



## **Wind Resource Areas**

Executive orders 2009-1 and 2009-46, issued by Governor Jennifer Granholm, charged the Michigan Great Lakes Wind Council with identifying and mapping areas that are most favorable to the development of offshore wind energy in Michigan's Great Lakes. To do so, the council developed a set of 22 criteria related to biological, cultural, and other features and uses of the lakes. The council's mapping criteria were applied using a geographic 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 as of June 2010, the council identified the five largest most favorable areas in shallow waters (greater than 20 contiguous square miles and 45 meters or less in depth). The council has referred to these locations as wind resource areas, or WRAs.

### **About the Council**

The Michigan Great Lakes Wind Council, created by Executive Order 2009-1, served as an advisory body within the Michigan Department of Energy, Labor & Economic Growth during 2009 and 2010 to examine issues and make policy recommendations related to offshore wind energy development in Michigan. The 29-member council consisted of key state agency representatives and stakeholders appointed by Governor Jennifer M. Granholm.

Michigan Great Lakes Wind Council  
[www.michiganglowcouncil.org](http://www.michiganglowcouncil.org)

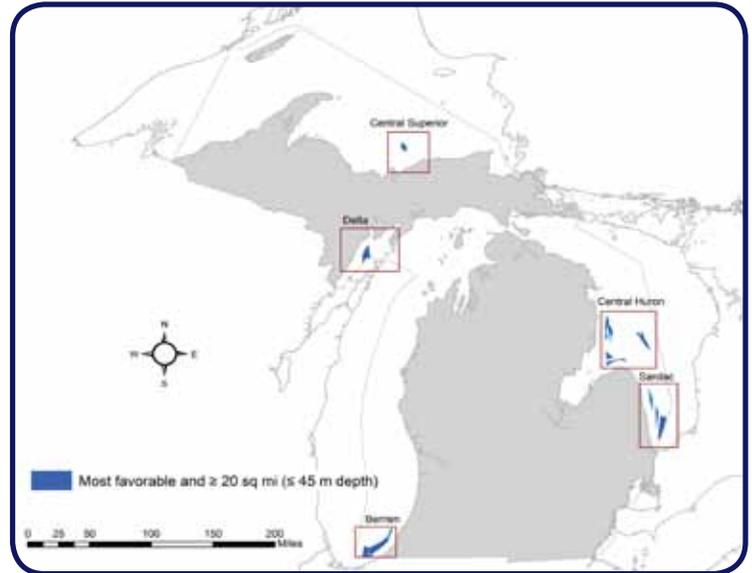
October 2010

# Where Should Offshore Wind Energy Be Developed?

Anticipating the development of Michigan’s world-class offshore wind resources, a council comprised of 29 stakeholders and state agency representatives used GIS mapping tools to identify the “least” and “most” favorable areas for development of offshore wind energy on state-owned bottomlands.

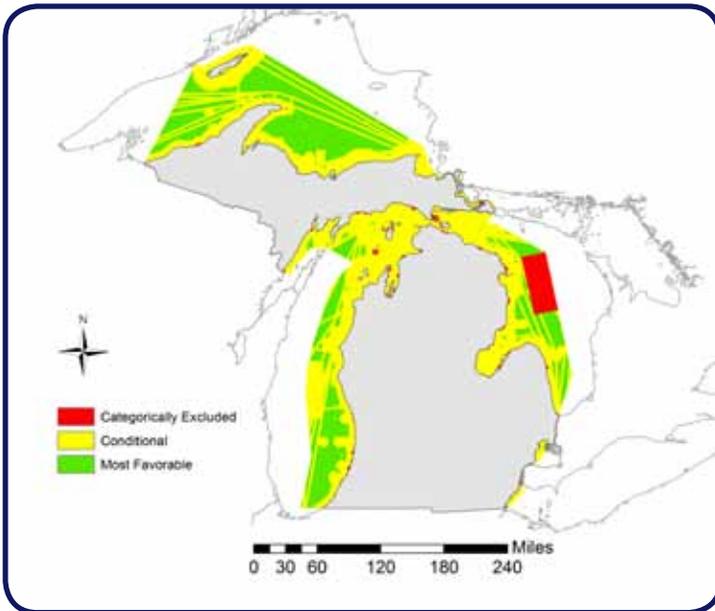
Three designations were developed using various screening criteria:

- ❖ **Categorical exclusion areas:** Bottomlands that are not suitable for development due to existing uses and/or state or federal laws that provide for other exclusive uses (for example, navigation channels, coastal airport setbacks, etc.)
- ❖ **Conditional areas:** 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:** Bottomlands outside of categorical exclusion areas and conditional areas that do not contain any features defined by the screening criteria



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
<b>Total</b>	<b>38,448</b>	<b>7,869</b>	<b>10,640</b>

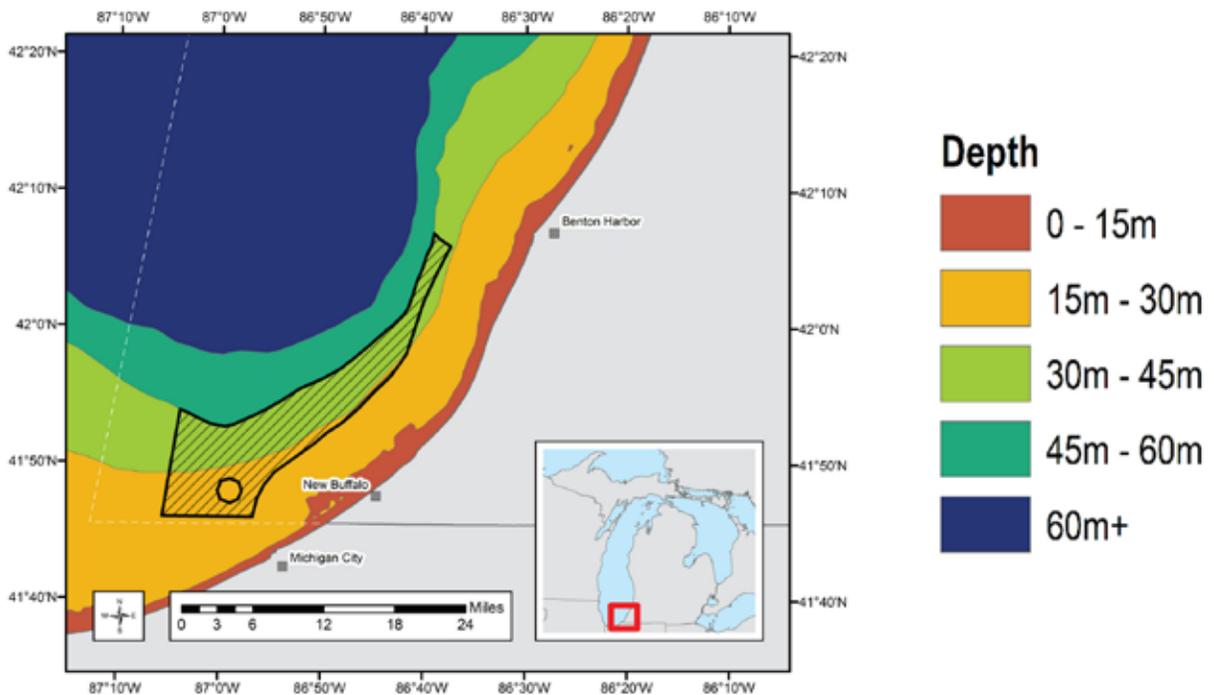
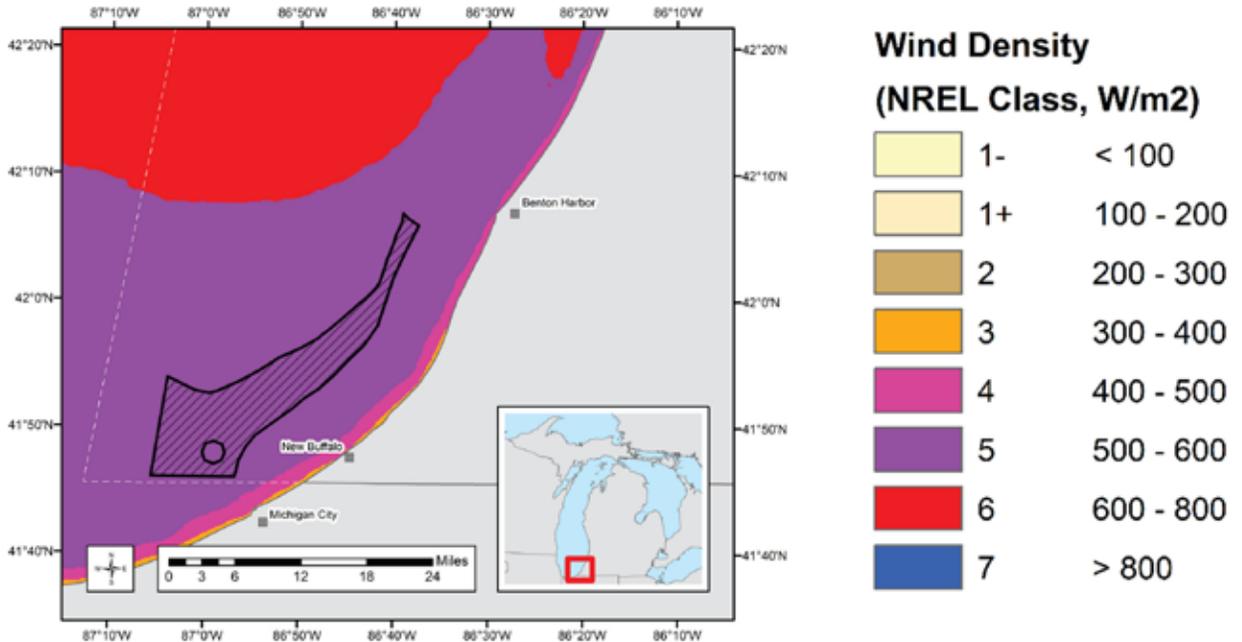
The map to the left shows the three types of areas. For example, the red rectangle in Lake Huron is an “excluded” military operation area. The bright yellow strip along the shore indicates a “conditional” 6-mile-wide visual buffer.



Source: Institute for Fisheries Research, UM/MDNR, 2009.

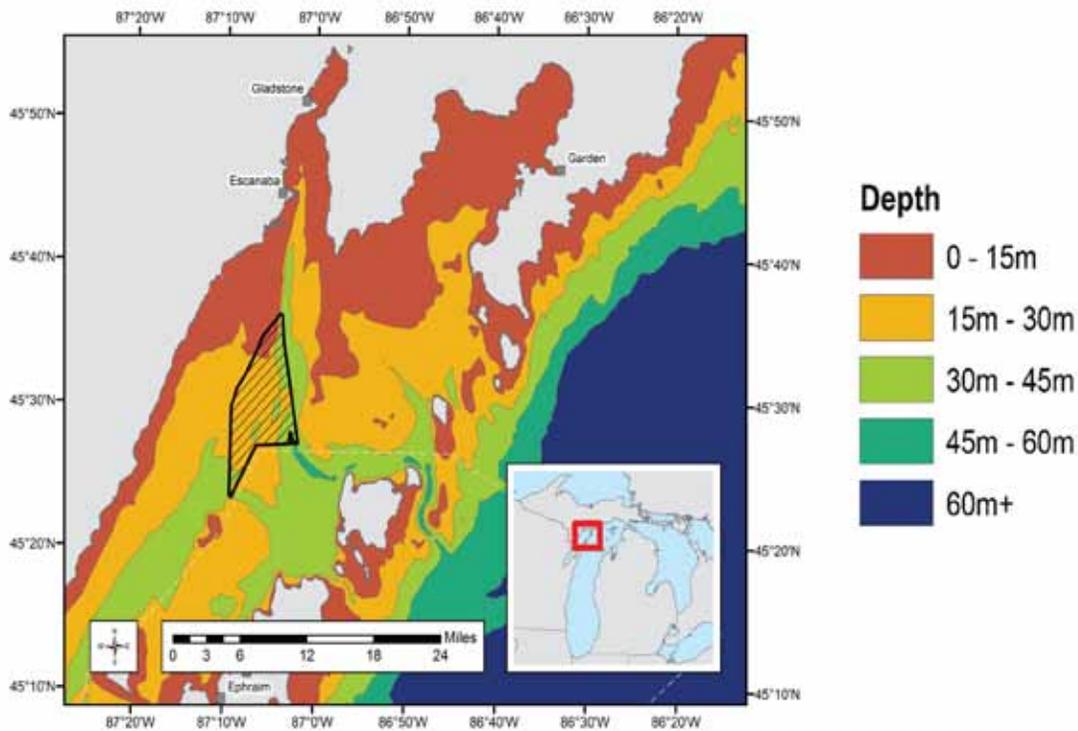
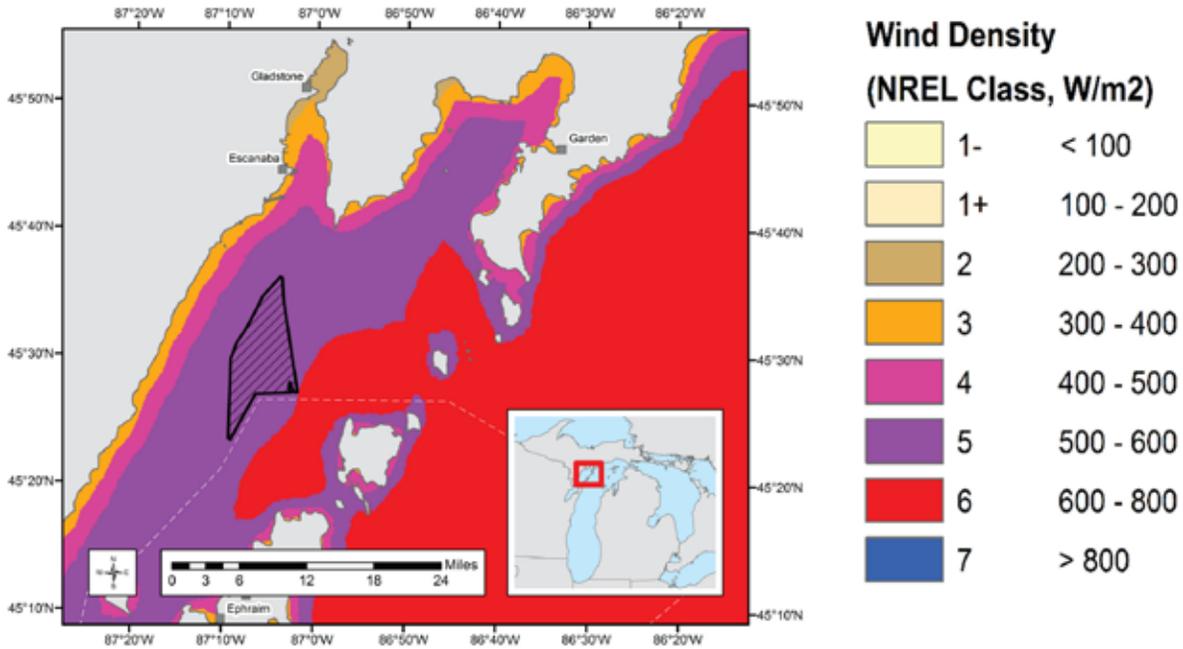
# Berrien County Wind Resource Area

137 Square Miles  $\leq$  45 Meters Deep



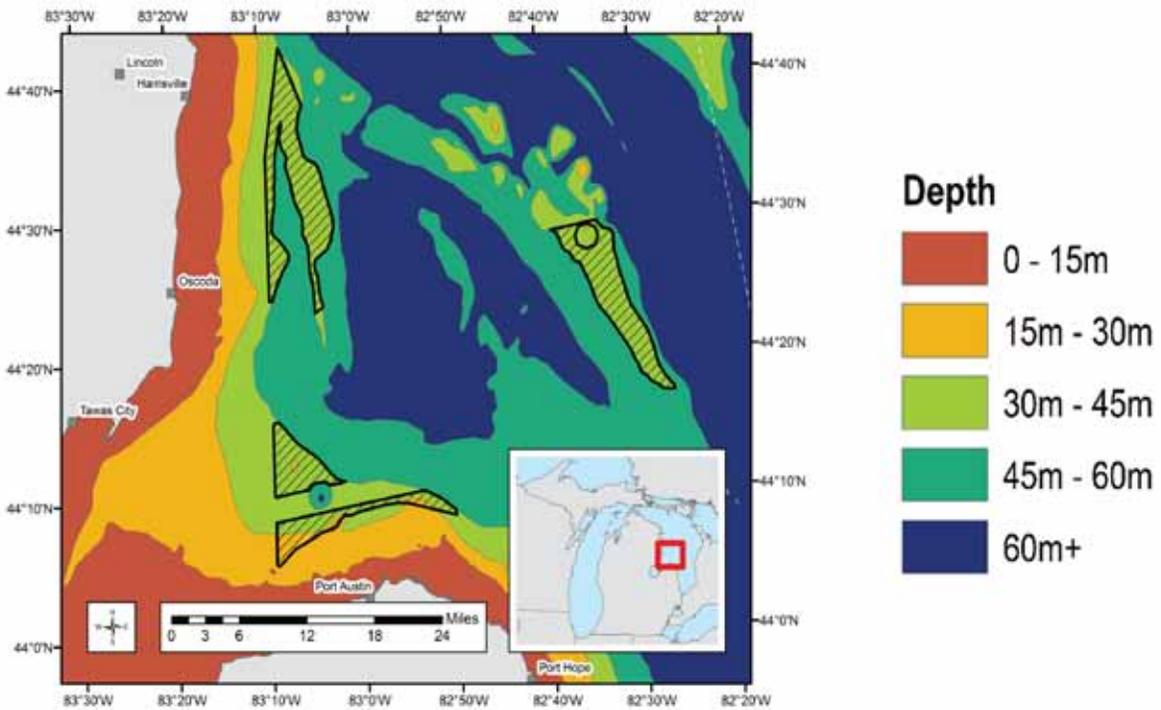
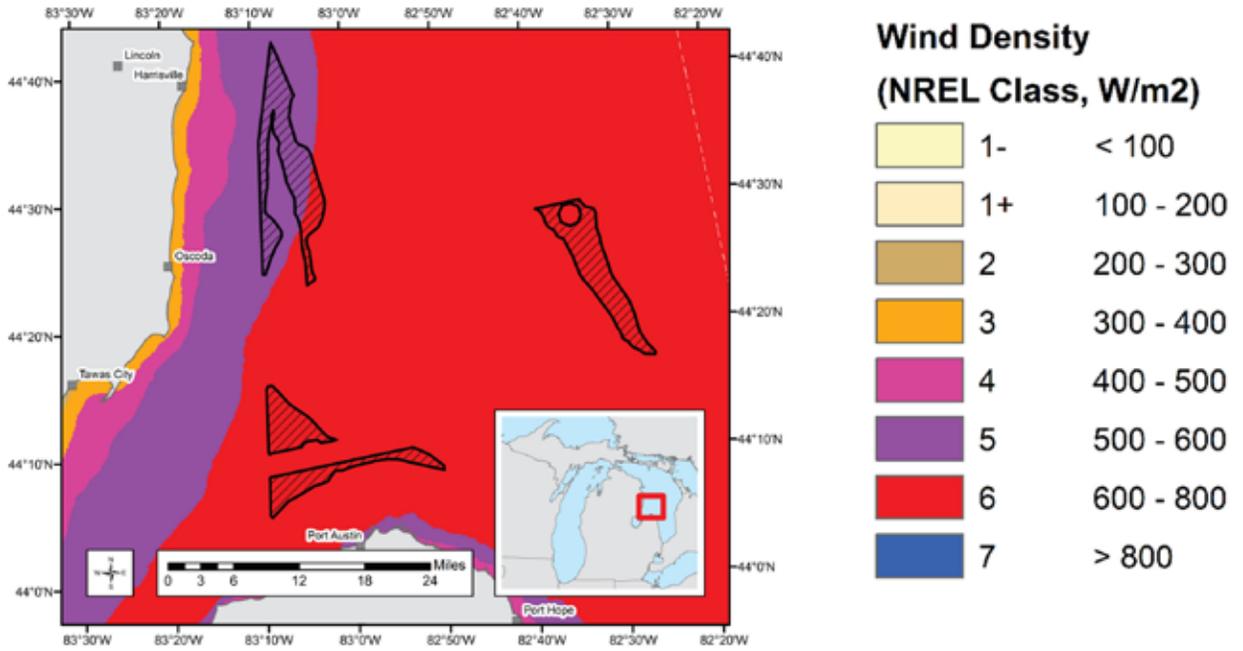
# Delta County Wind Resource Area

46 Square Miles  $\leq$  45 Meters Deep



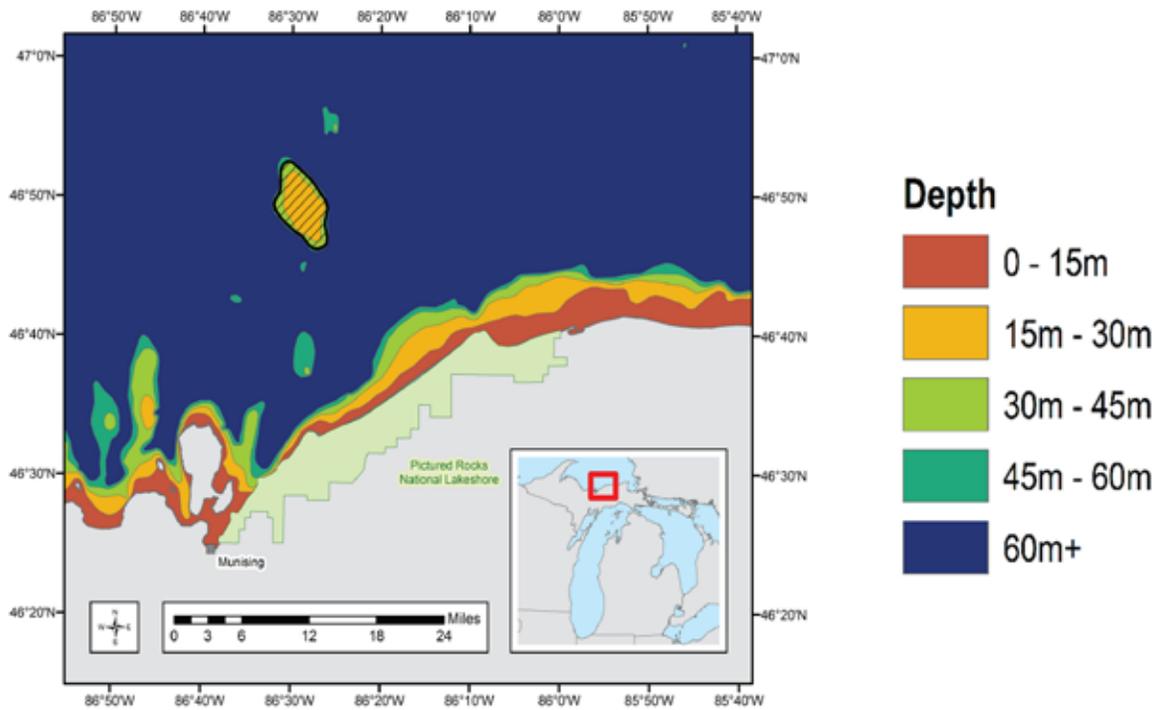
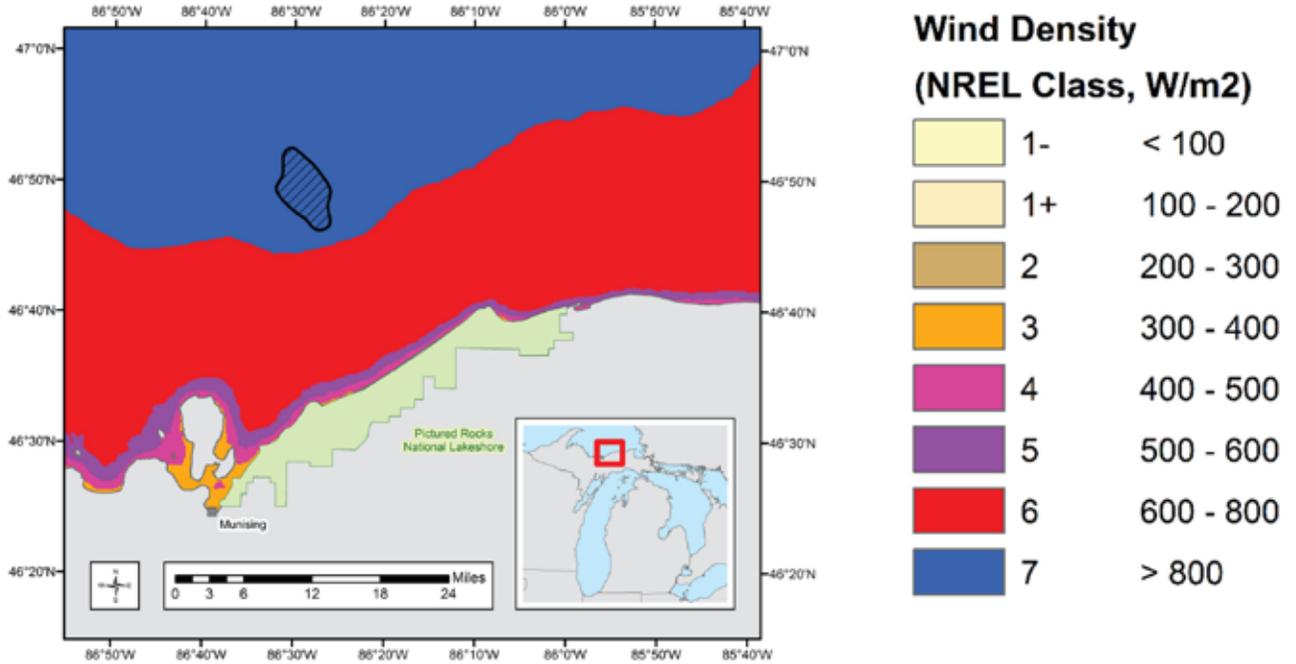
# Central Huron Wind Resource Area

148 Square Miles  $\leq$  45 Meters Deep



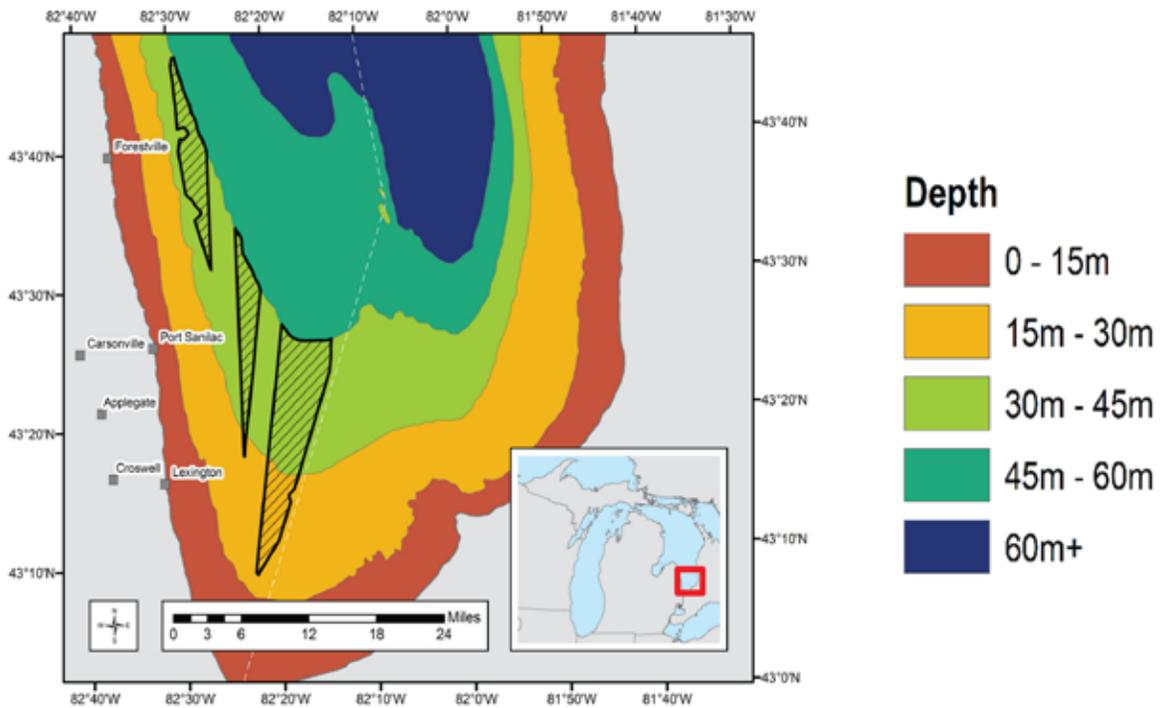
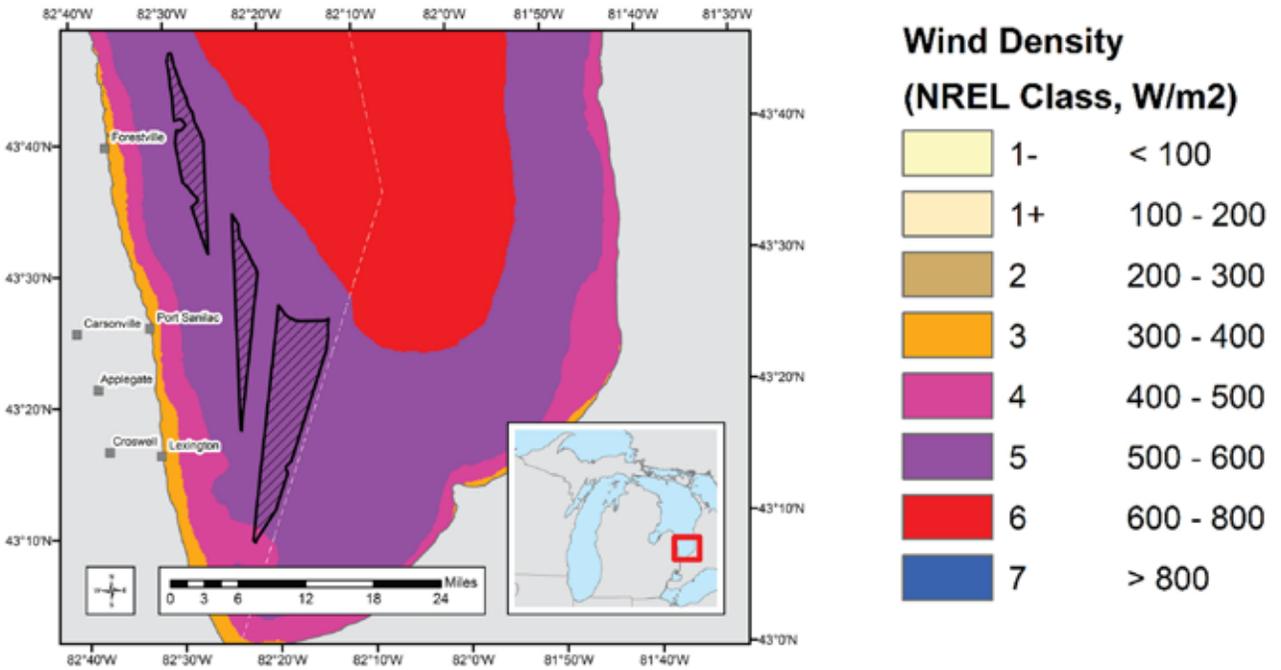
# Central Superior Wind Resource Area

32 Square Miles  $\leq$  45 Meters Deep



# Sanilac County Wind Resource Area

112 Square Miles ≤ 45 Meters Deep



# Michigan Great Lakes Wind Council

## Council Members

### State Agencies

**Andrew Levin (Chair)**—Director, Michigan Department of Energy, Labor & Economic Growth

**Ken DeBeaussaert**—Director, Office of the Great Lakes, Michigan Department of Environmental Quality

**John Halsey**—Michigan State Housing Development Authority, Michigan Department of Energy, Labor & Economic Growth

**Orjiakor N. Isiogu**—Chairman, Michigan Public Service Commission

**Dennis Knapp**—Assistant to Resource Management Deputy, Michigan Department of Natural Resources

**Cindy Douglas**—Vice President of Business Development, Michigan Economic Development Corporation

**Roberta “Bobbi” Tisdale**—Chair, Green Initiatives Team, Michigan Department of Transportation

**Jim Sygo**—Deputy Director, Michigan Department of Environmental Quality

### Members appointed by the Governor

**Adesoji O. Adelaja**—Director and founder, Michigan State University Land Policy Institute, John A. Hannah Distinguished Professor in Land Policy, Michigan State University

**Dennis Assanis**—Director, Michigan Memorial Phoenix Energy Institute, Arthur F. Thurnau Professor, and Jon R. and Beverly S. Holt Professor of Engineering, The University of Michigan College of Engineering

**T. Arnold Boezaart**—Director, Grand Valley State University, Michigan Alternative and Renewable Energy Center

**Leonard J. Bohmann**—Associate Dean of Engineering, Michigan Technological University

**James P. Clift**—Policy Director, Michigan Environmental Council

**J. Wilfred Cwikiel**—Harbor Springs, Michigan

**Frank D. Ettawageshik**—Executive Director, United Tribes of Michigan

**Brett French**—Senior Regional Manager-External Relations Michigan, American Transmission Company

**Margaret R. Gale**—Dean, School of Forest Resources & Environmental Science, Michigan Technological University

**Dennis L. Grinold**—State Affairs Officer, Michigan Charter Boat Association

**Curtis A. Hertel Sr.**—Executive Director, Detroit-Wayne County Port Authority

**Thomas L. Hickner**—Bay County Executive

**M. Jack Knowles**—Vice President, Dietrich, Bailey and Associates, PC

**Steven E. Kurmas**—President and Chief Operating Officer, Detroit Edison

**Marty G. Lagina**—Chief Executive Officer, Heritage Sustainable Energy, LLC

**James D. MacInnes**—Co-owner and Chief Executive Officer, Crystal Mountain Resort & Spa

**Michael O’Brien**—Great Lakes Project Director, Bluewater Wind

**John G. Russell**—President and Chief Executive Officer, CMS Energy Corporation and Consumers Energy Company

**Christopher M. Trebilcock**—Principal, Miller, Canfield, Paddock and Stone, PLC

**Richard F. Vander Veen**—President, Mackinaw Power

**Joseph L. Welch**—President and Chief Executive Officer, ITC Holdings Corp.