

Lake-based Energy Proposals and the Health of Lake Erie

Energy companies view the lakebeds of the Great Lakes as a “new frontier” for the routing of cross-lake oil and gas pipelines and electric transmission lines. Efforts to harvest high-speed winds have also spurred plans to anchor wind energy systems offshore or along the coasts of the Great Lakes.

Lakebeds provide critical habitat for the aquatic organisms that form the foundation of the Great Lakes food chain. An essential element of the world’s largest freshwater ecosystem, and the heart of an annual fishery worth more than \$4 billion, protecting this habitat helps protect the health of the entire Great Lakes ecosystem. Extensive projects have the potential to damage these lakebeds and nearshore areas. While there are existing stretches of pipelines and transmission lines, there are currently no structures that cross the lake bottom of an entire Great Lake and no large-scale wind energy farms located offshore or anchored into the lake bottoms of the Great Lakes. The next few years present a crucial opportunity to ensure a comprehensive review of emerging energy proposals and the most environmentally appropriate siting for projects that move forward.

Lake Erie’s Lakebed: The Biological Engine of the Great Lakes

Lake Erie, the shallowest of the Great Lakes, is also the most biologically productive. Its average depth is only 210 feet (19 meters). In contrast, Lake Huron is over twice as deep and Lake Superior is over seven and half times as deep. Lake Erie’s western basin is very shallow, averaging only 24 feet (7 meters).

This shallow lakebed, with its rocky areas, reefs and shoals, and numerous islands, offers an abundant assortment and diversity of habitat. These factors all combine to make Lake Erie’s entire lakebed vital habitat for a rich diversity of fish, plant



and animal life. It also supports a world-class fishery, featuring numerous species of sportfish, such as walleye, yellow perch and smallmouth bass.

Lake Erie is the most biologically productive of the Great Lakes, often producing more pounds of fish than the other Great Lakes combined.

According to the Great Lakes Fishery Commission, Lake Erie’s walleye fishery is measured in the tens of millions of dollars annually and is important to the economy of all the lake’s surrounding jurisdictions. In 2001, the American Sportfishing Association valued the economic impact of Ohio’s Lake Erie sportfishing industry at \$680 million.

Aquatic habitat in Lake Erie is fragile and under stress. Urbanization, the development of the shoreline, loss of coastal wetlands, and sedimentation from tributaries and watersheds are damaging this valuable ecosystem. Pollution on the bottom of Lake Erie is contributing to unhealthy conditions for life forms that inhabit the lake bottom. These tiny organisms are a critical source of food for fish. The continued introduction of invasive species is causing unpredictable alterations to the food chain and is implicated in the recent outbreaks of botulism, and fish and waterfowl die-offs. A “dead zone,” an area of low oxygen,

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has reappeared in the bottom waters of the central basin after a period of recovery that began in the late 1970s. Lake levels in the Great Lakes are also expected to decline due to climate change, creating a shallower Lake Erie over time, and worsening its problems.

All of these stresses mean that the health of Lake Erie is in a fragile balance. Lakebed development risks tipping this balance in the wrong direction if it is not done with the utmost environmental attentiveness.

While some areas of the lake have been studied, there is no comprehensive assessment of lakewide sediment contamination. This means dredging could stir up pollutants such as polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and heavy metals that have been discharged into the lake. Chemical pollution that has settled over the years along

the lake bottom could be stirred up and re-released, only to move up the aquatic food chain. Silt from dredging can cover fish spawning areas, disrupting the survival of eggs. Loss or degradation of existing nursery areas for young fish by dredging or placement of structures on the lake bottom may lead to reduced hatchling survival rates and a smaller fishery.



Doing Wind Power Right

Great Lakes United is supportive of renewable energy sources and conservation programs that lessen our dependence on polluting fossil fuels and dangerous nuclear energy. Wind power is one such alternative. Yet, as with any project, new wind turbines have an effect on the environment they occupy, and these considerations must be factored into every placement decision. Wind power in the Great Lakes region can be done safely, but only if investment is first made in the knowledge to make wise decisions.

Fuels and Toxic Chemicals Don't Belong in Pipelines in the Great Lakes

Great Lakes United opposes the transportation of fuels or other toxic substances by new pipelines sited on or in the lakebeds of the Great Lakes. A leak or rupture risks contaminating drinking water and devastating plant, animal, and fish habitat, especially as significant damage could happen before leaks are even detected. Great Lakes United opposes lakebed pipelines because the risks far outweigh any benefits from cross-lake projects.

What Can Be Done?

With little scientific research on lakebed habitat in Lake Erie, the most pressing priority is to map and monitor the lake bottom in order to identify and protect rare and sensitive habitats, those that are economically important, such as fish spawning and nursery habitats, and habitats that support rare or endangered species, in advance of approvals for large-scale cross-lake utility projects. This information would allow for the development of a proactive basin-wide plan to guide the ecologically sustainable management of Great Lakes bottomlands.

Great Lakes United encourages citizens and public interest organizations to monitor proposals for new, large, projects, participate in decision-making, and promote the use of the precautionary principle, which requires applicants to demonstrate their projects will not be harmful to the environment, prior to approval of any permits for cross-lake pipelines, transmission cables, or wind farms.

Learn more about how to ensure our lakebeds are properly protected.

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