Course Syllabus

THE LAW OF ECOSYSTEM MANAGEMENT
VERMONT LAW SCHOOL
SUMMER 2023| TERM TWO

Week One
Professor J. B. Ruhl in person
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Week Two
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Course Description

The concept and practice of ecosystem management has swept through federal and state resource management agencies over the past two decades, altering their orientation toward resource use and conservation issues, but what is the *law* of ecosystem management? This course explores that question beginning with an introduction to the concept of ecosystem management—its history, principles, and current state of play in concrete policy settings—as well as key concepts such as adaptive management and ecosystem services. The course then explores laws and regulations relating to different types of ecosystems often described in ecosystem management literature—forests, grasslands, freshwater, coastal & marine, and fragile (e.g., arctic). Perspectives of agencies, resource users, environmental groups, and other interest groups will be explored in the discussion of problems included in the course materials.

Course Materials

A set of reading materials will be assembled into a pdf file text that will be posted for your use and available for printout. Supplemental readings will be posted as needed.

Course Grading

The principal course components upon which grading and assessment are based are described in more detail below. The grade will be based on class participation (20 percent); a group project with a group progress report presentation due the last day of the first week and the final group project presentation and individual summary papers due the last day of class (30 percent); and a final take-home written project distributed at the conclusion of the course and due at the conclusion of the exam period (50 percent). The final written project will be page limited and will not require outside research, but may include materials not covered in class (e.g., copy of a recent case or policy). We may also assign each student brief research tasks throughout the course (e.g., update a note; find a current example of the topic discussed in the text) and ask you to report your findings in class. These are included in class participation. Class attendance and participation is expected.

Please see us if you have any needs or concerns regarding accommodation for disabilities, religious observances, military service, or medical or family emergencies.

Personal Statement

Prior to the beginning of the class, please e-mail both of us a short personal statement about you, your background, your interest in the topic of ecosystem management, what you hope to get from the class, and what you aspire to accomplish in your legal career. This is an ungraded personal statement that helps us get a feel for the mix of perspectives in the class. We will not share these with the class, and you need not provide any information that makes you uncomfortable. We will give the class our respective personal statements orally on the first class day each week!

Overview of Course Coverage

The purpose of this class is to provide a foundation and fluency in ecosystem management principles, policies, and laws. We have only seven class periods over the course of two weeks to accomplish this, so the class will by necessity take on a "boot camp" environment. The major themes are summarized below in order of coverage:

Introduction to Ecosystem Management Law: In this unit we lay the foundation for understanding what, in general, the approach of ecosystem management has to offer to environmental law. This necessarily requires some discussion of what an ecosystem is and what ecosystem management might entail. For this purpose, the materials build on the theme of "ecosystem services" as a potentially unifying principle for the development of ecosystem management law. Much of the dialogue in environmental law exposes a dichotomy between anthropocentric approaches focused on commodity values of ecosystem resources (e.g., timber, water) versus a biocentric focus on the functional role of ecosystems in the environment and the importance of biodiversity in that regard (e.g., habitat). By contrast, the ecosystem services approach is both anthropometric, in that it focuses on values ecosystems deliver to humans, and biometric, in that uses the values of ecosystem functions themselves, not the commodity values, as the unit of discussion. The materials use this emerging theme as a medium for exploring the framework questions of ecosystem management and evaluating an example of a legal program explicitly oriented to ecosystem management—the National Wildlife Refuge System.

Freshwater Ecosystems: Aquatic ecosystems are, of course, tremendous sources of biodiversity and ecosystem service value. Pollution control laws in the United States have reversed many of the ill-effects of industrialization, but still our nation's fresh waters remain seriously impaired. Habitat modification in freshwater settings—dams, flood controls, filled wetlands—also has taken a toll on these ecosystems. In this unit we explore several programs designed to incorporate ecosystem management approaches in this setting, ranging from heavy regulatory approach of the total maximum daily load program, to the market approach of wetlands mitigation banking, to the special area designation approach of the Wild and Scenic Rivers Act. The materials close with a study of the shift in emphasis from conventional lakes-rivers-wetlands conceptions of freshwater ecosystems to a watershed-based approach.

NOTE: This year we will focus in particular on the management of wetlands under Section 404 of the Clean Water Act and study the implications of a May 2023 Supreme Court case (opinion will be provided) that has substantially changed the scope of that program.

Grassland Ecosystems: A major terrestrial ecosystem type in the United States is comprised of the vast areas of grasslands where trees are not the dominant vegetative regime. Like forests, humans have manipulated grassland regions since well before European settlement. Also like forests, the dichotomy between public and private ownership complicates the coordination of ecosystem management policy.

NOTE: This year our focus for the grasslands topic will be exclusively on the Bureau of Land Management's April 2023 proposed "Conservation and Landscape Health" rule designed to implement the Federal Land Policy and Management Act (FLPMA) (to be provided). Following a short description of the necessary background, we will assess the proposed rule from the perspective of ecosystem management principles and practices.

Coastal and Marine Ecosystems: No ecosystem regime offers greater biodiversity storage or service value than our oceans. Yet no regime is more dynamic and complex, defying easy management prescriptions. In Week One we will briefly discuss programs managing coasts and estuaries. In Week Two we will cover fisheries and marine protected areas in more detail.

Forest Ecosystems: Forests are the largest terrestrial storehouse of biodiversity and a significant source of ecosystem services, and thus a primary focus of ecosystem management policy and law. But forest policy in the United States is complicated by diverse ownership as well as diversity of forest type across the nation. In this unit we explore forest policy as an example of the dichotomy between public and private land ownership and the challenges it presents to formulating coordinated policy. The National Forest Management Act, which governs land use decisions on national forests, is the only federal law that includes an explicit biodiversity management mandate, though its parameters are far from clear. The materials focus on recent developments in national forest policy that illustrate the difficulty of accomplishing ecosystem management in public land settings where both the commodity value and the environmental value of the resources are high. The materials then move to the question of how policy can be coordinated between public and private forested land holdings.

Fragile Ecosystems: Some ecosystem types may not be so amenable to management as the theme of ecosystem management suggests. Management for these fragile ecosystems may mean nothing less than hands-off preservation. But is any ecosystem beyond the reach of human impact? Air pollution has had measurable impacts around the planet, for example, meaning preservation with no intervention could be worse than intervention's impacts. We will explore this policy dilemma for arctic and desert regions.

Course Components

The compressed course format will require us to have several balls in the air at once. The primary course components will be:

Daily discussion of readings: The class will cover a lot of pages in the two weeks we have together, and we hope to guide the class through the heavy materials and engage the class in lively discussion of policy issues. We are more interested in broad understanding than details. We will ask what you think of a case outcome, other students' observations, etc. The point is, please do the readings, and please come to class ready to dive in and participate.

Group project: The class will be divided into groups and each group will select a large-scale ecosystem about which to provide the class two oral presentation reports. The first, at the conclusion of the first week, will provide the class a descriptive account of your ecosystem and management challenges it faces. The second, on the last day of the class, will provide the class an evaluative assessment of the ecosystem management efforts any public or private entities are taking in the ecosystem. We will provide sets of prompts for each presentation. This project will allow students a deep examination of ecosystem management as it is practiced in the field, a comparative perspective, and an opportunity to engage in evaluation of the challenges and performance of ecosystem management in practice. Each student will write an individual account of the group project experience, due on the last day of class. In-class time will be devoted each week to group preparation.

Mini-reports: In order to spur class discussion as well as to keep the materials current, we will have short research projects in some of the classes (e.g., find an example of how the Biden administration is addressing this issue; update a regulatory development; update this litigation) and discuss findings in class.

Attendance

The text is a starting point for exploration of ecosystem management policy and law topics, making attendance, preparation, and participation essential to your comprehensive introduction to the field. Pursuant to Vermont Law School policy, we will take attendance every day through a sign-in sheet, and will follow Vermont Law School policies regarding missed classes. Please see us if you have any needs or concerns regarding accommodation for disabilities, religious observances, military service, or medical or family emergencies.

Course Interaction

Ecosystem management has become a controversial topic! We encourage students to participate in class by making comments and asking questions that get to the heart of this controversy. We reserve the right to call on any student in class to engage in such discourse. If for any good reason you are less than fully prepared to participate in class, please discuss the reason with us before class.

Class Meeting Times and Late Arrival

Class will begin promptly each session at 8:30 am. Please try to avoid arriving late. We will stay after class every day to discuss the class theme and issues of interest in person.

Office hours

Given the short time frame of this course, we are happy to set up meetings as needed, including through Zoom. Feel free to email us with questions. We try to respond promptly to all e-mails.

Policies

All relevant Vermont Law School policies regarding honor codes, non-discrimination, and accommodation of disabilities are of course followed in this class. If you have any questions about these policies, please do not hesitate to contact us.

Reading Assignments

NOTE: We use and update the readings text each time we teach this course, but do not necessarily cover all the topics or follow the order of topics in the text.

WEEK ONE

"Skim" means to read to get the gist of the materials
"Review" means to read through to gain familiarity for purposes of class lecture and discussion
"Focus" means to read carefully and consider the ecosystem management perspectives

Day 1 – Introduction to Ecosystem Management

- Background Concepts and Terminology — Review Text 2-31
- The Endangered Species Act — Focus Text 32-36
- Ecosystem Services Policy History — Review Text 36-40 and Focus Text 40-44
- National Wildlife Refuges Case Study — Review Text 44-56

- Discussion of Group Projects/Group Meetings

Day 2 –Freshwater Ecosystems (I)

- Overview of Freshwater Ecosystems — Review Text 173-191
- Scope of the Clean Water Act — Focus Text 191-194
- Structure of the Clean Water Act — Focus Text 196-198
- NPDES Permits and TMDLs — Review Text 197-213
- Wild & Scenic Rivers — Skim Text 213-224
- Waters of the United States — Focus Text 224-233 and Review *Sackett*

- Group Project Meetings

Day 3 – Freshwater Ecosystems (II) and Grassland Ecosystems

• Implementing Section 404	Review Text 233-260 (Skim cases)
• Watershed Planning and Trading	Review Text 261-281 (Skim case)
• The ACF Case Study	Review Text 281-288
• Coasts and Estuaries	Skim Text 299-300, 307-309, 314-322
• Federal Grassland Conservation	Focus BLM Proposed Rule

- Group Phase I Presentations

<u>WEEK TWO</u>

Day 4 –Marine Ecosystems – Fisheries and Marine Protected Areas	Text 57-107 *Skim 107-115*
Day 5 – Forest Ecosystems and PES	Text 116-168 *Skim 169-172*
Day 6 – Fragile Ecosystems: polar regions and desertification	Text 324-342

Day 7 – Final group project presentations
Note class meets from 9-12