

MAPAIS Spring 2020 Meeting

Wednesday, April 29, 2020

Conference Call

Google Meet URL: meet.google.com/pev-bzrq-puc

Join by phone: +1 219-321-0305 PIN: 696 920 849#

9:00 am	Call to Order <ul style="list-style-type: none">• Welcome/housekeeping• Introductions	<i>Jay Kilian, Panel Chair</i>
9:10 am	New business and decision items: <ul style="list-style-type: none">• Review & approve agenda and Fall 2019 minutes• Fall 2019 meeting action items• New MAPAIS recommendations to ANSTF?• Next meeting (Fall 2020 MAPAIS)	<i>Jay Kilian / Edna Stetzar, Panel Vice Chair/ Mike Allen</i>
9:30 am	Budget and funded projects update <ul style="list-style-type: none">• 2020 budget update• Update on 2019 funded grants• Update on ongoing/completed projects	<i>Mike Allen, MD Sea Grant</i>
9:45 am	Aquatic Nuisance Species Task Force Update	<i>Susan Pasko, USFWS</i>
10:15 am	Break	
10:30 am	Collaborative Management of Invasive Catfish in Chesapeake Bay	<i>Mandy Bromilow, NOAA Fisheries Chesapeake Bay Office</i>

11:00 am	MAPAIS Project Update – Quantifying threats to the upper Juniata River from invasive Rusty Crayfish	<i>George Merovich, Juniata College</i>
11:30 pm	Lunch	
12:00 pm	Mid-Atlantic region AIS introductions and NAS program updates	<i>Ian Pfingsten, USGS NAS Program</i>
12:30 pm	Stopping aquatic invaders in Pennsylvania: There’s an app for that!	<i>Sara Stahlman, PA Sea Grant, Penn State University</i>
1:00 pm	Cryptic and possibly under-reported species in New York State	<i>Steven Pearson, NYDEC</i>
1:30 pm	Break	
1:45 am	Review/Decisions regarding 2020 RFP Proposals	<i>Julianna Greenberg, Panel coordinator</i>
4:30 pm	Adjourn	

Julianna Greenberg	Catherine McGlynn	Steven Pearson	Jay Kilian
Josh Brown	Alanna Brush	Tara Whitsel	Heather Desko
Edna Stetzar	Carolyn Junemann	Kevin Heffernan	Christine Densmore
Mike Allen	Kate Flemming (DE Sea Grant)	Ellyn Campbell	Sarah Stahlman
Matthew Shank	Chris Smith	Anne Tim	Katie Zipfel
Barbara Beelar	Sarah Whitney	Mandy Bromilow	Marnie Pepper
Ian Pfungsten	Jonathan McKnight (MD DNR)	George Merovich	Nancy Rybicki
Kris Abell	Steve Minkkinen	Ken Klipstein	Aarya Sharma
Kiersten Carleson	Ray Fernald		

Minutes

Call to Order (*Jay Kilian, Panel Chair*)

- Welcome/housekeeping
- Introductions
- States submit their updates via email

New business and decision items: (*Jay Kilian/ Edna Stetzar, Panel Vice Chair/Mike Allen*)

- Review & approve agenda and Fall 2019 minutes
 - Motion to approve by Jonathan McKnight
 - Seconded by Edna Stetzar
 - Agenda and minutes approved
- Fall 2019 meeting action items
 - Follow up from blood worm discussion by NE Panel?
 - VIDA State Inspection List serv - Contact Michelle Tremblay if you're interested
 - Nutria recommendation uploaded to website
 - What is each state doing with ANSTF funding?
 - Solicit greater engagement from governors in aquatic invasive species management
 - MAPAIS and NEANS agreed to complete and share the recreational boating legal matrix discussed during the 'Working together on movement of Invasive Species' session.

- Julianna and Jay will make a Google Docs version of the matrix and share with member states for MAPAIS state representatives to update
 - Jay/Edna will follow up with Susan Pasko on status of the ANSTF Experts Database
 - Contacts are out of date, but when contacted they were updated right away
 - Tier 1 is publicly available contacts in your state
 - Tier 2 is restricted access for government employees
 - Edna will touch base with Susan to see how to get access to that
 - They're going to be evaluating the database for utility
 - Would recommend all panel members look at this list and see who is the contact for your state
 - J. McKnight will follow up with Susan Pasko on the MAPAIS nutria recommendation – the end of the Chesapeake Bay effort will be 2021, not 2020 - all set
 - Jay will follow up with Sandy Kepner at USFWS regarding state ANS plan implementation updates
 - Can we get access to the annual report that describes how the funds are being used?
 - Jay will follow up with Sandy before our fall meeting
 - Jay will be in contact with Sarah Whitney about the process which PA is using to add things to their prohibited species list
 - Ray Fernald will assist with organizing a meeting of partners to discuss options for Water Chestnut (*Trapa bispinosa*) eradication in the Potomac River drainage. Email Ray Fernald if you wish to participate
 - Updates from Ray on the water chestnut?
 - Jay and Ray will go back to their respective agencies and discuss the issue of invasive water chestnut and set up a meeting with Nancy
- New MAPAIS recommendations to ANSTF?
 - Sarah Whitney - State implementation plan money has gone up a lot.
 - Recognition and appreciation of the increase in funding might be a good idea (official or unofficial)
 - Jay will follow up with Susan Pasko on best way to do this
- Spring meeting of ANSTF was canceled, Fall is still up in the air
- Next meeting (Fall 2020 MAPAIS)
 - Will wait and see if we will be able to meet in person
 - Had previously discussed reaching out to the Gulf and Atlantic States for a joint meeting
 - Should wait until we can be sure to be able to meet in person.
 - Wait until we have a better sense of COVID trajectory. Will send Doodle Poll this summer.

Budget and funded projects update (Mike Allen, MD Sea Grant)

- 2020 budget update

- Funding for panel is under budget
- \$50,000 allotted for FY20 from ANSTF
- Mike recommends that no new funding be allocated for travel
- Need to fund second year of Gedan project
- Leaves 30k for new awards
- Update on 2019 funded grants
 - Dr. Fowler has submitted her final report, Dr. Merovich will update us today
 - Money has been spent out
 - Most other projects are just beginning, and their expenses have not yet been charged to the grant
- Update on ongoing/completed projects
 - Kate Flemming - presentations at fishing clubs, where to report invasive fish, group is not super excited to go virtual so likely waiting until in-person meetings can start again
 - Anne Timm invited Kate to Chesapeake Women Anglers
 - Kate will talk to her team
 - Dr. Carney has had to suspend field work
 - Dr. Gedan has spent out their first year of funding and second year's funding will be coming from this year's grant allotment

Aquatic Nuisance Species Task Force Update *(Susan Pasko, USFWS)*

- Overview of ANSTF history and structure
 - Established by legislation in 1990 and reauthorized in 1996 - Nonindigenous aquatic nuisance prevention and control act
 - Develop and implement a program in the us to prevent the establishment of such species and monitor their spread
 - Currently have 13 federal members and 13 ex-officio members
 - 6 regional panels and 5 standing sub-committees that all work together to implement the goals
 - ANS task force is the only federally mandated group dedicated to aquatic invasives
 - New standing committees to move forward on the strategic goals
 - Fish and Wildlife Service does support the regional panels through annual grants - FY20 will be \$50,000
 - New system for grants causing a slight slowdown but it should be smoothed out by next month
- State management plans
 - Reviewed and approved by the task force
 - Once the plans are approved the states are eligible for funding
 - \$4 Million in funds for state management plans this coming year
 - 43 approved plans - 40 states, 3 inter-state agreements
- Nov 6-7 Task force meeting in Beltsville, MD

- Motion from USDA to strengthen panel and institute bi laws
- VIDA updates
- eDNA
- Genetic biocontrol
- Updates from the Western regional panel
- Strategic planning
 - Committees tasked with producing a work plan
 - Coordination
 - Only goal that does not have a formal committee
 - Reflects the ongoing operations of the task force
 - Established an ad-hoc committee
 - Establish and outline bylaws
 - Establish a process for members to respond to recommendations brought forth by regional panels
 - Report to congress
 - Prevention
 - Strategies to identify, assess, and manage risk of aquatic nuisance species in the waters of the United States
 - Work with federal agencies to make sure importation data is available electronically and searchable
 - Hoping to receive an update at next meeting
 - Enter into national prevention strategies with sectors that face an introduction risk
 - Boat manufacturers - make boats easier to clean, drain, and dry
 - Work with seaplanes and larger vessels?
 - Look at biofouling as well as ballast water
 - Evaluate and refine the Pathway Risk Assessment
 - Assess new introductions to determine where prevention measures are lacking
 - Early detection rapid response
 - Develop a framework for the use of horizon scanning tools to determine US hotspots
 - What are the species that we're most concerned about?
 - Where are the priority locations for protection?
 - Develop recommendations for minimum standards for eDNA
 - Develop a template and guidance for using ICS for rapid response
 - Working with the National Invasive Species Council
 - Put together a survey being distributed to states to determine what tools they have, what's working, and what needs more assistance
 - Sent by Julianna on April 25, 2020
 - Working with NISC to set up Emergency response funds

- Control and Restoration
 - 10 approved species plans put through for task force approval
 - Some of these plans are dated
 - This committee is doing a deep assessment of these plans to determine if plans are still in use and relevant
 - Developing guidance for how to write species assessment plans
 - Surveying members and panels to determine where there are gaps in control and restoration
- Research
 - Annual priority research list that reflects needs of natural resource managers
 - Developing a survey that will be sent out soon to determine national and regional priorities
- Education and Outreach
 - Funding opportunity for an effectiveness survey for national campaigns
 - Stop Aquatic Hitchhikers Portal
 - Website was refreshed
 - Wanted something more interactive
 - Information that can be customized for different campaigns, infographics, etc
 - Templates for the Task Force for consistent messaging
 - Identify leaders for a community of practice
- Spring meeting has been postponed indefinitely
- Weekly newsletter - send Susan an email if there is anything you would like added
 - Subscribe on the ANS Task Force website
- *Edna Stetzar: Follow up question about the experts database - I asked the panelists to look at the experts listed to make sure they're up to date. How would we go about editing the Tier 2 list of coordinators that are not publicly available?*
 - *Susan: Tier 2 are a variety of folks that are from a variety of agencies, academia, etc., while Tier 1 is mostly state coordinators. Each panel should have identified a "Main editor" for their database that should have editing privileges for the Tier 2, not publicly available information.*
- *Sarah Stahlman: Are responses to the rapid response surveys available for others to view? Would be very useful for our state plans*
 - *Susan: Sure! Any product that comes out of the task force is publicly available. Surveys are out until the end of May, but it may take us some time to make this information coherent.*
- *Jay Kilian: I have three questions. One: To the panel, who is our editor that can make changes to the Tier 2 list of experts?*
 - *Mike Allen: I think it was Ray Fernald*

- *Susan: Typically, it was the chairs of the panel, so it was likely Ray. We can change it as needed, so just let me know who would make the most sense for your panel.*
- *Jay: Question number two: Given that the meeting is being pushed to the fall, will it still be hosted by the Northeast Panel?*
 - *Susan: I am completely open to rescheduling the meeting, but there's a lot that is uncertain. We still have a contract on file with the hotel. Things are still up in the air.*
- *Jay: Last question: With the coming State AIS Plan implementation money, Maryland has been talking about revisiting the rapid response plan. Do you know if there are Instant Command System Trainings that we could send personnel to?*
 - *Susan: There are definitely some free online training sessions. EPA has been doing in-person training, but I'm not sure the cost and if they're still offering them. I can look into it and get back to you.*

Break

Collaborative Management of Invasive Catfish in Chesapeake Bay (Mandy Bromilow, NOAA Fisheries, Chesapeake Bay Office)

- Two species of invasive catfish in the bay: blue catfish and flathead catfish
- Species are native to the Ohio, Missouri, Mississippi, and Rio Grande river basins and were introduced to Chesapeake Bay for sport fishing in VA in the 60s and 70s
 - Now found in all of the major tributaries in the Bay
 - Flathead catfish inhabit the upper, more fresh regions and blue catfish are found in more tidal regions
- Both have a very high salinity tolerance
 - Better adapted to climate change than many native species which could allow them to increase range and spread even more
- Both species produce large eggs and exhibit parental care
 - rapid somatic growth
 - Life history strategy makes them well adapted to be an invader
- Generalist and opportunistic predators so they can pose a threat to many different native species
 - Blueback herring, alewife, gizzard shad, blue crab, etc
- Blue catfish are outcompeting native white catfish
- Invasive Catfish Outcome under the Sustainable Fisheries GIT at the Chesapeake Bay Program
 - Invasive catfish policy adopted in 2012 by the Fish GIT
 - 2017 established an invasive catfish task force
 - Established the Invasive Catfish Workgroup in 2019
 - Management jurisdiction, scientists, commercial fishers, processors, distributors, recreational anglers, conservation authorities, federal and state agencies, etc...

- Coordinate, synthesize, and communicate scientific information
 - Develop science-based management strategies
- Different stakeholders have different interests and perspectives
 - Recreational angling
 - Trophy fishing
 - General recreation
 - Subsistence fishing
 - Commercial Fishery
 - Fishery worth \$22 Million in 2002
 - Processing barriers
 - USDA in latest Farm Bill added Catfish to inspection criteria
 - Processing times outside of the normal workday make it hard to meet the inspection criteria
 - Smaller processors have had to leave the market
- Outreach and Marketing
 - Eat the invasives and save the bay
 - Social Media
 - Seafood festivals
 - Traditional signage at docks
 - Consumer advisories (Monterey Bay seafood watch, Maryland Fish Consumption Advisory) -- biomagnification, mercury
- Science Needs
 - Impact on native species
 - Population dynamics seem to vary across tributaries
 - Better understanding of nutritional value and contaminant risk
 - Size and location based
 - Consumer demographics
 - Preparation methods
 - Economic value
- Management approaches
 - Improve public awareness
 - Remove processing barriers
 - Conduct/synthesize scientific research
 - Develop tributary-specific management plans
- Questions
 - *Edna Stetzar: I saw a letter about Maryland pushing back on the new USDA inspector regulations. Do you know the status of that?*
 - *Mandy: There was a bill drafted by the MD senate that passed and is currently going through the House, I believe. I'm not sure on status but we're continuing to track it and stay aware of this.*
 - *Matthew Shank: Would you be able to share the presentation with the group?*
 - *Mandy: Yes!*
 - *Jay Kilian: VA commercial harvest 2.5 million pounds in 2019. I read a paper around 10 years ago estimating the biomass of blue cats and it was 70% of the*

biomass. Has there been a documentation of any decline of the biomass in the James because of commercial harvest?

- *Mandy: I'm not sure of the answer. At our workshop we heard that growth has slowed in the James River, but they think it's because the biomass is so high that it is having negative effects on somatic growth. No evidence of population declines because of commercial harvest at this point.*

MAPAIS Project Update – Quantifying threats to the upper Juniata River from invasive Rusty Crayfish (George Merovich, Juniata College)

- Alleghany and rusty crayfish look similar
 - Alleghany crayfish does not have the rust spot on the carapace
 - Neither are native
 - Appalachian brook crayfish is the only native crayfish in the area
- Rusty crayfish distribution map overestimates their distribution and the Allegheny crayfish is likely underestimated
- Goal: Gain an understanding of rusty crayfish ecology. How much biomass is locked up in the rusty crayfish in the upper Juniata watershed?
- Some individuals were very difficult to classify, seem to have a mix of traits
 - Are the rusty and Allegheny crayfish hybridizing?
 - Rusty crayfish are known to hybridize with other members of the genus
- Another goal of this research is to quantify dietary overlap with smallmouth bass
- 60 different sites on the upper Juniata River have been sampled
 - Used electrofishing, minnow traps, nets
- Mapped at HUC 12 scale
 - Found up to the Raystown bridge
 - Juniata river dam at Petersburg
 - Frankstown/Little Juniata Confluence
 - Will Rusty crayfish move into the Little Juniata River? River is colder than many that they inhabit
- Intermediate morphotypes
 - Individuals who are difficult to identify
 - Standing stone creek
 - Shavers Creek
 - Transitional Zone between dominance by rusty crayfish and dominance by Allegheny crayfish
 - Can measurements/morphometrics clarify the differences between rusty and Allegheny crayfish?
 - There are physical characteristics that differentiate the two species but the intermediate morphotypes have some physical characteristics from each species
- Hybridization study

- Took over 20 morphometric measurements
 - Ran a principal component analysis
- Sequenced parts of genomes of about 48 individuals
- Used hybrid analysis to classify individuals
 - Pure species
 - F2 Hybrid
 - Backcross
- Principal component 1 accounted for 80% of the variation - Total length (ignored)
 - PC1, PC2 and PC3 accounted for 73% of the remaining variation (ignoring length)
 - Areolar length-width ratio
 - Areolar width
 - Abdomen: Carapace ratio
 - Areolar length-width ratio and areolar width were significantly different between taxa
 - Very small difference however, very difficult to assess in the field
 - All of the individuals identified in the field as rusty crayfish were correct but one was a backcross to Rusty
 - All of the Allegheny identified in the field were correct
 - Of the “unknown” from field analysis, 2 were Rusty, 4 were Allegheny, and 2 were back-crossed to Rusty
- First finding of hybridization
- PCA can only deal with numerical data
- Ran a classification tree analysis to look at categorical variables (serrated or smooth mandibles, band on claw present, etc)
 - Found categorical variables to be more important for splitting taxa
 - Mandibles serrated or smooth was the first variable of importance to classify individuals
 - Individuals with serrated mandibles were always Allegheny crayfish
 - Analysis is strongly dependent on how you identify individuals
 - Misidentifying will give you very different results
- Limited sample but Rusty morphotypes appear to be dominant
 - Hybrid individuals are back-crossing in to rusty crayfish
 - What are the consequences of hybridization?
 - Hybrid swarm? Heterosis?
- Diet and overlap with smallmouth bass
 - 3 sites, 65 bass, 67 crayfish
 - Fall 2019 dissections
 - Work currently on hold for identification of diets
- Further work
 - We have identified the front line of expansion of rusty crayfish
 - What environmental controls affect our detection probability with eDNA?

- Population dynamics
 - Feed into bioenergetics
- Questions
 - Jay Kilian - *You have two tributaries that are uninvaded right now and crayfish are often spread by anglers. Have you considered a targeted outreach in areas that are uninvaded, like Frankstown Branch, to work with anglers to keep uninvaded areas pristine?*
 - George Merovich – *Yes, we have put a proposal together to propose doing some of the outreach work. Not just in Frankstown Branch, but in Little Juniata as well.*
 - Josh Brown - *Have you been talking with Dave Leib (PFBC)?*
 - George Merovich -*No I haven't yet, I know him but have not talked with him about this.*
 - Josh Brown - *He's been doing work on rusty crayfish and American eels in that watershed and it might be worth reaching out to him.*

Lunch

Mid-Atlantic region AIS introductions and NAS program updates (*Ian Pfingsten, USGS NAS Program*)

- NAS runs a database out of Gainesville, FL
 - Occurrence database for all non-native aquatic species for US states and territories
 - Species profiles with native ranges, actionable maps, and tools
- New alerts since December 2019 Meeting
 - 15 new alerts - new to a state, new to HUC 8 drainages, new county occurrences, etc.
 - 4 came from DE, 2 in NC, 2 from NJ, 2 from NY, 2 from PA, 3 from PA
 - Most came from sighting report system, some from literature, some from personal communication, 2 from specimens
- New species
 - Possible aquarium release of an alligator gar (Failed)
 - Verified by PA Fish and Boat
 - Red bellied pacu (Failed)
 - Verified by DNREC
 - Northern Snakehead (Unknown Status)
 - Two fish both verified by DNREC
 - New County record, risk map created
 - Includes other known populations as well as where the specimens are found
 - Mystery snail
 - Could not identify to species
 - New drainage in Kings County, NY
 - Graceful Cattail (Likely established)

- aka Dwarf cattail
 - Likely ornamental escapee
- Water chestnut *Trapa bispinosa* (Established)
 - Virginia two new county occurrences
 - Centralized within the Potomac region of Virginia
 - Have not seen any of the native *Trapa natans* within the distribution
 - Aerial imagery can help identify population locations
 - Ultimately need to do verification on the ground
 - Identified at 52 sites
 - Risk assessment for the species
 - What is the dispersal risk?
 - Fruit stick to plumage of waterfowl
 - Haven't found a generalizable number for dispersal distance for the region
 - Used a surrogate estimate of “average distance between known sites” and came up with a conservative 3km
 - Initial results
 - County level analysis of risk
 - HUC 10 drainage analysis of risk
 - Looking mostly at the Potomac basin area of Virginia
 - Mostly located within Bull Run
 - Around 1% of total area colonized but 16% are at risk
 - Priority Sites
 - Described management history of sites
 - Next step is verification of identified sites
 - Need volunteers or funding
- Updates to NAS Flood and Storm Tracker
 - Flooding moving species across drainage barriers
 - Started in 2017
 - Did a historic map for Hurricane Sandy
 - Look at areas that had low elevation and likely flooded areas
 - Look at introductions that are documented in that area within a year
 - Oriental Weatherfish in the Hudson River
 - Known to take advantage of high flood conditions
 - Problem with hindcasting
 - Not a large amount of data to pull from and verify
- Screen and Evaluate Invasive and Non-Native Data Tool will be released on May 4, 2020
 - Submit dataset to the system and it will help determine if species in the dataset fall within native range
 - Filters first for spatial and taxonomic accuracy
 - Next filter is determining if species is non-native in its location

- Add more information about the occurrence
 - Add waterbody names
- eDNA NAS Webinar Feedback
 - Overwhelming amount of support
 - 166 people RSVP'd to 7 webinars
 - Feedback was mostly on
 - Minimum data standards for adding info to NAS database
 - Operational communication plan for contacting stakeholders about new eDNA data
 - Integration and visualization of new eDNA data alongside specimen data in the database
 - Next step: Invite eDNA experts from outside the Department of the Interior to assist
 - Option for panels to review the draft products hopefully in early June
- Questions:
 - *Jay: I just want to reach out to Nancy and Ray to follow up about what you mentioned about water chestnut. Is there a plan for a meeting to follow up about options?*
 - *Ray: Not really, things are somewhat stalled right now. I don't see us being able to expand much. We will assist when we can, but we can't work in groups in the field.*
 - *Nancy - Continuing to correspond with all of the contacts I have and encouraging them to manage the water chestnut themselves. I am also part of the National Capital Region PRISM. They might have some funding to rake the chestnut out of the pond as a tool for individuals to use on their own pond. Meeting on May 28 with the Virginia Master Naturalists. Right now, we've identified high risk water bodies and we're going to help encourage Master Naturalists to help us monitor those sites. Continuing outreach at a grassroots level, Ian is putting a lot of time in to mapping. Helping us get a look at where its spreading*
 - *Jay - Is there any talk of managing the resident geese populations to prevent movement?*
 - *Nancy: I have not found a way to incorporate that. I know that Virginia Game and Fisheries has a permit for that, but some people are not interested in removing the geese. Haven't looked into this extensively. Not enough funding and time.*
 - *Anne Timm - Have you seen any predictive tools being developed? Some sort of tool looking at change in salinity related to change in risk of invasion?*
 - *Ian - I don't have anything to present on, but that's where things are headed with some of the things we're working on. There is talk of incorporating that with our flood and storm tracker tool. Right now, we are just using static salinity zones from NOAA in our risk assessment.*

Stopping aquatic invaders in Pennsylvania: There's an app for that! (Sara Stahlman, PA Sea Grant, Penn State University)

- AIS field guide app developed by PA
 - Field Guide to AIS in PA was a handbook
 - Distributed to over 20 states and several Canadian provinces
 - Developed a Mid-Atlantic field guide as well
 - Funded initially by the Mid-Atlantic Panel and the Great Lakes Restoration Council
- App funding from USFWS
 - Received around \$22,000
- Only available on iOS
 - Released in December 2019
- Can report directly from app
 - GIS tracked
 - Don't need internet connection
 - County level distribution information
- Virtual tour of the app
 - Categories on the app
 - Species
 - Can filter by county or taxa
 - Gives ID advice, distribution maps
 - Articles
 - Report
 - Glossary
 - Info
- Word-press database allows you to go back in and update easily
- PA Fish and Boat NW Region requires all conservation officers to have the app downloaded on their work phones
- Cost for an iOS app was \$22k
 - Took approx. 1 year to complete
 - Have the ability to add additional field guides to the platform
 - Would cost around \$20k to add each field guide
- Android App would cost another \$30-60k
 - Working with Penn State Behrend to look into other app development options
 - PA Sea Grant owns the app including the files and data
- Questions
 - *Josh Brown: On the App it shows distribution by county, can we look at the data by watershed or HUC?*
 - *Sarah Stahlman: Not at this time, we don't have the personnel and time to implement the different scales. However, it is something we could look in to in the future.*

- *Josh Brown: Could administrators get the specific GPS data so they could map by watershed if they wanted to?*
 - *Sarah Stahlman: All of the reports from the map do come in with a latitude and a longitude. But only the reports that come in, it wouldn't include all the reports from around PA that have been researched*
- *Steven Pearson: Does the app crosstalk with any of the other big apps like iMAP Invasive and NAS?*
 - *Sarah Stahlman: When anything is confirmed in one of the other apps, I manually update the field guide. Internal database that Sarah maintains has all the species.*
- *Kiersten: Can PA iMap get regular downloads from the app?*
 - *Sarah Stahlman: Not right now, but we can ask the developer if that's something that can be added. There might be a way to do that on the back end.*
- *Josh Brown: Submissions are verified?*
 - *Sarah Stahlman: Yes, when something is submitted, it goes to the Pennsylvania Council coordinator and activates the rapid response protocol. So that includes coordination with other mapping and tracking initiatives. This is an early detection program that sparks the rapid response in Pennsylvania.*
- *Sarah Stahlman: If MAPAIS is interested in making this for the Mid-Atlantic field guide, we can start having these conversations*

Cryptic and possibly under-reported species in New York State (Steven Pearson, NYDEC)

- Relied on data from iMapInvasives and the NAS USGS website
- Hydrilla
 - High priority AIS
 - Often found near boat launches
 - Three new introductions in the summer of 2019 (most recent sighting)
 - Long Island Metro AIS task force
 - Preliminary reports suggest 8-10 spots on Long Island that have hydrilla
 - Compile a list of waterbodies, list of species
 - Planning potential control efforts
- Variable leaved milfoil
 - Native to mid-Atlantic
 - Hybrid is prohibited species in NY state
 - Difficult to distinguish hybrid from native
 - Both are considered to be invasive in NE and Canada
 - If it is the native species, is this a naturally occurring or anthropogenic range shift?
- European Frogbit
 - Low density of reports

- Native to Eurasia
- Can spread by vegetative stolons
- Often co-occurs with water chestnut because they have similar habitat requirements
- Flowering Rush
 - Mostly found along Lake Ontario
 - Wetland to fully aquatic habitat
 - Difficult to identify which could contribute to lack of reports
 - Spreads easily along riverine systems
- Brittle Naiad
 - Broader distribution in Mid-Atlantic region
 - Unsure of exact locations, severity of problem
- Watercress
 - Understory wetland to fully aquatic habitat
 - Very few reports a year ago
 - Now that it has been identified, more and more sightings are coming in
 - Perennial herb
 - Outcompete native species for space
- Potamogeton hybrid
 - Apparent new hybrid of native and invasive (*P. perfoliatus* x *P. crispus*)
 - Found in Otsego Lake
 - Potentially other locations as well, unsure of distribution
- Starry Stonewort
 - Spread throughout the great lakes basin
 - Rapid aggressive growth
 - Potential harm to environmental systems
 - Spawning areas
 - Water quality
 - Replacing natives
 - Human impacts
 - Inhibit use of waterways
 - Fishing
 - Potential economic loss
 - Starry stonewort collaborative working to understand the impacts and distribution
- Freshwater jellyfish
 - Native to China but now found globally
 - Easily transported as a polyp or larvae on boats or in water
 - Not many repeat sightings in the same place
 - Two life stages - polyp colony (cryptic) and medusa
- Tench
 - Many failed introductions
 - Established in the St. Lawrence river, dispersing west and south
 - Potential competitor for food and spawning location ‘

- Broad distribution of tench along Lake Champlain
- Distribution in NY is probably much broader than is reported
- Could have large impact
- Banded Mystery Snails
 - Native to Mississippi River
 - Reduces game fish reproductive success
 - Trophic transfer of toxic trematodes can kill birds
- Chinese Mystery Snails
 - Unsure about distribution, hard to differentiate from banded
 - Distributed across the Mid Atlantic
- Questions
 - *Jay Kilian - I don't think the freshwater jellyfish has reached Maryland yet but I would be interested to know more. I also agree about the mystery snails, very under reported.*
 - *Steven Pearson - I have a website I can send you about the jellyfish's distribution and you can look and see if Maryland is listed.*

Break

Review/Decisions regarding 2020 RFP Proposals (Julianna Greenberg, Panel coordinator)

Eight proposals were submitted to MAPAIS for the 2020 Small Grants Competition. Panel members reviewed proposals and discussed funding decisions at the meeting. Approximately \$30,000 was available for funding.

The following proposals were reviewed:

Author	Title
Merovich	<i>Assessment of Rusty Crayfish detection and distribution in the upper Juniata River watershed using environmental DNA</i>
Hale	<i>Building Opportunities to Engage and Educate the Public About Aquatic Invasive Fish Species in the Mid Atlantic Region</i>
Cusick	<i>Beyond Bivalves: Microbial Biofilms from Marine Vessels as an Unexplored Source of Aquatic Invasive Species</i>
Lui	<i>Developing Innovative Consumer Education and Outreach Programs to Enhance Public Awareness on Nutrition Benefits and Safety of Invasive Blue Catfish and Promote Safe Consumption</i>
Mann	<i>Revisiting <i>Rapana venosa</i> in Hampton Roads as TBT abates</i>
Schall	<i>An Innovative 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</i>
Fowler (1)	<i>Marine Bioinvasions of the Mid-Atlantic: Rapid Assessment Survey for Introduced Marine Organisms from New Jersey to Virginia</i>

A motion was raised to fund and approved to fund Mann, Schall, and Fowler (1) at full cost. The funding for Schall is contingent upon IRB approval of methods.

Discussion of funding a future Mid-Atlantic AIS Field Guide App

- Jonathan McKnight - Can we keep in mind the potential funding needed for an app as we look at the funding for the grants?
- Steven Pearson - I think the app is great, but the platform that's being used has some downfalls. Someone has to manage it, in person. It would be great to explore the potential of another app development through a better established platform.
- Mike Allen - Very concerned about finding something that is only accessible to the proportion of the population with an iPhone
 - Jonathan - I think that's reasonable. I think we should wait a year and see how things go. I really value the tool and its outreach capability.
- Steven Pearson - In the past we dedicated funds from this year to fund 2-year projects. Can we still do that?
 - Mike - Absolutely yes, it's just about what we decide we want to do. Same amount of money just distributed differently.
- Matt - Looking into app development could also be a plan B for any funding that falls through for the grants because of the pandemic

- Get clarity before funding Schall – didn't get enough details on the survey

Adjourn

- Jay Kilian will follow up to the state representatives and send the matrix on the recreational boating pathway regulations
- Jay Kilian will send out an email requesting state AIS updates and the updates will be incorporated into the meeting minutes
- Mike Allen moved to adjourn
 - Rob Emens and Edna Stetzar seconded the motion
- Meeting adjourned

Spring 2020 State Representative Updates Submitted via email after the meeting was adjourned

Pennsylvania:

- Pennsylvania Sea Grant released the new Pennsylvania Aquatic Invasive Species Field guide iOS app this past December. It can be found in the Apple store under "PA AIS". This app compliments the print version of the field guide, and allows for reporting new species directly from the app. PA Sea Grant is currently working to develop an Android version of the app.

- Pennsylvania Sea Grant released the Pennsylvania Watercraft inspection Handbook. This tool assists organizations interested in starting a new watercraft inspection program by suggesting standard operating procedures and providing resources for stewards to help slow the spread of invasive species.
- Pennsylvania Sea Grant developed new AIS fact sheets for European Frogbit, Rainbow smelt, Yellow-bellied slider, and Brazilian elodea. These fact sheets can be accessed on the PA Sea Grant website (seagrant.psu.edu)
- Pennsylvania Sea Grant held two mock rapid response exercises on New Zealand mudsnail and Water chestnut. The purpose of these exercises is to familiarize agencies and organizations with the rapid response process in Pennsylvania, and identify gaps and challenges to further refine the process. After-action reports have been developed to summarize the process and the findings for each of the exercises. PA Sea Grant is available to hold trainings and mock exercises on rapid response.

New York

- Long Island and New York City Metro Area Task AIS task force has been formed. Task force members are local, state and federal governments, NGO personnel, consulting firms and members of the public. Current focus is on determining a list of regional waterbodies, the known invaders in those waterbodies and determining past survey effort. The results of this survey will help prioritize next steps in a region wide survey effort for AIS. Additionally, The taskforce is working to develop pilot programs for chemical control of *Hydrilla verticillata* and *Ludwigia peploides*.
- Continued control of hydrilla in the Croton River which is tributary to the Hudson River. 2020 is the fourth year of repeated treatment in the river. At the end of year three no hydrilla was found growing in the river and very few tubers were found.

Delaware:

- State Aquatic Invasive Species Plan – Currently preparing documents to send through the Department to ensure support for the plan before starting a draft.
- Invasive Fish Reporting cell phone app (<http://bit.ly/ReportInvasiveFish>) - created by DNREC staff as part of a M.S. project, can be used on android and iphones. Anglers are using it to report catches, upload confirmation photo, and provide location on an interactive map. May expand to include other invasive species.
- The Delaware Invasive Species Council (DISC) - Finalized update of state invasive species list – the list now includes aquatic invasive species but there are no associated regulations. DISC board and interested members are creating fact sheets for each species, but currently focusing on terrestrial plants.
- New invasions in 2020
 - **Northern Snakehead:** All caught and reported by anglers (confirmed via photos); all water bodies have a connection to a river system with an established population although illegal stocking can't be ruled out.
 - Stormwater pond – (Drawyer Creek Watershed) Springmill Development in Middletown, DE

- Stormwater Pond – (Pigeon Run Watershed) - Pigeon Run Development in Bear, DE
 - Stormwater Pond (Leipsic River watershed)– Brenford Station Development, Smyrna, DE
 - Leipsic River (Delaware Bay watershed)- caught below Massey Mill Pond dam, Smyrna, DE
- **Flathead Catfish:** Delaware River – lower range of Marcus Hook; furthest south so far that flatheads have been reported in this river system. It was caught by a researcher gillnetting for sturgeon

New Jersey

The main highlights for New Jersey from NJDEP, Division of Fish and Wildlife:

- Division of Fish and Wildlife, Bureau of Freshwater Fisheries is currently working on an Invasive Fish Species Management Plan. We anticipate that a draft document will be completed by the fall 2020.
- All field sampling is temporarily suspended due to Covid-19.
- The Division continues to receive weekly calls from anglers catching Snakeheads in the Delaware River basin.

West Virginia

- WV does not have any AIS updates for WV's Atlantic Slope waters.
- We did not receive any reports of Snakehead in the Potomac drainage. We had a report of one in Opequon Creek in 2018, but that turned out to be a discarded fish from a bowfishing angler. I have aspirations to conduct eDNA sampling for snakeheads in the Potomac drainage, but I haven't had a chance to really delve into the logistics for this. Our main focus, currently is with Asian carp in the Ohio River.

Maryland

- DNR Resource Assessment Service is overseeing the chemical treatment at seven state owned lakes this summer. The Maryland Park Service and Wildlife and Heritage divisions awarded contracts in a competitive bid process to control aquatic invasive macrophytes. The applicators will begin herbicide treatment in May/June, and DNR will conduct follow-up monitoring to evaluate the success of the project.
- DNR Resource Assessment Service will also continue its water chestnut harvest on the Bird and Sassafras Rivers this summer. Water chestnut populations have persisted on these rivers since 1998. With the help of riverkeepers and volunteers from ShoreRivers, DNR staff use boats, canoes and kayaks to remove water chestnut from infested creeks.