



ENVIRONMENTAL CONSULTING, INC.

Providing Environmental Solutions



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Myths of Surface Fountain Functions

Envirotech would like to take this opportunity to clear up some misperception's and incorrect information regarding the water quality management capabilities of surface fountains and the impact on physical water quality parameters such as dissolved oxygen (DO) concentration's in Storm Water Management Wet Ponds based on scientific fact and not on fountain marketing and internet information. Be advised that surface fountains, unless specified strictly for "aeration" and applied to water columns in large volume,



Surface Fountains do not;

- ✗ Increase overall pond Dissolved Oxygen Concentrations (DO) to a measurable difference and outside of the immediate zone of impact of returning water. Laminar flow does not occur. Aquatic photosynthetic microorganisms and water temperature determine DO concentrations in a wet pond. The colder water is the greater the DO. The higher the water temperature the less DO in the water column. Once water exceeds 65 to 70 degrees DO levels begin to drop and anaerobic conditions form regardless of the presence of surface fountains.
- ✗ Control or regulate the growth and development of colonial algae's, submerged rooted aquatic vegetation, creeping pond weeds, emergent growth ponds weeds or any other type of aquatic vegetation. Surface fountains do assist in controlling "Cyanobacteria" by disrupting the flagellate's diurnal cycles of rise and fall with sunlight availability.
- ✗ Control pond odors. Pond odors are a result of gas discharge from benthic anaerobic bacteria and decomposing microorganisms and algae's in the pond water column that grow and die very quickly as a part of the natural order of Limnologic function and aquatic ecology. Odors are exacerbated in Storm water wet ponds (SWWP) because they are designed for water quantity and quality storage from significant rain events and to detoxify the community watershed runoff including but not limited to fertilizers, pesticides, herbicides, petroleum products from streets, dog feces, grass clippings etc.; that is the purpose the SWWP. All ponds have odors and wind transports the gas exported.
- ✗ Have virtually no impact on aquatic ecology and or limnologic function. That is a marketing piece and wives tale. Over specific surface fountains may be detrimental to pond ecology.

Surface Fountains do;

- ✓ Provide aesthetically pleasing sights and sounds of cascading water. (Subjective)
- ✓ Break water surface tension and release some nitrogen gases out of the water column. This is relatively insignificant to overall pond ecology or anything else but it does help with nutrient release and may help with mosquito larva growth and development control if they were in the center of the pond. However, they are not typically. They are on the shallow fringe pond bench shelves

Aquatic Vegetation is controlled proactively and reactively with Aquatic pesticides EPA registered and applied by licensed EECl staff regularly and when needed. Mosquitos are controlled with *Gambusia holbrooki* (Eastern Mosquito Fish) the best biological controls known and all parts of the Comprehensive Pond Management Plan provided.

If you have any questions or concerns, please contact EECl's professional office at 302.684.5201 or via email at info@envirotechcinc.com!

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