

The Death and Life of the Great Lakes

The Death and Life of the Great Lakes Pt 1

TL;DR:

- Egan part 1 documents a series of policy choices;
- Those policy choices induced successive waves of ecological instability in the Great Lakes system;



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Policy 1: canal building



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- Problem:
- Actors:
- Evaluation criteria:
- Policy:
- Consequences:

Policy 1: canal building

- Problem: Great Lakes unconnected to oceans by navigable water; others?
- Actors: British army; DeWitt Clinton; Canada/Britain; Congress/Eisenhower; others?
- Evaluation criteria: economic growth/development via trade;
- Policy: build canals! Welland, Erie, Seaway;
- Consequences: ...

Policy 2: dealing with the first invasion



Policy 2: dealing with the first invasion

- Sea lamprey discovered in Lake Ontario in 1835 - may have swum through the Erie canal;
- Found above Niagara Falls in Lake Erie in 1921;
- Lake Michigan in 1936;
- Lake Michigan lake trout harvest 6.5 million pounds in 1944 - only 324k pounds in 1949.

Policy 2: dealing with the first invasion

- Problem:
- Actors:
- Evaluation criteria:
- Policy:
- Consequences:

Policy 2: dealing with the first invasion

- Problem: collapse of native top of the food chain decimated commercial fishing;
- Actors: US Fish and Wildlife Service; Applegate;
- Evaluation criteria: restore the Great Lakes' natural apex predators; maintain canal links;
- Policy: poison spawning grounds;
- Consequences: Lamprey population < 10% of peak by 1967 – too late for lake trout.

Policy 3: dealing with the second invasion



Policy 3: dealing with the second invasion

- Alewife (river herring) - an east coast fish and food source for more than 4k years, used as an early form of welfare in colonial America;
- May be a natural addition to Lake Ontario - found there in 1873;
- Overfishing decreased apex predator populations in Lake Ontario leading to Alewife population explosion;
- Found in Lake Erie in 1931, in Lake Huron in 1933, in Lake Michigan in 1949, and in Lake Superior in 1954;
- By 1965 they were 90% of the fish mass in Lake Michigan; massive die-off.

Policy 3: dealing with the second invasion

- Problem:
- Actors:
- Evaluation criteria:
- Policy:
- Consequences:

Policy 3: dealing with the second invasion

- Problem: commercial fishing destroyed; repeated massive die-offs decimated tourism; Lake Michigan biodiversity and ecological stability upset.
- Actors: “There are hundreds if not thousands of government bodies—from township boards to state environmental departments to Native American tribes to federal fishery agencies to the U.S. and Canadian International Joint Commission—that have some role in managing the interconnected lakes for the sake of the 50 million people who live within a short drive of their shores”; Michigan Fishery Chief Howard Tanner.
- Evaluation criteria: ecological stability and fun; maintain canal links;
- Policy: Import coho and chinook salmon into Lake Michigan;
- Consequences: explosion of recreational fishing, unsustainable salmon population growth.

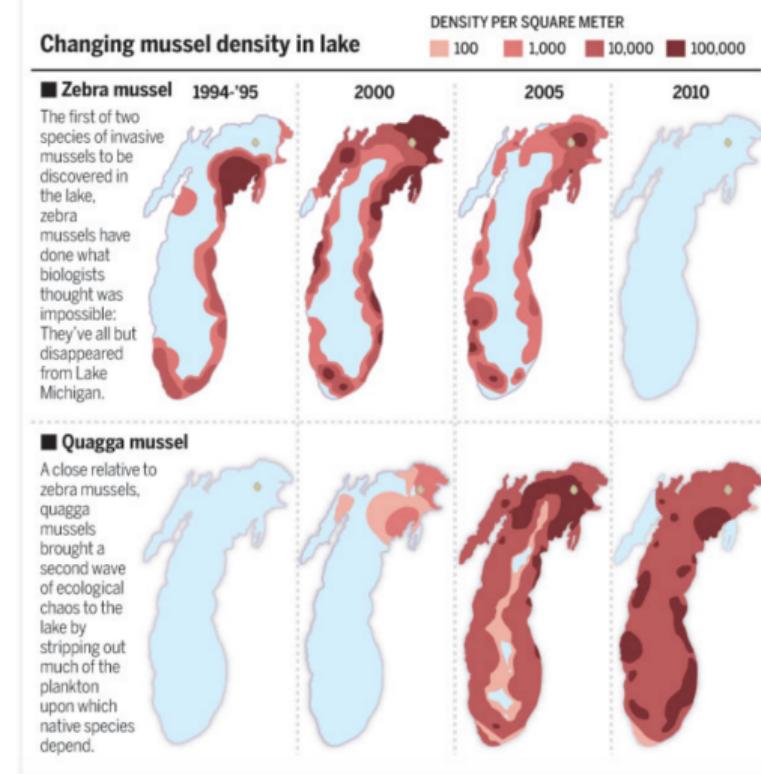
Policy 4: dealing with the third invasion



Policy 4: dealing with the third invasion

- With the opening of the seaway, exotic species quickly arrived in the Great Lakes;
- First zebra mussel found in Lake St Claire in 1988;
- Hypothesized to have arrived via water ballast from a ship;
- Quagga mussel found in Lake Erie in 1989.

Policy 4: dealing with the third invasion



Policy 4: dealing with the third invasion

- Problem:
- Actors:
- Evaluation criteria:
- Policy:
- Consequences:

Policy 4: dealing with the third invasion

- Problem: destruction of the base of the food chain;
- Actors: EPA; US coast guard; Isle Royale National Park Superintendent Phyllis Green;
- Evaluation criteria: stop importing exotic species; maintain canal links;
- Policy: mandatory ballast flushing before entering the Great Lakes; development of ballast treatment systems;
- Consequences: ???