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ENST 570.01: Ethics and Restoration

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ETHICAL ISSUES IN ECOLOGICAL RESTORATION

ENST 570_01, Fall 2021

MW 4:00—5:20 pm; DHC 120

CRN: 72246

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“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 introducing class group projects built around collaboration with the Clark Fork Coalition and other restorationists carrying out 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

Eric Higgs, *Nature By Design*. (MIT Press: 2003; ISBN: 0-262-58226-0)

Robin Wall Kimmerer, *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants*. (Milkweed editions, 2013; ISBN: 978571313560)

Readings on Moodle

COURSE SCHEDULE

Date	Class Topic and Assigned Readings	Reading Location
Introduction: Key Concepts in Ecological Restoration and Ethics		
8/30 M 1	Introduction to the course	
9/1 W 2	What is Ecological Restoration?	
	International Principles and Standards for the Practice of Ecological Restoration, 2 nd edition. Sections 1 & 2	Moodle 1
	Ch 1: "Overview: Basic Terms and Concepts"	Clewell & Aronson, Moodle 2
	Ch 2: "Values and Ecological Restoration"	Clewell & Aronson, Moodle 3
9/6 M	LABOR DAY: NO CLASS	
9/8 W 3	Restoration in Context: The UN Decade on Ecological Restoration	
	Readings: TBA	
	<i>Speaker: Bethanie Walder, Executive Director, Society for Ecological Restoration</i>	
II. ETHICAL ISSUES AROUND RESTORATION IN WILDERNESS		
9/13 M 4	Ethical Dilemmas in Restoration in Wilderness	
	Peter Landres et al: "Naturalness and Wildness: The Dilemma and Irony of Ecological Restoration in Wilderness"	Moodle 4
	Peter Landres: "Let It Be: A Hands-Off Approach to Preserving Wildness in Protected Areas"	Moodle 5

Gregory Aplet & David Cole: “The Trouble with Naturalness:
Rethinking Park and Wilderness Goals” **Moodle 6**
The Wilderness Act of 1964 **Moodle 7**

9/15 W 5 **Wilderness Management and Restoration**

Beth Hahn, Peter Landres, Eric Biber, Dan Spencer “Protected area stewardship in
the Anthropocene: integrating science, law, and ethics to evaluate proposals for
ecological restoration in wilderness” **Moodle 8**
Michael Soulé: Should Wilderness Be Managed? **Moodle 9**

Recommended: John Hendee et al: “Wilderness Management: Philosophical Directions”
Moodle 10

Sign up for Restoration in Wilderness Case Studies

II. RESTORATION IN THE UPPER CLARK FORK WATERSHED & WILDERNESS CASE STUDIES

9/20 M 6 **Restoring the Upper Clark Fork: The Work of the Clark Fork Coalition and
the Watershed Restoration Coalition**

Read: <http://clarkfork.org/halfway-to-healing-at-the-coalitions-cattle-ranch/>
<https://clarkfork.org/our-work/what-we-do/restore-the-best/upper-clark-fork/>
<https://clarkfork.org/our-work/what-we-do/restore-the-best/upper-clark-fork/upper-clark-fork-restoration-projects/>
<http://fwp.mt.gov/mtoutdoors/HTML/articles/2019/Upperclarkfork.htm>

Clark Fork Coalition: Transformation: Restoration on the Dry Cottonwood Creek
Ranch 2017 **Moodle 11**

Listen to Nora Saks’s prize-winning podcasts on Butte, Richest Hill, especially
Episode 5, “ Out of the Frying Pan, Into The Fire,” available at:
<https://buttepodcast.org/episode-05-out-of-the-frying-pan-into-the-fire/>

Recommended Scan: <https://dojmt.gov/lands/upper-clark-fork-river-basin/>

Speaker: *Will McDowell, Clark Fork Coalition*

9/22 W 7 **Restoration of the Confluence of the Blackfoot & Clark Fork Rivers**
Field Trip to Milltown Dam Overview Site: Leave UM 3:30 pm; return 6:00 pm

The Three R’s of the Milltown Reservoir Superfund Project **Moodle 12**
How Public Participation Redefined Superfund Law at Milltown, MT **Moodle 13**
YouTube video: Breaching the Dam:
<https://www.youtube.com/watch?v=ISLlnzprz3M>

Opportunity, MT: “Toxic Turmoil”: http://missoulain.com/news/state-and-regional/toxic-turmoil-like-it-or-not-people-of-opportunity-are/article_a08b1062-527f-5409-b39f-cfbd68fefdf2.html

Speaker: Mike Kustudia, Manager, Milltown State Park

9/24 Fri Upper Clark Fork Field Trip: Restoration Project on the Thomas Ranch

**9/25 Sat Superfund Sites Field Trip in the Upper Clark Fork Watershed
[Leave Friday 2 pm; return Saturday 6 pm; overnight at Thomas Ranch]**

9/27 M 8 Ethics and the Environment: An Overview

Andrew Light and Holmes Rolston III: “Introduction: Ethics and Environmental Ethics” **Moodle 14**

Clare Palmer: “An Overview of Environmental Ethics” **Moodle 15**

9/29 W 9 Overview of Ethical Issues in Ecological Restoration

Dan Spencer: “Ethics and Restoration: A Fascinating and Vexing Time” **Moodle 16**

Marion Hourdequin: “Ecological Restoration” **Moodle 17**

Eric Higgs: “What is Good Ecological Restoration?” **Moodle 18**

Spectrum Exercises on Ecological Restoration

Essay #1: Is the Clean-up and Restoration of the Upper Clark Fork an example of Good Restoration?

10/4 M 10 Restoration and Wilderness: Case Study I in Managing for Wildness and Naturalness in Wilderness: Whitebark Pine Restoration in Wilderness

Readings: On Moodle and To Be Assigned
(Paper due: 10/11)

10/6 W 11 Restoration and Wilderness: Case Study II in Managing for Wildness and Naturalness in Wilderness: Proposed Fisheries restoration in the Scapegoat Wilderness

Readings: On Moodle and To Be Assigned
<https://missoulacurrent.com/outdoors/2020/07/wilderness-trout-restoration/?print=print>
(Paper due: 10/13)

10/11 M 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 and To Be Assigned
(Paper due: 10/18)

Essay on the Ethics of Restoration in Wilderness due in class for 10/4 Facilitators

III. ETHICAL ISSUES & DEBATES IN ECOLOGICAL RESTORATION

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

Read articles in this order:

Robert Elliot: “Faking Nature” **Moodle 19**

Eric Katz: “The Big Lie: Human Restoration of Nature” **Moodle 20**

Eric Katz: “Another Look at Restoration: Technology
and Artificial Nature” **Moodle 21**

Andrew Light: “Ecological Restoration and the Culture of Nature:
A Pragmatic Perspective” **Moodle 22**

Essay on the Ethics of Restoration in Wilderness due in class for 10/6 Facilitators

10/18 M 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 23**

G. Stanley Kane: “Restoration or Preservation? Reflections on a
Clash of Environmental Philosophies” **Moodle 24**

William Jordan: “Weeding Key Biscayne” **Moodle 25**

Essay on the Ethics of Restoration in Wilderness due in class for 10/11 Facilitators

10/20 W 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,
Meet Disney World **Higgs, NBD**

Ch. 2: Boundary Conditions (skim 59-75) **Higgs, NBD**

10/25 M 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**

10/27 W 17 **The Risks of Commodification & Professionalization**

Ch. 5: Denaturing Restoration **Higgs, NBD**

11/1 M 18 **Community Participation in Restoration: Focal Restoration and Wild Design**

Ch. 6: Focal Restoration
Ch. 7: Nature by Design

Higgs, NBD
Higgs, NBD

Recommended:

SER News on Participatory Restoration pp. 1-18
K. Suding et al., "Committing to Ecological Restoration"
Borgmann, "Focal Practices"

Moodle 26
Moodle 27
Moodle 28

Reflection Papers on Group Restoration Projects due in class

IV. INDIGENOUS PERSPECTIVES AND PRACTICES ON RESTORATION

11/3 W 19 **Restoration as Reciprocity: Introduction to the work of Robin Wall Kimmerer**

Kyle Powys Whyte: "Our Ancestors' Dystopia Now: Indigenous Conservation and the Anthropocene."

Moodle 29

Robin Kimmerer: *BSW Preface and Section I: Planting Sweetgrass* (pp. ix-59)

11/8 M 20 **Participatory Indigenous Restoration**

Robin Kimmerer: "Restoration and Reciprocity: The Contributions of Traditional Ecological Knowledge"

Moodle 30

Robin Kimmerer: *BSW Section II: Tending Sweetgrass* (pp. 63-117)

Due in Class: *Higgs Critical Response essay*

11/10 W 21 **Traditional Ecological Knowledge and Restoration**

Robin Kimmerer: *BSW Section III: Picking Sweetgrass* (pp. 121-201)

11/15 M 22 **Indigenous Restoration as Becoming Native to Place**

Robin Kimmerer: *BSW Section IV: Braiding Sweetgrass* (pp. 205-300)

11/17 W 23 **Beyond Restoration: The Sacred and the Superfund**

Robin Kimmerer: *BSW Section IV: Braiding Sweetgrass* (pp. 303-384)

V. RESTORATION, GENDER, AND ENVIRONMENTAL JUSTICE

11/22 M 24 **Restoration and Environmental Justice**

Colette Palamar: "From the Ground up: Why Urban Ecological Restoration Needs Environmental Justice"

Moodle 31

Michelle Garvey: “Restoration’s “Return”: Toward Justice-Oriented Ecological Restoration **Moodle 32**
 Michelle Garvey: “Novel Ecosystems, Familiar Injustices: The Promise of Justice-Oriented Ecological Restoration” **Moodle 33**

11/24 W THANKSGIVING TRAVEL DAY: NO CLASS

11/29 M 25 **Gender, Ecofeminism, and Restoration**

Colette Palamar: “Restorashyn: Ecofeminist Restoration” **Moodle 34**
 Marlène Elias, Deepa Joshi, and Ruth Meinzen-Dick: “Restoration for Whom, by Whom? A Feminist Political Ecology of Restoration” **Moodle 35**

Due in Class: *Kimmerer Critical Response essay*

V. RESTORATION IN AN AGE OF CLIMATE CHANGE

*12/1 W 26 **Restoration in an Age of Climate Change: I**

Ned Hettinger: Nature Restoration as a Paradigm for the Human Relationship with Nature **Moodle 36**
 William Throop: Environmental Virtues and the Aims of Restoration **Moodle 37**

*12/6 M 27 **Restoration in an Age of Climate Change: II**

Ronald Sandler: Global Warming and Virtues of Ecological Restoration **Moodle 38**
 Eric Higgs: History, Novelty, and Virtue in Ecological Restoration **Moodle 39**
 Andrew Light: The Death of Restoration? **Moodle 40**

12/8 W 28 **Wrap up & Discussion: What Makes an Ethic of Good Restoration?**

• = Student-facilitated class

Final Exam Period: Thursday, Dec 16, 1:10-3:10 pm

Due: Final Take Home Exam Essay

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:

	<u>points</u>	<u>%</u>	<u>due date</u>
1. Initial Reflection Paper on Clark Fork Restoration	50	10%	Sept 29
2. Wilderness Restoration Case Study Essay	100	20%	Oct 11, 13, or 18

3. Group Projects on Restoration & Individual Reflection Papers	50	10%	Nov 1
4. Higgs Critical Response Essay	100	20%	Nov 8
5. Kimmerer Critical Response Essay	100	20%	Nov 29
6. Take-Home Final Exam Essay	100	20%	Dec 16

Note: final grades will use pluses and minuses.

1. Initial Reflection Paper on Clark Fork Restoration: After our initial study of and field trips to the clean-up and restoration of the Upper Clark Fork River at Milltown Dam and in the Deer Lodge Valley, write a 5-6 page, double-spaced reflection paper making the case that the Superfund remediation and restoration of the Upper Clark Fork River either is or is not an example of *good* ecological restoration, and why. Be sure to state and develop your reasons to support your position. **Due in class Wednesday, September 29.**

2. 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 Monday, October 4, Wednesday, October 6, and Monday, October 11. 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 Monday, October 11, Wednesday, October 13, or Monday, October 8.**

3. Small Group Projects: The entire class will partner with several local restoration projects taking place in the Bitterroot and Upper Clark Fork River Watersheds. We will get an overview of the project options early in the semester. Small group teams will then be expected to carry out an individual project on one of the additional field days scheduled for Fri-Sat [Dates TBD] in October. More information about the structure of the projects will be given in class.

Following your field experience(s) write a short (3-4 page) reflection essay where you do three things: (1) Describe briefly what you did for your project(s); (2) Discuss any insights about Restoration you gained from the project; (3) Reflect on the quality of the Restoration (ecological, social, cultural) being done there in light of our conversations to this point of the semester about what counts for *good* restoration and why. To what extent can we see the work being done in these projects be seen as an example of *good* restoration, and why? **Due in class Monday, Nov 1** (flexible deadline depending on when projects are finished).

4. Critical Response Essay Eric Higgs' *Nature By Design*: An 8-10 page critical response essay to one of 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 8.**

NOTE: Your audience for the papers in 4 & 5 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.

5. Critical Response Essay to Robin Wall Kimmerer's *Braiding Sweetgrass*: An 8-10 page critical response essay to the second primary course text, Robin Wall Kimmerer's *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teach of Plants*. The first part of this essay should be a thoughtful exposition (i.e. summary and explanation) of Kimmerer's overall argument and main themes from the book, with several examples from the book that illustrate her arguments about drawing on both indigenous wisdom and western science to address issues of restoration, conservation, and botany. The second section should be your response to the issues Kimmerer raises and argues about what counts as *good* science and restoration, and *why*. Does Kimmerer add anything important to our assessments of what counts as good restoration, or provide a helpful framework for assessing the ethical dimensions of ecological restoration? How would you compare her work to previous authors we have read on restoration, particularly to Eric Higgs and other western thinkers? What is your overall assessment of her book and contributions it makes to restoration?

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, **Thursday, Dec 16, 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

UM COVID-19 Policy Fall 2021:

UM's Health Advisory Group Academic Safety sub-committee shared this guidance for instructors. In an effort to communicate expectations and important safety messages to students returning to the classroom, the following important information should be communicated to in-person students on the first day of fall class. This information can also be included in course syllabi.

- Mask use is required within the classroom or laboratory.
- If you feel sick and/or are exhibiting COVID-19 symptoms, please don't come to class and contact the Curry Health Center at (406) 243-4330.
- If you are required to isolate or quarantine, you will receive support in the class to ensure continued academic progress. (Add specific information about how you, as the instructor, will continue providing course materials to students in quarantine or isolation.)
- UM recommends students get the COVID-19 vaccine. Please direct your questions or concerns about vaccines to Curry Health Center.
- Where social distancing (maintaining consistent 6 feet between individuals) is not possible, specific seating arrangements will be used to support contact tracing efforts.
- Class attendance and seating will be recorded to support contact tracing efforts.
- Drinking liquids and eating food is discouraged within the classroom.
- Mask use is required in vehicles when traveling to field sites as part of class/fieldwork.
- Please note this class is being recorded. Notifying students is a requirement if this is the case.

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 <http://cyberbear.umt.edu/>

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.

Moodle: Course assignments and readings are also posted on Moodle, which may be accessed at <https://moodle.umt.edu>

Readings on Moodle, ENST 570_01, Fall 2021 Ethical Issues in Ecological Restoration

1. International Principles and Standards for the Practice of Ecological Restoration, 2nd edition. Sections 1 & 2 (<https://www.ser.org/page/SERStandards/International-Standards-for-the-Practice-of-Ecological-Restoration.htm>)
2. Andre F. Clewell and James Aronson. 2013. "Overview: Basic Terms and Concepts" in *Ecological Restoration: Principles, Values, and Structure of an Emerging Profession* (Second Edition). Washington DC: Island Press, pp. 3-13.
3. Andre F. Clewell and James Aronson. 2013. "Values and Ecological Restoration" in *Ecological Restoration: Principles, Values, and Structure of an Emerging Profession* (Second Edition). Washington DC: Island Press, pp. 15-31.
4. Peter Landres, Mark Brunson, and Linda Merigliano. Naturalness and Wildness: The Dilemma and Irony of Ecological Restoration in Wilderness. *Wild Earth*, Winter 2000/2001, Publication #417, 77-82.
5. Peter Landres. Let it Be: A Hands-Off Approach to Preserving Wildness and Naturalness in Wilderness. In David N. Cole and Laurie Yung, eds. *Beyond Naturalness: Rethinking Park and Wilderness Stewardship in an Era of Rapid Change*. Washington, D.C.: Island Press, 2010, 88-105.
6. Gregory Aplet & David Cole. The Trouble with Naturalness: Rethinking Park and Wilderness Goals. In *Beyond Naturalness: Rethinking Park and Wilderness Stewardship in an Era of Rapid Change*. David Cole and Laurie Yung, eds. Washington D.C.: Island Press, 2010, 12-29.
7. The Wilderness Act of 1964.
8. Beth Hahn, Peter Landres, Eric Biber, Dan Spencer. 2020. "Protected area stewardship in the Anthropocene: integrating science, law, and ethics to evaluate proposals for ecological restoration in wilderness." *Restoration Ecology*, 2020: doi: 10.1111/rec.13104.
9. Michael Soule. 2001. Should Wilderness Be Managed? In Ted Kerasote, ed. *Return of the Wild: The Future of Our Natural Lands*. Washington DC: Island Press, 2001: pp. 136-152.

10. John Hendee, George Stankey, and Robert Lucas. 1990. Wilderness Management: Philosophical Directions. In John Hendee, George Stankey, and Robert Lucas, eds. *Wilderness Management*. Golden, CO: North American Press, 1990; pp. 3-25.
11. Clark Fork Coalition: "Transformation: Restoration on the Dry Cottonwood Creek Ranch" 2017
12. EPA: "Integrating the "3 Rs": Remediation, Restoration and Redevelopment."
13. David Brooks. "How Public Participation Redefined Superfund Law at Milltown, Montana." *Montana Magazine*, Autumn, 2015.
14. Andrew Light and Holmes Rolston III. Introduction: Ethics and Environmental Ethics. In Andrew Light and Holmes Rolston III, eds. *Environmental Ethics*. Malden, MA: Blackwell, 2003, pp. 1-11.
15. Clare Palmer. An Overview of Environmental Ethics. In Andrew Light and Holmes Rolston III, eds. *Environmental Ethics*. Malden, MA: Blackwell, 2003, pp. 15-37.
16. Dan Spencer. 2016. "Ethics and Restoration: A Fascinating and Vexing Time." *SER News*, Vol. 30, Issue 4, August 2016.
17. Marion Hourdequin. 2015. "Ecological Restoration" in *Environmental Ethics: From Theory to Practice*. London and New York: Bloomsbury, pp. 169-193.
18. Eric Higgs. 1997. What is Good Ecological Restoration? *Conservation Biology*, Vol. 11, No. 2, April 1997, 338-348.
19. Robert Elliot, "Faking Nature." *Inquiry* Vol. 25, No. 1, March 1982, 81-93. Reprinted in Robert Elliot, ed. *Environmental Ethics* (Oxford: Oxford University Press, 1995), 76-88.
20. Eric Katz. The Big Lie: Human Restoration of Nature. *Research in Philosophy and Technology*, 1992, Vol. 12, 231-243.
21. Eric Katz. 2000. Another Look at Restoration: Technology and Artificial Nature. In Paul Gobster and R. Bruce Hull, eds. *Restoring Nature: Perspectives from the Social Sciences and Humanities*. Washington DC: Island Press, 2000; pp. 37-48.
22. Andrew Light. 2000. Ecological Restoration and the Culture of Nature: A Pragmatic Perspective. In Paul Gobster and R. Bruce Hull, eds. *Restoring Nature: Perspectives from the Social Sciences and Humanities*. Washington DC: Island Press, 2000; pp. 49-70.
23. William Jordan. Sunflower Forest: Ecological Restoration as the Basis for a New Environmental Paradigm. In A. Dwight Baldwin, Jr., Judith de Luce, and Carl Pletsch, eds. *Beyond Preservation: Restoring and Inventing Landscapes* (Minneapolis: University of Minnesota Press, 1994), 17-34.
24. G. Stanley Kane. Restoration or Preservation? Reflections on a Clash of Environmental Philosophies. In A. Dwight Baldwin, Jr., Judith de Luce, and Carl Pletsch, eds. *Beyond Preservation: Restoring and Inventing Landscapes* (Minneapolis: University of Minnesota Press, 1994), 69-84.

25. William Jordan. Weeding Key Biscayne. In William R. Jordan, III, *The Sunflower Forest: Ecological Restoration and the New Communion with Nature* (Berkeley: University of California Press, 2003), 10-27.
26. *SER News*: “Participatory Restoration”. Volume 34, Issue 2, pp. 1-18.
27. Katherine Suding, et al.: 2015. Committing to Ecological Restoration. *Science* 8 May 2015, Vol. 348, Issue 6235, 638-640.
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