

The Floating Gardener

A Publication Provided by The Magothy River Association



A Better Mousetrap – A Letter From The Editor

If you've been a regular reader of this newsletter, you've seen lots of photos and references here to the wide array of designs concocted to create floating wetland gardens. They range in size from small single units to large multi-layered apparitions. The structures may be as simple as repurposed old tires and as complex as custom engineered plant condos, built with high-tech components and designed for public, park or municipal installations.

The Magothy River Association (MRA) has been experimenting with float designs since 1998, when Paul Spadaro, Magothy River resident and MRA president, wondered if he could use an oyster gardening float to grow underwater grasses (SAV's). His curiosity paid off when a tray of water celery plants installed in the float thrived, but there was stiff competition for underwater grass seeds at that time. The Chesapeake Bay Foundation had launched "Grasses for the Masses" (see TFG June 2015), a large scale effort aimed at restoring underwater grasses in the region. Sourcing seed became difficult and so the MRA project lost steam and subsequently took a back seat to other more pressing MRA business.

In 2013, Dr. Stephen Ailstock of Anne Arundel Community College presented a new AACC Environmental Center endeavor at the annual State of the Magothy meeting, which reignited interest in floating gardens. This time, however, emergent wetland plants grown in AACC's greenhouse took the place of SAV's. Thirty Magothy River residents volunteered to participate in a pilot study that combined several emergent plant varieties into one of two hydroponic systems. **1.** floats, containing emergent plants placed in the water at sunny, semi-protected locations at piers and bulkheads **2.** buckets (5 gallon), placed on a pier, rather than in the water, employing a "pot in a pot" system and filled with river water and local bottom sediment as a nutrient source for plants suspended in a permeable plastic basket. The project was a success and the MRA has been committed to spreading the word about the benefits of floating gardens ever since and encouraging more local residents to become floating gardeners.

As community interest in the floating gardens increased, the MRA and AACC joined forces with the Providence Center to grow the plants and construct additional floats. These were made with a layer of Styrofoam with 3 slots for plant baskets and surrounded by a wooden frame. Although a poor choice environmentally, Styrofoam was easy to work with and relatively inexpensive, which helped keep the cost of the units within easy reach of local citizen scientists who wanted to be a part of the MRA's floating garden program.

Over the last two years, the MRA has "floated" several ideas for improvements to the current design, with the goal of eliminating the Styrofoam while keeping the overall cost of the unit affordable. Construction of units with PVC pipe has been the most promising. The PVC pipe does double duty, providing both frame and floatation. It's also sturdy enough to resist the pitting inherent to the Styrofoam floats as they age. Two of the prototypes already in testing incorporate wire mesh to support the plant baskets. Extending the mesh above the top of the PVC frame creates a barrier, a "duck fence" of sorts, to discourage casual nibbling of the growing emergent plants. The MRA is currently working with local Boy Scout Ty Chisolm, who is building several other iterations of this design for his Eagle Scout project. All of the prototypes will be float tested this fall with the hope that we will be able to make the new design available to residents next Spring and finally send Styrofoam... packing.

Upcoming Events

Mid-September (exact dates TBD)

Marylanders Grow Oysters Program
Spot pick up for participants on the:
North Shore – Old Eagle Cove School
South Shore – Cape St. Claire

September 30

MRA Annual Members Picnic
Twin Harbors Community Pavilion
12-2:00 PM

October 17

MRA Meeting 7:30 PM
Berrywood Community Center

Contacts:

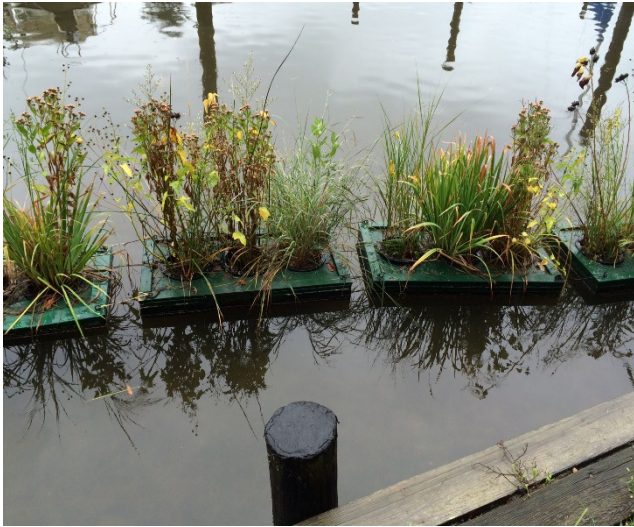
Paul Spadaro - President,
Magothy River Association
(president@magothyriver.org)

Nathan Ullrich – The
Providence Center
(nullrich@providencecenter.com)

Lise Crafton - Editor, The
Floating Gardener
(mrafloatinggardener@gmail.com)

We're Evolving!

Take a look and compare the old floating garden designs, which incorporated Styrofoam, to the new PVC units the MRA is testing.



As always, if your inner engineer has other ideas for further improvements, we'd be delighted to hear from you at mrafloatinggardens@gmail.com.



Here's a sneak peek at two new PVC based designs currently undergoing float testing in the Magothy River.



A Tisket, A Tasket, We Could Sure Use Your Basket!

We need your help! Repurposing is even more environmentally friendly than recycling and the MRA is all about being good environmental stewards. If you have floating gardens that you are no longer using, we would like to re-use the baskets for the float testing we are conducting this fall with more of the new PVC units. Email mrafloatinggardens@gmail.com and let me know if you have baskets you would be willing to repurpose and we will make arrangements to get them. Thanks in advance for your generosity!

Unfortunately we cannot repurpose the large Styrofoam floats. A great many of those are still in use and are holding up reasonably well, but if you no longer want them, please make every effort to remove them from the water for disposal.

The Silver Lining To A Dreary Spring - Dark False Mussels!

A small brown mollusk, barely the size of child's fingernail, is making a big splash in the Magothy this summer. You might even say these little critters have become local celebrities, based on the attention they got in print in the Annapolis *Capital Gazette*, the *Baltimore Sun* and even the *Washington Post*! The Chesapeake Bay Magazine was in on the action too and posted a video on their website featuring a story about the mussels and our floating gardens. Check out the links below for more on this year's dark false mussel explosion.

<http://www.baltimoresun.com/news/maryland/anne-arundel/bs-md-ci-mussels-20180710-story.html>

<https://www.chesapeakebaymagazine.com/baybulletin/2018/7/13/video-mussels-flex-their-muscles-on-the-magothy>

Although dark false mussels (DFM) may be seen on pilings and attached to the underside of boats and floating gardens in most years, this year the population exploded in many of the Magothy's creeks, because of the extremely wet spring we experienced. Like oysters, these native mussels are awesome water filters, but unlike oysters, who need high salinity in order to reproduce, the dark false mussels thrive and spawn in conditions of low salinity – exactly what those spring rains delivered! Their filtering efforts improved water clarity dramatically in some of the creeks in a very short period of time.



The Magothy mussels also attracted the attention of Dr. Peter Fong of Gettysburg College in Pennsylvania. Dr. Fong published research in 2008 on the spawning of DFM and is currently conducting additional research, testing the tolerance of dark false mussels to several environmental toxins and investigating how those toxins impact spawning.

In June, Dr. Fong and his students came to Cattail Creek to collect some dark false mussels for further study in the university's lab. Dr. Fong recently alerted the MRA that a late summer spawn may well be in the cards, because the excessive amount of rain this month has kept salinity levels in the river unusually low. Needless to say, a second spawn would be a blessed event for the Magothy River!

*** A word of warning - pet owners should ensure that their dogs do not eat the mussels, which may be toxic.

The MRA is currently conducting our own experiments throughout the Magothy creeks by deploying test plates in various locations around the river (see photo at right)

Some locations have a string of plates spaced 16 inches apart from surface to bottom while other locations have a single plate set 4 feet below the surface. These plates will allow us to observe the adherence of mussels as the season progresses and not only help to identify whether a second spawn has occurred, but also tell us if there is a "sweet spot" for mussel growth at a particular depth.

*** If you observe more mussels anywhere around the Magothy or other rivers in the county now and on into the fall, please contact Paul Spadaro at president@magothyriver.org.



Spreading the Word About the Benefits of Floating Gardens

Question: **How many Anne Arundel County residents live on the water?**

Answer: **We all do!**

We are all part of the Chesapeake Bay watershed. A watershed is an area of land that drains into a particular river, lake or other body of water. The land-to-water ratio of the Chesapeake Bay is 14:1 - the highest proportion of water to land of any coastal body in the world. This is why our actions on land have such a big impact on the Bay's health. More than 100,000 streams, creeks and rivers thread through this watershed. Each watershed resident lives within a few miles of one of these local waterways that connect our communities to the Bay.

With that in mind, educating folks about floating gardens and their benefits shouldn't be limited to those with a pier. I had the opportunity to share information about the significance of MRA's floating garden project with two groups earlier this year.

On April 29, the Severna Park Library was the site of a gardening workshop open to the community and organized by Miranda Surret, a Girl Scout Cadet earning her Silver Award. The theme was 'Creating an Eco-Friendly Backyard' and included speakers who instructed attendees on Native Plant Gardens, Rain Gardens, Floating Gardens, etc., all of which seemed to resonate with the audience.



On June 3, Linthicum Garden Club members visited with Paul Spadaro and me to see the array of floating gardens that reside by Paul's pier and bulkhead and to hear from us about how they work. We talked about the importance of emergent plants in the ecosystem in undisturbed shorelines; how they remove excess nutrients from the water, mitigate erosion with their root mass, buffer wave action (another source of erosion), provide habitat for native wildlife and manage to be beautiful in spite of working so hard. Unfortunately, undisturbed shorelines have become a rarity on the Magothy, so we demonstrated to club members how floating gardens can help replicate some of those environmental tasks on a small scale.

*Notice the level of the tide in the photo that morning. Extraordinary high tides and heavy rains are becoming more common on the Magothy. (kudos to the ladies, who held their ground in spite of a Northern water snake taking advantage of the high tide to go cruising by at their feet!)

Are You Bay-Wise?

What we do to maintain our own landscapes can affect the health of our local waterways (drainage ditches, streams, and rivers), the Chesapeake Bay and our environment overall. By changing a few simple landscape practices, you and your family can help keep Maryland communities healthy.

The University of Maryland Extension Bay-Wise Program focuses on water quality and relies on trained Master Gardeners to teach simple, bay-friendly lawn and gardening practices so homeowners can help preserve the land and waterways within the Chesapeake Bay watershed.

Bay-Wise trained Master Gardeners conduct free yard visits to discuss sustainable methods for maintaining a specific landscape and teach residents how to control storm water runoff, incorporate native plants, encourage wildlife, fertilize wisely, mulch appropriately, recycle yard waste, mow and water efficiently and manage yard pests with Integrated Pest Management (IPM) methods.



Are you interested in becoming Bay-Wise certified? Open the link, view the video and follow the steps described there.

<http://baywise.weebly.com/>

Floating From Summer Into Fall

When crickets join the chorus of katydids and cicadas at night, it's a sure sign that the summer is starting to slide into fall.

If you have a floating garden with Hibiscus or Kosteletzkya, you'll notice that the pink Kosteletzkya flowers (right) are coming on strong, while the hibiscus blooms are either gone or past their prime.

Next up, are two of my favorites – seaside goldenrod (*Solidago*) and asters - which are also favorites of native bees and a critical source of high energy food necessary for butterflies as they travel south on their long annual migration.



Monarch butterflies seem to be especially abundant this year and although there's no goldenrod blooming in my floating garden yet, the Monarchs put the swamp milkweed (*Asclepias incarnata*) to good use. Leaves suddenly went missing – a sure sign that Monarch caterpillars were munching their way to maturity. It takes just 9-14 days to go from hatched egg to a fully grown caterpillar (see the photo on the right). No wonder their appetite is so voracious! And don't worry about the milkweed, it will grow back next year.



To view more photos and access additional information about any of the plants used in the floating gardens, see the Emergent Plant Guide found in the April/ May 2016 issue of *The Floating Gardener*.

<http://www.magothyriver.org/wp/wp-content/uploads/2016/01/Floating-Gardener-May-2016.pdf>.

For a more comprehensive list of native emergent plants in Maryland, please refer to the DNR's website information at:

<https://www.nps.gov/plants/pubs/nativesmd/lists.htm>

**** Remember that back issues of *The Floating Gardener* can be found on the MRA's website at:**

<http://www.magothyriver.org/projects/floating-gardens/>