

EcoPhoto Project

Introduction to Ecology (BIO366)
University of North Carolina Wilmington

Updated Summer 2018

Introduction

Ecology is happening all around us; Part of our challenge is to learn to see it. Learning to look thoughtfully and carefully is one of the things that art and science have in common. The primary goal of this project is to get you out of our windowless classroom and into the world using your new “ecology lenses” to recognize the ecology around us. This exercise lets you take concepts from the classroom and apply them in larger world in which we live.

Specifically, the primary **learning objectives** of this activity are:

- Practice observing ecology;
- Apply ecological concepts;
- Have fun with ecology; and
- Document the ecology of the Lower Cape Fear Region for the public.

Project Description

Images

Your assignment is to take photos (or short videos) of the ecology you see in your environment during the semester. You will then select **at least four** to share with the class (and global community) through a class related group on the social media site **Flickr**. The group address for this class is <https://www.flickr.com/groups/uncw-ecology/>.

For each photograph, you will need to:

1. Upload your photograph to your own personal Flickr account, and then **submit** it to the class group (“UNCW Ecology”)¹. You can add it to other groups as well. For example, you might submit it to the UNC Wilmington group (<https://www.flickr.com/groups/uncw/>), the Wilmington, NC group (https://www.flickr.com/groups/wilmington_nc/), or any number of ecology or nature related groups. The more groups to which you submit your photos, the more they will be seen.

¹Your photo will not appear in the group until it has been reviewed and approved by the instructor

2. Write a description of the photo that accurately identifies an ecological concept or principle that you recognize as visible or involved in the image. The description should also generally identify where and when the photograph was taken. Please put the description in the description field (not a comment), and complete the description before you submit it to the class group.
3. Provide useful tags (in the tags field) for the images to help people find the content online. At a minimum, each photo should contain the following tags:
 - UNCW,
 - ecology,
 - bio366,
 - semester enrolled – Su2018,
 - and the image number (i.e., image1, image2).

The last two tags are essential for the assignment to be assessed.

As the point of this assignment is to get you looking for ecology in action, I am generally leaving the specific subject matter of the photographs up to you. However, you must be able to clearly identify an ecological concept or principle at work in the image (or behind the scenes).

I must apply a few restrictions. First, your images and behavior on the site must meet the Flickr [Community Guidelines](#). This includes meeting the criteria for “Safe” images, as our group is designated safe. Second, your conduct must meet the [UNCW Academic Honor Code](#). Third, cyberbullying of any kind will not be tolerated. Any student found violating these requirements will earn a zero on this assignment. In addition, I expect you to be good public ambassadors for ecology, the region, and UNCW. Further, please do not submit photographs of pets for this assignment, and no more than one photograph can be a selfie. Given these restrictions, I am looking forward to seeing the ecology you find.

Critical Reflection

At the end of the project, you will write a short reflection essay on the project (about a page). In your reflection, please address the following:

Reflection Prompts

1. What did you learn about ecology and the Lower Cape Fear region through this project?
2. Were you able to apply the things you learned in this experience and in your prior courses in this project? How so? How do you think you will be able to apply this skills in the future?
3. How do you think this project will impact future students? Your community? What other impact do you think this project might have on others?

Please save your essay as a PDF, name the file “YourLastName_EcoPhoto.pdf”, and email it to the appropriate course email address (bio366.su18@gmail.com) by the due date. Please include “bio366 : EcoPhoto Reflection” in the subject line. Essays submitted late, submitted in a form other than a PDF, or otherwise named will not be accepted for credit.

Essays that respond to the prompts and exhibit deliberate and thoughtful reflection will receive full credit.

Due Dates

| Project Components | Due Date |
|--------------------|----------|
| Register Account | May 17 |
| Image 1 | May 21 |
| Comment 1 | May 24 |
| Image 2 | May 29 |
| Image 3 | June 4 |
| Image 4 | June 11 |
| Comment 2 | June 14 |
| Reflection essay | June 14 |

Camera Access

Completion of this assignment requires access to a camera of some type and the means to generate a digital photograph (video) to upload to Flickr. If you do not have or have access to a digital camera to use for this assignment, please let your instructor know as soon as possible so that we can find a solution. The cameras on most smart-phones and tablets are adequate for this assignment.

Getting Started with Flickr

Flickr is a social media site for sharing photographs and short videos. It is a convenient way for us – and the global community – to see our photos and document the ecology of our region.

Flickr accounts are free, but you will need to register for the account using a Yahoo email address. If you don’t have a Yahoo email address, you can create one for free. The websites should guide you through this processes with ease, but let your instructor know if you have any trouble. Once you have created your Flickr account, please email your instructor your Flickr ID so that s/he can associate your account with your classwork.

There are several ways to upload photos to Flickr. First, you can upload digital images to Flickr from a computer using a web browser (click on the *Upload* button near the top of your Flickr page). This works well once you have digital images on a computer. Second, if you have a smart phone, you can use the Flickr app to upload photos directly from your phone. You can add the required description and tags to the photo and submit it to the group from within the app. Some students have struggled with completing their photo description from the phone apps. If you experience this problem, it is your responsibility to complete your photo description using the internet interface.

Photographs and videos posted on the web are a form of intellectual property. When you submit a photo to Flickr, you can select the level of copyrights that you want to retain. The default is *All Rights Reserved*. This legally means that although others can view your photos, they could not use the image for any purposes without your express permission. Alternatively, there are a variety of Creative Commons licensing options that you might also select. For example, you might select the Attribution-NonCommercial Creative Commons license for your photographs. This would let someone legally use the photo for non-commercial purposes as long as they give clear attribution to you the creator. This kind of license would legally let a college professor use your ecology photos in lecture materials without having to directly contact you for express permission, but would expressly prohibit a commercial photo clearing house from selling your work. You can learn more about Creative Commons licensing at <http://creativecommons.org/licenses/>. Even if you retain the All Rights Reserved copyright on your work, when you join the class group you are required to give the instructor and the university permission to use your photos for publicity purposes, including social media and marketing materials.

Assessment

This is an Ecology assignment, not a photography class assignment. As such, your photographs (including the required description) will be judged primarily based on their completion and an accurate description of the ecology observed. Here are guidelines for successful completion of this assignment.

Project Grading Rubric

Minimum criteria to earn a C (Satisfactory)

1. All images (photographs or videos) are submitted to the UNCW Ecology group with ecological content that is clearly and accurately identified in the description. It is your responsibility to explain why or how the ecological concept or principle is at work in the image. I encourage you to do a bit of research about the topic if necessary. Cite (and link to) your sources as appropriate.
2. No more than one required project component is submitted late (images and reflection essay).
3. All images contain the required tags.
4. Photographs are taken during the course of the semester enrolled in bio366.
5. Pets are not photographed as subject matter. Yes, there is likely ecology at work with your pets, but I am challenging you to go further with this assignment.
6. No more than one submitted photograph is a selfie.

Failure to meet all of the above criteria will detract from your grade on this assignment.

Criteria to earn a B In addition to the minimum criteria to earn a C, B level work must include a combination of the following:

1. The descriptions of the ecological phenomenon contain biological and ecological details (i.e., species names, place identification). Writing is clear.
2. The images exhibit a diversity of ecological phenomenon or subject matter.
3. Student accurately identifies an additional ecological concept or principle in a **Flickr comment** on an image submitted by another student in the class (same semester). This must be a concept or principle not already identified for the photograph by the original student or subsequent comments. Comments must also include a tag indicating which comment this is from the commenter (e.g., [comment1], or [comment2]). Please see the calendar for comment due dates.
4. All required project elements must be submitted on time.

Criteria to earn an A (Exemplary) In addition to the criteria to earn a B, exemplary work may include the following:

1. The descriptions of the ecological phenomenon are clear, rich with detail (i.e., species names, place identification, time of day). Writing is clear and compelling.
2. Student accurately identifies an additional ecological concept or principle in a comment on another student's photo/video that the original student and previous commentators did not identify. One more than that required for a B will elevate a student's overall assessment from a B to an A. Again, please tag comments with the the comment number from the perspective of the student doing the commenting (e.g., [comment2]).

Please note that your body of work – the images, comments, and reflection paper – will be judged as a **whole project**. However, a minimum requirement to earn a B on the assignment is for each component to be completed on time. Also, other positive or constructive comments on photos beyond the required 2 to earn an A will earn the student respect and warm fuzzies. This project works better when the class is more interactive with the photos.

Image & Description Feedback

To help you know the relative quality of each photo and its description, they will be judged using the following scale

Level 0 Description was insufficient; the ecological concept was unclear.

Level 1 Ecological content was identified, but was not clear or the description was not completely accurate.

Level 2 Ecological content was clearly and accurately identified; some details present.

Level 3 Ecological content was clearly and accurately identified; rich with detail and generally well written; information sources are clearly identified.

While your photographs will not be judged on their quality, interesting and beautiful photographs will be much appreciated. If you are a novice photographer, you might find these tips for better photos helpful (<http://www.betterphoto.com/exploring/tips.asp>). In addition, the Rule of Thirds is generally helpful to create better compositions (<http://www.betterphoto.com/exploring/tips/thirds.asp>).

Examples

Figure 1 shows four example photos that could have been submitted for this assignment, and what follow would be good (but not exemplary) descriptions.

Fig. 1a shows the pitcher and flower of the Yellow pitcher plant (*Sarracenia flava*). Notice the house fly sitting on top of the pitcher plant, seemingly tempting fate. Why does this carnivorous plant eat insects? Does it eat flies? This is an interesting example of the ecology and evolution of this plant because it has evolved to both eat insects and depend on insect pollination. This may be why the flower and pitcher are quite distinct structures and spatially separated.

Fig. 1b shows a juvenile Tulip Poplar (*Liriodendron tulipifera*) tree growing on the forest floor. There are several different ecological concepts or principles at work here. First, the juvenile tree shows evidence of individual reproduction and population growth. This is also an example of primary production for the forest, and given that the older and taller trees are shading the plant this could be an example of intra- or interspecific competition. A richer description of this competition would identify the other trees potentially involved in this competition.

Fig. 1c is an image of glowing coals in a fire. In this combustion process, we see part of the biogeochemical cycling of carbon. Where does the wood biomass go during this combustion? A high-quality description would attempt to answer this question.

The Carolina anole (*Anolis carolinensis*; Fig. 1d) was sun bathing on pipe near my home in Wilmington, NC. He is exhibiting an ecological behavioral adaptation used by this cold-blooded organism to help increase its body temperature. I love having these critters around my home. Not only do they make me smile, they will eat roaches.

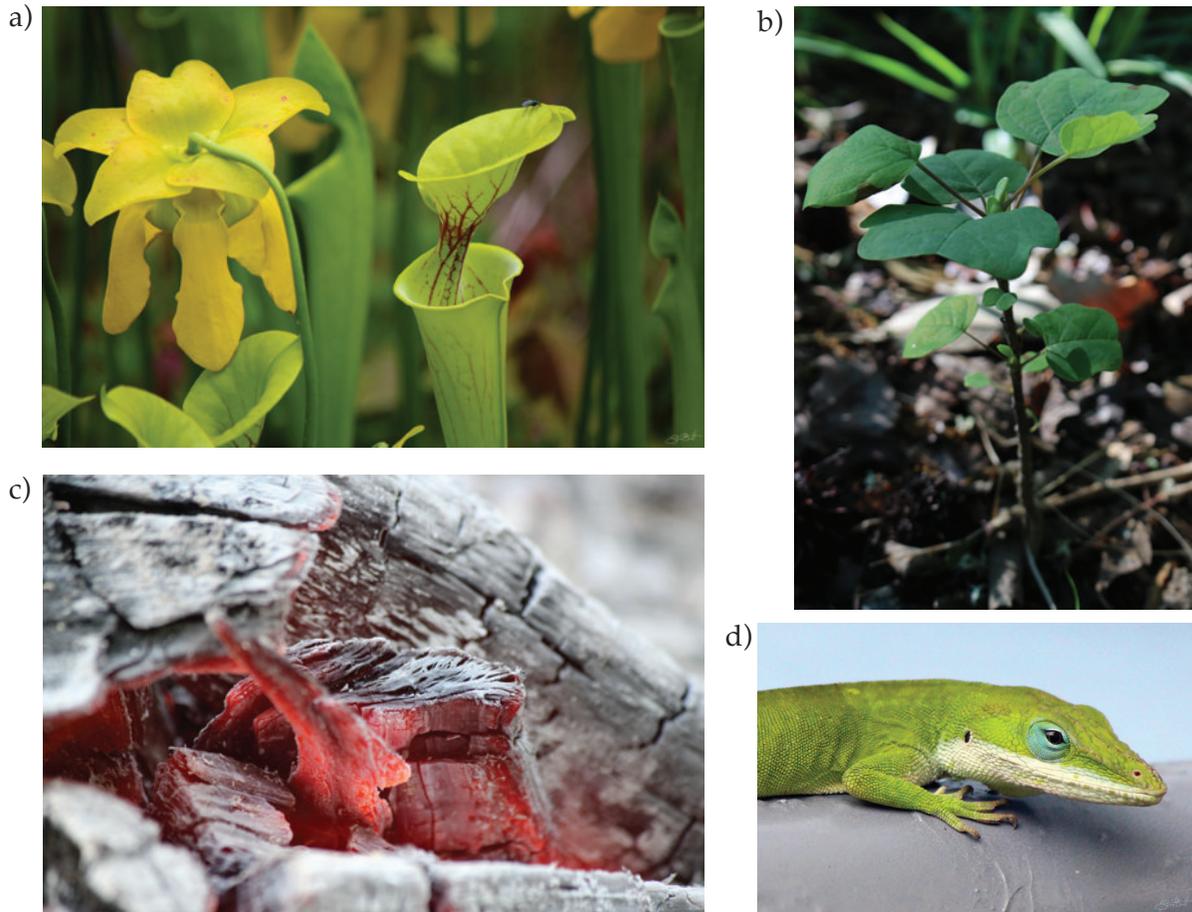


Figure 1: Example photos that might be submitted for the EcoPhoto Project. See the text for relevant photo descriptions. a) Yellow Pitcher Plant in the Stanley Rehder carnivorous plant garden behind Alderman Elementary School, Wilmington, NC, b) juvenile Tulip Poplar tree growing in the forest in Duplin County, NC, c) glowing coals in fire, and d) Carolina anole sun bathing for warmth on a pipe in Wilmington, NC.

Going the Next Step

A key piece of this assignment is that you can find ecology happening all around you – even right outside your home, in your other classes, at work, etc. However, this is a biodiverse and ecologically rich region. If you want to more actively look for interesting ecology, here is a list of places you might visit. I have tried to include a mix of locations that are easily accessible from campus on foot, bike, or car.

UNCW Campus Forests There are a number of different forest patches on campus with different ecological characteristics. This includes the beautiful longleaf pine forest at the back of campus, the pocket forests between buildings on the main campus, and the Bluethenthal Wildflower Preserve (<http://uncw.edu/physicalplant/arboretum/bluethenthal.html>).

Coquina Outcrop This is a section of hard bottom shoreline that hosts a variety of different organisms than our more typical sandy bottom shoreline (https://www.tripadvisor.com/Attraction_Review-g49265-d6690361-Reviews-Coquina_Outcrop-Kure_Beach_North_Carolina.html).

Stanley Rehder Carnivorous Plant Garden This garden is home to a large number of carnivorous plants including Venus flytraps, several species of pitcher plants, and at least three different species of sundews – all inside the city limits (<https://coastallandtrust.org/lands/stanley-rehder-carnivorous-plant-garden-at-piney-ridge-nature-preserve-2/>)

Carolina Beach State Park This gem of a state park has a healthy longleaf pine forest, native carnivorous plants, and trails that travel from the forest, through wetlands, and along the Cape Fear River (<https://www.ncparks.gov/carolina-beach-state-park>).

Fort Fisher & Basin Trail The area around Fort Fisher has a nice example of maritime forest, and it quite near the Coquina Outcrop. A bit further south, nearer the Fort Fisher Aquarium, is the Basin Trail that will take you through part of the forest, across wetlands and marsh, and to the edge of Zeke's Basin (<https://www.ncparks.gov/fort-fisher-state-recreation-area/trail/basin-trail>).

Lake Waccamaw State Park This is the largest Carolina Bay. <https://www.ncparks.gov/lake-waccamaw-state-park>

Jones Lake State Park This is a large and permanently wet Carolina Bay in Bladen County, NC <https://www.ncparks.gov/jones-lake-state-park>

Green Swamp Preserve <https://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/northcarolina/placesweprotect/green-swamp-preserve.xml>.

Croatan National Forest <https://www.fs.usda.gov/recarea/nfsnc/null/recarea/?recid=48466&actid=63>

Masonboro Island While it requires a boat to access the island, this is a great example of an undeveloped barrier island in the southeastern USA. <http://www.nccoastalreserve.net/web/crp/masonboro-island>. Students can rent kayaks and paddle boards from Campus Recreation <http://uncw.edu/campusrec/adventures/index.html>.

J.E.L. Wade Park This city park lies at one end of the Gary Shell Cross City trail, and it contains a constructed wetland to slow storm water run-off, reduce flooding, and filter and process aquatic pollutants (including excess nutrients) before the water enters Hewlitt's creek (<http://www.wilmingtonnc.gov/home/showdocument?id=2781>).

Halyburton Park Here is a link for more information: <http://www.starnewsonline.com/news/20070720/area-parks>

Greenfield Lake Here is a link for more information: <https://wilmingtonnc.com/greenfield-lake-park/>

Oakdale Cemetery Here is a link for more information: <http://www.oakdalecemetery.org>

Wrightsville Beach On this island you can observe the dune development and its changing ecological community and the soft bottom surf zone. You can also easily access the salt marsh behind the island from the north end (public parking near Shell Island Resort).

Brunswick Nature Park & Town Creek Here is a link for more information: <http://bcparks.recdesk.com//recdeskportal/bcparks/FacilityDetail/tabid/7360/default.aspx?FacilityID=1>