

## **Floating Wetland Islands as a Tool for Ecosystem Restoration - Basic Science and Future Embodiments (Leviathan® Island Systems)**

**Kevin Hedge** and *Ted Gattino*

Managing Partner, BlueWing Environmental Solutions & Technologies, LLC

Floating Wetland Islands are man-made replicas of natural peat based systems found around the world. Using a fibrous recycled material (matrix), Floating Islands are manufactured and installed in all types of water. The interstitial spacing of the recycled materials allows naturally occurring microbes to colonize the fibrous surfaces creating a diverse wetland ecosystem where waterborne pollutants and contaminants are bio-processed into and out of the food chain.

We will examine the key processes present in the floating wetland system and details of system dynamics that are optimized with the current island design. The massive potential of this habitat and nutrient processing tool will also be examined, along with the potential for future embodiments that utilize to reduce dead zones in all impaired waterways.

The most prominent (and most recent development) in the floating treatment wetland technology is called Leviathan® and it eats dead zones. How? By combining the best of wetland science, ecosystem design and processing, along with proven wastewater treatment technologies, we are able to process and treat 8000 gallons of water per minute, while oxygenating and treating impaired waters. This system has been effectively shown to reduce temperature and oxygen (DO) stratification in deep water ponds. The system is designed to easily allow removal of pollutants from the aquatic environment for proper storage, disposal and processing.

Participants will learn about the Biomimicry, concentrated wetland effect, biofilm, and ecosystem services.

Contact Information: Kevin Hedge, Managing Partner, BlueWing Environmental Solutions & Technologies, LLC, 4309 English Morning Lane, Ellicott City, Maryland 21043; Phone: 410-203-2270, Email: kevin@bluewing-env.com