

ZO 245

Wildlife Habitat Conservation

3 Credits

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ZO 245 Version: 14



Wildlife Habitat Conservation

Calendar Description

The principle focus is identifying the habitats, particularly breeding habitats for species at risk, for the terrestrial vertebrate biodiversity of the Prairie Provinces. Wildlife habitat requirements, diets, distributions, and legal status designations are profiled for wildlife that range in the Prairie Provinces. Wildlife field signs are described and distinguished so they can be identified in the field. Key concepts for conserving, managing and enhancing wildlife habitats for biodiversity and to mitigate disturbances are introduced.

Rationale

This is a required course for Conservation and Restoration Ecology (CARE) and Wildlife and Fisheries Conservation (WFC) students. Familiarity with wildlife habitat requirements, wildlife signs, habitat conservation and management, and an understanding the potential effects of disturbances on wildlife habitat are required of employees conducting wildlife surveys, and for those managing and conserving wildlife habitat.

Prerequisites

BI 110 and BO 120

Co-Requisites

None

Course Learning Outcomes

Upon successful completion of this course, students will be able to

1. compare and contrast wildlife habitat associations, ranges, diets and status designations.
2. contrast digestive anatomies of insectivores, carnivores, herbivores and birds.
3. identify federal and provincial legislation for biodiversity conservation and the Species At Risk Act (SARA) process.
4. locate the current federal and provincial status listings, critical habitat descriptions and setback guidelines for species at risk.
5. describe the ecological and social value of biodiversity.

6. contrast the potential effects of habitat loss, fragmentation and degradation, and propose actions to minimize negative effects.
7. describe actions for enhancing habitat and for mitigating disturbances to wildlife habitat.

Essential Employability Skills

Essential employability skills are critical for workplace success and lifelong learning. Lakeland College prepares its graduates for the workplace and lifelong learning by integrating and promoting essential employability skills development in its curricula. Each credit course offered at Lakeland College emphasizes one or more of the following five essential employability skills:

- A. **Communication Skills** that enable individuals to listen, interpret, express, and convey knowledge and ideas so that they are received and understood.
- B. **Teamwork Skills** that enable individuals to respect the thoughts and opinions of others as they work together to plan activities, meet deadlines, complete projects, and contribute to an organization's goals.
- C. **Critical Thinking Skills** that enable individuals to conceptualize and analyze issues from various perspectives while rationally evaluating the strengths and limitations of each perspective and deciding what action to take.
- D. **Adaptability Skills** that enable individuals to respond quickly, willingly, and positively to new conditions and changing times.
- E. **Positive Attitude and Behavioural Skills** that enable individuals to be confident about themselves and to deal with people, problems, and situations with honesty, integrity, and personal ethics.

Resource Materials

Required Text:

None.

Reference Websites:

- Environment and Climate Change Canada
- Alberta Environment and Parks
- Saskatchewan Environment
- Manitoba Conservation
- IUCN Red List
- Alberta Conservation Association
- Nature Conservancy of Canada
- Canadian Herpetological Society

- Ducks Unlimited Canada
- NatureServe

Conduct of Course

This class includes 3 hours of lecture each week and a 4 hour lab every second week. The lecture is a formalized classroom situation while the labs include field excursions and computer laboratory analyses. Quizzes follow the completion of each of associated units and occur throughout the term. Field labs include collecting data in the field and summarizing in database files and technical reports. Working in groups assist students development of teamwork and interpersonal skills required by employers in the conservation industry.

It is important that students stay current with the instructional material because of the frequency of quizzes and assignments. Students must come adequately prepared for field labs including being familiar with the activity to be conducted and properly dressed for the weather.

Evaluation Procedures

To obtain credit in this course all assignments must be completed and submitted or an incomplete (IN) grade is assigned. Assignments are due at the beginning of class on the due date and late assignments are assessed a penalty of -25% per day late. Quizzes and the Final Exam include multiple choice, matching, short answer, true/false, image and map questions. Quizzes will follow the lecture units in which the topic is presented. The Final Exam is cumulative but will focus on the lecture units that have not already been quizzed. Unexcused absences from quizzes and labs will result in a grade of zero for marks associated with that activity.

Quizzes		60%
	<i>Habitat Associations, Diets, Ranges and Status of Herptiles</i>	10%
	<i>Habitat Associations, Diets, Ranges and Status of Species at Risk</i>	10%
	<i>Habitat Associations, Diets and Ranges of Mammals</i>	10%
	<i>Habitat Associations, Diets and Ranges of Raptors</i>	10%
	<i>Habitat Associations and Ranges of Bats</i>	10%
	<i>Wildlife Signs</i>	10%
Assignments		20%
	<i>Wildlife Signs Field Survey</i>	5%
	<i>Amphibian Habitat Analysis</i>	15%
Final Exam		20%
Total		100%

Knowledge/Skills Matrix

Students apply and demonstrate their knowledge and skills to use

A. Communication Skills

A1. by listening, reading, interpreting information, and communicating effectively
Evaluation(s)/Goal(s): Outcomes 1-7
A2. by using written, spoken, and/or visual formats and media to communicate and meet needs of each particular audience
Evaluation(s)/Goal(s): Outcomes 1-7
A3. by using libraries, Internet, technical publications, journals and other sources to find pertinent information
Evaluation(s)/Goal(s): Outcomes 4-7

B. Teamwork Skills

B1. by using interpersonal skills to create an atmosphere that maximizes the strengths of group members to accomplish tasks
Evaluation(s)/Goal(s): Outcomes 1-7
B2. by using interpersonal skills to resolve conflict, relate to others, and assist others
Evaluation(s)/Goal(s): Outcomes 1-7
B3. by contributing and listening to others as group determines realistic objectives, prioritizes tasks, and identifies resources and timelines
Evaluation(s)/Goal(s): Outcomes 1-7
B4. by treating other members of the group open-mindedly and fairly
Evaluation(s)/Goal(s): Outcomes 1-7
B5. by developing tactics/strategies to accomplish tasks
Evaluation(s)/Goal(s): Outcomes 1-7

C. Critical Thinking Skills

C1. by seeing critical thinking as a lifelong process of self-assessment
Evaluation(s)/Goal(s): Outcomes 1-7
C2. by examining problems closely
Evaluation(s)/Goal(s): Outcomes 1-7
C3. by examining beliefs, assumptions, and opinions, and weigh them against the facts
Evaluation(s)/Goal(s): Outcomes 1-7
C4. by seeking out the truth
Evaluation(s)/Goal(s): n/a
C5. by finding solutions; make decisions
Evaluation(s)/Goal(s): Outcomes 1-7
C6. by incorporating new ideas that may not necessarily agree with previous thought on the topic
Evaluation(s)/Goal(s): Outcomes 1-7

C7. by seeing connections between topics and use knowledge from other disciplines to enhance reading and learning experiences
Evaluation(s)/Goal(s): Outcomes 1-7

D. Adaptability Skills

D1. by working independently or as part of team
Evaluation(s)/Goal(s): Outcomes 1-7
D2. by carrying out multiple tasks or projects
Evaluation(s)/Goal(s): Outcomes 1-7
D3. by being innovative and resourceful: identify and suggest alternative ways to get the job done
Evaluation(s)/Goal(s): Outcomes 1-7
D4. by being open and respond constructively to change and uncertainty
Evaluation(s)/Goal(s): Outcomes 1-7

E. Positive Attitude and Behavioural Skills

E1. by dealing with people, problems, and situations with honesty, integrity, and personal ethics
Evaluation(s)/Goal(s): Outcomes 1-7
E2. by showing interest, initiative, and effort
Evaluation(s)/Goal(s): Outcomes 1-7
E3. by affirming the need for positive solutions and encourage positive interaction and feedback
Evaluation(s)/Goal(s): Outcomes 1-7
E4. by balancing personal and family activities with job-related activities
Evaluation(s)/Goal(s): Outcomes 1-7

Grade Equivalents and Course Pass Requirements

A minimum grade of D (50%) (1.00) is required to pass this course.

Letter	F	D	D+	C-	C	C+	B-	B	B+	A-	A	A+
Percent Range	0-49	50-52	53-56	57-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-100
Points	0.00	1.00	1.30	1.70	2.00	2.30	2.70	3.00	3.30	3.70	4.00	4.00

Students must maintain a cumulative grade of C (GPA - Grade Point Average of 2.00) in order to qualify to graduate.

Attendance

Classroom and laboratory attendance is considered vital to the learning process and as significant to the students' evaluation as examinations and reports, therefore absenteeism is recorded.

- a. Students having a combination of excused and/or unexcused absence of 20 percent or higher for the scheduled course hours can be required to withdraw and would then automatically receive a "RW" (required withdrawal) for the course, regardless of any other evaluation results. (RW is a failing grade).
- b. An excused absence is one that is verified with your instructor. Verification should be prior to the absence or the next class day following the absence. Verification of the absence may take the form of a note from your doctor/College nurse regarding illness, or a note from another instructor regarding a field trip or other activity, or authorization by your instructor following an in-person meeting. Be sure to contact your instructor and ask what they will require from you as verification for each absence. An unexcused absence is anything NOT verified by the instructor prior to the absence or the next class day following the absence.

NOTE: Any exceptions to the above attendance policy (e.g. timetable conflicts, work-related issues) must be approved in writing by the Department Chair prior to the beginning of the course.

It is the students' responsibility to know their own absentee record.

Normal hours are 8:30 a.m. to 6:30 p.m., with potential for evening courses, exams or extended field trips. Students are expected to be available for classes during these times.

Course Units/Topics

Lecture Units

Unit 1. Herptile Habitat

1. Habitat requirements, diets, ranges and status designations.

Unit 2. Wildlife Habitat Overview

1. The essential components of wildlife habitat and biodiversity.
2. The coevolution of habitat and species.

Unit 3. Species at Risk Habitat

1. Habitat requirements, diets, ranges and status designations

Unit 4. Conventions and Legislation for Biodiversity Conservation and Species at Risk

1. International Conventions
2. NatureServe Conservation Data Centres and Conservation Ranks
3. Federal and Provincial Species at Risk Legislation
4. Provincial Ecosystems at Risk Legislation

Unit 5. Raptor Habitat

1. Habitat requirements, diets, nests, ranges and status designations.

Unit 6. Landscape Ecology and the Management of Wildlife Habitat

1. Distinguishing the effects of habitat loss, fragmentation and degradation.
2. Wildlife Land Use Guidelines and Wildlife Sensitivity Maps.
3. Private and NGO wildlife habitat conservation.
4. Principles and techniques for mitigations and enhancements.
5. Habitat management and conservation by the ACA.

Unit 7. Wildlife Nutrition

1. Digestive strategies and foraging adaptations.
2. Characteristics of grasses/grazers and browses/browsers.
3. Primary macro- and micro-nutrients.

Unit 8. Wildlife Signs

1. Field signs that indicate wildlife presence.

Unit 9. Mammal Habitat Associations, Diets and Ranges

1. Habitat requirements, diets, nests, ranges and status designations.

Laboratory Topics

Labs are held indoors and outdoors so the order and ability to conduct these labs depends on weather or other factors that may cause the lab to be modified and/or the order to change.

- 1. Amphibian Habitat Analysis (the first 3 lab periods)**
 - *Students combine field survey data and GIS tools to identify amphibian breeding ponds at which they quantify habitat variables.*
- 2. Habitat Enhancement: Nest Tunnels/Hen Houses for Waterfowl (Feb)**
 - *Students build, install, maintain and monitor use of nest tunnels for waterfowl.*
- 3. Habitat Assessment: Wildlife Signs Survey (Mar-Apr)**
 - *Students conduct a field survey to identify and quantify wildlife signs.*
- 4. Habitat Enhancement: Bat Houses (Mar-Apr)**
 - *Students review the protocols for monitoring bats at bat houses use bat habitat requirements to determine a location for the installation of a bat house.*
- 5. Conservation Mitigation: Snake Road Mortality (Apr – weather dependent)**
 - *Students assess a site to propose mitigation strategies to reduce road mortality of snakes.*
 - *This activity is weather dependent and may need to be substituted for a different activity.*



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