

# A Primer on Benthic Barriers and DASH for Paradise Lake Riparians

## Dr. Jennifer L. Jermalowicz-Jones, CLP

### Restorative Lake Sciences

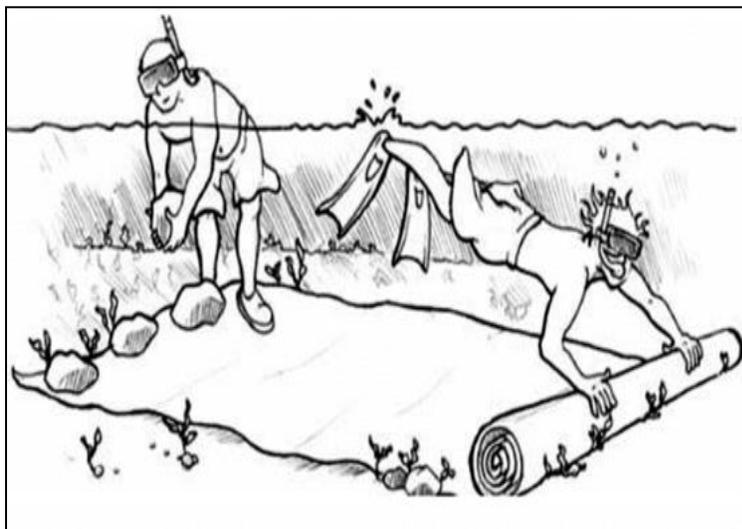
#### *Benthic Barriers and Nearshore Management Methods*

The use of benthic barrier mats (Figure 1) or Weed Rollers (Figure 2) have been used to reduce weed growth in small areas such as in beach areas and around docks. The benthic mats are placed on the lake bottom in early spring prior to the germination of aquatic vegetation. They act to reduce germination of all aquatic plants and lead to a local area free of most aquatic vegetation. Benthic barriers may come in various sizes between 100-400 feet in length.

They are anchored to the lake bottom to avoid becoming a navigation hazard. The cost of the barriers varies among vendors but can range from \$100-\$1,000 per mat. Benthic barrier mats can be purchased online at: [www.lakemat.com](http://www.lakemat.com) or [www.lakebottomblanket.com](http://www.lakebottomblanket.com). The efficacy of benthic barrier mats has been studied by Laitala *et al.* (2012) who report a minimum of 75% reduction in invasive milfoil in the treatment areas. Lastly, benthic barrier mats should not be placed in areas where fishery spawning habitat is present and/or spawning activity is occurring.

Weed Rollers are electrical devices which utilize a rolling arm that rolls along the lake bottom in small areas (usually not more than 50 feet) and pulverizes the lake bottom to reduce germination of any aquatic vegetation in that area. They can be purchased online at: [www.crary.com/marine](http://www.crary.com/marine) or at: [www.lakegroomer.net](http://www.lakegroomer.net).

Both methods are useful in recreational lakes such as Paradise Lake and work best in small beach areas and near docks to reduce nuisance aquatic vegetation growth if it becomes prevalent in future years. It would not be recommended for larger areas with extensive beds of EWM.



**Figure 1. A Benthic Barrier. Photo courtesy of Cornell Cooperative Extension.**



**Figure 2. A Weed Roller.**

### ***Diver Assisted Suction Harvesting (DASH)***

Suction harvesting via a Diver Assisted Suction Harvesting (DASH) boat (Figure 3) involves hand removal of individual plants by a SCUBA diver in selected areas of lake bottom with the use of a hand-operated suction hose. Samples are dewatered on land or removed via fabric bags to an offsite location. This method is costly on a large scale and so it used on a spot-removal basis and prices are based per project but usually start at \$1,000 per acre.

Because this activity may cause re-suspension of sediments (Nayar et al., 2007), increased turbidity and reduced clarity of the water can occur. Permitting requirements include the use of a turbidity curtain that reduce the transport of solids to locations outside of treatment areas and also help define areas where intensive aquatic vegetation removal efforts are being implemented. This method would be feasible in the future in areas where herbicide treatment is not possible and/or if the EWM is reduced to a small area (i.e., less than 5 acres).



**Figure 3. A DASH Boat with turbidity curtain.**

### **References:**

- Laitala, K.L., T.S. Prather, D. Thill, and B. Kennedy. 2012. Efficacy of benthic barriers as a control measure for Eurasian Watermilfoil (*Myriophyllum spicatum*). *Invasive Plant Science* 5(2):170-177.
- Nayar, S., DJ Miller, A. Hunt, BP Goh, and LM Chou. 2007. Environmental effects of dredging on sediment nutrients, carbon, and granulometry in a tropical estuary. *Environmental Monitoring and Assessment* 127(1-3):1-13.