

The Floating Gardener

A Publication Provided by The Magothy River Association

The Grass Is Greener on the Northern Side – A Letter From The Editor

At the end of July, I had the opportunity to participate in a field-based SAV workshop in Havre de Grace, conducted by Brooke Landry, Natural Resource Biologist for the Maryland Department of Natural Resources (DNR). The workshop was designed to educate members of environmental and local watershed groups about SAV, the acronym for Submerged Aquatic Vegetation, and included both plant identification and field monitoring techniques. The extravagant SAV beds in an area known as the Susquehanna Flats in the upper Chesapeake Bay was our training ground. With a sandy bottom, perfect water temperature and the undulating green underwater grasses, I can think of no better place to be 'up to your neck' on a very humid 95 degree summer day in Maryland!

SAV is a term that includes true seagrasses, estuarine plants, and freshwater plants. All are rooted vascular flowering plants and all are fully submerged. SAV is critical to the health of the Bay. Algae are not SAV, because they are not vascular plants. Nor are the emergent plants in our floating gardens, which are rooted in the water, but have leaves and stems that extend out of the water, although they may become partially or fully submerged for brief periods during tidal changes. Emergent plants grow naturally in wetlands and along undeveloped shorelines, conditions that have become increasingly rare in our area.

You may remember an article or two in The Floating Gardener last summer that detailed how the MRA's floating garden project came about. What started as an attempt to renew SAV beds that historically occupied the Magothy and other local rivers and creeks failed, due to lack of available seed stock and an over-abundance of algae that kept sunlight from penetrating the water below the surface. No sunlight = no photosynthesis = no SAV. While floating gardens of emergent plants improve conditions in their immediate surroundings, large areas of natural shoreline studded with native plants, or rehabilitated "living shorelines", have a much bigger positive impact on the environment. Shorelines armored with rip-rap or bulkheads can't support the growth of emergent plants, however with the right conditions SAV can thrive fully submerged in deeper water beyond the bulkheads. A resurgence of underwater grasses could be a huge benefit to our waterways. By ensuring that the Bay and its tributaries are clean enough to support SAV, a benevolent cycle begins and the SAV then does its bit, filtering excess nutrients and sediment to keep the Bay clean, returning oxygen to the environment and providing safe haven to an abundance of bay critters. And when bay grasses are back, can soft crabs be far behind?

Following are some key slides from the classroom portion of the workshop, including a few that will familiarize you with the SAV species most commonly found in Maryland. The entire Power Point presentation may be found via an attachment at the end of this newsletter.



Upcoming Events

September 21

MRA Monthly Meeting
Berrywood Community Clubhouse
7:30 PM

October 2

MRA Members' Crab Feast
Celebrating Our 70th Year!

2 – 6 PM
Cape St. Claire Clubhouse
Tickets \$50.00 thru Eventbrite
<https://goo.gl/2nJ0IV>

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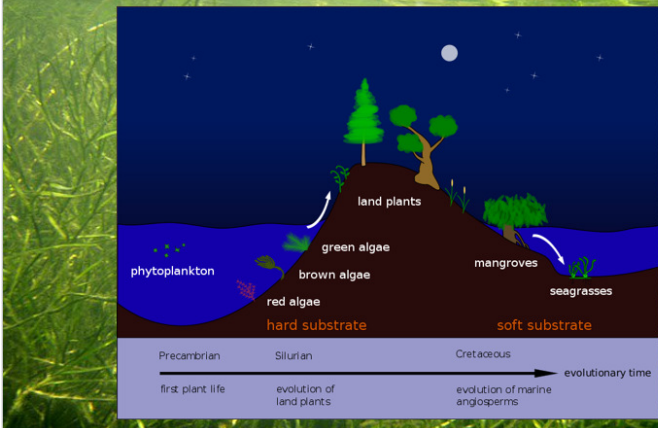
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Submerged Aquatic Vegetation (SAV) 101

Evolution of SAV

(Seagrasses = angiosperms or flowering plants)



Anatomy 101

RHIZOME:

- propagation of the clone
- anchoring the plant to the substrate
- translocation of materials throughout the clone
- nutrient absorption and gas exchange

ROOT:

- nutrient absorption
- anchorage of the plant
- elimination of waste products

SHORT SHOOT:

- "stem" of the plant
- where the blades originate

BLADE:

- Photosynthesis
- nutrient absorption
- elimination of waste products



Why is SAV distribution important?

SAV is an Ecologically and Economically Important Habitat

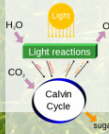
SAV absorbs and filters nutrients and sediments from water column, and reduces resuspension of sediments promoting increased water clarity

SAV reduces shoreline erosion

SAV provides food and habitat

SAV releases oxygen into water column

SAV sequesters carbon



Chesapeake Bay SAV - 17 Species of grasses are commonly found in the Bay and it's tributaries. The five most common ^{native} are:

Wild Celery (*Vallisneria americana*)

Redhead Grass (*Potamogeton perfoliatus*)

Sago Pondweed (*Stuckenia pectinata*)

Widgeon Grass (*Ruppia maritima*) (the most widespread)

Eelgrass (*Zostera marina*) (the only "true" seagrass species, can tolerate salinities as low as 10 ppt, and is dominant in the lower reaches of the bay)



Wild Celery



Redhead



Eelgrass



Widgeon Grass

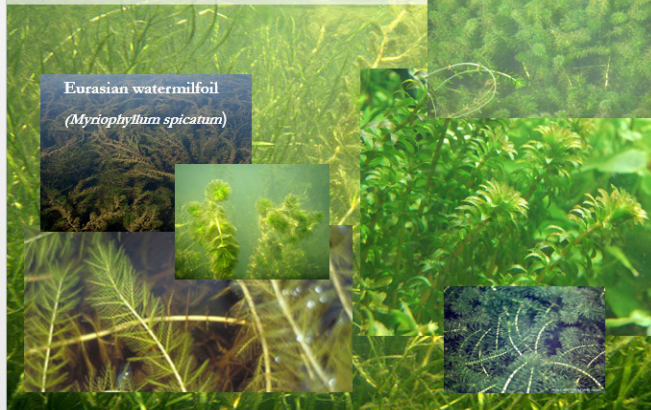


Sago Pondweed

And then there are the common invasive species.....

Hydrilla verticillata

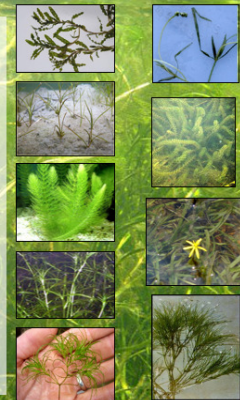
Eurasian watermilfoil
(*Myriophyllum spicatum*)



Other species of SAV in the Chesapeake Bay include:

1. *Potamogeton crispus* (Curly pondweed) *
2. *Potamogeton pusillus* (Slender pondweed)
3. *Zannichellia palustris* (Horned pondweed)
4. *Elodea canadensis* (Canadian waterweed)
5. *Ceratophyllum demersum* (Coontail)
6. *Heteranthera dubia* (Water stargrass)
7. *Najas guadalupensis* (Southern naiad)
8. *Najas minor* (Brittle naiad) *
9. *Najas gracilima* (Slender water nymph)

* Denotes a less common invasive species

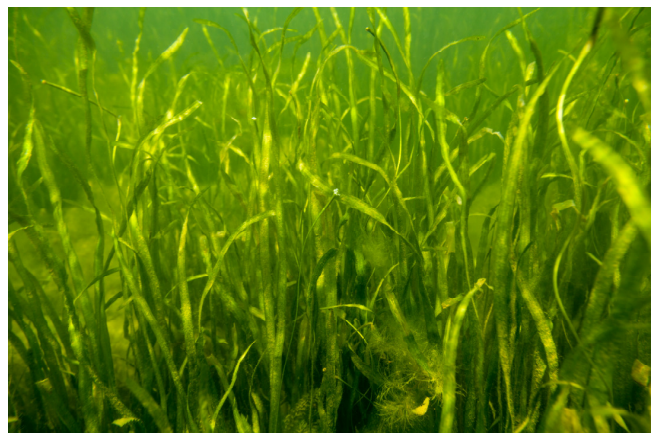


Working in the Fields

These photos were taken in the Susquehanna Flats, where we put our new found knowledge of SAV monitoring to the test. The photographer who captured it all is Will Parson, who may be reached at wparson@chesapeakebay.net



Myriophyllum spicatum, or Eurasian watermilfoil in front;
Vallisneria americana, or wild celery in back



Vallisneria americana, or wild celery



Mermaid tresses, per chance? (nope, wild celery again)



Class in session!



Preparing *Vallisneria americana*, wild celery, for pressing



Myriophyllum spicatum, or Eurasian watermilfoil in plant press

And the Results...

A successful day with an impressive variety of specimens! Here's are all the SAV species collected while snorkeling and exploring the Flats. Horned pondweed (*Zannichellia palustris*), which grew in abundance in the Magothy this past spring, completes its life cycle early in the season so, as expected, there was none to be found in the Flats in late July.



1. *Vallisneria americana*
2. *Heteranthera dubia*
3. *Elodea canadensis*
4. *Ceratophyllum demersum*
5. *Potamogeton pusillus*
6. *Potamogeton crispus*
7. *Najas gracillima*
8. *Najas guadalupensis*
9. *Najas minor*
10. *Hydrilla verticillata*
11. *Myriophyllum spicatum*

Water stargrass flower (*Heteranthera dubia*)

For more information on plants:

FIELD GUIDES TO CHESAPEAKE BAY SAV

A. Chesapeake Bay Program: online guide searchable by salinity zone

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

B. Maryland Department of Natural Resources

Online key: <http://dnr.maryland.gov/waters/bay/Pages/sav/key.aspx>

PDF: http://dnr.maryland.gov/waters/bay/Documents/SAV/complete_sav_key.pdf

C. Chesapeake Bay Foundation Guide to Underwater Grasses

<http://www.cbf.org/Document.Doc?id=188>

D. Printed Guides

Underwater Grasses in Chesapeake Bay & Mid-Atlantic Coastal Waters:

Guide to Identifying Submerged Aquatic Vegetation. Peter W. Bergstrom, Robert F. Murphy, Michael D. Naylor, Ryan C. Davis, and Justin T. Reel. 2006. Available from

<http://www2.mdsg.umd.edu/store/books/sav/index.php>

Field Guide to the Submerged Aquatic Vegetation of Chesapeake Bay. Linda M. Hurley, U.S. Fish and Wildlife Service. 1990. Chesapeake Bay Estuary Program Annapolis, MD.

<https://babel.hathitrust.org/cgi/pt?id=uc1.31822009412263;view=1up;seq=7>



Slip Slidin' Away (or Where the heck did summer go?)

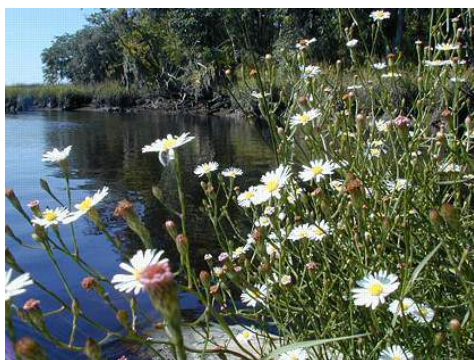
As summer begins to slip into fall, the change of seasons will be evident by the change in what's blooming in your floating garden. Hibiscus and *Kosteletzkya* (saltmarsh mallow) are probably still producing a few white to pink flowers. If *Pluchea* (marsh fleabane) was part of your plant combo, it's in full bloom now, its clustered pink flowers popular with foraging native bees. The bees are also hot for New York ironweed (*Vernonia*), whose loose purple blooms stand tall, putting them within easy reach of butterflies too. *Panicum*, commonly known as switch grass, is now sporting wispy seed stalks that will soon double as bird food. Next up will be the *Solidago* (seaside goldenrod) and salt marsh aster, the dense yellow-spiked heads of the one juxtaposed with the dainty daisy-like flowers of the other. Migrating Monarch butterflies use seaside goldenrod as one of their primary food sources in the fall. As many of the abundant food and nectar sources of summer near depletion, fall flowering plants play a critical role for both migratory and other species that will overwinter locally.

To view photos or to access additional information about any of the plants described above, the Emergent Plant Guide may be found in the April/ May 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>



Saltmarsh aster



Kosteletzkya (saltmarsh mallow)



Solidago (seaside goldenrod)

Gardeners' Forum:

Anything you'd like to share about your floating garden? Send questions, comments and photos to:

mrafloatinggardener@gmail.com

Magothy River Association Crab Feast – Celebrating 70 Years! 1946-2016

This year, the Magothy River Association recognized its 70th year of advocating for the Magothy and the Chesapeake Bay watershed. To celebrate, the MRA is hosting a crab feast on Sunday, October 2 at the Cape St. Claire Clubhouse. Tickets are on sale for \$50.00 via Eventbrite <https://goo.gl/2nJ0IV>. This event is open to the public, so come join us as we celebrate our volunteers, our history and accomplishments and raise a glass to continued success in the next 70 years!

Moving forward!

Under The Sea

Under the sea
There be SAV
De eelgrass is better
Down where it's wetter
Take it from me
Up in the boat they sail the Bay
Out in the sun they bake all day
While we devotin'
Full time to floatin'
Under the sea

(with apologies to Disney's The Little Mermaid)



(Photo by Will Parson/Chesapeake Bay Program)



Stan Kollar of Kollar Nursery in Pylesville, Md., is transformed by underwater grasses on the Susquehanna Flats near Havre de Grace, Md., on July 25, 2016. Kollar was participating in a workshop to learn how to identify and monitor various species of submerged aquatic vegetation (SAV) that live in the Chesapeake Bay. A healthy patch of underwater grasses provides food and habitat for animals like fish and crabs, reduces shoreline erosion, and improves water quality by slowing the current and helping sediment filter out of the water column. (Photo by Will Parson/Chesapeake Bay Program)



Riverkeeper Training
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Power Point presentation provided courtesy of Brooke Landry, DNR. Thank you Brooke!

For more information on floating gardens and back issues of The Floating Gardener, please refer to the MRA's website at <http://www.magothyriver.org/projects/floating-gardens/>