



# Introduction to Lakes Online Course

## Course Objectives

### Unit 1: Introduction to Lake Ecology (Bhakta & Gibb)

- Identify the definition of lake ecology.
- Identify components of a food chain necessary to support a healthy lake ecosystem.
- Place in order from least to most productive the three main categories of lake trophic status.
- Identify three characteristics of lakes that can influence lake ecology.
- Identify three human activities that can impact inland lake health.

### Unit 2: Lakes and their Watersheds (Latimore)

- 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 nonpoint source pollution.
- Develop a list of potential local, municipal, county, state, and federal partners who can assist in local watershed management.

### Unit 3: Lakes and their Shorelines (Herbert)

- 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.
- List two Best Management Practices that can help 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: Lakes and the Law (Herbert, Latimore)

- Identify who gets riparian water rights in the state of Michigan.
- Identify activities riparians are allowed to 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: Aquatic Plants (Wolfson, Herbert)

- 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: Promoting Citizen Involvement (Latimore)

- Describe the benefits associated with developing or partnering with various lake management institutions, including lake associations, township public improvement projects, and lake boards.
- Identify components of a comprehensive lake management plan.