

Solar powered floating prototype platforms uses mixing/aeration/propulsion to combat algae formation in small ponds.

Prototype mixes aerated water (20.9 % oxygen) and higher dissolved oxygen (DO) concentrations from the surface water (DO usually in the 7-12 mg/l range) to the pond bottom which helps elevate the pond bottom water DO concentrations (can be as low as 0-2 mg/l depending on pond depth and algae decomposition process).

Algae doesn't like agitation so the prototype platform keeps water moving. The aeration/mixing process (bubbling action and flow) prevents waters from being still and calm. This mixing process may also help prevent "fall turnover" in ponds.

Phosphorous (P) and nitrogen (N) are the fertilizers for the algae growth. Phosphorous (from runoff) is released from bottom sediments when the DO concentrations drop below 2 mg/l. The prototype solar powered process helps elevate the DO concentrations so that the P remains in the sediment versus being released to the water column as a source nutrient for algae. (Nitrogen lasts only a few weeks in a pond because it eventually off-gases so our focus is on P).

Solar powered prototype is a green alternative to chemical additives or dredging. Prototype floats in middle of pond eliminating the need for shore-based electrical source, outlets, hose tubing, wiring or panels.