

Headwaters

Publication of Maryland Sea Grant Extension Watershed Educators

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DEAR READERS:

In Headwaters we talk a lot about water, native plants, soils, sunlight, sediment, and nutrients- all the things that comprise our natural environment and go into the big stew of modeling the Chesapeake Bay's health. The real reason we are here, though, is people.

Neighbors, friends, colleagues, clients, and complete strangers that we have an opportunity to help on a daily basis. The only way we will succeed in improving water quality, producing food, ensuring safety, lowering energy consumption, and creating a culture that is generally sustainable for the long term, is by working together. Collaboration, partnership, and education can move us toward a resilient and sustainable community in the Chesapeake Bay. In this Headwaters, we demonstrate that humans are an inextricable part of every story and every landscape of the Chesapeake.

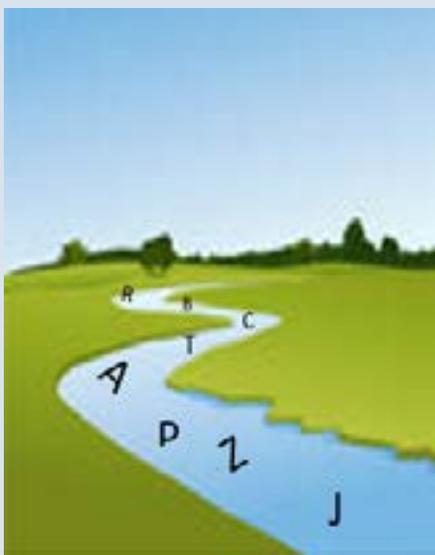
For more information on how we support Chesapeake Bay restoration, please visit our website, www.extension.umd.edu/watershed.

Sincerely,
The Maryland Sea Grant Extension Watershed Educators Team





CHARACTER STREAM



Newsbites about watershed restoration, community resilience, behavior change, and water quality science in 140 characters or less! Follow [@shesashinyotter](#), [@lefthandjen](#), and [@cleanwatermd](#) for hot topics and trends in the world of water.

Are the data “right?” Emily Russ examines #confidence in the lab @ umces <http://go.umd.edu/wrr>

Edges are the diverse places ripe for development and transition. Heard at #anrep #nacdep16

Happy first full day of summer! Remember to enjoy the water and put safety first! #cleanwaterwednesday

Emily Russ is working in the lab! Learn about her process: <http://go.umd.edu/wcd> #CleanWaterWednesday #research

Award-winning poster by MDSG #watershed specialists about their study on #stormwater control <http://bit.ly/2adYg15>

#Cecil #Watershed Stewards finish a great class project! <http://go.umd.edu/wrb> and <http://go.umd.edu/wra>

Kicking off the #anrep #nacdep16 joint conference in #Burlington. Excited to be speaking Wed about #watershed stewards!

How Understanding Culture Can Help Us Respond to Environmental Change <http://go.umd.edu/wxj> #CleanWaterWednesday #womeninscience





BAY CLARITY

+ SANTANA MAYS &
KRISZTIAN VARSA

+ WHAT'S MAKING THE
WATER SO CLEAR?



Many locals took notice recently that the Chesapeake Bay is clearer than it has been in recent memory. In trying to explain this phenomenon, we here at Headwaters feel that it is always important to consider all scientific factors contributing to the Bay's water clarity. And, while efforts to clean up the Bay are working, there are some factors that even humans can't control.

One of these factors is the weather. A big storm or heavy winds contribute to water clarity. In late 2015 and into 2016, river flows into the bay have been at or below normal. This means that rain washed fewer nutrients and other pollutants off the land and into the Bay. Consequently, algal blooms, which thrive in nutrient-rich water, were sparser. Lower storm flows





“Other factors contributing to local water clarity are time and place.”

also meant that less sediment was delivered to the Bay to make the water cloudy. Finally, with less freshwater flowing into the Bay, salinity levels increased. High salinity water tends to be clearer because it is further disconnected from runoff sources and sediment settles out of it more easily. Another weather factor is wind. With less wind than normal in 2015, the calmer water resulted in fewer waves which help stir up sediment and cloud the water.

Other factors contributing to local water clarity are time and place. For example, certain areas have expanding

underwater grass beds. The grasses provide habitat for aquatic life, use nutrients and help sediment drop out of the water column. Further, there is evidence of an unusual abundance of tunicates or sea squirts, which are water filters.

On the other hand, this glimmer of hope may be due to human-influenced factors as well: meeting BMP Milestones, completing wastewater treatment plant upgrades, and other efforts to clean the Bay are making headway in reducing nutrient and sediment inputs and could be resulting in clearer water. 💧





FELLOWSHIP PROGRAM ACCEPTING APPLICATIONS

SEEKING 25 NEW LEADERS

+ AMANDA ROCKLER & SUSAN HARRISON

+ LEAD MARYLAND ACCEPTING APPLICATIONS FOR NEXT CLASS OF FELLOWS

In 2014, our LEAD Maryland cohort landed in Chile for a two-week travel study tour. The trip was the culmination of a two-year fellowship exploring the agriculture and natural resource sectors of Maryland. Throughout the two year program, I developed new leadership tools and skills, and gained a broader perspective on agriculture, the environment, policy, and about rural communities in Maryland.



From LEAD Maryland, I built a diverse professional and personal network, consisting of people from all different backgrounds and parts of the state. I would highly encourage anyone looking to explore Maryland's natural resource and agriculture sectors to consider applying for this program.

The LEAD Maryland Fellowship Program is seeking applicants for its next class of Fellows. Applications are due October 1, 2016 and are available at www.leadmaryland.org. Participants will complete a series of multi-day seminars held throughout Maryland and Washington, D.C. in 2017 and 2018 along with a travel study tour and class project. The LEAD Maryland Foundation (LEAD) awards a two-year fellowship to selected participants, creating classes of up to 25 emerging leaders. A statewide program, the LEAD Fellowship Program curriculum focuses on providing public issues education, skills building, leadership development and personal growth. Through program participation, Fellows become more equipped to solve problems, identify resources, engage and educate others, lead communities, and shape public policy.





“The LEAD Maryland Foundation is dedicated to identifying and developing leaders to serve agriculture, natural resources, and rural communities.”

LEAD Fellows represent a diversity of people with activities or interests in production agriculture, rural and urban farms, natural resources, forestry, aquaculture, the environment, food processing, food sourcing, food marketing and distribution, rural communities, rural services and development, land use and conservation. Fellows may have other roles in business, sales and services, communications, education, policy, science, law, nonprofits, and others within or serving agriculture, natural resources, and rural communities.

The LEAD Maryland Fellowship Program is a partnership program. The University of Maryland Extension, the LEAD

Maryland Foundation, Inc., and many others give funding and other support to provide the Fellowship Program. Thank you to all LEAD Fellowship Program partners, funders, participants, and volunteers. The LEAD Maryland Foundation is dedicated to identifying and developing leaders to serve agriculture, natural resources, and rural communities. A 501(c)(3) nonprofit, LEAD Maryland Foundation accepts donations. For more information, contact Susan R. Harrison at 410-827-8056 or leadmd@umd.edu. ♦





GO NATIVE!

+ ERIC BUEHL

+ FIVE GREAT REASONS TO
PLANT NATIVE



The native plant bed at the Wye Research and Education Center in full bloom.
Photograph-Eric Buehl



At an early age, we get an introduction to the relationships between plants and animals, including the story of the Monarch Butterfly (*Danaus plexippus*) and Milkweed (*Asclepias* spp.). As research increases our understanding of such relationships, it also increases our appreciation for the beauty and value of many of Maryland's native plants. When

members of the Watershed Protection and Restoration Program work with partners and property owners who are interested in installing conservation landscapes or rain gardens, we often get questions about the importance of native plants.

Sometimes the answer to why we should use native plants





“If grant funding is involved, it is usually a requirement that native plants be used.”



A Cloudless Sulfur (*Phoebis sennae*) taking a nectar break on the Coral Honeysuckle (*Lonicera sempervirens*) planted in the native plant bed at the Wye Research and Education Center in Queenstown. Photograph-Eric Buehl.

is fairly simple. For example, if grant funding is involved, it is usually a requirement that native plants be used. From an ecological perspective, native plants serve as a host to many of our butterflies, moths, bees, and other important pollinators. The University of Maryland Extension’s Home & Garden

Information Center (HGIC) has information regarding what constitutes a native plant (<https://extension.umd.edu/hgic/native-plants>). In short, it is a plant that occurs naturally in a given physiographic or ecological region where it has co-evolved over time with the local soils, climate, fauna,





“The co-evolution with the local fauna is very important.”

and other members of the plant community, and is adapted to local physical conditions. To some, the co-evolution with the local fauna is very important. This is evidenced by a study conducted by Dr. Doug Tallamy with the University of Delaware (<http://udel.edu/~dtallamy/host/>) in which he determined that native Oak trees (*Quercus* spp.) serve as host to 534 species of butterflies and moths and native Goldenrod (*Solidago* spp.) are host to 115 species.

Along with the plants' ability to survive in a wide variety of climatic conditions and show resistance to insects and diseases, the HGIC offers five great reasons why we should all use native plants:

1. you can enjoy a beautiful landscape;
2. they help to preserve Maryland's biodiversity;
3. they support pollinators;
4. they provide habitat and food for song birds;
5. and they require less inputs than other landscapes (such as fossil fuel for mowing, fertilizer, or extra watering).

So if you are considering revamping the landscaping on your property, consider using native plants that not only look good...they do good.💧





RECENT REVIEW SPOTTED ON CONFADVISOR

+ JENNIFER DINDINGER

+ THE CONFERENCE
REVIEWS ARE IN!



Enjoyed the conference; we'll be back again! ★★★★★☆

Our team from UMD Sea Grant Extension's Watershed Protection and Restoration Program recently attended the joint ANREP-NACDEP 2016 Conference in Burlington, VT. We had such a good experience! We attended sessions on stormwater education programs, Extension climate education, community development, green infrastructure, Water

School, and many more. We learned what others are doing in Extension regionally, heard about results from a climate change community survey in FL, and even had the chance to take food tours of the greater Burlington area. I have to confess that Ben & Jerry's saw a lot of us that week.

Our team gave 3 session talks and 5 poster presentations – one poster even won an award from the **National Network for Sustainable Living Education.**





“The Farm-to-Table dinner was the culinary highlight of the conference.”

The Farm-to-Table dinner was the culinary highlight of the conference. Although, I did get some glares from the people in line when I approached the empty beef slider station, but I crept away until a safer time. I think the conferees were just hangry. It was understandable, there were so many sessions to choose from and so little time!

The utilization of technology and social media was incredible. Using the **Sched** app really cut down on having to haul around a bulky conference program, and it was fun to post pictures and comments on Twitter and Facebook when prompted by the **Remind** message service. Both services greatly enhanced the networking experience.

Finishing the conference with **Ignite** presentations was an

excellent way to wrap up an intense three days. They were fun, informative, and you could tell the speakers really put a lot of time and effort into them.

I do have a few conference pet peeves I'd like to mention: the hot water routinely tasted like coffee and the temperature in most of the session rooms was pretty much incompatible with human life. Otherwise, great work!

We recommend this conference for anyone who works in natural resources or community development education, even if they're not with an Extension program.

Thanks again for a great experience! We will see you in 2018! 💧





Training the Next Generation

Geography . . . Hydrology . . .
Entomology . . . Botany . . . OH MY !

possible land uses and inhabitants of a newly found planet based on the environmental data sent back from space.

Sounds more like the course schedule of an overachieving college student than a 4-H summer camp. But those are just a few of the subjects that campers, ages 8-14, experienced during the Calvert 4-H Chesapeake Outdoor Discovery Camp. Now in its third year, this week-long day camp promotes 4-H's slogan "Learning by Doing" by exposing children to our natural environment thru hands-on scientific discovery and outdoor adventures.

Making it Happen!

Each day, campers studied a variety of subject areas that would help them analyze their data and fulfill their mission. The week started with cartography, geography, hydrology and soil science where activities included creating "living" topographic lines, following the journey of a water molecule, testing the unique electrochemical properties of water and determining soil texture. Campers also learned the use of hand-held GPS units in research - which in our camp was a good thing as Dr. Herb's data collecting "space robot" was hit by lightning and the data for the mission was being dropped all over the campsite.

From the moment campers step into camp - they are asked become "researchers" - making hypotheses - collecting data - analyzing data - drawing conclusions - presenting results. Their mission:

Help Dr. Herb (our fun-loving, absent-minded professor) describe the

- + JACKIE TAKACS
- + GEOGRAPHY . . .
- HYDROLOGY . . .
- ENTOMOLOGY . . .
- BOTANY . . . OH MY !





“Did I fail to mention that there was swimming, crafts and even ice cream making?!?”

We hope through camp that our youth not only become more interested in being stewards of the environment but they also develop more confidence in those other aspects of youth development – citizenship, leadership, and public speaking.

So now you are probably saying to yourself – geez – “who would torture kids in the summer with science camp and writing and presentations” (an actual quote from my 14-yr old). Did I fail

to mention – even with all our science fun – that there was swimming, crafts and even ice cream making?!?

I am very fortunate to work with a great group of colleagues in Calvert County (and across Extension) who truly put the 4 “H’s” into 4-H and everything they do. If you are not familiar with 4-H and the magnitude of programs that they offer to youth across Maryland, check them out at <http://www.extension.umd.edu/4-h>



Craft Time: Fish printing t-shirts



Getting up close with local wildlife



HEADWATERS

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Headwaters is a publication providing information and resources for Extension and watershed protection professionals. It is a joint production of the University of Maryland Extension and Maryland Sea Grant Program. If you have any comments, questions, or ideas for Headwaters, please contact the Editor:

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Special thanks to our Production Supervisor, Rhonda Barnhart, for her ongoing support to layout and design Headwaters every quarter!

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Map details:
Northern Maryland Cluster Pop. 1,871,000
Western MD Cluster Pop. 253,300
Central MD Cluster Pop. 1,481,550
Southern Maryland Cluster Pop. 1,725,000
Upper Shore Cluster Pop. 243,850
Lower Shore Cluster Pop. 205,550

For more information on related publications and programs, visit extension.umd.edu/watershed. Please visit <http://extension.umd.edu/> to find out more about Extension programs in Maryland.

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