

## EEB 2208 (Introduction to Conservation Biology)

### Poster projects

In order to reduce the proportion of the total grade that is exam-based, and to give you an assignment that requires skills used regularly in the sciences and integrates lessons from class, everyone is expected to participate in a group project that will be presented as a poster in the last week of classes. Posters are one of the main ways in which scientists communicate research results. These projects are worth 30% of the total course grade.

### GOALS

The goals of the assignment 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, 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 1<sup>st</sup> Jan or later). 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 in one of the two poster sessions during the last week of classes (see syllabus; I will determine which session you will be in). All posters must be brought to the first poster session, whether you are presenting or not.

For examples of appropriate news articles check out the “Conservation Biology in the News” link on the web site: [http://hydrodictyon.eeb.uconn.edu/eebedia/index.php/Conservation\\_biology\\_in\\_the\\_news](http://hydrodictyon.eeb.uconn.edu/eebedia/index.php/Conservation_biology_in_the_news). You do not need to use the articles on this site (in fact, I’d prefer that you found your own). Your project can be narrowly or broadly focused on the news article, but you must get it approved by me before Monday 2<sup>nd</sup> March. Here are some examples of how you could develop a project from a news article:

- The *BBC News* article on Tasmanian devils (listed on 4 Jan on my “News” site) could lead you to a project describing the status of Tasmanian devils (how many there are, how much and why they are declining, etc.) and the actions that are being taken to conserve them.
- The *New York Times* article on logging in Oregon (listed on 2 Jan) could lead to a project to evaluate the biodiversity consequences of forest loss in the Pacific Northwest.
- The *Economist* article on oysters (listed on 2 Jan) could lead to a project on shellfish overharvest.

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 web site. The deadline for telling me your topic and the people you will work with is **Monday 2<sup>nd</sup> March** (see below). If you want to avoid being scooped, 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 on your chosen topic.

Once you have identified the topic you are interested in, you need to research the topic to find out what the scientific studies tell us. 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 read in the first 8 class discussions). Web of Science (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.

You will need to read a number of scientific articles (probably at least 5-10) to produce a good poster. Your poster should identify the conservation issue you were interested in; provide background information on the problem; describe current scientific knowledge on the topic, and identify what is known in terms of finding solutions to the problem. More on poster preparation below. Everyone must bring their completed posters to class on Monday 27<sup>th</sup> April.

Half the group will present their posters in the first poster session, while the other half of the class evaluates those posters. During the second session, roles will switch. Poster sessions will be held in the North Reading Room of the Wilbur Cross Building during the last two class sessions on 27<sup>th</sup> and 29<sup>th</sup> April (DO NOT come to the regular lecture hall or you will miss the sessions and get a terrible grade as a result). I will try to arrange a way for people to set up posters earlier in the day so that you do not need to carry them with you from class to class all day long (more details to come).

Members of each team will be expected to answer questions about their project when people come to view the posters. Students who are not presenting, will look at other posters and formally evaluate three other groups' posters 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 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. Students will also assign a grade to each poster they evaluate, and their grades will affect the poster's final grade.

If you do not attend both sessions, it will be mathematically impossible for you to get better than a D on this portion of the class.

## DEADLINES

**ABSOLUTELY NO EXCEPTIONS. Why no exceptions? Because 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. My advice is to have everything done at least a week early (in each case you have plenty of time to do this, as long as you plan ahead). Then it won't matter if something else comes up!!!**

*Anytime before 2nd March (the sooner the better):*

- Identify two other people who you will work with on the project. (Make sure they know!)
- 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 1<sup>st</sup> Jan, this year.
- Identify one peer-reviewed scientific paper that is relevant to the topic.
- Send an email to [chris.elphick @ uconn.edu](mailto: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 subject line must say "EEB 2208: Poster Topic"). This email is worth 5% of your total course grade, so make sure that you follow the instructions carefully.

- Members of a group can 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).

**On Monday 27<sup>th</sup> April:** Before this date, I will assign each group a date on which to present their poster (either 27<sup>th</sup> or 29<sup>th</sup>). Everyone, however, should bring their completed posters to the first poster session and everyone must attend both sessions.

## GROUPS

My preference is for you to determine who you work with yourselves, but if you really need help, let me know and I will assign groups. If you need my assistance, DO NOT wait until late February to email me.

## 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 they 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 not printed on colorful, glossy paper, and do not have much in the way of photographs. 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
Bird Conservation & Ecology	Landscape & Urban Planning
Conservation Biology	Restoration Ecology
Conservation Ecology (on-line)	Wildlife Society Bulletin

## GRADING

Grades will be based on a combination of information, as follows:

- 5 points – meeting all requirements for the 2<sup>nd</sup> March deadline
- 15 points – grade assigned by instructors during poster session. 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 – comments made by students who examined your poster. This is the real test of how well you can communicate information to an audience. All peer comments will be anonymous.
- 5 points – 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.
- 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:*** Trina does a pretty good job on the first task, but the scientific article she submits is not from a peer-reviewed journal, so she gets just 4/5 points for the 2<sup>nd</sup> March assignment. Her group's poster is good, but a few parts are hard to understand and her answers to questions are vague, so she gets 12/15 (one of her group-mates does much better with questions and so gets 13/15). Other students who examined the poster are nicer than I am and found her topic interesting and easy to understand, so they all gave her 5/5. Trina also did a superb job of critiquing others – providing good advice on how to improve the posters, without being harsh or unpleasant. So, I gave her 5/5 for that. This gives her a total of 26/30 points. But, both of Trina's project collaborators recognized that she spent much of the semester drinking expensive coffee in Starbucks, leaving them to do most of the work. Consequently, she got a grade multiplier of 0.9. To calculate her final score I multiplied her total number of points (26) by 0.9. Her final score on this portion of the class is 23.4/30 (78%, or a C+). If she had pulled her weight she'd have got a solid B.

## POSTER PREPARATION

The key to a good poster is to identify the critical pieces of information and to present them in as few words as possible, but without compromising clarity. The biggest danger is spending more time making your poster look nice than on making sure that the content is accurate and easy for the reader to understand. Presentation counts for something, but the best presentation in the world will still get you an F if the content is full of errors and impossible to understand. Most importantly, note that someone (e.g., the person grading it) should be able to read it and get the main points you want to make within 3-5 mins.

Exactly how you present the information is up to you, but every poster should include the following (you don't have to use these titles):

***Project title and names of authors:*** Should be self explanatory. It is conventional to put this at the top.

***Abstract:*** In 200 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, then narrow the focus of the introduction to the specific issue that you have researched. Give the location, any interested parties (for many projects this will include who is in conflict), and state your specific goals for the project (e.g., to determine why Tasmanian devils 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 paragraphs should be sufficient.

***Background:*** A brief review of 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. If your project focuses on a single species, summarize its pertinent natural history, ecology, behavior, etc. If your focus is an ecosystem, say where it is found, what the primary species are, how it is threatened, etc. This section could be combined with the Introduction.

***Current state of knowledge:*** This is the bulk of your project. You will not have space to tell us everything that you found 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. So, this is the part that you should spend most time on.

***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 this is the case, 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.

**Literature cited:** All ideas, data, information that is not your own must be cited, unless they are ideas common in the literature (e.g., that plants photosynthesize). All citations must come from the peer-reviewed scientific literature (see above). 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. **Citing Web pages: DO NOT**, unless it is 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 url if not).

**Pictures, tables, figures:** Feel free to include these. But, you **MUST** provide attributions. If they came from a web site you must say where. If the web site says that they cannot be used, then you cannot use them no matter how suitable they are. Most pictures on Wikipedia should be free game, but check their guidelines. If you have not read what my Grading Policies says about plagiarism, go and read it right now to avoid a nasty shock later.

**PROOFREAD YOUR POSTER.** I guarantee that if you wait until the week before posters are due to do this project it will show in the quality of your work and your subsequent grade.

### **Additional tips**

1. Your goal for a poster is to distill the information on your chosen topic into short, clear paragraphs, illustrations, and/or tables in a space not exceeding 1 meter tall by 1.3 meters wide.
2. Everything should be easily readable from at least a meter away. Text font should be no smaller than 32 pt (bigger is ideal). Use a font that is easy to read without getting too close - Arial is good.
3. If you are having trouble making everything fit, look to see if you have included irrelevant information.
4. We will not have poster boards to pin posters to, so you will need something that stands up on its own. My recommendation is that you use a poster-board trifold (available from the Coop for about five bucks) and attach your information to that. Graphs, figures, and tables can be pre-mounted on colored paper or poster board for ease in setting up your poster and to highlight the material. Each figure or table should be numbered and referred to in the text of the poster. Each should be easy to understand and have a heading of one or more lines that provides a brief (one or two lines) “take home” message.
5. Choose fonts that are easy to read, but don’t overuse bold or italics. Background colors should draw attention to material, but not detract from presentation – avoid fluorescent colors. In general, if the reader notices your use of color, then you have overdone it because they are not thinking about the stuff that actually matters.
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, then rewrite it!
7. Ideally, your poster should be self-explanatory so that you are free to supplement and discuss questions raised by visitors.
8. If you use a picture or diagram from the web or some other source, you must attribute it.
9. Arrange material in columns rather than in rows. It is easier for viewers to scan a poster by moving systematically down then across rather than zigzagging back and forth. The abstract should be placed at the upper left or center. Make sure your names appear on the poster under the title.
10. For design ideas, look at the real posters, pinned to walls throughout TLS and the EEB floors of the Bio/Pharmacy building.
11. Be prepared to answer questions about your poster.