



Looking for a relatively low cost localized solution for
invasive weeds around your docks and swimming
area?

Explore Using Benthic Mats !

Building Blocks to a Cleaner Lake

Strategic Foundation Programs

Watershed Mgmt	Walleye Stocking	Boat Steward Programs
Stormwater Management	Macrophyte Mgmt	Curly Leaf Harvesting
Agricultural Runoff		

Homeowner Programs

Septic Maintenance	Localized Invasive Weed Control-Docks/Swim Areas
Shoreline Maintenance/Erosion Control	"Lake Friendly" Lawn Maintenance

Benthic Mats

Brief Overview of Benthic Mats

- Benthic mats are materials placed on the benthic (bottom) surface of waterbodies to suppress growth of aquatic plants and improve access for boating and swimming.
- Benthic mats are one of the safest and ecologically sound physical weed control techniques. Materials are relatively inexpensive and are usually effective for several years.
- Benthic barriers are most appropriate for small areas, such as around docks or boat launches or in swimming areas. This technique is not suitable for controlling widespread invasive plant infestations (that's where the other programs such as walleye stocking come in!)
- Mats consist of a dark vented fabric or material that block sunlight and is held against the bottom by weights. Without sunlight, plants cannot photosynthesize and do not grow.
- Types of Benthic Mats:
 - Framed
 - Easily covers small areas
 - Less fabric movement
 - Frames can be bulky and harder to store
 - Weighted Sheet
 - Can cover large or small areas
 - Easy to roll up and store
 - May require more maintenance



Brief Overview of Benthic Mats

Advantages:

- Creates an immediate area of open water.
- Easily installed around docks and swimming areas
- Properly installed screens can control up to 100% of aquatic weeds
- Inexpensive compared to other methods of weed control, can be reused season after season
- **Effective and safe**
- Can be moved to a new area after two or three weeks to extend the area of weed growth suppression

Disadvantages:

- Must be regularly inspected and maintained Some mats are difficult to anchor in deep/ muck sediments
- Can interfere with fish spawning and other bottom dwelling organisms
- “Ballooning” or “tenting” from gas build up can occur and the gas needs to be released (vented)

NY DEC Region 7 does NOT regulate Seasonal Benthic Mats but does issue guidelines on their use.



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Ways to use benthic mats to reduce impacts to freshwater organisms

Placement of a benthic mat: Benthic mats are a common barrier method for preventing growth of aquatic plants. They are also known as bottom screens, weed mats, or benthic barriers. A benthic mat works by covering plants, reducing or eliminating light availability and thereby inhibiting the plants ability to photosynthesize and grow. A mat may also smother fish eggs and small organisms living in the top layer of sediment. It is because of concerns about these unintended consequences that it is important to follow certain guidelines to allow for placement of these mats and the enhancement of recreational use while eliminating or reducing unintended ecological impacts

Key Points

Benthic Mat Functions

- Aquatic plant suppression
 - Submerged aquatic plants may not necessarily be weeds, but their proximity to docks and piers limits access for recreation and is considered undesirable
 - Timing of the mat placement is important to protect spawning fish and small organisms living in the sediment that are a key element of the food chain for the waterbody.
- Enhance access to water-based recreation

Time of year restrictions: NYS DEC states that placement of mats should not be done until after June 30 when fish are no longer actively spawning. Mats need to be removed by October 1 each year to reduce impacts on small organisms which live in the sediment and represent a key element of the freshwater food web.



BENTHIC MATS

Using mats to suppress aquatic plant growth



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Mat size, location, and material guidelines:

- Use mats covering no more than 500 square feet of surface area. A mat of up to 500 square feet is considered to have a minimal local impact and is not likely to result in significant cumulative impacts.
- Use a 10 foot setback from any property boundary that extends into the water. A 10 foot buffer between a property line and mat is expected to reduce any conflicts that may arise between neighbors
- Only 100 square feet of the mat material in waters less than three feet deep, in order to reduce the potential of shoreline erosion
- Mats to be anchored to the bottom sediments, in order to keep the mat from moving
- Mats to be made of gas-permeable material (holes or spaces in the material) to allow gases from decomposition to escape without lifting the mat material.
- Do not use pressure treated or chemically treated wood in the construction or anchoring of your mats.
- Mark any mats installed in shallow waters with buoys to protect boaters and swimmers.

Benthic Mats can help support the need for localized weed control around our docks and shorelines without disrupting the balance of strategic programs such as our walleye stocking!



What to do next if you want to use Benthic Mats...

- Determine the desired size and location(s) of your mat(s).
- Determine the type of mat you wish to use (framed vs weighted)
 - Framed mats use some sort of wood or tubular framing to create a solid unit which is then moved to the deployment area
 - Weighted mats typically roll out and use metal rebar or other weights to submerge the mat once deployed.
- Decide whether you wish to buy or build your mat. (see following slide for suggestions)
- **Deploy your mat(s) after June 30th!**
- Be sure to mark your mat's location with markers/buoys for safety if needed.
- Move your mat to another location after two to three weeks if desired. This will allow you to maximize the area of weed suppression.
- **Remove your mat(s) by October 1st.** Clean, dry, and store your mat(s) for the next season.

Buy vs Build...your choice!

Buy – Potential Sources (note: this is NOT an endorsement in any way of these vendors by the TLPF and is not intended to be a recommended or exclusive list)

- Lake Mat Pro - <https://www.lakemat.com/lakemat-pro/>
- Lake Bottom Blanket - <http://lakebottomblanket.com/>
- Weeders Digest - <https://weedersdigest.com/lake-bottom-blanket-sunlight-blocker-weed-inhibitor-weed-killer/>
- Amazon (lake bottom blanket) - https://www.amazon.com/Lake-Bottom-Blanket-Chemical-Swimming/dp/B072LP6YP1/ref=sr_1_1?ie=UTF8&qid=1531954974&sr=8-1&keywords=Benthic+mat
- Natural Waterscapes - https://shop.naturalwaterscapes.com/aquatic-weed-control-mat-12-x-24/?gclid=CjwKCAjwyrvaBRACEiwAcyuzRLnjxUF2z_NUdnOp-FclEpPgToCTvsBjxT9lsunbCgqqIZd30wR98hoCULEQAvD_BwE
- Seaweed Mat Systems (shows some local implementations) - <http://seaweedmatsystems.com/>

Build – Helpful Links

- <https://www.cayugacounty.us/portals/0/wqma/weedswatchout/documents/benthicbarrierinstructions.pdf>
- <https://waynecountynysoilandwater.org/wp-content/uploads/Benthic-Mat.pdf>

