

Introduction to Lakes

Course Objectives

Unit 1

Define lake ecology.

Identify components of a food chain.

Place in order from least to most productive the three main categories of lake trophic status.

Discuss different factors that influence lake ecosystems.

Describe the process of thermal stratification.

Identify three human activities that can impact inland lakes.

Unit 2

Describe two ways in which water moves through the water cycle, both into and out of a lake ecosystem

Identify the watershed you live in

Identify a critical hydrologic feature and describe its function in a watershed

List the ecological functions of a wetland that help protect a lake ecosystem

Distinguish between point and non-point source pollution

Develop a list of potential local, municipal, county, state, and federal partners who can assist in local watershed management

Unit 3

Describe three functions of a lakes transition zone that help to promote a healthy ecosystem

Identify three environmental impacts that may result from developing shoreline areas

Identify two benefits of a buffer zone

Implement best management practices that can reduce stormwater runoff along a lake shoreline

List two signs that may help identify a failing septic system

Name two ways to reduce household water use to avoid overloading a septic system

Unit 4

Identify who gets riparian water rights in the state of Michigan.

Identify activities riparians can conduct, given reasonable use, on the water abutting his/her property.

Identify one local policing method that can be used to control lake utilization activities.

Identify two indicators which help determine the location of a shoreline's ordinary high-water mark.

Identify two parts of Michigan's Natural Resources and Environmental Protection Act which affect activities around lakes.

Unit 5

Identify three major growth forms of algae.

Identify the four ways that larger rooted (vascular) aquatic plants attach in the water.

Distinguish between beneficial, neutral, nuisance, and invasive aquatic plants.

Describe at least three common aquatic invasive species found in lakes.

Describe short-term management techniques that can be used to manage aquatic plants.

Describe long-term management techniques that can be used to manage aquatic plants.

Determine when a state-issued permit is needed to control aquatic plants.

Unit 6

Describe the benefits associated with developing and partnering with various lake management institutions, including lake associations, township public improvement projects, and lake boards.

Identify components of a comprehensive lake management plan.

Describe approaches for encouraging public engagement in lake protection and management.