



Department of Wildland Resources

2018 SYLLABUS

Course: WILD 5560/6560 – *Applied Avian Ecology*

Instructor: Frank P. Howe, NR 242, 797-8523, frankhowe@utah.gov

Credits: 3 hours, Spring semester

Time, place: Lecture: Tu 1:30-2:45; Lab Th 1:30–5:20 Room DE 211
(check Regional Campus schedule for broadcast rooms)

Prerequisites: BIOL 1620 -- Biology II
ENGL 2010
and NR 2220, WATS 2220 or BIOL 2220 -- General Ecology
or instructor's permission (see instructor)

Course Fees:

\$75/student - Course fees cover the cost of field trips as well as maintenance and repair of equipment (see below).

Learning objectives – The students will:

- 1) Develop an understanding of the principles of avian ecology and apply these concepts to management practices for bird communities, species, populations and habitats.
- 2) Develop knowledge of bird population and habitat ecology and management techniques including monitoring, inventory and assessment.
- 3) Develop an understanding of basic avian physiology and anatomy as they relate to management.
- 4) Develop skills in avian taxonomy focusing on North American bird groups of socioeconomic and ecological importance.

- 5) Learn the role of adaptive management in developing, implementing, and evaluating conservation actions established in state, regional, and national avian conservation plans.
- 6) Improve communication skills through written and oral presentation.
- 7) Develop skills in critical thinking, synthesis, library use, field techniques and computer applications.

Textbook:

No suitable up-to-date text is available; a Western or North American Bird Field Guide is strongly recommended (I recommend National Geographic Field Guide to the Birds of North America, Sibley N.A. or Western Guide, or Peterson Western Field Guide). Current readings from ecology and management journals, "The Wildlife Techniques Manual: Volumes 1 and 2", and avian ecology books will be the primary source of applied ecology literature.

Management and planning readings will include current peer reviewed journal articles, on-line publications, and published management plans and strategies such as: North American Waterfowl Management Plan, National Partners in Flight Plan, Greater Sage-grouse Comprehensive Conservation Strategy, and Utah Wildlife Action Plan.

Course scope and format:

This course will teach students to integrate avian ecology with population and habitat management practices. It will illustrate the links between management and avian biology, demographics, predator-prey interactions, limiting factors, movement behavior, and other ecological concepts. It will also demonstrate the relationship of management plans and planning processes to conservation actions. The course will be organized primarily by avian taxonomic group (e.g., upland game birds, waterfowl), but will also focus on habitat associations (e.g., riparian birds) and socio-political groupings (e.g., Threatened and Endangered Species). The course is designed for advanced undergraduate students and graduates with an understanding of basic ecology and bird identification. The course will use case studies that illustrate the application of basic ecological principles to real-world management scenarios. This will be accomplished through a combination of lectures, discussions, assignments, computer labs, and field experiences.

Lectures and discussions will be held Tu 1:30-2:45; labs will be held Th 1:30-5:20. Lectures will be PowerPoint presentations; discussions will be based on current scientific literature, recently published management plans, and currently practiced planning approaches. Laboratory experiences will include field and computer labs focused on ecology and management techniques and will reinforce lectures and readings.

Course Fees:

\$75/student - Course fees supplement the cost of rental vehicles for field trips and the cost of binocular repair and replacement. Binoculars are available for students to check out for the semester. The course includes at least 8 field trips in the Cache Valley and adjacent mountains, including Bear River near Trenton, Bud Phelps WMA in Mendon, Hyrum Reservoir, Cutler Reservoir, and Logan Canyon. The course also includes an extended field trip to Bear River National Migratory Bird Refuge near Brigham City.

Grading:

The final course grade will be based on a mid-term test, a final exam/assignment, two writing assignments, an oral presentation and lab assignments; graduates will complete an additional assignment. For undergraduates, the mid-term test will count 25%, the final 25%, the writing assignments are 20%, and the oral assignment is 15%; labs will be worth 10% (4 lowest lab scores will be dropped) and participation is worth 5%. For graduates, the mid-term test will count 20%, the final exam 25%, writing assignments 15%, oral assignment 15% of the grade; graduate assignment is 10%, labs are 10% (4 lowest lab scores will be dropped) and participation is 5% of the grade.

Communication assignments (details are provided in the Assignments document on Canvas):

These will include two written assignments and an oral presentation. Both written assignments will involve developing an initial draft document followed by a second draft addressing reviewer comments and suggestions. The oral presentation will use information from the written assignments and combining individual and team work; constructive criticism will be provided from instructors and peers.

Writing Assignment One: develop a fact sheet (~4 pages, 2000 words, and graphics) on a bird species that occurs in the Logan River Watershed. The fact sheet will contain basic biological and ecological information on the species including description, life history, demography, habitat, and management considerations. The initial draft of your fact sheet will be reviewed by the instructors who will provide constructive criticism. You will address instructor comments and submit the final draft for grading. Fact sheets are written in a format that communicates scientific information to a popular audience.

Writing Assignment Two: Building on information from Assignment One, you will develop a single-species management plan for your "fact sheet" bird on the Logan River. You will describe factors that potentially limit the growth of your species population and how you will address those limiting factors through management actions. You will also develop population and habitat objectives and a monitoring strategy within your plan. You will follow the same "initial draft – review and comments by instructors – final draft" process as in Assignment One. The management plan is in a format intended to communicate scientific information to managers; yours will be 12-15 pages and 4-5000 words.

Oral Assignment: You will combine your work with a team of your classmates to develop a multiple-species management plan for birds on a portion of the Logan River. Here you will consider how to manage an avian community: you will describe factors that potentially limit growth of the bird community and how to manage those factors. You will also develop community and habitat objectives and a monitoring strategy. You will also include an implementation plan of tasks required to carry out your management plan indicating who (e.g., state, federal, city agencies, nongovernment organizations, volunteers) will complete the tasks. During the team presentation, each team member will present the information pertaining to his/her species, then the team will present their proposal for managing the species together. Constructive criticism will be provided by the instructors and classmates and each student will provide a self-evaluation. Individual presentations will be 7-10 minutes with an additional 5-10 minutes for the team presentation.

Laboratory assignments:

These assignments will involve use of computer applications for modeling avian populations, movements and habitats as well as field trips to examine the application of management techniques in relation to ecological concepts in a variety of habitats.

Academic integrity:

Students must follow the USU Regulations Regarding Academic Integrity found in the *Code of Policies and Procedures for Students at Utah State University* www.usu.edu/student-services/student-code/.

Accommodation for disabilities:

Students with ADA-documented physical, sensory, emotional or medical impairments may be eligible for reasonable accommodations. Veterans may also be eligible for services. All accommodations are coordinated through the Disability Resource Centers (DRC): www.usu.edu/drc/ for main campus students and <http://usueastern.edu/drc/> for USU Eastern students.

Applied Avian Ecology Schedule Spring 2018 (subject to change see Canvas)

Date	Day	Topic
9-Jan	Tu	Foundations: ecological principles and applied management I
11-Jan	Th	Foundations: ecological principles and applied management II
11-Jan	Th	LAB: Basic Bird Identification Skills Visual; bring field guide
16-Jan	Tu	Foundations - finish Foundation lectures; Written Assignment species
18-Jan	Th	Foundations: predators and predation
18-Jan	Th	LAB: Winter bird management I incl. powerlines (field trip)
23-Jan	Tu	Elements of Planning: Species Plans and Area Plans (includes WAP)
25-Jan	Th	Conservation Action Planning
25-Jan	Th	LAB: Winter Bird Management II (waterfowl)
30-Jan	Tu	Continental Waterfowl Management
1-Feb	Th	Waterfowl management - Adaptive Harvest Modelling
1-Feb	Th	LAB: maximum sustainable yield and Adaptive Harvest Modeling
6-Feb	Tu	Waterfowl management in Utah
8-Feb	Th	Wetland Management in Utah
8-Feb	Th	LAB: Duck Wings

13-Feb	Tu	Colonial Waterbirds and shorebirds
15-Feb	Th	ASSIGNMENT ONE DRAFT DUE
15-Feb	Th	MID-TERM TEST (Take Home - covers all materials to date) No lab
20-Feb	Tu	No classes - Monday class schedule
22-Feb	Th	Shrubsteppe Passerines
22-Feb	Th	LAB: Bird Identification workshop (behavior, range, sounds, habitat)
27-Feb	Tu	Upland Game Birds – intro
1-Mar	Th	ASSIGNMENT ONE REVISION DUE; ASSIGNMENT 3 TEAMS ASSIGNED
1-Mar	Th	Utah Sage-grouse plan
1-Mar	Th	LAB: Capturing, marking and radio-telemetry (self-directed video lab)
5-9 Mar		No classes- Spring Break
13-Mar	Tu	Shrubsteppe Management
15-Mar	Th	TES Conservation
15-Mar	Th	LAB: radio-telemetry analysis
20-Mar	Tu	TES Conservation
22-Mar	Th	ASSIGNMENT TWO DRAFT DUE
22-Mar	Th	No Lecture UTTWS
22-Mar	Th	LAB: (self-directed exercise – Logan River site visits -photos point)
27-Mar	Tu	Monitoring techniques
29-Mar	Th	Extended Lab
29-Mar	Th	LAB: Shrubsteppe Management (field)
3-Apr	Tu	Monitoring Response (or How to give a scientific presentation)
5-Apr	Th	ASSIGNMENT TWO REVISION DUE
5-Apr	Th	Extended Lab
5-Apr	Th	LAB: State Wetland management (Field)
10-Apr	Tu	Riparian Bird Diversity
12-Apr	Th	No Lab
16-Apr	Th	LAB: ALL DAY SAT Federal Wetland management (Field)
17-Apr	Tu	ASSIGNMENT THREE DUE: IN-CLASS PRESENTATIONS
19-Apr	Th	ASSIGNMENT THREE continued
19-Apr	Th	Hand out Final (Take Home, due 5 May at 3:20 pm)
19-Apr	Th	LAB: Riparian Management (Field); Logan River
24-Apr	Tu	Bird Diversity and Forest Management
26-Apr	Th	Summary and extended lab
26-Apr	Th	LAB: Forest Management (Field) or Logan River urban
3-May	Th	FINAL DUE AT 3:20