

Moravian College  
Department of Biology  
Seminar (BIO 370/ENVR 370) - Fall 2014  
***“Conservation Biology and Restoration Ecology”***

<u>Instructor</u>	<u>Phone</u>	<u>E-mail</u>	<u>Office</u>	
Dr. Husic	610-625-7100	<a href="mailto:medwh03@moravian.edu">medwh03@moravian.edu</a>	Collier Science – Room 311	
<b>Office Hours:</b>	Mondays Thursdays	10:30 - 11:30 am 2:00 - 3:00 pm	Wednesdays Fridays	10:30 - 11:30 am 11:00 am - noon
<b>Class Meeting Times:</b>	M, W 8:55 – 10:05 301 PPHAC (Occasionally, the class may meet on Fridays at this time.)			
<b>Blackboard Site:</b>	BIOL370B_ENVR370.FA14: Seminar: Conservation Biology			
<b>Course Prerequisites:</b>	Junior or Senior status or permission of instructor			
<b>Required Textbooks:</b>	McMillan, W.E. 2012. <u>Writing Papers in the Biological Sciences</u> . 5 <sup>th</sup> Edition. Bedford/St. Martin’s  Gillen, C.M. 2007. <u>Reading Primary Literature: A Practical Guide to Evaluating Research Articles in Biology</u> . Pearson/Benjamin Cummings  Primack, R.B. 2012. <u>A Primer of Conservation Biology</u> . 5 <sup>th</sup> Edition. Sinauer Associates, Inc. Publishers			
<b>Additional Required Readings:</b>	Kolbert, E. 2014. <i>The Sixth Extinction: An Unnatural History</i> <b>OR</b> Weidensaul, S. 2003. <i>Ghosts with Trembling Wings: Science, Wishful Thinking and the Search for Lost Species</i> <b>OR</b> Wilson, E.O. 2003. <i>The Future of Life</i> <b>OR</b> Another book that is intended for the public and has ties to the themes of this course.  <i>You will also have several readings from journals, and various media and internet sources throughout the semester.</i>			

**Course Introduction and Description:**

In this course, students will discuss conservation strategies and threats associated with local, national, and global resources such as watersheds, forests, wildlife, and parks and preserved lands. Management of these resources, which serve as critical habitat for species, is complicated by rapid development (loss of open space) and land use change, the spread of invasive species, the alteration or loss breeding, wintering, and stop-over habitats for migrating species, and climate change. There will also be a strong focus on issues related to biodiversity. Science is the basis for developing conservation strategies and management plans, but often, economics, politics, and social issues (population growth, poverty, protection of the rights of indigenous people and their cultures) present complications to implementation of these plans.

Students will be challenged to consider questions such as whether conservation is a privilege of wealthy nations, and whether the needs of people in underdeveloped nations should come before that of preservation of wilderness and wildlife. In order to address these difficult questions, we will read not only contemporary science and conservation primary sources, but also excerpts from historical and contemporary writings of naturalists and environmentalists as they try to determine the value of wildness, wilderness, and wildlife in our own lives.

We will also explore the role of ecological restoration in conservation through specific case studies. As with conservation biology, the theory and methods from a wide range of disciplines are used in the practice of ecological restoration in which professionals work to remediate sites that have been disturbed or polluted to the point where the ecosystem is degraded or destroyed. Examples include reestablishing riparian zones and stream banks, reforestation, revegetating sites contaminated through mining and smelting operations, and reintroducing species that had been extirpated from an area or bolstering an endangered population.

A key question today is “To what extent can we reverse the damage caused by humans to Earth’s ecosystems and species?” Restoration debates have previously centered on the question of “restore to what” in terms of a desired outcome; there is often little agreement on what historical condition prior to disturbance should be used as a target. However, if predictions based on climate modeling come to fruition, these arguments will be meaningless. In many places, it will become impossible to look to pre-disturbance conditions due to changing regional climate, desertification, ocean acidification or sea level rise, and new species assemblages as compared to what once characterized a location in the past. In 2007, a position statement issued jointly by the Society for Ecological Restoration International and the Ecological Society of America called for a “global strategy for mitigating climate change” (for example, see [www.sciencedaily.com/releases/2007/08/070817165031.htm](http://www.sciencedaily.com/releases/2007/08/070817165031.htm)). In this release, it was noted that ecological restoration should be considered as one of the tools that can help in this mitigation.

To meet the writing intensive component of this course, students will be responsible for a number of writing assignments including journaling, op-ed assignments, reaction papers, abstracts and a major research paper. All students will be expected to give oral presentations, including a formal presentation on a topic relevant to the course theme.

**Course Objectives:** Upon completion of this course the students will be able to:

- 1) *describe* important scientific and policy issues in conservation and restoration through a variety of oral and written *communication* modes;
- 2) *understand* the interplay between science, economics, social values and priorities, and politics in conservation and restoration decisions;
- 3) thoroughly *research* a specific topic related to conservation biology or ecological restoration ~ using *primary and secondary literature* sources;
- 4) consider public responses/reactions to conservation science and priorities;
- 5) identify *ethical issues* associated with conservation;
- 6) *concisely express* a research topic in abstract form;
- 7) *construct* successful outlines and drafts and use peer and professor feedback for effective *revision*;
- 8) complete an *academic research paper* with appropriate citations of the primary literature;
- 9) effectively *discuss, explain, and critique* primary literature and other readings through journal club sessions;

- 10) **present** their comprehensive research before peers and instructor using Power Point or other visualization software as well as address questions regarding their work; and
- 11) objectively **critique** peer abstract writing samples and **ask questions** during discussions and after student presentations.

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From: What Do You Care What Other People Think? (Concluding essay, "The Value of Science") by Richard Feynman, p. 245, 1988 (see: <http://laserstars.org/bio/Feynman.html> )

*"The scientist has a lot of experience with ignorance and doubt and uncertainty, and this experience is of very great importance, I think. When a scientist doesn't know the answer to a problem, he is ignorant. When he has a hunch as to what the result is, he is uncertain. And when he is pretty darn sure what the result is going to be, he is still in some doubt. We have found it of paramount importance that in order to progress we must recognize our ignorance and leave room for doubt. Scientific knowledge is a body of statements of varying degrees of certainty-some most unsure, some nearly sure, but none absolutely certain."*

The fields of conservation biology and ecological restoration, while having solid scientific foundations, are also fields filled with uncertainty due to the relative newness of the disciplines and practices, and the great complexity within nature. The public, which is skeptical of science, misunderstands the scientific process, and, to some extent, is scientifically illiterate, is nonetheless key in determining policy and priorities related to the environment. Thus, for conservation and environmental work, communication skills and the ability to craft messages and stories for a wide range of stakeholders are critical skills.

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**Course Requirements:** The student’s grade will be based on the following:

- Miscellaneous assignments throughout the semester, including writing exercises, mini-presentations, book review, and journal 400 points
- Abstract, outline, and primary articles submitted on time to the instructor in order for classmates to access/review 25 points
- Substantially complete draft of research paper due 1 week prior prior to oral presentation (all or nothing) 25 points
- One written research paper 300 points
- One research presentation and follow up question/answer session 300 points
- Resume exercise 50 points
- Overall class participation, engagement, & attendance 300 points  
Including: participation in class discussions and quality of contributions (e.g. providing evidence of having carefully read assigned papers and other readings; asking questions of seminar speakers; and attendance at at the environmental films to be shown in fall semester and/or at talks by guest speakers.)

**TOTAL**

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**1400 points**

\*\* The “class participation aspects of the grade” are based on your participation and preparation for each class session. Therefore, excessive absences will have a negative effect on your final grade for the course.

\*\* Please note: it is within the instructor’s purview to apply qualitative judgment in determining grades for assignments or the entire course.

**Grading:** The grading system is as follows: (+/- will be administered as professor deems appropriate)

A = 90 - 100 %

B = 80 - 89 %

C = 70 - 79 %

D = 60 - 69 %

### Expectations:

- a) Attendance: Regular class attendance is expected. **No** make-up presentations will be permitted unless you have an acceptable reason (family emergency, illness, etc) – with documentation. If an emergency should arise, you must notify the instructor prior to the presentation date and **not** after. Notification from the Moravian College Health Center, Learning Services or the Moravian College Dean of Students’ Office will be necessary if you miss more than two seminar classes. I will recognize legitimate excused absences such as when students are representing the university in an official capacity (e.g. for presentation at scientific meetings, intercollegiate athletic competition, but not practice, off-campus music performances, etc.). Such activities are scheduled ahead of time; thus, we expect you to make arrangements with us ahead of time as well. Please note: Students who arrive late to class disrupt the flow of the session and distract their peers. Please be prompt!
- b) Appropriate Literature Sources: All students will be required to understand the differences between primary and secondary literature sources. The college subscribes to many databases that you should be familiar with as they will be invaluable sources of information for your paper and seminar; “Web of Knowledge”, “Science Direct”, “SciFinder Scholar”, Academic Search Elite, and Nexis-Academic Universe are some examples. Public-domain internet sources can be helpful but you must critically evaluate the information obtained from such sources – especially if they are not primary sources. **You should not typically use “Wikipedia” as a reference for assignments and material from this source is NOT acceptable for the formal research paper.**

\*\*\*\* Throughout the semester, I would also like for you to pay attention to media and popular press coverage of topics related to this course. Online magazines, such as *Yale Environment 360*, *Science in the News*, and *Environmental News Network*, sites of non-profit organizations, several blogs, etc. all have good material for class discussions. Your informed contributions to these discussions will be viewed favorably when assigning final grades! \*\*\*\*
- c) Reading Assignments : should be completed prior to each class session
- d) Writing Assignments : There will be a number of short writing assignments in this class and a major research paper. The expectations for the major research paper are outlined later in this syllabus. All work should be typed, double-spaced using a font size of 11 or 12. You are each responsible for knowing the timeline for your assignments.

- e) Academic Honesty: Students are responsible for adhering to the College's policy on academic honesty; Moravian College expects its students to perform their academic work honestly and fairly. A Moravian student, moreover, should neither hinder nor unfairly assist the efforts of other students to complete their work successfully. This policy of academic integrity is the foundation on which learning at Moravian is built. Students will be held to the highest standards as specified by the Moravian College Honor Code. Violations of this code will be handled in the most severe manner allowed by college policy. Please read the Academic Honesty Policy that is included in the student handbook *and* the Guidelines for Honesty included in this syllabus (below). If you have any questions about plagiarism or other forms of academic dishonesty, please ask.
- All work that you submit or present as part of course assignments or requirements must be *your original work*. This includes any work presented, be it in written, oral, or electronic form or in any other technical or artistic medium. When you use the specific thoughts, ideas, writings, or expressions of another person, you must accompany each instance of use with some form of attribution to the source. Direct quotes from any source (including the Internet) must be placed in quotation marks (or otherwise marked appropriately) and accompanied by proper citation, following the preferred bibliographic conventions of your department or instructor. Student ignorance of bibliographic convention and citation procedures is not a valid excuse for having committed plagiarism.
  - Minimize the number of quotes that you use. Your research paper should be a *synthesis* of information from the literature and an *original analysis* of the topic you have chosen. It is not simply a compilation of the thoughts and work of others.
  - You may not use writing or research that is obtained from a "paper service" or that is purchased from any person or entity, unless you fully disclose such activity to the instructor and are given express permission.
  - You may not use writing or research obtained from any other student previously or currently enrolled at Moravian or elsewhere or from the files of any student organization, such as fraternity or sorority files, unless you are expressly permitted to do so by the instructor.
  - Cheating or plagiarism will not be tolerated and may result in failure of the course. A major form of academic dishonesty is plagiarism, which we define as the use, whether deliberate or not, of any outside source without proper acknowledgment; an "outside source" is defined as any work (published or unpublished), composed, written, or created by any person other than the student who submitted the work (adapted from Napolitano vs. Princeton). Take care to cite the sources of ideas of others correctly (in other words, to give credit where credit is due). Several assignments in this class will involve the use of internet resources, and it is my experience that students often do not realize that copyright violations and plagiarism policies still apply when using materials from these resources.
  - At Moravian, if an instructor suspects that plagiarism has occurred, the student will be asked to show the notes and drafts contributing to the final version of a paper or assignment. The instructor also has the right to review any books or periodicals that were used. The grade for the paper will be suspended until these materials have been reviewed. An instructor who suspects a student of violating the policy on academic honesty with regard to an assignment will consult with another faculty member in the department using a blind copy of the work in question, to verify the violation. If the charge is verified, the instructor will, at a minimum, assign either a grade of zero to the academic work in question or a failing grade in the course in which the violation occurred. The student must be informed in writing of the alleged violation and penalty; a copy of this memo must be sent to the Associate Dean of Academic Affairs.

- A student may appeal either a charge of academic dishonesty or a penalty to the Academic Standards Committee, chaired by the Associate Dean for Academic Affairs.
- f) Journal:
  - Throughout the course, it is a good idea to be aware of stories in the media that relate to conservation, biodiversity, nature, and other environmental topics. The internet can be a valuable resource, but you have to *critically evaluate* the content and source of the information that you find there to make sure the information is *credible*. Often, timely stories break in the news that warrant our consideration in class, and your familiarity with media coverage of science and environmental issues can (and will) provide the basis for class discussions. Active participation in these discussions will be noted and will have a positive effect on your final grade for the course. For certain class assignments, I will also ask you to find an article or internet site on a specific topic. To this end, I would like each of you to keep a journal throughout the semester.
  - I allow students to determine the specific format and style of their journals. They can be in a notebook or done electronically, including a blog format. What I do require is that you date your entries and include the source of your information (e.g. which newspaper and what date, what magazine, edition and page number, the URL of a website, etc.). Keeping a regular record of stories that catch your attention or that relate to topics we are discussing in class, will allow you to reflect on what you are learning and how it applies to the “real world”, and allows you to follow trends throughout the semester. I expect that you should have **at least 2 entries (news items) per week, plus** some of your own comments, summaries or reactions to the news and to the topics discussed in class. Don’t simply cut out articles from a paper or magazine and stick it into a journal. It is your reaction and commentary that I most interested in. Often in class, we will have a discussion of timely news stories related to the environment and other topics being discussed in class. Having your journal up-to-date will allow you to make significant contributions to these discussions.
  - Another aspect of your journal is to take notes on the required readings. I highly recommend the format of a “Readings Journal” is formatted as follows:
    - Author (last name only is sufficient), Title (shortened if it is especially long), Source, Year, and Page numbers.
    - Include any notes taken during reading
    - Write a summary of each article in 200 words or fewer. Make this objective and clear, and be sure to identify the main point (thesis) of each reading.
    - Reaction: In at least 200 words, write a response (your personal reaction) to the assigned readings.
  - Journal entries will often be important for class discussions, so please bring your journals (or computer if you do this electronically) to class.
  - Prior to your submission of the completed journal at the end of the semester, I will ask you to summarize what you have learned from keeping such a journal and what trends or major issues you noticed.

- g) Extra Help : If any difficulties arise during this course in any area, including selecting a research topic to designing your presentation, please see me. *I will be happy to help!* The reference librarians in Reeves Library are willing to assist you with reference materials. You may (should) also contact the Moravian College Writing Center for assistance in writing and revising your abstracts and research papers.
- h) Learning Services Office: Students who wish to request accommodations in this class for a disability must contact Ms. Elaine Mara, assistant director of academic support services for academic and disability support, at the lower level of Monocacy Hall, or by calling [610-861-1401](tel:610-861-1401). Accommodations cannot be provided until authorization is received from the Academic Support Center.

### Timeline and Important Suggestions for Writing Your Research Papers

#### Timeline and guidelines:

- The **topic** for your paper and presentation is due to Dr. Husic on September 15<sup>th</sup> at the beginning of class. The focus of your paper and talk should be on some area of conservation biology, biodiversity, or ecological restoration.
- I expect you to focus on specific research studies (primary literature), but you should also include commentary on the impact of this research (its significance) to the field. I expect you to discuss your personal thoughts on this topic, formulating a clear thesis that you then elaborate on and justify.
- This paper (and your talk) should include a ***synthesis*** of your research findings and ***original analysis*** of the topic you have chosen.
- Review the information in this syllabus about Academic Honesty (pp. 4-5).
- A ***draft outline*** for seminar and paper due to Dr. Husic on October 1<sup>st</sup> by 5:00 pm.
- A ***complete (final) draft*** (including the bibliography) of your paper **due 10 days** prior to your scheduled presentation date. It will be evaluated and returned to you within one week of submission so that you can use my comments to revise the paper and adjust your presentation.
- The ***abstract*** for your presentation, as well as 2 of your primary research articles (hard copies or pdf), are to be submitted to me **one week** (by 3:00 p.m.) **prior to your presentation date**. These will be placed on Blackboard and/or in the student reading room (311C Collier) for your peers to peruse.
- All class members are to review speakers abstract and article and ***draft 1 to 2 questions for speaker*** - in writing and in advance of the presentation. These will be collected after each seminar along with any questions that you think of during the talk.
- Your ***final research paper*** (a minimum 10 pages of text - ***excluding*** the title page, figures, and references) is due to the instructor **one week after the day you are scheduled to present your research**

**topic.** If it is not submitted on that day, 20 points (10%) will be deducted from the research paper grade for every day that it is late.

Other expectations:

- You are expected to cite a minimum of **three *primary scientific papers*** and **two *secondary references***.
- All sources need to be properly cited in your paper.
- Your primary articles should not be from work published prior to 2009.
- Any figures or images should be attached at the end of the - 10 pages of text (with appropriate legends)
  - do not place in the body of your paper. The figures should be numbered and have titles and, if taken from some source, this should be noted. Technically, you should have permission to use figures from published sources (including the internet).
- Please visit the Writing Center if you are having difficulties in composing your draft and/or the final version of the paper.

Grading Criteria for Research Paper:

Clarity of writing	Quality of writing (grammar, punctuation, etc)
Ability to summarize research information	Appropriate detail/content/depth
Correct interpretation of data and information	Correct use of key terms
Original content or analysis	Appropriate References

**Timeline and Important Suggestions for Oral Presentations**

Timeline:

- Selection for topic: same as for paper (September 15<sup>th</sup>). You will randomly select the order in which you will present in class on day #1. The topic for your paper and presentation is the same, although the specific content of each may vary somewhat.
- The formal presentations will begin the week of October 27<sup>th</sup> and we will do 2 talks per day.

Expectations:

- See attached seminar evaluation sheet (p. 10) to get a sense of what your peers and I will be evaluating you on.
- Oral presentations must include a Power Point slide show (or other visualization format) which will be submitted electronically to Dr. Husic on the day of your presentation.



- Oral presentations should be *30 minutes*, leaving about 5 minutes for questions from your audience.
- Practice, practice, practice! This is the way to gain familiarity with your presentation content, to gain confidence and to diminish the dependence on reading your notes during your actual talk. When you practice – do so with your Power Point (or other format) presentation projected so you can also practice pointing out key information on your slides. Check for spelling and formatting errors.
- Remember the importance of appearance, poise, etc. during a professional presentation. Developing confidence and presenting yourself in a professional manner will go far in helping you during interviews, future presentations for your career, etc. We will be doing “mini-presentations” in class before starting with the major, formal presentation, so you can practice and gain confidence speaking in front of your peers.

### Faculty Evaluation of Student Seminar

**Student's Name :** \_\_\_\_\_ **Topic :** \_\_\_\_\_ **Date :** \_\_\_\_\_

Start Time : \_\_\_\_\_ End Time : \_\_\_\_\_ Duration : \_\_\_\_\_ Overall Grade : \_\_\_\_\_

**Preparation :**

	<b><u>Yes</u></b>	<b><u>No</u></b>
Topic chosen on time (by _____):	___	___
Rough draft of research paper 2 weeks prior to presentation:	___	___
Primary article and abstract on reserve in library on time:	___	___
Final draft of research paper to professor on presentation day:	___	___

**Comprehension of Topic :**

Clarity of explained concepts, examples, models, etc	A	B	C	D	F
Appropriate detail and level for a senior seminar class (too basic? lost audience with technical jargon?)	A	B	C	D	F
Accuracy without note dependency	A	B	C	D	F
Organization of presentation	A	B	C	D	F
Responses to questions	A	B	C	D	F

**Delivery :**

Adequate introduction	A	B	C	D	F
Concise summary statement	A	B	C	D	F
Overall degree of preparedness	A	B	C	D	F
Adequate length	A	B	C	D	F
Continuity or flow of presentation	A	B	C	D	F
Pace	A	B	C	D	F
Voice Modulation	A	B	C	D	F
Eye Contact	A	B	C	D	F
Gestures/enthusiasm	A	B	C	D	F
Overall impression or impact	A	B	C	D	F

**Abstract:**

Quality of writing	A	B	C	D	F
Accurate description of presentation	A	B	C	D	F

**General Comments : (strong points, areas needing improvement)**

BIOL 370/ENVR 370 WI: Seminar

**Academic Integrity:** Absolute academic integrity and honesty is expected in all of my courses. Penalties for copying, plagiarism, data fabrication, or other types of cheating will not be tolerated and students caught violating the attached policy provisions will be dealt with severely. This can include failure for a test or assignment or a failing grade for the entire course. I have the right to report any and all violations of academic integrity to the appropriate campus administrators.

Each student enrolled in my classes is required to read and sign off on the Academic Honesty Policy information contained within the syllabus. Please read the policy and return the signed form (below) before the end of the week. I will keep these signed forms on file in my office.

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I have read the “Academic Honesty Policy” included in the syllabus for Professor Husic’s Senior Seminar (fall semester, 2014). I understand the policy and the consequences of engaging in academic dishonesty.

Name: \_\_\_\_\_

Date: \_\_\_\_\_