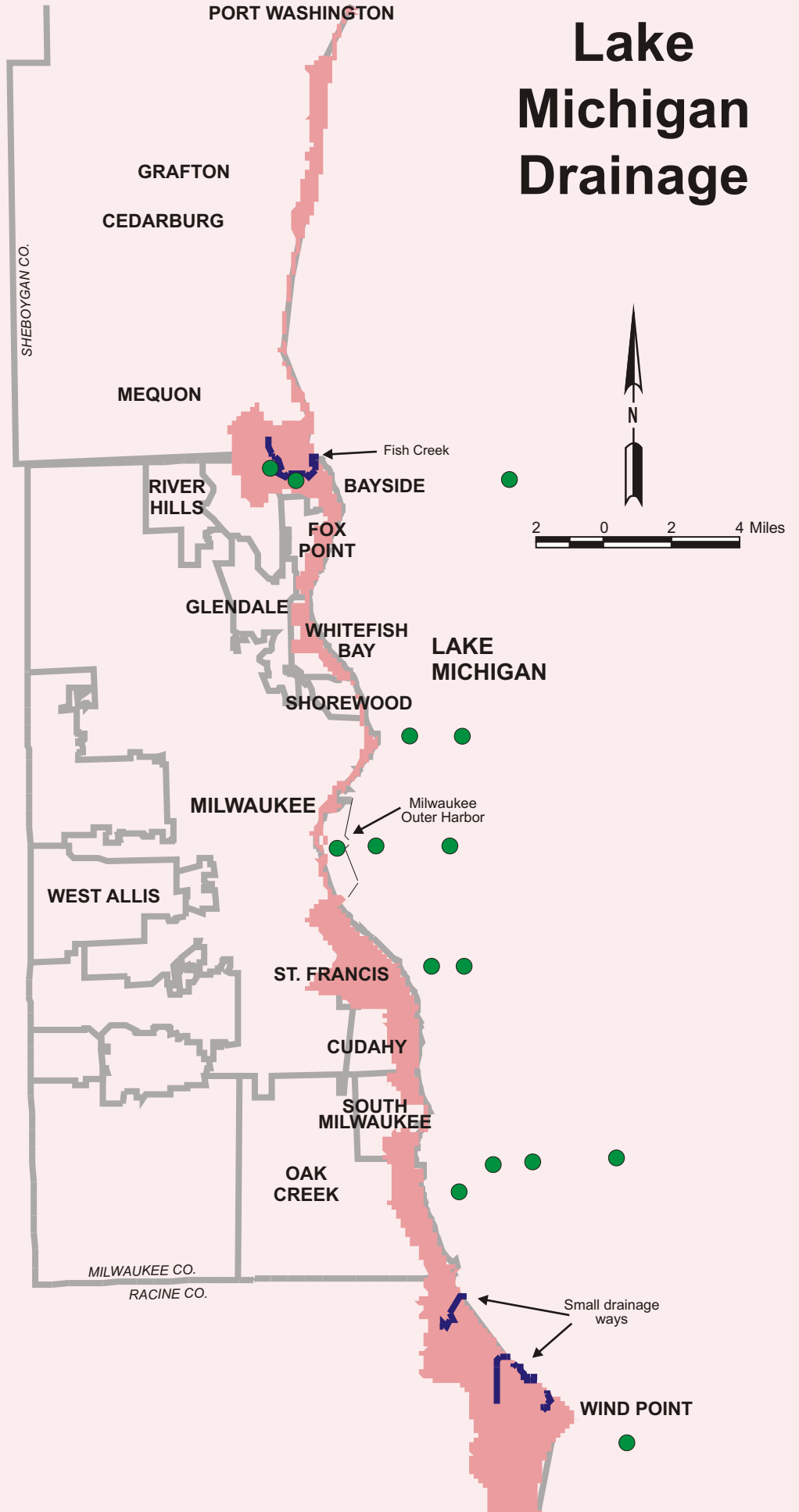


# Dissolved Oxygen Map

## Lake Michigan Drainage



- Meets Water Quality Standards at least 85% of the time.
- ▲ Meets Water Quality Standards between 50% and 85% of the time.
- Meets Water Quality Standards less than 50% of the time.

# Dissolved Oxygen

Just like humans, fish and other aquatic organisms need oxygen to live. When fish and aquatic organisms breathe, water moves past their gills, and oxygen in the form of microscopic bubbles (dissolved oxygen or DO) is transferred from the water to their bloodstream. Without enough oxygen in the water, desirable species of fish and other aquatic life cannot survive. The amount of dissolved oxygen in water is one of the most important water quality indicators.

Many factors influence the amount of dissolved oxygen in water including sunlight, water temperature, the presence of aquatic plants, turbulence of the water, and the amount and type of sediments, to name a few.



*Sport fishing off the South Shore Wastewater Treatment Plant.*

In recent years, Lake Michigan has provided renewed sport fishing opportunities for trout and salmon. To sustain or improve the fish population, fish must have plenty of dissolved oxygen, as do the other aquatic organisms that make up the Lake Michigan ecosystem.

The summer season presents special environmental conditions that greatly influence the amount of dissolved oxygen in the water. Because warm water holds less oxygen than cold water, as summer progresses, less oxygen is available for fish and other animals than at summer's onset.



*Sport fishing charters.*

Additionally, as people begin to fertilize their lawns, "fertilized" stormwater runoff enters our waterways where it can encourage algae to grow to nuisance levels (blooms) that can further deplete dissolved

oxygen. Algae are microscopic aquatic plants that add dissolved oxygen to the water during daylight hours by a process called photosynthesis. However, this process is reversed at night when this same algae consumes dissolved oxygen during respiration. Because fish, plants and other aquatic organisms need oxygen 24-hours a day, the day-to-night fluctuations of dissolved oxygen can be significant, even at times reaching the point where there is no available oxygen!

## Dissolved Oxygen Stats

All of the upper and middle Lake Michigan Drainage area tested has adequate amounts of dissolved oxygen. Dissolved oxygen levels needed to support cold water sport fish species are generally met most of the time. Dissolved oxygen concentrations are generally reported in units of milligrams per liter of water (mg/L). Wisconsin Cold Water Quality Standards require a minimum of 6 mg/L of dissolved oxygen in lakes, rivers and streams classified to support full fish and aquatic life. The Warm Water Quality Standard is 5 mg/L of dissolved oxygen which Fish Creek meets more than 85% of the time.