

## **SYLLABUS: BIOL523 Wildlife Ecology (Summer 2016, 2 credits)**

**Instructors:** David Willey, MSU-Ecology, 406C 310 Lewis Hall  
(Willey's Phone: 406-994-5319).

**Course Description:** Explore the ecology of diverse wildlife communities of Yellowstone National Park, emphasizing wildlife identification, habitat measurements, and populations.

### **1) Monday (8:00-1130am; room 407 Lewis Hall):**

- a) Introductions, the Course Workbook, and Syllabus.
- b) Exercise 1: Museum Skins: Wildlife Identification.
- c) Exercise 2: Pick a focal species (see the example list of potential organisms).
- d) Wildlife Ecology Introduction: Contemporary Issues in YNP: Populations and Habitat.
- e) **Lunch Break**
- f) Field Trip Logistics (Form Teams for Cooking and Sharing).
- g) Select your Focal Species and Conduct research for your presentation.
- h) Food buy and pack for the field trip (*Get some SLEEP!*).

### **2) Tuesday: Field Trip Day1:**

- a) Meet **4:30am** at Hannon Hall Entrance (Drive *rapidly* to Pebble Campground).
- b) 7am-10am: Find campsites, set up camp, breakfast, personal time.
- c) 10am-11am: *focal species presentations in Camp.*
- d) 11am to 4pm: Field Hike from Camp to Wolf Den Habitat, Soda Butte Creek. Bring Sandals for wading the COLD creek. We will eat lunch at the remote site and conduct Habitat Measurements among vegetation communities in the field.
- e) 4-7pm: Personal time in Camp (reading papers, focal species prep) and Dinner.
- f) 7pm to Sunset: Wildlife Surveys (Wolves, Bears, etc., Lamar River Valley).

### **4) Wednesday (6am Wake Up and pack a Breakfast)**

- a) 6:30am Depart Camp to Trout Lake Trailhead. Hike to the Lake (1 mile).
- b) 7-10am: Search for River Otters, Spawning YC Trout, goats, sheep, bears (establish Point-Count Stations to inventory wildlife species).
- c) 10-11am: Focal Species Presentations (at Trout Lake).
- d) 11am to 1pm: Lunch in Camp and Personal time.
- 3) 1-3 pm: **Response Papers #1:** Wolf Reintroduction History; Grizzly Bear Predation linked to Native Trout; and River Otters.
- e) 3-5pm: Personal Time (readings, focal species preparations)
- f) 5-6pm: Dinner in Camp.
- g) 6pm to Sunset: Wolf and Bear Surveys (Lamar River Valley).

### **5) Thursday (5am Wake Up)**

- a) 6am to ~9am: Wolf-Bear-Ungulate Surveys Lamar River Valley.
- b) 9am to 10am: Enclosures and Ungulate effects on Vegetation and Focal Species Presentations in the Lamar River Valley.
- c) 10:30am to Noon: Response Papers #2 Discussion (Brown-Bag Lunch) in Camp: Diets of Bears and Great Gray Owls in the GYA.
- d) Noon-1pm: Depart for Grand Canyon of the Yellowstone and the Hayden Valley: Wildlife Observations. Osprey and Peregrine Eyries; Hayden Valley Wolf-Grizzly Surveys. We will eat Dinner at Canyon Center Facilities (many choices).

### **6) Friday (pack it up, leave camp)**

- a) 9am: Breakfast at the Roosevelt Lodge (Tower Junction)
- b) Wildlife Roadside tour: Route TBA
- c) Return to Bozeman by 3pm.

**Field Trip Overview:** We will take a 4-day field trip (3 nights camping) to YNP to view wildlife in their native habitats. We will attempt to base at Pebble Creek or Tower Campgrounds in the Northeast corner of the park. The field trip will include free time to explore and read about the park's wildlife; several organized hikes among wildlife communities to gather data about focal species and communities; abundant wildlife identification practice; and outdoor classroom meetings to discuss wildlife articles and focal wildlife species.

### **Class Exercises**

- 1) (30pts) Wildlife identification exercise I. Identify common wildlife of YNP (a reference area for the Northern Rockies) using the Ecology Department's Natural History Collection. You will begin this as soon as you enter the classroom on Monday morning (407 Lewis Hall). Using the data form, identify the 30 specimens located on the tables. The specimens of vertebrates from our collection are displayed on the dissecting tables with a **worksheet** for you to fill out (*Due in Class on Monday, 5pm*).
  
  - 2) (30pts) Wildlife & Habitat Survey Forms: use the **Wildlife Communities data sheets** to record observations of species and habitat measurements.
  
  - 3) (30 pts) Focal Wildlife Species Presentation (*due throughout the week*). You will be introduced to a broad array of ecological communities in our study area (GYE). Please pick a species of interest. This research includes fact finding for background on your species, including identifying features, basic ecological relationships (e.g., diet), and habitat used. Prepare (e.g., use a notecard) a brief (5-10 minute) oral presentation concerning your species (presented in our outdoor classroom).
  
  - 4) (30 pts) Wildlife Ecology Response papers: Review research articles (included in this folder) that explore the YNP Ecosystem. After close reading each article, outline a "response" (hand-written in the field) that addresses the following questions (we will discuss these as a group in the park): what were the primary objectives of the articles? What were the key results or conclusions presented? What were the positive and negative issues, if any, you had with the articles?
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## **Wildlife Communities in Yellowstone National Park**

### **Aquatic and Riparian**

Lake Trout  
Yellowstone Cutthroat Trout  
Osprey  
Bald Eagle  
Golden-Mantled Squirrel  
Moose  
Long-tailed Weasel  
Water Shrew  
Deer Mouse  
Grizzly bear  
Mountain Lion  
Peregrine Falcon  
Cooper's Hawk

Common Merganser  
Horned Grebe  
Western Grebe  
Green winged real  
American Coot  
Trumpeter Swan  
Great Blue Heron  
Belted King-Fisher  
Mallard and Pintails  
Ring-Necked Duck  
Canada Geese  
Great Horned Owl  
Sandhill Crane

American Dipper  
River Otter  
White Pelican

### **Grasslands**

Elk  
Pronghorn  
Bison  
Richardson's Ground Squirrel  
Meadow Vole  
Northern Pocket Gopher  
Deer Mouse  
Gray Wolf

Burrowing owls  
Prairie Falcon  
Ferruginous Hawk  
Northern Harrier  
Red-Tailed hawk  
Swainson's Hawk  
Coyote  
Grizzly bear

### **Shrubsteppe**

Pronghorn  
Mule Deer  
Bobcat  
Coyote  
Red Fox  
Brush Rabbit  
Bushy-tailed woodrat  
Deer Mouse

Golden Eagle  
Red-tailed hawk  
prairie falcon  
Sage grouse  
Badger  
Bison  
Magpies

### **Parklands, Boreal Forests, and Tundra**

Grizzly Bear  
Black Bear  
Gray Wolf  
Wolverine  
Porcupine  
Lynx  
Bighorn Sheep  
Mountain Goat  
Magpie  
Gray Jay

Northern Goshawk  
Pika  
Hoary Marmot  
Rosie finch  
Ptarmigan  
Pine Marten  
Bison  
Common Raven  
Stellar's Jay  
Yellow-rumped warbler

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