

BioHaven® FTWs Remove Algae and Create Wildlife Habitat

Project Location: Barrington, Illinois

This case study summarizes results of Floating Island International's patented BioHaven® floating treatment wetland (FTW) technology to mitigate runoff from urban and rural developments. The Lake County Stormwater Management Commission named this project "Best Management Practice (BMP) Project of the Year".



BioHavens four months after launch

Overview

As part of a negotiated settlement by Citizens for Conservation (CFC) with a subdivision developer, several ponds were constructed to capture stormwater run-off. This water then flows through restored wetlands for discharge into Flint Creek. To address high algae levels, several BioHaven® floating islands were built on-shore and "launched" into the ponds.

Prior to 2006, the two stormwater ponds were completely covered with algae during the growing season. Algae reduction through use of hay bales as a Best Management Practice was unsuccessful. The CFC's goal was to transform these water bodies, located only 30 miles from downtown Chicago, into vibrant, productive wetlands in an urban setting, hopefully through the use of floating islands.

Installation Data

Location	Barrington, Illinois, USA
Parameters Studied	Dissolved oxygen, turbidity
Environment	Stormwater ponds
FTW Size	A total of 1100 ft ² (100 m ²); three large islands plus 42 smaller islands
Water Source	Stormwater run-off
Installation Date	May 2006
Flow Rate	Variable, depending upon precipitation
Water Body Depth	3 ft (1 m)
Water Body Area	The large pond is about 1.5 acres and the small pond is about 0.25 acre. Each pond contains floating islands.

Results

Dissolved oxygen (DO) levels greatly increased after island launching and subsequent plant growth, resulting in much lower algae levels and lower turbidity. CFC members note that most algae have disappeared and discharged water is much cleaner than before island installation. As the first photo demonstrates, plant growth on the islands developed quickly, a visual manifestation of the nutrient and metals removal occurring in and beneath the islands. Turbidity and DO levels were monitored but data transfer has been hampered by volunteer turnover.



Preparing small islands for launch

In addition to native wetland plant habitat, the islands also provide a key riparian environment in this quasi-urban setting. Sandhill cranes were noted nesting on the islands in 2007, just over a year after they were launched. The cranes have successfully fledged young in two of the past three years, even though coyotes and other predators are now abundant in the area.



“Sandy” the young sandhill crane colt (photo by Alan Sankevitz)

The executive director of the Lake County Stormwater Management Commission wrote the following testimonial:

On behalf of the Lake County Stormwater Management Commission (LCSMC) board and staff, congratulations on being awarded the “BMP Project of the Year.”

Your efforts to improve the Flint Creek watershed is a history rich in caring for the environment, for those that live in the watershed and for the generations to come... In our eyes, the Floating Islands Project is yet another example of your vision for the watershed that ties in water quality, habitat and technology to create what is believed to be the first use of “BioHaven” technology in Illinois that can be replicated in other parts of Flint Creek and in Lake County watersheds.

Flint Creek stakeholders ... are grateful for the work of Citizens for Conservation. Congratulations and thank you for your dedication to water quality improvements, and taking the lead on grassroots efforts that benefit us all.

Michael Warner

