

# MAJOR IN RESTORATION ECOLOGY

---

The Major in Restoration Ecology emphasizes interdisciplinary study, research, and restoration of damaged, degraded or destroyed rangelands and forested ecosystems of the world. More specifically, this major focuses on the restoration of rangelands and forests for multiple uses. These uses include both consumptive and non-consumptive activities such as recreation, preservation of wildlife habitat, providing for aesthetic beauty, livestock grazing, and timber production. Forests and rangelands occupy the vast majority of the earth's land surface and Colorado is an ideal setting for the study of restoration ecology with many different types of rangeland and forest ecosystems in close proximity.

Students in this program will gain the important knowledge and skills necessary to restore damaged ecosystems. They will learn how to manipulate soil, water, vegetation and animal resources in order to implement successful restoration for local, state and federal land management agencies as well as for a variety of private entities, landowners and non-governmental agencies. Students develop an in-depth understanding of basic plant and animal biology; a basic understanding of the physical sciences as they relate to restoration ecology; knowledge of important concepts of ecology and natural resources management; an understanding of economics related to evaluating alternatives; and analytical and decision-making skills. Students also develop communication, political and interpersonal skills to make their education effective. Examples of career opportunities include, but are not limited to restoration ecologist, soil conservationist, plant ecologist, riparian ecologist, researcher, commercial sales and service representative, consultants, and mine reclamation specialist.

## Learning Objectives

Students will:

1. Accurately and effectively communicate their understanding of restoration ecology both verbally and in written form.
2. Demonstrate an understanding of the ways in which the ecological structure and functioning of natural resource systems are damaged, degraded or destroyed by disturbances.
3. Apply qualitative and quantitative measurement and analytical techniques to identify and evaluate objectives and metrics for restoration programs.
4. Demonstrate proficiency in working with diverse, multi-disciplinary and multi-stakeholder teams to develop and communicate goals, objectives, and prescriptions for overcoming limitations to restoration.
5. Demonstrate learning of subject areas outside their major study focus, including (but not restricted to) principles/issues in wildlife, water, recreation, wilderness, soil, rangeland, and fishery resources; students will also demonstrate knowledge of social science analytic techniques.
6. Develop vegetation/habitat management and restoration techniques and methods based on scientific insights that can be used to craft solutions responsive to unique challenges.
7. Be able to work together as a team to solve natural resource problems, taking into account ecological, social, government policy, and economic contexts, and the use of inquiry, analytical, integrative/synthetic, and communication skills.