

EEB 2208E (Introduction to Conservation Biology)

Poster projects

Everyone is expected to participate in a group project that will be presented as a poster in the penultimate week of classes. Posters are one of the main ways that scientists summarize and communicate research results, so this assignment allows you to learn and practice skills used regularly in science, while delving into a topic of your own choosing. These projects are worth 30% of the course grade.

GOALS

The assignment goals are that you will (a) examine how the course material relates to newsworthy events taking place in the world today, (b) learn to gather and interpret relevant scientific information so that you can understand/evaluate the reporting better, (c) synthesize that information and present it to your peers in a format commonly used by scientists, (d) experience collaborative work, which is something you are likely to have to do in your career, and (e) practice providing constructive criticism to your peers. All of these skills are critical to the development of someone who wants a career in science.

THE TASK

In groups of three, you should identify a topic relating directly to conservation biology that has been in the news since the beginning of this year (publication must be after 1st January). You should identify the relevant conservation issues, and search the peer-reviewed research literature for scientific information about the topic. Then you should present that information in the form of a poster during the penultimate week of classes. **All posters must be put up on HuskyCT by 2 pm on Monday 18th April.**

For examples of appropriate news articles check out #eeb2208 on Twitter (you do not need to have a Twitter account). I would prefer that you found your own articles, rather than just using the ones that I post, but they will give you a sense of what topics are appropriate. If you use Twitter, feel free to use #eeb2208 to flag articles you think are relevant to the course as other students might find them interesting. Your project can be narrowly or broadly focused on the news article, **but you must get it approved by me before 4 pm on Friday 25th February.** Here are some examples of how you could develop a project from a news article:

- The article in *The Guardian* on a huge gathering of fin whales in Antarctica (tweeted with #eeb2208 on 18 Jan) could lead to a project on fin whale conservation, or on the threats to marine habitats in the Southern Ocean.
- The *Mongabay* article on habitat restoration on the wintering grounds of monarch butterflies (tweeted on 20 Jan) could lead to a project on the conservation of monarchs, or on the methods used for forest restoration.
- The *BBC News* article on endangered species in the Mekong area (tweeted on 25 Jan) could lead to a project on one of the featured species, or to one on the conservation threats in this part of Asia.

If you are not sure if a topic is appropriate, please ask. Every group must work on a different topic – first come, first served. I will post a list of topics that are taken on the course web site. The deadline for telling me your topic and the people you will work with is **4 pm, Friday 25th February** (see below). If you want to avoid having your preferred topic taken by another group, **do not wait until the last minute** to do this part of the assignment. Also, do some preliminary literature searches before you make your choice to ensure that there is sufficient information in the scientific literature on your chosen topic.

Once you have identified the topic you are interested in, you need to research that topic to find out what the scientific studies show. The scientific literature, popular literature, news, personal experience, and the Internet are filled with information about conservation biology. You can use any of these sources for background information. But, the content of your poster presentation must be based exclusively on information from the peer-reviewed scientific literature (i.e., the type of articles we will be reading in most of the class discussions). Scopus (available via the UConn libraries) or Google Scholar (**NOT** regular Google!) are probably the best places for searches of primary literature. I will talk about what counts as the peer-reviewed literature in lecture, but if you are unsure ask me or the TA.

To produce a good poster, you will need to read a number of scientific articles (probably 5-10 is the minimum; more would be better). Your poster should (a) identify the conservation issue you were interested in and the news event that it connects to; (b) provide background information on the problem; (c) describe current scientific knowledge on the topic; and (d) identify what is known in terms of finding solutions to the problem. More on poster preparation below. Everyone must put their completed posters up on HuskyCT by **2 pm on Monday 18th April**.

During the week of 18th April, there will be no class sessions and no new class material (i.e., lecture videos) presented. Instead you will be assigned 3 posters to review and comment on, in order to practice thinking critically and assessing the work of others. Your evaluations will be graded (see below), based on your doing a careful, constructive job of reviewing the posters. If you say a poster is great when it is not (or vice versa), your evaluation grade will suffer. If you just point out flaws, without also providing remedies, your grade will also suffer. You will also be able to look at any other posters you are interested in – just as you would at a real poster session.

DEADLINES

NO EXCEPTIONS OTHER THAN MAJOR HEALTH PROBLEMS OR SIMILARLY DISRUPTIVE LIFE EVENTS. Why? Because you are given ample time to do the assignments well in advance of the deadlines, and there are many deadlines in life that truly must be met – job applications, scholarship applications, grant deadlines, project deadlines, meetings that must be prepared for, etc. Getting used to deadlines is important for many careers. These are that kind of deadline because your work affects that of others. My advice is to have everything done at least a week early (in each case you have plenty of time if you plan ahead). Then it will not matter if you get sick or something else comes up.

Any time before 4 pm Friday 25th February (sooner is better):

- Identify two other people who you will work with on the project. Make sure that you all have a similar approach to group work **BEFORE** you commit to working with them.
- Identify a recent news article that discusses a topic relevant to conservation biology and that you think you can do a project on. The article must have been published after 1st Jan, this year.
- Identify one peer-reviewed scientific paper that is relevant to the topic. Send an email to chris.elphick@uconn.edu describing the topic that you intend to do your poster on. The email must also contain a link to the news article, a link to the peer-reviewed paper, and the names of your collaborators. The links must work – check them before you send them. The subject line in your email must say “EEB 2208: Poster Topic”. **DO NOT** send attachments.
- Members of a group should all use the same news article, but must each identify a different peer-reviewed paper (you may work together to identify papers – the goal is to ensure that each group has at least three papers by this date).
- If you are unsure what a peer-reviewed paper is, please ask (but see below, first).
- **This email is worth 3% of your total course grade, but you will only get full points if you do everything mentioned above.**

Any time before 4 pm Wednesday 23rd March (earlier is better, as you will get feedback sooner) turn in a short “prospectus” for your poster project. The prospectus should include the following information:

- A short work plan, including information on how you have divided up the work, your time-line for completing the project, etc. How you do this is entirely up to you – I just want to see that you are on-track to complete the project, have a plan for the rest of the semester, and know who is responsible for what when I evaluate the posters. Note that even though I expect you to divide the labor, I will hold everyone in a group responsible for the entire final product, which should be a single integrated project and not 3 mini-projects stuck together. Consequently, everyone will be expected to know all of the scientific information that goes into the final poster and will be considered equally responsible for ensuring there is no plagiarism, etc.
- A statement about how you will manage group-working to ensure that everyone’s views are respected and that everyone will contribute equally to the work. How you plan to manage these things is up to you, but I want you to discuss the issue as a group and write in the prospectus what you have agreed on. Your statement should include a sentence that indicates that you agree to abide by the group’s decisions, that you will communicate with other group members in a timely way, and that you will do your fair share of the work.
- An updated reference list including all of the papers that you are currently expecting to use (following the citation guidelines posted on the class web site). You can still add more papers later if you like.
- A sketch of the layout you are thinking of using for the poster; this can literally be a pencil sketch on a piece of paper, or it could be an outline on a PowerPoint slide or other computer-drawn diagram. The key is that it should show what type of information is going to go where on the poster, approx. how much space you plan to devote to each section, etc., etc.
- The prospectus information should be submitted in HuskyCT (email submissions will not be accepted). Your group should create a single pdf file that has all 3 parts included (if you sketch the poster on paper, you can just take a photo, put the photo into a word-processing document along with the other information, and then save it all as a pdf). **Each person in the group should separately submit a version of their group’s plan** (i.e., your group mates cannot submit for you), but you should all upload the same document – this ensures that you all take responsibility for submitting the information. Instructions will follow the same procedure you will use for homework 4, and will be explained on HuskyCT.
- **This prospectus is worth 2% of your total class grade. You will get 1% for turning it in before the deadline, and 1% if you do all of the things described above.**

Before 2 pm on Monday 18th April: Your posters should be available on HuskyCT for others to review. Step-by-step instructions on how to submit your poster will be provided the week before they are due. If you would like me to review an initial draft of your poster, email it to me before Friday 1st April. **The poster is worth 15% of your total class grade.**

Before 8 pm on Saturday 23rd April: Your peer-reviews of the posters that are assigned to you should be posted on HuskyCT. Instructions on which posters to review, what to comment on, and how to post your comments will be provided on 18th April when the poster session begins. **Your peer reviews will be graded and are worth 5% of the total class grade.**

Before 8 pm on Friday 29th April: Your group should respond to questions about your poster that peer-reviewers have posted on HuskyCT. Instructions on how to post your responses will be provided on 18th April, when the poster session begins. **Your responses will be graded and are worth 5% of the total class grade.**

GROUPS

My preference is for you to choose who to work with yourselves, but if you really need help, let me know. If you need my assistance, please do not wait until just before the deadline to email me. There is a poster discussion board on the class HuskyCT site where you can search for students with similar interests. I will also provide opportunities to meet with other people during class.

While the vast majority of students take the poster projects seriously, every year a few people complain that their group-mates did little work. Since you have control over who you work with, I suggest that you start meeting with people early in the semester so that you can get to know them a little – you have a month before the first deadline, so use that time to find out if people are reliable, show up for meetings, conduct preliminary research on your chosen topic, etc. If they do not, you will have time to rethink your group membership. Everyone will be given an opportunity at the end of the semester to comment confidentially on whether everyone in their group pulled their weight, and this will be considered in the grading. Please be patient, however, with your group mates, recognizing that we all have life constraints that can complicate things and sometimes lead to slow responses – take the time to try to distinguish between people who are just juggling a lot of things and those that are truly taking advantage of others.

PEER-REVIEWED LITERATURE

If you are unsure whether an article is peer-reviewed, please ask. Generally, such articles can be identified by the fact that they appear in major scientific research journals and they contain original data collected by the authors or compile data from other studies for new analyses. Peer-reviewed papers normally follow the standard format of: Abstract, Introduction, Methods, Results, Discussion, References (usually in this order, although the Methods is sometimes moved to the end). Normally, peer-reviewed papers are text-heavy, not colorful, and do not have much in the way of photographs. Important scientific journals that publish many papers relevant to this class include:

Animal Conservation	Ecological Applications
Biodiversity & Conservation	Journal of Applied Ecology
Biological Conservation	Journal of Wildlife Management
Conservation Biology	Restoration Ecology
Conservation Letters	Wildlife Society Bulletin

An unfortunate, but increasing, problem in science is the emergence of “predatory journals” that masquerade as regular journals, but do not use proper peer review and are designed mostly for profit. If you use the library’s search engines to find papers, then you are unlikely to have problems. Any journal on this list should be viewed as unreliable, and not used: <https://beallslist.net/>.

GRADING

Your overall grade for the poster project will be based on a combination of information, as follows:

- 3 points – meeting all requirements for the 25th February deadline (see above).
- 2 points – meeting all requirements for the 23rd March deadline (see above).
- 15 points – grade assigned by instructors once the poster has been put online. This portion of the grade addresses your ability to synthesize scientific studies relating to your topic accurately, and to present it and answer questions about it clearly.
- 5 points – grade assigned by instructors based on your assessment of other people’s posters. We will be looking for your ability to make thoughtful comments about ways that your peers could improve their posters.

- 5 points – grade assigned by instructors based on your responses to the comments made by students who examined your poster.
- Social grade multiplier, determined by your group collaborators. Each person will be asked to (confidentially) rate the relative contributions of their team members. Everyone will be asked whether (a) everyone contributed more-or-less equally, (b) one person did substantially more work than the others, or (c) one person did substantially less work than the others. Based on the responses, each person will be assigned a “multiplier grade” between 0.9 and 1.1 to adjust their score up or down based on their contribution to the project.

This grading scheme is a bit complicated, so here is an example: Nick does a pretty good job on the first task, but the scientific article he submits is not from a peer-reviewed journal, so he gets just 2/3 points for the 25th February assignment. He does better on the prospectus assignment and misses nothing from the requirement list, so he gets both available points. His group’s poster is good, but a few parts are hard to understand and they are mostly in parts that the prospectus says were his responsibility, so he gets 12/15. He does a superb job of critiquing others – providing good advice on how to improve the posters, without being harsh or unpleasant – and also provides detailed answers to the questions asked about his group’s poster. So, he gets 5/5 for both of those items. This gives him a total of 26/30 points. But, both of Nick’s project collaborators recognized that he spent much of the semester chatting with people on zoom and binge-watching *Phineas and Ferb*, leaving them to do most of the work; this observation is consistent with the instructor’s observations about which parts of the poster were weaker. Consequently, he got a grade multiplier of 0.9. To calculate the final score I multiplied the total number of points (26) by 0.9. Nick’s final score on this portion of the class is 23.4/30 (78%, or a C+). If he had pulled his weight on putting the poster together he would have got a solid B.

Plagiarism: The maximum penalty for plagiarism will be that everyone in the group gets zero for the entire assignment. Consequently, you are all responsible for ensuring that your poster does not plagiarize the work of others. For my definition of plagiarism, which is the one that will be applied to this assignment, please see my grading policies and the document on plagiarism on the course web site. Note that the poster should not include any quotations (see plagiarism document for more details).

POSTER PREPARATION

The key to a good poster is to identify the key pieces of information and present them in as few words as possible, but without compromising clarity. The biggest danger is spending more time making the poster look nice than on making sure that the content is detailed, accurate, and easy to understand. Presentation counts for something, but the best presentation in the world will not serve you well if the content is superficial, full of errors, or impossible to follow. Most importantly, note that someone should be able to read it and get the main points you want to make within 3-5 minutes. At an in-person poster session, it is typical for people to spend just a few minutes at each poster because there are dozens, maybe 100s, to look at. Consequently, it is really important to learn to be concise. Example posters are available on the HuskyCT site. All of these posters received good grades in past years, but even these are wordier than they need to be.

Exactly how you organize your information is up to you, but every poster should include the following items (you do not have to use these titles):

Project title and names of authors: Should be self-explanatory. It is conventional to put this at the top, but an imaginative design might lead you to put it somewhere else – the important thing is that it should be easy to find.

Abstract: In 100 words or fewer, summarize your findings. State the issue, why it matters, what the science tells us, and any recommendations for future action to address the issue. No citations should appear in the abstract.

Introduction: Briefly introduce the general conservation/management problem, relating it to the news item your project began with. Then, narrow the focus of the introduction to the specific issue you have researched. Give the location, any interested parties (for some projects this will include who is in conflict), and state your specific goals for the project (e.g., to determine why sturgeon are endangered, and what can be done about it). By the end of the section a reader should know what you are doing and why. One or two short paragraphs should be sufficient.

Background: This section is often unnecessary, or can be combined with the Introduction, but sometimes it is helpful to provide key background information that will help your reader understand the issues your project addresses. Do not tell us everything you found out about the topic, just what we need to know to understand the research that has been done. For example, if your project focuses on a single species, it might help to summarize pertinent aspects of its natural history, ecology, behavior, etc. If your focus is on an ecosystem, then you may want to say where it is found, what the primary species are, how it is threatened, etc.

Current state of knowledge: This section is the most important, so it should be the one that takes up the largest amount of space, and be the part that you spend most time on. You will not have space to say everything that you find out, so you need to identify and summarize only the most important parts. The hardest part of the assignment is to reduce all the research to a few key points. I will also be looking for signs that you can synthesize information from different sources to generate a clear overall sense of the problem – this might involve things like identifying the relative importance of different threats, prioritizing different potential solutions, showing how information from one study informs another, drawing on the collective literature on the topic to determine what needs to be done next, etc. If your group members each work on different parts of the project, make sure that you work together to integrate the information – I am not looking for 3 mini-projects tacked together, but a single cohesive piece of work.

Recommendations: Not every project will have this section, but most topics will relate to some real-world issue, where someone is trying to solve a problem. If so, tell us what you think should be done based on the specific research you have read about and the general ideas I have discussed in class. If there are big unknowns, tell us about them. What is the most important research that still needs to be done? Given that managers cannot sit around forever waiting for new data, what can you tell them they should do now? Be sure to identify specific things that you think should be done, rather than just broad generalities. Suggestions like “more research” or “public education” will not get many points, but if you say what type of research, or how public education should be implemented, what should be said, and why, you will likely do well.

Literature cited: All ideas, data, and information that is not your own, must be cited, unless the ideas are common knowledge in the scientific literature (e.g., that plants photosynthesize). All citations must come from the peer-reviewed literature. The literature cited section should contain all citations used, and no extras. All citations must follow the format that I will post on the web site. DO NOT cite web pages, unless they refer to papers in a peer-reviewed on-line journal; then you may cite following the standard guidelines (i.e., author, date, title, journal name, pages if provided, or doi if not; no urls). The only exception is that you may cite the original news article. Numbering your citations like footnotes and using the numbers in the body of the poster is recommended as a way to save space (see examples on HuskyCT if you are not sure what I mean). Making the font size small for the reference list is also fine. References

should be put on a second PowerPoint slide that appears as a second page in the pdf file that you upload (see below).

Pictures, tables, figures: Posters lend themselves to graphical information and posters should not be almost entirely text. The goal is not to write a paper and put it on a PowerPoint slide. So, feel free to include pictures, tables, and figures to communicate information as much as possible. The sources for any images you use should be appropriately attributed. If they came from a web site, you must say where. If the web site does not say that they can be used, then you cannot use them no matter how suitable or attractive they are. Most pictures on Wikipedia or from open-access journals should be free for you to use, but check the guidelines. Making your own figures or illustrations, based on existing ones, is often better as long as you attribute the source for the information you use. If you have not read the Plagiarism Statement on the class web site, please do so right now to avoid a nasty shock later.

Specific tips for creating your poster:

1. Your goal is to distill the information on your chosen topic into short, clear paragraphs (bulleted lists are good), illustrations, and/or tables in a space that fits onto a single PowerPoint slide (or equivalent) and that can be easily read on a laptop screen with the entire slide showing. If I have to zoom in, lean forward, or squint, to read any part of the poster then the information is too small.
2. Your poster should be self-explanatory so that a reader can understand the main points without you being there to explain things.
3. If you are having trouble making everything fit (and you almost certainly will), look to see if you have irrelevant information, or if you can simplify your sentences so that they have fewer words. Writing in “telegraphic” style, rather than complete sentences is often the best approach), as long as what you write is understandable.
4. Choose fonts that are easy to read without getting too close – Arial is good. Do not overuse bold or italics.
5. Background colors should draw attention to material, but not detract from the presentation. In general, if the reader notices your use of color, then you have overdone it, because they are not thinking about the content of the poster.
6. Avoid unnecessary details in preparing figures, drawings or illustrations. Try to keep everything simple. If you copy a figure and the font comes out too small to easily read, then remake it!
7. Figures and tables should be numbered for easy reference (e.g., by peer reviewers of your poster). Each should be easy to understand and have a heading or legend that provides a brief “take home” message.
8. If you use a picture or diagram from the web or some other source, you must attribute it. A reference to the creative commons license, a url for the web site, the name of the person who took the photo, or the organization that authorized it as open source (e.g., a government agency) will generally suffice.
9. It is often a good idea to arrange material in columns rather than rows. Especially for a physical poster, it is easier for viewers to scan the information by moving systematically down, then across, rather than zigzagging back and forth. The abstract should be somewhere obvious (e.g., upper left, or top center). Make sure your names appear near the title.
10. For design ideas, look at the real posters I have put up on the HuskyCT site. Note that the student examples all got high grades, but none are perfect – in particular most have more text than is ideal, and could have been more carefully edited to make the information more concise.
11. Be prepared to answer questions about your poster, both on the discussion board, and from the instructor.
12. For more information, see the FAQs about poster projects on the course web site.
13. Proof-read everything. Typos, grammatical errors, mislabeled items, etc. will reduce your grade.
14. Lastly, I guarantee that if you wait until the week before posters are due to start this project it will show in the quality of your work, and your subsequent grade.

THE POSTER SESSION

Posters must be submitted via HuskyCT by 2 pm on 18th April (i.e., when class is due to start). Posters will not be accepted via email. I have created a discussion board where all posters should be submitted. I will create a thread for each poster and one person from each group should respond by attaching the group's pdf to the initial message in that thread. Note that it is very important that your file is a pdf as other file types - especially large PowerPoint files - may cause upload problems. You are responsible for ensuring that your file is the right type, and is not too large to upload properly. The discussion board for posters will become available during the week before the poster sessions and I strongly recommend that you plan to post your file early in case you run into problems.

I will post an example on the discussion board and provide detailed instructions on how to upload your poster, which you should follow carefully to avoid confusion. Most important is that you put your poster in the thread that has your poster number and topic in the subject line (how to do this will be in the instructions on the discussion board). Doing this will enable other students to find your poster and comment on it during the virtual poster session.

For the poster session, each student will be assigned three posters that they need to comment on. I will post a list on HuskyCT saying who needs to comment on which poster and instructions for what your comments should address. You will then need to find the threads for your assigned posters and go and comment on them. Each commenter will need to ask a question of the group presenting the poster and the presenters should respond to those questions.

There will be no new lecture videos during the week of the poster session, and you should spend your class time reading posters and providing comments, just as you would have done if we were on campus. If the poster session were taking place in person we would do everything during a lecture period, so reading the posters, commenting, and responding to comments is all something you should be able to complete within a typical class session (i.e., I am not expecting you to spend more than 75 minutes on these tasks). **Peer reviews of posters are due before 8 pm on Saturday 23rd April. Responses to questions from peer-reviewers are due before 8 pm on Friday 29th April.**

I strongly encourage you to look over posters other than just those you are required to comment on. Poster projects are often really informative and you will likely learn a lot from reading your fellow students' work. Feel free to also engage with each other on the discussion board – this is a great way for you to ask a poster's creators' questions. I will also use posters to generate scenarios for questions on the final. I will not ask about specific factual information that is on posters, but looking at them in advance may help you prepare for the final.