

Syllabus

Wetland Management

WIS 4934/6934

Fall 2020

Online synchronous course

3 credits

Instructor: Dr. Peter Frederick, Department of Wildlife Ecology and Conservation
pfred@ufl.edu, Ofc 352-846-0565
Office: Building 87, next to Florida Cooperative Wildlife Research Unit
(knock on entrance door, someone will open it).

Office hours: Dr. Frederick T Period 8, TH Period 9 – please arrange with me ahead of time for an appointment on Zoom

Class Time and location: Tuesday Period 7 1:55 – 2:45pm, Zoom meetings
Thursdays periods 6-8 12:50 – 3:50 pm Zoom, self guided trips, or experiences at UF Natural Area Teaching Lab.

Course Description

This course will prepare students for basic monitoring, field research, and management of wetlands, using ecological principles and knowledge of community variation in relation to stressors. Identification, monitoring techniques, and management and restoration techniques will be taught through a combination of class lectures and hands-on field exercises and labs.

Course Learning Objectives:

By the end of this course, students will be able to:

- Identify important plants, animals and biotic communities in southeastern wetlands
- Assess wetland soil types and what they tell about wetland history
- Contrast components of hydrological budgets and how to measure them
- Employ standard wetland delineation techniques
- Evaluate appropriate sampling techniques for tracking spatial and temporal biotic parameters in wetlands
- Design different wetland management and restoration techniques for specific goals.

Course Schedule: See schedule at end of this document for lectures and dates.

Critical dates: see schedule at the end of this document for dates of quizzes, tests, and Canvas site for due dates of assignments.

Prerequisites or concurrency: none

Course requirements: Class attendance, field trip attendance, lab practical quizzes, lab practical exercises, and two written exams. Participation (below) is graded on evidence of active engagement in the class and lab, such as questions asked, evidence of evolving thinking, and interactions with students and faculty in the class and on assignments. **Graduate students** enrolled in this class will also research and write a management and monitoring plan or detailed section thereof, for a wetland in consultation with the manager. Graduate students will also be required to present their management or monitoring plan to the class as an assignment. See detailed description of this assignment on the Canvas site.

Contributions to final grade for undergraduate section, WIS 4934:

Participation and attendance:	10%
Lab quizzes	30%
Field trips and exercises	15%
Mid Term	20%
Final exam	<u>25%</u>
Total	100%

Contributions to final grade for graduate section, WIS 6934:

Attendance and participation*	10%
Lab quizzes	25%
Field trips and exercises	15%
Mid Term	15%
Final exam	20%
Written Management plan	15%
Presentation of management plan	<u>5%</u>
Total	100%

**Participation is based on both attendance and on evidence of engagement in classes and labs – asking questions in or out of class times, and evidence of preparation. See UF attendance policy at <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>*

Grading: A (94% or greater), A- (90%-93%), B+ (87%-89%), B (84%-86%), B- (80%-83%), C+ (77%-79%), C (74%-76%), C- (70%-73%), D+ (67%-69%), D (64%-66%), D- (60%-63%),

E (<60). See <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx> for UF grading policy.

Course Materials and Readings.

This course is heavily based on identification and hands on field experience, which will be supplemented with readings, and a combination of field guides and online material. This course relies considerably on material presented in class and encountered in the field – **this is definitely not a class where you can miss classes and catchup by reading the materials on the Canvas site.**

Required Materials:

General: Anderson, J.T. and C.T. Davis (eds). 2014. Wetland Techniques, Volumes 2 – 3. Springer Science Press, Dordrecht. **Note this book is available free to UF students**, see the Canvas site (under Files>Reference Materials) for downloads. The two chapters (below) must be finished BEFORE the lectures that they pertain to. The goal is to supplement information from lectures and build general knowledge about commonly accepted techniques for monitoring and assessing wetland biota and condition.

Material in these chapters will be on Mid-term and Final exams, and we will discuss much of the reading and situations in which different methodologies are used, and the ability to name and identify what is generally involved in each technique. For example, I might ask an exam question about the situation in which a funnel net might be used to capture turtles, or the most likely method to sample amphibians emerging from a pond postbreeding. These readings will also build your knowledge for more synthetic questions that involve designing a monitoring study for a particular purpose, that involves multiple forms of biota and wetland response. These are also likely to be on the tests.

Reading schedule:

Date due	Assignment	Folder (Canvas>Files...)
August 22, field trip	Lightning Safety (be prepared to answer questions)	>Unit I>Wetland Plant ID lab
September 17, class	Chapter 7 in Wetland Wildlife Monitoring and Assessment (vol 2)	>Reference material>Wetland Techniques
September 17, class	Chapter 7 in Wetland Wildlife Monitoring and Assessment (vol 2)	>Reference material>Wetland Techniques

September 26, field trip	Methods section in the Florida Wetland Delineation Manual	>Unit II>Wetland classification and delineation lab
October 10, lab	Updated Wetland Plant Sampling Protocol	>Unit II > Wetland Plant quantification Lab
October 31, class	Chapter 2 in Management of Wetlands for Wildlife (vol 3)	>Reference material>Wetland Techniques
October 29, class	Chapter 2 in Management of Wetlands for Wildlife (vol 3)	>Reference material>Wetland Techniques
October 17, field trip	Payne's Prairie Sheetflow project pdf	
November 14, class	Kellogg paper (Kellogg et al 2013) Mann and Powell paper (2007) Plus one other paper of your choice	>Unit III >Shellfish restoration
November 20, class	Chapter 2 in Management of Wetlands for Wildlife (vol 3)	Reference material>Wetland Techniques
November 19, class	Sklar paper (Sklar et al 2005) Smith paper (Smith et al 2011)	>Unit III>Everglades and Chesapeake

Other required material for this course:

Bird identification: Sibley Field Guide to Birds –book or the eguide app (recommended).
https://play.google.com/store/apps/details?id=com.coolideas.eproducts.sibleybirds&feature=search_result. Other field guides such as Audubon guides or National Geographic guides are also acceptable, but you will need to find a source for calls (which are in the app).

Wetland Soil identification: Field Indicators of Hydric Soils in the United States. A Guide for Identifying and Delineating Hydric Soils, Version 7.0, 2010. Available on the Canvas site under Files>Unit 1>Labs>Hydric Soils Lab materials.

Wetland Plant identification: Tobe, J. et al. 1998. *Florida Wetland Plants: an identification manual*. Florida Department of Environmental Protection and UF/IFAS Publications. The manual is no longer available in print, but the pdf is available on the Canvas site under Files>Unit 1>Labs>Wetland Plant Identification Lab. **Download to your phone or tablet ahead of the first lab!**

Frog calls: Use the Florida Frog Calls lookup
https://www.pwrc.usgs.gov/Frogquiz/index.cfm?fuseaction=main.lookup&CFID=6366850&CF_TOKEN=288034ba03db9883-0B5283B7-D5D5-4EA0-BD3B20F30FA9B4A6

Wetlands Delineation: Florida Wetlands Delineation Manual: on the Canvas site Files>Unit II.Labs>Wetland delineation lab materials.

Wetland habitat classification: Florida Natural Areas Inventory: below, or on the Canvas site Files>Unit I>Lectures>FNAI Wetland Communities.

<http://fnai.org/naturalcommguide.cfm> http://fnai.org/natcom_accounts.cfm

Other nonrequired resources:

Wetland Plants:

Godfrey, R.K. and J.W.Wooten 1981. Aquatic and Wetland Plants of Southeastern United States: Vol. 1. Monocots, Vol 2. Dicotyledons. University of Georgia Press. This is the authoritative book for wetland flora complete with keys and detailed descriptions.

Tiner, R. 1993. Field guide to coastal wetland plants of the southeastern United States. University of Massachusetts Press.

Aquatic and Wetland Plants in Florida – Plant management

<http://plants.ifas.ufl.edu/manage/why-manage-plants/aquatic-and-wetland-plants-in-florida/>

Links to information and research on frogs and toads:

<http://ufwildlife.ifas.ufl.edu/frogs/links.shtml>

Waterfowl Management: Baldassare G.A. and E. G. Bolen. 2006. Waterfowl ecology and management. Krieger Publishing. Second edition.

Important - Coronavirus safety procedures: Because of coronavirus risks, this course will be taught as a synchronous online course during fall 2020, with all lectures, tests, quizzes and office hours accomplished online through Canvas and Zoom. However, this course has always had a strong field component, and we have several face to face labs outside. Most exercises will be at the Natural Areas Teaching Lab on the UF campus, others will be at locations that can be accessed by bus or bicycle. Students are required to travel to labs on their own, and to wear face coverings, use hand sanitizer frequently and maintain six-foot distances at all times. The Coronavirus Safety Plan for this course can be found on the course Canvas under Files.

In response to COVID-19, the following policies and requirements are in place to maintain your learning environment and to enhance the safety of our in-classroom interactions.

- You are required to wear approved face coverings at all times during class and within buildings. Following and enforcing these policies and requirements are all of our

responsibility. Failure to do so will lead to a report to the Office of Student Conduct and Conflict Resolution.

- Sanitizing supplies are available at labs if you wish to wipe down your immediate area or belongings prior to sitting down and at the end of the class.
- Follow your instructor's guidance on how to enter and exit the lab area. Practice physical distancing to the extent possible when entering and exiting the classroom.
- If you are experiencing COVID-19 symptoms ([Click here for guidance from the CDC on symptoms of coronavirus](#)), please use the UF Health screening system and follow the instructions on whether you are able to attend class. [Click here for UF Health guidance on what to do if you have been exposed to or are experiencing Covid-19 symptoms](#).
- Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. [Find more information in the university attendance policies](#).

Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>.

Attendance and Make-Up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>.

Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at: <https://gatorevals.aa.ufl.edu/public-results/>.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*" You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: "*On my honor, I have neither given nor received unauthorized aid in doing this assignment.*"

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes,

exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>.

Software Use:

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation
0001 Reid Hall, 352-392-8565, <https://disability.ufl.edu/>

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

• *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,*

www.counseling.ufl.edu

Counseling Services

Groups and Workshops

Outreach and Consultation

Self-Help Library

Wellness Coaching

• U Matter We Care, www.umatter.ufl.edu/

• *Career Connections Center, First Floor JWRU, 392-1601, <https://career.ufl.edu/>.*

Student Complaints:

• Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>.

• Online Course: <http://www.distance.ufl.edu/student-complaint-process>

Cultural Accommodation: Because our students represent a myriad of cultures and many faiths, the University of Florida is not able to assure that scheduled academic activities do not conflict with the holy days of all religious groups. We therefore rely on individual students to make their need for an excused absence known in advance of the scheduled activities. As you look through the course syllabus, if you have a religious or cultural observance conflict, contact me at the beginning of the semester or as soon as you can, and we will make appropriate arrangements. Here is UF's policy on cultural accommodation:
<https://administrativememo.ufl.edu/2018/10/uf-religious-observances-policy->

Safe Space & Mutual Respect: My classroom and my office are safe spaces. What that means for you, as a student, is that while in class or in my office you have the right to express yourself freely and openly (and appropriately), and have me, your TA and your classmates respect your expression. In these safe spaces, mutual respect is expected; this means that both parties have respect for one another (note: this does not mean we always agree). In order to foster this environment conducive of learning and growth experiences, please join me in treating your classmates with respect.

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Lecture and Lab schedule Fall 2020

See Canvas site for dates for assignments, tests and quizzes

Unit I. Wetland ecology, communities, and indicators for management.

Week 1. Wetland Ecology basics and Wetland Plants

9/1/2020 Course introduction, wetland ecology overview

9/3/2020 Wetland Plants identification- **(meet at NATL, see map at Canvas under Files>Reference Material)**

Week 2. Hydric Soils

9/8/2020 Wetland ecology, Hydric Soils - Dr. Mark Clark

9/10/2020 Hydric soils identification lab – **(Meet at NATL)**

Week 3. Wetland Communities I

9/15/2020 FNAI community types I, typical and impaired

9/17/2020 FNAI Community types, Herp and fish id

Week 4. Wetland Communities II

9/22/2020 Herps as indicators

9/24/2020 Wetland Community types field trip (self guided trips)

Unit II. Monitoring Wetlands

Week 5. Herp and fish monitoring

9/29/2020 Herp and fish monitoring techniques

10/1/2020 Wetland fish and herp field monitoring exercise – **(meet at NATL)**

Week 6. Wetland Classification and Delineation

10/6/2020 Wetland Classification and delineation

10/8/2020 Wetland delineation field exercise – **(meet at NATL)**

Week 7. Agriculture and wetlands

10/13/2020 Agriculture and wetland management

10/15/2020 Avian Identification lab

Week 8. Quantifying wetland vegetation

10/20/2020 Monitoring vegetation

10/22/2020 Field exercise- quantifying wetland vegetation – **(meet at NATL)**

Week 9. Aquatic birds and wetlands

10/27/2020 Avian monitoring techniques.

10/29/2020 Field trip to Sweetwater Wetlands Park (**Meet at SWP**)

Week 10. Measuring hydrology

11/3/2020 Monitoring wetland hydrology – Dr. David Kaplan

11/5/2020 Wetland hydrology lab exercise

Unit III. Managing and restoring wetlands

Week 11. Wetland fire ecology, field logistics

11/10/2020 Wetland fire ecology

11/12/2020 Field safety & logistics

Week 12. Hydrological management

11/17/2020 Managing Hydrology.

11/19/2020 Waterfowl and wetland management

Week 13. Mosquito management, wetland restoration

11/24/2020 Vector control

11/26/2020 Thanksgiving Break, no class

Week 14. Wetland restoration

12/1/2020 Chesapeake restoration

12/3/2020 Kissimmee and Everglades Restoration

Week 15. Graduate project presentations

12/8/2020 Shellfish and seagrass restoration