

# WILDLIFE (WLF)

## College of Natural Science and Mathematics

Department of Biology and Wildlife (<https://www.bw.uaf.edu/>)  
907-474-7671

### WLF F101 Survey of Wildlife Science

2 Credits

Offered Fall

An introduction to wildlife science for research, conservation and management. Lectures, presentations, labs and other outside class activities will familiarize students with the field of wildlife biology and the wildlife profession. Special fees apply.

**Lecture + Lab + Other:** 1 + 2 + 1

**Grading System:** Letter Grades with option of Plus/Minus

### WLF F104L BIOL F104X Laboratory (n)

0 Credit

Offered Fall

Laboratory portion of BIOL F104X/WLF F104X.

**Co-requisites:** BIOL F104X or WLF F104X.

**Attributes:** UAF GER Natural Science Req

**Lecture + Lab + Other:** 0 + 3 + 0

**Grading System:** Non-Graded

### WLF F104X Natural History of Alaska (n)

4 Credits

Offered Fall

Survey of the physical and biological environment of Alaska, including terrestrial and aquatic systems. Topics include the past, present and future climate of Alaska, life histories of common plants and animals, adaptations of organisms to the northern environment, human influences on ecosystems and the management of wildlife and ecosystems.

**Prerequisites:** Placement in WRTG F111X; placement in MATH F105.

**Co-requisites:** BIOL F104L or WLF F104L.

**Cross-listed with** BIOL F104X.

**Attributes:** UAF GER Natural Science Req

**Lecture + Lab + Other:** 3 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### WLF F301 Design of Wildlife Studies

3 Credits

Offered Spring

Study designs for wildlife populations and their habitats. Probability theory, finite population sampling, capture-mark-recapture sampling and research design will be examined through lectures, labs and a term project.

**Prerequisites:** WLF F101 (may be taken concurrently); MATH F151X (may be taken concurrently) or MATH F122X (may be taken concurrently).

**Recommended:** STAT F200X or STAT F300.

**Lecture + Lab + Other:** 2 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### WLF F304 Wildlife Internships

1-3 Credits

Offered Fall and Spring

Practical experience in wildlife management in public or private agencies. Projects are approved by faculty member and supervised by professional agency staff. May not be substituted for courses required for major.

**Lecture + Lab + Other:** 1-3 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**Repeatable for Credit:** May be taken 3 times for up to 3 credits

### WLF F305 Wildlife Diseases

3 Credits

Offered Fall Even-numbered Years

Basic concepts of parasitic, infectious, environmental and nutritional diseases. Specific study of Alaska wildlife diseases. Basic necropsy technique and chemical immobilization.

**Prerequisites:** BIOL F115X and BIOL F116X.

**Recommended:** BIOL F310.

**Lecture + Lab + Other:** 3 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### WLF F322 Principles and Techniques of Wildlife Management

3 Credits

Offered Fall

This course applies ecology to the study and management of animals and their habitats. We will discuss management for consumptive and non-consumptive uses of birds, mammals, reptiles and amphibians.

**Prerequisites:** BIOL F371; WLF F101; WRTG F111X; WRTG F211X, WRTG F212X, WRTG F213X or WRTG F214X.

**Lecture + Lab + Other:** 2 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### WLF F385 Global Change Biology (n)

3 Credits

Offered Spring

Causes of climate change, the climate record, and the effects of past and forecast climate change on biophysical systems. Consideration of impacts on plants, animals, ice, and people with an emphasis on Alaska and the Arctic.

**Prerequisites:** BIOL F115X; BIOL F116X; Junior or Senior standing.

**Cross-listed with** BIOL F385.

**Lecture + Lab + Other:** 3 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### WLF F421 Ecology and Management of Large Mammals

3 Credits

Offered Fall Even-numbered Years

Identification, distribution, life history, ecology and management of North American large mammals. Exploration of roles of reproduction, predation, nutrition, habitat alteration and competition in population dynamics of large mammals, and management and research practices designed for conservation of habitats and populations.

**Prerequisites:** BIOL F371; WLF F322.

**Stacked with** WLF F623.

**Lecture + Lab + Other:** 3 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### WLF F425 Ecology and Management of Birds

3 Credits

Offered Spring Odd-numbered Years

Ecology of avian populations with a focus on harvest and habitat management for North American birds. Distributions, life-history, population dynamics, and monitoring and research techniques will be considered.

**Prerequisites:** BIOL F371; COM F131X or COM F141X; WLF F322.

**Lecture + Lab + Other:** 3 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**WLF F433 Conservation Genetics**

3 Credits

Offered Fall Even-numbered Years

Concepts of population genetics, phylogenetics, pedigree analysis, systematics and taxonomy as they apply to conservation of species. Evaluating the impact of small population size, population fragmentation, inbreeding, hybridization, taxonomic uncertainties and other factors on viability and management of species.

**Prerequisites:** BIOL F260; BIOL F371.**Recommended:** NRM F277.**Cross-listed with** BIOL F433.**Stacked with** BIOL F633; WLF F633.**Lecture + Lab + Other:** 3 + 0 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F469 Landscape Ecology and Wildlife Habitat**

3 Credits

Offered Spring

A problem-based learning and critical thinking approach to modern methods in landscape ecology, including geographic information systems, remote sensing, modeling, software and the Internet. Graduate students are expected to help undergraduates with problems and questions.

**Prerequisites:** BIOL F371; COM F121X, COM F131X or COM F141X.**Cross-listed with** BIOL F469.**Stacked with** BIOL F669; WLF F669.**Lecture + Lab + Other:** 2 + 3 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F470 Human Dimensions of Wildlife Management**

3 Credits

Offered Spring

Study of the interactions and relationships between people and wildlife, and the thoughts and behaviors of people related to wildlife and their management. This course also considers the social psychology, economic and political components of wildlife management.

**Prerequisites:** WRTG F111X; WRTG F211X, WRTG F213X; WLF F101; WLF F322; BIOL F371.**Stacked with** WLF F670.**Lecture + Lab + Other:** 2 + 3 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F602 Research Design**

3 Credits

Offered Fall

An introduction to the philosophy, performance and evaluation of hypothetical/deductive research in the biological sciences, with emphasis on hypothesis formulation and testing. Each student will develop a research proposal.

**Prerequisite:** Graduate standing.**Cross-listed with** BIOL F602.**Lecture + Lab + Other:** 3 + 0 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F604 Scientific Writing, Editing and Revising in the Biological Sciences**

3 Credits

Offered Spring

For students who are ready to produce a manuscript or thesis chapter. Topics include the publication process, selecting a journal, authorship, the components of the scientific paper, revising and editing manuscripts, and responding to reviews. Students will produce a complete manuscript.

**Prerequisites:** Graduate standing in Biology, Wildlife, or related discipline; permission of instructor.**Cross-listed with** BIOL F604.**Lecture + Lab + Other:** 3 + 0 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F623 Ecology and Management of Large Mammals**

3 Credits

Offered Fall Even-numbered Years

Identification, distribution, life history, ecology and management of North American large mammals. Exploration of roles of reproduction, predation, nutrition, habitat alteration and competition in population dynamics of large mammals, and management and research practices designed for conservation of habitats and populations.

**Stacked with** WLF F421.**Lecture + Lab + Other:** 3 + 0 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F625 Population Dynamics of Vertebrates**

3 Credits

Offered Spring Even-numbered Years

Sampling vertebrate populations, modeling their population dynamics and the implications for management. Focus will be on study design, model assumptions, estimation of population parameters and inference. State-of-the-art computer applications will be employed in laboratory exercises of actual and simulated data.

**Prerequisites:** BIOL F371; STAT F401.**Cross-listed with** FISH F625.**Lecture + Lab + Other:** 2 + 3 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F633 Conservation Genetics**

3 Credits

Offered Fall Even-numbered Years

Concepts of population genetics, phylogenetics, pedigree analysis, systematics and taxonomy as they apply to conservation of species. Evaluating the impact of small population size, population fragmentation, inbreeding, hybridization, taxonomic uncertainties and other factors on viability and management of species.

**Prerequisites:** BIOL F260; BIOL F371.**Recommended:** NRM F277.**Cross-listed with** BIOL F633.**Stacked with** BIOL F433; WLF F433.**Lecture + Lab + Other:** 3 + 0 + 0**Grading System:** Letter Grades with option of Plus/Minus

**WLF F669 Landscape Ecology and Wildlife Habitat**

3 Credits

Offered Spring

A problem-based learning and critical thinking approach to modern methods in landscape ecology, including geographic information systems, remote sensing, modeling, software and the Internet. Graduate students are expected to help undergraduates with problems and questions.

**Prerequisites:** Graduate standing.**Cross-listed with** BIOL F669.**Stacked with** BIOL F469; WLF F469.**Lecture + Lab + Other:** 2 + 3 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F670 Human Dimensions of Wildlife Management**

3 Credits

Offered Spring

Study of the interactions and relationships between people and wildlife, and the thoughts and behaviors of people related to wildlife and their management. This course also considers the social psychology, economic and political components of wildlife management.

**Stacked with** WLF F470.**Lecture + Lab + Other:** 2 + 3 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F680 Data Analysis in Biology**

3 Credits

Offered Spring

Course covers major statistical concepts and techniques using the statistical software R, with emphasis on applications in biology. Reviews probability theory, hypothesis testing, ANOVA, regression, least squares fitting, parametric and nonparametric approaches, and then focuses on random and mixed-effects models, likelihood based fitting, GAMs, GLMs, ordination, and model selection.

**Prerequisites:** STAT F200X; STAT F401; graduate standing in a biologically oriented field.**Cross-listed with** BIOL F680.**Lecture + Lab + Other:** 2 + 3 + 0**Grading System:** Letter Grades with option of Plus/Minus**WLF F692 Graduate Seminar**

1-6 Credits

Topics in fish and wildlife management explored through readings, talks, group discussions and guest speakers with a high level of student participation.

**Prerequisites:** Graduate standing.**Lecture + Lab + Other:** 0 + 0 + 1-6**Grading System:** Letter Grades with option of Plus/Minus**Repeatable for Credit:** May be taken unlimited times for up to 99 credits