

## **New water purifier powered by solar energy**

In Japan, Masaki Envec Co. Ltd. has developed a novel solar floating water purification unit, with the cooperation of Marine Technology Institute Co. Ltd. and World Link Co. Ltd. The new system incorporates a solar panel and can purify water in land-locked areas – reservoirs, ponds, etc. The quality of water in land-locked areas is prone to deteriorate when water flowing into the area is polluted and over-rich in nutrients. An effective method to prevent water from degrading is to stir and aerate it.

The Water Beetle moves a large quantity of water at low speed and, because it utilizes just 1/6<sup>th</sup> of the energy used by other systems, can be powered by a solar panel. It floats on the surface of water while a screw propeller, in its lower section, creates an ascending water stream which diffuses radially on the water through a bell-mouthed duct structure. The screw propeller also moves the unit around a mooring buoy, producing convection currents over a wide area. The currents destroy putrid layers and temperature gradients in deeper water, and provide warm water and oxygen. These conditions activate aerobic microbes that decompose the pollutants. These microbes are on the first level of the food chain for fish and aquatic insects; therefore, this system stimulates the entire ecosystem. In addition, the water lifted to the surface is exposed to the sun's ultraviolet rays and is sterilized. An extension nozzle can be fitted to the base of the unit for use in deep water.

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