

Native Plants for Biodiversity

By Allison Burnett, *JBWS Office Manager and Maryland Master Naturalist*

As we continue to strive for effective messaging and action on the ground, the Sanctuary staff is excited to announce a new effort involving a year defined by programs and activities guided by a common and unifying theme: Native Plants.

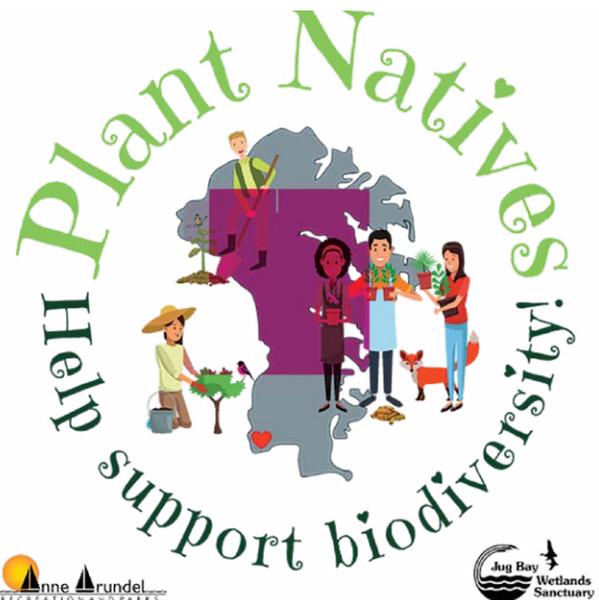
Why native plants?

Preserving, enhancing, and creating rich native plant habitats directly correlates with the preservation of biodiversity. Diverse and healthy habitats are functioning ecosystems that support life and provide other ecosystem services. As invasive plants and animals pose an increasing threat to habitat biodiversity, we want to focus our efforts to educate, preserve, and create an environment thriving with native plants—not only at the Sanctuary but at our own communities and homes.

As reports and articles continue to surface on the degradation of our natural world, we can begin to feel fatigued, overwhelmed, and unable to help. Our hope is that by establishing our unifying, positive theme of native plants, we will provide opportunities for anyone to become engaged in meaningful conservation in a personal way. By removing invasive plants, planting native gardens, and choosing native trees and shrubs for landscaping, we can all do our part to create healthier ecosystems. Jug Bay Wetlands Sanctuary (JBWS) will be providing education, hands-on participation, and other resources to help you take action with us and in your own communities!

Why is biodiversity important?

Bacteria and fungi in the soil, plants, insects, and other wildlife all evolved together over time in the same area and are adapted to coexist with one another. In many cases, they even depend on each other to survive. If one species is out-competed or lost due to invasives, pollution, over-hunting, disease, a storm, or any other disturbance, it can cause an ecosystem to weaken or even completely collapse. Biodiversity is important because it ensures an ecosystem's resilience or ability to withstand disturbances. Having a variety of species that can perform similar ecosystem services creates a buffer against the damage caused by the loss of one species and the services it provides. Invasive species can quickly become monopolies in an ecosystem, significantly raising the risk of collapse and decreasing the ability of an ecosystem to recover from disturbance. Nature does not have antitrust laws to ensure fair competition, but we can certainly do



our part to walk back some of the damage we have done in introducing invasive species to the area.

Why remove invasive plants?

Removing invasive plants helps maintain biodiversity by creating more space for natives to thrive. According to the Convention on Biological Diversity, an “Invasive Alien Species (IAS) is a species whose introduction and/or spread outside their natural past or present distribution threatens biological diversity.” A “Non-native species is a species, subspecies or lower taxon, introduced outside its natural past or present distribution.” Not all non-native species are invasive, but there are some very aggressive invasive plants that we see often on our properties. Invasives can cause an ecosystem to collapse by starting a chain reaction. The invasive species survives by out-competing or destroying all other species. This means the host plants for native pollinators and other wildlife are lost, so they leave or die off, which in turn affects predators that were eating the wildlife. Additionally, most native species either do not desire or cannot consume any part of the invasive plant. The area essentially becomes a food desert as opposed to the varied and nutritious native buffet it once was.

To combat the collapse of our meadow ecosystems at Glendening Nature Preserve (GNP), we perform many invasive removals throughout the year. Last month alone about 300 pounds of Garlic Mustard (*Alliaria petiolata*) were pulled from the meadow, with more removals to come! Garlic Mustard is especially pernicious because, as a member of the mint family, it grows very rapidly across

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Jug Bay Wetlands Sanctuary is operated by the Anne Arundel County Department of Recreation and Parks. It was established in 1985 with the goals of wetlands research, environmental education, and protection. The Sanctuary is a limited-use park. Groups are requested to make a reservation by calling the office before planning a visit.

Jug Bay Wetlands Sanctuary is a component of the Maryland Chesapeake Bay National Estuarine Research Reserve, which along with 27 other Reserves around the country promotes scientific research, public education, resource management and stewardship in estuaries across the nation.

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- Debra Gage, *Volunteer & Program Coordinator*
- Sarah Kempfer, *Education Coordinator*
- Allison Burnett, *Office Manager*
- Richard Chaney, *Maintenance*
- Donald Smith, *Maintenance*
- David Rose, *Maintenance*

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- Vice President, *Vacant*
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- Al Tucker

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Comments and suggestions are welcome.

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Native Plants for Biodiversity, continued from page 1

any available area and produces 600 to 3,000 seeds per plant! Additionally, it releases a toxin into the soil that inhibits the growth of other plants and kills beneficial soil bacteria, and its oils are poisonous to some caterpillars. Our desire to attract and support healthy native pollinator populations is the reason we planted our Butterfly Garden and began our Monarch monitoring program at GNP. As an invasive species that is potentially harmful to native pollinators in the same area, Garlic Mustard is one of our top priorities for removal.

In summer, the meadows at GNP are overrun with Porcelain Berry (*Ampelopsis brevipedunculata*), a vine known for its brightly colored berries that range in color from magenta to turquoise. While beautiful to look at, the vines grow quickly and shade all other plants, causing them to die off. Migrating and native birds frequent GNP as a pit stop for rest and refueling, but the Porcelain Berry offers little nutritional value to birds, does not attract native insects (which are also favorite meals for our avian friends). We continue to make space by removing other invasives like



Invasive English Ivy has reportedly been eradicated at the Sanctuary Proper.

WANTED

Porcelain Berry

- climbing vine & groundcover
- grows 25ft or longer
- shades all native groundcover & can choke a mature tree
- berries provide very little nutritional value to native birds

Garlic Mustard

- groundcover
- can produce 600 to 3,000 seeds per plant
- emits chemicals that inhibit native plant growth and is poisonous to some native butterflies
- outcompetes native wildflowers

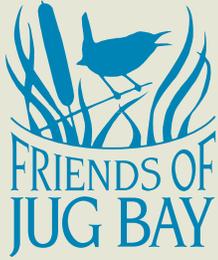
REWARD: A HEALTHIER ECOSYSTEM

Pampas Grass (*Cortaderia selloana*), which has thankfully been completely eradicated at GNP after 50 clumps were removed, spanning several seasons! In a small patch near the bird feeders at the Sanctuary Proper Visitor Center, Tree of Heaven (*Ailanthus altissima*) was recently eradicated, making room for the native Devil's Walking Stick (*Aralia spinosa*), a favorite plant of the Eastern Tiger Swallowtail (*Papilio glaucus*) butterfly! At the Sanctuary Proper, we believe we have removed much of the invasive English Ivy (*Hedera helix*), but if you ever come across any, feel free to remove it or let a staff member know where it was spotted. There are a multitude of other invasive species in our meadows and forests, but with your help we can keep removing them, plant by plant, place by place, and bring back the native landscape that will better support our wildlife.

Why use native plants?

Native plant gardens provide habitat and food to pollinators and wildlife, as we saw after our removal of the Tree of Heaven.

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Dear Friends,

Welcome to the summer 2021 issue of *Marsh Notes*.

I would like to thank all the members who attended the Friends of Jug Bay virtual Annual Meeting. It was a success thanks to all the hard work the board and the Jug Bay Wetlands Sanctuary staff put in to prepare and present at the meeting. We elected a new member to the Board of Directors: Anne Muecke.

We are very happy that Anne has (re)joined the Board of Directors. Ever since she first discovered Jug Bay in 2008, she has wanted to help take care of it. So in 2011, Anne joined as a trail monitor volunteer to walk and check an assigned trail monthly. She still finds the monthly treks a wonderful way to get to know the Jug Bay properties and encourages anyone to join the trail monitor volunteers. In 2014, Anne became a FOJB board member and helped with social events, plant sales, and the Holiday Wreath Workshop, until 2019, when she resigned for health reasons. She is looking forward to helping again on the board and continuing trail monitoring, now at Glendening Nature Preserve.

While the board continues to maintain a high level of efficiency, we are still in need of more help performing all its duties. We need two officers, Treasurer and Vice President, as well as members to lead our Advocacy and Outreach committees. If you or someone you know with experience would like to join the board—or serve on or lead committees without being a board member—please contact me at tbjerkne@friendsofjugbay.org.

So far, the challenges of 2021 have been like those of 2020. Thanks to all the volunteers, Friends of Jug Bay and Jug Bay Wetlands Sanctuary have managed some sense of normalcy, keeping the Sanctuary open. Thank you all for volunteering to make our wetlands a better place now and for our children and future generations.

As I have asked you in past letters, please share our mission to increase awareness, understanding and appreciation of the estuarine and other natural ecosystems and their conservation through outdoor education, research, stewardship, and volunteering.

Remember, we all are the Friends of Jug Bay. Any ideas, thoughts, or interest in joining the Board of Directors are welcome. And as always, the board's monthly general meetings held on the second Tuesday are open to the public. If you would like to attend or present, please contact me at tbjerkne@friendsofjugbay.org.

Tor Bjerknes, *FOJB President*

We welcome new and returning FOJB members:

Laura and Vivek Amin	Kathleen and Peter Chow	Mary and John Driver	Barbara & Michael Harris	Jenna Lane and Bill Allen
Cory and Patrick Anastasi	Christina and Robert Clark	Michelle Dyro	Wanda Hartley	Peri Lane
Steve and Betty Arthur	Henderson Cleaves	Ethan Eddy	John Hawley	Lisa Lavallee
Daniel Babinski	Ryan Close	Karen and Glenn Edgecombe	Teresa Hayden	Elizabeth Lewis
Celeste Baucom	Ed Coll	Joyce Edwards	Susan Heller-Zeisler	Lloyd Lewis
Michael Beaghen	Mark Collien	Paul Egan	Ailen Hernandez	Diana Linnekin
Lisa Berrios	Kevin and Sue Collins	Kevin Eide	Sheri Hill	Anne Looker
Tor Bjerknes	Mark Condon	Disa and Grace Elliott	James Hogan	Bobo Lu
Ronald and Rhema Bjorkland	Margaret Cook and Gary	James Firth	Anthony Hopkins and	Rick Malmgren and
Mary Blackborow	Scribner	Alexandra Flippo	Julie Clements	Judy Burke
Andrew Blahnik and Emily	Lisa Cosgrove-Davies	Carol Frost and George Miller	Sally Hornor	Laura Manville
Baucom	Joy Crosser	Violeta Fuduric and Olivia	Anastazia Huryan	Jay Marciano
Julia Bradley-Cook	Jay Czarniecki	Grubach	Dominick P. Iacone, Jr.	Stephanie and David Martin
Mariayne Brodnicki	Carrie Dana-Evans	Laure Fuller	Tanushree and Sibren Isaacman	Charles McClain
Samantha Brown	David S. Davis and Lisa	Amanda Gibson and	Rebecca Johnson	Dolores McDonagh and
Sylvia Buckalew	Siciliano	John Butler	Jordan Kanarek	Jamie Karn
Amelia Campana	Rachel Dawson	Diane and Jeff Goldman	Julius and Melissa Kassovic	Pat Melville
Stephen Caplins	Flore De Preneuf	Chris Gordon	Victoria Keithline	Wes Merchant and
Macu Carman-Goeke	Sarah Dean	Mary Greer	Patricia Lynn and Peter Kenny	Julie Wood
Eddy Cervantes and Cecilia	Sierra and Nick DeFelice	Daniel Grogan and Mariann	Thaddeus and Lauren King	Alicia and Thomas Moore
Rojas	Cindy DiCocco	Michaels	Christopher Kirby	Tessa Muehllehner and
Sarah and Matthew Chafin	Jessica Dove	Edward Hall	Hannah Knight	John Day
David Chan	Erin Dozier	Philo and Elizabeth Hall	Eli and Jaime Koppel	Valerie Napawanetz and
			Michelle Lacombe	

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First Volunteer Naturalist Certification Course is a Success!

By Sarah Kempfer, *JBWS Education Coordinator*

Jug Bay's student education program depends on our Volunteer Naturalists to make it happen! This March 14th, new and veteran Volunteer Naturalists joined our first Volunteer Naturalist Certification Course. We now have a great group of volunteers educated and ready to lead field trips for our Classrooms in the Field program.

This 16-hour course included 4 virtual sessions and 2 field days. We focused on the history of Jug Bay and the ecology of the wetlands, vernal pools, streams, and forests, and we reviewed the educational materials used to support successful programming. In each area, local experts were invited to share

their perspectives and knowledge. We discussed water quality issues and testing and how humans have used the land and water. We sat on the Marsh Boardwalk and observed the birds, dipped our nets into the stream and vernal pool to find hidden creatures, and walked historical trails through the forest.

We are grateful for all of the participation from our Volunteer Naturalists and the many local experts who shared their time and expertise. We look forward to the return of student groups to Jug Bay. We are ready to go!

If you are interested in becoming a



JBWS Volunteer Naturalists dip netting at the Sanctuary Proper.

Volunteer Naturalist, please contact Sarah Kempfer at rp Kempfer@aacounty.org. We can always use more help!



JBWS 2021 Volunteer Naturalist Certification Class.

FOJB Members continued from page 3

- | | | | | |
|---------------------------------|-----------------------------|------------------------------|--------------------------------------|---------------------------------|
| Greg Minnick | Hans Plugge and Abby Ershow | Jenn Rohrbaugh | Marc Steinberg and Maria Day | Nancy Wahls |
| Brad Neumann | Gary and Tammy Preston | Alice Rohrer | Jennifer Sterling and Benjamin Brown | Warren and Beverly Walker |
| Eric Nielsen | Michael and Carolyn Quinlan | Barbara Saffir | Jesse Stewart | Lauren Ward |
| Jason and Erin Orfanon | JD Rathjen | Doris Schmitz | Nora Terres and Peter West | Randy Watson |
| Jan Owings | Jennifer Raulin | William Schneider | Tracy Thompson and Nathaniel Miller | Mary Weadon |
| Jeffrey Parker and Sabrina Dent | Gordon and Jane Reynolds | Timothy Schwartz | Denny and Anne Townsend | Susie Westrup and Brian Vincent |
| Ralph Parkinson | Sue Ricciardi | Jon and Tink Sheller | Bill and Amber Tucker | Katherine Willyard |
| Ursula Pieper | Liana Rodrigues | Joseph Smith | Greta Umidi | Kristine Wood |
| Emily Pilgrim | | John and Charlotte Smutko | Randall Wagner and Debra Benator | Garrett Yee |
| | | Arthur Sode | | Tiffany Yowell |
| | | Stephanie and Chris Sperling | | |



Sarah Kempfer and Chris Hintz teaching during a virtual field trip at Jug Bay.

JBWS Education Programs Adjust During Pandemic

By Sarah Kempfer, *JBWS Education Coordinator*

The COVID-19 pandemic brought field trips, and all school activity, to a screeching halt in March of 2020. Like every outdoor education program, Jug Bay Wetlands Sanctuary had to pivot because school buses were just not coming our way. After the initial shock, we got moving to keep kids connected to nature.

COVID-19 required that we limit the number of people on our field trips to a maximum of 20, which would be divided into two groups. Families began to join with other families to form COVID-safe “pods.” In the fall of 2020, we hosted field trips for at least 10 of these small COVID-safe pods. In addition, we began live virtual field trips, joining with a school’s virtual classroom for a live walk along the Marsh Boardwalk. These field trips proved this model could be successful.

With support from CBNERR, we purchased an iPad to use for virtual field trips, and this spring we will have provided nearly 1,000 students with a virtual field trip.



Preschool student dip netting in a vernal pool.

These have mostly focused on experiencing the ecosystem of vernal pools, specifically Mark’s Pond. We are able to show them frogs, tadpoles, salamander larvae,

macroinvertebrates, and a salamander and snake if we are lucky! Volunteer Naturalists have joined in to provide these experiences to students at home and school. The “roomies” and “zoomies” are able to “experience” Jug Bay. We also continued to provide small in-person field trips.

Other in-person offerings expanded; in the early spring, Nature Play Days were well attended and Preschool Explorers bloomed. With volunteer help, we have doubled the size of Preschool Explorers, and we still have families on the waitlist.

We look forward to getting back to “normal.” The pandemic forced us to do things in a different way, but there is a silver lining. People seem more interested in getting their kids outside, and we have new educational tools that can be used to connect students to nature even if they are not able to come to Jug Bay for a field trip. Thanks for all the support from volunteers and staff through this unusual time.

Jug Bay Wetlands Sanctuary Open Hours

Sanctuary Wetlands Center: Wednesdays, Fridays, Saturdays, and (Mar-Nov) Sundays 9:00 am - 5:00 pm

Glendening Nature Preserve: Wrighton Road entrance daily, gate open 9:00 am - 5:00 pm; Plummer House entrance Monday to Saturday, gate open 9:00 am - 5:00 pm (trails, Butterfly Garden, dogs on leash)

Patuxent Wetland Park: daily, dawn to dusk (fishing, hand-carried boat launch)

Wootons Landing Wetland Park: daily, dawn to dusk (fishing, loop trail, hand-carried boat launch)

Sanctuary Wetlands Center admission fee: \$6/vehicle

- Free for current Friends of Jug Bay members, active volunteers, and active military and their immediate families.

- There are no fees to visit our other sites.

Visit www.jugbay.org for directions, information and updates to our schedule.

Registration is required for all programs.

Please call 410-222-8006 or e-mail programs@jugbay.org to register, or, in the case of ActiveNet programs, register online at <https://apm.activecommunities.com/aarecparks>.

All programs meet at the Wetlands Center at 1361 Wrighton Road unless otherwise noted. An adult must accompany children under 13.

Visit www.jugbay.org and follow links to public programs offered at JBWS.

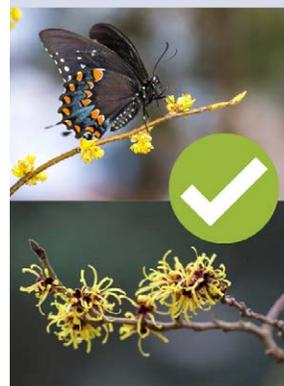
Native Plants for Biodiversity, continued from page 2

Restoring biodiversity through invasive removal and native plantings is a guaranteed way to bring resiliency back to a habitat. Larger landscaping projects benefit from using native trees and shrubs as well. Not only is it better for biodiversity, it is better for your pocketbook. Native trees and shrubs are adapted to our climate, requiring less maintenance and care than most non-native species.

Landscaping with native trees and shrubs protects the soil, cleans the air, and conserves water. Native trees and shrubs also will attract more native wildlife to your yard or garden. There are some amazing native alternatives to classic landscaping favorites you can use in your next landscaping project. Witch Hazel (*Hamamelis virginiana*) and Spicebush (*Lindera benzoin*) are both natives with yellow blooms that attract native pollinators and produce fruits that local wildlife enjoy, which can be great alternatives to non-native Forsythia (*Forsythia x intermedia*). Spicebush is the host plant for Spicebush Swallowtail butterflies; their caterpillars depend on the plant for food. The bright red fruit of the Spicebush is also a desired snack of many native birds. Witch Hazel blooms in late winter, adding one of the first splashes of color to the landscape. It is pollinated by interesting species of Noctuidae moths known as sallows that increase their body temperature through shivering, making it possible for them to seek out food on cold winter nights. And although many people may not want to hear it, Poison Ivy (*Toxicodendron radicans*) produces berries that are consumed by over 50 species of Maryland birds!

How can you get involved?

For more information on incorporating native plants into your own yard or community, the Maryland Native Plant



Consider landscaping with Spicebush or Witch Hazel instead of non-native Forsythia. You will see more native wildlife species in your yard and you will save money on maintenance!



Invasive Tree of Heaven eradicated at GNP. Native Devil's Walking Stick, a popular hotspot for Eastern Tiger Swallowtail butterflies, grew in its place!



Society website (mdflora.org) is a great resource for planting guides, tips, and upcoming native plant sales. If you would like more information on identifying and safely removing invasive plants, consult the official website for the Center for Invasive Species and Ecosystem Health (invasive.org). There are free native and invasive plant atlases available for downloading on both websites along with numerous articles about getting started.

If you would like to help us remove invasives, plant natives, care for our existing native gardens, and learn about the plants and pollinators they support, we have weekly opportunities for you! Join us Tuesdays for "Everything Butterfly Garden" from 8 to 11 am at the GNP Butterfly Garden (walk-ins welcome). Join us for "Pollinator Mondays" from 9 am to 12 pm to work on the pollinator gardens (walk-ins welcome). Or volunteer with us for "Field Work Fridays" from 9 am to 12 pm by registering for a session through our website calendar at jugbay.org. Keep an eye on our calendar and social media for more events and information as we explore our theme of Native Plants. There will be many opportunities for everyone to participate and join us in this exciting new effort, which will only be successful if you are part of it!



Renaming of One of Jug Bay Wetlands Sanctuary's Properties

By Dave Linthicum, *JBWS volunteer*; and Patricia Delgado, *JBWS Superintendent*

The Jug Bay Farm Preserve was acquired by Anne Arundel County Department of Recreation and Parks in 2004 from the Riggleman Family. It includes 307 acres of forest, fields, meadows, vernal pools, creeks, shoreline, a small vineyard, pier, and two houses more than 150 years old. This property will be renamed the “Emory Waters Nature Preserve” to honor the life and cultural heritage of Mr. Emory Waters and all African Americans who worked and lived within Jug Bay and the Patuxent River Watershed.

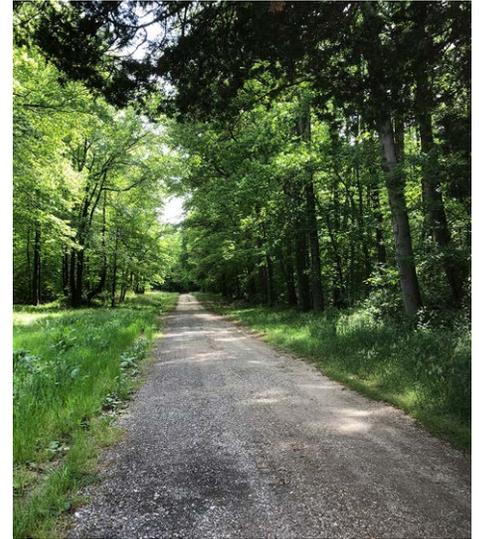
The son of a slave, Mr. William Emory Waters (1877-c. 1950) owned and lived in a half-acre parcel of land east of Emory Landing, found at the extreme north end of the Jug Bay Farm Preserve (known during his time as the Patuxent Fishery). This parcel was deeded to Mr. Waters by the Pindell family and belonged to his family from 1910 to 1981.

A tobacco and corn farm laborer, handyman, fisherman, logger, and waterfowl hunter, Mr. Waters knew a “better way to do most everything.” He worked in the tobacco fields and as a waterman for 30 years. In

later years, he helped the neighboring Sunderland family, living at the now Jug Bay River Farm property, in making wood stakes used to hang tobacco in the barn. He would also hunt and process Canada Geese, which were sold each holiday season to Annapolis markets and to the Eastern Market in Washington, DC. Mr. Waters proved to be invaluable to many of the neighboring landowners, and they spoke fondly of him.

This property, now part of the Sanctuary, was built and prospered with the help of slaves during the 1800s...

This property, now part of the Sanctuary, was built and prospered with the help of slaves during the 1800s, among those, Mr. Emory Waters' father and grandfather. Their history and that of other African Americans who lived within this area should be remembered and preserved. Such is the case of the location of the last slave house within the property, which was still standing in the 1940s.



Entrance road to Emory Waters Nature Preserve. Photo by Patricia Delgado.

From the many place names found around Jug Bay (Pindell, Glendening, Wrighton, Plummer, Galloway, Waysons, Drury, Courtney, etc.), none are named for African Americans. By naming this property after Mr. Waters, the Anne Arundel County Department of Recreation and Parks and Jug Bay Wetlands Sanctuary would like to recognize Mr. Waters' life and cultural heritage, as well as that of all other African Americans who lived and worked here and helped to make the community what it is today.



View from the Riggleman house of a meadow and the Patuxent River at the Emory Waters Nature Preserve. Photo by Allison Burnett.



Vineyard and Riggleman house at Emory Waters Nature Preserve. Photo by Patricia Delgado.

Ask a Ranger

By Liana Vitali, *JBWS Citizen Science & Stewardship Coordinator*

Are there native cacti in Maryland? Do raccoons seen in the daytime have rabies? What's the difference between fox poop and beaver poop? The answers to these questions and more are featured in the new Anne Arundel Recreation and Parks Department webisode series called Ask A Ranger! Created by Rangers Dave Burman (Quiet Waters Park) and Victor Jones (Beverly Triton Nature Park) and Naturalist Liana Vitali (Jug Bay Wetlands Sanctuary), Ask A Ranger answers nature questions from the general public with humor and the occasional movie spoof. Family friendly and free to all, the original Ask A Ranger episode that aired in May 2020 attempted to bring a bit of the parks to people who were homebound during the height of the COVID-19 pandemic. With full support from the Department, Victor, Dave, and Liana have turned the initial episode into a quarterly series and will be presenting on it and other cross-park initiatives at the upcoming National Recreation & Parks Association conference in September 2021.

You can find all Ask A Ranger episodes on the county Vimeo page at www.vimeo.com/aarecparks.



Screen grab from Episode 3 of the Ask A Ranger Webisode. Series Credit: Victor Jones.



Rick Anthony (center, with hat) and Jug Bay Wetlands Sanctuary staff. Photo by Chris Carroll.

Farewell to Rick Anthony, Director of Anne Arundel County Department of Recreation and Parks

By Patricia Delgado, *JBWS Superintendent*

After a decade of service as the Director of the Anne Arundel County Department of Recreation and Parks, Rick Anthony is leaving, but his legacy remains. We are very thankful for the support Mr. Anthony and his team provided to Jug Bay Wetlands Sanctuary on many fronts. Some of these include the Sanctuary's first international exchange with Palo Verde National Park in Costa Rica, hiring a full-time maintenance staff person, improvement of infrastructure (PawPaw Pavilion, raising of the Marsh Boardwalk, renovation of one of the Glendening barns), but most importantly, his unconditional support of Jug Bay's education, stewardship, research, and volunteer programs and his contribution towards making the dream of a Jug Bay Field Station a reality! As Rick moves back to his hometown of Bakersfield, California, to be closer to his family, the Jug Bay Wetlands Sanctuary community wishes him all the success and happiness he deserves!

Explore our volunteer opportunities online at www.jugbay.org/volunteer.

For more information, call 410-222-8006, or e-mail Volunteer & Program Coordinator Debra Gage at rpgage00@aacounty.org.

Meet Jug Bay Wetlands Sanctuary's 2021 Summer Research Interns



Emma Bonanno.

Emma Bonanno is a graduating senior at the University of Maryland studying Atmospheric and Oceanic Science. After graduation, she hopes to pursue a career in coastal or fisheries management. This summer, Emma is looking forward to exploring the Jug Bay Wetlands Sanctuary while studying marsh resilience.



Christy Ferguson.

Christy Ferguson is a recent graduate from UMBC with a B.S. in Environmental Science and Geography. In the summer of 2019 she completed a visitor services internship through the Student Conservation Association with the USFWS at the Rhode Island National Wildlife Refuge Complex. Christy will be interning with CBNERR's stewardship team as a Governor's Intern.



Gavin Studds.

Gavin Studds was born and raised in Calvert County, MD, and is now seeking a degree from Frostburg State University, majoring in Wildlife Biology and minoring in Animal Behavior.



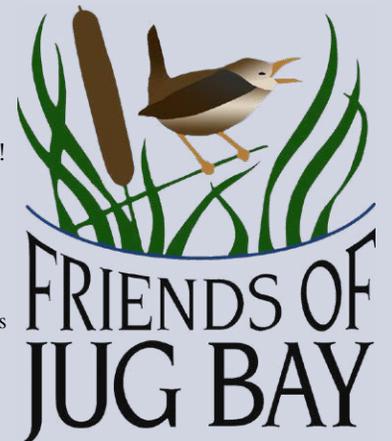
Caroline Vasquez.

Caroline Vasquez is a rising senior at Virginia Tech majoring in environmental science with minors in biology and French.

Science Fair Award Winners

By Siobhan Percey, *JBWS Volunteer*

March was the month of up-and-coming scientists in Prince George's County! Judges from the Friends of Jug Bay reviewed the virtual science fair to award middle and high school budding scientists for their efforts executing and presenting their environmentally minded projects. The winners were Lillian Merrill, Carter Brotherton, and Kennedy Gourdine. The selected projects ranged from the effect of acid rain on aquatic organisms to using native plants to minimize runoff to the Chesapeake Bay. Each student was presented with a family membership to the Friends of Jug Bay, a Certificate of Excellence, and a cash award. The Friends are again grateful to Jessica Allison, a Ph.D. student at the University of Maryland Baltimore County, who helped judge the projects. The Friends of Jug Bay support this event every year and are thrilled to welcome these young people and their families to our organization.



Jug Bay is one of the three components in the Chesapeake Bay National Estuarine Research Reserve, Maryland. The purpose of CB-NERR is to manage protected estuarine areas as natural field laboratories and to develop a coordinated program of research and education as part of a national program administered by National Oceanic and Atmospheric Administration (NOAA).

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Website:
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Check out the
CBNERR-MD web page at
[www.http://dnr.maryland.gov/waters/cbnerr](http://dnr.maryland.gov/waters/cbnerr)

Navigating Change: Summer Learning Opportunities for Educators

By Coreen Weilminster, *Education Coordinator, CBNERR-MD*

Reserves are about building resilience, and resilience is often about navigating change. As educators, how might we address resilience? Ancient Chinese philosopher and writer Lao Tzu, contemporary of Confucius, whose writings formed the basis for Taoism has the answer. You are likely familiar with a few of his more famous sayings: “A journey of a thousand miles must begin with one step,” and “Nature does not hurry, yet everything is accomplished.” Focused on time and movement, his words are (ironically) both static and timeless. Since we are in the midst of great change (as only a climate crisis or global pandemic might cause), we might be wise to use this historic event to build our

educator resilience by navigating change. After all, as Lao Tzu has acknowledged, “If you do not change direction, you may end up where you are heading.”

CBNERR-MD has been working in partnership with several agencies and organizations to be able to offer unique professional development opportunities in June and July. First up is the Mid-Atlantic Climate Change Education Conference (MACCEC):

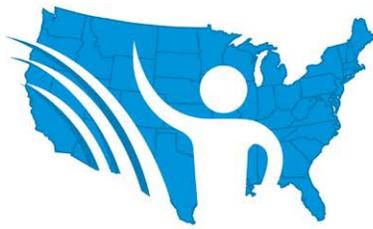
**Mid-Atlantic Climate Change Education Conference—
June 28–July 1, 2021**

The U.S. Department of Defense calls climate change a “threat multiplier.” So how



MID-ATLANTIC CLIMATE CHANGE EDUCATION CONFERENCE
WWW.MACCEC.ORG

**SAVE THE DATE
JUNE 28 - JULY 1
2021**



Teachers on the Estuary

do we incorporate productive understanding of this dominant 21st century issue in our teaching? This virtual conference looks across science, society, pedagogy, and the arts to bolster educator confidence in addressing the issue with the latest trends in climate change education. Last year, the 2020 MACCEC reached close to 280 participants, including formal classroom and university educators as well as informal environmental educators throughout the region (and even a few from abroad). A blog piece details the 2020 experience: <https://www.baybackpack.com/blog/mid-atlantic-climate-change-education-conference-reflection>.

Because we understand the importance of engaging youth voices and preparing youth to navigate change, the MACCEC is excited to offer a brand-new student track on the first day of the conference this year: June 28. The track will be geared towards middle school and high school students who are passionate about tackling climate change. Throughout the day students will have the opportunity to connect with and hear from other students engaged in climate solutions, justice, and action. Students are also welcome to attend the entire conference. Registration for the full 2021 event is \$20 and is now open! Student registration is FREE. Register

at <https://www.maccecc.org/register>.

Another way to navigate change is to be able to monitor for it. For that, there is a week-long unique virtual opportunity (with bonus “implementation fee” and 3 Maryland State Department of Education (MSDE) Continuing Professional Development credits upon completion) for educators in July.

Teachers on the Estuary (TOTE): Resilient Communities and Coasts—July 26–30, 2021

In its 11th year, TOTE aims to make the curriculum come alive with real-time data. CBNERR-MD/MD DNR, the Chesapeake Bay Foundation, and NOAA Chesapeake Bay Office partner each summer to work with middle and high school formal and informal educators to integrate local and national environmental data into the classroom through cross-disciplinary, hands-on field activities from the NOAA Chesapeake Exploration and Estuaries 101 curricula. This dynamic online course will ask you to take your learning outside to conduct investigations of your local environment. Investigations will be supported/facilitated by course partners and are designed to model a Meaningful

Watershed Educational Experience (MWEE) through participant-driven field experiences and authentic research. A \$200 MWEE implementation support fund is available to each participant upon completion of all course requirements, and Maryland teachers are eligible for 3 MSDE Continuing Professional Development credits.

TOTE 2021 also explores WHY we monitor for change—that is, the cultural aspect of why science and monitoring are so vital to adapting to and mitigating for (navigating) change: protecting the people and communities we care about. Register at <https://www.cbf.org/join-us/education-program/professional-learning/chesapeake-classrooms-summer-courses/open-courses.html>.

If you are an educator who is concerned about “ending up where we are headed,” build your (and your students’) resilience in navigating change and consider these opportunities a “next step” on your personal thousand-mile journey in teaching by participating in these two unique courses. Contact Coreen.Weilminster@Maryland.gov for more information.

Spring Donations:

Felicity Kreger: new Insect Shield field garment, **Robert Mitchell:** large wine rack for vineyard basement, **Colin and Valerie Rees:** document safe and 40 copies of Nature’s Calendar, **Tor Bjerknes:** life vests for paddle trips, **Nick Iascone:** 5x7 Beaver Pond photo on glass, **John Norris:** time and materials to repair six canoes, **Brad Mann:** hand-woven wool/cotton scarves in Jug Bay tartan, **Mike Quinlan:** clipboards, **WeCare Denali:** 15 cubic yards of compost for the South County Community Garden at JBWS.



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2021



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FREE
PADDLE
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AT WOOTON'S LANDING WETLAND PARK

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SATURDAY, JUNE 12TH 10AM - 2PM