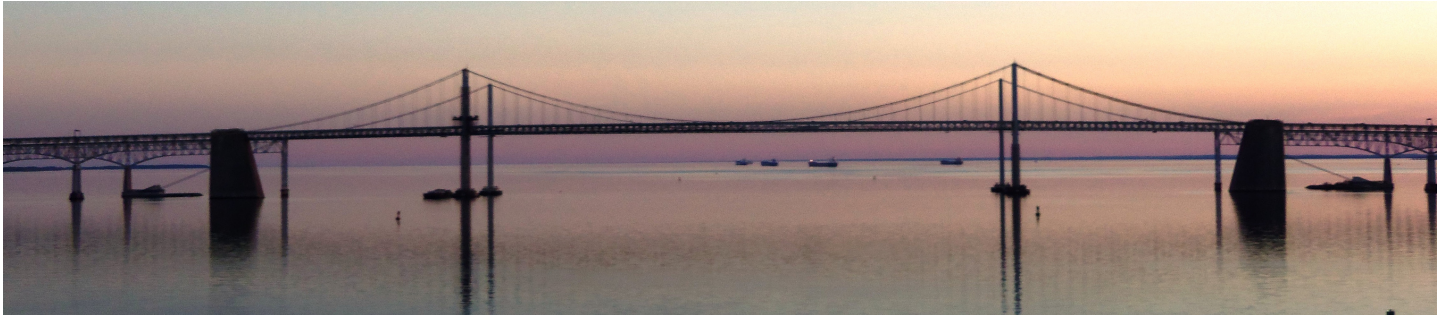




MASTHEAD

Quarterly Newsletter of the Mid-Atlantic Marine Education Association



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From the Captain's Quarters

Happy fall to all - it may not be the autumn we hoped for, but here's to making the most of it!

Autumn is a significant transitional time for many in a normal year, but back-to-school was an even bigger event for many this season after the chaos of the previous year. I hope you all have had a smooth transition back to in-person programming and to classrooms over the last few months!

A huge shout-out to the hard working Conference Committee, Evan Beatty and Kathy Fuller, and everyone who has been involved in planning our annual #MAMEA21 conference! They have pulled together a great lineup of speakers and sessions and quickly pivoted to shift the conference from an in-person event to a virtual one to ensure members feel safe and can fully participate. The dates remain the same, so keep November 5 & 6 marked on your calendars!

Looking forward to "seeing" you all then!

Lisa Tossey
MAMEA President



2021 MAMEA Conference Update

The MAMEA Board voted to move the MAMEA 2021 Conference from an in-person event to a virtual event.

We are keeping the same dates of the conference, so please keep **November 5-6, 2021** on your calendar. The pivot from in-person to virtual has pushed our registration opening back a bit, so please watch for a message that registration is open soon. We will be using Whova as our conference platform (same as NMEA 2021) which will allow for networking and other exchanges of ideas. If you haven't used Whova before we have optional sessions on the agenda for anyone interested in test-driving Whova before the conference starts. We also kept the in-person field trip (extra ticket), scheduled for Sunday, November 7th, to search for marine fossils with the Assistant Curator of Paleontology from the Calvert Marine Museum.

We have some amazing plenary speakers and concurrent sessions set up. Here is a preview of our draft schedule for the virtual conference:

Thursday, November 4

7:00-8:00pm How to Whova - Optional Session

Friday, November 5

3:00-4:00pm How to Whova - Optional Session

5:00-7:00pm Conference Welcome

5:00-6:00pm Welcome Speaker - Amazing Fossils from Calvert Cliffs with Dr. Stephen Godfrey, Calvert Marine Museum Curator of Paleontology

6:00-7:00 Social Activity

Saturday, November 6

8:30-8:45 Welcome

8:45-9:30 Plenary Session - Watershed Education Panel Discussion with Local Practitioners

9:30-9:45 Break

9:45-10:15 Networking Tables

10:15-10:30 Break

10:30-11:15 Concurrent Session 1

A - Thinking Outside the Box of Band-aids, Chuck Fuller

B - Biofilms, Biodiversity, and Microplastics, Adam Frederick, Jesse Meiller & Ana Sosa

C - Watershed Explorers: Innovative Hands-on-Learning in Response to COVID-19, Karla Smith,

Cathy Roberts & Cindy Pinell

11:15-11:30 Break

11:30-12:15 Concurrent Session 2

A - Aquaculture in the Classroom, Amy Sauls & Terri Kirby-Hathaway

B - Can Wind Farms Stop a Hurricane?, Chris Petrone

C - VA SEA: Engaging Grad Students in the Lesson Plan Process, Tara Rudo

12:15-12:45 Lunch Break

12:45-2:15 Business Meeting and Plenary Session - Writing "Mr. Greg's Ospreys" with Children's Author Laura Callahan

2:15-2:30 Break

2:30-3:15 Concurrent Session 3

A - Students Solving Real World Problems: Adapting to Sea Level Rise in Coastal Virginia, Rachel Clark

B - National Ocean Sciences Bowl Regional Competitions, David Christopher

C - Exploring Marine Archeology with Blackbeard, Kristi Walters

D - BRIDGE DATA: The Great Humpback Comeback!, Celia Cackowski

3:15-3:30 Break

3:30-5:00 Closing Event and Social

Sunday, November 7

Field Trip (Extra ticket)

Fossilizing Trip with Calvert Marine Museum Assistant Curator of Paleontology Dr. Victor Perez

REGISTRATION IS NOW OPEN! Thanks to our generous sponsors, we are able to keep the registration rate low, \$25 which includes a 1-year membership to MAMEA. More details can be found here: <https://masweb.vims.edu/mamea/registration.html>.

Consider adding an in-person field trip to look for marine fossils in Lusby, MD (limited to 15 people) scheduled for Sunday, November 7th.

If you have any questions, feel free to reach out to the MAMEA 2021 Conference Committee, Evan Beatty ebeatty@hershey.k12.pa.us or Kathy Fuller kathryn.fuller@pgcps.org.

National Marine Educators Association (NMEA) Updates

Sarah Nuss

NMEA Representative

NMEA Annual Conference

NMEA is pleased to announce the dates for next year's hybrid conference, based at Hofstra University in Hempstead, Long Island, NY. The conference will kick off with the Sea Grant Educators' meeting on Friday, July 8, 2022, followed by the NMEA board meeting on Saturday, July 9. That evening there will also be a fun kick-off event for everyone.

The conference will move into full swing with speakers and sessions on July 10-13, with full-day field trips on Tuesday, July 12. Being mindful of time zones for those attending remotely, the speakers and sessions will be scheduled from 2-6pm EST, allowing in-person participants the opportunity to spend their mornings taking short excursions or getting together to explore common interests.

Stay tuned for announcements about speakers, field trips, presentation proposal deadlines, etc. We're really looking forward to seeing you (in person or remotely) next year in New York!

MAMEA Members on the NMEA Board

Please join me in congratulating several of our MAMEA members on being elected to the NMEA board! David Christopher, Marine Education Specialist in the Marine Advisory Service at Delaware Sea Grant, is our current 2021-2022 NMEA President! We look forward to David's leadership of NMEA in the next year.

Please also congratulate Kathy Fully, elected as a Director of NMEA, and Jackie Takacs who was re-elected as NMEA Treasurer!

To find out more about NMEA initiatives and to get involved, consider joining NMEA here - https://members.marine-ed.org/general/register_member_type.asp

MAMEA Featured Member

David Christopher
Secretary

MAMEA Featured Member: Evan Beatty, 7th Grade Science Teacher

Growing up swimming, I always had a connection to water. In 7th grade when I went on an overnight field trip to the Chesapeake Bay, it sparked something in me. Being able to combine my love of water, science, and being outside was eye opening. It informed a lot of what I did throughout high school and college. I knew I wanted to be a biologist but I didn't have a context of what that meant until that trip. While in college, I got an internship working as an educator at Zoo America in Hershey Pennsylvania. I learned really quickly that I liked learning and teaching science more than being in a lab. This inspired me to pursue a career in education. I was very fortunate, when I graduated from college, I got a position as an Education Specialist at the National Aquarium. This further added fuel to the fire, providing me the opportunity to teach not just about animals, but the ecosystems that were so near and dear to my heart.

After working at the Aquarium for 4 years, I realized I wanted more opportunities to build relationships with students over a longer period of time. This led me to transition into the classroom.

About the Author



Name: Evan Beatty

Position/Title: 7th Grade Science Teacher

Institution/Organization: Derry Township Public Schools, Hershey, Pennsylvania

How long have you been a MAMEA member? Why did you join MAMEA? 9 Years. I enjoy connecting with other educators and sharing resources and ideas.

What do you do for a living? I am currently a 7th grade science teacher. My curriculum largely focuses on Ecology and Environmental Science. I use every opportunity I can to teach these topics using marine science as my vehicle.

What inspired you to go into marine education? When I was in 7th grade we took an overnight field trip to Sandy Hill in Harford County Maryland. This was the culmination of a year learning about the Chesapeake Bay. It was the first time I got to do a stream survey. I loved being able to get dirty and have hands on experiences in the water.

What are some fun facts about yourself? In my free time I compete in DockDogs with both of my dogs. We will be competing at our 4th World Championship this October.

MAMEA State Chapter Updates

Delaware Chapter

Delaware Coast Day 2021

David Christopher
Secretary

Delaware Coast Day was held on October 2 and 3, 2021. This year's event included both online sessions and small in-person events held around the state.

The in-person events were held on Saturday, October 2 and included a kayak tour on Broad Creek, a tour of the aquaculture facility at Delaware State University and a marine life traveling exhibit at libraries in New Castle County. In addition, Delaware Sea Grant staff shared information about emergency preparedness at the Boast the Coast Maritime Festival in Lewes, and about marine debris and aquaculture at the Delmarva Outdoor Expo.

Saturday's activities were capped off by screenings of the Meg, the 2018 blockbuster based on the book by Steve Alten, UD alumnus and Coast Day special guest. Screenings were held at the Lewes Library and on the Green at the University of Delaware in Newark.

Sunday, October 3, Coast Day was held online and started off with a conversation with Steve Alten, author of The Meg, and Aaron Carlisle, Assistant Professor, College of Earth, Ocean and Environment. This was followed by online sessions including The Unknown Deep, Connecting to Climate Change, Indigenous Perspectives on Climate Change, and Exploring the Underwater World with Robots.

Although Coast Day 2021 is over, you can still register to view all the online content at <https://www.deseagrant.org/coast-day>.

Maryland Chapter

Lauren Fauth
Maryland State Representative

Upcoming Events Around Maryland

National Aquarium Project WET 2.0

Engage in multidisciplinary activities that promote awareness, appreciation, knowledge and management of water resources. This workshop highlights the new Project WET Curriculum and Activity Guide 2.0, which contains revised and updated activities from the original guide, as well as many brand-new activities. The workshop is appropriate for informal and formal educators of K-12 students. Participants receive a copy of the Project WET Curriculum and Activity Guide 2.0. Participants may be eligible to receive one MSDE CPD credit.

To initiate a National Aquarium professional development workshop reservation request, please contact our reservation specialists at reserve@aqua.org or 410-576-3833. Due to exceptionally heavy request volume, we suggest that you begin your reservation request via email and allow several days for a response from our team. Hold times may be significant. All requests will be processed in the order they are received, and your patience is appreciated.

Date: Saturday, November 13, 2021

Time: 9:30 am to 4 pm

Cost: \$15 per person; includes Aquarium admission and refreshments (lunch is not included)

Registration Deadline: November 6, 2021

Check out upcoming volunteer opportunities with the National Aquarium at: <https://aqua.org/support/conservation>.

NOAA Ocean Exploration PD Mini-Series: Bioluminescence (Grades 6-12)

Educators are invited to join NOAA Ocean Exploration's Education Team and the National Aquarium in Baltimore in a live online professional development workshop and follow-up event to learn about the fascinating phenomenon of bioluminescence in deep-sea organisms. This three-part offering will consist of:

- A viewing of a short video with experts in bioluminescence research. Please view the video (to be sent to participants) prior to the live event!
- A 90-minute online event featuring a live, interactive question and answer session with a bioluminescence expert and an introduction and demonstration of relevant educational activities and resources. **October 28, 4:30pm EST**
- A 90-minute follow-up event hosted by the National Aquarium in Baltimore providing participants with the opportunity to cooperatively discuss content shared during the October 28 event and explore additional resources. **November 11, 4:30pm EST**

Registration is required and space is limited. Educators will receive content for review prior to the event, links to specific activities and additional resources, a NOAA Ocean Exploration Certificate of Participation, and a \$75 stipend. Registrants must participate in all three parts in order to receive the certificate and stipend.

TO REGISTER, visit: <https://www.eventbrite.com/e/noaa-ocean-exploration-pd-mini-series-bioluminescence-grades-6-12-tickets-182858283047>.

Deadline to Register is October 21, 2021.*

*Please note this registration page is for both the live event and the follow-up event. Tickets will only be generated for the live event; the National Aquarium in Baltimore will be in direct contact with participants to provide additional information about the follow-up event.

Look for more professional development opportunities on additional topics in Spring 2022!

This program is provided via collaboration between NOAA Ocean Exploration and the University of Rhode Island Graduate School of Oceanography's Inner Space Center, with support from the Ocean Exploration Cooperative Institute and the National Marine Sanctuary Foundation.

Irvine Nature Center**EAT, DRINK AND LEARN SPEAKER SERIES**

"After a year-long shift to virtual lectures, we are returning to in-person events! With fascinating topics ranging from the eastward expansion of coyotes to the increasing hardships faced by migratory shorebirds, you will not want to miss this year's fabulous slate of expert speakers from all over the Mid-Atlantic. Enjoy the camaraderie of sharing the beverage du jour and a sumptuous catered dinner with both old friends and new green-minded neighbors prior to each memorable educational program. Sign up for one or more; receive a discount for attending all seven E,D,&L's." Sign up at their website: <https://www.explorenature.org/classes-camps-programs/adults/eat-drink-learn-speaker-series/>

Anita C. Leight Estuary Center

Visit <https://otterpointcreek.org/> to learn about the upcoming programs at Anita C. Leight Estuary Center. They have paddle trips, guided hikes, critter programs and more! They also have opportunities for volunteers to help with programming and participate in citizen science programs.

Virginia Chapter

Cathy Roberts

Virginia State Representative

Forestry and Wildlife Tours

Virginia Tech has a number of K-12 teacher scholarships available for the Forestry and Wildlife Tours. The scholarships cover the full cost of registration, which includes the tour, transportation (for 2 of the three tours), materials, lunch, registration, and the cost of a substitute, if requested. See following brochure on the next page.

VAST (Virginia Association of Science Teachers)

Professional Development Institute "Science, Systems, Solutions"

Virtual Professional Development Institute

Tuesday, Wednesday, and Thursday November 16-18, 4:00pm - 9:00pm

In-Person Professional Development Institute Plus

Friday Afternoon and Saturday November 19-20

Harrisonburg, VA

For more information: Virginia Association of Science Teachers - 2021 PDI (wildapricot.org)

Botetourt/Rockbridge Counties - Wednesday, October 27

Meet at 8:30 a.m. at the Fincastle United Methodist Church
137 S Church St
Fincastle, VA 24090

Tour begins promptly at 9:00 a.m. Participants will drive their own vehicles.

From big trees in old counties with rock-bridges and high elevations, this tour will feature general points of interest, demonstrate stellar wildlife habitat improvement, explore the complexities of hardwood management, witness the magic of state-of-the-art sawmilling, and provide an opportunity to watch robots milk cows!

Stop 1: National Champion Honey Locust. Virginia's robust Big Tree Program chronicles the lives of the known biggest tree of each species in the state. Some of these, like the honey locust in Fincastle, are National Champions! Also featured in the "Remarkable Trees of Virginia" book, the tree is believed to be over 200 years old and reclaimed its National Champion title in 2019.

Stop 2: Big & Tall (acres and elevation) - Fraley Place. With approximately 12,000 acres, there are lots of opportunities to do things well and not so well. Hear from the Fraley family about their journey to better wildlife management through better habitat management. Discussions will include the role of timber harvesting, golden-winged warblers and fire to make this property the stellar example it is, with amazing views too!

Lunch: Ingleside Dairy. Drink milk while watching the robot harvest it from the cow at Ingleside Dairy. Food will also be available and a quick stop elsewhere on this diversified farm to see trout farming.

Stop 3: Hardwood Management is... "Hard". Virginia has a new initiative to make our hardwood forests better to keep oaks and other important species in the mix. At Deacon's woodlot, we will look at a recent harvest and discuss ways to measure success.

Stop 4: Deacon's Sawmill - From Round to Not... A tour of this state-of-the-art facility illustrates the competitive nature of this business, the science woven throughout and the importance of forestry to our economy yesterday, today and tomorrow.

Return by 4:00 p.m.
For more information contact:
Adam Downing, adowning@vt.edu, 540-948-6881 or
Bill Worrell, bworrell@vt.edu, 276-889-8056
Please register by 4:00 p.m., Wednesday, October 13

All tours are outdoors and held rain or shine. Please dress appropriately (sturdy shoes, hats, rain gear, insect repellent, sunscreen, etc.).

Cumberland County - Thursday October 14

Meet at 8:00 a.m. at the Cumberland State Forest
751 Oak Hill Road
Cumberland, VA 23040
Tour begins promptly at 8:30 a.m.

The Cumberland State Forest Office, also known as the Trenton House, is listed in the Virginia Department of Historic Resources. The main house was constructed by Dr. John Trent in 1815. The Cumberland State Forest is Virginia's second largest at 16,169 acres. The forest is managed for multiple uses including timber, wildlife, recreation, water quality, biodiversity, research, and demonstration. The original properties that make up Cumberland State Forest were purchased by the federal government in the 1930's under the Bankhead-Jones Farm Tenant Act. The land was leased by the state of Virginia in 1939 and the State Forest was established.

Morning stops: Cumberland State Forest, which has been a classroom for demonstrating hardwood management for over 80 years.

Stops 1 & 2: Pine and Hardwood Management. At these stops you'll learn about the benefits of management planning and working with a professional. We'll discuss the process of biological succession and how forests mature. Next, we'll learn about suitable management options for 4 types of forests: mature loblolly pine, sapling- sized loblolly pine, young hardwoods, and 60-year-old hardwoods.

Stop 3: More Pine and Hardwood Management. Stop 3 continues the discussion of management options available to woodland owners, including thinning and crop tree release, and how these techniques can be used for wildlife management. We'll also discuss options for controlling the emerald ash borer.

Lunch: Winston Lake. Southern style meal from Fish'n Pig.

Afternoon stops: From Clean Water to Mature Timber. Privately owned woodland.

Stop 4: Growing Forests for Clean Water. Forested buffers protect water quality, reduce erosion, and provide wildlife habitat. Hear about the James River Buffer Program and the Buffer Consortium, as we explore a vital component of forest stewardship.

Stop 5: Mature Hardwood. When (if) you decide to harvest, learn what you need to know about your "golden" timber. Speakers will cover selling mature hardwood, the life span of hardwoods, and challenges with advanced regeneration.

Stop 6: Mature Loblolly Pine and Open Fields (if time allows). Find out how to create habitat for small game and birds.

Return by 5:00 p.m.
For more information contact:
Jason Fisher, jasonf@vt.edu, 434-476-2147
Please register by 4:00 p.m., Thursday, September 30th

Thank You Sponsors!

- Emerson Logging
- James River Buffer Program
- Marion Brothers Logging
- Virginia Cooperative Extension - Botetourt & Rockbridge Counties
- Virginia Department of Wildlife Resources
- Virginia Tech College of Natural Resources and Environment
- Virginia Tech Department of Forest Resources and Environmental Conservation



Important COVID-19 Information
Please read carefully before registering

- Registration will be limited to ensure adequate physical distancing.
- Currently, we plan on providing transportation for all tours EXCEPT Botetourt/Rockbridge Counties; however, unanticipated limitations on vehicle occupancy may require individual participants to drive themselves. We will notify all participants if this becomes the case.
- We will follow all current COVID-19 procedures as required. These may include wearing face masks/shields.
- Physical distancing will be encouraged.
- Sanitizing materials will be provided.
- If you feel ill, please cancel your reservation. Full refunds will be given to anyone who cancels prior to the day of the tour.
- If the COVID-19 situation changes, there may be additional requirements or the tours may be cancelled. Your safety and the safety of our speakers and organizers, are our primary concerns. We will communicate with all participants to keep you up to date.
- Please visit the Virginia Department of Health for more prevention tips: <https://www.vdh.virginia.gov/coronavirus/prevention-tips/>

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in this activity, please contact Jennifer Gagnon, VFLEP Coordinator, at 540-315-0615/TDD* during business hours of 8:00 a.m. and 5 p.m. to discuss accommodations 5 days prior to the event. *TDD number is (800)828-1120.

Sussex County - Tuesday October 19

Meet at 8:30 a.m. at the Garland Gray Forestry Center
19127 Sandy Hill Road
Courtland, VA 23837
Tour begins promptly at 9:00 a.m.

Stop 1: Bayyyyybeee Pines, do do, do do do do: Garland Gray Nursery. This nursery produces over 32 million pine seedlings a year to restock areas that have been harvested. These are primarily loblolly pines of varying grades, though some shortleaf pine, longleaf pine, and Atlantic white cedar are also being raised here in efforts to restore those species in appropriate areas. Here we can see how the seeds are planted and cared for until they are sorted, sold, and distributed.

Stop 2: Big Woods State Forest and Wildlife Management Area/Piney Grove Preserve - Virginia's Hardwood Initiative. We will hear from the Virginia Department of Forestry about Virginia's Hardwood Initiative. This is a new initiative, but will see some of the early steps taken in this process.

Stop 3 : From Trash to Treasure: Log Deck Refurb for Wildlife. Just a small jaunt down the lane will take us to areas where the Virginia Department of Wildlife Resources is doing work to refurbish log loading decks to benefit wildlife.

Lunch: Airfield 4-H Center catered by Nanny's BBQ

Stop 4: Fire Pong: Fire From Above. We will be able to witness a demonstration of how drones are being used to ignite fire for prescribed burning as well as different monitoring uses.

Stop 5: Perceptive Perspectives. Land managers face a diverse range of choices of what to do with acreage over a long time horizon with a resource that is ever-changing. This roundtable wrap-up will offer some ideas of small things that we can do today, to work toward achieving long-term goals decades from now.

Return by 4:00 p.m.
For more information contact:
Neil Clark, neclark@vt.edu, 757-653-2572
Please register by 4:00 p.m., Tuesday, October 8th

See back for Botetourt/Rockbridge Counties tour details

Virginia Cooperative Extension programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. An equal opportunity/affirmative action employer. Issued in fulfillment of Cooperative Extension work. Virginia Polytechnic Institute and State University, Virginia State University, and the U.S. Department of Agriculture cooperating. Elvira J. Ison, Director, Virginia Cooperative Extension, Virginia Tech, Blacksburg; M. Ray McKinnis, Administrator, 1890 Extension Program, Virginia State University, Petersburg.

45th Annual Fall Forestry & Wildlife Field Tours 2021



Join other forest landowners and natural resource professionals for an educational and fun day in the woods learning about forest and wildlife management. Check individual tour descriptions for dates and times.

SEE BACK PAGE FOR IMPORTANT COVID-19 INFORMATION

These tours promote wise resource management on private woodlands. You will: (1) observe science-based management practices; (2) become acquainted with public and private sources of technical and financial management assistance; and (3) network with fellow landowners, natural resource professionals, and others who share your interest in Virginia's natural resources.

Each tour will include stops on multiple properties. See inside for times, departure points, and itineraries.

October 14 - Cumberland County
October 19 - Sussex County
October 27 - Botetourt/Rockbridge Counties

****A limited number of scholarships are available for K-12 teachers. Please call Jennifer Gagnon 540-231-6391 for details. Awarded first-come, first-served.**

Extension is a joint program of Virginia Tech, Virginia State University, the U.S. Department of Agriculture, and state and local governments.

Register and pay on-line!
Visit <https://forestupdate.frec.vt.edu>
Or send this form and check made payable to Virginia Tech Treasurer to:
Kathie Hollandsworth
228 Cheatham Hall (0324)
Blacksburg, VA 24061
Registration fees include lunch and refreshments.
All tours are \$25/person; \$40/couple

- Cumberland County
- Sussex County
- Botetourt/Rockbridge Counties
- I am a K-12 teacher**see front of brochure

Name(s) _____

Street/P.O. _____

City _____

State _____ Zip _____

Phone _____

E-mail _____

Dietary needs: _____

Land County _____

Total Acres _____ Wooded Acres _____

Youth Conservation Series

Opportunities for middle and high school students to explore science through field experiences and conservation action.

Field Experiences

Ocean Collection

October 9, 2021, 8:30 am - 12:00 pm

Students will have the opportunity to assist in the collection of fish, invertebrates, and plankton using the same tools and methods as marine scientists. Also, get a bonus experience by going behind the scenes to see how we acclimate our new animals to their habitats.

\$79 members, \$94 non-members; Advanced registration required

Marine Mammals

December 29, 2021, 8:30 am - 4:00 pm

Students will learn about some of Virginia's winter visitors through a Whales & Wildlife boat trip and harbor seal training session.

\$149 members, \$179 non-members; Advanced registration required

Trash Talking Art

June 4, 2022, 8:30 a.m. - 3:00 p.m.

Students will kayak around Owls Creek to collect trash, track their data, and turn it into art to share with Virginia Aquarium guests.

\$119 members, \$139 non-members; Advanced registration required

For more information and to register for Field Experiences, email our School & Youth Programs Team at programs@virginiaaquarium.com.

Save the Date: Virtual Marine Science Career Day

March 18, 2022, 5:00 - 7:00 pm & March 19, 2022 10:00 am - 3:00 pm

Meet with scientists and Aquarium professionals to learn about their job duties, what skills and training they need, and how you can get started in their field.

Registration will open in January 2022. More information to follow on our website.



VA SEA Fall Lesson Plan Log: Highlighting Hands-On, Research Based Marine Science Activities for K-12 Classrooms

*Bethany Smith, Marine Education Specialist (bsmith@vims.edu)
Virginia Institute of Marine Science – Marine Advisory Program*

Graduate students in the Virginia Scientists & Educators Alliance (VA SEA) program (a program facilitated by educators at the Virginia Institute of Marine Science and Chesapeake Bay National Estuarine Research Reserve in Virginia) have created over 40 unique, hands-on lesson plans geared towards middle and high school audiences. These lesson plans provide real-world connections to classroom learning across a variety of science disciplines, and are easily scalable to meet the needs of your unique classroom. In this fall edition of the VA SEA Lesson Plan Log, we highlight three lessons that are sure to be spooktacular!

Dichotomous Keys: An Essential Tool for Fish Detectives

In this activity, designed by VIMS student Jackson Martinez, your students will use external anatomy clues to solve the mystery of an unknown fish species. While solving the fish mystery, students gain practice using a dichotomous key to arrive at the appropriate identification. Students then characterize the fish's trophic level based on clues about their feeding preferences and adaptations, ultimately looking for links between morphological features and the trophic level each species occupies. Jackson's lesson plan most closely addresses middle school life science and high school biology standards.

Marine Parasites and Fish: How to Sample and Analyze

In this activity, designed by VIMS student Zoemma Warshafsky, your students investigate the impacts of an invasive parasitic nematode which has been targeting the American Eel. Through a simulation of real-life data collection, students sample pipe cleaner "eels" infected with bead "parasites." They will then use this data to calculate metrics such as parasite prevalence, mean intensity, and mean abundance, culminating with a class discussion of which metric is most important for scientists to best understand parasite infection levels. Zoemma's lesson plan most closely addresses middle school life science and high school biology and marine science standards.

Tiny Killers

In this activity, designed by VIMS student Sarah Pease, your students will discover the methods and technologies used to monitor harmful algal blooms and the toxins they produce. Armed with a deeper understanding of bioaccumulation and biomagnification, students design and test a harmful algae monitoring program to uncover the challenges and limitations of a monitoring plan that attempts to measure natural events. Students also gain an understanding of the shellfish regulatory process as they are challenged to connect their harmful algae data with shellfish harvest closures. Sarah's lesson plan most closely addresses high school biology, environmental science and oceanography standards.

For complete lesson plans for these and all other VA SEA lessons, including a background PowerPoint, student/teacher handouts and answer keys, please visit the VA SEA lesson plan collection at www.vims.edu/vasea.

Have you used any of the VA SEA resources in your classroom? Is there a specific topic / SOL you could really use a lesson for? Our team would love to hear from you! We also invite you to attend our sessions during the upcoming MAMEA and VAST conferences which will highlight lessons from our 2021 VA SEA cohort. Sign up here to receive updates on the 2022 VA SEA Lesson Plan Expo.

National Ocean Sciences Bowl Regional Competitions

David Christopher
Secretary

The National Ocean Sciences Bowl (NOSB) is a nationally recognized and highly acclaimed high school academic competition that gives students the opportunity to test their knowledge of the marine sciences. NOSB was created in 1998 in honor of the International Year of the Ocean and has grown to include 25 regional competitions around the country. The Mid-Atlantic region is home to three of these regional competitions. The winners of the regional competitions go on to compete in the NOSB National Finals.

- The Blue Crab Bowl serves the majority of Virginia. This year's competition is slated for February 11 & 12th, 2022, at Old Dominion University's Virginia Beach Center in Virginia Beach. More information and a pre-registration form are available on-line at www.vims.edu/bcb or contact Blue Crab Bowl 2022 Teams Coordinator, Bethany Smith at bsmith@vims.edu.
- The Chesapeake Bay Bowl serves Maryland, Delaware, southeastern Pennsylvania, Northern Virginia, and Washington D.C. This year's competition will be held on February 5, 2022 at University of Delaware's Hugh R. Sharp Campus in Lewes, Delaware. More information and a pre-registration form are available on-line at <https://www.chesapeakebaybowl.org> or contact Chesapeake Bay Bowl Co-Regional Coordinator, David Christopher at dmchrist@udel.edu.
- The Blue Heron Bowl serves North Carolina. The date of this year's competition is still to be determined. Please visit <https://sites.google.com/site/blueheronbowl/> for information as it becomes available.

The regional competitions are open to public and private high schools as well as institutions that serve high school students. Schools and institutions in the following cities and counties near Washington, DC, should apply to the Chesapeake Bay Bowl: Alexandria; Annandale; Arlington; Ashburn; Falls Church; Leesburg; McLean; Sterling; and Fairfax and Loudoun Counties. All other areas in Virginia should apply to the Blue Crab Bowl.

MAMEA is a proud sponsor of the regional bowls and offers a complimentary MAMEA membership to first time coaches as well as a complimentary MAMEA conference registration to the winning coaches of each of the regional bowls

2021 MAMEA Conference Scholarships Update

Lillie Reiter

Scholarship Committee Chair

Two scholarship applications for this year's conference are open!

1) Each year, Paul Standish Scholarships are available to MAMEA members who are interested in attending the annual conference but are in need of financial assistance. With these five scholarships, they cover up to \$300 of expenses directly related to participation in the conference and will be issued as a reimbursement after the conference upon submission of valid receipts. Applicants must have at least 6 months of membership in MAMEA prior to application or must have attended a MAMEA-sponsored state event by the time of application.

2) MAMEA also offers the Expanding Audiences Scholarship (EA) which strives to create a diverse audience. We offer one \$400 scholarship to attend the annual conference. Candidates cannot be a current or former MAMEA member however any current member may nominate an interested candidate for the scholarship. The EA scholarship will reimburse costs associated with attending the annual conference, including registration, accommodations, and travel associated directly with attending the conference.

To apply: It's super easy! Find the application forms online at our website mamea.org/scholarship. Fill in the google form and hit submit! The extended application deadline is Oct 18th 2021. Recipients will be notified by Oct 22nd, 2021. If you have any questions, email:

Lillie Reiter,
Scholarship Committee Chair
reiterlb@gmail.com



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