

The Floating Gardener

A Publication Provided by The Magothy River Association

Once Upon a Time – A Letter from the Editor

Once upon a time, the Chesapeake Bay and its tributaries were alive with all manner of fish, shellfish, crabs and, most importantly, grasses. These plants provided food, shelter, protection, and the life-giving oxygen that allowed residents both in and around the bay to thrive. For centuries Native Americans, followed by newly arrived Americans from Europe, Africa, etc., who called the Chesapeake region “home”, depended on the largess of the bay to sustain them.

As grasses and emergent plants have become increasingly scarce, it may be hard to imagine a scene in which men in rowboats quietly made their way through a bed of underwater grasses, netting the soft crabs that took refuge there as far up the Magothy as Cattail Creek, but any of the rivers' long-time residents can verify the dramatic changes that have taken place in only a generation or two.

A place on the water was a dream realized by many, but as the number of people and houses increased, so did pressure on the environment. Then in 1972 Hurricane Agnes hammered Maryland and hammered what some believe was the last nail in the coffin of the Chesapeake Bay's tributaries with the sediment (suspended solids) it stirred up, preventing the transmission of sunlight to the underwater grasses that needed it to generate oxygen via photosynthesis.

Despite their decline, the Bay and its rivers are still a great place to live, so development and its impact to our local ecosystems continue. Your floating gardens are small green knights in a quest to understand where the plants in those mini-ecosystems will thrive and what impact they have on their surroundings. This important research may lead to solutions that turn the tide and restore the Chesapeake Bay watershed to good health.

This issue of the Floating Gardener will provide a historical perspective, from the early work with SAV's (submerged aquatic vegetation), now known as underwater grasses, to the collaboration in 2013 between AACC and the MRA that lead to the current floating garden project.

There's no “happily ever after” to this story yet, but we're working on it!



Upcoming Events

June 13

Magothy River Day

Deep Creek Restaurant

10AM – 4PM

June 14

Red, White, Blue & Yellow Too!

Walk for Yellow Perch habitat conservation. 11:AM at SP Library

Happening Now!

If you've volunteered to map SAV's via canoe or kayak, it's time to start paddling! Details in this month's newsletter.

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From Underwater Grasses to Water Gardens – A Saga

In June, 1998, The Annapolis 'Capital' ran a story about an inquisitive man on the Magothy who wondered if he could use his oyster gardening float to grow underwater grasses. That man was Paul Spadaro, longtime resident and president of the Magothy River Association, and his curiosity paid off. In only 2 months a tray of 100 water celery plants planted in the partially submerged float grew from 3 inches to 3 feet in height! The float's construction allowed it to move with the tide, assuring that the plants remained at a constant height in the water to get the sunlight they needed. Paul used a "pot within a pot" approach to contain the plants within the float and minimize erosion from wave action. The experiment was so successful that a soft crab was discovered among the grasses in the float as Paul and his son Nick demonstrated the contraption to the Capital's reporter.

Around that time the Chesapeake Bay Foundation began promoting a "Grasses for the Masses" project with the same goal of restoring underwater grasses in the region, making it difficult for the MRA to source the plants needed to expand underwater gardening in the Magothy. One solution to the lack of seedlings was to distribute seeds and have participants start the grasses inside themselves then transfer them to a water garden system at the right time, but that complicated the process and, as a result, the project fizzled.

Enter Dr. Stephen Ailstock and the Anne Arundel Community College Environmental Center. In early 2013, Dr. Ailstock spoke to community members at the annual State of the Magothy meeting, introducing a new water gardening project to those in attendance. With support from the MRA and an enthusiastic reception of the project plan by 30 Magothy River residents, the first pilot study for water gardens and plant culture at AACC was off to a good start. As with any garden, a lot of cross-pollination would be required for this project to bear fruit. Dr. Ailstock developed the research protocol and headed the project team at AACC. Michael Norman, Environmental Technical Specialist at AACC, lead his student assistants in selecting and growing the different plant species to be used in the study. Bruce Lenderking, an independent environmental researcher, developed and fine-tuned a prototype for the floats and guided AACC students in their construction. Dr. Sally Horner, a member of the MRA and a Biology professor at AACC, assisted with the site selection based on her knowledge of the Magothy and Paul Spadaro, MRA president, offered his experience, tenacity and people skills, enlisting volunteers to construct additional floats and keeping the momentum going within the community for the project now known to residents as the "Floating Gardens".

Three systems were actually deployed. 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 the "pot in a pot" system and filled with river water and local bottom sediment as a nutrient source and 3. submerged floats, containing SAV's (underwater grasses) and placed in sunny locations with 2 feet of river water at mean low tide.

All that remained was for Mother Nature to do her best (and worst!) in the coming season with weather, wind and tide and then to evaluate the plants in all three culture systems at the season's end to learn more about the river's effect on the plants, and the plants effects on the river!

Tune in next month for another exciting chapter in the ongoing saga of the Floating Gardens!

Emergent Botany 101!

Michael Norman highlights two more of the plant varieties that are being used in the floating gardens. There will be two more featured in next month's issue, but you can explore on your own via the two reference sites. <http://plants.usda.gov/java/> & <http://www.wildflower.org/explore>



Photo by Michael Norman

Plant Profile

Scientific Name: *Schoenoplectus tabernaemontani* – formerly *Scirpus validus*

Common Names: Soft-stem bulrush, Soft-stem club-rush, Great bulrush

Plant Description: Softstem bulrush, a member of the sedge family and found throughout North America. This plant is an obligate wetland variety that likes full sun and a wet to inundated condition at all times. It can tolerate a range of salinity from 0 - @ 6ppt so you're likely to find it in shallow freshwater wetlands, alkali wetlands, along the banks of brackish tidal tributaries and in wet meadows. *S. tabernaemontani* can spread rapidly and has a distinctive flowing form in the landscape with its 3 - 9' tall, weak tubular leaves and reddish brown drooping spikelet clusters. Flowering occurs in the late spring to early summer, followed later by an abundance of drooping seed heads that provide food for waterfowl, shore birds and wetland birds. The tall leaves provide good nesting cover for the birds while muskrats love the extensive tubers it produces.

Native Americans wove the long straight stems into mats and used the underground rhizomes for making bread meal and a sweet syrup from its boiled roots.



Photo by Michael Norman

Plant Profile

Scientific name: *Pluchea purpurascens* – (*Pluchea odorata*)

Common Names: Marsh fleabane, Salt marsh fleabane, Southern marsh fleabane, Sweetscent, Camphorweed, stinkweed.

Description: Marsh fleabane is a native wetland annual or weak perennial that inhabits moist brackish to saline marshes along the eastern seaboard to the Gulf of Mexico, as well as inland saline locations. It prefers full sun but can tolerate some shade, and its growth habit forms an attractive 1 - 5 foot herbaceous sub-shrub with multiple erect, stiff, downy stems covered with velvety lanceolate leaves. It prefers to live in salt marshes but is tolerant of a wide range of conditions. *P. purpurascens* blooms from July through October with a profusion of fragrant clusters of pink-lavender flower heads. In addition to the vibrant splash of pink it gives to the marsh, this plant is visited by countless numbers of native bees and insects providing important resources to our native pollinators.

Some of the uses of this plant are for dried flower arrangements, as an insect repellent, and as an herbal tea, however early colonists learned to use the plant for medicinal purposes.

Mapping SAV's in the Magothy:

The following is from Jeff Reagan, who is coordinating efforts to document the presence of underwater grasses in the Magothy River.

This year will be very similar to last year, but we've made a few updates to our collaborative map. In addition to mapping what you find, we'd like to record the absence of SAV too. So please plot points where you find nothing! This will really help us identify viable SAV locations.

We'll also attempt to quantify the density of SAV beds found using sparse, moderate, and abundant values.

1 stem per square foot - Sparse

2-5 stems per sq foot - Moderate

More than 5 stems per sq foot - Abundant

Lastly, we can use a polygon feature this season to better delineate the boundaries of the SAV beds we identify. Attached you'll find pictures of the most common SAV you'll encounter, and mapping instructions. Here's a link to an online field guide which is a wonderful resource.

http://www.chesapeakebay.net/fieldguide/categories/category/bay_grasses_sav

Anyone with a link to the map can edit, so please share with any friends and neighbors that may be interested in participating.

MAP LINK: <https://www.google.com/maps/d/u/0/edit?mid=zfUq3XE4xVCQ.kiZe8k2aJD90>

Happy Paddling!

Jeff Reagan, Environmental Specialist, Master Watershed Steward

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Gardeners' Forum:

A Magothy mallard laid her eggs among the emergent plants on Sandy and Paul Spadaro's garden float, proof that floating gardens provide good habitat for residents both above and below the water's surface!

Note that the plants are already well established. The secret? These are last year's plants that overwintered successfully in the float, giving them a head start this year.



Anything you'd like to share about your floating garden? Send questions, comments and photos to mrafloatinggardener@gmail.com

Coming Next Month:

Learnings from AACC's pilot project in 2013

New MRA/ AACC SAV garden project - the latest on growing underwater grasses (possible spin-off publication: The Partially Submerged Gardener??)

Emergent Botany 101 (continued)

Gardener's Forum