

Fall Semester 2023

ENR 5250.02 Wetland Field Laboratory

INSTRUCTOR: **Mark A. Dilley, MS, PWS**
Lecturer – OSU School of Environment and Natural Resources

OFFICE: **MAD Scientist Associates LLC** (work; Virtual meetings by appointment)
253 N. State Street, Suite 101
Westerville, OH 43081

PHONE: (614) 531-9156

E-MAIL: dilley.7@osu.edu

TEACHING ASSISTANT: **Peter Renz**, SENR Graduate Student
Virtual meetings by appointment
renz.23@buckeyemail.osu.edu

PREREQUISITE: ENR 5250.01 (can be taken concurrently).

COURSE LOCATION: Olentangy River Wetland Research Park – 352 W. Dodridge Avenue (NOTE: Nov. 1, 8, 17 and 15 labs will be held in computer lab on second floor of Kottman Hall)

TIME OF CLASS: Tuesday 4:00 - 7:00 p.m.

CREDIT HOURS: 1

COVID PRECAUTIONS: The lab is a residential (in person) offering as long as this permissible at the University level. All requirements established by the University are to be followed. Plan to wear a mask, socially-distance yourself when finding a seat or moving about the room, wash your hands frequently, and under no circumstances should you come to class if you are not feeling well or exhibit any Covid-19 symptoms (fever, headache, body aches, intestinal issues, etc.). No remote offering is planned or is feasible for the lab section content. Students will be assigned to small “Study/Support Teams” to share notes/updates with one another if someone is unable to attend. Copies of all presentation slides will be made available within 48 hours of class.

COURSE DESCRIPTION: Laboratory on wetland hydrology, vegetation, water quality, soils, and aquatic biota. Real-world skills in the areas of wetland delineation, assessment, monitoring, and restoration design will be emphasized.

TEXT: None. Handouts and readily available online resources will be used.

COURSE OBJECTIVES: In this course, engaged and invested students will develop a solid understanding of: 1) wetlands and how they are identified and delineated; 2) wetland assessment techniques and how they are applied; 3) the importance of monitoring and how to conduct it; and 4) basic principles of planning and designing wetland restoration projects.

| COURSE GRADING: | Percent of Grade |
|--------------------------------|-------------------------|
| Lab Reports/Summaries (4) | 80 |
| Class Participation/Attendance | <u>20</u> |
| TOTAL POINTS | 100 |

Location: The Wilma H. Schiermeier Olentangy River Wetland Research Park (ORWRP); 352 W. Dodridge Street, The Ohio State University. NOTE: The ORWRP has adequate parking if you drive. It can also be reached easily by walking or bicycle on the city Olentangy Bike Path that goes through campus along the east bank of Olentangy River.

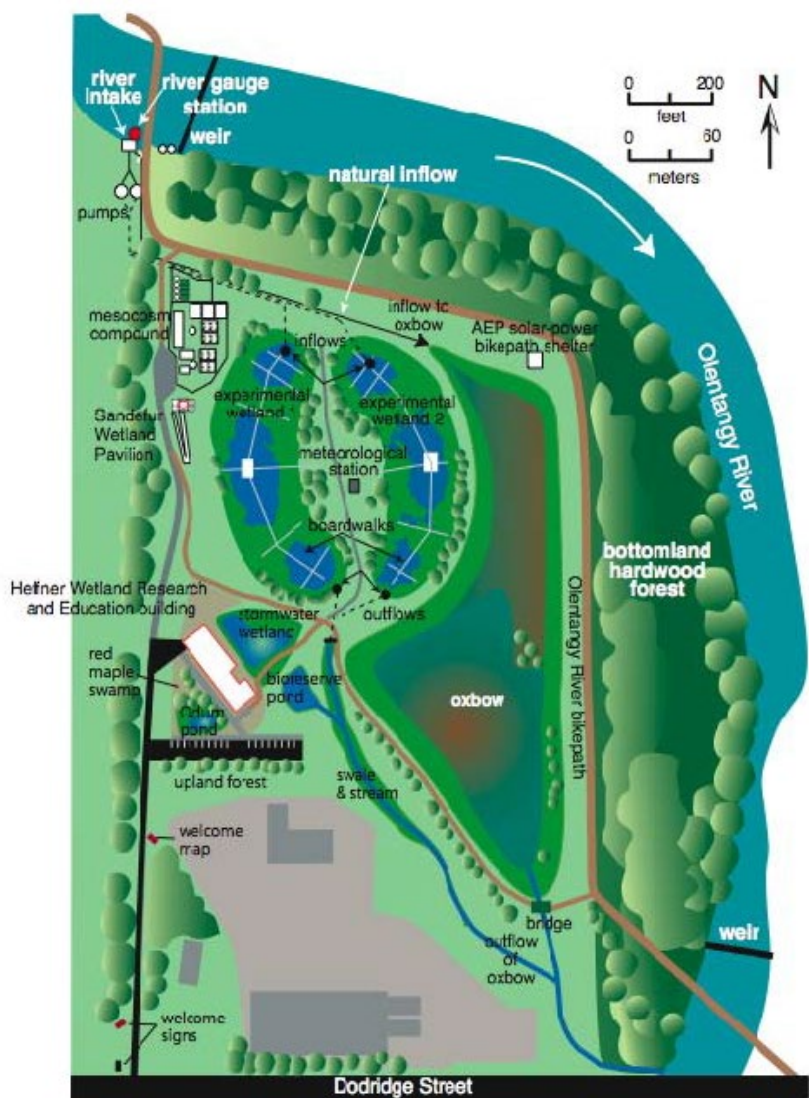
Site Description: The Wilma H. Schiermeier Olentangy River Wetland Research Park is a 50-acre research and teaching field research site on the northern edge of the campus of The Ohio State University. There are seven separate ecosystems at the ORWRP that are used for research and teaching, including: a 13-acre bottomland hardwood forest, a 7-acre created natural flowing floodplain wetland (referred to as our “billabong” or oxbow); two 2.5-acre experimental wetlands (water is pumped into these basins), a flowing swale that drains the two experimental wetlands and its adjacent bioreserve pond, the Olentangy River pool itself (adjacent to the bottomland hardwood forest), and a stormwater wetland that receives roof runoff from the Heffner Wetland Building. There is also a mesocosm compound designed for wetland experimental work. There are 3 structures on the wetland campus: the Sandefur Wetland Pavilion for wetland observation, bird watching, and outdoor seminars; the Heffner Wetland Research and Education Building with labs, offices, conference room, and wetland library; and the AEP Bike path shelter on the city’s bike path that passes through the ORWRP. You can fill your bicycle tires using solar energy there!

There is also a mesocosm compound designed for wetland experimental work. There are 3 structures on the wetland campus: the Sandefur Wetland Pavilion for wetland observation, bird watching, and outdoor seminars; the Heffner Wetland Research and Education Building with labs, offices, conference room, and wetland library; and the AEP Bike path shelter on the city’s bike path that passes through the ORWRP. You can fill your bicycle tires using solar energy there!

Recommended attire: Wear appropriate clothing and shoes, as we will be working in and near wet muddy areas. Some waders and boots may be available.

Supplemental Resources Available:

A significant number of peer-reviewed papers, theses, and dissertations from the ORWRP are listed under **research/publications** at our ORWRP web site <http://swamp.osu.edu>. Recent papers are available from the receptionist at the Heffner Wetland Building. Theses and dissertations are in the university library.



Many of the chapters of scientific annual reports published from 1992 to 2005 are on the OSU Library D-Space web site at <https://kb.osu.edu/dspace/handle/1811/59>. A link to this web site can also be found under **research/publications** of our ORWRP web site <http://swamp.osu.edu>. Hard copies of all annual reports are also found in the library (room 130) of the Heffner Wetland Research Building and in the Life Sciences and Agricultural Libraries on campus.

Academic Misconduct:

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct (http://studentaffairs.osu.edu/resource_csc.asp).

Disability Accommodations:

The university strives to make all learning experiences as accessible as possible. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Safe and Healthy Buckeyes:

Health and safety requirements: All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>), which includes wearing a face mask in any indoor space and maintaining a safe physical distance at all times. Non-compliance will result in a warning first, and disciplinary actions will be taken for repeated offenses.”

Counseling and Consultation Services/Mental Health:

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life Counseling and Consultation Services (CCS) by visiting ccs.osu.edu or calling (614) 292- 5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on-call counselor when CCS is closed at (614) 292-5766 and 24 hour emergency help is also available through the 24/7 National Prevention Hotline at 1-(800)-273-TALK or at suicidepreventionlifeline.org.

David Wirt, wirt.9@osu.edu, is the CFAES embedded mental health counselor. He is available for new consultations and to establish routine care. To schedule with David, please call 614-292-5766. Students should mention their affiliation with CFAES when setting up a phone screening.

Creating an environment free from harassment, discrimination, and sexual misconduct:

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at equity.osu.edu,
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or Email equity@osu.edu

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

This course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environmental Sciences. These principles are located on the Carmen site for this course; and can also be found at <https://go.osu.edu/principlesofcommunity>. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (<https://equityandinclusion.cfaes.ohio-state.edu/>). If you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at <https://studentlife.osu.edu/bias/report-a-bias-incident.aspx>.

COURSE SCHEDULE (Subject to Change):

| Date | Lecture Topic/Activity | Required Reading/Resources* |
|--------------------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| ORIENTATION | | |
| Tuesday, Aug 22 | Introduction and Site Tour | |
| DELINEATION (LAB REPORT FOR SECTION DUE OCT. 03) | | |
| Tuesday, Aug 29 | Vegetation Sampling and Gradients | 1987 Corps Delineation Manual (provided on Carmen) Midwest Region Delineation Supplement (1) |
| Tuesday, Sep 05 | Wetland Hydrology Interpretation | |
| Tuesday, Sep 12 | Soil Sampling and Characterization | |
| Tuesday, Sep 19 | Delineation Field Practicum | |
| ASSESSMENT (LAB REPORT FOR SECTION DUE OCT. 24) | | |
| Tuesday, Sep 26 | Ohio Rapid Assessment Method | ORAM Manual (2) FQAI Manual (3) |
| Tuesday, Oct 03 | Floristic Quality Assessment; LAB 1 DUE | |
| Tuesday, Oct 10 | Other Methods Comparison - OR - Special Field Trip | |
| MONITORING (LAB REPORT FOR SECTION DUE NOV. 07) | | |
| Tuesday, Oct 17 | Vegetation Index of Biotic Integrity | VIBI Manual (4) AmphIBI Manual (5) |
| Tuesday, Oct 24 | Amphibian Index of Biotic Integrity; LAB 2 DUE | |
| RESTORATION (LAB REPORT FOR SECTION DUE DEC. 05) | | |
| Tuesday, Oct 31 | Site Selection and Data Gathering | Ohio EPA Mitigation Plan Checklist (6) An Introduction and User’s Guide to Wetland Restoration, Creation, and Enhancement (7) |
| Tuesday, Nov 07 | Planning (Focus on Hydrology); LAB 3 DUE | |
| Tuesday, Nov 14 | Planning (Focus on Planting) | |
| Tuesday, Nov 21 | Optional Work Session (to finalize plans) | |
| Tuesday, Nov 28 | Mitigation Plan Presentations | |
| Tuesday, Dec 05 | Mitigation Plan Presentations (if needed); LAB 4 DUE | |
| Tuesday, Dec 12 | FINAL EXAMINATION (4:00-5:45 pm) | NO FINAL IS PLANNED! |

* Resource Links:

1. http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/reg_supp/erdc-el-tr-10-16.pdf
2. http://www.epa.ohio.gov/portals/35/401/oram50um_s.pdf
3. http://www.epa.ohio.gov/portals/35/wetlands/Ohio_FQAI.pdf
4. [http://www.epa.ohio.gov/portals/35/wetlands/standardized veg field manual v1_3rev01jul04.pdf](http://www.epa.ohio.gov/portals/35/wetlands/standardized_veg_field_manual_v1_3rev01jul04.pdf)
5. http://www.epa.ohio.gov/portals/35/wetlands/amphibi_field_manual.pdf
6. http://www.epa.ohio.gov/portals/35/401/mitigation_monitoring_plan_checklist.pdf
7. https://permanent.access.gpo.gov/gpo26134/pub_wetlands_restore_guide.pdf