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(R-1) PROJECT REFERENCE NORTHERN PALM BEACH COUNTY IMPROVEMENT DISTRICT UNIT 11 PGA STA MARSH v2

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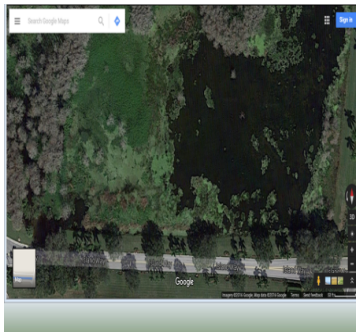
Aquatic Vegetation Control, Inc. (AVC) provided an operational evaluation reducing muck in 15 acres in a 25 acre Stormwater treatment marsh for Northern Palm Beach County Improvement District (NPBCID) Palm Beach Gardens, FL.

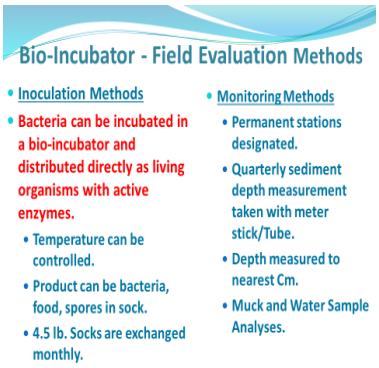
Project Description

Owner:	Northern Palm Beach County Improvement District
Contracting Agency:	Northern Palm Beach County Improvement District
Project Location:	NPBCID Unit 11 PGA National Resort and Spa
Project Size:	The marsh area was 25 acres and the treatment area was 15 acres.
Project Purpose:	Reduce the muck bottom and phosphorous level thereby improving the physical characteristics of the cell holding capacity, flow and aesthetics and reducing trophic state index.



Description:

The PGA marsh is designed to store water and remove nutrients (mainly phosphorus) before it is moved into an STA, then into the C-18 canal. The marsh was filling in with organic detritus. The objective for this project was to create more capacity and an environment that can be managed with less effort.



Materials:

Aquatic Vegetation Control, Inc. set up a 200 gallon bio-incubator with a 100 watt solar panel. The Bio-Generator is on a platform in the marsh at the treatment site. The delivery pump and internal aerator were put online to aid in the augmentation process.

Methods:

AVC placed the Bio-Zyme (trmbiozyme.com) in the 200 gallon tank and distributed the incubated product in the 15 acre treatment area weekly for a period of eight months. In 13 months the water was low, causing the Bio-Incubator to be ineffective. This caused a short term accumulation of muck. After 18 months the pond dried up and the experiment was terminated. With adequate water levels, treatment continued for an additional 2 years improving the water quality and reducing muck over a larger area.

Results:

The treatment prescription was to apply 200 gallons of incubated Bio-Zyme per week to the 15 acre trial area. This continued through September of 2016. The photo shows the healthy emergent plants. The Bio-Zyme works well in conjunction with plants. The native plants also tie up nutrients and are a substrate for bacteria to thrive. The bottom organic sediments were reduced from 45cm to less than 11cm in a period of 18 months. The water clarity was greatly improved. The Bio-Incubator is still used when the water level is adequate. This improves the water from the adjacent neighborhoods and golf course. The soft bottom sediments initially made traversing through the marsh difficult, almost impossible but now the bottom is sand in most areas and walking through the area is much easier.