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EVST 594.01: Graduate Seminar - Ethical Issues in Ecological Restoration

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Ethical Issues in Ecological Restoration

EVST 594_01, Fall 2008

MW 9:40—11:00 am; Education 214

CRN: 74436

Prof. Dan Spencer

Office: JRH 103; Tel: 243-6111

Office Hours: MW 3-5; Tu 4-5; and by appointment

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Course Description

With the increasing ability to use science and technology to restore damaged ecosystems comes a host of ethical and philosophical issues in the emerging field of ecological restoration. The first section of the course introduces central concepts and practices in ecological restoration while examining the ethical dimensions of a current case study concerning restoration in wilderness. The second section of the course is built around collaboration with the Clark Fork Coalition and other organizations carrying out restoration projects in the Upper Clark Fork River watershed and western Montana. Specifically 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. 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.

Required Texts

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

Ecological Restoration: Principles, Values, and Structure of an Emerging Profession. Andre Clewell and James Aronson (Island Press: 2007; ISBN: 978-1-59726-168-2)

Readings on Electronic Reserve (ERES: <http://eres.lib.umt.edu/>)

Course Schedule

Date	Class Topic and Assigned Readings	Reading Location
I. Introduction: Ecological Restoration and the Clark Fork Watershed		
8/25 M 1	Introduction to the course and to each other	
8/27 W 2	What is Ecological Restoration?	
	The SER International Primer on Ecological Restoration	ERES 1
	Anthony Bradshaw: What do we mean by restoration?	ERES 2
	Ch 1: “Essence of Restoration” (pp 5-13)	Clewell & Aronson, ER
9/1 M	Labor Day – No classes	
9/3 W 3	Key Concepts in Ecological Restoration	

- Jim Harris & Rudy van Diggelen: “Ecological Restoration as a project for global society” **ERES 3**
- Jelte van Andel and Ab P. Grootjans: “Concepts in Restoration Ecology” **ERES 4**

Speaker: Cara Nelson, College of Forestry and Conservation

9/8 M 4 **Central Components of Ecological Restoration**

- Ch 2: “Ecological Impairment and Recovery” **Clewell & Aronson, ER**
- Ch 4: “Ecological Attributes of Restored Ecosystems” “ “ “ “
- Ch 5: “Reference Models and Development Trajectories” “ “ “ “
- Recommended: Ch 3: “Cultural Ecosystems, Fire, and Alternative States”

9/10 W 5 **Ethics and Values of Holistic Restoration**

- Ch 7: “Values and Ecological Restoration” **Clewell & Aronson, ER**
- Ch 8: “A Four-Quadrant Model for Holistic Ecological Restoration” “ “ “ “
- Ch 12: “Holistic Ecological Restoration” “ “ “ “

II. Restoration and Wilderness: Ethical and Philosophical Issues

9/15 M 6 **Restoration and Wilderness: Issues in Managing for Wildness and Naturalness in Wilderness**

- John Hendee et al: Wilderness Management: Philosophical Directions **ERES 5**
- “Managing the Wild: Should Stewards Be Pilots?” Forum, **ERES 6**
- Frontiers in Ecology*, www.frontiersinecology.org
- Peter Landres et al: Naturalness and Wildness: The Dilemma and Irony of Ecological Restoration in Wilderness **ERES 7**

Speaker: Peter Landres, Aldo Leopold Wilderness Research Institute

9/17 W 7 **Restoration and Wilderness: A Case Study in Managing for Wildness and Naturalness in Wilderness**

- MT FWP Scoping Letter **ERES 8**
- MT FWP Q and A **ERES 9**
- Statement of Reasons: Objections to proposed SFFWWCLCP **ERES 10**
- South Fork Flathead Watershed Westslope Cutthroat Trout Conservation Program
- RODs: www.efw.bpa.gov/environmental_services/Document_Library/South_Fork_Flathead/

Speaker: Peter Landres, Aldo Leopold Wilderness Research Institute

[9/20 Blackfoot River Restoration Field Trip (optional: Contact Vicki Watson)]

9/22 M 8 **Initial Analysis of Case Study on Wilderness & Restoration**

Instructions handed out in class

Speaker: Peter Landres, Aldo Leopold Wilderness Research Institute

III. Restoration of the Upper Clark Fork Watershed

9/24 W 9 Restoring the Upper Clark Fork: The Deer Lodge Valley and the Dry Cottonwood Ranch

Read: 2005 State of the Clark Fork: Understanding Our Watershed **ERES 11, 11A**

“History of Upper Clark Fork Basin Litigation: Background, Status, and Opportunities to Restore the Basin” by Cassandra Hemphill **ERES 12**

Skim: www.clarkfork.org/programs/upper_clark_fork.html

Speakers: *Chris Brick, Clark Fork Coalition;*
Bryce Andrews, Dry Cottonwood Ranch

[Sept 25-26: Sixth Annual River Center Meeting: **managing and Restoring Human-Manipulated Large River Ecosystems**” www.umt.edu/rivercenter/conf2008.html

9/26 F Field Trip to Deer Lodge Valley (all day)
(details provided in class)

Recommended: “An Environmental History of the Early Deer Lodge Valley: Origins, Mining, Timber, Ranching, Agriculture and Water” **ERES 13**

9/29 M 10 The Watershed Restoration Coalition and Landowner Perceptions

Upper Clark Fork Restoration and Redevelopment Plan, August 2007 **ERES 14**

Debrief Field Trip

Speaker: *Sarah Carvill*

10/1 W 11 Cleaning up the Upper Clark Fork Watershed: The Road Map

“Draft Conceptual Framework for an Upper Clark Fork River Basin Restoration Priorities Road Map” **ERES 15**

Speaker: Carol Fox, Natural Resources Damages Program

10/4 S Upper Clark Fork Superfund Sites Field Trip (all day)

IV. What is *Good* Ecological Restoration? A Philosophical Examination

10/6 M 12	Overview: What is <i>Good</i> Ecological Restoration?	
	Eric Higgs: What is Good Ecological Restoration?	ERES 16
10/8 W 13	Introduction to Eric Higgs' <i>Nature by Design</i>	
	Ch. 1: A Tale of Two Wildernesses: Jasper National Park, Meet Disney World	Higgs, NBD
	Ch. 2: Boundary Conditions (skim 59-75)	Higgs, NBD
10/13 M 14	What's in a Word? Defining Ecological Restoration	
	Ch. 3: What is Ecological Restoration?	Higgs, NBD
10/15 W 15	Fidelity to the Past?	
	Ch. 4: Historicity and Reference in Ecological Restoration	Higgs, NBD
10/20 M 16	The Risks of Commodification & Professionalization	
	Ch. 5: Denaturing Restoration	Higgs, NBD
10/22 W 17	Community Participation in Restoration	
	Ch. 6: Focal Restoration	Higgs, NBD
10/27 M 18	Nature By Design: Keeping the Wild in Restoration	
	Ch. 7: Nature by Design	Higgs, NBD
10/29 W 19	Discussion of Restoration in Wilderness Paper	No Readings
	<u>Due:</u> First Draft, Restoration in Wilderness Paper	

V. Ethical Issues and Debates in Ecological Restoration

*11/3 M 20	Early Critics: Restoration as Faking Nature?	
	Robert Eliot: Faking Nature	ERES 17
	Eric Katz: Another Look at Restoration: Technology and Artificial Nature	ERES 18
	Eric Katz: The Big Lie: Human Restoration of Nature	ERES 19
	<u>Facilitators:</u>	
	<u>Due:</u> Higgs Response essay	

***11/5 W 21 Proponents Respond: Defending Restoration**

Andrew Light: Ecological Restoration and the Culture of Nature:
A Pragmatic Perspective **ERES 20**

Alan McQuillan: Defending the Ethics of Ecological Restoration **ERES 21**

Facilitators:

***11/10 M 22 Debates on Restoration vs. Preservation**

G. Stanley Kane: Restoration or Preservation? Reflections on a
Clash of Environmental Philosophies **ERES 22**

William Jordan: "Sunflower Forest": Ecological Restoration as the
Basis for a New Environmental Paradigm **ERES 23**

William Jordan: Weeding Key Biscayne **ERES 24**

Facilitators:

VI. Restoration and the Deer Lodge Valley: A Holistic, Landscape Approach

11/12 W 23 Sobering Lessons from Conservation Biology: Are Preservation and Restoration Enough?

Michael Rosenzweig: *Win-Win Ecology* chs. 8 & 9 **ERES 25**

Recommended: Michael Rosenzweig: "Loss of speciation rate
will impoverish future diversity" **ERES 26**

11/17 M 24 Reconciliation Ecology: Alternative or Complement to Restoration?

Michael Rosenzweig: *Win-Win Ecology* chs. 1, 10, 11, 12 **ERES 27**

11/19 W 25 Linking Landscapes & Communities: Introduction to Green Infrastructure

Mark Benedict & Edward McMahon: Excerpts from *Green Infrastructure: Linking Landscapes and Communities* (Chs 1&2) **ERES 28**

11/24 M 26 Green Infrastructure and the Deer Lodge Valley

Mark Benedict & Edward McMahon: Excerpts from *Green Infrastructure: Linking Landscapes and Communities* (Chs 3-5) **ERES 29**

Recommended:

"The Historical and Contextual Background of the Powell County
Zoning & Planning Regulations" **ERES 30**

"Policy Options for Land Use Conservation Issues in Powell County" **ERES 31**

11/26 W No Class: Thanksgiving Holiday

12/1 M 27 Discussion: Clean up of the Deer Lodge Valley: Good Restoration?

12/3 W 28 Discussion: Restoration in Wilderness: The South Fork Flathead Watershed Westslope Cutthroat Trout Conservation Program

Due: Final Draft, Restoration in Wilderness Paper

FINAL EXAM PERIOD: **THURSDAY, DECEMBER 11, 8:00-10:00 AM**

Due: Final Take Home Exam Essay

GRADING POLICY

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 **five (5)** absences will result in one grade reduction. More than **seven (7)** 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 (p. 22).

1. **Critical Response Essay Eric Higgs' *Nature By Design*:** A 6-8 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 main themes from the book with 1-2 paragraphs dedicated to each chapter. The second section should be your response to the issues Higgs raises and argues: 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, Nov 3.**

2. Facilitation of Class Discussion and Critical Response essay to Class Facilitated Essays: Each student will have the opportunity to facilitate class discussion of one set article(s) assigned for Section V of the class: “Ethical Issues and Debates in Ecological Restoration.” The class should be organized as a discussion of the texts, not a presentation. You will then write a response paper to the article(s) discussed in that class. Your paper should contain (a) a clear summary exposition of the main points of the reading(s) (2-3 pages) as well as (b) your thoughtful assessment of and response to the materials and ideas presented in the text (2-3 pages). (Total Length: 4-5 pages, double-spaced), **Due in class one week after class facilitation.**

3. Group Project: Ethical Analysis of The South Fork Flathead Watershed Westslope Cutthroat Trout Conservation Program. With Peter Landres of the Aldo Leopold Wilderness Research Institute, we will be analyzing a current case study involving ecological restoration in and around the Bob Marshall Wilderness Area. Students will work together to analyze the case and write up an ethical analysis to be submitted to the International Journal of Wilderness or another appropriate journal. The issues and case will be discussed in class **September 15-22**. The first draft of the paper is due in class 5 weeks later, on **October 29**. Peter and I will provide feedback and critique on this draft; the final draft is due on the last day of class, **December 3** when we will discuss options for submitting the paper.

4. Take-Home Final exam essay: Throughout the semester, we have considered ethical issues in ecological restoration through two primary lenses: (1) the philosophical question, “What is good ecological restoration?” posed most acutely by philosopher Eric Higgs (and posed by others as “Can restoration even be good?”); (2) the on-the-ground restoration planning and projects in the Deer Lodge valley being stimulated by the Superfund clean-up of the Clark Fork River and the community planning being spearheaded by the Clark Fork Coalition.

In light of this semester-long conversation, write a 6-8 page essay addressing two questions:
(1) “What kind of restoration ethic is needed to guide ecological restoration efforts, and why?”
(2) “Is the restoration and clean up process ongoing in the Deer Lodge valley an example of *good* restoration? Why or why not?”

In your essay, please draw on several of the assigned readings as “conversation partners” in developing your response, as well as insights gained from class discussions, field trips, and speakers. In your answer, please consider and respond to these questions:

- Which authors have been most helpful to you in formulating your ethic, which most problematic, and why?
- What are the strengths and weaknesses, problems and potential, of the proposed clean up of the Clark Fork River in the Deer Lodge valley?
- What are the most important insights you have gained about restoration from this semester-long immersion?

Bring your completed essay to our classroom during the final exam period – **Thursday, December 11, 8:00-10:00 am** – where each of you will have the opportunity to share a synopsis of what you have written.

Important University Policies, Dates and Deadlines

For Important Dates and University policies, check Cyberbear at <http://cyberbear.umt.edu/>

Credit/No Credit Grade option: A minimum grade average of D- (60) is required for a CR grade in the CR/NC Grade option.

Incomplete Grade: Please see the criteria that must be met for an Incomplete on p. 23 of the University Catalog. No exceptions will be made for these criteria.

ERES: To access the ERES readings:

- a. Go into <http://eres.lib.umt.edu/>
- b. Click on Electronic Reserves and Course Materials
- c. Under Instructor, find and select SPENCER, Daniel
- d. Click on the course name: EVST 594.01.
- e. Enter the password, "restore"
- f. The first entry, "Reading List," is a Table of Contents. The rest of the readings are entered in the order we will discuss them. The readings are in PDF format.

ERES Readings, EVST 594_05, Fall 2008 **Ethical Issues in Ecological Restoration: The Clark Fork Watershed** **Dan Spencer, Environmental Studies**

1. The SER International Primer on Ecological Restoration
(www.ser.org/content/ecological_restoration_primer.asp).
2. Anthony Bradshaw, What do we mean by restoration? In Krystyna Urbanska, Nigel Webb, and Peter Edwards, eds. *Restoration Ecology and Sustainable Development* (Cambridge and New York: Cambridge University Press, 1997), 8-14.
3. Jim A. Harris and Rudy van Diggelen, "Ecological restoration as a project for global society." In Jelte van Andel and James Aronson, eds. *Restoration Ecology: The New Frontier* (Malden, MA: Blackwell, 2006), 3-15.
4. Jelte van Andel and Ab P. Grootjans, "Concepts in restoration ecology." In Jelte van Andel and James Aronson, eds. *Restoration Ecology: The New Frontier* (Malden, MA: Blackwell, 2006), 16-28.

5. John Hendee, George Stankey, and Robert Lucas, Wilderness Management: Philosophical Direction. In John Hendee, George Stankey, and Robert Lucas, eds. *Wilderness Management* (Golden, CO: North American Press, 1990), 3-25.
6. Peter Alpert, "Managing the Wild: Should Stewards Be Pilots?" Forum, *Frontiers in Ecology*, Vol. 2, Issue 9 (Nov 2004), pp. 494-499.
7. 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.
8. Montana Fish, Wildlife and Parks Scoping Letter, South Fork Flathead Watershed/Westslope Cutthroat Trout Conservation Project.
9. South Fork Flathead Watershed Westslope Cutthroat Trout Conservation Program Q&A Fact Sheet: June 8, 2004.
10. Statement of Reasons: Objections to proposed SFFWWCLCP South Fork Flathead Watershed Westslope Cutthroat Trout Conservation Program RODs:
www.efw.bpa.gov/environmental_services/Document_Library/South_Fork_Flathead/
11. 2005 State of the Clark Fork: Understanding Our Watershed
www.clarkfork.org/publications/state_of_clark_fork/index.html
12. "History of Upper Clark Fork Basin Litigation: Background, Status, and Opportunities to Restore the Basin." Unpublished paper by Cassandra Hemphill.
13. "An Environmental History of the Early Deer Lodge Valley: Origins, Mining, Timber, Ranching, Agriculture and Water." Unpublished paper by Daniel Zizzamia.
14. Upper Clark Fork Restoration and Redevelopment Plan, August 2007.
15. "Draft Conceptual Framework for an Upper Clark Fork River Basin Restoration Priorities Road Map." <http://doj.mt.gov/lands/naturalresource/restorationroadmap.asp>
16. Eric Higgs, What is Good Ecological Restoration? *Conservation Biology*, Vol. 11, No. 2, April 1997, 338-348.
17. 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.
18. Eric Katz: 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 D.C.: Island Press: 2000), 37-48.
19. Eric Katz, The Big Lie: Human Restoration of Nature. *Research in Philosophy and Technology* Vol. 12, 231-243.

20. Andrew Light: 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 D.C.: Island Press: 2000), 49-70.
21. Alan McQuillan, Defending the Ethics of Ecological Restoration. *Journal of Forestry* Vol. 96, No. 1, January 1998, 27-31(5).
22. G. Stanley Kane:,Restoration or Preservation? Reflections on a Clash of Environmental Philosophies. In A. Dwight Balkdwin, Jr., Judith de Luce, and Carl Pletsch, eds. *Beyond Preservation: Restoring and Inventing Landscapes* (Minneapolis: University of Minnesota Press, 1994), 69-84.
23. William Jordan, “Sunflower Forest”: Ecological Restoration as the Basis for a New Environmental Paradigm. In A. Dwight Balkdwin, Jr., Judith de Luce, and Carl Pletsch, eds. *Beyond Preservation: Restoring and Inventing Landscapes* (Minneapolis: University of Minnesota Press, 1994), 17-34.
24. William Jordan, Conservation and Community: Restoration, the Environment, and Environmentalism. In William R. Jordan, III, *The Sunflower Forest: Ecological Restoration and the New Communion with Nature* (Berkeley: University of California Press, 2003), 195-204.
25. Michael L. Rosenzweig, *Win-Win Ecology: How the Earth’s Species can Survive in the Midst of Human Enterprise* (Oxford: Oxford University Press, 2003), chapters. 8 & 9.
26. Michael L. Rosenzweig, “Loss of speciation rate will impoverish future diversity.” *Proceedings of the National Academy of Science* (May 8, 2001, Vol 98, No. 10, pp. 5405-5410).
27. Michael Rosenzweig: *Win-Win Ecology: How the Earth’s Species can Survive in the Midst of Human Enterprise* (Oxford: Oxford University Press, 2003), chapters. 1, 10-12.
28. Mark Benedict & Edward McMahon: Chapters 1&2 from *Green Infrastructure: Linking Landscapes and Communities* (Washington DC: Island Press, 2006).
29. Mark Benedict & Edward McMahon: Chapters 3-5 from *Green Infrastructure: Linking Landscapes and Communities* (Washington DC: Island Press, 2006).
30. “The Historical and Contextual Background of the Powell County Zoning & Planning Regulations.” Unpublished paper by Jonathan Hayes.
31. “Policy Options for Land Use Conservation Issues in Powell County.” Unpublished paper by Kassandra Miller.