“The real future of environmentalism is in rehabilitation and restoration. Environmentalists have told the story of the Garden of Eden and the fall from grace over and over again. But we haven’t yet told the story of redemption. Now we need to tell that story.” • Steven Pyne

Course Description

With the increasing ability to use science and technology to manage and restore damaged ecosystems comes a host of ethical and philosophical issues. A central theme in this class is integrating the restoration of ecosystems with the restoration of human communities to create sustainable bioregions and landscapes. We will be looking at developing a “restoration ethic” as a philosophical and moral grounding for this work, with the premise that restoring the earth requires restoring ourselves to the earth in the process. Yet, just because increasingly we can restore ecosystems does not necessarily mean that we should do so in all contexts. Hence the first section of the course reviews central concepts and practices in ecological restoration while looking at restoration projects in the Upper Clark Fork River watershed and western Montana. As a class we will examine community dimensions of the restoration process of the Upper Clark Fork watershed in the Deer Lodge Valley under way as part of the Superfund clean-up of the Clark Fork River. The second section of the course examines the ethical dimensions of several current case studies concerning restoration in wilderness to explore the question of whether active restoration in wilderness is ever ethically merited. The final section of the class is an extended philosophical exploration of what counts as “good” restoration, and why. Within this discussion we will look at emerging issues around restoration in the context of novel ecosystems and climate change. Over the course of the semester students will have the opportunity to develop a framework for what counts as good restoration in our changing, dynamic 21st century context.

Objectives & Learning Outcomes:

Upon completion of this course, students should be able to:

1. Analyze, critically evaluate, and correctly apply basic ethical concepts and forms of moral reasoning from the field of environmental ethics to contemporary issues and practices in the field of ecological restoration.
2. Think critically about the moral, social and environmental effects of the practices of ecological restoration in diverse social and ecological contexts.
3. Apply moral analysis to a contemporary case study in restoration in the Upper Clark Fork River watershed.
4. Incorporate information literacy into the moral analysis of restoration issues and writing assignments by finding, evaluating, analyzing, and synthesizing information from diverse sources.
5. Write more clearly and effectively about complex ethical issues related to ecological restoration and be able to communicate these issues and multiple perspectives fairly and clearly to diverse audiences.

Required Texts

*Nature By Design.*
Readings on Moodle

**ZOOM LINK FOR MW CLASSES:** [https://umontana.zoom.us/j/94216584659](https://umontana.zoom.us/j/94216584659)

Course Schedule

* = Meet outdoors, weather permitting

<table>
<thead>
<tr>
<th>Date</th>
<th>Class Topic and Assigned Readings</th>
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<tbody>
<tr>
<td></td>
<td>Introduction: Key Concepts in Ecological Restoration and Ethics</td>
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<tr>
<td>8/19 W 1</td>
<td>Introduction to the course</td>
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<td>Moodle 1 Ch 1: “Overview: Basic Terms and Concepts” Clewell &amp; Aronson,</td>
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<td>Moodle 2 Ch 2: “Values and Ecological Restoration” Clewell &amp; Aronson, Moodle 3</td>
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<td><strong>I. RESTORATION IN THE UPPER CLARK FORK WATERSHED</strong></td>
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<td>8/26 W 3</td>
<td>Restoring the Upper Clark Fork: The Work of the Clark Fork Coalition and the Watershed Restoration Coalition</td>
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<td>Read: Clarkfork - Halfway to healing at the coalitions cattle ranch</td>
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<td>Clarkfork - Our Work, What we do to Restore the upper Clark Fork</td>
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<td>Clark Fork Coalition: Transformation: Restoration on the Dry Cottonwood Creek Ranch 2017</td>
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Recommended Scan: https://dojmt.gov/lands/upper-clark-for...
Beth Hahn, Peter Landres, Eric Biber, Dan Spencer “Asking the Right Questions: Integrating Law, Science, and Ethics to Support Decisions about Ecological Intervention In Wilderness” Moodle 14
Michael Soulé: Should Wilderness Be Managed? Moodle 15

Recommended: John Hendee et al: “Wilderness Management: Philosophical Directions” Moodle 16

Sign up for Restoration in Wilderness Case Studies

*9/16 W 8  Ethics and the Environment: An Overview

Andrew Light and Holmes Rolston III: “Introduction: Ethics and Environmental Ethics” Moodle 17
Clare Palmer: “An Overview of Environmental Ethics” Moodle 18

*9/21 M 9  Overview of Ethical Issues in Ecological Restoration

Dan Spencer: “Ethics and Restoration: A Fascinating and Vexing Time” Moodle 19
Marion Hourdequin: “Ecological Restoration” Moodle 20
Eric Higgs: “What is Good Ecological Restoration?” Moodle 21
Spectrum Exercises on Ecological Restoration (if possible)

9/23 W 10 Restoration and Wilderness: Case Study I in Managing for Wildness and Naturalness in Wilderness: Fisheries restoration in the Stephen Mather Wilderness, North Cascades National Park, WA

Readings: On Moodle
(Paper due: 9/30)

9/28 M 11 Restoration and Wilderness: Case Study II in Managing for Wildness and Naturalness in Wilderness: Whitebark Pine Restoration in Wilderness

Readings: On Moodle
(Paper due: 10/5)

9/30 W 12 Restoration and Wilderness: Case Study III in Managing for Wildness and Naturalness in Wilderness: Herbicide application on non-native plants in Saguaro National Park, AZ

Readings: On Moodle
(Paper due: 10/7)

Essay on the Ethics of Restoration in Wilderness due in class for 9/23 Facilitators

III. Ethical Issues & Debates in Ecological Restoration

*10/5 M 13 Early Critics: Restoration as Faking Nature?

Robert Elliot: “Faking Nature” Moodle 22
Andrew Light: “Ecological Restoration and the Culture of Nature: A Pragmatic Perspective” Moodle 25

*10/7 W 14 Early Debates on Restoration vs. Preservation

Read articles in this order:
William Jordan: “Sunflower Forest”: Ecological Restoration as the Basis for a New Environmental Paradigm” Moodle 26
G. Stanley Kane: “Restoration or Preservation? Reflections on a Clash of Environmental Philosophies” Moodle 27
William Jordan: “Weeding Key Biscayne” Moodle 28

*10/12 M 15 What is Good Restoration? Introduction to Higgs’ Nature by Design Introduction to Nature By Design (pp. 1-14) Higgs, NBD Ch.1: A Tale of Two Wildernesses: Jasper National Park, Higgs, NBD Meet Disney World Ch. 2: Boundary Conditions (skim 59-75) Higgs, NBD

*10/14 W 16 Defining Ecological Restoration and The Question of History in Restoration Ch. 3: What is Ecological Restoration? Higgs, NBD Ch. 4: Historicity and Reference in Ecological Restoration Higgs, NBD

*10/19 M 17 The Risks of Commodification & Professionalization Ch. 5: Denaturing Restoration Higgs, NBD Ch. 6: Focal Restoration & Ch. 7: Nature by Design Higgs, NBD


Critical Response essay on “Ethical Issues and Debates in Ecological Restoration” due in class

10/26 M 19 Holistic and Reciprocal Restoration I: Indigenous Ways of Knowing


10/28 W 20 Holistic and Reciprocal Restoration II: Restoration & Reciprocity


11/2 M 21 Restoration, Politics & Justice II: Urban Restoration & Justice
Colette Palamar: “From the Ground up: Why Urban Ecological Restoration Needs Environmental Justice” Moodle 35
Michelle Garvey: “Novel Ecosystems, Familiar Injustices: The Promise of Justice-Oriented Ecological Restoration” Moodle 36
Colette Palamar: “Restorashyn: Ecofeminist Restoration” Moodle 37

Due in class: Higgs Critical Response Essay

IV. Restoration in an Age of Novel Ecosystems & Climate Change

11/4 W 22 Restoration in an Age of Climate Change: I

Allen Thompson and Jeremy Bendik-Keymer: Introduction: Adapting Humanity Moodle 38
Ned Hettinger: Nature Restoration as a Paradigm for the Human Relationship with Nature Moodle 39

Class Facilitators:

11/9 M 23 Restoration in an Age of Climate Change: II

William Throop: Environmental Virtues and the Aims of Restoration Moodle 40
Ronald Sandler: Global Warming and Virtues of Ecological Restoration Moodle 41

Class Facilitators:

11/11 W VETERANS DAY – NO CLASSES

11/16 M 24 Restoration in an Age of Climate Change: III

Eric Higgs: History, Novelty, and Virtue in Ecological Restoration Moodle 42
Andrew Light: The Death of Restoration? Moodle 43

Class Facilitators:

11/18 W 25 Wrap up & Discussion: What Makes an Ethic of Good Restoration?

Final Exam Period: Friday November 20, 2020, 1:10-3:10 pm
Due: Final Paper Project

UM COVID-19 Policies for Classes & Classrooms:
- Mask use is required within the classroom
- Each student is provided with a cleaning kit. The expectation is that students will clean their personal work space when they arrive for class, and before they leave the classroom
- Classrooms may have one-way entrances / exits to minimize crowding
• Students are discouraged from congregating outside the classroom before and after class
• Specific seating arrangements will be used to ensure social distancing and support contact tracing efforts
• Class attendance will be recorded to support contact tracing efforts
• Drinking liquids and eating food is discouraged within the classroom (which requires mask removal)
• If the class is being recorded, students must be notified of the recording
• Stay home if you feel sick and/or if exhibiting COVID-19 symptoms
• If the student is sick or displaying symptoms, contact the Curry Health Center at (406) 243-4330
• UM Coronavirus Website: UMT Corona Virus information
• UM COVID-19 Fall 2020 website: UMT Fall 2020 Corona virus
• Strongly encourage students to remain vigilant outside the classroom in mitigating the spread of COVID-19

Zoom & Moodle:
Given the ongoing COVID-19 pandemic, it is likely that at some point in the semester we may need to go to teaching remotely via Zoom exclusively. Classes will be taught in-person as long as possible, but also will be broadcast and recorded using Zoom at this link: Zoom Classroom Link. Each recorded class session will be posted to Moodle, so if you have to miss a class, you can watch it later.

Office Hours:
Due to the COVID-19 pandemic and the need for social distancing, I will hold my office hours remotely via Zoom this semester. You may set up a time with me ahead of time for my office hours, or “drop by” and wait in the waiting room until I am able to let you in. That will ensure confidentiality for each person using office hours. The Zoom link for the MWF 11:10 am-12:00 pm office hour is: Zoom Link MWF Office Hours. The Zoom link for the Thur 2:00-4:00 pm office hour is: Zoom Link TR Office Hours. If those times don’t work for you, I am also available by appointment. Email me at Daniel.spencer@umontana.edu for an appointment.

WEIGHT AND TIMELINE OF ASSIGNMENTS
The total number of points available for class assignments is 500 points.
In order of due dates, the assignments are: points % due date
1. Wilderness Restoration Case Study Facilitation 25 5% Sept 23, 28 or 30
2. Wilderness Restoration Case Study Essay 100 20% Sept 30, Oct 5 or 7
3. Early Debates Critical Response Essay 100 20% Oct 21
4. Higgs Critical Response Essay 125 25% Nov 2
5. Climate Change & Restoration Class Facilitation 25 5% Nov 9 or 16
6. Final Paper Project 125 25% Nov 20
1. **Ethical Analysis of a Case Study in Restoration in Wilderness: Class Facilitation and Reflective Essay.** Each class member will have the opportunity to work in a small group to facilitate class discussion on a case study involving restoration in wilderness, using a framework by Peter Landres of the Aldo Leopold Wilderness Research Institute. The case studies and instructions for the class facilitation will be given in class. The dates for the case studies are Wednesday, September 23, Monday, September 28, and Wednesday, September 30. Each student will then write up a 6-8 page reflective essay on her/his case, reflecting on and analyzing the ethical dimensions of the case, and making a recommendation for how best to resolve it. Specific instructions will be given in class. **Essay due in class on Wednesday, September 30, Monday, October 5, or Wednesday, October 7.**

2. **Critical Response Essay:** Each student will have the opportunity to write a critical response essay to one set of article(s) assigned for Section III of the class: “Ethical Issues and Debates in Ecological Restoration.” Dan will organize a class discussion of the texts. You will then choose one set of essays from class on either October 5 (Elliott, Katz, Light) or October 7 (Jordan and Kane) and write a critical response paper to the articles discussed in that class. Your paper should contain (a) a clear summary exposition of the main points of the readings (3-4 pages) as well as (b) your thoughtful assessment of and response to the arguments and ideas presented in the text (3-4 pages). With which author(s) do you agree most, and why? **(Total Length: 7-8 pages, double-spaced), Due in class Wednesday, October 21.**

3. **Critical Response Essay Eric Higgs’ *Nature By Design*: An 8-10 page critical response essay to the primary course text, Eric Higgs’ book, *Nature by Design: People, Natural Process, and Ecological Restoration.* The first part of this essay should be a thoughtful exposition (i.e. summary and explanation) of the overall argument and main themes from the book with 1-2 paragraphs dedicated to each chapter (Note: this should be a well-written, flowing essay, not a compilation of chapter summaries. Develop Higgs’s argument to reflect how he does this in the book). The second section should be your response to the issues Higgs raises and argues about what counts as *good* restoration, and why: where do you agree with Higgs, disagree, and why? Does Higgs provide a helpful framework for assessing the ethical dimensions of ecological restoration? Where is his framework most helpful, least helpful, and where could it or should it be developed further or differently? **Due in class, Monday, November 2.**

**NOTE:** Your audience for the papers in 1, 2, & 3 is someone who has not read these texts. This means your exposition section must be clear and sufficiently well-developed so that the position and arguments of the author(s) would be clear to someone who has not read them, and would satisfy the author of a fair representation of his or her arguments.

4. **Class Facilitation of readings from *Ethical Adaptation to Climate Change*: These two classes will each focus on a different section of the text, *Ethical Adaptation to Climate Change.* Student teams will facilitate each class. In preparing for class, assume that everyone has read the chapters carefully, so you do not need to present on the content of the chapters. Rather, briefly summarize some of the central issues, and then facilitate a critical conversation on the key themes and concepts, and what contributions, if any, they make to the discussion of what counts as *good* ecological restoration and why. Plan to have a structured facilitation for the first 20-25 minutes, and then open discussion of the readings from there.

5. **Final Project Essay:**

Throughout the semester, we have considered the philosophical question, “What is *good* ecological restoration?” We have looked at this question through several lenses, especially through Eric Higgs’s text, *Nature By Design.* For this essay, use Higgs’s text as a departure point to investigate and analyze in greater depth an issue you believe is central to the question of *good* ecological restoration, but that Higgs either does not address, or addresses inadequately. Your paper should *not* be a rehashing of the issues in Higgs or your response paper to Higgs, but rather a new and more in-depth examination of *other* dimensions you
believe need to be factored into the question of what counts for good ecological restoration, and why. Draw on other authors (including those we read in class or others you bring in), to help develop your analysis. What I am looking for in this essay is your ability to take the conversations and readings we have engaged this semester about good ecological restoration as a starting point that you move beyond and address a new or additional issue(s) in greater depth. Your final essay should be 8-10 pages, double-spaced. Please clear your topic with me prior to writing it.

Bring your completed essay to our classroom (if possible) during the final exam period, Friday, November 20, 1:10—3:10 pm, where each of you will have the opportunity to share a synopsis of what you have written (if we are meeting remotely at this point, we’ll do this discussion via Zoom).

CLASS POLICIES:

Note Re Papers: Papers are due in class on or before the date listed in the syllabus. Unless you have made a prior agreement with me, I will take off one grade level (A becomes A-) for each class day an assignment is late. Papers with an undue number of errors of punctuation, spelling, or grammar will be marked down and may be returned ungraded for correction. Written work will be evaluated in terms of your depth of critical analysis, thoughtfulness of reflection, clarity of writing, and ability to address issues raised in the text and in class on the topic at hand. Grades given reflect the following criteria of judgment:

F: Failure to meet minimum requirements
D: Unsatisfactory, but some effort to meet minimum requirements
C: Satisfactory; meets minimum requirements of assignment but not much more
B: Good to Very Good: thoughtful reflection, good analysis, clear writing style
A: Excellent depth of critical analysis, thoughtfulness of reflection, and writing style; demonstrate creativity and mature analytical skills in going beyond the primary requirements of the assignment

Attendance: Regular attendance and participation in the class is expected. More than three (3) absences will result in losing any benefit of the doubt on your final grade. More than four (4) absences will result in one grade reduction. More than five (5) absences will result in a failing course grade. Late arrivals in class will count as an absence. (Note: If you have a valid reason for missing several classes, such as illness or other conflicting commitments, you still must speak with the instructor).

Academic Dishonesty and Plagiarism: All work submitted is expected to be the student's own. Any acts of plagiarism or academic dishonesty will result in automatic failure of the course, and may result in further academic punishment. If you have any doubts about definitions of plagiarism or academic dishonesty, please review the relevant sections of the University Catalog.

Students with Disabilities: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommason Center 154 or 406.243.2243. I will work with you and Disability Services to provide an appropriate modification. I am in the process of converting all of the materials in the class to an accessible format. If you find any course materials are not in an accessible format for you, please let me know and I will work with DSS to change the format.

Important University Policies, Dates and Deadlines
For Important Dates and University policies, check Cyberbear at UMT Cyberbear
Incomplete Grade: Please see the criteria that must be met for an Incomplete in the University Catalog. No exceptions will be made for these criteria.
Readings on Moodle, ENST 570_01, Fall 2020

Ethical Issues in Ecological Restoration


8. EPA: “Integrating the “3 Rs”: Remediation, Restoration and Redevelopment.”


