NRRT 340: Principles in Conservation Planning and Management

Human Dimensions of Natural Resources
Colorado State University

INSTRUCTORS: Mike Gavin, michael.gavin@colostate.edu

OFFICE HOURS: 330-530pm Thursdays in Forestry 231, all other times by appointment please

CLASS MEETINGS: Tuesday and Thursday 1400-1515 in Forestry 217.

COURSE OVERVIEW

This course will explore theories that are fundamental to conservation planning and management. The course will provide an overview of key ideas from: conservation biology - as they relate to the design and management of conservation programs for protected areas and endangered and invasive species, social-ecological systems, conservation psychology, historical ecology, indigenous resource management and traditional ecological knowledege, and biocultural approaches to conservation. The course will also engage students with a variety of tools used to apply theory to the practice of conservation. Topics in applied conservation planning and management will include the conservation action planning framework, conservation behavior change, design of protected area systems, and adaptive management.

In addition, the course will focus on student's further developing core competencies in critical skills that will assist in future classes and careers. In particular the course will provide space and tools for students to improve their skills in a variety of means of communication (writing, presentations, group work), in critical thinking, and in the research process. The course will focus on the importance of identifying and filtering a wide variety of information sources and in analyzing and presenting results in a clear, concise and synergistic fashion.

COURSE MATERIALS, ASSIGNMENTS, AND GRADING

All readings and other relevant course materials will be available through the course's Canvas website (note: the course will not use RamCT)

Assignments	**Percent of final grade**	**Due Date**
Protected Area Design Exercise	10%	Feb 17
Anatomy of Protected Area:		
Draft	5%	March 3
Revision	5%	March 10
Final	35%	April 2
Conservation Action Planning Group Presentation	30%	April 14
Worldview Reflection essay:		
Draft	5%	April 30
Final	10%	May 7

Letter grades will be assigned as follows:

Percentage	Letter Grade
98-100%	A+
92-97%	A
90-91%	A-
88-89%	B+
82-87%	B
80-81%	B-
78-79%	C+
72-77%	C
70-71%	C-
65-69%	D
<65%	F

COURSE POLICIES

Academic Integrity: This course will adhere to the CSU Academic Integrity Policy as found in the General Catalog (http://www.catalog.colostate.edu/Content/files/2014/FrontPDF/1.6POLICIES.pdf) and the Student Conduct Code (http://www.conflictresolution.colostate.edu/conduct-code). At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.

We take academic integrity seriously. At minimum, academic integrity means that no one will use another's work as her or his own. The CSU writing center defines plagiarism this way:

"Plagiarism is the unauthorized or unacknowledged use of another person's academic or scholarly work. Done on purpose, it is cheating. Done accidentally, it is no less serious. Regardless of how it occurs, plagiarism is a theft of intellectual property and a violation of an ironclad rule demanding "credit be given where credit is due.""

Source: (Writing Guides: Understanding Plagiarism. http://writing.colostate.edu/guides/researchsources/understandingplagiarism/plagiarismoverview.cfm. Accessed, January 19, 2015)

If you plagiarize in your work you could lose credit for the plagiarized work, fail the assignment, or fail the course. Plagiarism could result in expulsion from the university. Each instance of plagiarism, classroom cheating, and other types of academic dishonesty will be addressed according to the principles published in the CSU General Catalog (see http://www.catalog.colostate.edu/Content/files/2014/FrontPDF/1.6POLICIES.pdf).

Of course, academic integrity means more than just avoiding plagiarism. It also involves doing your own reading and studying. It includes regular class attendance, careful consideration of all class materials, and engagement with the class and your fellow students. Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. For more information on practicing academic integrity see: http://learning.colostate.edu/integrity/index.cfm

Requests for Assignment Extensions: In fairness to your fellow classmates, extensions on due dates for assignments will not be granted except in cases where extenuating circumstances arise. If this is the case, please let me know at the earliest possible opportunity to request an extension. In the absence of being granted an extension, the policy below applies for late submissions.

Policy on Late Assignments: Late assignments (those not turned in at the beginning of class) will be penalized 5% per calendar day (including weekends).

Availability of Student Accommodations: If you have university-approved circumstances, please contact me after the first class so that we can make a plan for accommodations to ensure a productive semester together.

COURSE SCHEDULE

Date & Time	Topics	Readings & Assignments
January 20	• Introduction & course logistics • Discussion of assignments	
January 22	• Research, interviewing, group work, and writing overview (skills) • Introduction to biodiversity	
January 27	• Biodiversity basics (theory)	**Readings:** Gaston 2010 **Suggested:** An excellent source for this week and many others is Sodhi and Ehrlich's free textbook (search online): Conservation Biology for All
January 29	• Threats to biodiversity (theory) • Discussion of PA choices	**Readings:** Salafsky et al 2008 **Recommended**: Chapters 4-8 in Sodhi and Ehrlich textbook
February 3	• Principles of conservation biology related to protected area design (theory)	**Readings:** Primack 2014
February 5	• Protected area design exercise and discussion (application)	
February 10	• Protected area design exercise and discussion (application)	
February 17	• Endangered and invasive species management (application)	**Reading:** TBD (see Canvass) **PA design exercise due**
February 24	• The scale of conservation effort (species, protected areas, landscapes) (theory)	**Reading:** Schwartz 1999
February 26	• Historical ecology (theory)	**Reading:** Denevan 1992

March 3	• Writing workshop	**Draft of Anatomy of PA due**
March 5	• Priority setting (theory)	**Reading:** TBD (see Canvass)
March 10	• Social-ecological systems (theory)	**Reading:** Liu et al 2007 **Revision of Anatomy of PA due**
March 12	• Social-ecological systems (theory)	
March 17&19	• Spring Break	
March 24	• Implications of SES theory for conservation management: introduction to adaptive management (application)	**Reading:** Salafsky et al 2001 (required: pp. 12-17, 32-63)
March 26	• Adaptive management (application) • Revision of Anatomy of PA returned and discussion of adaptive management at your PAs	
March 31	• Conservation Action Planning Framework (application)	**Readings:** TBD (see Canvass)
April 2	• Conservation Action Planning workshop (application)	**Final Anatomy of a PA assignment due**
April 7	• Conservation Action Planning workshop (application)	
April 9	• Presentation skills • Overview of worldview essay assignment	
April 14	• CAP presentations	**CAP presentation due**
April 16	• CAP presentations	

April 21	• Indigenous resource management and traditional ecological knowledge (theory)	**Reading:** TBD (see Canvass)
April 23	• Biocultural approaches to conservation (theory)	**Reading:** Gavin et al 2015
April 28	• Drivers of conservation action: an introduction to conservation psychology (theory)	**Reading:** Kollmuss and Agyeman 2002
April 30	• Reflection essays workshop	**Draft reflection essays due**
May 5	• Managing for conservation behavior change (application)	**Reading:** Berkes 2012
May 7	• Conclusion overview	**Final reflection essays due**

ASSIGNMENT DETAILS

Protected Area Design Exercise: After being introduced to fundamental principles that help shape the design of protected area systems, you will be asked to complete an assignment for which you apply these principles to the design of a particular protected area system. The full details of this assignment will be provided in class (February 5th). The assignment will ask you to design the system within budget constraints provided, and to justify your design based on the key principles we learn about and considering the data you will be provided on the ecology and socioeconomic conditions for the region in which the system will theoretically be applied.

Due date: February 17th (at the beginning of class)

Anatomy of a protected area assignment:
This assignment asks you examine how many of the theories you will be learning about in class are applied to a real world protected area of your choice. You will critically examine the planning and/or management of your chosen protected area. The assignment will require you to use a variety of research skills and to communicate your findings in a clear and concise manner. The assignment has multiple parts, which allow you to develop the full document, while receiving constructive feedback from your fellow students and from the course instructor at critical stages in the research process.

Key steps for the assignment:

(i) The first step for this assignment is to choose the protected area you will focus on. You can choose any protected you want. It can be anywhere in the world and administered by any agency or community. But be sure to choose carefully! What are you looking for? You want a protected area that has a published current management plan (i.e., one that is in use currently).

You want a protected area that has plenty of information on line considering the many questions you will need to answer (see below). And, you want a protected area for which you can get in touch with and briefly interview an employee involved in current management or planning. **January 29:** Bring your idea for a possible protected area to focus on and we will discuss these options briefly in small groups. Be sure to have researched the available materials for the protected area of choice before coming to class on January 29th.

(ii) Note that the second and third steps can be done simultaneously. You need to gather and assess (i.e. critically examine given the theory you will be learning in class) the main management challenges the protected area faces, the biggest threats to biodiversity within the protected area, the main management approaches the protected area is employing to address these threats to biodiversity, the zoning plan of the protected area, the shape and size of the protected area, and the protected area's placement in the landscape. Be sure to use all available sources of information, and to consider the reliability of these information sources. Possible sources of information may include (but are not limited to) the protected area's website, the website of the agency that uses the protected area, website of other organizations that have an interest in the protected area (e.g., Friends of X Protected Area, Sierra Club, tourism sites etc), academic literature on the protected area, popular press, historical documents, etc.

(iii) Your gathering and critical assessment of information on the protected area (step 2) will be augmented by a short interview you will conduct with a staff member currently working for the protected area. You can contact any staff member (e.g., director of the protected area, information officer, ranger, education specialist, etc, etc). You only need to interview one staff member. You will need to design a short set of questions that you will use to guide the semi-structured interview process (we will review interview techniques in class). The interview should seek to gather information about the interviewees perception of the protected area and aid in answering the key questions you have (see step 2 for list of the issues you will be exploring). You should also record the interviewee's name, position at the protected area, and ask them about their career path. What is their professional background and how did it lead them to this job? You will need to provide the list of questions and a synopsis of the answers in the appendix of your assignment (see details below)

(iv) You will use the academic literature to critically assess the protected area's approach to managing the major threat to the area's biodiversity. (We will review in class the best research tools for identifying, filtering and assessing academic literature.) You will need to cite at least 4 academic articles in your final assignment, which means you will likely need to read lots more to narrow down the best articles that support your argument. You will use these academic articles to examine at least some of these key questions: how widespread is this threat in the region?, what are the advantages and disadvantages of the approaches the protected area is using to address the specific threat?, what alternatives might exist to current management approaches to the biodiversity threat? Is there consensus in the literature on the best approach to that specific threat or what is the nature of the debates regarding management approaches to that threat?

(v) **March 3** you need to bring a rough draft of parts 1-4 to class. On that day we will hold a writing workshop where we will critique drafts and you will receive constructive feedback on how to improve. To receive full credit, and to benefit from this exercise, you need to bring a completed draft to class. This is not just a set of ideas, but a printed out full draft of your assignment with parts 1-4 completed. See guidelines below for the format of the document

(vi) **March 10** you will turn in (via email to me prior to class in word doc or docx format) a revised version of the document that incorporates the feedback you received from the March 3rd writing workshop.

(vii) **March 10, 12, 24, and 26** we will discuss social-ecological systems theory and adaptive management in detail in class. You will then need to then develop a section for your final

assignment that discusses how the protected represents a social-ecological system, and how, if at all the protected area managers are using adaptive management approaches. If they are not using adaptive management, you should discuss how they could incorporate adaptive management principles into current management practices.

(viii) **March 26th**: you will receive feedback on your revised document (the only you submitted March 10) from me.

(ix) **April 2nd**: your final assignment with all parts is due

Format of your final document:

The document will need to present information in a clear and concise way within the maximum allowed 1500 words. You can be creative in terms of the format of the document (e.g., paragraph format is not always needed – for some information bullet points, diagrams etc, may be more appropriate). Be sure the assignment maintains a professional presentation throughout. In turn, imagine you are creating this for your supervisor who works for the agency that manages the entire protected area system (e.g., the National Park Service). She or he would want you to provide only relevant information, be clear and concise, and indicate all your sources using proper citations. The final document will contain 8 main sections (note that sections 1-5 need to be in the draft, revised and final versions of the assignment, whereas sections 6 and 7 will only be submitted in the final version of the assignment):

1. Brief overview of the protected area: location, history, purpose (be very careful not to use to many words for this!)
2. Main management challenges the protected area faces
3. Biggest threats to biodiversity within the protected area, and the main management approaches the protected area is using to address these threats
4. For the main threat to biodiversity (identify the one main threat for this section), compare and contrast the management approach(es) used by the protected area with recommendations you find in the academic literature. Be sure you properly cite at least 3 academic articles in this section
5. Examine the protected areas zoning plan, the protected area's shape and size, and the protected area's placement within the larger landscape of land uses based on the principles of conservation we cover in class
6. Describe how the protected area represents a social-ecological system (you will incorporate this section into your final version only)
7. How, if at all, does the protected area managers use adaptive management approaches? If they do not, how could they incorporate them into current management practices (you will incorporate this section into your final version only)
8. Appendices: Here you should include a link the protected area's management plan, a link to the protected area's website, a map of the protected area, details of employee you interviewed (name, job), list of your questions, summary of the interviewee's answers, and a paragraph (max 300 words) summarizing how their answers contributed to your main document.

Grading criteria: clear, concise, creative, and professional writing (25%), overview of protected area, management challenges, biodiversity threats and management approaches (15%), critical assessment of management of biodiversity threat with proper citation of literature (15%), analysis of zoning, size, shape and landscape placement with reference to key principles from conservation science (15%), analysis of protected area in light of social-ecological systems theory and adaptive management tools (15%), interview and other supplementary materials (appendices; 15%)

Conservation Action Planning Group Presentation: Conservation Action Planning (CAP) is a framework developed to guide the conservation planning process. The framework was first developed by The Nature Conservancy, but now via the Conservation Measures Partnership and the Open Standards, conservation organizations around the world use different versions of CAP to guide the conservation planning process. You will become familiar with this form of conservation planning, the different concepts and processes that the framework entails. You will then be asked to work in a group of 5-6 students to produce part of an action plan using the framework. More details will be provided in class March 31st when we begin this section of the course. The assignment will involve a formal presentation of results by your group. The assignment will allow you to become familiar with this widely used conservation tool and to develop your skills working as a group and presenting in a formal setting.

Worldview reflection essay: This assignment is linked to the part of the course when we discuss indigenous resource management, traditional ecological knowledge and biocultural approaches to conservation. It is critical for us to all recognize that we possess distinct worldviews, and that these ways of seeing the world shape how we interact with other people, view our place in the world, and see conservation processes. This essay will ask you to consider your own worldview in light of the conservation principles we have discussed in this course, the ideas on how other cultures see conservation, and the theory of biocultural conservation. Additional details will be provided in class on April 9th. As part of the course goals of developing writing and communication skills, we will hold a writing workshop in class on April 30th. You will be expected to arrive to this workshop with a completed essay. During the workshop you will receive constructive feedback on your draft that should be incorporated into the final version of the assignment due May 7th.