

Floating Treatment Wetlands

What they are &
when to use them



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The Problem

- 70% global freshwater contaminated



Solutions

- **Depends on the situation!**
- **Best Management Practices**



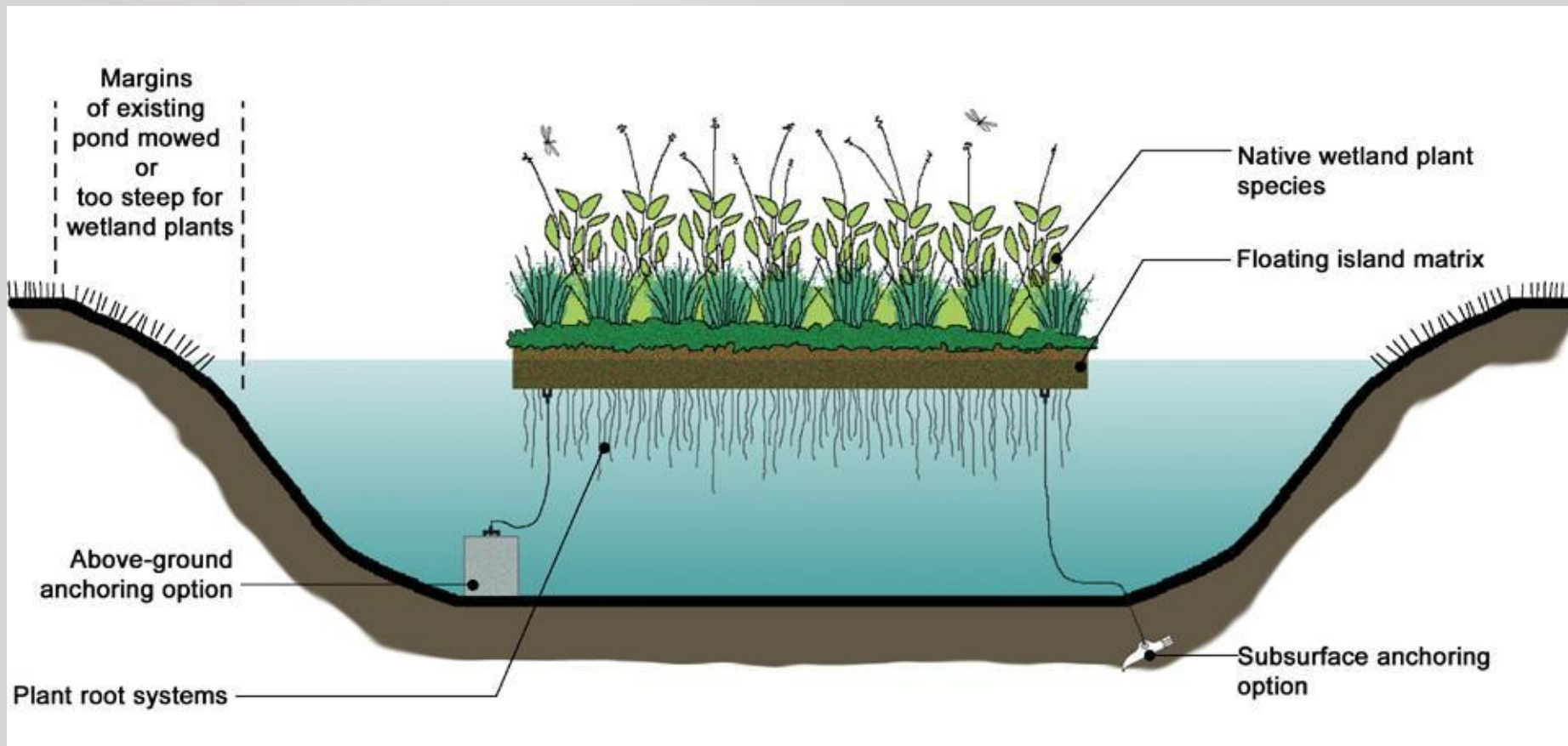
Wetlands - What We Know

- Provide many services - flood and stormwater control, erosion control, habitat, human food source, fuel source ...
- **Also bioremediation!**
- Carbon sequestration, nutrient sinks, sediment sinks, pollutant sinks, nitrogen fixation ...

What is a Floating Treatment Wetland?

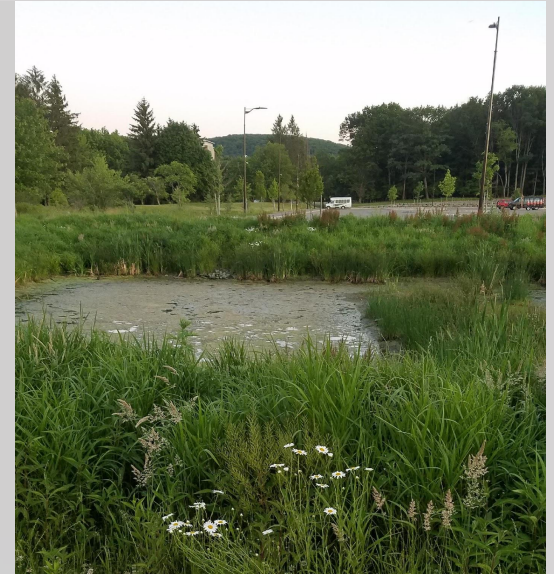
- AKA hydroponic root mats
- AKA floating wetlands islands
- AKA floating islands/floating wetlands





How Viable an Option are FTWs?

- **Cannot be generalized**



Questions to Ask

- Does the waterbody see a lot of traffic?
- How big is the waterbody?
- How deep is the waterbody?
- Does it already have emergent macrophytes?
- Is it invaded by aquatic invasive species that might be facilitated in spread?



Will FTWs Help With...?

YES

- Stormwater Management
- Reduction of particulate nutrients
- Reduction of suspended solids
- Helping to still water for “settling”
- Seasonal requirements

NO

- Meeting TMDL requirements
- Cannot replace natural or constructed wetlands
- Full water filtration
- Invasive Species Prevention or Treatment

Will FTWs Help With...?



Fisheries?

YES!



Will FTWs Help With...?

MAYBE -

**We just don't
know yet!**

- Crude oil spills
- Large-scale cleanup of agricultural runoff
- Remediation after septic/sewage failure
- Reduction of dissolved contaminants
- HABs



Should I get a FTW?

- *Maybe!*

- We need a cheap option
- We can't have a vegetated shore
- The waterbody is small enough*
- Our current system could use a hand
- We have a pond in an agricultural area

- *Maybe Not?*

- The waterbody is too big*
- We already have wetlands
- We have an AIS issue
- The FTW will be targeted by fauna*
- There is medium to high water flow

References

- NYSFOLA. 2009. *Diet for a Small Lake: The Expanded Guide to New York State Lake and Watershed Management*. New York State Federation of Lake Associations Inc.
- Gunderson, J. 2021. *Floating Treatment Wetlands Show Promise as Pond Retrofit*. The Stormwater Report
- Afzal, M., M. Arslan, J. Müller, G. Shabir, E. Islam, R. Tahseen, M. Anwar-ul-Haq, A. Hashmat, S. Iqbal, and Q. Khan. 2019. *Floating treatment wetlands as a suitable option for large-scale wastewater treatment*. Nature Sustainability 2: 863-871.

• Gunderson, J. 2021. *Floating Treatment Wetlands*



Questions?