



Mapping Criteria

By executive order, the Michigan Great Lakes Wind Council was charged with recommending criteria to identify and map areas that should be categorically excluded from offshore wind energy development as well as those areas that are most favorable to such development.

RECOMMENDED MAPPING CRITERIA

In its 2009 report to the governor, the council recommended a set of 22 criteria to identify and map the “most” and “least” favorable areas for offshore wind energy development in the state’s Great Lakes, as summarized below. The council recommends that these criteria be considered by state or federal agencies as part of siting processes.

Summary of Mapping Criteria

Criteria	Buffer distance
Scenic vistas	6 miles
National park lakeshores	13 miles
Shoreline parks and wilderness	6 miles
Shipwrecks	0.5 miles
State bottomland preserves	Addressed during permitting
Underwater archeological sites	Addressed during permitting
Habitat/biological (5 criteria)	
• Concentrations of bird or bat species of conservation concern	5 miles
• Threatened and endangered species	5 miles
• Recreational fish spawning sites and refuges	1 mile
• Very high concentrations of birds or bats on at least a seasonal basis	5 miles
• Nearshore zone of biological productivity	3 miles
Commercial fishing areas	0.5 miles
International and state boundaries	0.5 miles
Shipping lanes (pursuant to NOAA nautical chart data)	1 mile
Aids to navigation	Addressed during permitting
Buoyed navigation channels	Excluded Area
Coastal airport zones	Excluded Area
Military operation areas	Excluded Area
Submerged transmission lines	Addressed during permitting
Disposal sites	0.5 miles
Harbors/marinas	5 miles
Large river mouths	5 miles

Three designations were developed for the mapping criteria, and each was assigned a color for visual representation:

- **Categorical exclusion areas (red):** Bottomlands that are not suitable for development based on existing uses and/or state or federal laws that provide for other exclusion uses (e.g., navigational channels, coastal airport setbacks, etc.)
- **Conditional areas (yellow):** Bottomlands that may have potential for development but contain one or more potentially competing value such as wildlife habitat, harbors, commercial fishing, shoreline, shipwrecks, etc.
- **Most favorable areas (green):** Bottomlands outside of categorical exclusion areas and conditional areas that do not contain any features defined by the mapping criteria

There is a total of 38,448 square miles of state-owned bottomlands. The table below identifies the number of square miles in each of the categories and at two different depths. Based on current technology, the practical depth limit is approximately 30 meters (about 100 feet) although some turbines have been installed at depths up to 45 meters.

Area type	No depth restriction (sq. miles)	30 Meters or less (sq. miles)	45 Meters or less (sq. miles)
Categorical exclusion area	1,710	349	521
Conditional area	23,399	7,363	9,554
Most favorable area	13,339	157	565
Total	38,448	7,869	10,640

SOURCE: Institute for Fisheries Research, UM/MDNRE, June 2010.

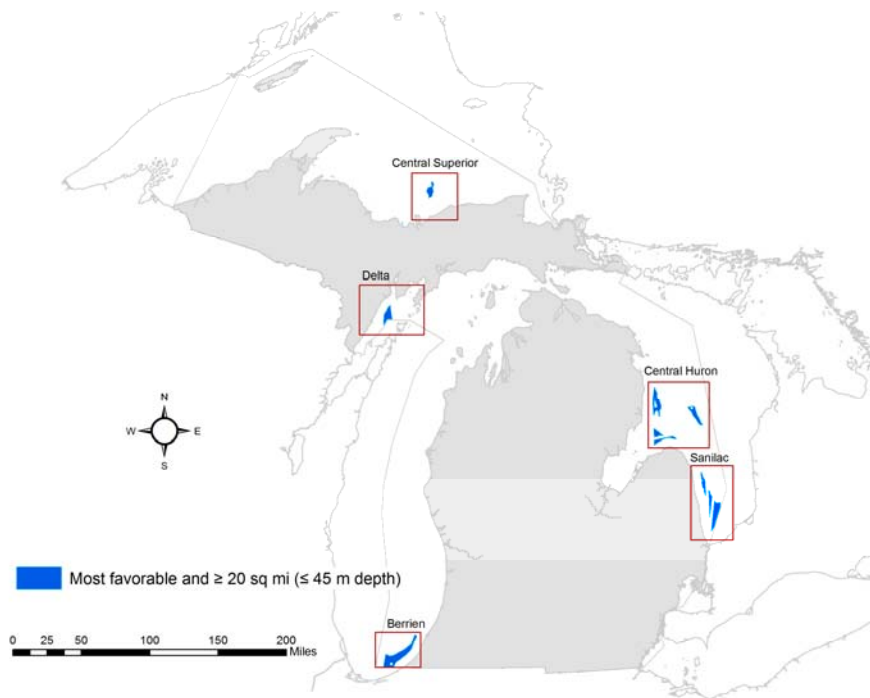
MOST FAVORABLE AREAS

The council’s mapping criteria were applied using a geographical information system (GIS) tool developed by the University of Michigan/Michigan Department of Natural Resources and Environment Institute for Fisheries Research. Based on currently available data, the five largest most favorable areas in shallow waters (greater than 20 contiguous square miles and 45 meters or less in depth) are located in the following areas. The council has referred to these locations as wind resource areas, or WRAs.

- Southern Lake Michigan near Berrien County
- Northern Lake Michigan near Delta County
- Central Lake Huron (out from Saginaw Bay)
- Lake Huron near Sanilac County
- Central Lake Superior near Alger County

The WRAs are shown on the map on page 3. For more information, visit www.michiganlowcouncil.org.

Wind Resource Areas, 2010



SOURCE: Institute for Fisheries Research, UM/MDNRE, June 2010.
