



2009 WISCONSIN

## Renewable Energy Summit

Renewables, Sustainability, Energy Efficiency,  
Social Responsibility, and Green Energy Practices

## Water Technology

## Session 18-2

**DATE:**

**WEDNESDAY, MARCH 25, 2009**

**Breakout Session 18-2:**

**Time:**

**3:45pm - 5:30pm**

**Presenters:**

**Lake Michigan's offshore reefs: can wind turbines and lake trout co-exist?**

John Jansen, Great Lakes WATER Institute

Lake Michigan's offshore reefs are gaining attention with respect to both energy generation via wind turbines and Great Lakes restoration. The lake trout is Lake Michigan's native top carnivore but were extirpated by overfishing and lamprey predation in the 1950's. Efforts to restore lake trout have been hampered by lack of knowledge about their reproductive habits in large lakes. Gaining knowledge is difficult because lake trout spawn deep in late fall and their eggs incubate over winter. We used bottom mapping technology (multibeam sonar) to locate potential lake trout spawning habitat at the Mid-Lake Reef Complex, a series of offshore reefs (> 1000 sq. mi.) that separate Lake Michigan's northern and southern basins. Using unmanned submersible technology we have been able to document viable egg deposition and fry production at five "sub-reefs." These few sites are the only known fry producing sites in Lake Michigan. Eggs on the sub-reefs are mainly deposited on cobble at the shallowest areas (130-200 ft deep) of the reefs. Placement of wind turbines at the Mid-Lake Reef Complex will require technological innovations that include consideration of the importance of lake trout spawning areas, currently mostly unknown, that may be essential for ecosystem restoration.

**Wastewater & Alternate Energy**

Lee Lundberg, Veolia Water

**Presenter Biographies:**

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**John Jansen**

John Jansen has 30+ years of presentations at scientific meetings and teaching university classes. In addition he makes several general public presentations of his work each year.