



# Bay Grass Restoration Partnership Newsletter



Issue 8

Spring/Summer 2008

## Special points of Interest:

- Approximately 10,350 gallons of eelgrass reproductive material collected near Crisfield
- Over 80 bushels of invasive water chestnut were collected from the Bird and Sassafras Rivers
- More than 60 classes participated in raising and planting bay grasses for the Bay Grasses in Classes program
- Invasive Water Lettuce spotted on the Potomac River



## Inside this issue:

|                                  |   |
|----------------------------------|---|
| Large-Scale Eelgrass Restoration | 1 |
| Water Chestnut Eradication       | 1 |
| Bay Grasses in Classes           | 2 |
| Invasive Water Lettuce           | 2 |

## Another Season of Large-Scale Eelgrass Seed Collection Completed

DNR's Resource Assessment Service completed a sixth season of eelgrass seed collection near Crisfield, MD from May 21<sup>st</sup> to June 4<sup>th</sup>, 2008.

Approximately 10,350 gallons of eelgrass reproductive material containing one million eelgrass seeds were collected.

The eelgrass seeds were collected as part of a continued effort to plant or seed bay grasses on a large-scale in strategic locations to achieve Maryland's bay grass restoration goals.

DNR has long recognized the need for a large-scale restoration approach. There are areas of the Bay where water quality has improved sufficiently to support bay grasses, yet a lack of seeds prevents recolonization of these areas.

Planting or seeding these areas with bay grass seeds collected from healthy beds elsewhere could lead to vigorous natural revegetation in adjoining areas.

Using a mechanical harvesting boat, Maryland DNR biologists collected eelgrass reproductive material from Pocomoke Sound and the Little Annemessex River.

The harvester "trims" the reproductive shoots, removing seeds while leaving the roots and rest of the grasses intact. Only a small portion of the seeds are removed from each healthy eelgrass bed allowing them to reproduce and persist at healthy levels.



Eelgrass reproductive shoots containing mature seeds

After collection, the harvested seed material  
*(Continued on page 3)*

## Water Chestnut Eradication Efforts Continue on Bird and Sassafras Rivers

DNR biologists, along with several volunteer groups, recently completed an annual harvest of water chestnut (*Trapa natans*), an invasive aquatic plant.

This most recent annual effort resulted in the removal of approximately sixty bushels on the Sassafras River and twenty five bushels

on the Bird River.

Water chestnut is an aquatic plant native to Asia. In the Americas, water chestnut is an invasive species known for its aggressive growth habits. One acre of water chestnut can produce enough seeds to cover 100

*(Continued on page 4)*

## Bay Grasses in Classes Wraps-Up 11<sup>th</sup> Season



Students planting their classroom-raised bay grasses

Maryland DNR, in partnership with the Chesapeake Bay Foundation (CBF), has completed its eleventh season of the Bay Grasses in Classes (BGIC) program. BGIC is a hands-on, interactive education project that enables students to play a direct role in Chesapeake Bay restoration.

Since its inception in 1998, 1,568 classes and 40,970 students have been involved in the program. In 2008, 150 teachers from 15 counties and Baltimore City participated in one or all phases of this project. Redhead (*Potamogeton perfoliatus*), water stargrass (*Heteranthera dubia*), wild celery (*Vallisneria americana*) and sago pondweed (*Stuckenia pectinata*) were grown from seed or propagated by students in 2008.

Returning teachers, as well as 20 new teachers, from across the State were trained by DNR and CBF staff in January. Teachers used the curriculum materials and online resources provided to educate their classes on the importance of bay grasses. Teachers were provided with materials necessary to construct growth chambers in their classrooms including, aquarium equipment, sediment, and seeds or adult plants to propagate.

Each student had an opportunity to plant the seeds or propagate adult plants, monitor growth and record data, as well as participate in lessons and activities designed to educate them on the benefits of bay grass communities. After 12-16 weeks of caring for their bay grasses in the classroom, the students disassembled their systems and transported the grasses to restoration sites

(Continued on page 3)

## Invasive Water Lettuce Harms Bay Grasses And May Impede Boating

A native of South America, water lettuce (*Pistia stratiotes*) is an aquatic weed that floats on the surface of slow-moving rivers, lakes and ponds. Unmistakable in appearance with light green leaves grouped in rosette like an open head of lettuce, the commonly used household aquatic plant floats on the surface of the water alone or in dense mats. Water lettuce produces seeds and spreads rapidly; growing into thick mats of vegetation that block sunlight from reaching underwater grasses and using dissolved oxygen in the water that fish need to survive. Once established, water lettuce becomes impenetrable to boats, swimmers and waterfowl.

U.S. Geological Survey biologists first identified invasive water lettuce in Maryland last fall during a routine survey of Mattawoman Creek, a large Potomac River tributary in Charles County.



Water Lettuce Plants with attached roots



Floating Mat of Water Lettuce Plants

This past July, DNR biologists completed a scouting mission on the tidal freshwater portion of the Potomac River in search of additional water lettuce plants. No water chestnut plants were observed on the Potomac River.

However, a concerned citizen notified DNR biologists of several water lettuce plants in Norman Creek on the Middle River in August. No water lettuce plants were observed on a subsequent survey by DNR.

The Maryland Department of Natural Resources reminds water gardeners and aquarium owners to properly dispose of aquatic plants to prevent spread of invasive species like water lettuce that harm bay grasses and may impede boating.

DNR hopes to eliminate this invader and advises boaters, swimmers and residents to keep a look out for its presence and take precautions to avoid its spread to other streams and rivers. New introductions of the plant result from improper disposal of domestic

(Continued on page 3)

## Bay Grasses in Classes

*(Continued from page 2)*

throughout the state. Approximately 66 classes attended a field trip at the end of the program to plant their classroom-raised grasses at one of the five restoration sites in the Chesapeake Bay watershed. There they took part in planting the grasses and other activities designed to reinforce their knowledge of bay grasses.

By studying the ecological importance of bay grasses and actively participating in restoration, students also gained a sense of stewardship of the Bay. Students have planted over three acres of bottom surface in the Bay with the half million plants grown in their classrooms.

BGIC receives funding from the Chesapeake Bay Trust.

For more information on the Bay Grasses in Glasses program, contact Mark Lewandowski ([mlewandowski@dnr.state.md.us](mailto:mlewandowski@dnr.state.md.us), 410-260-8634) or visit us online at <http://www.dnr.state.md.us/bay/sav/bgic/>.



**Healthy bay grasses raised and planted by students near Seneca Creek State Park**

## Water Lettuce

*(Continued from page 2)*

pond plants and water, or when winter rains overflow man-made ponds into local bodies of water. Water lettuce may also be introduced by hitchhiking on boat trailers or other gear. Residents surrounding the Potomac River are encouraged to help DNR eliminate invasive water lettuce. Water lettuce can be raked or seined to remove it from the water's surface and then either spread out on the ground away from water to dry out and die or bagged up with compost.

Warm summer weather is the ideal time for water lettuce to flourish. Individuals who spot water lettuce in Maryland's waterways are encouraged to remove it and also report what they see to DNR by calling 410-260-8634 or emailing [mlewandowski@dnr.state.md.us](mailto:mlewandowski@dnr.state.md.us).

## Large-scale Eelgrass

*(Continued from page 1)*



**Eelgrass plants in a restored area near St. George Island, St. Mary's River**

was transported by commercial watermen to Maryland DNR's Piney Point Aquaculture Facility in St. Mary's County. The eelgrass reproductive material is held through the summer in large tanks to allow for seeds to separate from non-seed material. After separation, seeds are stored under temperature and salinity controlled conditions. The seeds will be planted this fall on the Potomac River.

Large-scale seeding efforts have resulted in the successful establishment of eelgrass beds near St. George Island on the Potomac River. Recent monitoring indicates that healthy eelgrass is thriving and has expanded beyond initial seeding extents.

DNR will continue to monitor these new beds in addition to the germination and development of this year's seeds. DNR will also continue to closely monitor the health of the eelgrass beds from which the seeds are taken, as well as the relative success of the different seeding techniques, in order to identify the most cost-effective large-scale restoration method to meet Chesapeake Bay restoration goals.

Funding for this project was provided by the National Oceanic and Atmospheric Administration.

For more information on Maryland DNR's large-scale eelgrass restoration projects, contact Katie Busch ([kbusch@dnr.state.md.us](mailto:kbusch@dnr.state.md.us), 410-260-8654) or visit <http://www.dnr.state.md.us/bay/sav/restoration.asp>.

# Water Chestnut Eradication

(Continued from page 1)

acres the following year. With four, hard half-inch spines, water chestnut seeds are major hazards to water recreation. Additionally, water chestnut can wipe out native bay grasses from some areas, creates breeding grounds for mosquitoes, and provides only marginal habitat to native fish and birds.

In 1997, water chestnut was observed on the Bird and Sassafras Rivers after nearly three decades since previous eradication efforts ended. The water chestnut population on the Bird River reappeared with approximately 50 plants and spread to three acres in 1998 and approximately 30 acres in 1999.

The Sassafras population was larger and difficult to quantify due to its remote location. A massive eradication effort utilizing a mechanical harvester in 1999 resulted in the removal of approximately 400,000 pounds of plants from both rivers.

Less than 1,000 pounds of water chestnut were removed from both Rivers in 2000. Since then, small teams of DNR biologists have been able to survey both the Sassafras and Bird Rivers each year and remove small populations of water chestnut as necessary.

Eradication efforts took place in July of 2008 on both the Bird and Sassafras Rivers. On the Bird River, water chestnut plants have consistently been found in the same areas of the river, namely, Railroad Creek and Day's Cove. This year, approximately 25 bushels of plants were removed from Railroad Creek and Taylor Creek (adjacent to Mariner Point Park). No plants were found in Day's Cove.

DNR biologists worked with the Sassafras Riverkeeper and volunteers from the Sassafras River Association to survey and remove plants on the Sassafras River. Plants have been removed from Lloyds Creek, Woodland Creek, Island Creek and Turners Creek in the past.



**Map of 2008 Water Chestnut Locations on the Sassafras River**



**Map of 2008 Water Chestnut Locations on the Bird River**

In 2008, approximately 60 bushels of water chestnut were removed from Turners Creek, Dyer Creek, Woodland Creek, Island Creek and a small cove behind Pond's Bar adjacent to the Sassafras Natural Resources Management Area. The majority of the plants were collected from Turners Creek.

Water chestnut populations on the Bird and Sassafras Rivers have been dramatically reduced. Despite these successes, the threat posed by the remaining small, but still significant, populations requires that removal efforts continue to keep the water chestnut in check and prevent any further proliferation.

For more information, contact Mark Lewandowski ([mlewandowski@dnr.state.md.us](mailto:mlewandowski@dnr.state.md.us), 410-260-8634) or visit [http://www.dnr.state.md.us/bay/sav/restoration/other\\_projects.asp](http://www.dnr.state.md.us/bay/sav/restoration/other_projects.asp).

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