

**SOLAR AQUATIC WASTEWATER TREATMENT:
HURDLES AND IMPLEMENTATION**

by

Philip W. Simmons

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ABSTRACT:

Rhode Island is faced with a water pollution problem, part of which is caused by the limitations of conventional wastewater treatment technologies. In order to solve this one part of the overall pollution problem, the State needs to embark on a concerted effort to find and implement new ways of treating wastewater.

One of the most promising innovative wastewater treatment technologies existing today is the system called solar aquatics. It possesses many appealing attributes as a partial solution to the problem. Solar aquatics utilizes human-controlled, natural freshwater purification processes to clean used water. Aquatic plants, microorganisms, snails, crustaceans, algae, and fish work together in a sunlit greenhouse to produce effluent meeting tertiary treatment standards. And solar aquatics provides water purification in a cost effective manner, (approximately one to two thirds the cost of conventional treatment depending on the system specifications) without producing the side effects of conventional wastewater treatment technologies.

Considering the beneficial effects of solar aquatics makes one wonder why it is not operating on a full scale in the State. Many hurdles must be overcome before an innovative technology can be considered viable, and the largest one may be regulatory reluctance.

To surmount the regulatory obstacles, a solar aquatics septage treatment facility can be linked to a conventional sewage treatment facility. The conventional component would act as a "safety net" preventing any poorly treated solar aquatic effluent from entering receiving waters, thereby calming reservations about the new technology's performance. The solar aquatic component would also benefit the conventional facility by treating septage, something which many small conventional systems cannot do.