

Fisheries timeline (for teachers): Category answers provided below. For student “Fishery Time” cards, see following section.

S = Social Change: Any change in group behavior, attitude, policy, or politics.

T = Technological Change: Any change that results from a new invention, or which alters the ability of people to use tools.

E = Environmental Change: Any change in the Great Lakes habitat or human/fish populations that affects the health of the ecosystem.

Station #1 | Early Times of Abundance – 15,000 years ago to 1800 A.D. or C.E.

- E** 15,000 years ago: Glaciers retreat and the Great Lakes begin to take shape.
- E/T** 8,000-10,000 B.C. (Archaic Period) - Prehistoric people hunt, fish and gather food. Fishing is done with spears and hooks.
- T** 1,000 B.C. – 1600 A.D. or C.E. (Woodland Period) – Native people add nets and harpoons to fishing gear.
- S** 1600s: Europeans begin to explore the Great Lakes.
- S** 1700s: The French and British establish trading posts where fishing gear is traded.
- S** 1760s: French and Indian War (1754 – 1763) ends and Great Britain takes control of the region.
- S** 1770s – 1790s – U.S. Revolutionary War takes place. U.S./Canadian border is established.
- S** Throughout this era – The fishery is thought to be inexhaustible.

Station #2 | Changing Times: Exploitation and Degradation – 1800-1870s

- S** 1800: European settlement increases.
- E** 1812: After the War of 1812, the first commercial fisheries are established to serve eastern cities with salted fish.
- E** 1820s – 1830s: Fur trading begins to decline and fur companies convert to fishing.
- T** 1825: The Erie Canal opens, connecting Lake Ontario with the Atlantic Ocean.
- T** 1829: The Welland Canal opens, which allows ships to travel around Niagara Falls.
- E/T** 1830: The sea lamprey, an invasive species, is first reported. The lake trout population will be greatly reduced by the sea lamprey that feed on them.
- S** 1836: The Treaty of 1836 (Ottawa-Chippewa Treaty) transfers one of the largest tracts of land in the Great Lakes region from the Native Americans to the United States. Native Americans retain fishing and hunting rights.
- E** 1830s – 1840s: The Atlantic salmon is overfished in Lake Ontario. This raises great concerns in the region. (This fish was last seen in the Great Lakes in the late 1800s. Current Great Lakes salmon are non-native Pacific salmon).
- E** 1860s – 1870s: Logging activity peaks in the upper Great Lakes region. Logging waste, dammed streams and soil erosion negatively affect fish habitat.
- E** 1860s: Fish begin to decline in many areas of the Great Lakes. Fishing is prohibited in some areas.

Station #3 | Early and Continued Efforts of Regulations and Stocking: 1870s – 1918

- S** Late 1800s: Another wave of settlers arrives in the region. Some bring their fishing cultures and skills with them. Cities grow.
- T** 1870s: Shipbuilding begins using steel and steam engines in power tugboats. Machine-made nets replace handmade nets.
- T** 1875: Railroad cars carry frozen fish from the Great Lakes to the east coast.
- E** 1870 – 1890: Fish are raised in facilities called hatcheries. Fish are stocked (added) to the lakes to reverse declining populations.
- E** 1880s: Alewives begin to appear in the late 1800s.
- E** 1889: More than 10,000 people are fishing the lakes; over 146 million pounds (66.4 million kg) of fish are caught.
- E** Late 1880s – early 1900s: Arctic grayling and Atlantic salmon decline. Fewer blue pike, lake trout, lake whitefish and chubs are being caught in most lakes, particularly in Lake Erie. Lake sturgeon declines in all lakes between 1890 and 1910.
- T** 1900: Motorized net lifters are able to haul larger nets from the water. The Chicago Sanitary and Ship Canal is constructed, connecting the Great Lakes with the Mississippi watershed.
- S** Early 1900s: Governments in the Great Lakes region begin to adopt some regulations on fishing by setting limits and quotas on catches, restricting access to certain species, setting constraints on fishing gear and limits on who may fish.
- S** 1909: The Boundary Waters Treaty between the U.S. and Great Britain (in control of Canada) established the International Joint Commission to study water pollution in the Great Lakes and recommend solutions to the governments.
- S** 1914: Great Britain (ruling Canada) enters World War I and fishing in Canada is considered an essential service.
- E** 1915: The fish catch from the Great Lakes reaches an all-time high of 151 million pounds (68.6 million kilograms).
- E** 1918: Fish catches decline.

Station #4 | Era of New Invaders and Challenges: 1920s – 1950s

- S** 1920s and 1930s: Tourism and commercial fishing grow.
- E** 1920s – 1930s: Total fish catch levels off to less than 120 million pounds (54.5 million kilograms) per year until World War II. The Lake Erie lake herring population crashes.
- S/E** 1929: The U.S. stock market crashes and many fish wholesalers go broke (along with many other people in the U.S.).
- S** 1930: A Michigan court case rules that Native Americans have no special fishing and hunting rights under state regulations. Native American commercial fishermen have to purchase commercial state licenses.
- T/S** Mid 1930s: The unusually efficient bull-net is banned in most areas of the U.S. Great Lakes.
- S** Mid 1930s: There is wide spread acknowledgement that the fishery is in trouble. Lake Superior seems to have been spared.

- E** 1930s – 1940s: The non-native alewife and sea lamprey make their way in to the upper Great Lakes through the Welland Canal.
- S** 1939 – 1942: The US and Canada enter World War II. Fish demand is great. People fish more, but catch less.
- E** Late 1940s: The fishery is in bad shape and getting worse. By the 1950s the Lake Superior lake trout population is fed on by the sea lamprey and begins to collapse.
- S** 1954: The Convention on Great Lakes Fisheries was signed by the U.S. and Canada. This agreement created the Great Lakes Fishery Commission.
- S/E** 1955: The Great Lakes Fishery Commission, a partnership between the U.S. and Canada, is established. Initially, they cooperate to control the sea lamprey. Shared fishery management goals are developed for each Great Lake across state and international boundaries.
- E** Late 1950s: A chemical is applied to some Great Lakes streams to control the sea lamprey.
- T** 1959: The Saint Lawrence Seaway opens, allowing medium-sized international ocean-going vessels to travel to the Great Lakes.

Station #5| Time of New Problems and Recovery: 1960s - 1980s

- E** Early 1960s: The lake trout is lost, causing alewife populations to increase (normally eaten by the lake trout). Alewife die-offs (piles of dead alewives) litter beaches in the 1960s. This occasionally continues to happen in modern times.
- E** 1966: Pacific salmon are introduced into Lake Michigan to provide fishing opportunities and prey on the alewife.
- Late 1960s: Mercury is acknowledged to be contaminating walleye in Lake Erie.
- E** 1969: The Cuyahoga River emptying into Lake Erie is so contaminated that it catches fire. Lake Erie is so polluted with sewage, agricultural and industrial pollution that it contains very little oxygen. The media proclaims Lake Erie “dead.”
- E** 1969: The National Environmental Protection Act is passed, granting federal protections to the Great Lakes.
- E** 1970: The entire sport and commercial fisheries of Lake Erie are temporarily closed.
- E** 1970s: The U.S. and Canada ban the sale of DDT (an insecticide) and PCBs (chemicals which contaminate the Great Lakes).
- S** 1972: The U.S. and Canada sign the first Great Lakes Water Quality Agreement to protect and improve Great Lakes water quality by controlling sewage, industrial pollution and phosphorus. This sets the stage for the development of Remedial Action Plans (RAPs) that would help clean up the most contaminated sites in the lakes so they could no longer contribute toxic chemicals to the fish we eat.
- E** 1972: The Clean Water Act is passed protecting the Great Lakes from new chemicals inputs like dioxin and PCBs.
- S** Late 1970s and 1980s: Walleye rebound in Lake Erie. As other fish begin to make a comeback, the Great Lakes system is seen as resilient, able to “bounce back.”

Station #6 | Continued Time of New Problems and Recovery: 1980s - present

- S/E** 1980: The Great Lakes Fishery Commission and several other groups implement a Joint Strategic Management Plan for the Great Lakes fishery.
- S** 1980s: The total economic impact of the Great Lakes sport fishery is estimated between \$2-4 billion per year, and the recreational fishery supports over 60,000 jobs in the region.
- S/E** 1981: The Chippewa-Ottawa Treaty Fishery Management Authority is established to stabilize and enforce fishing regulations for tribal fishermen.
- E** 1981: Native American tribes and the U.S. government negotiate a settlement called the Entry of Consent Order, which grants tribes exclusive fishing rights in certain treaty waters. In exchange, the tribes agree not to fish commercially in certain areas important for sport fishing or for re-establishing lake trout populations.
- E** Mid 1980s: Invasive species alert! The zebra mussel arrives via a ship from the ocean. It is native to the Baltic Sea. Zebra mussels proceed to eat a great deal of plankton (plankton is the base of the food chain, upon which many other fish depend), affecting yellow perch populations. In addition, mussels clog water intake pipes, causing expensive maintenance issues. Also, a new exotic species, the spiny water flea (a type of zooplankton) arrives in Lake Huron and spreads throughout the Great Lakes.
- E** 1989: More invasive species?! The quagga mussel is spotted in the Great Lakes. At first sight it seemed a larger zebra mussel, however, by 1991 it was verified to be a quagga mussel (a new invader).
- E** 1990: Licensed commercial catch in the Great Lakes is 105 million pounds (47.7 million kilograms) of mostly lake whitefish, yellow perch and alewife. The catch is largest in Canada.
- E** 1990s: Concentrations of PCBs, DDT and other contaminants in fish decline over 90% from the levels recorded in 1970.
- S/E** 2008: The ballast water treatment standards bill passes through the House and Senate, helping to eliminate the transportation of invasive species.
- E** 2010: Asian carp finally make their first appearance within the Great Lakes, (bighead carp) and the region braces for more to come.