

# LANDSCAPE ECOLOGY, CERTIFICATE

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Requirements for an undergraduate certificate may be completed at any campus location offering the specified courses for the certificate.

## Program Description

Landscape ecologists are in increasing demand in the areas of conservation management, urban planning, and Earth system science. Landscape-level management also increasingly depends on an understanding of coupled natural-human systems, and landscape ecologists need to be trained to understand interdisciplinary linkages between social and ecological sciences, which is a strength in geographic thought. This 12-credit certificate provides training necessary to make inferences about ecological dynamics at landscape scales through training in spatial analysis, environmental modeling, and geographically relevant ecosystem processes. Learning objectives: apply techniques of spatial analysis and environmental modeling to complex socio-ecological landscape systems, draw from social and ecological sciences to address challenges in coupled natural-human systems, and apply these tools for landscape-level management of human-environment processes.

## What is Landscape Ecology?

Landscape ecology is a key focus within the physical and environment-society subdisciplines of geography. Geographers focusing on landscape ecology use field studies, models, and laboratory activities to measure, quantify, and forecast how ecosystems change across space and time. They work at scales ranging from microbial to sub-continental. Through such geographic analyses, landscape ecologists seek to understand how natural and human disturbances (such as fire or suburban development) influence landscape sustainability, and they make recommendations for managing the landscape. Landscape-level management increasingly depends on an understanding of coupled natural-human systems, and landscape ecologists need to be trained to understand interdisciplinary linkages between social and ecological sciences. The certificate in Landscape Ecology is more focused than the complementary Physical Geography and Environment-Society certificates, and it incorporates training in geospatial technologies.

## You Might Like This Program If...

- You are curious about how demand for more commodities and services from global ecosystems has led to an ecological crisis.
- You want to study how climate change affects spatial distribution of plant species or the frequency of wildfires.
- You want to learn about the role of people on landscape patterns and processes ranging from wilderness to cities.
- You want to apply techniques of spatial analysis and environmental modeling to address challenges in complex human-natural systems.