis, GIS, and basic visualizations.

Topics include methods for estimating spatial pattern, the effects of varying spatial and temporal scales, conservation management, species distribution, and data collection, input, and manipulation.

**Prerequisite:** (LIFE 320) and (STAT 301 or STAT 307).

**Restriction:** Must not be a: Freshman.

**Registration Information:** Sophomore standing. Credit not allowed for both FW 325 and FW 380A2.

**Term Offered:** Spring (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 370 Design of Fish and Wildlife Projects Credits: 3 (2-2-0)**

**Course Description:** Design, analysis, and evaluation of wildlife projects; lab exercises in design and data analysis; preparation and presentation of project proposals.

**Prerequisite:** (LIFE 320 or LAND 220 or LIFE 220) and (FW 260 or FW 360) and (NR 220) and (MATH 155 or MATH 160) and (STAT 301 or STAT 307).

**Registration Information:** Must register for lecture and laboratory.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 373A Travel Abroad : Wildlife Conservation--Baja California Sur Credits: 3 (0-0-3)**

**Course Description:** Study tour of various overseas ecosystems and natural resources conservation programs; discussions with local ecologists/managers.

**Prerequisite:** None.

**Registration Information:** Written consent of instructor. Students need a minimum of a 2.500 GPA per Education Abroad standards. Credit allowed for only one of the following: FW 373A, FW 382, or FW 382A.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 375 Field Wildlife Studies Credits: 3 (1-4-0)**

**Course Description:** Field trips to see wildlife management and habitats and to discuss problems and practices with professional ecologists and resources managers.

**Prerequisite:** (LIFE 320 or LAND 220 or LIFE 220) and (FW 260).

**Registration Information:** Must register for lecture and laboratory. Required field trips.

**Terms Offered:** Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 382B Study Abroad--Japan: Fisheries & Wildlife Credits: 3 (0-0-3)**

**Course Description:** First-hand exposure to natural history and fisheries and wildlife management at two Experimental Forests of Hokkaido University (northern and central Japan). The latitudinal gradient and high human population density provides experiential opportunities to understand fisheries and wildlife issues in a non-Western context.

**Prerequisite:** None.

**Restriction:** Must be a: Undergraduate.

**Term Offered:** Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 384 Supervised College Teaching Credits: Var[1-5] (0-0-0)**

**Course Description:** Instruction and practice in laboratory instruction in lower-division departmental courses.

**Prerequisite:** None.

**Registration Information:** Written consent of instructor. A maximum of 10 combined credits for all 384 and 484 courses are counted towards graduation requirements.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 400 Conservation of Fish in Aquatic Ecosystems Credits: 3 (2-0-1)**

**Course Description:** Ecological processes that create habitat and biotic template for fish in aquatic ecosystems; human effects; strategies for conserving fishes.

**Prerequisite:** LIFE 320 and FW 300.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 401 Fishery Science Credits: 3 (2-3-0)**

**Course Description:** Theory, philosophy, and applications for study and management of fishery resources.

**Prerequisite:** (FW 300) and (STAT 301 or STAT 307 or ERHS 307) and (MATH 141 or MATH 155 or MATH 160).

**Registration Information:** Computer literacy. Must register for lecture and laboratory.

**Term Offered:** Fall.

**Grade Modes:** S/U within Student Option, Trad within Student Option.

**Special Course Fee:** No.

**FW 402 Fish Culture Credits: 4 (3-2-0)**

**Course Description:** Principles and practices to produce food, bait, and sport fishes.

**Prerequisite:** FW 300.

**Registration Information:** Must register for lecture and laboratory.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 405 Fish Physiology Credits: 3 (2-3-0)**

**Course Description:** Physiological ecology of fish; functional adaptations and adjustments used to cope with environmental and physiological states.

**Prerequisite:** BZ 214 or FW 300.

**Registration Information:** Must register for lecture and laboratory. Credit not allowed for both FW 405 and FW 605.

**Term Offered:** Spring (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 430 Waterfowl Ecology and Management Credits: 3 (2-3-0)**

**Course Description:** Apply concepts from life history theory, evolutionary ecology, population ecology, community ecology, and wildlife management to become familiar with the ecology and management of North American waterfowl across their migratory life cycles. Labs and field trips will develop practical field skills in waterfowl biology, conservation, and management in addition to data analysis and computing skills.

**Prerequisite:** (FW 260 with a minimum grade of C or LIFE 320 with a minimum grade of C) and (STAT 301 with a minimum grade of C or STAT 307 with a minimum grade of C).

**Registration Information:** Must register for lecture and laboratory. Required field trips. Credit not allowed for both FW 430 and FW 481A1.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 455 Principles of Conservation Biology Credits: 3 (3-0-0)**

**Course Description:** Review of efforts to study and conserve biological diversity, focused on fish and wildlife populations.

**Prerequisite:** (FW 260 and LIFE 320) and (STAT 301 or STAT 307).

**Registration Information:** Credit allowed for only one of the following: FW 455, FW 555, or NR 300.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 465 Human-Wildlife Conflict and Coexistence Credits: 3 (3-0-0)**

**Course Description:** Methods for resolving conflicts caused by wildlife; integrating wildlife biology, economics, and human dimensions into solutions.

**Prerequisite:** FW 260.

**Term Offered:** Spring (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 467 Wildlife Disease Ecology Credits: 3 (2-0-1)**

**Course Description:** Ecological, epidemiological, and evolutionary principles of disease in fish and wildlife populations; contemporary issues in disease ecology.

**Prerequisite:** LIFE 320.

**Term Offered:** Fall (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 468 Bird Ecology and Conservation Credits: 3 (2-3-0)**

**Course Description:** Introduction to the principles and the practice of avian ecology and conservation. Class discussions, outdoor labs and field trips emphasize major threats to birds and opportunities for overcoming those challenges. Learn to identify local birds by sight and sound, employ field methods (e.g., bird banding), participate in long-term applied research projects, collect and analyze data independently, and interact with conservation practitioners.

**Prerequisite:** LIFE 320.

**Registration Information:** Must register for lecture and laboratory. Required field trips.

**Term Offered:** Fall (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 469 Conservation and Management of Large Mammals Credits: 3 (3-0-0)**

**Course Description:** Principles of behavior, ecology, population dynamics, and conservation related to large mammals.

**Prerequisite:** (BZ 330 and FW 260 and LIFE 320) and (NR 319 or NR 322) and (STAT 301 or STAT 307).

**Registration Information:** Required field trips.

**Term Offered:** Fall (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 471 Wildlife Data Collection and Analysis Credits: 4 (2-4-0)**

**Course Description:** Analysis methods used in wildlife management and research; adaptive resource management with emphasis on learning through field and computer labs.

**Prerequisite:** FW 370 and NR 220.

**Registration Information:** Must register for lecture and laboratory. Required field trips.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 472 Issues in Animal Conservation and Management Credits: 3 (2-0-1)**

**Course Description:** Current and emerging issues in fish and wildlife conservation and management at the state, national, and global scales.

**Prerequisite:** (FW 260) and (LIFE 320).

**Term Offered:** Spring (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 473A Travel Abroad: Conserving Desert/Marine Animals Credits: 3 (0-0-3)**

**Course Description:** Ecology and conservation of animals from desert, marine, intertidal, and shore ecosystems and application to problems of animal conservation in an international setting.

**Prerequisite:** LIFE 320.

**Registration Information:** Written consent of instructor. Students need a minimum of a 2.5 GPA per Education Abroad standards. Credit allowed for only one of the following: FW 473A, FW 482, or FW 482A.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 475 Conservation Decision Making Credits: 3 (3-0-0)**

**Course Description:** Structured approaches to conservation and management of vertebrates; articulating objectives, developing management options, and predicting outcomes.

**Prerequisite:** (MATH 155 or MATH 160) and (STAT 301 or STAT 307) and (LAND 220 or LIFE 220 or LIFE 320).

**Registration Information:** Junior standing.

**Term Offered:** Spring (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 477 Wildlife Habitat Use and Management Credits: 3 (1-3-1)**

**Course Description:** Wildlife habitat evaluation, classification, and improvement; analysis of habitat use patterns; planning and implementation of management plans.

**Prerequisite:** (FW 260) and (NR 319 or NR 322).

**Registration Information:** Must register for lecture, lab, and recitation. Credit allowed for only one of the following courses: FW 477, FW 577, or FW 677. Required field trips.

**Term Offered:** Fall (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 487 Internship Credits: Var[1-6] (0-0-0)**

**Course Description:** Field experience in fish and wildlife management.

**Prerequisite:** None.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 492 Seminar-Wildlife Biology Credit: 1 (0-0-1)**

**Course Description:**

**Prerequisite:** None.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 495A Independent Study: Fishery Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** LIFE 320 or FW 104 or NR 220 or LAND 220 or LIFE 220.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 495B Independent Study: Wildlife Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** LAND 220 or LIFE 320 or FW 104 or NR 220 or LIFE 220.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 496A Group Study: Fishery Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** LAND 220 or LIFE 320 or FW 104 or NR 220 or LIFE 220.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 496B Group Study: Wildlife Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** LAND 220 or LIFE 320 or FW 104 or NR 220 or LIFE 220.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 498 Research Credits: Var[1-6] (0-0-0)**

**Course Description:** Mentored research in fisheries and aquatic sciences, wildlife biology, or conservation biology.

**Prerequisite:** None.

**Restriction:** Must not be a: Freshman.

**Registration Information:** Sophomore standing. Written consent of instructor.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 540 Fisheries Ecology Credits: 3 (2-0-1)**

**Course Description:** Population, community, and ecosystem management for fishes and other aquatic organisms in freshwater habitats.

**Prerequisite:** None.

**Registration Information:** One course in fishery science; one course in aquatic ecology. Must register for lecture and recitation.

**Term Offered:** Spring (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 544 Ecotoxicology Credits: 3 (2-0-1)**

**Course Description:** Ecological effects of contaminants on populations, communities, and ecosystems.

**Prerequisite:** (LIFE 320 or LAND 220 or LIFE 220) and (STAT 301 or STAT 307).

**Registration Information:** Must register for lecture and recitation. Sections may be offered: Online.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 546 Conservation Challenges in Freshwater Systems Credits: 3 (2-0-1)**

**Course Description:** Evaluating the abiotic and biotic elements that comprise freshwater systems, how those are altered and impaired by events, and the policies, plans, and implementation that can restore necessary structure and function.

**Prerequisite:** (LIFE 220 or LIFE 320) and (STAT 301).

**Restriction:** Must be a: Graduate.

**Registration Information:** Graduate standing. Must register for lecture and recitation. Offered as an online course only.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 551 Design of Fish and Wildlife Studies Credits: 3 (2-0-1)**

**Course Description:** Principles, types of studies, and philosophy of science in design of experimental, observational, and sampling studies for wildlife investigations.

**Prerequisite:** STAT 301 or STAT 307 or ERHS 307.

**Registration Information:** Must register for lecture and recitation. Sections may be offered: Online.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 552 Applied Sampling for Wildlife/Fish Studies Credits: 3 (2-0-1)**

**Course Description:** Survey sampling theory and techniques, including distance sampling, with emphasis on wildlife and fish studies.

**Prerequisite:** STAT 301 or STAT 307.

**Registration Information:** Must register for lecture and recitation. Graduate standing. Sections may be offered: Online.

**Term Offered:** Spring (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 553 Adaptive Fish and Wildlife Management Credits: 3 (2-2-0)**

**Course Description:** Formal approaches to making management decisions about wildlife and fish populations, using tools of decision analysis.

**Prerequisite:** (FW 104 or FW 260 or FW 555 or LIFE 320 or NR 300) and (STAT 301 or STAT 307).

**Registration Information:** Graduate standing. Must register for lecture and laboratory. Sections may be offered: Online.

**Term Offered:** Spring (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 555 Conservation Biology Credits: 3 (2-0-1)**

**Course Description:** Ecological factors in conservation of biological diversity.

**Prerequisite:** (LAND 220 or LIFE 220 or LIFE 320) and (STAT 307).

**Registration Information:** Must register for lecture and recitation. Offered face-to-face in the spring and online in the fall. Credit allowed for only one of the following: FW 455, FW 555, or NR 300.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 556 Wildlife Conservation Ethics Credits: 3 (3-0-0)**

**Course Description:** Philosophy, art, history, and science of wildlife and land management from writings of Aldo Leopold and others.

**Prerequisite:** None.

**Restriction:** Must be a: Graduate.

**Registration Information:** Graduate standing. Offered as an online course only.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 557 Wildlife Habitat Management on Private Land Credits: 3 (0-0-3)**

**Course Description:** Management of cover, food, and water for wildlife and fish in the Great Plains. Emphasis on practices compatible with other uses of private land.

**Prerequisite:** None.

**Registration Information:** Bachelor's degree, or any level ecology or wildlife management course, or written consent of instructor. Offered online only.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 558 Conservation Genetics of Wild Populations Credits: 3 (2-0-1)**

**Course Description:** Examine the background, concepts, and tools required to determine how genetic data can be used to evaluate wild vertebrate species and communities of conservation concern.

**Prerequisite:** (BZ 350 or LIFE 201A or LIFE 201B) and (LIFE 220 or LIFE 320) and (STAT 301 or STAT 307).

**Registration Information:** Graduate standing. Written consent of instructor. Must register for lecture and recitation. Offered as an online course only. Admission to a graduate program in Fish, Wildlife, and Conservation Biology.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 561A Advanced Topics: Fishery Biology Credits: Var[1-3] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 561B Advanced Topics: Wildlife Biology Credits: Var[1-3] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 561C Advanced Topics: Population Analysis Credits: Var[1-3] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 561E Advanced Topics: Vertebrate Management Credits: Var[1-3] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 562 Fish and Wildlife Population Dynamics Credits: 3 (2-0-1)**

**Course Description:** Factors that influence population abundance and density, and how they change over time. It blends ecology, evolution, genetics, and mathematical modeling into a unified field. Concentrate on understanding single-species population growth models, including metapopulation concepts, as well as multi-species topics such as predation and competition.

**Prerequisite:** (MATH 155 or MATH 160) and (LIFE 220 or LIFE 320) and (STAT 301 or STAT 307).

**Registration Information:** Graduate standing. Must register for lecture and recitation. Written consent of instructor. Offered as an online course only.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.



**FW 563 Analyses for Managing Wild Populations Credits: 3 (2-0-1)**

**Course Description:** Design of wildlife population studies and the analysis of mark-recapture and occupancy data. Discussion of scientific philosophy, statistical theory, sampling design, and the application of the latest quantitative approaches to the analysis of population data.

**Prerequisite:** FW 260 and STAT 301.

**Restriction:** Must be a: Graduate.

**Registration Information:** Graduate standing. Must register for lecture and recitation. Offered as an online course only.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 564 Science of Managing Human-Wildlife Conflicts Credits: 3 (2-0-1)**

**Course Description:** Human-wildlife conflicts, and in particular, damage caused by wildlife, often termed wildlife damage. Topics such as animal behaviors, population dynamics, public attitudes, economics, and effective strategies in understanding the various types of conflicts and how to manage them.

**Prerequisite:** FW 104 or LAND 220 or LIFE 220 or LIFE 320.

**Registration Information:** Must register for lecture and recitation. Offered as an online course only.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 567 Wildlife Disease Ecology Credits: 3 (2-0-1)**

**Course Description:** Ecological, epidemiological, and evolutionary principles of disease in fish and wildlife populations; contemporary issues in disease ecology.

**Prerequisite:** (LIFE 320) and (STAT 301 or STAT 307).

**Registration Information:** Graduate standing. Sections may be offered: Online.

**Term Offered:** Fall (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 568 Sustaining River Ecosystems in Changing World Credits: 3 (3-0-0)**

**Also Offered As:** BZ 568.

**Course Description:** Applying the concepts and principles of freshwater ecosystem structure and function to develop a multidisciplinary and integrated understanding of the approaches and methods for restoring and sustainably managing these systems in the face of increasing human demands and rapid climate change.

**Prerequisite:** None.

**Restriction:** Must not be a: Freshman, Sophomore, Junior.

**Registration Information:** Senior standing. Credit allowed for only one of the following: BZ 568, BZ 680A2, FW 568, and FW 680A2.

**Term Offered:** Spring (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 572 Wildlife Conservation Communications Credits: 3 (2-0-1)**

**Course Description:** Examines the identification and engagement of groups involved in wildlife conservation action and applies knowledge from social science fields to shape communications related to biodiversity conservation to effectively inform and converse.

**Prerequisite:** None.

**Restriction:** Must be a: Graduate.

**Registration Information:** Graduate standing. Must register for lecture and recitation. Offered as an online course only.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 573 Travel Abroad-Wildlife Ecology/Conservation Credits: 3 (3-0-0)**

**Course Description:** Study tour of various overseas ecosystems and natural resources conservation programs; discussions with local ecologists/managers.

**Prerequisite:** None.

**Registration Information:** Written consent of instructor.

**Term Offered:** Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 575 Wildlife Habitat Evaluation for Educators Credits: 3 (0-0-3)**

**Course Description:** Teachers or leaders implement wildlife habitat evaluation procedures in classroom or community programs and evaluate performance of students.

**Prerequisite:** None.

**Registration Information:** Graduate standing. Offered as a correspondence course only.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 576 Wildlife Policy, Administration, and Law Credits: 3 (0-0-3)**

**Course Description:** Evolution of policy affecting wildlife and humans using historical, current, philosophical, legal, and administrative constructs.

**Prerequisite:** None.

**Registration Information:** Required: one course in political science; one course in natural resources management. Offered as a correspondence course only.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 577 Management of Wildlife Habitat Credits: 3 (2-0-1)**

**Course Description:** Identifying and implementing management techniques for evaluating, classifying, and improving wildlife habitat to sustain and conserve populations.

**Prerequisite:** (FW 260) and (GR 311 or GR 323 or NR 323 or GR 420 or NR 319 or NR 322 or NR 422 or SOCR 377).

**Registration Information:** Written consent of instructor. Must register for lecture and recitation. Offered as an online course only. Admission to graduate program in Fish, Wildlife, and Conservation Biology. Credit allowed for only one of the following courses: FW 477, FW 577, or FW 677.

**Term Offered:** Spring.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 579 Wildlife Conservation Policy--Current Events Credits: 3 (2-0-1)**

**Course Description:** Addresses a subset of the most current topics in fish and wildlife conservation policy (e.g., climate change, renewable energy, endangered species legislation). Review history, legislative and administrative policy underpinnings, and contemporary impact on fish and wildlife conservation and management in the United States.

**Prerequisite:** None.

**Restriction:** Must be a: Graduate.

**Registration Information:** Graduate standing. Must register for lecture and recitation. Offered as an online course only.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 605 Advanced Physiological Ecology of Fishes Credits: 4 (2-3-1)**

**Course Description:** Physiological ecology of fishes; functional adaptations and adjustments used to cope with environmental and physiological states.

**Prerequisite:** FW 300.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Must register for lecture, lab, and recitation. Credit not allowed for both FW 405 and FW 605.

**Term Offered:** Spring (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 662 Wildlife Population Dynamics Credits: 3 (1-2-1)**

**Course Description:** Population models; experimental evidence and analysis of theories of population regulation; case studies.

**Prerequisite:** (FW 260 and STAT 301) and (MATH 155 or MATH 160).

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Must register for lecture, laboratory and recitation.

**Term Offered:** Spring (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 663 Sampling & Analysis Vertebrate Populations Credits: 5 (3-3-1)**

**Course Description:** Sampling and analysis of fish and wildlife populations, including survival estimation, capture-recapture sampling, and transect sampling.

**Prerequisite:** FW 260 and STAT 301.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Must register for lecture, lab, and recitation.

**Term Offered:** Spring (even years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 670 Wildlife Ecology Modeling Credits: 3 (2-2-0)**

**Course Description:** Gain knowledge and skills focused on 1) modeling data to make inference/predictions on wildlife and their habitat, 2) communicating results, 3) evaluating modeling frameworks based on data and study goals, and 4) implementing models and report writing through the R programming language. Base-level knowledge of coding in R is strongly encouraged.

**Prerequisite:** STAR 511.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Must register for lecture and laboratory. Credit not allowed for both FW 670 and FW 680A4.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 673 Hierarchical Modeling in Ecology Credits: 3 (3-0-0)**

**Also Offered As:** STAT 673.

**Course Description:** Hierarchical ecological modeling using common forms of data in fish and wildlife studies and emphasizing spatial and temporal aspects of analysis.

**Prerequisite:** ESS 575 or STAT 420.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Credit not allowed for both FW 673 and STAT 673.

**Term Offered:** Fall (odd years).

**Grade Mode:** Traditional.

**Special Course Fee:** No.

**FW 677 Wildlife Habitat Management Credits: 3 (1-3-1)**

**Course Description:** Habitat models; vegetation manipulation and monitoring for wildlife; extended field trips.

**Prerequisite:** FW 260.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Must register for lecture, lab, and recitation.

Credit allowed for only one of the following courses: FW 477, FW 577, or FW 677. Required field trips.

**Term Offered:** Fall.

**Grade Mode:** Traditional.

**Special Course Fee:** Yes.

**FW 684 Supervised College Teaching Credits: Var[1-5] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Written consent of instructor.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 692 Seminar: Fish, Wildlife, and Conservation Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Sections may be offered: Online.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 695A Independent Study: Fishery Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 695B Independent Study: Wildlife Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 696 Group Study: Fish, Wildlife, Conservation Biology Credits: Var[1-18] (0-0-0)**

**Course Description:** Group study projects on topics in fish, wildlife, and conservation biology.

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Registration Information:** Written consent of instructor. Sections may be offered: Online.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 698A Research: Fishery Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 698B Research: Wildlife Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 699A Thesis: Fishery Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 699B Thesis: Wildlife Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 798A Research: Fishery Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 798B Research: Wildlife Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 799A Dissertation: Fishery Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.

**FW 799B Dissertation: Wildlife Biology Credits: Var[1-18] (0-0-0)**

**Course Description:**

**Prerequisite:** None.

**Restriction:** Must be a: Graduate, Professional.

**Terms Offered:** Fall, Spring, Summer.

**Grade Mode:** Instructor Option.

**Special Course Fee:** No.