

GENERAL INFORMATION



INSTRUCTOR INFORMATION

Instructor:	Assistant Professor Cara Rockwell
Office Hours:	By Appointment
E-mail:	Please use Canvas course messages or directly at crockwel@fiu.edu
Website:	http://faculty.fiu.edu/~crockwel/index.html

COURSE DESCRIPTION AND PURPOSE

Ecosystems have always been managed by human institutions and organizations, unconsciously or consciously. However, this course focuses on the history of ecosystem management in the United States beginning in the 19th century. We will begin by reviewing the history of public land management in the United States, particularly the history of parks. We will then examine some of the major contemporary land and wildlife management issues, particularly the spotted owl controversy in the Pacific Northwest. The main focus is on the institutions and organizations that implement ecosystem management and its current version, landscape conservation cooperatives, in contemporary society: federal and state government agencies, non-governmental organizations, and local communities. We will look at these institutions and how they operate in practice, including the challenges of administering ecosystems, as well as the use of ecosystem science in administration and related issues. The student will master concepts of ecosystem management and adaptive management and what they mean in an institutional setting. They will gain a better understanding of the challenges of working within the kinds of institutions in which their careers will almost inevitably take place. There is a substantial focus on climate change and its impacts on ecosystem management. Other themes covered include The Wilderness Act, recent policy shifts in public land administration in the Trump and Biden administration, recent policy changes in the National Park Service (NPS) due to climate change, bark beetle infestations and wildfires in the West, conservation on Indigenous lands and buffalo re-introductions, and natural climate solutions. Students will also learn about the latest social innovations in natural resource management and will work in groups much like the local groups which are involved in ecosystem management across the country. Throughout the class you will be meeting in assigned groups and working on the management scenarios in the book *Ecosystem Management*. I will assign you to a group and a scenario in early October.

COURSE OBJECTIVES

Students will be able to:

- Analyze the Challenges of Climate Change for Ecosystem Management (Module 1)
- Explain the History of Public Land Management in the United States (Module 2)
- Articulate Management of Large Carnivores and Current Issues in Public Land Management (Module 3)
- Differentiate Concepts and Methods in Ecosystem Management (Module 4)
- Integrate Conservation on Private Lands (Module 5)
- Monitor Climate Change Thresholds in Ecosystems (Module 6)

MAJOR & CURRICULUM OBJECTIVES TARGETED

This is a required course in the BA in Sustainability (as one of the options in the Human Dimensions category) and can be an elective in the BS in Environmental Studies.

TEACHING METHODOLOGY

This is a fully online course in which all the instructional materials and activities are delivered through Canvas, and/or other internet-based media. Should you have any questions, please contact the instructor..

IMPORTANT INFORMATION

POLICIES

Please review the [FIU's Policies](#) webpage. The policies webpage contains essential information regarding guidelines relevant to all courses at FIU, as well as additional information about acceptable netiquette for online courses.

TECHNICAL REQUIREMENTS & SKILLS

One of the greatest barriers to taking an online course is a lack of basic computer literacy. By computer literacy we mean being able to manage and organize computer files efficiently, and learning to use your computer's operating system and software quickly and easily. Keep in mind that this is not a computer literacy course; but students enrolled in online courses are expected to have moderate proficiency using a computer. Please go to the "[What's Required](#)" webpage to find out more information on this subject.

Please visit our [Technical Requirements](#) webpage for additional information.

ACCESSIBILITY AND ACCOMMODATION

Please visit our [ADA Compliance](#) webpage for information about accessibility involving the tools used in this course.

Please visit [Blackboard's Commitment Accessibility](#) webpage for more information.

For additional assistance please contact FIU's [Disability Resource Center](#).

COURSE PREREQUISITES

There are no prerequisites for this course.

PROCTORED EXAM POLICY

This course does not require a Proctored Exam.

EXPECTATIONS OF THIS COURSE

This is an online course, which means all of the course work will be conducted online. Expectations for performance in an online course are the same for a traditional course. In fact, online courses require a degree of self-motivation, self-discipline, and technology skills which can make these courses more demanding for some students.

Students are expected to:

- **Review the how to get started information** located in the course content
- **Introduce yourself to the class** during the first week by posting a self introduction in the appropriate discussion forum
- **Take the practice quiz** to ensure that your computer is compatible with Canvas
- **Interact** online with instructor/s and peers
- **Review** and follow the course calendar
- Log in to the course **3-4 times** per week
- Respond to discussion boards within **3 days**
- Respond to **emails** within **1 day**, messages within **2 days**
- Submit assignments by the deadline

The instructor will:

- Log in to the course **5 times** per week
- Respond to discussion boards within **2 days**
- Respond to **emails and messages** within **24 hours-two days**
- Grade assignments within **10 days** of the assignment deadline

ACADEMIC MISCONDUCT STATEMENT

Florida International University is a community dedicated to generating and imparting knowledge through excellent teaching and research, the rigorous and respectful exchange of ideas and community service. All students should respect the right of others to have an equitable opportunity to learn and honestly to demonstrate the quality of their learning. Therefore, all students are expected to adhere to a standard of academic conduct, which demonstrates respect for themselves, their fellow students, and the educational mission of the University. All students are deemed by the University to understand that if they are found responsible for academic misconduct, they will be subject to the Academic Misconduct procedures and sanctions, as outlined in the Student Handbook.

Academic Misconduct includes: **Cheating** – The unauthorized use of books, notes, aids, electronic sources; or assistance from another person with respect to examinations, course assignments, field service reports, class recitations; or the unauthorized possession of examination papers or course materials, whether originally authorized or not. **Plagiarism** – The use and appropriation of another's work without any indication of the source and the representation of such work as the student's own. Any student who fails to give credit for ideas, expressions or materials taken from another source, including internet sources, is responsible for plagiarism.

Learn more about the [academic integrity policies and procedures](#) as well as [student resources](#) that can help you prepare for a successful semester.

TEXTBOOK



Ecosystem Management: Adaptive, Community-Based Conservation

Gary Meffe, Larry Nielsen, Richard L. Knight, Dennis Schenborn

Island Press, 2nd ed., 2013

ISBN-10: 1610914880

ISBN-13: 9781610914888

This book is available for free online in a pdf at <http://base.dnsgb.com.ua/files/book/Agriculture/Management-in-Agriculture/Ecosystem-Management-Adaptive-Community-Based-Conservation.pdf> . You may also purchase it online at the [FIU Bookstore](#). COURSE DETAIL

COURSE COMMUNICATION

Communication in this course will take place via **Messages in Canvas or email**.

Users must log on to Canvas send messages, but they go to regular email. It is recommended that students check their email routinely to ensure up-to-date communication.

You can also email me directly at crockwel@fiu.edu.

Visit our [Writing Resources](#) webpage for more information on professional writing and technical communication skills.

DISCUSSION FORUMS

Keep in mind that your discussion forum postings will likely be seen by other members of the course. Care should be taken when determining what to post.

1. There are 5 discussion forums. The first discussion forum is where you introduce yourself to the class. The four other discussion forums are organized by groups, focus on subjects and ecosystem scenarios in the Ecosystem Management textbook, and each discussion forum will have a facilitator. You will be assigned to a group and to a facilitation date and this will be posted by the time of the mid-term exam. All four discussion forums are in the second half of the course.
2. Details on discussion forum expectation are found in the syllabus for the week for each discussion.
 - A first posting on the subject of discussion for that week should be 400-500 words.
 - A second posting can be 200-250 words, after reviewing the comments of other students.
3. The facilitator needs to make a first posting by Monday of the week she/he is facilitator, introducing the subject, posing some questions, and then monitor the discussion more closely, make sure the questions are being answered, and write up a report on the discussion (see weekly schedule for more orientation.) If the facilitator does not post by Wednesday of that week, their grade on the assignment will be reduced by half (from 5% of grade to 2.5%). Additional reductions may occur depending on quality and frequency of facilitation.

4. Open for one week on weeks specified in the syllabus.
5. Students will be evaluated on the basis of the degree to which they respond to the issues.
6. Grades on the discussion forum will be posted within one week after the forum takes place

ASSIGNMENTS

Assignment Expectations:

- There are two take-home exams, three short papers, four discussion forums, and one landscape exercise. For one of the discussions all students will be a facilitator.
- The take-home exams, a mid-term and a final, are short answer and essay. Mid-term exam will be available on Blackboard at 12am on Sunday October 1 and due by Saturday, October 7 at 11:59pm, submitted in assignment dropbox. Take Home Final (covering second half of class only) Available Sunday December 3 at 12am, due by Saturday, December 9 at 11:59 pm. Submitted in assignment dropbox.
- Three short papers (6 pages, double-spaced, plus bibliography). For details on short paper assignments, see Week 2, Week 3, and Week 5 in the syllabus. Submitted in assignment dropbox.
- There are four discussion forums. In four of the discussion forums you will be a participant, and expected to post two discussion during the week. In a fifth discussion forum, you will be the facilitator. This will require you to monitor the discussion closely, make sure everyone is participating, and that the questions or problem posed for the discussion are being answered. As facilitator, you will also be responsible for submitting, one week after the close of the discussion, a 2-3 page double spaced report on the discussion. This should be submitted in the Assignment dropbox. See Weeks 8, 10, 11, and 12 in the syllabus for detail on each discussion forum.
- Exercise in New England Landscape Futures Explorer <https://qubeshub.org/publications/1867/about?v=1> Open link and under "Contents" open link NELF-module_HF.docx(DOCX | 1 MB) Read text and follow instructions and answer questions 1-6.(the introduction to question 2 first asks you to explore a town in New England you know well. Since you are not in New England, skip that, and go directly to the part of the question that explores two towns in New Hampshire. Submit results in Canvas.
- A rubric is used in the evaluations of the assignments.
- Assignments will be graded within 10 days or less.
- Instructions for these assignments are included in the assignment on Canvas. The rubrics are attached to the assignments. To verify the originality of your work, certain assignments will use a Turnitin dropbox in Canvas. These and all assignments must be your original individual effort, and any sources used **must be cited**. Instructor will grade assignments within ten (10) days of the assignment deadline.

EXAMS

There are two exams, one mid-term and one final, as scheduled in the syllabus. Both exams are short answer and essay questions, and both are take-home. Expectations of detail are higher with take-home exams, so you will have to spend some time on these exams. I regularly get exams that look like something a student would have done if it was not a take-home exam, and they are desperately trying to recall a few scraps of information. That won't do for a take-home exam.

In order to mitigate any issues with your computer and online assessments, it is very important that you take the "Practice Quiz" from each computer you will be using to take your graded quizzes and exams. It is your

responsibility to make sure your computer meets the minimum [hardware requirements](#).

Assessments in this course are not compatible with mobile devices and should not be taken through a mobile phone or a

COURSE REQUIREMENTS	Number of Items	Points for Each	Total Points Available
Exams	2	100	200
Short Papers	3	50	150
Four Discussion Forum Participation	4	25	100
One Discussion Forum as Facilitator	1	25*	25
One Exercise on New England Landscapes	1	25	25
Total	11		500

*Grade reduced by half if facilitation does not occur
By Wednesday of that week

GRADING

tablet. If you need further assistance, please contact [FIU Online Support Services](#).

Letter	Range	Letter	Range	Letter	Range
A	95 - 100	B	83 - 86	C	70 - 76
A-	90 - 94	B-	80 - 82	D	60 - 69
B+	87 - 89	C+	77 - 79	F	< 59

COURSE CALENDAR

MODULE WEEKLY SCHEDULE

MODULE I (Weeks 1 and 2): Ecosystem Management and Climate Change

Human Organizations and Ecosystems: Ecosystem Management in the Era of Climate Change

Week 1 (August 21 - 25)

Learning Objectives:

- Introduction to basic concepts of ecosystem management, public policies towards ecosystem management and concerns about climate change and ecosystem management.

Part I: Introduction to Ecosystem Management

Read:

- Intro: Review the How to Get Started information in the Course Content
- In *Ecosystem Management* book: Introduction: New Approaches for a New Millennium" (pp. 1-6)
- Chapter 2: Getting a Grip on Ecosystem Management (pp. 57-76) in *Ecosystem Management* by Meffe et al.

Watch:

- **Watch video Lecture Week 1, Part I:** Introduction to the Course Requirements/Review of Syllabus
- **Video Lecture Week 1, Part II:** Introduction to Ecosystem Management

Part II: Ecosystem Management and Climate Change I

Read:

- "Ecosystem Management and a Changing Climate" Statement by Ecological Society of America (in Blackboard). (pdf in canvas)
- Seddon, N., Chausson, A., Berry, P., Girardin, C. A., Smith, A., & Turner, B. (2020). Understanding the value and limits of nature-based solutions to climate change and other global challenges. *Philosophical Transactions of the Royal Society B*, 375(1794), 20190120. (pdf in Canvas)

Watch:

- **Video Lecture Week I, Part III:** Implications of Climate Change for Ecosystem Management.
- **Video Lecture Week 1: Part IV:** Nature-based Solutions to Climate Change

Tasks:

- **Discussion Forum:** Introduce yourself to the instructor and other students. Sunday, September 3 at 11:59pm, submitted in Canvas to the appropriate Discussion Forum.

Climate Change and Ecosystem Management and History of Public Land Use in the US.

Week 2 (August 28 - September 2)

Learning Objectives:

- Expand understanding of current understanding about global warming and its impact on ecosystems and to learn
- Begin to learn about the history of public land management in the United States as the foundation for contemporary debates about ecosystem management.

Part I: Ecosystem Management and Climate Change II

Read:

- Lipton, D., M.A. Rubenstein, S.R. Weiskopf, S. Carter, J. Peterson, L. Crozier, M. Fogarty, S. Gaichas, K.J.W. Hyde, T.L. Morelli, J. Morisette, H. Moustahfid, R. Muñoz, R. Poudel, M.D. Staudinger, C. Stock, L. Thompson, R. Waples, and J.F. Weltzin, 2018: *Ecosystems, Ecosystem Services, and Biodiversity. In Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 268–321. <https://nca2018.globalchange.gov/chapter/7/>
- Past and Future Global Transformation of Terrestrial Ecosystems under Climate Change by Nolan et al. . 361, 920-923 31 August 2018 (pdf in Weekly Activities)

Watch:

- Week 2, Ppt. Lecture Number 1: Climate Change and Ecosystem Management.

Module 2 (Weeks 2-5): The History of Public Land Management

Part II: The History of Conservation and Public Land Management

Read:

- [The Yosemite](#) by John Muir; Chapter 1 “The Approach to the Valley” Chapter 16 “Hetch Hetchy Valley”;

Watch:

- **Week 2, Ppt Lecture Number 2:** History of Public Land Use in the US and the Rise of National Forests and Parks.

Task:

- Short Paper No. 1 (six pages double-spaced). Chapter 7 of the Fourth Climate Assessment has four Key Messages. Briefly summarize each of the four Key Messages and discuss your reaction to the messages. Due Sunday September 10 at 11:59 pm, submitted in Canvas.

The History of National Parks

Week 3 (September 5-9)

Learning Objectives:

- Understand struggles over the definition of what a national park should be and what is allowed in national parks. Learn about the first major environmental struggle of the 20th century over the Hetch Hetchy Dam in Yellowstone National Park.

Read:

- "The Contested Landscape of Early Yellowstone" by L. Smith In Canvas (pdf)
- "The Hetch Hetchy Controversy", Phase II: The 1913 Senate Debate in Canvas (pdf)

Watch:

- **The Last Refuge by Ken Burns** from The National Parks: America's Best Idea. (No PowerPoint this week)

Assignment: Short paper No. 2 (six pages double-spaced): After reading the two articles and watching The Last Refuge, briefly summarize what happened in Yellowstone NP in 1883 and with the Hetch Hetchy Dam controversy. How were the two outcomes different? What does this tell us about the status of protected areas in the US in the late 19th and early 20th century. Why do you think the outcomes were different? Submitted, Sunday, September 17, 11:59 pm

The Rise of Wilderness Areas and The Spotted Owl Controversy

Week 4 (September 11 - 16)

Learning Objective:

- Analyze the history of why wilderness areas emerged as a new federal land designation and understand how the controversy over the spotted owl in the northwest led to the birth of ecosystem management as the principal federal land management approach.

Part I: The Wilderness Act

Read:

- [Howard Zahniser and the Wilderness Act of 1964](#). pp. 1-24 (up to "Wild Areas East") In A Wilderness-Forever Future: A Short History of The National Wilderness Preservation System. Douglas W. Scott. In Course Content
- **Week 4- Part I-Ppt Lecture 1-Wilderness Act**
- **Week 4-Part I-Lecture 2-On the Rise of Environmental NGOs**

Part II: The Spotted Owl Controversy: Part I

Read:

- Marcot, Bruce G.; Thomas, Jack Ward. 1997. Of spotted owls, old growth, and new policies: a history since the Interagency Scientific Committee report. Gen. Tech. Rep. PNW-GTR-408. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 34 p. Pp. 1-21 (pdf in Canvas)

Watch:

- **Week 4- Ppt Lecture 2** (on spotted owl controversy)

The God Squad and Its role in the Spotted Owl Controversy

Week 5 (September 18 – September 23)

Learning Objective:

- Understand and analyze the spotted owl controversy as a watershed moment in the history of public land management and ecosystem management in the US.

Part I: The God Squad

Watch:

- Video: The God Squad: The Spotted Owl Controversy.

Part II: The Spotted Owl Controversy II

Read:

- Marcot, Bruce G.; Thomas, Jack Ward. 1997. Of spotted owls, old growth, and new policies: a history since the Interagency Scientific Committee report. Gen. Tech. Rep. PNW-GTR-408. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station.34 Table 1—A chronology of northern spotted owl management since convening of the Interagency Scientific Committee (ISC) on the Northern Spotted Owl in 1989. **Pp. 22-34** (See link to PDF in Week 4)

Watch

- **Week 5 Ppt 1**-More on spotted owl and the God Squad

Tasks:

- Short paper No. 3: Six-page double-spaced paper summarizing the events and the most important consequences of the spotted owl controversy using readings from class and at least two additional citations from Google Scholar (academic journals or technical reports). Submitted by Sunday, October 1 at 11:59 pm in Canvas.

Wolves and Grizzly Bears in the Greater Yellowstone Ecosystem and Public Land Management Now

Week 6 (September 25-September 30)

Learning Objective:

- Understand the challenges of large-scale ecological restoration in Yellowstone National Park and the controversial efforts at ecosystem management for large carnivores. Evaluate a new and disturbing watershed in public lands management: The Trump Administration

Part I: Large Carnivore Conservation in the Greater Yellowstone Ecosystem

Read:

- *Wolf reintroduction, predation risk, and cottonwood recovery in Yellowstone National Park* (pdf in Weekly Activities)
- <https://www.nationalgeographic.com/animals/2019/03/gray-wolves-endangered-species-united-states/> Is the Grey Wolf Still Endangered? Depends Who You Ask
- <https://www.npr.org/2019/02/02/688553708/as-grizzlies-come-back-frustration-builds-over-continued-protections> As Grizzlies Come Back Frustration Builds Over Continued Protection

Watch:

- [Return of the Wolves: Next Chapter](#)
- Liz Hadly Tracks the Impacts of Climate Change in Yellowstone.
<https://www.youtube.com/watch?v=z6JVMhKsHDo>

- **Powerpoint Lecture Week No. 6, ppt 1:** Wolves and Grizzly Bears in the Greater Yellowstone Ecosystem

Part II: From Trump to Biden in Public Lands Administration

Read:

- Chapter 1 “Evolution of the Interior Department” and Chapter 3 “Only “Nature” Concern is Trophy Hunting” from *Industry First: The Attack on Conservation by Trump’s Interior Department* by Bruce Rocheleau (self-published) (pdf)
- <https://insideclimatenews.org/news/07052021/america-the-beautiful-plan-debuts-the-biden-administrations-approach-to-conserving-the-environment-and-habitat/> ‘America the Beautiful’ Plan Debuts the Biden Administration’s Approach to Conserving the Environment and Habitat

Watch:

- **Powerpoint Lecture Week No, 6, ppt 2:** From Trump to Biden in the Administration of Public Lands

Tasks:

- Scenario Groups posted on Canvas

Mid-Term Exam

Week 7 (October 2-7)

Learning Objective:

- Evaluate learning so far through mid-term exam

Tasks:

- **Mid-Term Exam** (short answer and essay). Exam will be **available on Canvas at 12am on Sunday, October 1 and due by Saturday, October 7 at 11:59pm**, uploaded to Canvas.

Module 4 (Weeks 8-13): Differentiate Concepts and Methods in Ecosystem Management

The Ecosystem Management Scenarios and Uncertainty and Complexity in Ecosystem Management

Week 8 (October 9 - 14)

Learning Objective:

- Begin to solve actual ecosystem management problems in composite scenarios and understand the roles of uncertainty and complexity in ecosystem management.

Part I: The Landscape Scenarios

Read:

- The Ecosystem Management Scenarios. The ecosystem scenario assigned to you group from *Ecosystem Management* from Chapter I: The Landscape Scenarios.

Watch:

- **Powerpoint Lecture Week 8:** Part I on landscape scenarios

Part II: Uncertainty and Complexity in Management

Read:

- Chapter 3 in *Ecosystem Management: Incorporating Uncertainty and Complexity into Management*, plus pp. 89-94 by Yaffee.
- Schick, A., Hobson, P. R., & Ibsch, P. L. (2017). Conservation and sustainable development in a VUCA world: the need for a systemic and ecosystem-based approach. *Ecosystem Health and Sustainability*, 3(4), e01267. (pdf)

Watch:

- **Powerpoint Lecture Week 8:** Part II on uncertainty, complexity and climate change

Participate:

- **Discussion Forum #1** - on uncertainty and complexity in your scenario. Discuss part of Exercise 3.4 on p. 87. Your group should consider point No. 2-complexities and uncertainties specifically relevant to small populations of concern. First identify the small populations of concern in your scenario. Develop a list of four or five possible problems and issues that could be faced in the coming years as a result of the complexities in and uncertainties of your scenario. Can advance consideration and planning minimize or eliminate the problem? How?

Each participant in the group is expected to leave two postings. The first posting should be 300-400 words. The second posting after reviewing the postings of others, should be some 200-250 words. Ideally, you should post one paragraph earlier in the week and then come back later in the week and review what other people have said and make a second posting, although I recognize this timing may not always be possible. The facilitator needs to introduce the discussion by Monday of that week (Wednesday midnight at the latest), post comments also, monitor the discussion to make sure all points are being considered, ask questions of participants if necessary.

The forum will be open at **12am Sunday, October 8** and **close on Saturday, October 14 at 11:59 pm**. The assigned facilitator/secretary will then write up a 2–3-page summary of the discussion that will be due by **Sunday, October 22 at 11:59 pm**. All discussion forums will follow this same format.

Adaptive Management and Climate Change and the National Park Service

Week 9 (October 16-20)

Learning Objective:

- Understand what adaptive management is in theory, and how it can be applied in practice, and frequently must be modified in real-world situations. Evaluate how adaptive management is being implemented to deal with climate change in US national parks.

Part I: Adaptive Management

Read:

- Chapter 4: Adaptive Management in *Ecosystem Management*.

Watch:

- Powerpoint Lecture No. 1, Week 9, on Adaptive Management

Part II: Adaptive Management, Climate Change, and the National Park Service

Read:

- <https://www.nytimes.com/2021/05/18/climate/national-parks-climate-change.html> What to Save? Climate Change Forces Brutal Choices at National Parks.
- *Resist-Accept-Direct (RAD)—A Framework for the 21st-century Natural Resource Manager* (pdf)
- Powerpoint Lecture No. 2, Week 9: Adaptive Management, Climate Change, and the National Park Service

Populations and communities at the landscape level

Week 10 (October 23 – October 28)

Learning Objective: Understand basic ecology of populations and communities and how that can be applied to management issues in protected areas. Integrate

Part I: Populations and communities at the landscape level

Read:

- Chapter 7 in *Ecosystem Management* (p. 145-162)

Watch: Ppt Lectures Week No. 10, Ppt 1-Species and Communities in Landscapes

Part II: Landscape Level Conservation

- Chapter 8 in *Ecosystem Management: Landscape-Level Conservation*.
- Chapter 2, pp. 15-22 Scientific And Conservation Merits Of Landscape-Scale Conservation And The Landscape Conservation Cooperatives In National Academies of Sciences, Engineering, and Medicine 2016. *A Review of the Landscape Conservation Cooperatives*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/21829>.

Watch: Week 10-Ppt 2-Landscape-level Conservation

Participate:

- **Discussion Forum #2** -discuss Exercise 8.3 on p. 176 of *Ecosystem Management*. See instructions for Discussion Forum No. 1, this follows the same format. The forum will be open on **Sunday October 22 at 12am** and close on **Saturday, October 28 at 11:59 pm**. The assigned facilitator/secretary will then write up a 2–3-page summary of the discussion that will be due by **Sunday, November 5 at 11:59 pm**.

Managing Biodiversity in Large Landscapes and Bark Beetle Infestations in the US West

Week 11 (October 30-November 4)

Learning Objective: Evaluate how to effectively manage biodiversity across large landscapes and confronting the problem of bark beetle infestations in the western USA

Part I: Managing biodiversity in large landscapes

Read:

- Chapter 9 in *Ecosystem Management*.
- pp. 211-216 in *Ecosystem Management* (Malpai);

Watch:

- Video lecture Week 11, ppt No. 1-Managing Biodiversity in Large Landscapes

Part II: Climate Change and Bark Beetle Infestations in the Rocky Mountain West

Read:

- [On pine bark beetles in rocky mountain national park](#)
- Morris, Jesse L., Stuart Cottrell, Christopher J. Fettig, R. Justin DeRose, Katherine M. Mattor, Vachel A. Carter, Jennifer Clear et al. "Bark beetles as agents of change in social–ecological systems." *Frontiers in Ecology and the Environment* 16, no. S1 (2018): S34-S43. (pdf)

Watch:

- Video lecture, Week 11, ppt No. 2-Drought, Wildfires and Forest Pests in Forests of the US West

Participate:

- **Discussion Forum #3** - discuss Exercise 9.6 on p. 206. See Discussion Forum No. 1 for further instructions. As usual, the assigned facilitator needs to monitor the discussion and make sure all points are being discussed and contribute themselves. The forum will be open on **Sunday, October 29 at 12am** and close on **Saturday, November 4 at 11:59 pm**. The assigned facilitator/secretary will then write up a 2-3 page summary of the discussion that will be due by **Sunday, November 12 at 11:59 pm**.

Working in Human Communities and Project Evaluation

Week 12 (November 6-10)

Part I: Working in Human Communities/Stakeholder Involvement

Read:

- Chapter 10 in Ecosystem Management plus article by Brunson (240-244)

Watch:

- Week 12 ppt 1-Working in Human Communities

Part II: Project Evaluation

Read:

- Chapter 12 Evaluation in Ecosystem Management

Watch:

- Week 13, ppt 2 Evaluation

Participate:

- **Discussion Forum #4** - discuss Exercise 10.4 on p. 233. See Discussion Forum #1 for instructions. The assigned facilitator needs to introduce the subject by Monday of that week, pose some questions, and monitor the discussion and make sure all points are being discussed, and contribute themselves. The forum will be open **Sunday, November 5** at 12am and close on **Saturday, November 11** at 11:59 pm. The assigned facilitator/secretary will then write up a 2–3-page summary of the discussion that will be due by **Sunday, November 19** at 11:59 pm.

Module 5 (Week 13-14): Integrating Conservation on Indigenous and Private Lands

Strategic Approaches to Ecosystem Management and Integrating Conservation on Indigenous and Private Lands

Week 13 (November 13– November 18)

Part I: Strategic Approaches to Ecosystem Management

Read:

- Chapter 11 in *Ecosystem Management* plus article by Knight (263-269)

Watch:

- Powerpoint for Week 13-Strategic Approaches to Ecosystem Management.

Part II: Buffalo Reintroduction and Conservation on Indigenous Lands in the US

Read:

- <https://medium.com/wild-without-end/a-tour-of-tribal-buffalo-programs-in-partnership-with-defenders-1b0632ded4df> A tour of tribal buffalo programs in partnership with Defenders

- <https://e360.yale.edu/features/how-returning-lands-to-native-tribes-is-helping-protect-nature> How Returning Lands to Native Tribes Is Helping Protect Nature

Watch

- https://www.youtube.com/watch?v=JURnsTOso_0&list=PLYSMxORqGIANUavwtLkCDh4XiqfHgWTMI&index=14"The Buffalo People" (2014)

Video Lecture, Week 13, Part II: Buffalo Reintroduction and Conservation on Indigenous Lands in the US

The Recovery of New England Forests and Wildlife on Private Lands: Land Trusts and the Recovery of the New England and Massachusetts Landscape.

Week 14 (November 21-28)

Part I: Land Trusts, the Recovery of Forests and Wildlife in New England and scenarios for the future of New England Landscape

Read:

- What is a Land Trust? (pdf) on Canvas
- Review [website of Franklin Land Trust](#) Under "News and Views" go to "Success Stories" and read first two success stories.
- <https://www3.bostonglobe.com/metro/2013/08/31/new-england-sees-return-forests-and-wildlife/IJRxacvGcHeQDmtZt09WvN/story.html?arc404=true> New England Sees Return of Forests
- Voices from the Land: Listening to New Englanders Views of the Future <https://view.publitas.com/p222-2239/voices-from-the-land/page/1>

Watch:

Ppt 1 Week 14: Land Trusts and the Recovery of New England Forests and Wildlife on Private Lands and Scenarios for the Future of New England Forests

Task: Do exercise New England Landscape Futures Explorer <https://qubeshub.org/publications/1867/about?v=1> Open link and under "Contents" open link NELF-module_HF.docx(DOCX | 1 MB) Read text and follow instructions and answer questions 1-6.(the introduction to question 2 first asks you to explore a town in New England you know well. Since you are not in New England, skip that, and go directly to the part of the question that explores two towns in New Hampshire. Submit results in Canvas. **Due Sunday November 26th, 11:59 pm**

Module 6 (Week 15): Thresholds, Climate Change, and Ecosystems

Thresholds, Climate Change, Ecosystems, and Natural Climate Solutions for the US

Week 15: November 27-December 2)

Part I: Thresholds, Climate Change and Ecosystems

Read:

- Thresholds and Climate Change in Ecosystems. Pp 5-14, 43-47, and 25-29.
<https://downloads.globalchange.gov/sap/sap4-2/sap4-2-final-report-all.pdf>

Watch:

- [“Climate Change Puts Ecosystems on the Run”](#)
- [“Ecosystems on the Edge: Forests and Climate Change”](#)
- Ppt Lecture Week 15, Part I: Thresholds, Climate Change and Ecosystems

Part II: Natural Climate Solutions in the United States

Read: Natural Climate Solutions in the United States

- <https://nature4climate.org/news/natural-climate-solutions-in-action-across-the-united-states/>
- Natural Climate Solutions for the United States, by Joseph E. Fargione, Steven Bassett, et al. Science Advances 14 Nov 2018 : eaat1869 (pdf in Canvas)
<https://advances.sciencemag.org/content/4/11/eaat1869/tab-pdf>

Watch:

- Ppt Lecture Week 15, Part II: Natural Climate Solutions for the US

Take Home Final

Week 16 (December 4-9)

Take Home Final. Short answer and essay (covering second half of class only)–**AVAILABLE**
Sunday, DECEMBER 3rd AT 12AM – Saturday DECEMBER 9TH 11:59PM