



Water Quality: What YOU can do to help Silver Lake. **Tips from the Silver Lake Association's Water Quality Committee**

Tip One: DON'T CUT THE WEEDS

Although it might seem like it helps to cut the weeds, they'll grow back with a vengeance.
Instead of cutting the weeds, try installing a benthic weed mat.

Aquatic Plant Management: Benthic Mats

Are you keen to create weed-free areas around your water-front deck or dock? If so, benthic mats are an attractive option for many reasons. Benthic mats can be 100% effective in controlling aquatic plants; are among the safest and most environmentally friendly physical aquatic plant control methods; and can remove existing aquatic plants and prevent the growth of new plants. Methods like aquatic plant "cutting" and/or chemical treatment (i) exacerbate weed problems because cutting creates plant debris that eventually re-sprouts and tends to multiply the aquatic plant problem and/or (ii) they are illegal because they are harmful to the ecosystem.

What are Benthic Mats and How Do they Work?

Benthic mats (also known as a benthic barrier/weed mat/bottom screen) are physical mats that are installed at the bottom of a body of water to prevent or inhibit aquatic plant growth. The mat consists of a dark fabric or material that blocks sunlight and it is held against the bottom by weights. Without sunlight, plants cannot photosynthesize and they do not grow.

Benthic mats can be up to 100% effective in controlling aquatic plants. Both nuisance weeds and invasive plant species can be controlled with this method. Existing vegetation can be removed or new vegetation growth can be prevented. This method is not selective and will target any sediment-dependent species including: native aquatic plants, invasive aquatic plants, and bottom dwelling organisms.

Benthic mats are one of the safest and more ecologically sound physical weed control techniques. The materials are relatively inexpensive and are usually effective for several years. To be most effective, mat installation should occur in late May or early June after fish have spawned. The less plant material present before installation, the more successful the mat will be in staying in place.

The mats can be removed after only 4-6 weeks, there is little to no plant growth for the rest of the season where a mat has been placed. This timing allows one mat to service a larger area by rotation. Rotation helps to amortize your investment. Mats can also be left in place throughout the season. Regardless of ones mat-rotation/mat-removal schedule, the mats should be removed completely for winter storage. Removal for winter storage ensures that ones investment does not become a navigational hazard and/or get destroyed during ice out. A good rule of thumb is to ensure benthic mats are removed at the same time your docks are removed from the lake.

Benthic mats are most appropriate for areas of significant concern or intensive use, such as docks, beaches, and swimming areas. When using a benthic mat for weed control, it is important to carefully consider the type and size of benthic mat used. You will need to consider factors such as intended location of the mat, cost to purchase/build, installation time, and maintenance required after installation to determine the most appropriate mat for your use.

Mat Installation & Removal

If a commercial mat is used, it should be installed per the manufactures specifications.

A DIY mat like the one described above can be installed by an individual home owner by unrolling the mat from a deck/dock area into the water and allowing the mat to sink and simultaneously position it directly into the area of interest. Multiple mats can be used to cover a larger area in a grid pattern.

At the end of the season mats are removed and rolled up for above ground storage.

Mat Maintenance

Prior to placing the mats in the water for the season, they should be unrolled and any areas requiring maintenance addressed with rope, rebar or cable ties.

Sources for Benthic Mats

Commercial

There are several commercial sources for benthic mats, including purchase at local marinas.

A non-exhaustive listing of vendors that provide integrated weed mat products follows:

<http://www.lakemat.com/lakemat/order-lakemat>

<http://www.lakeweedmats.com/>

<http://seaweEDOCTOR.com/products/lake-mat>

(The SLA does not endorse any of these products. They are listed for illustrative purposes only.)

Note: Although it is tempting to consider the largest mats, realize that the larger the mat, the more challenging it is to move and to store. One can generally handle smaller 10'x12' mats much more easily compared to larger mats.

Do It Yourself

One can easily create your own benthic mats. Several designs have been published on the internet. Keys to consider when building your own mats include:

- 1) Create multiple, smaller mats rather than one larger mat. This eases the effort needed during placement, rotation, and retrieval for winter storage.
- 2) Mats can be built from plastic sheet, woven synthetics, landscaping fabric, geotextiles, plastics, nylon tarp, and burlap.
- 3) Mat materials that are robust and gas permeable (e.g., geotextile) are ideal and will facilitate the release of gases that build up during plant decomposition under the mat.
- 4) Never use any pressure-treated or chemically-treated lumber.

The attractions of DIY benthic mats include: (i) you save money in comparison to purchasing commercial products (generally 3-4 fold), (ii) you can customize the size to accommodate your specific situation, and (iii) you have the satisfaction of building something yourself.

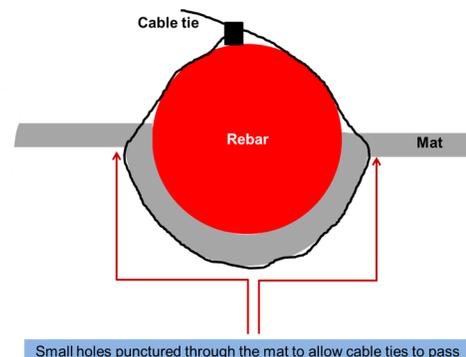
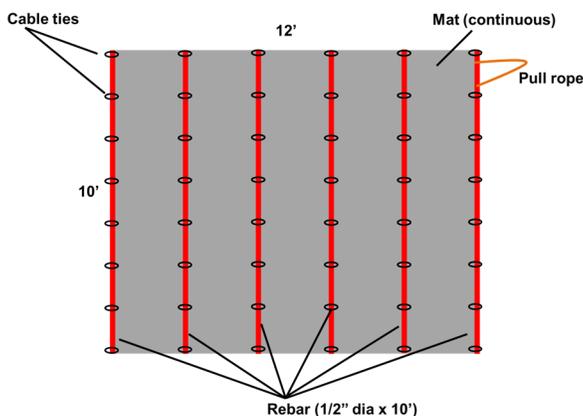
Shopping List (multiple accordingly to create additional mats)

One (1) 10'x12' piece of Geotechnical Fabric Woven Non-degradable, UV Resistance, Black Polypropylene,

Six (6) 1/2" x 10' #4 reinforcing steel bars (rebar) ASTM A615/A705

48 4-6" cable ties (colored ones help in identifying and positioning the mat in the water)

One (1) 3/8" x 2' marine grade rope (colored ones help in identifying and positioning the mat in the water)



Note: The mat thickness is highly exaggerated in this diagram to aid in visualization. It is substantially thinner in comparison to the rebar diameter.