



Lake Erie Watershed

I. Location

- Pennsylvania, New York, Ohio, Michigan, and Canada
- It makes up the larger watershed of the Great Lakes system.
- Creates a portion of the boundary between the US and Canada

II. Main Waterways in Pennsylvania

- Lake Erie: Average depth= 62 ft. (most shallow of the Great Lakes)
Max depth: 210 ft.
- Other Important Waterways: Walnut Creek, Elk Creek

III. History

- Considered by the Native Americans to be a "sweetwater sea."
- Last Great Lake to be discovered.
- Early colonization greatly reduced water quality in the early 1800's.
- Oliver Hazzard Perry made the famous quote, "We have met the enemy and they are ours," during the Battle of Lake Erie in the War of 1812.
- Declared "dead" in the 1970's because of eutrophication. Excessively high levels of toxins and chemicals caused massive fish kills and caused the lake to be void of life.

IV. Watershed Area and Size

- Watershed Area= 509 square miles within PA border
- 5th largest watershed in PA
- The Great Lakes make up the largest system of freshwater lakes in the world.
- Now considered the cleanest of the Great Lakes

V. Surrounding Environment

1. Land Use and Land Cover

- Main cities: Erie
- Mainly developed land consisting of the city of Erie and surrounding residential/industrial areas
- Land used for pasture and crop areas with spotty/if any forested land
- Agriculture
- Presque Isle State Park and beach areas
- Three nuclear power plants are situated along the shores of Lake Erie: Perry Nuclear Power Plant, located east of Cleveland, Davis- Besse Power Plant, near Sandusky, and Fermi Power Plant, located south of Detroit.



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VI. Population

- Approximately 240,000 people live in the Lake Erie watershed in PA.
- 10,500,000 in US live in watershed.
- 1,900,00 in Canada in watershed.

VII. Bedrock and Soil Types

- The Lake Erie watershed was formed by glaciers. This formation resulted in rich soils, which make the Lake Erie Basin an important area for agriculture.
- Stratified sand and gravel
- Sandstone, shale, limestone

VIII. Emissions into Water

1. Past emissions:

- PCB's
- Mercury from paper mills
- DDT from agricultural run-off. Though banned in 1972, no decline in levels has yet been shown.
- Dioxin from pulp and paper mills

2. Current emissions:

- Phosphorus from agricultural runoff

IX. Regulations Concerning Watershed

- Great Lakes Water Quality Agreement of 1972- reduce levels of phosphorus and sewage emissions into the lake.

X. Water Usage

- Public, commercial, domestic, industrial, thermoelectric power, livestock, irrigation, wastewater treatment
- More than 1 million people in the Lake Erie Watershed receive their drinking water from Lake Erie.
- Each year, more fish are harvested from Lake Erie recreationally and commercially for human consumption than from any other Great Lake.
- 1 million people enjoy swimming and boating in Lake Erie each year.
- Intra-Great Lakes Transportation system
- Irrigation



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XI. Threats

- Invasive Species: zebra mussels, rusty crayfish, spiny water flea, round goby, sea lamprey, white perch, curly leaf pondweed, eurasian watermilfoil, flowering rush, and purple loosestrife
- Agricultural runoff
- Past harmful emissions that have remained in the water due to bioaccumulation, insolubility, and persistence
- Pollution, biomagnification and accumulation effects from the Great Lakes upstream of Lake Erie including Lake Superior, Lake Huron and Lake Michigan
- Eutrophication

XII. Action in the Watershed

- International Joint Commission (IJC)- agreement between US and Canada. Works to reduce chemicals in the lake and target “Areas of Concern” for future improvement and monitoring- www.ijc.org
- Lake Erie Alliance- www.earthshareofohio.org
- Great Lakes United- www.glu.org
- Great Lakes Inter-Tribal Council- www.glitc.org
- Great Lakes Indian Fish and Wildlife Commission- www.glifwc.org
- Great Lakes Camp and Trail Association
- Earth Force- www.earthforce.org