

MAPAIS Fall 2021 Meeting
Wednesday December 1, 2021
 Click for [Meeting Link](#)
Join by phone: 1-202-991-0477
Access code: 344 326 789#

DAY 1

TIME	TOPIC	SPEAKER
10:00am	Call to Order <ul style="list-style-type: none"> Welcome Introductions – New members Virtual format housekeeping 	<i>Edna Stetzar, Panel Chair</i> <i>Katlyn Fuentes, Panel Coordinator</i>
10:10am	Old Business <ul style="list-style-type: none"> Review and approve agenda and spring meeting minutes Submission of annual reports from states with active plans Liaison with ANSTF Communication, Education, and Outreach Subcommittee ANSTF Expert Database 	<i>Edna Stetzar</i>
10:30am	Budget and funded project updates	<i>Mike Allen, Panel Fiscal Agent</i>
10:45am	New Business <ul style="list-style-type: none"> Website activity/security update RFP 2022 – any changes needed? Panel Representation (fed, state, academic) Spring 2022 Meeting 	<i>Mike Allen</i> <i>Edna</i> <i>All</i>
11:30am	Mid-Atlantic Region AIS introductions and NAS program updates	<i>Ian Pfingsten, U.S. Geological Survey</i>
12:00	Break/Lunch	
12:30pm	ANSTF Meetings– updates – June/November	<i>Edna Stetzar</i>
1:00pm	Discussion – Developing Research Priorities for MAPAIS	<i>Steve Pearson, Panel Vice Chair</i>
1:50pm	Other items from the floor/Public questions	
2:00pm	Adjourn	

Mid-Atlantic Panel on Aquatic Invasive Species  **Mid-Atlantic Panel on Aquatic Invasive Species**
Fall Meeting
 December 1 and 2, 2021
 AGENDA

MAPAIS Fall 2021 Meeting
Thursday December 2, 2021

Click for [Meeting Link](#)

Join by phone: 1-202-991-0477

Access code: 358 578 970#

DAY 2

TIME	TOPIC	SPEAKER
10:00am	Call to Order <ul style="list-style-type: none"> • Welcome/Introductions • Follow up from Day 1 	<i>Edna Stetzar, Panel Chair</i>
10:10am	AIS Liaison for the National Sea Grant Office and USFWS	<i>Tim Campbell, WI Sea Grant</i>
10:30am	International Conference on Marine Bio-Invasions – Annapolis, MD – May 2022	<i>Whitman Miller, SERC</i>
10:50am	Exploring Nature 15 Seconds at a Time	<i>Chris Petrone, DE Sea Grant</i>
11:10am	Agency Preferences to the Use of eDNA Monitoring for Aquatic Invasive Species	<i>Dr. Joe Love, Maryland DNR</i>
11:30am	Regional Law Enforcement AIS Task Force	<i>Steve Pearson, Panel Vice Chair</i>
11:50am	Break/Lunch	
12:20pm	Member and Interested Party Updates (please keep update brief; 5-10 minutes)	<i>Katlyn Fuentes/Edna Stetzar</i>
1:50pm	Public questions/comments; wrap up	<i>Edna Stetzar</i>
2:00pm	Adjourn	

****Please note that the meeting will be recorded for note-taking purposes****

MAPAIS Fall 2021 Meeting (Virtual)
December 1 – December 2, 2021

DAY 1 – ATTENDEES

Aaron Henning, Susquehanna River Boat Commission	Amos Sweany, VA-DCR	Christine Densmore, USGS
Christopher Smith, NJ-DEP	Edna Stetzar, DE-DNREC	Gary Walters, PA-DEP
Heather Desko, NJWSA	Ian Pfungsten, USGS	Jay Kilian, MD-DNR
Jonathan McKnight, MD-DNR	Katherine Zipfel, WV-DNR	Katlyn Fuentes, CRC
Ken Klipstein NJWSA	Kerry Wixted, WV-DNR	Kevin Heffernan, VA-DCR
Kierstin Carlson, PA Natural Heritage Program	Mark Lewandowski, CBP	Matthew Neilson, USGS
Matthew Shank, PA-DEP	Mike Allen, MD Sea Grant	Nathan Finney,
Ray Frederick, US EPA	Rob Emens, NC-DEQ	Sara Mirabilio, NC Sea Grant
Sara Stahlman, PA Sea Grant	Sean Hartzell, PFBC	Steven Pearson, NY-DEC
Susan Pasko, USFWS	Tara Whitsel, USACE	Tim Campbell, WI Sea Grant

10:00 – CALL TO ORDER

Edna Stetzar (Panel Chair) & Katlyn Fuentes (Panel Coordinator)

- New member introduction: **Katlyn Fuentes** – Chesapeake Bay Program’s Habitat Goal Team Staffer – is the new Panel Coordinator.

10:10 – OLD BUSINESS

Edna Stetzar (Panel Chair)

- Review and approve today’s agenda
 - **Motion made:** Steven Pearson
 - **Seconded:** Mike Allen
- Review and approve Spring 2021 meeting minutes

- **Motion made:** Heather Desko
- **Seconded:** Steven Pearson
- **Submission of annual reports from states with active management plans:** states with approved management plans get annual funding and in return have to submit an annual report outlining how the funds were utilized.
 - **ACTION ITEM FOR STATE REPRESENTATIVES: Please submit these reports to Edna when they are complete. If you are not responsible for the drafting and/or submission of the reporting, please contact the state employee in charge. These reports will be posted to the MAPAIS website.**
 - MD, VA, NY, and PA all have approved management plans. NJ, DE, WV, and NC do not.
 - **VIRGINIA, Kevin Heffernan** (*Stewardship Biologist with VA Natural Heritage, DCR*) is overseeing the implementation of the management plan in Virginia. The FY19 report was completed Spring of 2021, and the FY20 is currently being worked on. The grant reporting period is generally July 1st to June 30th.
 - **ACTION: Kevin will send Edna the completed reports.**
 - **MARYLAND, Joe Love** oversees the ANSTF grant and is currently in the process of getting the report approved by MD DNR for submission to USFWS.
 - **ACTION: Jay Killian will talk with Joe after the meeting, to ensure that MD DNR can provide a report to MAPAIS for publication on the website.**
 - **PENNSYLVANNIA, Sarah Whitney** oversees preparing these reports, but she is currently out of office.
 - **ACTION: Sara Stahlman will contact Sarah Whitney as soon as possible, to inquire about the reports.**
 - **NEW YORK, Steve Pearson:** not sure when the reporting period is, but there is currently a report being drafted.
 - **ACTION: Steve will find out who oversees this report and will get back to Edna.**
 - **NORTH CAROLINA, Rob Emens** (*Division of Water Resources*): NC doesn't have an approved management plan. There is currently a working management plan that several state agencies have signed on to, but no comprehensive approved plan.
 - **ACTION: Rob Emens will send a report that was put together for the Gulf and South Atlantic Panel to Edna.**
- Liaison with ANSTF Communication, Education, and Outreach Subcommittee
 - At the Spring MAPAIS meeting, it was mentioned that ANSTF was looking for a liaison and Christine Densmore volunteered for this position. Edna forwarded the information to Susan Pasko, and Susan has not yet responded to Christine/Edna.

- **Susan Pasko:** The Outreach Subcommittee of ANSTF has expressed a desire to have a representative from each of the regional panels, to sit on the meetings, to ensure of consistency through the different panels. This was put on hold due to the pending bylaws.
- **ACTION: Susan will check-in with the Outreach Subcommittee for an update and to see if they are still interested in filling liaison/representative positions.**
- ANSTF Expert Database
 - The database that ANSTF was keeping on their website was very outdated. At the last Task Force meeting, it was mentioned that they were taking this database down and editing it before sharing it again. **ANSTF may reach out to MAPAIS members for feedback on the new database.**

10:30 – BUDGET AND FUNDED PROJECT UPDATES

Mike Allen (Panel Fiscal Agent)

- Received panel funds this past summer (current award period of Sept. 2018-2023).
- There is a large balance (~\$100k) due to COVID limiting travel, etc. over the past two years.
 - \$5,850 remains in travel and meeting costs
 - \$100 remains in web maintenance
 - \$94,000 remains outstanding in allocated awards for small grants
 - This is a reimbursable grant. At this time, the money that's come back from closed grants has been reissued to the three grants. There is no other money from forfeitures. Fowler's project hasn't spent any money, and given that COVID has delayed several projects, drawdown of grant funds has been delayed as well.
- **CLOSED PROJECTS:**
 - **Amy Fowler** – ended 2019 – Impacts of two functionally distinct invaders on facilitation and community succession – **forfeiture \$6**
 - **George Merovich** – ended 2020 – Quantifying multiple ecosystem-level threats to the upper Juniata River system from the invasion and occupation of rusty catfish – **forfeiture \$55; products: new report**
 - **Kate Fleming** – ended 2021 – Promoting tidal and marine invasive species awareness and response in DE among diverse stakeholders - **\$0 balance; products: 7,500 ID cards, Virtual presentations, public exhibit, Asian crab lesson and story map, and a new report.**
- **ONGOING PROJECTS:**



- **Keryn Gedan** – NCE until 08/22 – Early detection of invasive *Phragmites australis* at the tidal marsh-forest ecotone with airborne LiDAR – **reported last meeting**; products: new report
- **Jenny Carney** – ends 05/2022 – Assessing the potential impact of Dominion Cove Point LNG export facility on ballast mediated invasions in Chesapeake Bay – **presented FA20**; **Present next Spring?**
- **Roger Mann** – ends 02/2022 – Revisiting *Rapana venosa* in Hampston Roads as TBT abates – **has \$5,400 remaining**; **presented SP21**; products: new report
- **Megan Kepler Schall** – NCE 08/2022 – An integrative approach to studying Flathead Catfish invasion in the Susquehanna River Basin: linking ecological field studies and public perception for effective outreach on aquatic invasive species – **presented SP21**; products: new report; **Present next Spring?**
- **Amy Fowler** – ends 08/2022 - Marine Bioinvasions of the Mid-Atlantic Coast: Rapid Assessment Survey for Introduced Marine Organisms from NJ to VA – products: new report; **Present next fall?**
- **NEW PROJECTS:** no billing on these projects yet
 - **Stephanie Coster** – ends 08/2022 – Test an environmental DNA assay to detect nutria in the Mid-Atlantic and explore how activity patterns impact detection
 - **Michael Stangl** – ends 08/2022 – Development of an Aquatic Invasive Species Management Plan for Delaware
 - **Jennifer Wanat** – ends 08/2023 – Evaluating the impact of a rural to urban land use gradient on the incidence of chytridiomycosis, ranavirus, and overall salamander health in the Chesapeake Bay watershed

10:45 – NEW BUSINESS

Mike Allen (Panel Fiscal Agent) & Edna Stetzar (Panel Chair)

- **WEBSITE ACTIVITY/SECURING UPDATE:** <https://www.midatlanticpanel.org/>
 - Website requires regular updates, and the site health is good
 - Updated to HTTPS
 - In November 2021, there were 2,468 downloads from the website, with 116 new user visits and 16 returning users.
- **RFP 2022 CHANGES NEEDED** → grant ends 08/2023, so only allowing 1-year project next year
- **UPDATES/CHANGES TO PANEL REPRESENTATION:**
 - **FEDERAL:**
 - **Army Corps of Engineers:** Tara Whitsel is the new representative
 - **USFS:** currently do not have a Forest Service member
 - **NOAA:** Jeannette Davis is now in a different role at NOAA, so there is no current NOAA representative. A new NOAA Invasive Species Coordinator is



- starting at NOAA GLERL soon assist help the ANSTF NOAA co-chair. **Maybe they could help connect MAPAIS with someone more locally that could be a rep?**
- **NPS:** Dani Johnson and Mark Frey are no longer panel representatives. Aleksandra (Alex) Voznitza is the new representative
 - **U.S. DOT:** Carolyn Junemann is the listed representative but it's unknown if she is still an active member
 - **USFWS:** Steve Minkinen is the current representative
 - **STATE:**
 - **VA:** Ray retired, and Kevin Hefferman (VA DCR) is currently serving in this role until a replacement for Ray is hired/selected.
 - **ACTION: If you have any recommendations regarding any additional federal/state agencies or academics that would be beneficial to have a representative for the panel, please contact Panel Chair, Edna Stetzar. Any panel member can recommend adding a panel member. This request must be written and sent to the Panel Chair, who will then bring it to a vote at the next meeting.**
 - **SPRING 2022 MEETING:**
 - Barring any new COVID-related restrictions, this will be an in-person meeting. Panel leadership will look into conference call line and/or hybrid technology access for those unable to attend the meeting in-person.
 - **COVID PROTOCOLS:** the meeting would follow COVID protocols, and everyone in attendance would show proof of vaccination, as well as required to sign an attestation agreeing to said protocols
 - **Susan Pasko:** *Presently, all meetings must be virtual. Federal buildings are not set to reopen until sometime between January and March 2022, but with the new Omicron Variant, this may be delayed further.*
 - **Edna Stetzar:** *Spring Meetings are usually held in April. Would need at least one month notice (early March) to plan the meeting, based on the COVID protocol at the time.*
 - **ACTION: Susan will be in contact with Edna re: COVID protocols, as it gets closer to the Spring Meeting.**
 - **LOCATION:** will be held in Annapolis, MD.
 - **ACTION: Katlyn Fuentes will contact SERC to inquire about using the conference space to host the meeting.**
 - **AGENDA ITEMS FOR SPRING MEETING:**
 - Presentations from three ongoing projects (*mentioned during Mike Allen's presentation*)



- Presentation from Dennis Whigham (SERC) on the MD Sea Grant *Phragmites* removal experiment at SERC. This could also potentially include a site-visit.
- **ACTION: please contact Edna Stetzar with any recommendations for potential presentations and/or other agenda items.**

11:30 – MID-ATLANTIC REGION AIS INTRODUCTIONS AND NAS PROGRAM UPDATES

Ian Pfinzgen (USGS)

- **USGS NONINDIGENOUS AQUATIC SPECIES DATABASE:** this is the central repository for spatially referenced accounts of introduced aquatic species.
 - Link to Database: <https://nas.er.usgs.gov>
 - Tracks over 1,350 species
 - Across conterminous U.S., Alaska, Hawaii, and U.S. territories
 - Data ranges from 1800s-Present
- **NEW INTRODUCTIONS:** The database alerts public of new species occurrences at Country, State, County, and Watershed (HUC8) levels.
 - **NAS Alert Risk Mapper (ARM):** <http://nas.er.usgs.gov/AlertSystem>
- 29 alerts since May 2021 in the Mid-Atlantic region. Examples include:
 - **Monoecious Hydrilla (*Hydrilla verticillata*)** – sited on shore of New River by Brooks Falls Roadside Park in Raleigh County, WV.
 - **Variable-leaf Watermilfoil (*Myriophyllum heterophyllum*)** – found in Gouldsboro Lake in Gouldsboro State Park in Wayne County, PA.
 - **Water Chestnut (*Trapa natans*)** – found in Brooks Lake in Lackawaxen drainage in PA.
 - **Water Chestnut (*Trapa bispinosa*)** – found in Mount Pleasant Farm Pond, Loudoun County, VA.
 - **Water Lettuce (*Pistia stratiotes*)** – found in Little River, near northern end of Dance’s Bay in the Albemarle drainage of Pasquotank County, NC.
 - **Australian Water-Clover (*Marsilea mutica*)** – found in Gunpowder Falls along CSX transportation line in the Gunpowder-Patapsco drainage in Carroll County, MD.
 - **Northern Snakehead (*Channa argus*)** – *several sightings*
 - Middle Delaware Scenic Recreational River (DE Water Gap National Recreation Area), in a shallow backchannel near Poxono Island in Warren County, NJ.
 - Delaware River at Callicoon in the Upper Delaware drainage in NY.
 - **Round Goby (*Neogobius melanostomus*)** – *several sightings*
 - Hudson River, on the west shore along Van Wies Point Rd., in Middle Houston drainage of Albany County, NY.
 - Mohawk River, downstream of Lock E14, Montgomery County, NY.
 - Mohawk River, shoreline on north side Crescent Bridge, Saratoga County, NY.



- **Zebra Mussel (*Deissena polymorpha*)** – found in the Curwensville Lake Intake Sower in Clearfield County, PA.
- **Japanese Mysterysnail (*Cipangopaludina japonica*)** – found in Bloomsburg Town Park Pong, in Columbia County, PA.
- **New Zealand Mudsnail (*Potamopyrgus antipodarum*)** – *several sightings*
 - Wissahickon Creek at bridge of Forbidden Drive and Orange Trail in Philadelphia County, PA.
 - Trindle Spring Run at RM 0.11 in the Lower Susquehanna-Swatara drainage in Cumberland County, PA.
- **Rusty Crayfish (*Faxonius rusticus*)** – *several sightings*
 - Yellow Breeches creek below Huntsdale in Cumberland County, PA.
 - Codorus Creek at Spring Grove Municipal Park in York County, PA.
- **White River Crayfish (*Procambarus acutus acutus*)** – found in Meadow River WMA near Dawson, on Burr Track, in Greenbrier County, WV.
- **ACTION: To submit an invasive species observation into the NAS Database, please send spreadsheets to Matthew Neilson or Ian Pfingsten.**

12:30 – ANSTF MEETINGS/UPDATES – JUNE/NOVEMBER

Edna Stetzar (Panel Chair)

- 2021 ANSTF Meetings: ANSTF meetings *require* panel representation; meeting minutes can be found [here](#).
 - **June (virtual):** Regional Panel Principal Meeting (06/24); Task Force Meeting (06/28-06/30)
 - **November (virtual):** Regional Panel Principal Meeting (11/08); Task Force Meeting (11/16-11/18)
- **MAPAIS RECOMMENDATION TO THE ANSTF:** “Virginia should seek funding under the Nutria Control and Eradication Act of 2020 and that the ANSTF – as a whole and its member agencies individually vigorously support the request.”
 - **ANSTF RESPONSE:** Congress did not appropriate funds for this work in its FY2021 Appropriation’s Bill. Virginia will not be able to seek funding under the act unless the funding is appropriated.
- **PANEL PRINCIPAL MEETINGS:**
 - Developing regional species lists (MRB)
 - Standardized boater surveys – outreach to boat transport companies
 - National Aquatic Invasive Species Economic Cost Survey – needs funding
 - Panel vacancies – federal members
 - Rotate location of panel principal meeting

- **NATIONAL PLANS AND INITIATIVES:** National ANS Research Priorities List, National Plan for Asian Carp, Watercraft Best Management Practices, Invasive Species Strategic Plan (DOI)
- **NATIONAL RESOURCES:**
 - National Invasive species Information Center (NISIC) - [link](#)
 - *Comprehensive portal for invasive species*
 - North American Invasive Species Management Association (NAISMA) - [link](#)
 - *Training, monthly webinars, certifications, networking, advocacy*
- **NATIONAL PREVENTION AND OUTREACH:**
 - Request for materials to share on national campaign sites
 - Regional panel participation on the subcommittee
 - Organisms in Trade Pathway (USGS & USFWS)
- **ECOSTAR LABELS** – rating system for non-native species
 - Uses red, yellow, and green color scheme to represent risk level based on risk-assessment mapping program (RAMP)
 - Communication tool
 - Also developed “enhances labels” and state specific labels
- **FUNCTIONAL ERADICATION PAPER:** *Green, S.J. and E.D. Grosholz. 2021. Functional Eradication as a framework for invasive species control. Front. Ecol. Environ. 19(2): 98-107*
 - Population control typically focusing on removal of individuals can result in population explosion
- **ANS TRANSPORT ON PURCHASED WATERCRAFT:** boats are being taken from the Great Lakes to the Western Region. Increased numbers are transporting dreissenid mussels. Used boat sales are also a nationwide threat.
- **BALAST WATER STANDARDS – VIDA ACT:** Dec. 2021 rule finalized without final standards. The draft BMPs were rejected by 5 states, and the EPA is re-engaging with states to address concerns. Funds were not appropriated to implement VIDA.
- **9 APPROVED SPECIES MANAGEMENT PLANS – [link for more information](#)**
 - NO REVISIONS – REMAIN ACTIVE: invasive carp, lionfish, snakehead
 - REVISIONS – REMAIN ACTIVE: *Caulerpa*, European green crab, New Zealand mud snail, Ruffe
 - ARCHIVED: Mitten crab
 - NOT ASSESSED: brown tree snake
 - OTHER PLANS: Giant Salvinia; Purple Loosestrife, Quagga/Zebra Mussel

1:00 – DISCUSSION ON DEVELOPING RESEARCH PRIORITIES FOR MAPAIS

Steve Pearson (Panel Vice Chair)

- **MAPAIS SMALL GRANTS RFP 2021** → [click here to download](#)
- **CURRENT MAPAIS RESEARCH PRIORITIES (2021 RFP)**

- Develop outreach and educational materials for classrooms and specific populations (K-Gray) to prevent the introduction and spread of AIS.
 - This falls within federal priorities; however, the federal priority is to evaluate existing programs, rather than create new ones.
- Conduct research on AIS issues in the region such as prevention, early detection, rapid response, emerging invasions, and how climate change may influence AIS.
- Conduct innovative approaches to AIS control/eradication, or control/eradicate a high priority AIS population.
 - Preference may be given to proposals that include a priority species
- Continue to develop vector management strategies for states and the region.
- Encourage states to develop and implement AIS management plans meeting the standards set by the Aquatic Nuisance Species Task Force.
- **FIVE GENERAL CATEGORIES FOR DRAFT FEDERAL ANSTF RESEARCH PRIORITIES:** Prevention, EDRR, Control, Outreach, and General Research
- Heather Desko volunteered to assist with the RFP process.
 - **ACTION: If you would like to assist with the RFP process, or if you have recommendations for any additional MAPAIS research opportunities, please contact Steven Pearson and Heather Desko.**

2:00 – DAY 1 MEETING ADJOURNMENT

- **Motion made:** Rob Emens
 - **Seconded:** Steven Pearson
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DAY 2 – ATTENDEES

Aaron Henning, Susquehanna River Basin Commission	Christine Densmore, USGS	Christopher Petrone, DE Sea Grant	Christopher Smith, NJ-DEP
Don MacLean, USFWS	Edna Stetzar, DE-DNREC	Ellyn Campbell, Susquehanna River Basin Commission	Heather Desko, NJWSA
Jay Kilian, MD-DNR	Jil Swearingen, NPS	Joe Love, MD-DNR	Katlyn Fuentes, CRC
Kerry Wixted, WV-DNR	Kevin Heffernan, VA-DCR	Kiersten Carlson, PA Natural Heritage Program	Matthew Neilson, USGS
Matthew Shank, PA-DEP	Mike Allen, MD Sea Grant	Nathan Finney,	Ray Frederick, US EPA
Rob Emens, NC-DEQ	Sara Mirabilio, NC Sea Grant	Sara Stahlman, PA Sea Grant	Sean Hartzell, PFBC
Steven Pearson, NY-DEC	Susan Pasko, USFWS	Tara Whitsel, USACE	Tim Campbell, WI Sea Grant
Whitman Miller, SERC			

10:10 – AIS LIAISON FOR THE NATIONAL SEA GRANT OFFICE AND USFWS

Tim Campbell (WI Sea Grant)

- **AQUATIC NUISANCE SPECIES TASK FORCE (ASNTF):**
 - Charge: To develop and implement a program for waters of the United States to:
 - Prevent the introduction and dispersal of ANS
 - Monitor, control, and study ANS
 - Disseminate related information
- **HOW SEA GRANT CAN HELP YOU:**
 - Research, education, outreach
 - Community engagement
 - Applied research
 - Social science
 - DEI issues
 - Project-based work
- Impacts of message framing on audience engagement:
 - What is the best way to talk about invasive species?

- **Examples include:** militaristic message frames; accidental message frames; protective message frames; scientific “impact-based” communications
- There is a lack of data on how message frames influence audience
- University of Wisconsin Sea Grant Institute project looking at message framework effectiveness:
 - Results: the least effective “cost per click” message frames were “hitchhiker” and “protective”
- **Technical Report on Homeowners Perceptions to AIS - [Link](#)**
- **ADDITIONAL COMMENTS/QUESTIONS:**
 - **Edna Stetzar:** What were some of the approaches used to get fishing tournament participants thinking about invasive species and transport/reporting of AIS?
 - **Tim Campbell:** The best approach was a continued effort from the Sea Grant to be present at these tournaments/outreach events, to connect one-on-one with the anglers, etc.
 - **Whitman Miller:** Are any message frameworks related to homogenization versus maintaining the existent rich diversity?
 - **Tim Campbell:** This project did not involve that directly. There is previous work that’s been done focused on gardening – but none that’s been done on AIS.
 - **Jay Kilian:** It’s one thing to educate the community, and it’s another thing entirely to effectively change their behavior. What is the best messaging approach that would be accepted by the public or private stakeholder community? Are you planning on looking beyond creating awareness and into effective behavior change?
 - **Tim Campbell:** often, outreach is evaluated by exposure or contacts, rather than behavior change. There is ongoing research being doing by UW on this. I think we can work on combining what we know about boater behavior with what we know from different behavioral science theories. A good example might be the Theory of Planned Behavior – high intention to do the behavior, high feelings of self-efficacy (I can do the behavior), and high feelings of behavioral control (the behavior actually makes a difference) are all correlated with actually doing the behavior (other things factor into this, too). This has been verified in other contexts and previous work by Laura Witzling and Bret Shaw has shown that boaters in WI that score high on these metrics also have a high intention to do the behavior.

10:30 – INTERNATIONAL CONFERENCE ON MARINE BIO-INVASIONS; Annapolis, MD; May 2022
Whitman Miller (Director of National Ballast Information Clearinghouse, SERC)

- The 11th International Conference on Marine Bio-Invasions (ICMB)
 - **WHEN/WHERE:** ~~May 16-20, 2022~~, in Annapolis, MD



- **UPDATE AS OF 01/2022: The IMCB 2022 Conference has been postponed till 2023, due to ongoing developments with the COVID-19 pandemic.**
- **CONFERENCE THEMES:**
 - Biofouling dynamics – ships, plastics, and management strategies
 - Climate-driven invasion effects and responses
 - Socio-ecology and multiple perspectives on invasions
 - Invasion impacts ecological interactions, ecosystem services, and economics
 - Methods for non-native species detection and assessment
 - Principles, patterns, and contracts of invasions across ecosystems.
- **More information can be found at [this link](#).**
- This is a biennial conference, and by holding these conferences, the Society aims to “facilitate the exchange of ideas and research results among scientists and policy makers from around the world about marine invasive species”.
- **Would MAPAIS be interested in sponsoring this conference?**
 - **ACTION: Panel Leadership has agreed to fund two student achievement awards for this conference. However, due to the postponement of the conference till 2023, MAPAIS will proceed with this sponsorship next year.**

10:50 – EXPLORING NATURE 15 SECONDS AT A TIME

Chris Petrone (DE Sea Grant)

- **15 Seconds of Science Invasive Species Playlist - [link](#)**
- **SERIES HISTORY:** began in May 2015 and now has 287 episodes (15 in Spanish), dozens of on-camera presenters, and over 100,000 views across social media
- **THE PROCESS - SCRIPTS:** 2 long or 3 short sentences that must be very engaging and “jargon-free”. The goal is to break- down higher-level science to its foundations
- **THE PROCESS – VISUALS:** Combine engaging words with engaging visuals
- **THE PROCESS – PRODUCTION:** About 1 hour production per episode. The time commitment has decreased from the start of development compared to now.
- **THE PROCESS – PUBLISHING:** Facebook, Instagram, Twitter, and YouTube
- **KNOWN USES OF 15 SECOND SCIENCE:**
 - Social media engagement
 - Course content
 - Course projects
 - Test-review
- **QUESTIONS/COMMENTS:**

- **Tim Campbell:** **Could MAPAIS develop a list of new 15 seconds of science topics on invasive species that could serve as a set of ideas for when they're needed? Maybe it turns into a small project?**
 - **Enda Stetzar:** I would be supportive of that.
 - **Chris Petrone:** We would be happy to have a list of species (or scripts!) from you all on new invasive species episodes. We can also work with you all to record your own video for us to wrap into the 15SS branding. We did a bunch of "15 SS from home" during the pandemic, so we have a set of guidelines for people to follow when creating their own videos, when we can't film them ourselves.

11:10 – AGENCY PREFERENCES TO THE USE OF eDNA MONITORING FOR AQUATIC INVASIVE SPECIES

Dr. Joe Love (MD DNR)

- **ANSTF:** 44 approved ANS Management Plans (41 State, 3 Interstate)
- **EARLY DETECTION AND RAPID RESPONSE SYSTEM:** detecting, reporting, and responding
- **DETECTION CHALLENGES:** no standardized methods; routine eDNA monitoring
- **HOW SHOULD eDNA RESULTS BE INTEGRATED INTO MANAGEMENT?**
 - A survey conducted by MD DNR determined that:
 - Most state agencies moderately familiar with eDNA tool for monitoring
 - Familiarity highest in Great Lakes and Pacific Northwest
 - Several states with high familiarity have used eDNA as a monitoring tool
 - In some cases, states with low familiarity had used eDNA monitoring
 - High confidence in results limited to a few states that were both familiar and users of eDNA monitoring
 - PA and AK had low confidence, despite familiarity and use of eDNA
- **PARTNERSHIP:** USGS Ecological Science Center, National Fish Health Research Laboratory
- **CAPACITY:** 1400 possible tests ready
- **WHERE DO WE GO FROM HERE?**
 - Increase use and confidence within agency
 - Experimental design, routine or as desired?
 - Establish a reporting protocol for statewide eDNA results
 - Partner with multiple labs
 - Decision tree development
- Adopt formal risk assessment protocol & perform risk assessments
- **ADDITIONAL COMMENTS/QUESTIONS:**

- **Steven Pearson:** have you considered academic partnerships or private labs to speed turnaround of eDNA results?
 - **Joe Love:** Have considered it and would welcome any recommendations on specific academic and/or private labs.
 - **Jay Kilian:** one of the limitations to academic institutions is having to undergo a bid process.
- **Edna Stetzar:** DE is considering eDNA work but are concerned with the potential for other entities using the results to limit Delaware's ability to implement time of year restrictions on their projects. Have other states also expressed this concern?
 - **Joe Love:** there has been a couple instances in which the results have gone public when the state had yet to approve public information dissemination. If you do the work and go public with the results, it's always a possibility that other entities may use it for other motivations, so the most important thing is to ensure that the results are accurate before going public. It's critical that you have a physical specimen before you go public or be certain that the results are indicative of a false-positive.

11:30 – REGIONAL LAW ENFORCEMENT AIS TASK FORCE

Steve Pearson (Panel Vice Chair)

- **BACKGROUND ON AIS LAW ENFORCEMENT AND NEW YORK'S PERSPECTIVE:**
 - NY State Statute Part 575 (effective 03/10/2015) prohibits/regulates invasive species.
- **OTHER STATE/REGIONAL INFORMATION:** extent of regulations vary between states, as well as variability in enforcement agencies and mechanisms
- **2021 MOSS BALLS & ZEBRA MUSSELS:**
 - NY DEC IS Coordination section worked closely with DEC Law enforcement to contact potential sellers, inspect products, and assist with quarantine and sample destruction.
 - Built working relationship within DEC
 - Worked with Ag and Markets to compile vendors list
- **INTERSTATE COMMUNICATIONS AMONG LAW ENFORCEMENT WOULD BE HELPFUL:** many invasive species are transported across state lines
- **STEPS BEING TAKEN:**
 - NYDEC internal discussions with BISEH and LE
 - Initial meeting invitations across region → **scheduled for January 19th, 09:00 ET**
 - Determine need
 - Participants
 - Goals
 - Meeting frequency

- **ACTION: Edna will follow-up to ensure that DE will reach out to the Department of Agriculture for their participation in this project. Delaware's Natural Resource Police Chief has been informed of this and has agreed to participate.**

12:20 – MEMBER AND INTERESTED PARTY UPDATES

Katlyn Fuentes (Panel Coordinator)

• DELAWARE UPDATE – EDNA STETZAR

- **New Zealand mud snail** confirmed in the Brandywine river; specimen IDs confirmed by Dr. Elizabeth Shea (Delaware Museum of Natural History) and Dr. Ed Levri (Penn State University)
- **water hyacinth** and **water lettuce** were collected from Blairs Pond in the Mispillion River watershed
 - Fisheries staff collected the plants and will go back to recheck the area after the winter.
 - The crew that monitors Hydrilla was already in the area and were unaware of the presence of these species. Training is needed in the future to broaden field ID knowledge.
 - Also saved a specimen of each plant species to see if they survive the winter
- **Alligator weed** found in Lums Pond along a shoreline readily accessible to the public
- **Three Feral grass carp** found in Nanticoke River System during tidal bass surveys.
 - Have been collecting feral carp for years, following escape from a private pond with no maintained barriers. If these are the same carp stocked into that pond, they are approx. 25 years old.
 - This species can be stocked in small water bodies in the state but must have a permit and barriers must be maintained/routinely checked.
- **Flathead catfish** caught in Lums Pond during Largemouth Bass fishing tournament.
- **Blue catfish** widespread in the Nanticoke River System and also found in the Delaware River
 - Finfish trawl survey → this is the first time they've been intercepted in the Upper Delaware River.
- **Harmful algal blooms** → unclear whether this is considered invasive or not, but **Microcystis** was found in multiple dog training ponds
- Also reached out to partners (FWS Advisory Council, DE Native Species Commission, etc.) about development of a state management plan



- There is a hydroponics business in DE that is selling tilapia and aquatic vegetation. This is a closed system, so there's no risk of escapement, but it's concerning that fisheries management were unaware of this operation until after it was established.
- **QUESTIONS/COMMENTS:**
 - **Jay Killian:** re: aquaculture and not knowing about it. In DE, is there a relationship or permit system for those that sell or move aquatic organisms through the state?
 - **Edna Stetzar:** Not informed of all permits issued by the DE Department of Agriculture, which regulates aquaculture. Unless it's a restricted species, the state doesn't have any regulatory authority over the sell/transfer of this species.

• **MARYLAND UPDATE– JAY KILIAN**

- **Hydrilla** has been treated in Deep Creek Lake – which is the largest freshwater lake in far western MD. It's high trafficked and an important tourist attraction. Just completed 8th year of treatment. Most recent beds were discovered in 2017 and 2020, and treatment is ongoing.
- Boat Launch Stewards Program at Deep Creek Lake – 1 of 8 total boat ramps.
- MD DNR have had launch stewards monitoring and interacting with boat stewards for several years.
- **Take-home-message:** there have been more interceptions going on the past several years (esp. re: zebra mussels and hydrilla). This appears to be happening regionally with no explanation despite increased education outreach.
- **Completed Risk Assessments showed that portions of the Delmarva are susceptible**
 - Looked at 5 different species, including plants and inverts
 - Area is suitable for Water lettuce and water hyacinth - it's unlikely that either of these species are truly a risk.
 - The models did not take Climate Change into account
- **ACTION: Jay Killian will send these Risk Assessments to Edna.**
- **ADDITIONAL COMMENTS/QUESTIONS:**
 - **Steven Pearson:** In the Boat Stewards Program, are users being asked where they're going next or where they're coming from, to look at potential dispersal of these plants or animals?
 - **Jay Killian:** Yes.
 - **Heather Desko:** Have you found waterwheel in MD?
 - **Jay Killian:** No, it hasn't been found in the state.

• **MARYLAND UPDATE – MIKE ALLEN**

- MD Sea Grant Chesapeake Quarterly – flagship magazine on aquatic invasive species was released Spring 2021 released an article on MAPAIS. The link to the magazine can be found here: <https://www.chesapeakequarterly.net/V20N2/>
- Elizabeth Staugler (staugler@ufl.edu) is the new Sea Grant Harmful Algae Liaison based out of FL Sea Grant office
- A workshop will occur in Spring 2022 on the use of satellite imagery to deal with harmful potentially invasive algae.
 - **ACTION: For those interested in attending this workshop, please contact Mike Allen for more information.**

• **NEW JERSEY UPDATE– HEATHER DESKO**

- Three new populations of **Hydrilla** were observed and collected as part of the Hydrilla Genetic Survey Collection Panel
- DNR Canal **Hydrilla** Project: this is the first year with no plants nor tubers being found.
- Shenandoah Lake and Manasquan Reservoir took 2020 off for **Hydrilla** treatment and both bodies reported significant bounce-back despite being treated in 2021.
- The NEANS **hydrilla** genetics study results will be presented at the NEANS panel meeting tomorrow and at the NE Aquatic Plant Management Society Conference in January.
- **New Zealand Mud Snail** – new confirmed populations in the Muskankan River. The Muskankan Watershed Association is adding two new cleaning stations for anglers, as well as additional informative signage.
- **Chinese Pond Mussel** – believed to still be present in waterway. This population is considered the “Ground Zero” for this species in North America and there is a significant risk of regional spread.
- New Jersey Freshwater Mussel Workgroup – a new group that focuses on invasive of primarily freshwater mussels, but also some other aquatic invertebrates.
- There are now three boat steward stations in the state: Lake Hopatcong, Manasquan Reservoir, and Spruce Run Reservoir. Plants were found on about 5% of boats coming in and out of the Manasquan and Spruce Run waterways.
- Discussions are happening regarding the development of a New Jersey ANS Plan

• **NEW JERSEY UPDATE - CHRISTOPHER SMITH**

- New Jersey Fish & Wildlife recently finalized the Fish Code change, adding three additional fish species to the “potentially dangerous fish” list: **Round Goby**, **Blue Catfish**, and “**black bass - all species other than largemouth and smallmouth bass**” (This terminology also covers F1 hybrids and other species). Fishing regulations will come out in January 2022
 - **Round goby**



▪ **Blue catfish**

- State Invasive Species Management Plan: still waiting on the first draft.
- No new species or introductions reported
- Fish & Wildlife is hosting the NEAFWA Northeast Fish and Wildlife Conference April 3-5 in Long Branch, NJ. Submitted for having a symposium on aquatic invasive species. Call for abstracts coming soon. **More information can be found [here](#).**

● **NEW YORK – STEVEN PEARSON**

- **2021 BOAT STEWARD PROGRAM:** very successful
 - Stewards were present at over 300 launches
 - 468,000 boaters were surveyed
 - 271,706 watercrafts were inspected (76% motorized, 24% non-motorized)
 - 11% of watercraft had organisms or debris, with 5% of the total having one or more invasive species detected on them.
 - 14,361 invasive species detected
- Croton River (tributary to Hudson River) **Hydrilla** project:
 - This is the fifth year, with no Hydrilla found. Success!
 - This was the first year of widespread treatment within the reservoir. This should continue moving forward.
- Another project is a **Ludwigia peploides** projects in Peconic River
 - Over 50 acres have been documented and are being mapped.
 - Pilot treatment studying the efficacy of two different herbicides
- **Water chestnut:** prioritization tools have been developed at regional scales to focus work on smaller or ecologically sensitive water bodies that could benefit from eradication in areas that this species is widespread.
- Between 2020 to 2021, the Mohawk River is being surveyed for AIS.
- In addition to species-specific work, there are several regional AIS distribution surveys
- **Snakeheads** have been observed multiple times.
 - Additional sightings north of Delaware River, and in the Upper Delaware into the East Branch. They seem to be moving rapidly upstream, perhaps due to limited habitat availability in the upper reaches.
 - Two fish were captured by an angler in the Bashakill WMA
 - Electrofishing has not captured any snakeheads and eDNA results are still-pending.
- **Round Goby:** rapid expansion of distribution through Erie Canal into Hudson River and rapid downstream dispersal in the Hudson R. This species was first documented in Troy, NY in early summer 2021 and by late summer, was found in Poughkeepsie.
- **REPORT ON PROGRAM GROWTH:** in process of hiring regional AIS coordinators (Region 7 & 9). Positions will help with surveys and *hydrilla* control efforts.
- In Long Island region, will have expansion of Boat Steward Program in future years.



• **PENNSYLVANIA – SEAN HARTZELL**

- **New AIS trainings for field staff:** in past several months, have had 10 virtual trainings on how to ID high-priority AIS for both LE and field biologist staff
 - Have several more trainings upcoming. Have also received feedback from training attendees.
- Targeted work on **New Zealand Mud Snails:**
 - 14 new detections
 - Last year they were observed in 6 watersheds and now up to 20+.
 - Found primarily in coldwater trout streams where anglers are wading.
- **Round Goby** population assessments:
 - Found in Lake LeBeouf (this is the only non-Lake Erie occurrence)
 - Future work will take place next year looking at potential spread into drainages
 - This is a current Master's Thesis project at the University of Pennsylvania.
- Hoping to do general AIS early detection series in the future. Depends on funding
- Have funding for two new boat clearing stations at Lake Erie. Also putting together proposals for additional funding for more stations
- Continuing risk assessment work for control plans targeting AIS in Pennsylvania. Currently 13 are “mostly complete” and others are in preliminary stages.
- New occurrences of **Zebra Mussels**
- PA Invasive Species Council (as supported by the Governor) organized a legislative hearing for rural PA on aquatic and terrestrial invasive species. Speakers gave testimonies on impact of invasive spp. in the state and emphasized lack of funding prohibiting work on these issues.

• **NORTH CAROLINA – ROB EMENS:**

- **Woolly frogmouth:** First observation in the US and evaluated as high risk. Only one sight known and have been treating at this site since 2016. One of the hurdles that they're experiencing is that this site is habitat to a rare species of frog, so need to be cautious with pesticides.
- Aquatic Weed Program Work Plan – dollars spent in this fund are required 1:1 match with local government
 - Budgeted over \$700k for aquatic weed projects in 2021; over half of this was specifically for **Hydrilla** work.
 - **Grass carp** was also focus for several projects, as there is concern with them moving out of stocked systems.
 - Significant cost is for pesticide management
- **Blue Catfish** are a significant part of commercial landings
- **Salvinia** continue to be observed
- **Oriental weatherfish** found this year and the last known capture was in 2009



- Marine Fisheries report on **Green Porcelain Crab**: this species has been documented in more locations. There is no management in place, just monitoring presence/absence.
- **Tiger shrimp** found in Pamlico Sound.
- **East Asian river prawn**: showed up in coastal Southeast North Carolina. Have been observed annually over the past 8 years in a handful of sites. Research paper on genetics is currently underway.
- Wildlife Resources Commission Report: 2018 initiation of assessment to define distribution of **Didymo** in Western NC. Recruited anglers and provided with sample kits to increase sample collection to develop a baseline in this region.
- Moss Balls and **Zebra Mussels**:
 - Sent officers out to every pet store across the state, visiting 280+ stores. Officers found and confiscated contaminated moss balls in all 9 districts of NC.
 - A successful public awareness campaign targeting aquarium trade provided information on how to safely dispose of moss balls and decontaminate aquariums
- **Red swamp crayfish** – mostly a southern issue tied to commercial crayfish aquaculture
 - There are declines in native crayfish species and a new study is underway to see if the declines are due to red swamp crawfish or other currently unknown variables
- **Catfish** Sampling Study conducted by the Wildlife Resource Commission on the Pee Dee River. This is an electrofishing survey specifically looking at catfish.
 - Found no native catfishes but found 251 **blue catfish**, 178 **flathead catfish**, and 254 **channel catfish**.
 - Otolith aging analyses determined that blue catfish were up to 25 years old, and flathead catfish were up to 15 years old.
- **Blue catfish** in Lake Aston (on Roanoke)
 - To evaluate need for regulation and shed light on competition between blue catfish and native fish species, they are conducting a study on relative abundance, diet composition, population structure, etc. on the blue catfish population in this lake.
 - This area has a long history with **Hydrilla**. Approximately ~\$1M was spent annually in the early 2000's.
- AIS management plan: Have not yet submitted plan to ANS taskforce but do have a functioning 5-year plan, which was useful during moss ball issue last spring.
- **USGS UPDATE – CHRISTINE DENSMORE:**
 - In collaboration with the Chesapeake Bay Science Team (within USGS), there are several projects being conducted:

- **Blue Catfish** Study: This is a study as part of the Chesapeake Bay Science Team within USGS. Looking in several tributaries to determine trophic impacts, health and disease considerations, and reproduction/spawning occurrence across the region.
- **Flathead catfish** study: looking at range-expansion and impacts using genotyping to track movement. Also conducting stable-isotope analysis to quantify food web interactions based on the presence of this species.

1:50 – PUBLIC QUESTIONS/COMMENTS, WRAP-UP

Katlyn Fuentes (Panel Coordinator)

- **Aaron Henning:** the Susquehanna River Basin Commission's current monitoring projects include:
 - **Quagga mussel** eDNA monitoring following eradication efforts several years ago. This is the fourth year of eDNA monitoring and still no observations of this species.
 - eDNA monitoring for **blue catfish** and **northern snakehead** in the Upper Susquehanna River Basin. The most current up-to-date distribution map for these two species, which includes updated positive eDNA detections and reports, can be found at [this link](#).
- **Sara Mirabilio** recommends Janelle Johnson (Gulf & South Atlantic Regional Panel on Aquatic Invasive Species - NC Division of Marine Fisheries Representative) to invite to be part of MAPAIS for crosstalk
 - **ACTION: Edna Stetzar (Panel Chair) will follow-up on this.**

2:00 – MEETING ADJOURNED.

- **Motion made:** Steven Pearson
- **Seconded:** Aaron Henning