



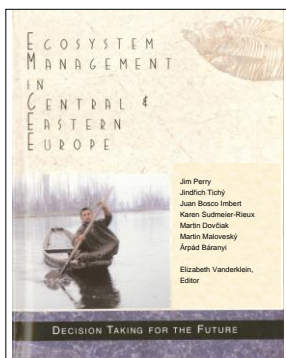
NATURAL RESOURCE MANAGEMENT (2 CREDITS)

INSTRUCTOR: DR. MARTIN DOVCIAK

COURSE DESCRIPTION: This course presents the main principles, concepts, and tools of natural resource management and it introduces ecosystem management as a new paradigm and a methodology used in natural resource management. We will discuss the evolution of human attitudes and management approaches to natural resources that lead to ecosystem management as the only viable option in some resource management decisions. We will also discuss limitations of the ecosystem management approach and we will identify those natural resource management settings where alternative approaches need to be taken. We will cover in detail all main principles of ecosystem management, including human values, the socio-ecological system concept, ecosystem approach and ecological modeling, hierarchy and scale issues, sustainability and monitoring, data collection and management, institutional design, public participation, interdisciplinary and interagency cooperation, conflict resolution, and adaptive management. Applications of landscape ecology and land-use planning in natural resource management will be examined as well.

INSTRUCTIONAL STRATEGY: The course consists of an integrated set of teaching methods including lectures, lecture discussions, and videos organized into block teaching modules, and corresponding weekly individual computer-based exercises and small group discussions leading to final writing assignments. Lectures cover all major topics and a set of questions and exercises will be provided to students every week to guide reading and assignment preparation.

READINGS: Weekly readings are selected from a course textbook and a course packet (below).



Course textbook: Perry, J., Tichy, J., Imbert, J. B., Sudmeier-Rieux, K., Dovciak, M., Malovesky, M., Baranyi, A. 2001. *Ecosystem management in Central and Eastern Europe: Decision-taking for the future*. Bang Printing, Brainerd, MN, E. Vanderklein, Editor, 293 pages.

Course packet: These additional reading materials expand selected topics from the course textbook and lectures.

EVALUATION STRATEGY: The final grade will be based on a final writing assignment (50%) and a final exam (50%). The final exam will be comprehensive, covering both lecture and reading material from the course textbook and the course packet. For the assignment, each student should choose a real world natural resource management problem that he or she is familiar with or can find most information about. The student should analyze how the individual ecosystem management principles relate to his or her

management problem and discuss different management approaches and alternatives to managing the resource in question. During their weekly meetings, students should split into working groups of 5-6 students, within which they will analyze and discuss their respective natural resource management problems. The composition of each working group should be diverse (made up of students with varying educational and professional backgrounds) so that students can discuss their resource management problems from different perspectives. Active participation in the group discussions during the weekly meetings is required to help students think through their problem and acquiring feedback from their peers. Resource management problems from course materials may not be chosen as an assignment topic. Late assignments will not be accepted unless prior arrangement is made with the instructor.

LEARNING OBJECTIVES AND OUTCOMES: At the end of the course, students will have working knowledge of different principles and aspects of resource management. Particularly, they will understand:

- how human values influence the range of choices open to a resource manager;
- how and why ecosystems provide the framework for decision-making;
- ecological and social implications of hierarchy and scale issues in management;
- different aspects of sustainability in a socio-ecological system;
- the need for and methods of monitoring across spatial and temporal scales;
- the need for multidisciplinary and multiagency approaches to management;
- positive and negative aspects of public participation and multiagency approach;
- possible ways of conflict resolution and adaptive management;
- limitations of the ecosystem approach to management.

COURSE SCHEDULE

Block Sessions	Topic
I: March 29, 9-12 am	Introduction, course logistics. Human values and evolution of resource management.
II: March 29, 2-6 pm	Resource & ecosystem management: overview & principles. Ecosystem as conceptual and modeling management tool.
III: March 30, Field trip	Forest, biodiversity, and water resource management at the Gabcikovo-Nagymaros Dam, Slovakia-Hungary border.
IV: March 31, 6-9 pm	Hierarchy and scale issues in resource management. Sustainability and ecosystem monitoring.
V: April 1, 6-9 pm	Adaptive management. Role of institutions and public in resource management.
VI: April 2, 6-9 pm	Course review, Review of the course assignment.

Weekly Sessions	Topic
April 2-9	Human values and evolution of resource management.
April 10-16	Resource & ecosystem management: overview & principles.
April 17-23	Ecosystem as conceptual and modeling management tool.
April 24-30	Hierarchy and scale issues in resource management.
May 1-7	Sustainability and ecosystem monitoring.
May 8-14	Adaptive management. Role of institutions and the public.

Final Exam: May 22

Final Assignment Due Date: May 22