



Plant Ecology

Native Plant Trust's Plant Ecology course will teach you about the distribution and abundance of plants and their interactions with other organisms and the physical environment. You will learn:

- An overview of ecological principles and their field applications.
- The factors that affect plants as individuals, populations, and communities.
- How to investigate different plant communities, including scientific process, sampling, and data collection and interpretation.

While the native plant examples are specific to New England, the concepts, approaches, processes, and tools for learning botanical science can be applied no matter where your specific location.

Structure

This course is offered in 8 modules. The modules are self-paced and include learning material with accompanying activities. Each module also offers online journal spaces to post assignments, forums for discussion and questions, and quizzes. An instructor will facilitate the forums and review the submitted assignments.

Concepts

Module 1: Plant Ecology: Biotic and Abiotic, Organization, Biomes, Species

Module 2: Life of a Plant: Autoecology and Life Stages, Plant Adaptations and Ecotypes, Life Span-History-Attributes

Module 3: Plant Communities and Sampling: Ecological Community and Niche, Community Attributes, Plant Community and Vegetation Sampling, Measures

Module 4: Biogeochemistry: Soil and Microbes, Cycles (Biogeochemical, Nitrogen, Carbon, Water), Photosynthesis, Pyramid/Tropic Levels

Module 5: Plant Interactions: Competition, Commensalism and Parasitism, Mutualisms, Mycorrhizae, Herbivory, Carnivorous Plants, Allelopathy

Module 6: Plant Biogeography: Biome Distribution, Regional Landscape History, Temperature and Precipitation, Environmental Factors, Microclimates

Module 7: Disturbance and Succession: Disturbance, Fire, Stability, Succession, Climax Community

Module 8: Conservation: Biodiversity, Habitat Loss-Degradation-Fragmentation, Habitat Conversion, Agriculture, Invasive Species, Climate Change

Requirement

Plant Ecology is a Basic Core requirement for Native Plant Trust's Native Plant Studies Certificate. Students must complete all lessons (including assignments, journal entries, and quizzes) to count this course toward their certificate.

Tools

You will need a notebook for observations and a distance measuring tool for land plots. You may also choose to use a soil test kit.

Resources

There are no required books for this course.

Contacts

If you have further plant science interest that you wish to pursue in-person, we recommend:

- Attending an in-person program with Native Plant Trust
- Contact your state natural heritage program
- Contact the science departments at your local college