Mid-Atlantic Panel on Aquatic Invasive Species

Fall 2024 Meeting Minutes

Prepared by:
Nick Staten
MAPAIS Coordinator

Mid-Atlantic Panel on Aquatic Invasive Species

Fall Meeting Minutes

Location:
USGS Eastern Ecological Science Center
Leetown Research Laboratory campus
11649 Leetown Road, Kearneysville WV 25430

MID-ATLANTIC PANEL ON AQUATIC INVASIVE SPECIES FALL 2024 MEETING

October 9 and 10, 2024

DAY 1, October 9nd:

ATTENDEES:

- Abell, Kristopher (PA DEA)
- Allen, Mike (MD Sea Grant)
- Brown, Bryan L. (Virginia Tech)
- Carney, Jenny (SERC)
- Densmore, Christine (USFWS)
- Desko, Heather (Water Supply Authority)
- Ellis, Timothy A. (APNEP)
- Emens, Rob (North Carolina Department of Environmental Quality))
- Hartzell, Sean (PA Fish and Boat Commission DES)
- Henning, Aaron (SRBC)
- Junemann, Carolyn (MARAD)
- Kilian, Jay (MD DNR)
- Lawal, Dede (CRC)
- Lockwood, Julie (Rutgers University)
- Maclean, Don (USFWS)
- Marino, Abby B. (LIISMA)
- Mark Lewandowski (MD DNR)
- McKnight, Jonathan (MD DNR)
- Mirabilio, Sara (NC Sea Grant)
- Mirabilio, Sarah (NC Sea Grant)
- Ottinger, Christopher A. (USGS)
- Pearson, Steven H. (DEC)
- Pfingsten, Ian A. (USGS)
- Shank, Matthew (PA DEP)
- Smith, Christopher (DEP)
- Staten, Nick (CRC)
- Stahlman, Sara (Pennsylvania SeaGrant)
- Steiger, Michael E. (DNREC)
- Swearingen, Jil (NPS)
- Trommatter, Matthew (CRC)
- Whitney, Sarah Niles (Pennsylvania Sea Grant)
- Whitsel, Tara (USACE)

- Williams, Branson (MD DNR)
- Zipfel, Katie (West Virginia Division of Natural Resources)

9 AM - Opening Remarks and Introductions from Panel Representatives

State Representatives:

- **Delaware:** Michael Steiger (DNREC) introduced himself as the Aquatic Invasive Species (AIS) Scientist and Delaware's representative.
- **Maryland:** Jay Kilian (Maryland DNR) and Jonathan McKnight (Associate Director, Wildlife Service, MD) represent Maryland. Branson Williams (MD DNR, Invasive Fishes Program Manager), Mike Allen (Maryland SeaGrant) also introduced themselves.
- **New Jersey:** Heather Desko (Water Supply Authority) and Christopher Smith (New Jersey Fish and Wildlife) introduced themselves. Steven Pearson noted Julie Lockwood (Rutgers University) as the New Jersey academic representative.
- **New York:** Steven Pearson confirmed his representation for New York and was joined by Abby Marino (Long Island Invasive Species Management Area).
- **North Carolina:** Rob Emens (North Carolina Department of Environmental Quality) and Sarah Mirabilio (NC Sea Grant).
- **Pennsylvania:** Sean Hartzell (AIS Coordinator, PA Fish and Boat Commission), Sara Stahlman (Pennsylvania Sea Grant), Matthew Shank (PADEP), and Kristopher Abell (Department of Agriculture, Coordinator for Invasive Species Council).
- **Virginia:** Bryan L. Brown (Virginia Tech) introduced himself as a steering committee member of VT's Invasive Species Collaborative.
- **West Virginia:** Katie Zipfel (West Virginia DNR) introduced herself as a fish biologist and WV state representative.
- **Washington, DC:** No Representative

Academic Representatives:

- **Delaware:** No Representative
- **Maryland:** Mike Allen
- **New York:** No Representative
- **North Carolina:** Sarah Mirabilio

- **Pennsylvania:** Sara Stahlman, Sarah Niles Whitney (Pennsylvania SeaGrant)
- **Virginia:** Bryan L. Brown
- **West Virginia:** No Representative
- **Washington, DC:** No Representative

Federal Representatives:

- **U.S. Army Corps of Engineers:** Tara Whitsel (USACE)
- **EPA:** No Representative
- **U.S. Fish and Wildlife Service:** Don MacLean (Branch of AIS) attended with Christine Densmore (Fish and Aquatic Conservation).
- **US Forest Service:** No Representative
- **USDOT Maritime Administration:** Carolyn Junemann
- **NOAA:** No Representative
- **NPS:** No Representative
- **USGS:** Ian Pfingsten (USGS)
- **Department of Agriculture:** No Representative
- **NGOs:** No Representatives

At Large Members:

- Christine Densmore (USFWS)

9:15AM - Presentation from Tom O'Connell (Director, USGS Eastern Ecological Science Center)

- Overview of EESC Operations:
    - EESC's structure was reviewed, with three campuses focused on aquatic and terrestrial ecology (Leetown, S.O. Conte Lab, and Patuxent Research Refuge).
    - Emphasis on partnerships, including those with state agencies and non-profits, for long-term AIS solutions.
- Invasive Species Program increase of capacity.
- $23 million appropriated budget that O'Connel mentioned could be used for collaboration and emphasized his desire for more partnerships.

9:30 AM - Old Business

- Agenda Approval:

    - Agenda was reviewed with no changes. Motion to approve was made by Heather Desko and seconded by Katie Zipfel. Virtual participants approved via "thumbs up" Microsoft Teams function. Motion passed unanimously.
- Approval of Spring 2024 Meeting Minutes:
    - Rob Emens mentioned that page numbers were formatted incorrectly and lacked reference to discussions about fiscal agent transitions. Timothy Ellis (North Carolina) confirmed this was a significant discussion point.
    - Heather Desko mentioned that her affiliation in the minutes should have been NJWFA.
    - Motion to amend the minutes was made by Heather Desko, and seconded by Sean Hartzell. Motion passed unanimously.
- Status of Annual Reports:
    - Steven Pearson reminded representatives of the importance of uploading state AIS annual reports to the MAPAIS website.
    - Sean Hartzell confirmed Pennsylvania's recent report for 2021, noting a slight delay on the 2022 report due to project extensions.
- Fiscal Agent Transition Update:
    - Steven Pearson presented a timeline of the fiscal agent transitions:
        - Maryland Sea Grant acted as the fiscal agent for 11 years until 2022.
        - After a year dealing with grant challenges with NatureSource Communications, the transition was finalized in June 2024 to the Chesapeake Research Consortium (CRC).

10:15 AM - Budget and Funded Projects Update

- Final Report from Maryland Sea Grant (Presented by Mike Allen):
    - Maryland Sea Grant funded 14 projects totaling $220,000 from 2018–2024, with $17,000 used for MAPAIS operations.
    - Mike Allen reported, "One final report is pending from the University, but all project funds have been reconciled and documented."
    - MD SeaGrant continues to host the website, listserv, and the google drive archive.
    - Steven Pearson and Rob Emens thanked Allen for his organization and 11 years of service.
- Budget Report from Chesapeake Research Consortium (CRC):
    - Matthew Trommatter shared CRC's detailed budget for the upcoming four years:

- Projected funding of $36,797 for grants, with $1,500 for travel, $2,500 for panel expenses, and a 23.42% offsite rate for a total of $50,000 for each year for 4 years.
- Trommatter confirmed the timely release of sub-awards to North Carolina, Rutgers, and Pennsylvania Sea Grant, and will submit the FY25 round of funding by October 15.

- Comments and Questions:
  - Mike Allen questioned whether 2024 projects, selected in the spring, would be covered in the upcoming year. Trommatter was unaware of this, noting flexibility to adjust the budget based on the final list of projects.
  - Steven Pearson clarified that three additional projects (including one from Stony Brook University) were prioritized for funding. CRC and MAPAIS will work to ensure these are supported in the 2025 budget. He also mentioned that part of the budget will go to Pennsylvania Sea Grant for AIS field guide app development.

10:30AM - New Business: Deferred to Day 2 of the meeting due to time constraints.

Key Action Items from Day 1

1. Annual Reports: State representatives are to ensure updated annual reports are submitted and available on the MAPAIS website.
2. FY2025 Budget Adjustments: CRC and MAPAIS leadership to review final allocations and ensure approved projects are covered.
3. Website Updates: Maryland Sea Grant and MAPAIS Coordinator to update the MAPAIS website to reflect funded projects, archived reports, and changes to fiscal agent contact details.
4. Amend previous meeting minutes with a clause stating there was a discussion about fiscal agent transitions, change to Heather Desko's affiliation to NJWFA, and fix page numbers.

Joint Session between Biological Threats and Invasive Species Research Program (BTRP) and Mid-Atlantic Panel on Aquatic Invasive Species (MAPAIS)

See Appendix IV-IX

Day 2: Thursday, October 10

ATTENDEES:

- Allen, Mike (MD DNR)
- Brown, Bryan L. (Virginia Tech)
- Cerniglia, Melody (LIISMA)
- Crawford, Kat (Skyward App Company)
- Densmore, Christine (USFWS)
- Desko, Heather (Water Supply Authority)
- Ellis, Timothy A. (APNEP)
- Emens, Rob (North Carolina Department of Environmental Quality)
- Hartzell, Sean (PA Fish and Boat Commission DES)
- Henning, Aaron (SRBC)
- Junemann, Carolyn (MARAD)
- Kilian, Jay (MD DNR)
- Lawal, Dede (CRC)
- Lockwood, Julie (Rutgers University)
- Maclean, Don (USFWS)
- Marino, Abby (LIISMA)
- McKnight, Jonathan (MD DNR)
- Mirabilio, Sarah (NC Sea Grant)
- Pasko, Susan R. (USFWS)
- Pearson, Steven H. (DEC)
- Shank, Matthew (PA DEP)
- Smith, Christopher (DEP)
- Stahlman, Sara (Pennsylvania SeaGrant)
- Staten, Nick (CRC)
- Steiger, Michael E. (DNREC)
- Whitney, Sarah Niles (Pennsylvania Sea Grant)
- Whitsel, Tara (USACE)
- Zipfel, Katie (WV Division of Natural Resources)

9 AM - Welcome and follow up from Day 1

9:15 AM -Nominating Committee Formation

- **Nominations and SOPs:** The nominations process and formation of a nominating committee were discussed, as well as a review of SOPs related to elections. Clarification was provided on the need for a 60-day timeline for nominations, with elections likely to occur via electronic voting by December 2024.
- **Committee Composition:** Volunteers for the committee included Jonathan McKnight (Maryland DNR) as the state representative and Tara Whitsel as the federal representative. The SOP states that the past chair will also serve on the committee. The previous chair is Edna Stetzar. Mike Steiger (DNREC) volunteered to contact Edna to inquire about serving on the committee.
- **Steven Pearson** asked in case Edna cannot serve, the SOP doesn't mention an alternative, and wondered if another past chair or another state representative would serve.
- **Rob Emens** asked Jay Kilian, another previous chair, if he would be willing to serve in case Edna cannot. Jay Kilian agreed.
- **Roles of Committee Members:** Responsibilities include compiling and submitting names for panel elections by the upcoming deadlines.
- **Leadership Consideration:** Rob Emens expressed interest in running for Chair or Vice Chair. Steven Pearson indicated his intent to step down due to internal obligations and logistical challenges with in-person attendance.

9:30 AM - Spring Meeting Planning

- **Location and Format:** Location was decided to be at EPA's Chesapeake Bay Program Annapolis Office. Discussion on continuing the tradition of hosting the spring meeting in Annapolis, central to participating states. Nick Staten suggested potentially dedicating the Spring meeting as an unofficial in-person meeting to encourage attendance.
- **Participant Feedback on Attendance Barriers:** Many members shared challenges regarding in-person attendance, citing work-related travel limitations, advance notice requirements, financial limitations, and personal commitments such as child-care logistics.
- **Grantee Presentations:** Steven Pearson inquired if all grantee's have fulfilled their commitment to present. Mike Allen said he would need to go through and check previous minutes. He asked specifically if Amy Fowler presented in which Mike Allen responded saying someone presented on her behalf which Pearson confirmed. Steven also inquired about the Rudgers project in which Julie

Lockwood responded that they should have results by the 2025 Fall Meeting and probably wouldn't have a dedicated presentation before their spring sampling. Steven addressed Rob to check with the other projects to make sure that everyone has fulfilled commitments.

- **Hosting ANSTF meeting:** Sarah Whitney asked when we were to host the next ANSTF meeting. It was decided that Spring 2027 MAPAIS will host ANSTF.

10 AM - Mid-Atlantic Field Guide and App Development Update

Speakers: Sara Stahlman, Kat Crawford
Project Background: Stahlman updated the panel on the Mid-Atlantic Field Guide project, a two-year effort with a 2025 app launch planned. Year 1 funding focused on updating species profiles and Year 2 funding will support app development. The new guide will include profiles for Alabama Bass, Apple Snails, Freshwater Drum, Tree of Heaven, and Two-Horned Water Chestnut. It also will update the Northern Snakehead profile to not include blotched snakehead.

App Development and Maintenance: Kat Crawford explained that Skyward's approach uses Agile methodology to provide regular updates. The app will support live data updates, with access to a database allowing for easy species additions without needing to contact the development team.

Questions and Detailed Discussion:

- **Species Naming Conventions:** Steven Pearson questioned if the guide's naming conventions would be consistent with existing MAPAIS resources. Stahlman acknowledged that while MAPAIS standards were not previously consulted, alignment could be ensured in the final edit.
- **Species Inclusion – Tree of Heaven:** Don Maclean questioned Tree of Heaven's inclusion due to its non-aquatic habitat, suggesting it be noted as primarily riparian. Stahlman agreed to clarify its habitat in the profile.
- **App Maintenance Costs:** Pearson asked about estimated annual maintenance. Crawford explained that maintenance varies but estimated less than $2,500 as a maximum yearly expense, mentioning that there is an hourly rate for the dev. team to fix things as needed.
- **State or County Level Data:** The field guide and app will be statewide, if users would like more granular information they will need to outsource to other resources.

10:20 AM - Panel Member and Interested Party Updates

ANS Task Force Meeting Hosting

Speaker: Susan Pasko
2025 Hosting Opportunity: Pasko explained that while the Mississippi Basin panel was initially scheduled to host, they deferred to spring 2026, making MAPAIS Next up for spring 2025.
Options Presented:

- **Option 1:** Host the ANS Task Force meeting in spring 2025.
- **Option 2:** Defer hosting to spring 2027, allowing MAPAIS additional planning time.
- **Consensus:** MAPAIS chose to defer hosting to 2027, allowing additional time to plan and potentially align with strategic priorities.

Finalization of Spring Meeting Dates and Locations

Potential Dates: April or early May 2025, avoiding mid-April to accommodate spring break schedules. **Location Confirmation:** Members agreed on Annapolis as the location, with preference for an early April or May schedule to align with RFP planning.

Discussion of RFP Committee

- Submission had previously been performed via sending RFP's through a google email address maintained by Pennsylvania SeaGrant. The previous MAPAIS Coordinator would be responsible for pulling these submissions. Steven Pearson Mentioned either working with the new Coordinator on this or have the Ad-Hoc Committee take on this responsibility.
- Steven Pearson asked Mike Allen what the process of gaining access to that email and Mike responded that the process is as simple as sending him someone the panel would like to have access, and he would add them to the email's administrators.
- Rob Emens asked for volunteers for the Ad-Hoc committee.
    - Sean Hartzell (PA) volunteered.
    - Steven Pearson (NY) volunteered.
    - Mike Allen volunteered and mentioned that Nick Staten should also be on the committee.

- Rob Emens mentioned that it will be important to consult with Matthew Trommatter.
- Steven Pearson will lead the Committee.

Recommendations to ANS Taskforce

- The next ANS taskforce meeting is next month Nov. 6th and 7th.
- Rob Emens asked the panel if there was any burning recommendations that the panel would like to add to this upcoming ANS taskforce meeting.
- Members decided to defer to the next ANS taskforce meeting.

Representation for MAPAIS

- The past few years there have been additions to academic representatives from both Virginia and New Jersey.
- There have not been new state representatives nor representation from Washington, DC.
- Rob Emens asked for Panel feedback on the best way to add new membership for Jurisdictions with limited representation.
- Steven Pearson asked Bryan Brown about the state government representative for Virginia.
- Bryan mentioned he could ask people at Virginia Tech if they have ideas.
- Rob Emens asked if it would be helpful to go from the governor's office down to appoint new panel members.
- Steven Pearson said reaching out to colleagues directly can be the first step and then we can use a top down approach if the first approach isn't successful.
- Rob Emens pointed the panel towards the SOP on the website for more information on membership roles and responsibilities.
- There is a continued need to find representatives from DC. A letter to DC leadership with a request for representatives will be the next step.

Website Updating

- Rob Emens requests a rework of how representatives are presented on the website to make it easier for the viewer.
- He also requests that members supply a photo to the MAPAIS Coordinator in order to update the website.

Member updates:

Federal Update (Tara Whitsel, USACE): See Appendix Xa

Maryland Update (Jonathan McKnight): See Appendix Xb

Delaware Update (Mike Steiger): See Appendix Xc

New Jersey Update (Chris Smith, Julie lockwood, and Heather Desko): See Appendix Xd

Discussion:

- Rob Emens: the coordinator position is it terrestrial too or just aquatic?
- Chris Smith: It is just an aquatic position housed within Fish and Wildlife.
- Steve: the blue cat in the other river – was it intentionally introduced or did it move into the canal?
- Chris Smith: I assume they moved through the canal.

New York Update (Steven Pearson): See Appendix Xe

North Carolina Update (Rob Emens and Sarah Mirabilio): See Appendix Xf

Pennsylvania Update (Sean Hartzell): See Appendix Xg

- Reference: Statewide chemical suitability model on NZ mud snail – published paper with Matt shank. Chemical variables predicting colonization risk of the invasive New Zealand mudsnail (Potamopyrgus antipodarum) in Pennsylvania's flowing waters | Hydrobiologia (springer.com)

Virginia Update (Bryan Brown, Virginia Tech): See Appendix Xh

Symbionts in crayfish's relationship with invasives.

Virginia Tech Invasive Species Collaborative is hiring 6 positions for invasive species.

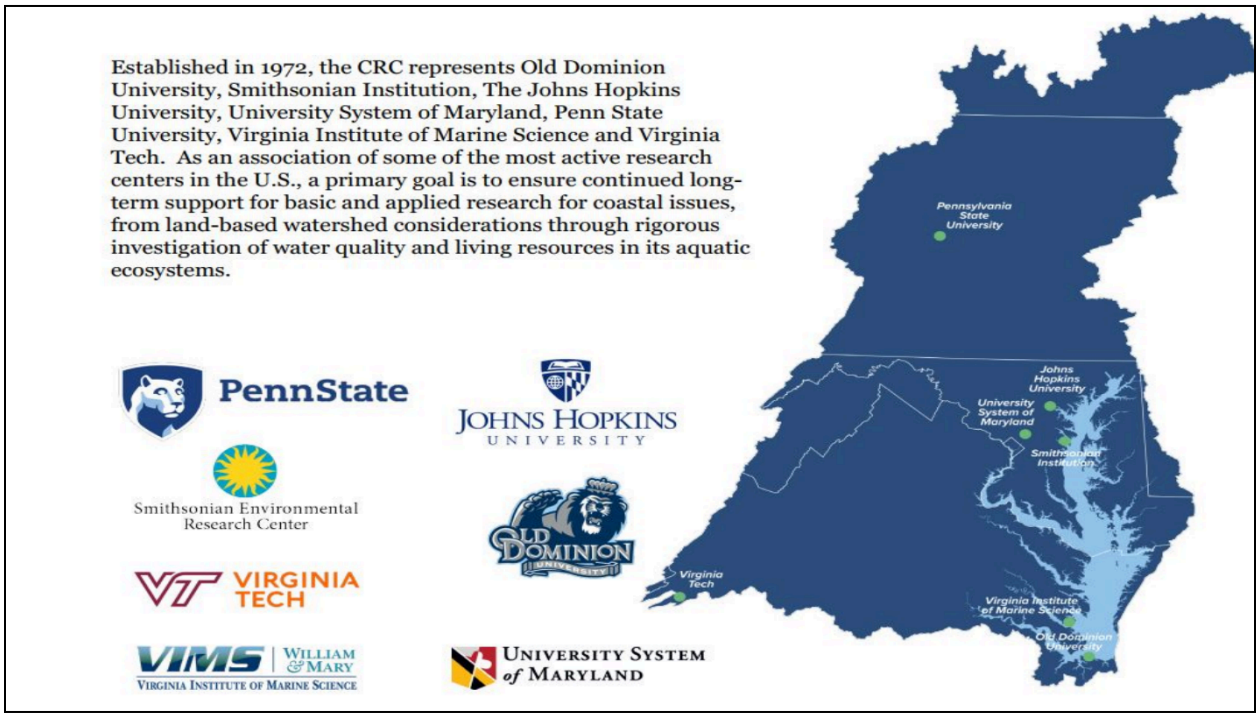
West Virginia Update (Katie Zipfel): See Appendix Xi

Meeting Adjourned

Key Action Items from Day 2

1. Coordinate Nomination Committee to begin the process of defining new MAPAIS leadership.
2. Reserve room for MAPAIS's Spring Meeting at EPA's Chesapeake Bay Program Office.
3. Check with other grantee projects to ensure the projects fulfill their commitment of presenting their findings.
4. Coordinate Ad-hoc RFP Committee. Steven Pearson to spearhead this.
5. Bryan Brown (Virginia Tech) to inquire about MAPAIS representation for the state of Virginia.
6. Rob Emens and Steven Pearson to reach Washington D.C. leadership with a request for representation.
7. Make the section of the website that lists representatives easier to view.
8. Members of the panel are to supply a photo to the MAPAIS Coordinator in order to update the website.
9. Tara Whitsel will reach out to PA and NY regarding the Watercraft Inspection and Decontamination Program. Steven Pearson suggested speaking with Scott Jameson in New York. Sean Hartzell expressed interest in speaking more about the program.

Appendix I: Matthew Trommatter Slides



Current State of MAPAIS finances

Mid-Atlantic Panel on Aquatic Invasive Species

1. Fiscal agent transfer from Naturesource Communications to CRC complete.
2. Bank account set up and received all remaining funds from Naturesource.
3. Subcontracts have been set up to the following, none have been paid:
   a. NC Department of Environmental Quality issued $15,000
   b. Rutgers, The State University, issued $12,491
   c. The Pennsylvania State University issued $14,305
4. Grant ready for submission on conclusion of this meeting for next four years of funding.

Budget of current funds

Mid-Atlantic Panel on Aquatic Invasive Species

North Carolina	$15,000
Rutgers University	$12,491
Pennsylvania Seagrant	$14,305
Courtesy discounted indirect cost	$ 3,729
Total	$45,525

Budget for upcoming year

Mid-Atlantic Panel on Aquatic Invasive Species

Travel	$ 1,500
Panel operational costs	$ 1,000
Contractual for awards	$38,297
Offsite rate of 23.42%	$ 9,203
Total	$50,000

Appendix II: Tom O'Connell Slides

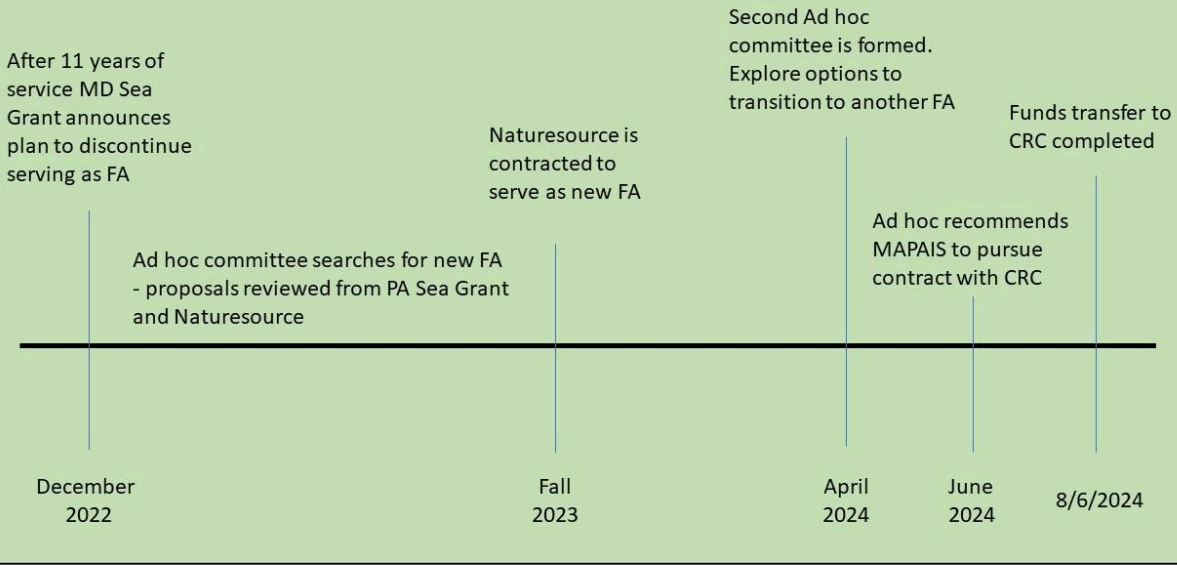
Tom O’Connell gave a presentation introducing the work and mission of the Eastern Ecological Science Center. Slides were not provided.

Appendix III: Steven Pearson's Fiscal Agent Transition Update Slides

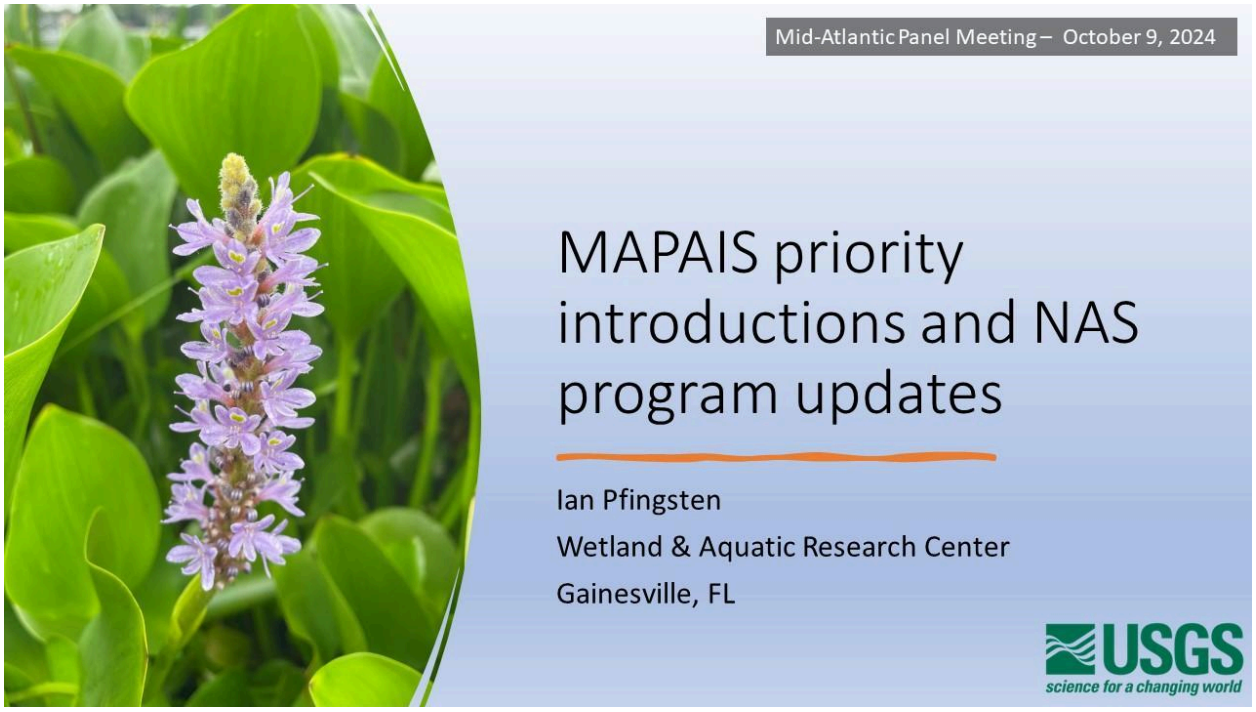
Fiscal Agent Transition

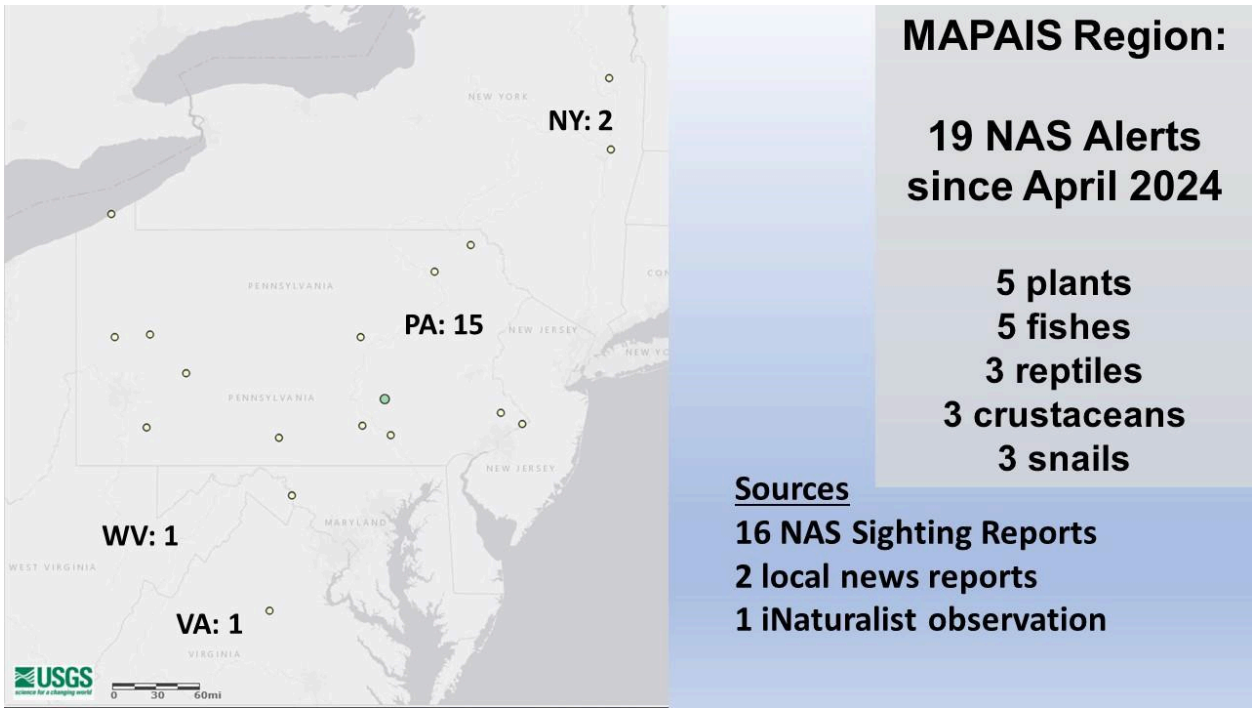
- MD Sea Grant announces plan to discontinue serving as FA for MAPAIS (Dec 2022)
  - Served as FA for 11 years (MD DNR served as FA prior to this).
  - Will complete 5-year grant (ending in August 2023)
- Naturesource Communications contracted to serve as FA (Fall 2023)
  - FA proposal review: PA Sea Grant, Naturesource Communications
  - Naturesource Communication actions: Apply for FWS funding (October 2023), Fiscal agent agreement with MAPAIS, contract negotiations with grantees (Rutgers, PA Sea Grant, NCDEQ).
- Following discussion at the MAPAIS spring 2024 meeting
  - Ad-Hoc Committee Formed
    - S. Pearson, R. Emens, M. Allen. M. Steiger, J. Killian
  - Cont. to work with Naturesource Communications to finalize contracts (i.e., grant subawards).
    - Rutgers – contract completed (April)
    - PA Sea Grant – unable to agree to terms (May)
    - NCDEQ – unable to agree to terms, declined $15K award (April)
  - Ad-Hoc committee pursues new FA
    - Each member contacts potential entities (e.g., Universities, Sea Grants, NGOs, non-profits)
    - Mike Allen has preliminary meeting with Chesapeake Research Consortium (June)
    - Committee meets with CRC and recommends that MAPAIS pursue contract with CRC (June)
  - Transition to Chesapeake Research Consortium
    - Consulted with USFWS to identity process to transfer funds from Naturesource Communications to CRC (July)
    - Funds transfer to CRC completed (8/6/2024)
    - CRC begins working with grantees including North Carolina

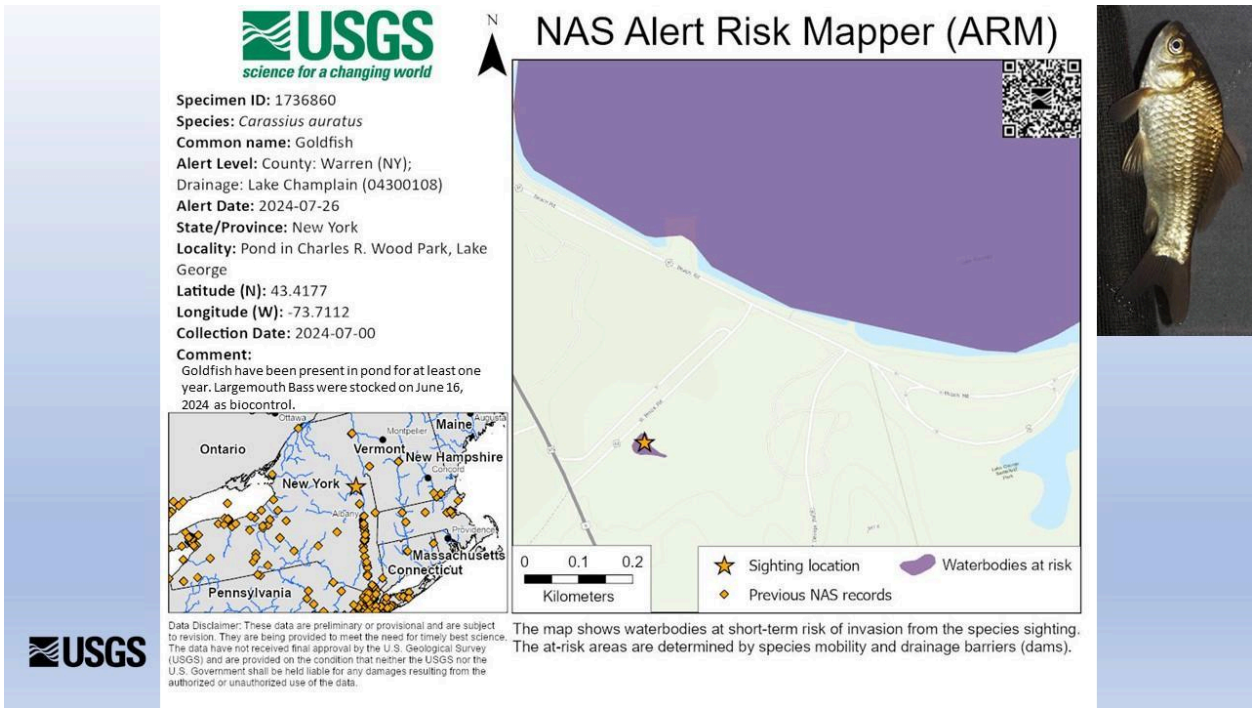
MAPAIS Fiscal Agent transition timeline



Appendix IV: Ian Pfingsten's "Mid-Atlantic Region AIS Introductions and NAS Program Updates" Slides



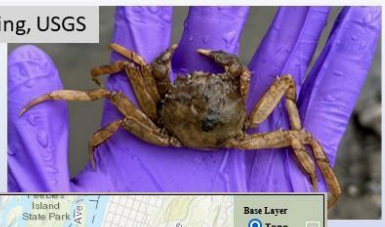

NY: 2
PA: 15
WV: 1
VA: 1
MAPAIS Region:
19 NAS Alerts since April 2024
5 plants
5 fishes
3 reptiles
3 crustaceans
3 snails
Sources
16 NAS Sighting Reports
2 local news reports
1 iNaturalist observation

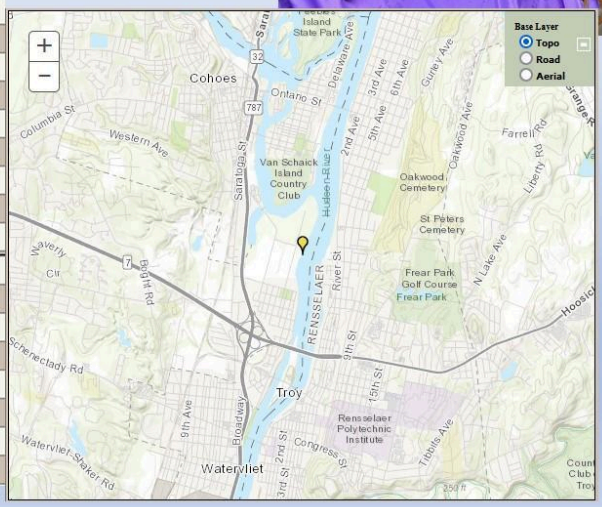

USGS
science for a changing world
NAS Alert Risk Mapper (ARM)
Specimen ID: 1736860
Species: Carassius auratus
Common name: Goldfish
Alert Level: County: Warren (NY); Drainage: Lake Champlain (04300108)
Alert Date: 2024-07-26
State/Province: New York
Locality: Pond in Charles R. Wood Park, Lake George
Latitude (N): 43.4177
Longitude (W): -73.7112
Collection Date: 2024-07-00
Comment:
Goldfish have been present in pond for at least one year. Largemouth Bass were stocked on June 16, 2024 as biocontrol.
Ontario
Maine
Vermont
New Hampshire
New York
Massachusetts
Connecticut
Pennsylvania
0 0.1 0.2
Kilometers
Sighting location
Previous NAS records
Waterbodies at risk
Data Disclaimer: These data are preliminary or provisional and are subject to revision. They are being provided to meet the need for timely best science. The data have not received final approval by the U.S. Geological Survey (USGS) and are provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the data.
The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).
USGS

Specimen ID	1736850
Group	Crustaceans-Crabs
Genus	Eriocheir
Species	sinensis
Common Name	Chinese mitten crab
State	NY
County	Albany
Locality	Hudson River, just upstream of Troy Dam
Mapping Accuracy	Accurate
HUC8 Name	Hudson-Hoosic
HUC8 Number	02020003
HUC10 Name	Anthony Kill-Hudson River
HUC10 Number	0202000311
HUC12 Name	Troy Reservoir-Hudson River
HUC12 Number	020200031107
Collection Day	8
Collection Month	6
Collection Year	2024
Year Accuracy	Actual
Status	unknown
Record Type	NAS sighting report
Verifier	C.R. Morningstar, USGS
Number Collected	1

USGS

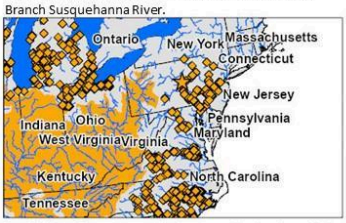
M. Darling, USGS





USGS
science for a changing world

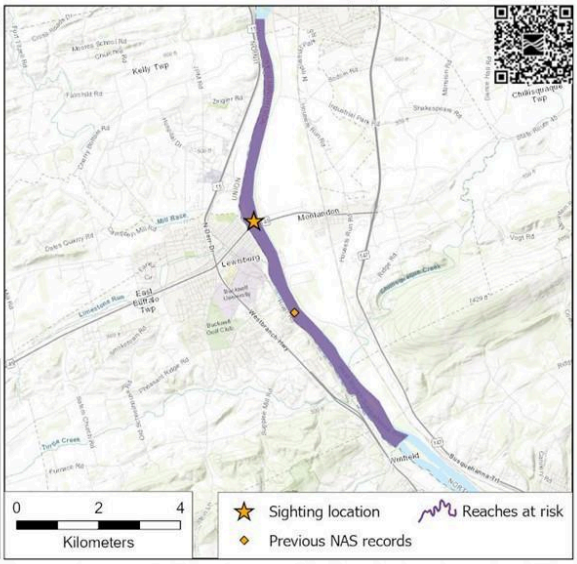
Specimen ID: 1737157
Species: *Pylodictis olivaris*
Common name: Flathead Catfish
Alert Level: Drainage: Lower West Branch Susquehanna (02050206)
Alert Date: 2024-09-30
State/Province: Pennsylvania
Locality: West Branch Susquehanna River, at Lewisburg
Latitude (N): 40.9682
Longitude (W): -76.8788
Collection Date: 2024-08-07
Comment:
Collected in trap net by Pennsylvania Fish and Boat Commission staff. First confirmed record in the West Branch Susquehanna River.



USGS

N

NAS Alert Risk Mapper (ARM)



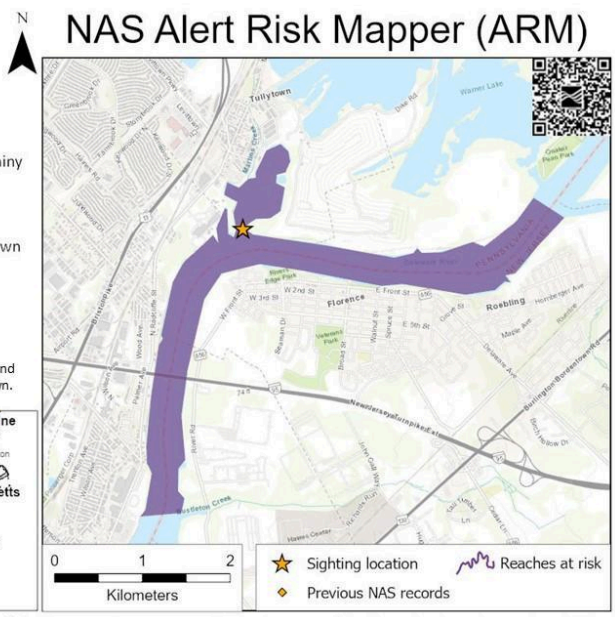
The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

PA FBC

USGS science for a changing world

Specimen ID: 1736887
Species: *Aplodinotus grunniens*
Common name: Freshwater Drum
Alert Level: Drainage: Crosswicks-Neshaminy (02040201)
Alert Date: 2024-08-01
State/Province: Pennsylvania
Locality: Delaware River, mouth of Tullytown Cove
Latitude (N): 40.1301
Longitude (W): -74.8166
Collection Date: 2024-05-11
Comment:
Angler report submitted to the Pennsylvania Fish and Boat Commission. Disposition of the fish is unknown.

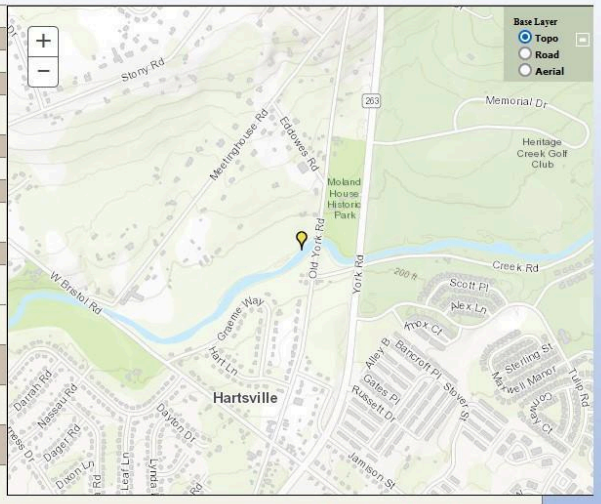
Data Disclaimer: These data are preliminary or provisional and are subject to revision. They are being provided to meet the need for timely best science. The data have not received final approval by the U.S. Geological Survey (USGS) and are provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the data.



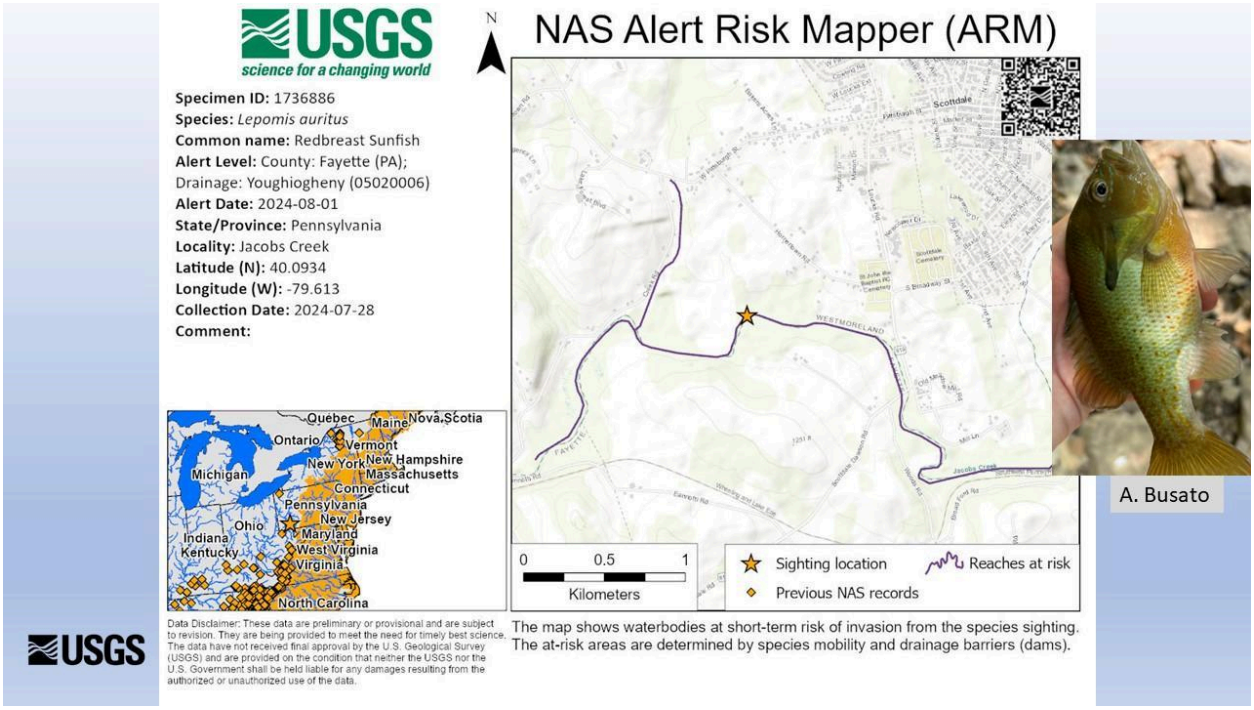
The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

USGS

Specimen ID	1736396
Group	Fishes
Genus	Oreochromis
Species	niloticus
Common Name	Nile Tilapia
State	PA
County	Bucks
Locality	Little Neshaminy Creek
Mapping Accuracy	Approximate
HUC8 Name	Crosswicks-Neshaminy
HUC8 Number	02040201
Collection Day	23
Collection Month	4
Collection Year	2024
Year Accuracy	Actual
Potential Pathway	released | stocked
Comments	Angler report sent to the Pennsylvania Fish and Boat Commission. One fish caught and killed. Location information given was only Little Neshaminy Creek, Bucks County, PA, so coordinates are just an approximate location.
Record Type	NAS sighting report
Verifier	M. Neilson (U.S. Geological Survey)
Freshwater/ Marine	Freshwater
Number Collected	1

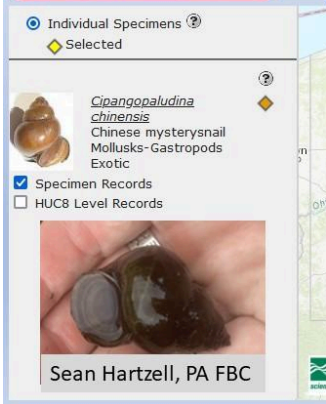


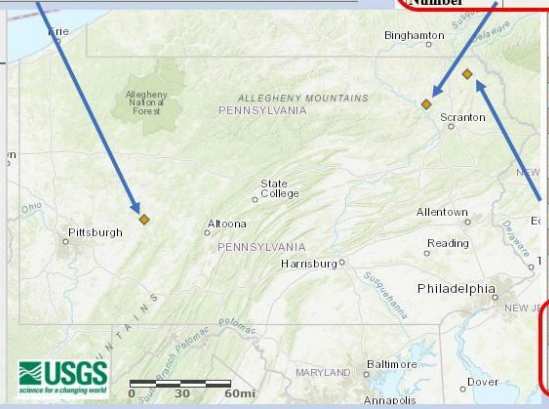
USGS



Specimen ID	1736748		
Group	Mollusks-Gastropods		
Genus	Cipangopaludina	Collection Day	16
Species	chinensis	Collection Month	6
Common Name	Chinese mysterysnail	Collection Year	2024
State	PA		
County	Indiana		
Locality	Unnamed pond discharging into Ramsey Run near Indiana, PA		
Mapping Accuracy	Accurate		
HUC8 Name	Conemaugh		
HUC8 Number	05010007		

Specimen ID	1736750		
Group	Mollusks-Gastropods	Collection Day	15
Genus	Cipangopaludina		
Species	chinensis	Collection Month	8
Common Name	Chinese mysterysnail	Collection Year	2023
State	PA		
County	Wyoming		
Locality	Steven's Lake, Wyoming County. Near boat launch and lake outlet.		
Mapping Accuracy	Accurate		
HUC8 Name	Upper Susquehanna-Tunkhannock		
HUC8 Number	02050106		

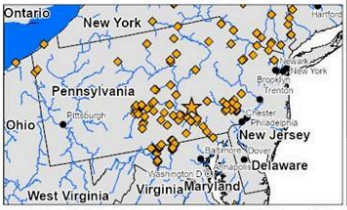




Specimen ID	1737126		
Group	Mollusks-Gastropods		
Genus	Cipangopaludina		
Species	chinensis		
Common Name	Chinese mysterysnail		
State	PA	Collection Day	2
County	Susquehanna	Collection Month	8
Locality	Wrighter Lake	Collection Year	2024
Mapping Accuracy	Accurate		
HUC8 Name	Upper Susquehanna		
HUC8 Number	02050101		

USGS science for a changing world

Specimen ID: 1737134
Species: *Faxonius rusticus*
Common name: Rusty Crayfish
Alert Level: County: Lebanon (PA)
Alert Date: 2024-09-23
State/Province: Pennsylvania
Locality: Swatara Creek
Latitude (N): 40.3701
Longitude (W): -76.5774
Collection Date: 2024-08-05
Comment:



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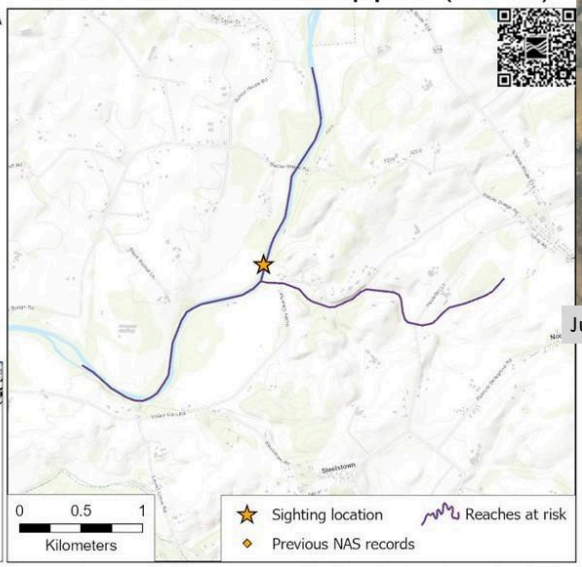
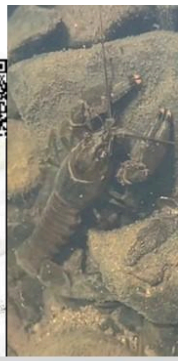
USGS

NAS Alert Risk Mapper (ARM)



The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).



Julieanne Stanley

USGS science for a changing world

Specimen ID: 1736844
Species: *Procambarus clarkii*
Common name: Red Swamp Crayfish
Alert Level: County: York (PA)
Alert Date: 2024-07-22
State/Province: Pennsylvania
Locality: Stony Run, near Rosstown Rd.
Latitude (N): 40.114
Longitude (W): -76.8647
Collection Date: 2024-07-07
Comment:

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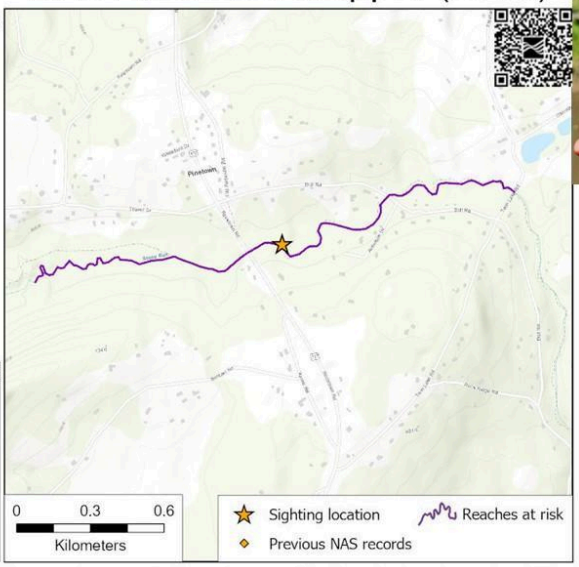
USGS

NAS Alert Risk Mapper (ARM)



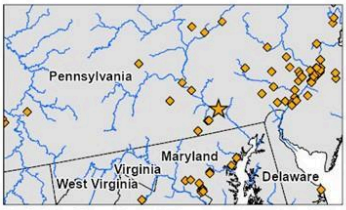
The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

Clifton Kern

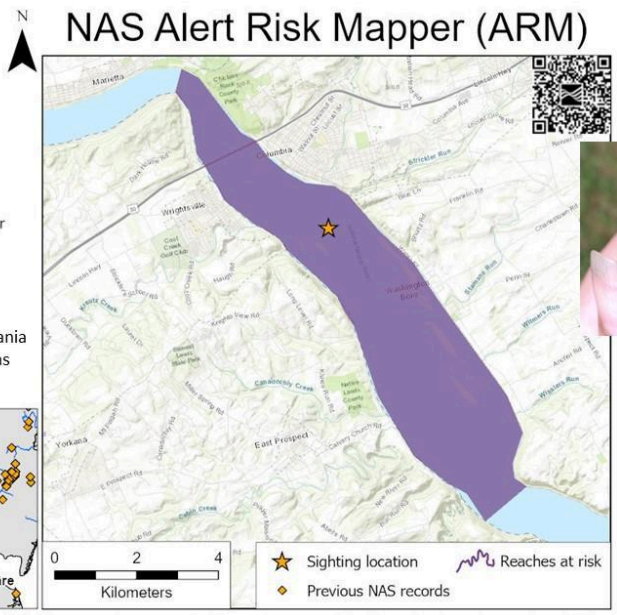
USGS science for a changing world

Specimen ID: 1736806
Species: *Trachemys scripta elegans*
Common name: Red-eared Slider
Alert Level: County: Lancaster (PA)
Alert Date: 2024-07-11
State/Province: Pennsylvania
Locality: Heisey Island, Susquehanna River
Latitude (N): 40.0158
Longitude (W): -76.4991
Collection Date: 2024-07-05
Comment:

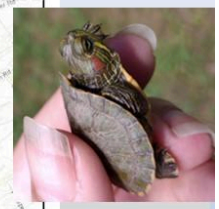
Public report submitted to the Pennsylvania Fish and Boat Commission. The turtle was removed and is now in captive care.



USGS



The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

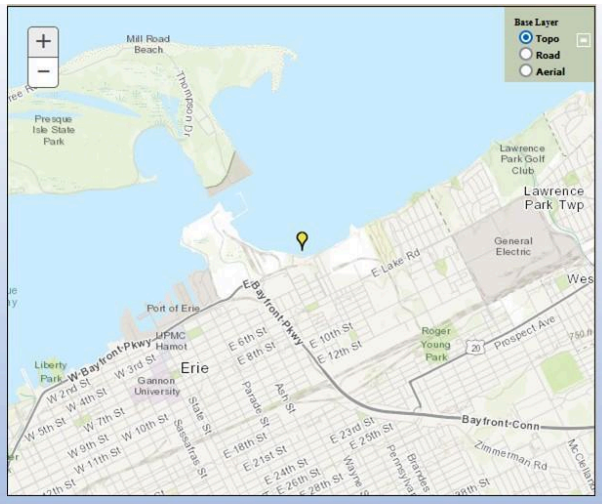


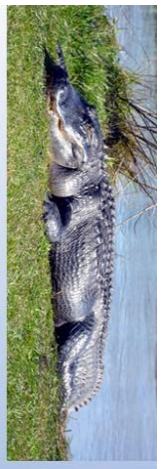
Sean Hartzell, PA FBC

Specimen ID	1736965
Group	Reptiles-Crocodilians
Genus	Alligator
Species	mississippiensis
Common Name	American alligator
State	PA
County	Erie
Locality	Lake Erie near East Ave
Mapping Accuracy	Accurate
HUC8 Name	Lake Erie
HUC8 Number	04260000
HUC10 Name	Lake Erie
HUC10 Number	0426000002
HUC12 Name	Lake Erie
HUC12 Number	042600000200

Collection Day	4
Collection Month	8
Collection Year	2024
Year Accuracy	Actual
Potential Pathway	released pet | escaped captivity pet
Status	unknown

USGS





Comments	Video recorded on Aug 4, other unverified observations and tracks observed on Aug 6.
Record Type	Literature
Verifier	Jonathan Freedman, USGS NAS
Freshwater/ Marine	Freshwater
Number Collected	1
Size	estimated 4'-6' long

USGS science for a changing world

Specimen ID: 1736600
Species: *Hydrilla verticillata peregrina*
Common name: wandering hydrilla
Alert Level: County: Fulton (PA); Drainage: Lower Juniata (02050304)
Alert Date: 2024-06-03
State/Province: Pennsylvania
Locality: inlet of lake at Cowans Gap State Park
Latitude (N): 39.995
Longitude (W): -77.9272
Collection Date: 2024-05-24
Comment:

Near "No boats beyond this point" sign

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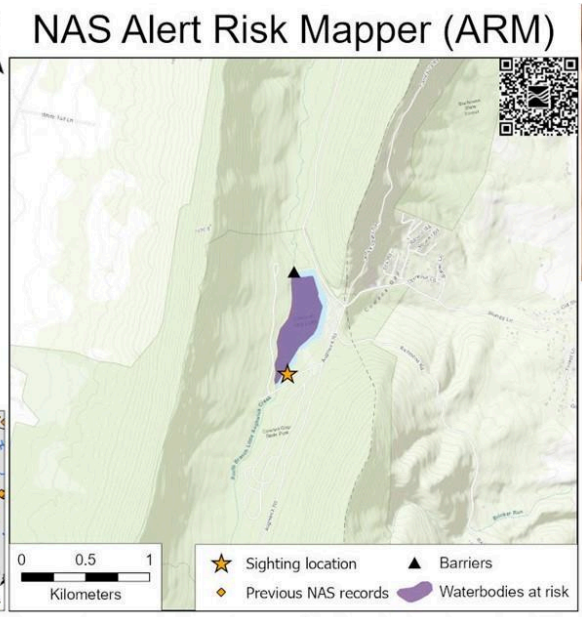
USGS



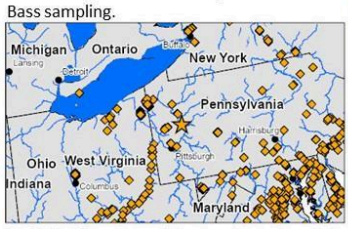
The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

Angela A Spagnoli, 2024

USGS science for a changing world

Specimen ID: 1737076
Species: *Hydrilla verticillata peregrina*
Common name: wandering hydrilla
Alert Level: Drainage: Middle Allegheny-Redbank (05010006)
Alert Date: 2024-08-28
State/Province: Pennsylvania
Locality: Allegheny River at Brady's Bend
Latitude (N): 40.9941
Longitude (W): -79.5793
Collection Date: 2024-08-22
Comment:

Incidental find by Pennsylvania Fish and Boat Commission staff during Smallmouth Bass sampling.



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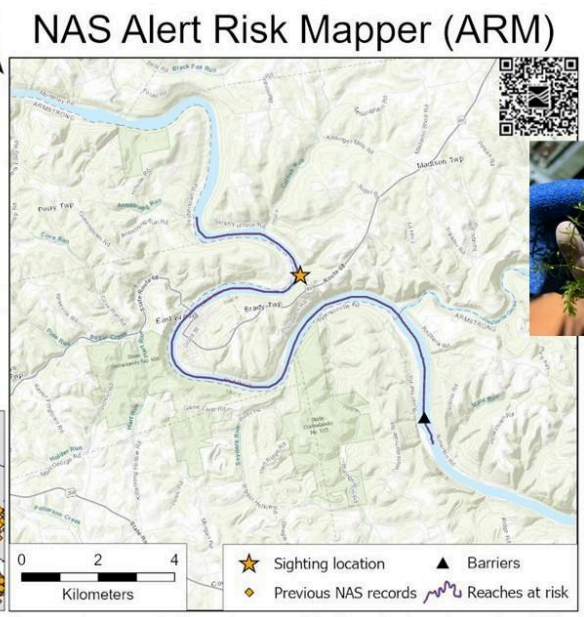
USGS



The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

PA FBC

USGS science for a changing world

Specimen ID: 1736903
Species: *Ludwigia peploides*
Common name: floating primrose-willow
Alert Level: County: Dauphin (PA); Drainage: Lower Susquehanna-Swatara (02050305)
Alert Date: 2024-08-07
State/Province: Pennsylvania
Locality: On the western bank across from Boathouse Park, and also along both banks heading to the Union Deposit Dam
Latitude (N): 40.3104
Longitude (W): -76.6658
Collection Date: 2024-08-06
Comment:

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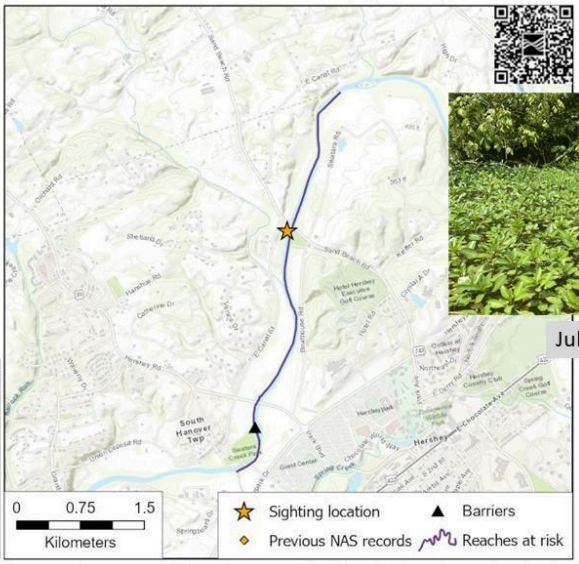
USGS

NAS Alert Risk Mapper (ARM)



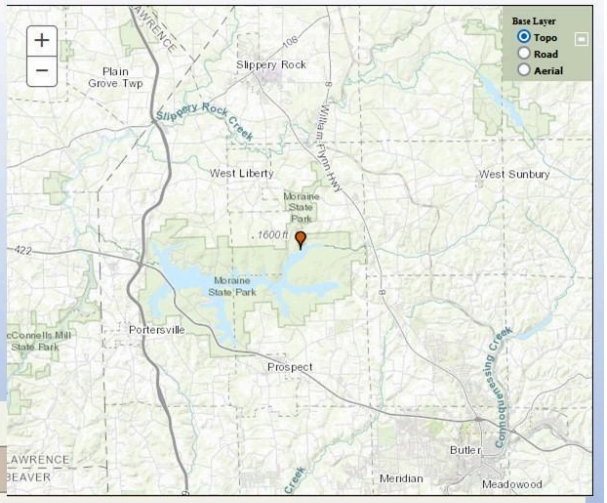
The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

Julieanne Stanley

Specimens were in large mats floating on the water, I counted 7 mats but there may have been more. Found among some purple loosestrife.

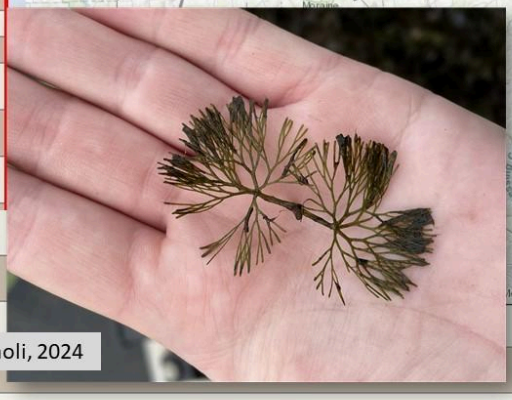
Specimen ID	1737162
Group	Plants
Genus	Cabomba
Species	caroliniana
Common Name	Carolina fanwort
State	PA
County	Butler
Locality	Lake Arthur shoreline, Moraine State Park, near the Barkley Rd Access
Mapping Accuracy	Accurate
HUC8 Name	Connoquenessing
HUC8 Number	05030105
HUC10 Name	Slippery Rock Creek
HUC10 Number	0503010503
HUC12 Name	Lake Arthur-Muddy Creek
HUC12 Number	050301050307

Collection Day	18
Collection Month	9
Collection Year	2024
Year Accuracy	Actual
Status	established
Comments	This is the first recorded observation of fanwort present at Moraine State Park. The Bureau of State Parks - Resource Management Division was on-site to conduct a hydrilla survey of the shoreline at the Barkley Road access point. While hydrilla was present, Angela Spagnoli also found evidence of a substantial fanwort infestation.



USGS

Specimen ID	1737162
Group	Plants
Genus	Cabomba
Species	caroliniana
Common Name	Carolina fanwort
State	PA
County	
Locality	
Mapping Accuracy	
HUC8 Name	
HUC8 Number	
HUC10 Name	
HUC10 Number	
HUC12 Name	
HUC12 Number	



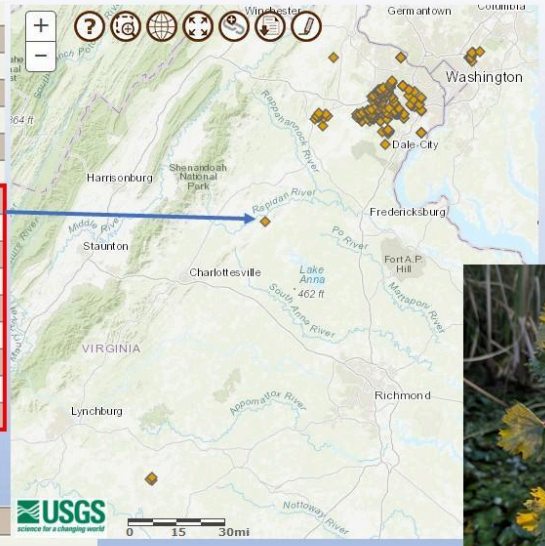
Angela A Spagnoli, 2024

Accuracy	
Status	established
Comments	This is the first recorded observation of fanwort present at Moraine State Park. The Bureau of State Parks - Resource Management Division was on-site to conduct a hydrilla survey of the shoreline at the Barkley Road access point. While hydrilla was present, Angela Spagnoli also found evidence of a substantial fanwort infestation.

USGS

Specimen ID	1736828
Group	Plants
Genus	Trapa
Species	bispinosa
Variety	iinumai
Common Name	water chestnut
State	VA
County	Orange
Locality	private pond near Mount Sharon Rd
Mapping Accuracy	Accurate
HUC8 Name	Rapidan-Upper Rappahannock
HUC8 Number	02080103
HUC10 Name	Cedar Run-Rapidan River
HUC10 Number	0208010310
HUC12 Name	Town of Rapidan-Rapidan River
HUC12 Number	020801031001

Invasive Species management project. Many removed from pond



© Tucker101

Collection Day	8
Collection Month	7
Collection Year	2024
Year Accuracy	Actual
Potential Pathway	hitch hiker on waterfowl
Status	established

USGS

USGS science for a changing world

Specimen ID: 1736785
Species: *Apalone spinifera spinifera*
Common name: Eastern Spiny Softshell
Alert Level: State: West Virginia; County: Jefferson (WV); Drainage: Conococheague-Opequon (02070004)
Alert Date: 2024-07-03
State/Province: West Virginia
Locality: River Road in Jefferson County, West Virginia, adjacent to the Potomac River
Latitude (N): 39.4252
Longitude (W): -77.7565
Collection Date: 2024-07-01
Comment:

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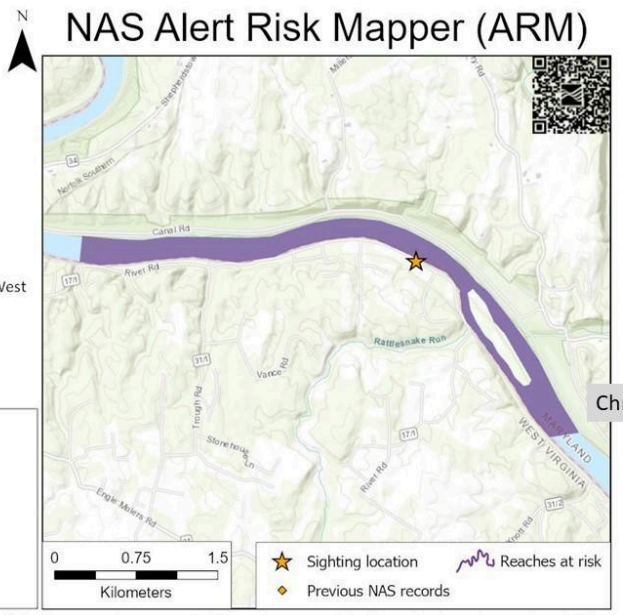
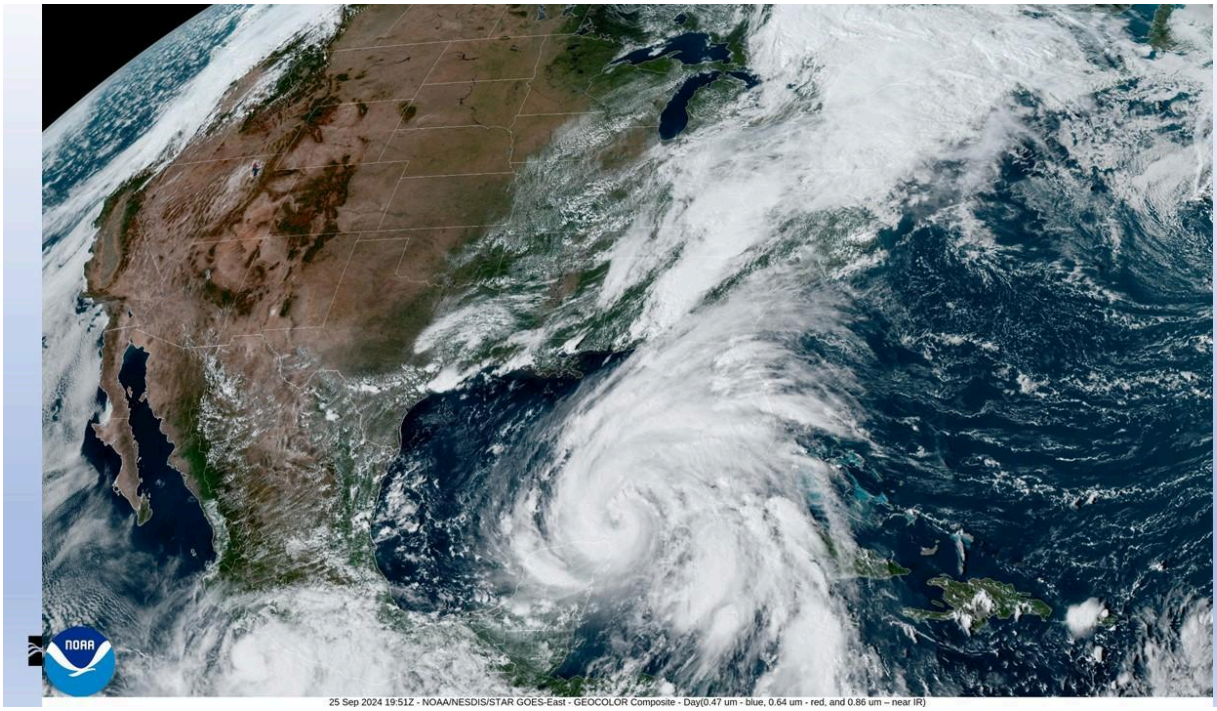


The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

Christine Marshall

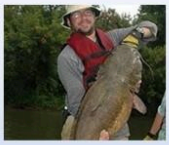
USGS



NAS

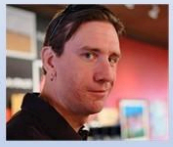
Dr. Wesley Daniel

Dr. Jonathan Freedman



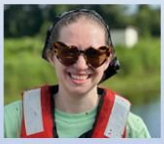
Audrey Jordon

Dr. Matthew Neilson



Kristen Reaver

Arden Williams



Ian Pfingsten

ipfingsten@usgs.gov

Mary Brown

Logan Stratton

Cayla Morningstar

Dr. Emily Dean

USGS

Nonindigenous Aquatic Species Database

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WARC Advanced Applications Team

Christina Hunnicutt Joey Richard

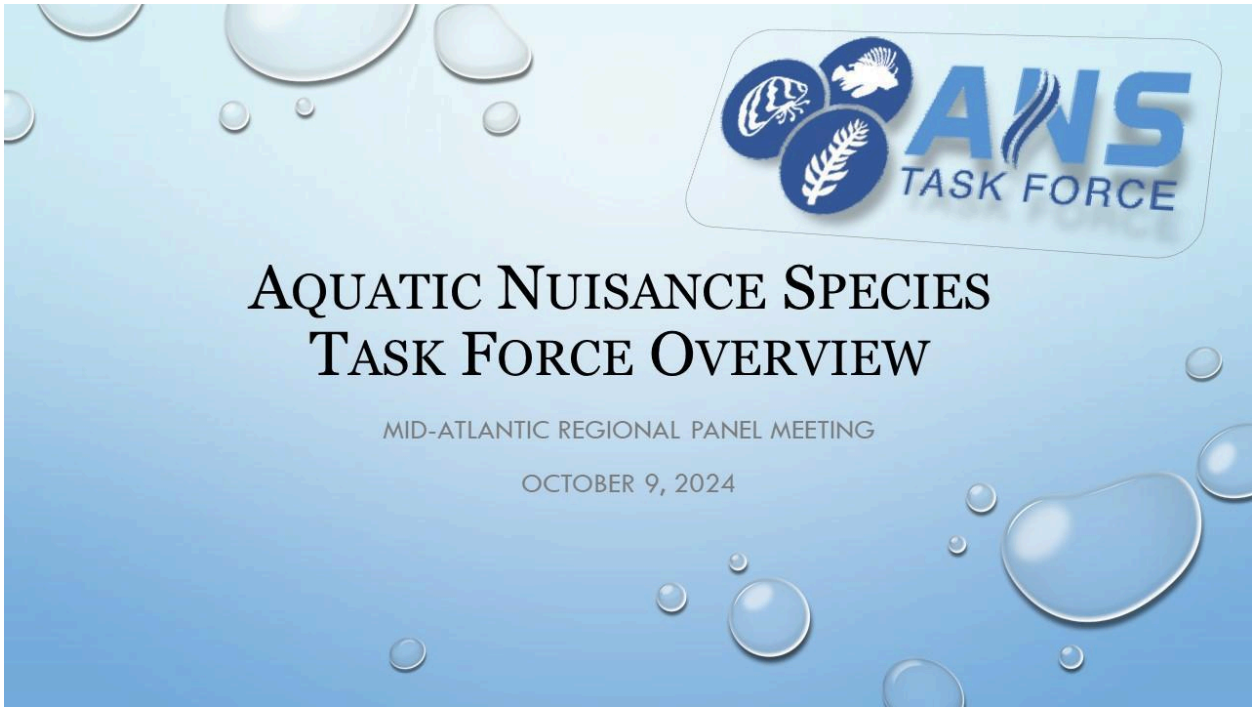
WARC Leadership

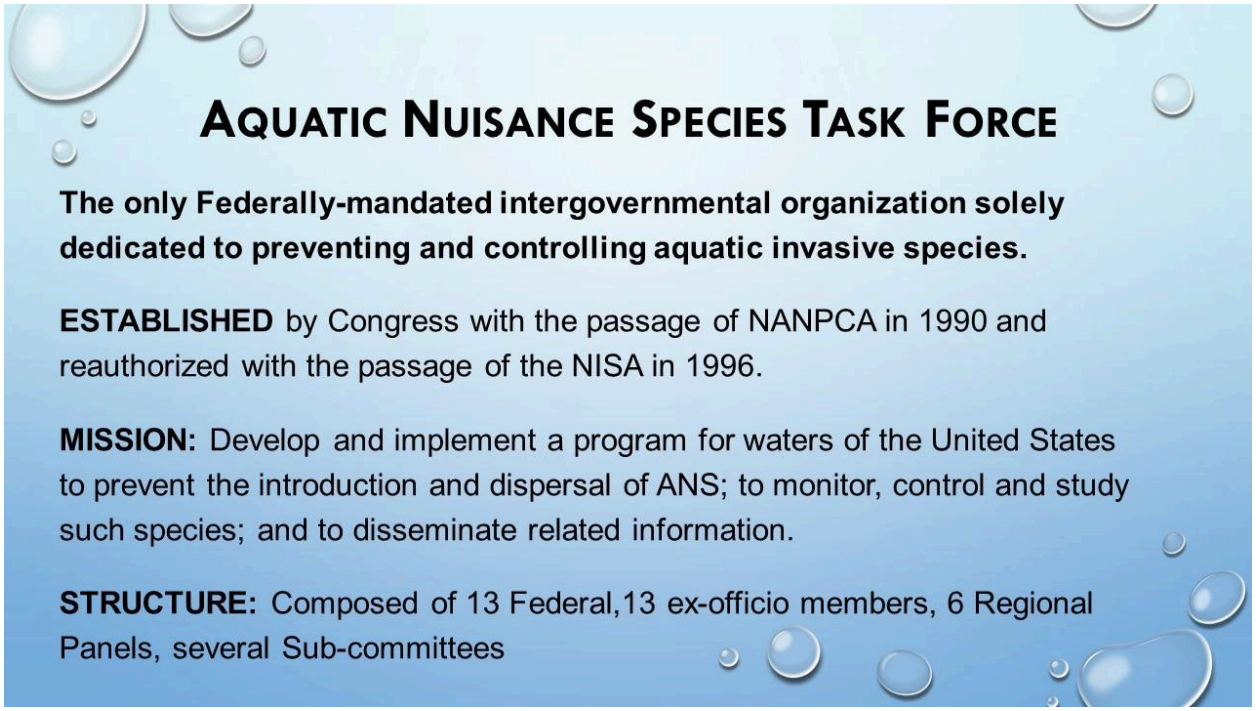
Dr. Lynn Copeland Dr. Deborah Epperson

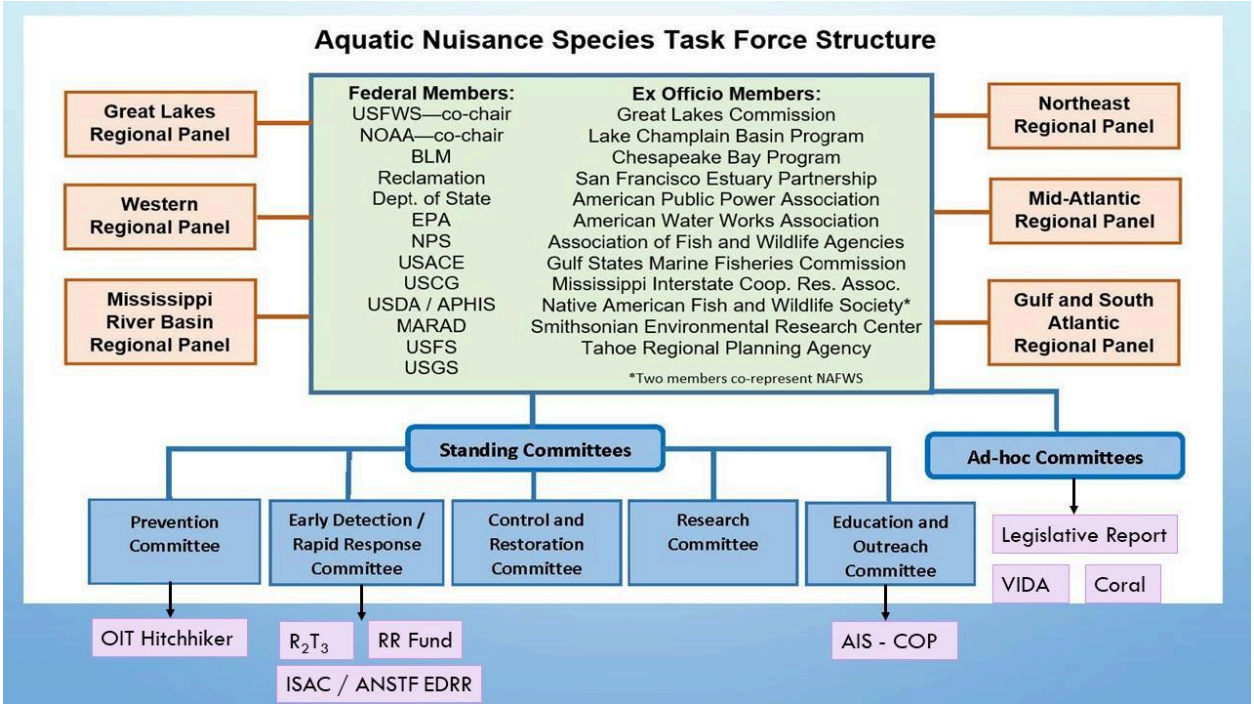
Danielle Kitchen Craig Conzelmann

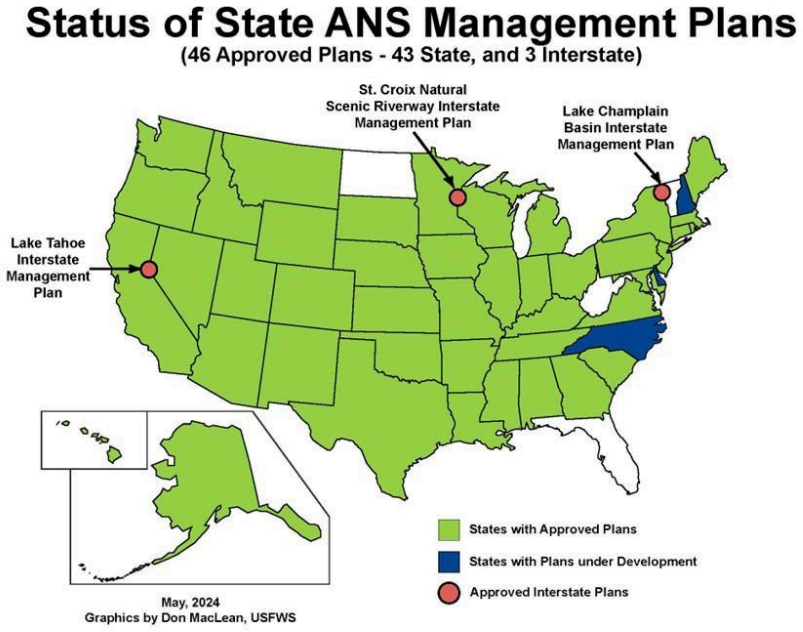
Melissa Chavis Dr. Scott Wilson

Appendix V: Susan Pasko's "Aquatic Nuisance Species Task Force Updates" Slides



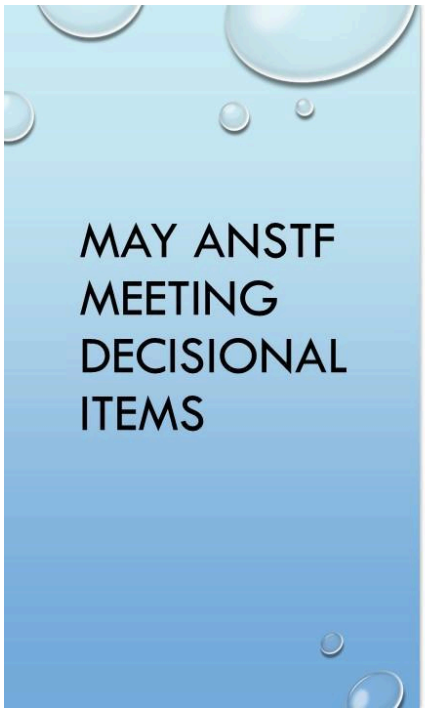


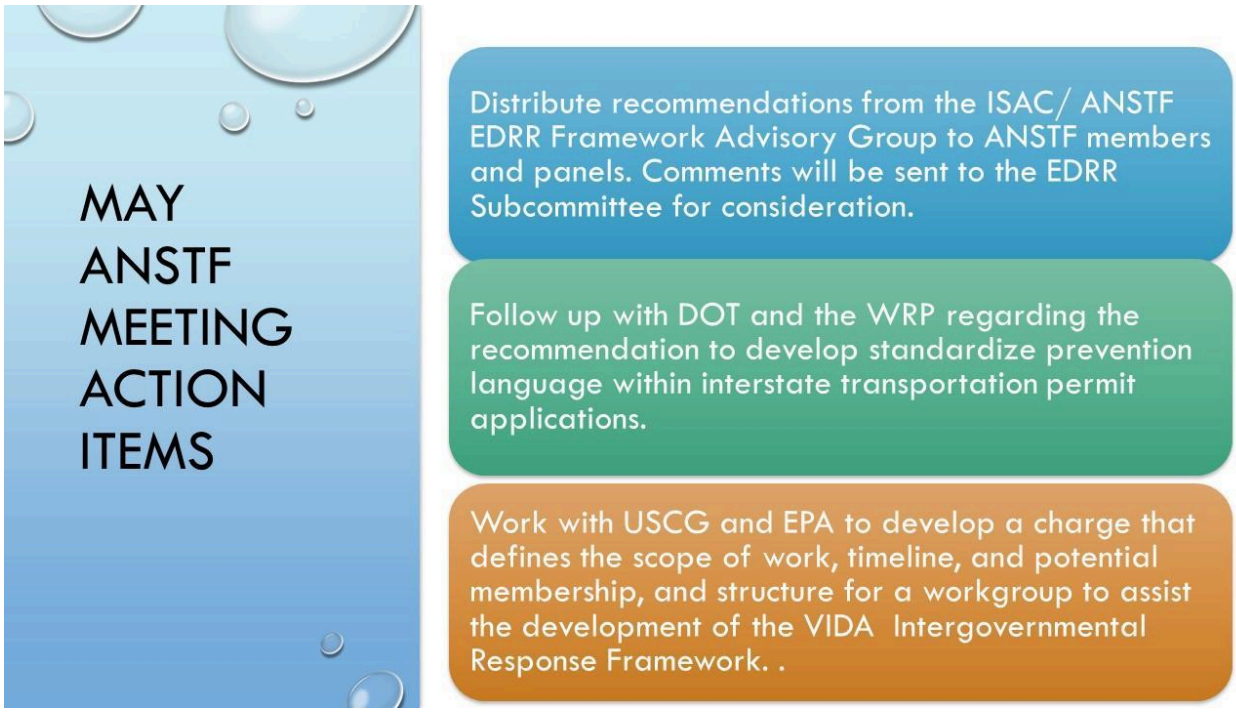




Authorized: $4M;
FY 15: $1M
FY 16 - 19: $2M
FY 20: $3.8 M

FY21 - 22: $4.084M;
45 plans; ~$92K/plan


MAY ANSTF MEETING DECISIONAL ITEMS
ANS Task Force approved the New Jersey State ANS Management Plan.
The ANS Task Force approved the final European Green Crab Management Plan.


MAY ANSTF MEETING ACTION ITEMS
Distribute recommendations from the ISAC/ ANSTF EDRR Framework Advisory Group to ANSTF members and panels. Comments will be sent to the EDRR Subcommittee for consideration.
Follow up with DOT and the WRP regarding the recommendation to develop standardize prevention language within interstate transportation permit applications.
Work with USCG and EPA to develop a charge that defines the scope of work, timeline, and potential membership, and structure for a workgroup to assist the development of the VIDA Intergovernmental Response Framework. .

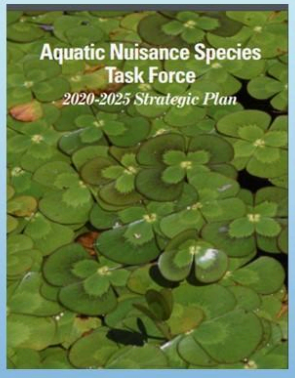
MAY ANSTF MEETING ACTION ITEMS

Work with the US Coral Reef Task Force to explore establishing a joint working group focused on the invasive soft coral issue in the Pacific and Caribbean. Recommendations for the scope and structure of the group will be communicated at the next meeting.

Control Subcommittee to review their recommendation on a Genetic Biocontrol Subcommittee to determine potential next steps. A recommended approach will be presented at the next ANSTF meeting.

Distribute survey to inform the Legislative Gap Report to Congress. ANSTF Chairs will distribute this email and survey to ANSTF Federal Member Agencies.

ANS TASK FORCE STRATEGIC PLAN



COORDINATION
Coordinate a national ANS program for waters of the United States

CONTROL & RESTORATION
Contain and control established ANS and restore native species and ecosystems

PREVENTION
Prevent the establishment and spread of existing ANS

RESEARCH
Facilitate research on ANS threats, impacts, and controls

EARLY DETECTION & RAPID RESPONSE
Identify and respond to new species detections in a timely manner to prevent their establishment and spread

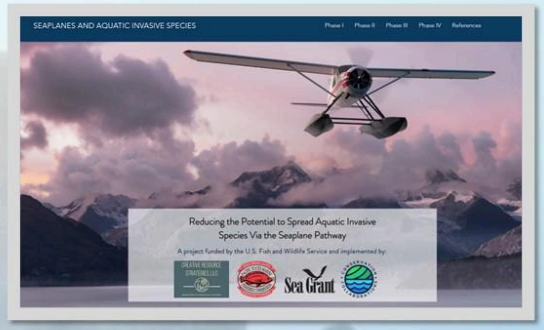
OUTREACH & EDUCATION
Conduct outreach and education to increase awareness concerning the threats of ANS

https://www.fws.gov/media/aquatic-nuisance-species-task-force-strategic-plan-2020-2025

COMPLETED OR ONGOING ANSTF WORK

Implementation of 2024 Subcommittee Work Plans (Prevention, EDRR, Control, Outreach, Research)

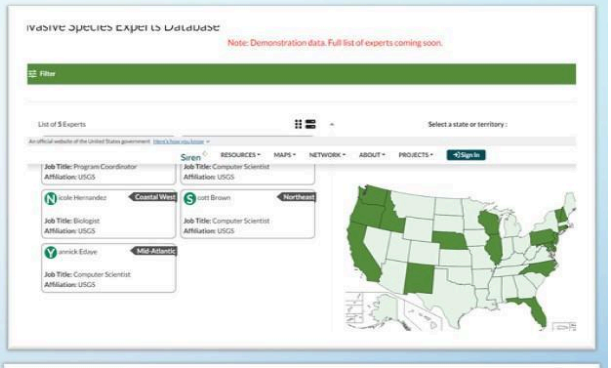
- **Advising a Sea Plane / AIS Risk Analysis**
  - Deliverables by Feb. 2025: Regional Case Studies, Regulatory crosswalk, Recommendations for seaplane equipment design, BMPs to reduce AIS transport,
  - https://www.seaplanesandais.com/
- **Revising the New Zealand Mudsnail Management Plan**
  - Draft anticipated November 2024
- **Decision-making Process for Approval to Develop new Species Control and Management Plans**
  - Vote Anticipated November 2024
- **National Outreach Summit**
  - Held October 1, 2024 in Missoula, MT
- **Managing SAH Website / Outreach CoP**



COMPLETED OR ONGOING ANSTF WORK

Implementation of 2024 Subcommittee Work Plans:

- **Completing Rapid Response Plan Template**
  - Draft anticipated November 2024
- **Modernizing and expanding the utility of the Invasive Species Experts Database**
  - Soft Launch with ANSTF snd Regional Panel Members
  - Incorporated in Siren: invasivespecies.gov/siren
- **Joint ANSTF / ISAC working group to provide non-federal input to the National EDRR Framework**
  - Vote Anticipated November 2024
- **Administering a pilot Rapid Response Fund for Aquatic Invasive Species**
  - https://www.fws.gov/story/rapid-response-fund-aquatic-invasive-species



RAPID RESPONSE FUND SELECTIONS (FY 23 AND 24)

20 Proposals Received (3 resubmitted):

- **Entities:**
  - Federal - 6
  - State - 12
  - Tribal – 1
  - Territory - 1

Funding:
- Min – $68, 191
- Max – $ 908.109
- **Total - $ 6,852,172**

Species:
- Zebra Mussel
- Elodea
- Hydrilla
- Giant Salvinia
- Redclaw /Signal Crayfish
- European Green Crab
- Rainbow Trout
- Octocoral
- Smallmouth Bass
- Caulerpa
- New Zealand Mud Snail

Locations:
- Colorado
- Alaska
- Hawaii
- Washington / Oregon
- North Carolina
- Rhode Island
- Nevada
- Utah
- California
- Texas
- Massachusetts
- Minnesota
- Ohio
- Puerto Rico

Third Quarter 2024 Rapid Response Funding Recipients

Project Name
Eradication and post-monitoring of invasive zebra mussel, Dreissena polymorpha, in Lake Norman Quarry in Iredell County

Second Quarter 2024 Rapid Response Funding Recipients

Project Name
Rapid response to the first known signal crayfish, Pacifastacus leniusculus, occurrence in a Minnesota lake
Rapid Response Plan for Hydrilla(Hydrilla Verticillata) in Massachusetts

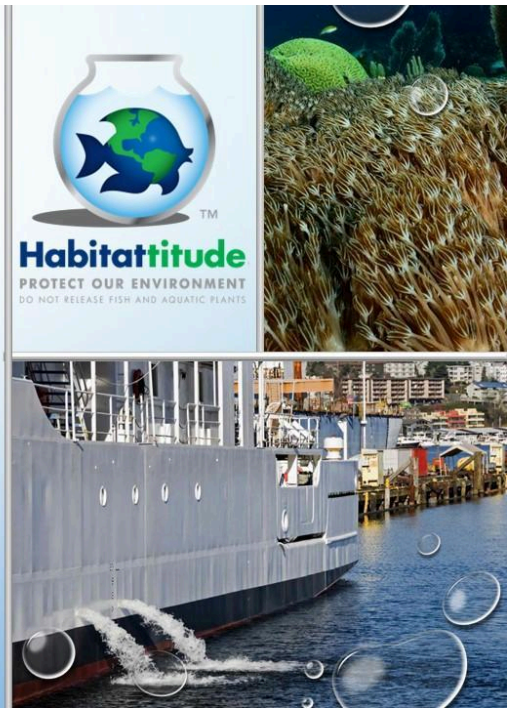
First Quarter 2024 Rapid Response Funding Recipients

Project Name
Eradication of the invasive aquatic plant elodea in the Yukon River Basin
Eradication of the founding population and delineation of Caulerpa prolifera in the Coronado Cays and South San Diego Bay
Australian redclaw crayfish eradication in the Clark County Wetlands Park
Control of newly found hydrilla in Indian Lake

Next NOFO will be posted October 2025!

NEW ANSTF ACTIVITIES FOR 2025!

- Assisting USCS in developing a Framework for ANS introduction resulting from Ballast Water discharge
- Invasive Coral Working Group
- Potential Archival of Ruffe Plan
- Develop process to better support and track existing species plans
- Updating the National AIS Research Priorities List
- Implement recommendations from the after-action report on the moss ball response
- Progress Report of AIS Legislative, Programmatic, and Regulatory Gaps
- National AIS Communication Framework
- Habitattitude MOU (PAN / USFWS/ NOAA)
- Return of the ANSTF Newsletter



THANK YOU!

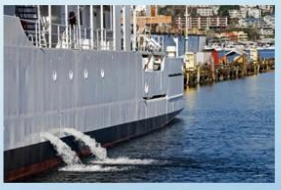
ANS TASK FORCE

SUSAN PASKO
ANS TASK FORCE EXECUTIVE SECRETARY
57725 LEESBURG PIKE FALLS CHURCH, VA 22041
PHONE: 703-358-2466
EMAIL: SUSAN_PASKO@FWS.GOV

FOR MORE INFORMATION, VISIT THE ANS TASK FORCE WEBSITE –
WWW.ANSTASKFORCE.GOV

PREVENTION SUBCOMMITTEE

- **Evaluate and refine science-based risk analysis procedures to assess potential ANS and pathways for introduction**
- **Identify priority pathways and species of concern**
- **Encourage implementation of measures to manage high priority pathways and species**



Priority Work Elements in 2024:

- Advising a SeaPlane Risk Analysis
- Assess new ANS introductions to determine where prevention measures may have been lacking or ineffective, or resulted from gaps in authority
- Organisms in Trade (OIT) Hitchhikers Workgroup.
- Assisting USCG and EPA in developing a Framework for ANS introduction resulting from Ballast Water discharge

OUTREACH SUBCOMMITTEE

- **Evaluate current ANS education and outreach efforts to ensure messaging is consistent and effective**
- **Develop processes to share information and consistently implement ANS outreach**
- **Raise the profile and communicate shared priorities of the ANSTF**

Habitattitude™
PROTECT OUR ENVIRONMENT

Priority Work Elements in 2024:

- Conducted assessment of national and state campaigns that target outdoor recreational users
- Organizing National AIS Outreach Summit (Fall 2024)
- Populate the Stop Aquatic Hitchhikers portal to serve as a national clearinghouse for education, outreach, and marketing materials
- Continue the ANS Outreach Community of Practice

EDRR SUBCOMMITTEE

- **Facilitate monitoring efforts to detect and report new sightings of ANS**
- **Develop processes to rapidly assess new species detections and determine appropriate**
- **Facilitate the development of capacities to respond rapidly to new invasions**

Priority Work Elements in 2024:

- Develop a plan for capacity-building in NAS to meet stakeholder needs
- Develop ANS horizon scanning and watch lists
- Modernizing and expanding the utility of the Invasive Species Experts Database
- Develop a Rapid Response Template
- Administering a pilot Rapid Response Fund for Aquatic Invasive Species
- Joint ANSTF / ISAC working group to provide non-federal input to the National EDRR Framework

CONTROL SUBCOMMITTEE

- **Coordinate the development and implementation of ANS Management and Control Plans**
- **Identify and communicate effective control and restoration techniques**
- **Identify gaps in available control and restoration measures and encourage innovation**

Priority Work Elements in 2024:

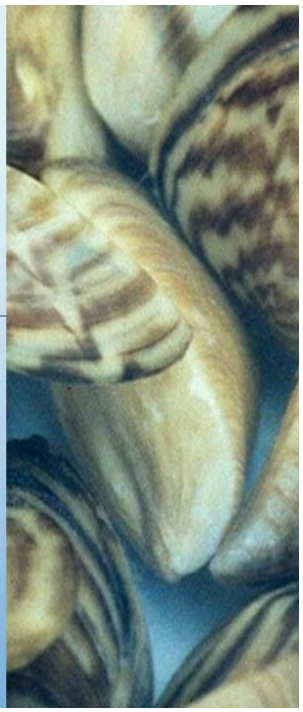
- Plan revisions: European Green Crab and New Zealand Mudsnail
- Potential Archival of Ruffe Plan
- Decision-making Process for Approval to Develop new Species Control and Management Plans
- Develop process to better support and track existing species plans
- Exploring concept of guidelines to prevent spread of ANS during restoration

RESEARCH SUBCOMMITTEE

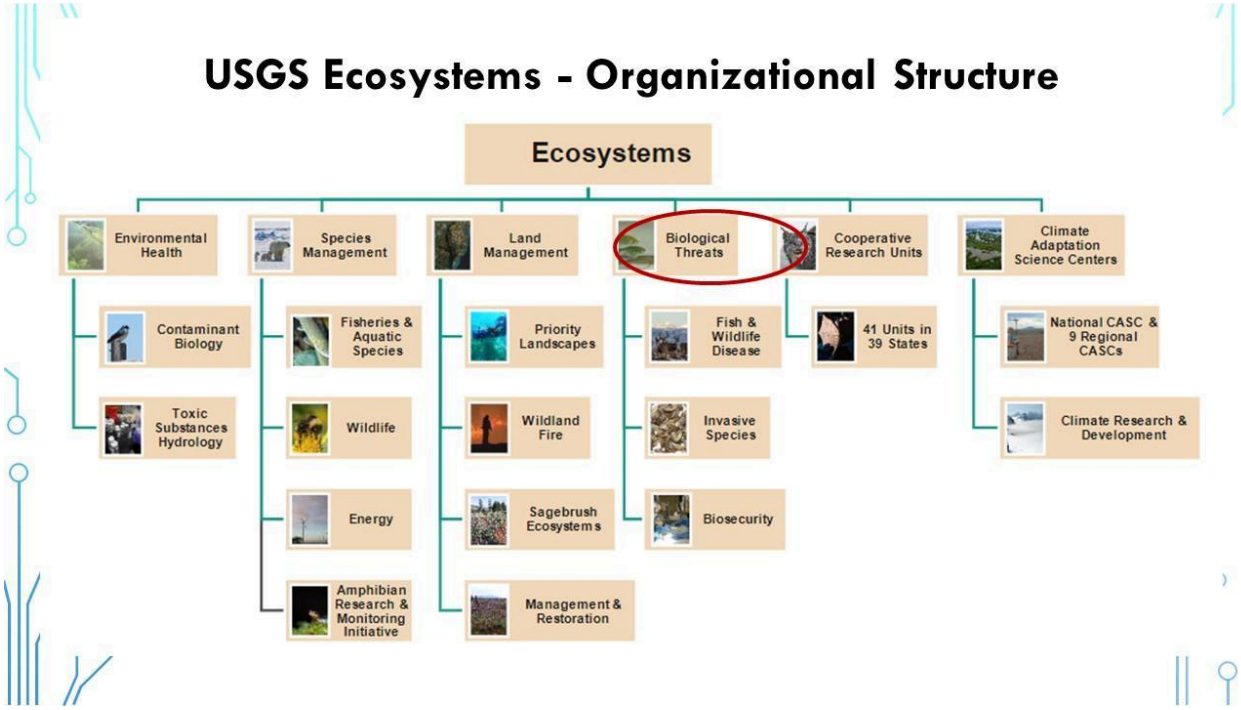
- **Establish ANS Task Force research priorities and identify prospective partners**
- **Facilitate activities that support priority ANS research needs**
- **Track and disseminate study results to incorporate into ANS management decisions and activities**

Priority Work Elements in 2024:

- Update the National AIS Priority Research List
- Create a database to track completed studies that address priority research needs identified by the ANSTF
- Identify and implement measures to communicate results from priority research to the ANS Task Force and appropriate audiences



Appendix VI: Cindy Tam's Biological Threats and Invasive Species Research Program (BTRP) Introduction Slides

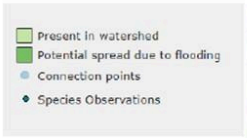

USGS Ecosystems - Organizational Structure
Ecosystems
Environmental Health
Species Management
Land Management
Biological Threats
Cooperative Research Units
Climate Adaptation Science Centers
Contaminant Biology
Toxic Substances Hydrology
Fisheries & Aquatic Species
Wildlife
Energy
Amphibian Research & Monitoring Initiative
Priority Landscapes
Wildland Fire
Sagebrush Ecosystems
Management & Restoration
Fish & Wildlife Disease
Invasive Species
Biosecurity
41 Units in 39 States
National CASC & 9 Regional CASCs
Climate Research & Development

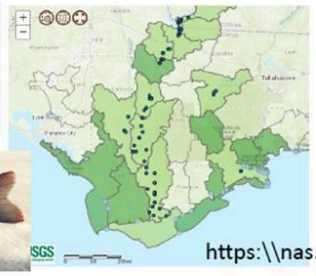

Biological Threats and Invasive Species Research Program
• Formed by internal re-organization of the EMA in FY2020 budget
• Brought together fish and wildlife disease and invasive species research portfolios
• The Program works closely with Interior and other Federal, State, local, and Tribal management partners to provide actionable science to reduce the impact of biological threats
• Provides essential information, data, research, and decision-support tools to help prevent, identify, detect, contain, manage, or eradicate invasive species and wildlife disease that pose significant threats to the U.S.

The BTRP Research Portfolio – Areas of Emphasis

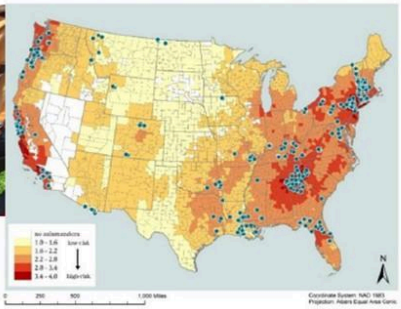
Invasive Species – Research, monitoring, and technology development to detect, contain, or eradicate invasive species with potential to cause significant ecological or economic damage or impact human health.

Wildlife Disease – Investigations into national and regional wildlife mortality events and research on fish and wildlife disease ecology, risk assessment, surveillance, impacts, control, and decision support to Federal, State, and Tribal wildlife management agencies.





Bsal surveillance

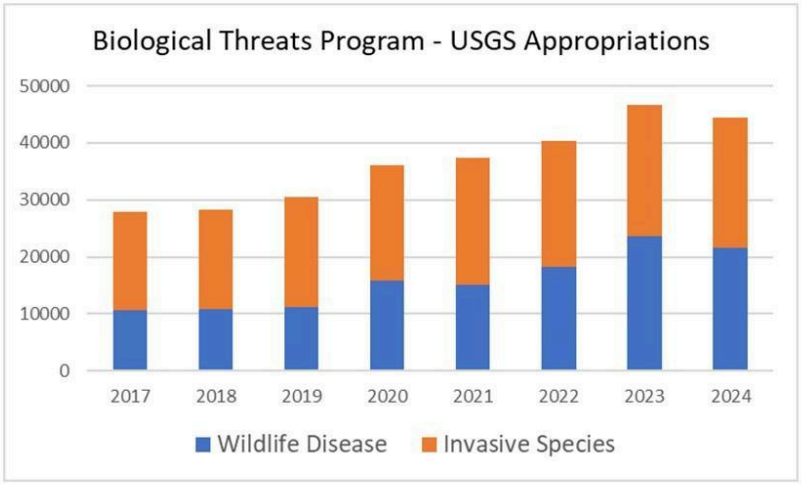


Sublines of Work

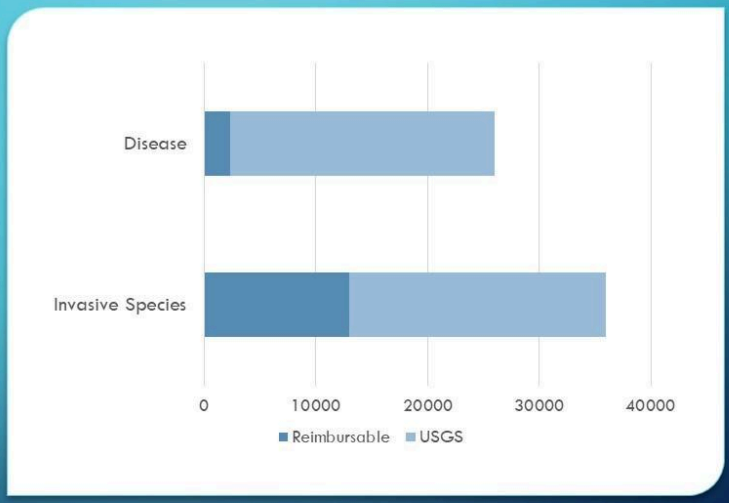
Due to similarities in the processes behind the introduction, spread, and management of invasive species and wildlife disease, sublines of work cross areas of emphasis:

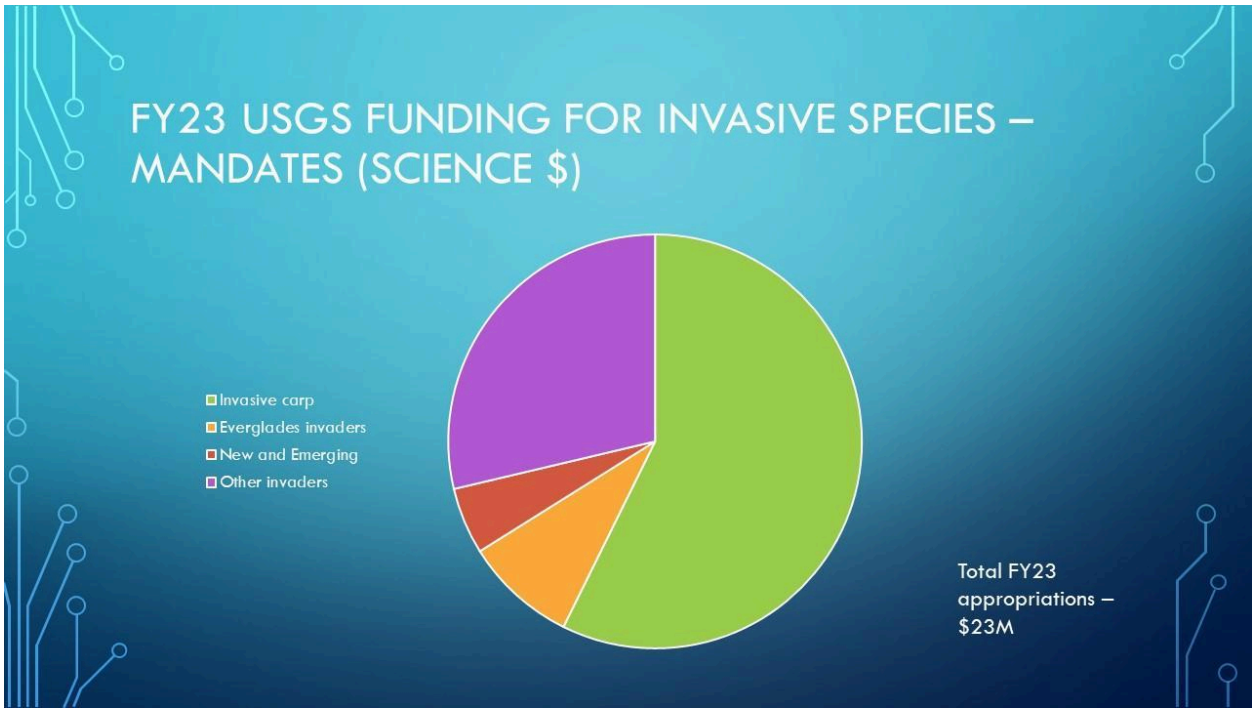
- Prevention
- Detection tool development and testing
- Species identification, cause of death investigations, and pathogen discovery
- Species tracking and surveillance
- Forecasting and modeling
- Decision science, economics, and human dimensions
- Ecology and impact
- Management and control tools
- Ecological interactions and management adaptation to climate change

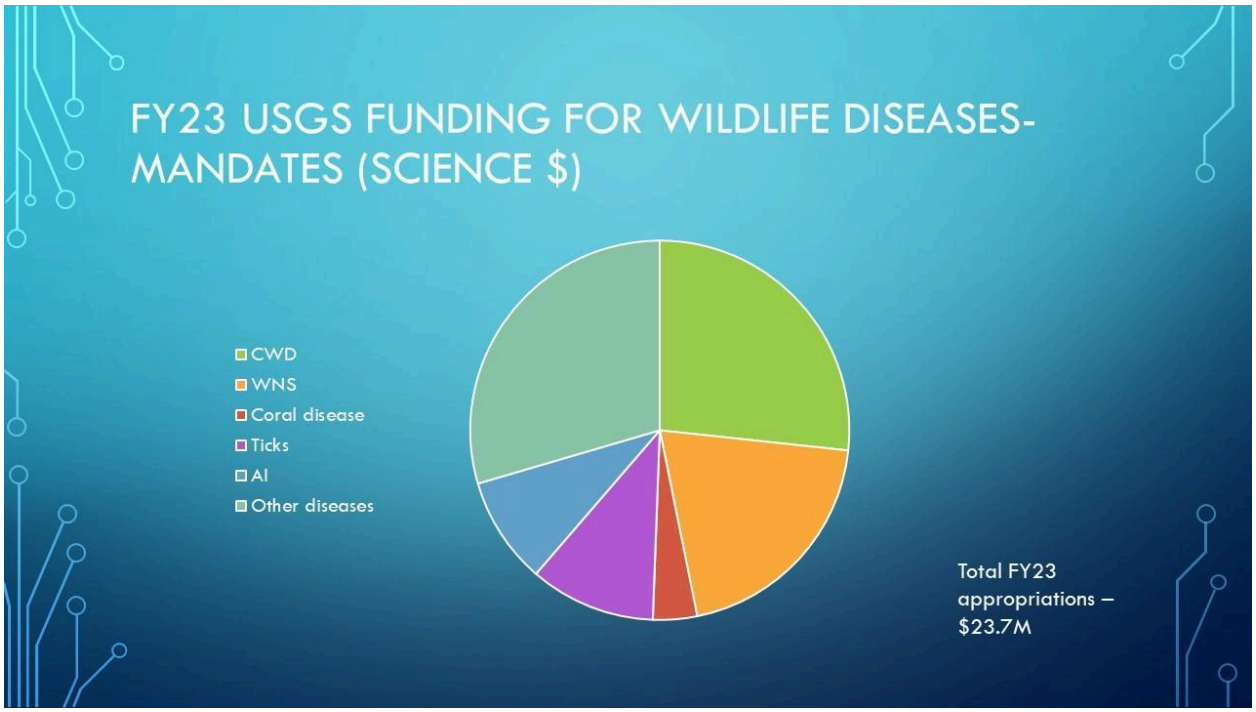
FY24 USGS Appropriations $44.5M (-2.122M from FY23)



FY23 Biothreats Reimbursable Funding




FY23 USGS FUNDING FOR INVASIVE SPECIES – MANDATES (SCIENCE $)
Invasive carp
Everglades invaders
New and Emerging
Other invaders
Total FY23 appropriations – $23M


FY23 USGS FUNDING FOR WILDLIFE DISEASES- MANDATES (SCIENCE $)
CWD
WNS
Coral disease
Ticks
AI
Other diseases
Total FY23 appropriations – $23.7M

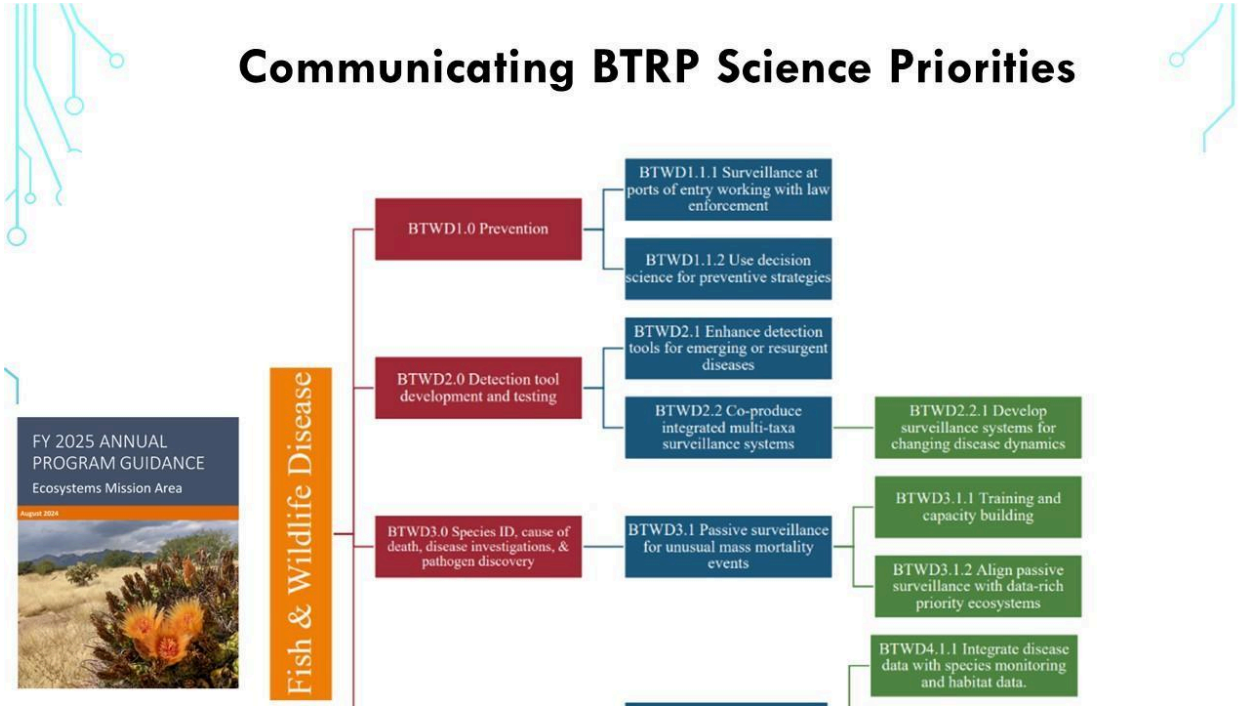
Other Congressional Priorities: BTRP Involvement in Recent Supplementals

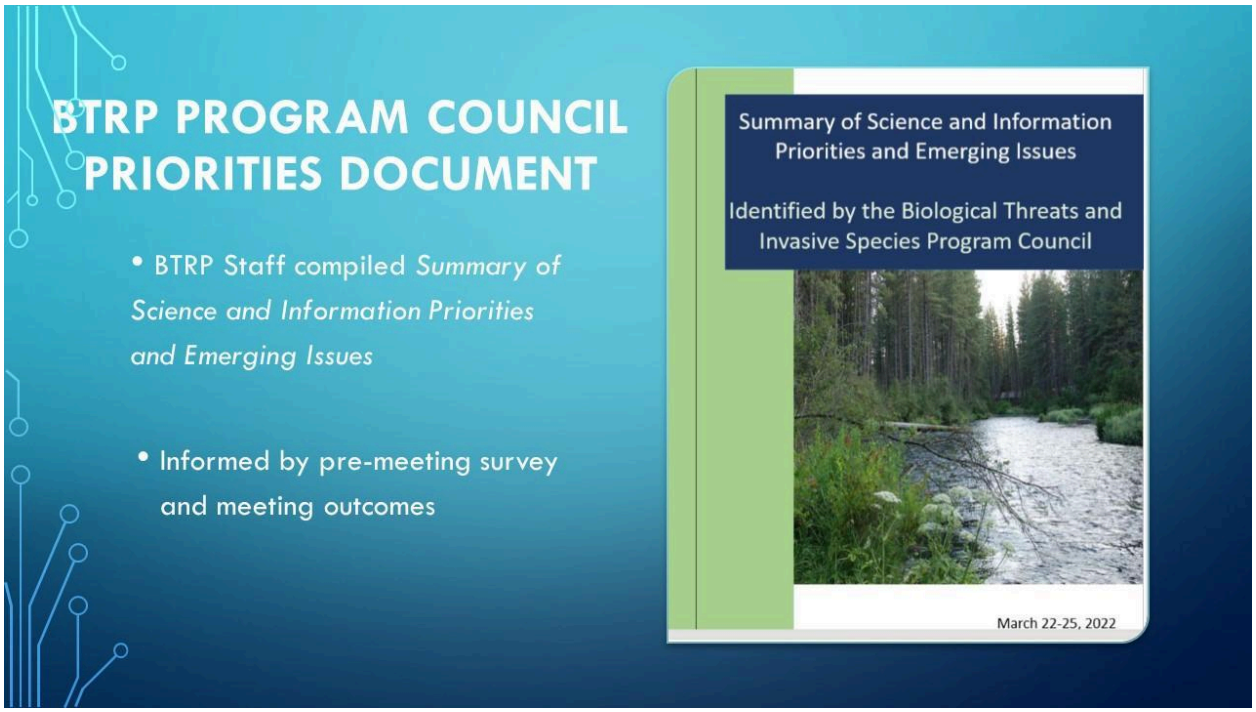
- **CARES Act**
  - 7.5M in FY2021
  - Coronavirus surveillance
    - Bat coronavirus surveillance, Bat tracking
  - Adaptive management
  - Rapid diagnostic assay development
- **American Rescue Plan Act**
  - 6.5M through IAA with FWS in FY2022
  - Create National Wildlife Disease Database
  - 5M add additional functionality to WHISPers
  - 1.5M to create AquaDepth
- **Bipartisan Infrastructure Law**
  - 4.592M in FY2022
  - 592K for Hawaiian forest birds – avian malaria
  - 4M to support National Early Detection Rapid Response Framework
  - 7 projects to provide specific tools
  - Will start discussions on FY2023 soon

BTRP Existing Coordination and Communication Groups

SCIENCE TEAMS	COMMUNITIES OF PRACTICE
• Invasive Carp	• Invasive Species
• Everglades Invaders	• National EDRR Framework
	• Wildlife Disease
• Chronic Wasting Disease (CWD)	
• Coral Disease	• Environmental DNA (eDNA)
• White-nose syndrome (WNS)*	• Biotech, Genetics, and –Omics
• Avian influenza (AI)*	• Animal Care and Use

* = No Congressional appropriations in FY24 and FY25 Marks

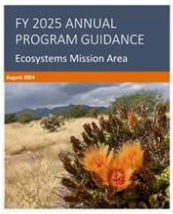

Communicating BTRP Science Priorities
FY 2025 ANNUAL PROGRAM GUIDANCE
Ecosystems Mission Area
August 2024
Fish & Wildlife Disease
BTWD1.0 Prevention
BTWD1.1.1 Surveillance at ports of entry working with law enforcement
BTWD1.1.2 Use decision science for preventive strategies
BTWD2.0 Detection tool development and testing
BTWD2.1 Enhance detection tools for emerging or resurgent diseases
BTWD2.2 Co-produce integrated multi-taxa surveillance systems
BTWD2.2.1 Develop surveillance systems for changing disease dynamics
BTWD3.0 Species ID, cause of death, disease investigations, & pathogen discovery
BTWD3.1 Passive surveillance for unusual mass mortality events
BTWD3.1.1 Training and capacity building
BTWD3.1.2 Align passive surveillance with data-rich priority ecosystems
BTWD4.1.1 Integrate disease data with species monitoring and habitat data.


BTRP PROGRAM COUNCIL PRIORITIES DOCUMENT
• BTRP Staff compiled *Summary of Science and Information Priorities and Emerging Issues*
• Informed by pre-meeting survey and meeting outcomes
Summary of Science and Information Priorities and Emerging Issues
Identified by the Biological Threats and Invasive Species Program Council
March 22-25, 2022

CROSS-PROGRAM NEEDS AND MEANS TO ACHIEVE

Table B. Emerging and existing needs for biological threats research and mechanisms to address them, as identified by Biological Threats and Invasive Species Research Program Council members.

List of Continuing and Emerging Research Priorities
Invest in research on invasive species and wildlife diseases that most affect species of conservation concern, whether important economically, Threatened or Endangered, or small populations.
Identify wildlife diseases and invasive species not yet in the US by conducting horizon scans, maintaining taxonomic expertise, thinking beyond our borders, and increasing international coordination.
Aid early detection by developing surveillance networks with new sensors to speed detections and improve communication and coordination and maintaining taxonomic expertise.
Support partners with regulatory and compliance responsibilities by developing interdiction tools and working more closely with these partners during implementation and conducting pathway analyses to understand patterns of introduction and spread.
Understand how perceptions and behaviors affect and exacerbate prevalence, management of, and impacts of biological threats by increasing work in human dimensions, social sciences, and economics.
Improve efficiencies by looking for ways to get the most of our data, including data analyses, and seeking efficiencies for on the ground activities such as sample collection, surveillance, and rapid response.
Consider adopting the Resist-Accept-Direct framework developed by USGS and NPS for application to wildlife disease and invasive species issues.
Study projected range changes, changes in abundance and impact, effects of sleeper species (i.e., established nonnative species that quickly exhibit characteristics of invasive species) and species with expanding ranges, and developing climate adaptation strategies.
The biological threats of concern in Hawaii and other Pacific Islands differ from those on the mainland; special attention would be required to address these ecosystems.



BTRP PROGRAM COUNCIL DUTIES

- Establish and document processes to ensure Center, Region, Mission Area, and interest group feedback on program strategies and annual guidance; inform program direction
- Review program implementation and assist evaluate program health and program review
- Identify and increase internal collaborations by identifying collaborative opportunities and integrated requirements with other Mission Areas
- Develop and implement communications intended to inform Associate Directors, Regional Directors, and their senior staffs on council activities, recommendations, and outcomes.

No. of reps.	Representation	Membership pool	Nomination/appointment process	Term
2	Other DOI Bureaus	Bureaus with science needs that overlap with BTRP based on current Administration, Department, Bureau, or EMA priorities	BTRPC recommends members to BTRPC Chair.	2 years
1	Tribal, indigenous, or Pacific Islander representative	DOI Office of Insular Affairs, Bureau of Indian Affairs, Inter-Tribal Fish Commissions, Native American Fish & Wildlife Association	BTRPC recommends members to BTRPC Chair.	3 years
1	Other USGS Mission Area (PC or Program Staff)	Mission Area that overlaps significantly with BTRP based on current Administration, Department, or Bureau priorities	BTRPC recommends members to BTRPC Chair.	2 years
2	USGS Regions - Regional Directors or Regional staff	The Region receiving the most in BTRP annual Center funds; Region-at-Large determined by interest	Annual BTRP Center funds assessed each term; BTRPC Chair choses Region-at-Large. Members appointed by Regional Directors.	1-year initially; 2 years thereafter
3	EMA Science Centers - Directors or Center staff	The two EMA Centers receiving the most in BTRP annual Center funds; Center-at-Large determined by interest	Annual BTRP Center funds assessed each term; BTRPC Chair choses Center-at-Large. Members appointed by Center Directors.	1-year initially; 2 years thereafter
1	Other EMA Programs - PC or Program staff	EMA Program that overlaps with BTRP based on current Administration, Departmental, or EMA priorities	Program for inclusion nominated by the BTRPC. Member appointed by PC of nominated program.	1-year initial term; 2 years thereafter
1	USGS Senior Scientist to act as Science Advisor	USGS ST or GS-15 RGE scientist with expertise in biological threats	Member nominated by the BTRPC.	2 years, renewable if mutually agreeable
1	AFWA; State liaison	Relevant AFWA committees	Member nominated by the BTRPC and appointed by the Executive Director of AFWA	2 years

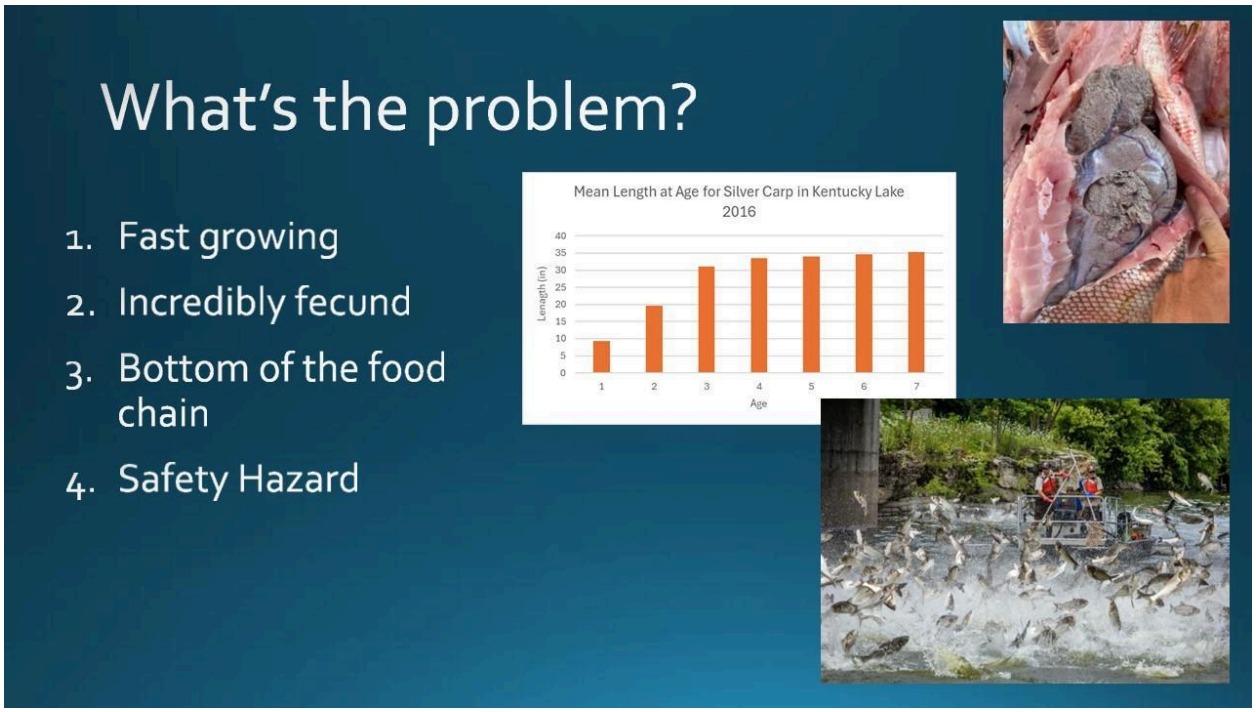
BTRPC STRUCTURE

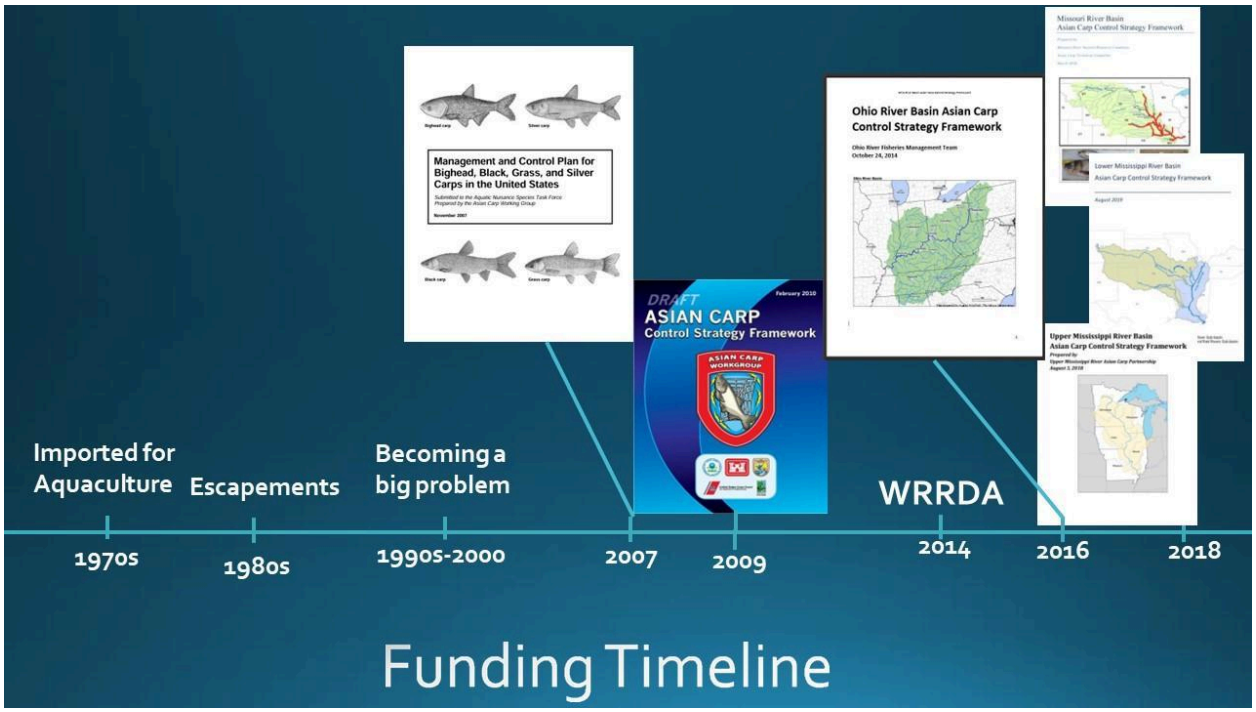
- We ask members to do their best to represent their constituency
  - E.g., DOI partners, USGS Regions, EMA Centers, EMA programs

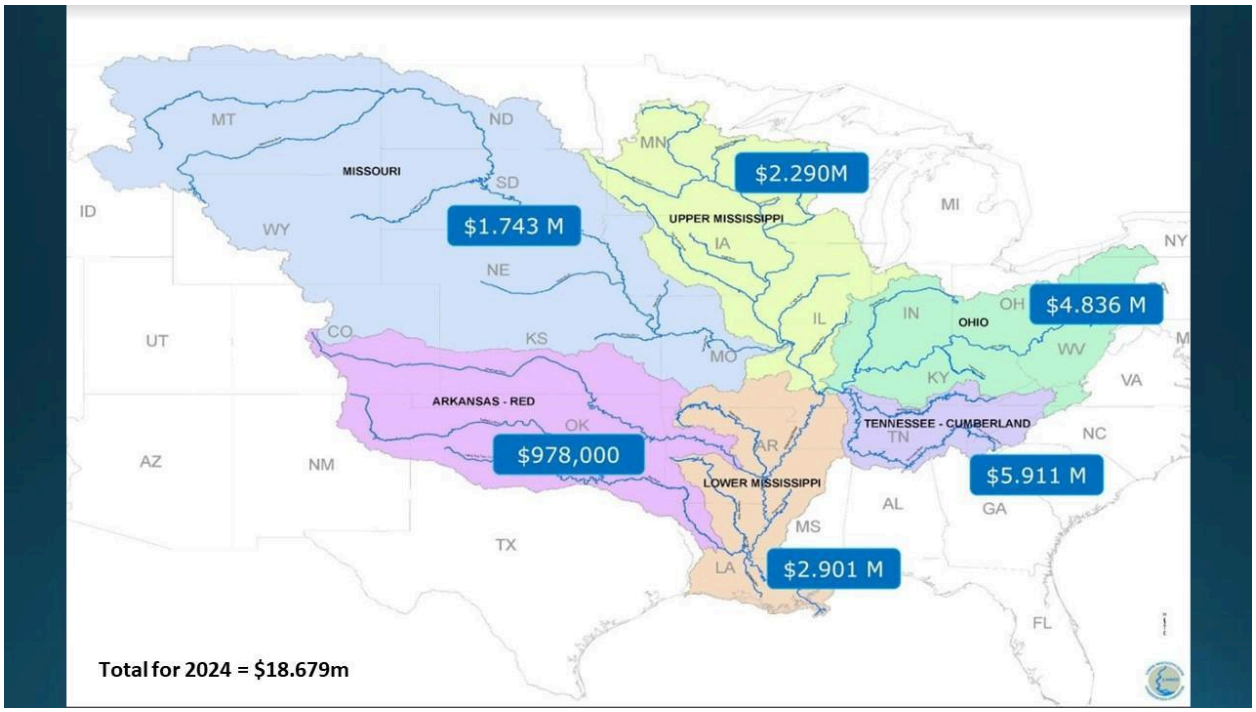
For more information on our research…

- Biological Threats and Invasive Species Program Public Website
- Biological Threats and Invasive Species Program Sharepoint (DOI and invited access only)
- BTRP Program Council Intranet
- (DOI and invited access only)
- Get-to-Know-the-Program Webinars
  - Fish & Wildlife Disease
  - Invasive Species
  - Biosurveillance Network
  - Biosecurity, Biotechnology, and Genetics

Appendix VII: Katie Zipfel's Carp AIS Issues in West Virginia Slides


What's the problem?
1. Fast growing
2. Incredibly fecund
3. Bottom of the food chain
4. Safety Hazard
Mean Length at Age for Silver Carp in Kentucky Lake 2016
Lenagth (in)
Age


Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States
DRAFT
ASIAN CARP
Control Strategy Framework
Ohio River Basin Asian Carp Control Strategy Framework
Missouri River Basin Asian Carp Control Strategy Framework
Lower Mississippi River Basin Asian Carp Control Strategy Framework
Upper Mississippi River Basin Asian Carp Control Strategy Framework
Imported for Aquaculture
Escapements
Becoming a big problem
WRRDA
1970s
1980s
1990s-2000
2007
2009
2014
2016
2018
Funding Timeline



OHIO RIVER BASIN PARTNERS

DNR Indiana Department of Natural Resources

USGS

TVA

US Army Corps of Engineers

The Ohio State University

West Virginia University

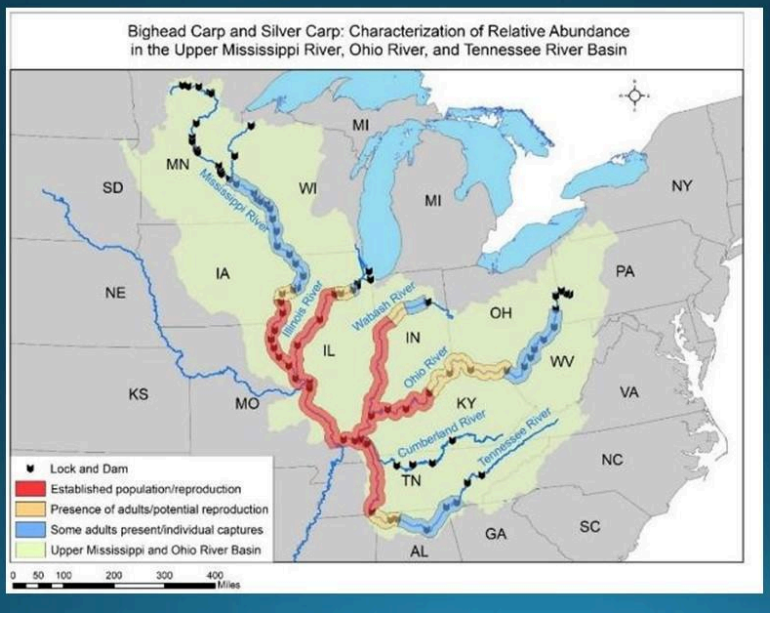
Eastern Illinois University

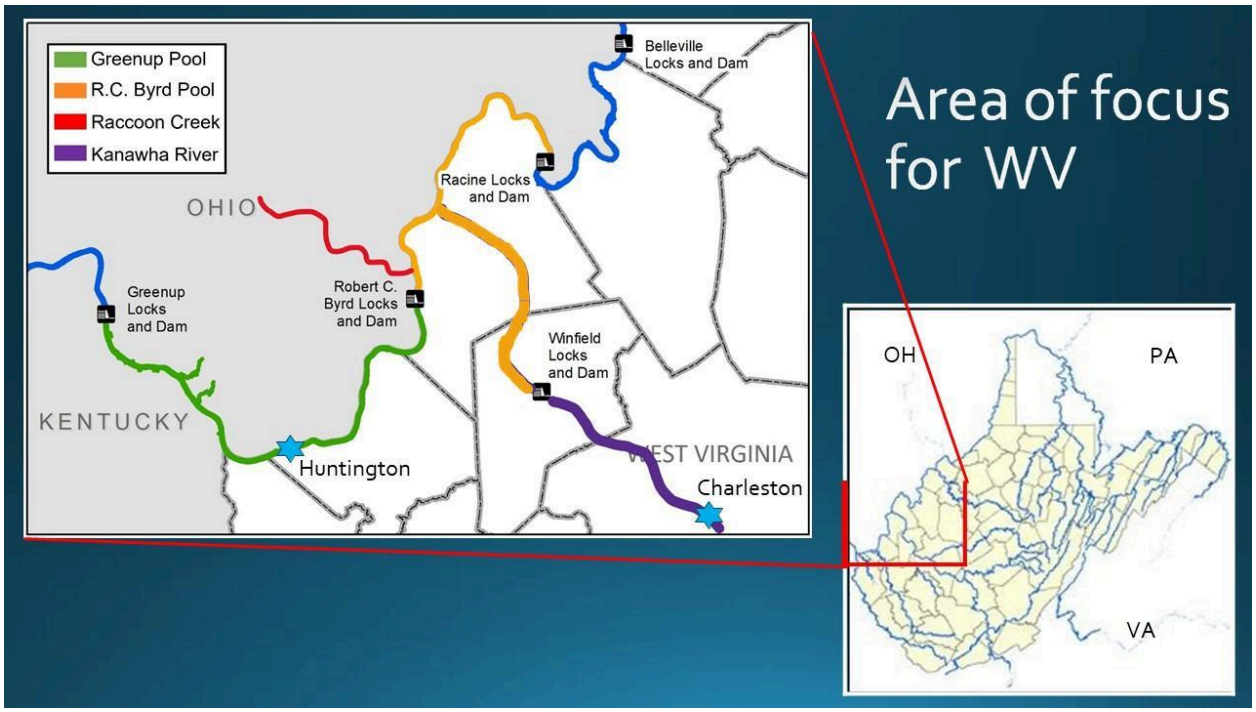
SIU Carbondale

Ohio River Basin - Collaborative Projects

1. Early Detection and Evaluation of Invasive Carp Removal in the Ohio River
2. Control and Containment of Invasive Carp in the Ohio River
3. Distribution, movement, and lock and dam passage of Invasive carp in the Ohio River through acoustic telemetry.
4. Abundance and distribution of early life stages of Asian carp in the Ohio River
5. Deterrence

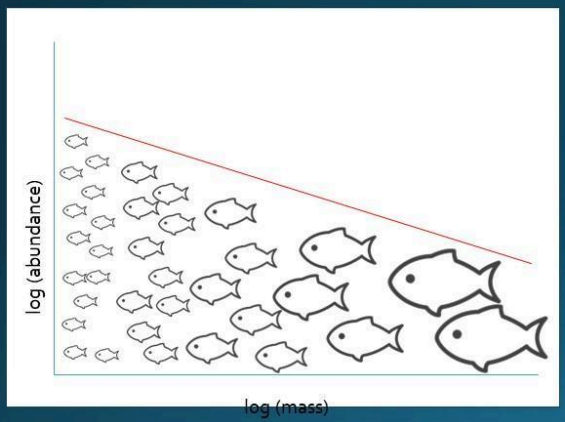
Management Zones

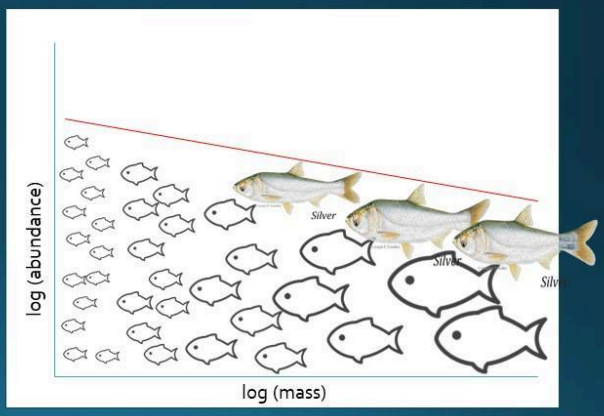



Greenup Pool
R.C. Byrd Pool
Raccoon Creek
Kanawha River
Belleville Locks and Dam
Racine Locks and Dam
OHIO
Greenup Locks and Dam
Robert C. Byrd Locks and Dam
Winfield Locks and Dam
KENTUCKY
Huntington
WEST VIRGINIA
Charleston
Area of focus for WV
OH
PA
VA


1. Early Detection
• Standardized sampling (spring)
• Abundance
• Distribution
• Age and growth
• eDNA
• Fish community sampling
• Hydroacoustics
• CSS analysis
CAUTION
NETTING IN PROGRESS

Community Size Spectra Analysis





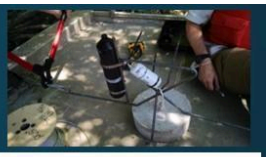
2. Control and Containment

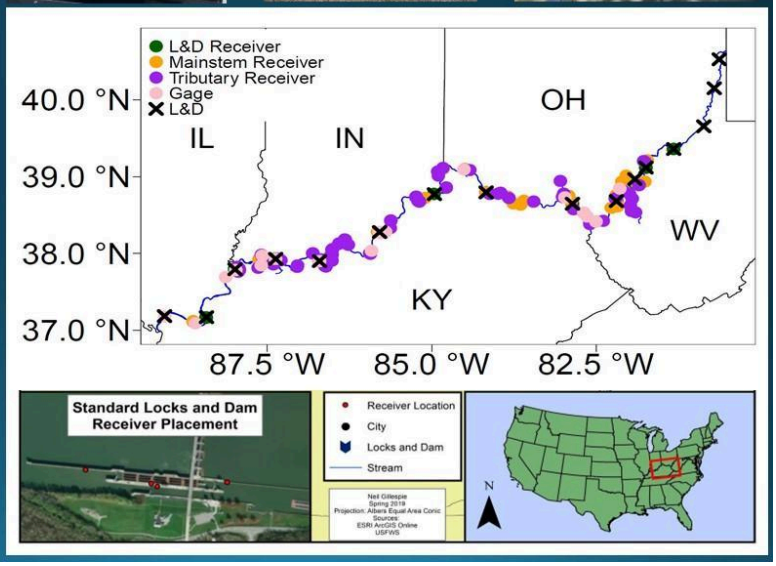
- Physical Agency Removal
- Contract fishers
- Encouraging commercial harvest
  - Commodities
  - Transit assistance
  - Ice machines

3. Telemetry

- Quantify dam passage
- Understand movement patterns and tributary use
- Inform removal efforts

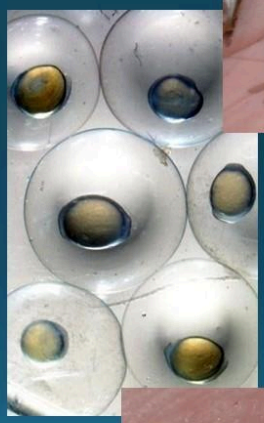
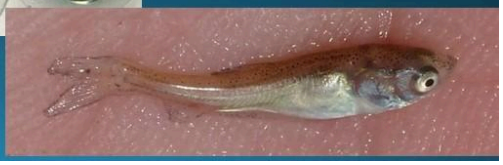


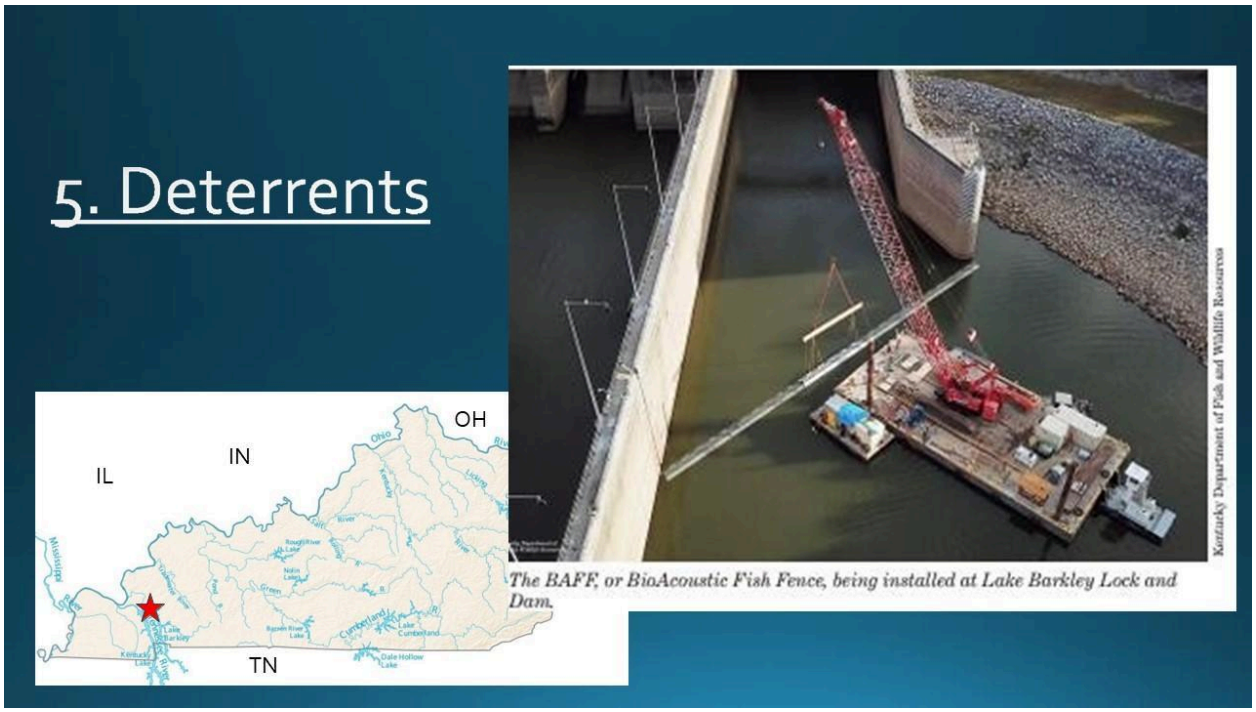




4. Early Life Stages

- Spawning and recruitment
- Limit recruitment from known sources
- Identify other sources


5. Deterrents
OH
IN
IL
TN
Kentucky Department of Fish and Wildlife Resources
The BAFF, or BioAcoustic Fish Fence, being installed at Lake Barkley Lock and Dam.

Future Plans

- Coordinate projects across basins
- Collaborative projects across basins
- Identify factors for response efforts
- Increased removal
- ???

Appendix VIII: Ted Castro-Santos's "Selective Fish Passage: Sea Lamprey & Northern Snakehead" Slides

Ted Castro-Santos presented a designed system for selective fish passage that could exclude Sea Lamprey and Northern Snakehead from migration further upstream. For inquiries about this work please email Ted directly: tcastrosantos@usgs.gov .

Appendix IX: Blue Catfish Invasion in Chesapeake Bay Session Slides

Multiple speakers from EESC gave update presentations. Slides were not provided.

Appendix X: Member Updates

Appendix Xa: Federal Update (Tara Whitsel, USACE)

USACE is working to advance the efforts of the Water Resources Development Act which amends Section (d) of the Rivers and Harbors Act of 1958. This provides USACE authority to enter into cost-share agreements with non-federal public entities to support Aquatic Invasive Species prevention efforts (Watercraft Inspection and Decontamination Stations, Monitoring, and Rapid Response) (33 USC 610). Specifically, as relevant to the Mid-Atlantic Panel, USACE will begin exploring opportunities related to (d)(1)(A)(v) which is to protect basins and watershed that adjoin an international border between the United States and Canada. USACE would like to reach out to POC within the states of New York and Pennsylvania to provide an initial overview of the Watercraft Inspection and Decontamination Program.

Appendix Xb: Maryland Update (Jonathan Mcknight)

MAPAIS Fall Meeting October 2024: Maryland Updates

Northern snakehead: Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov) Data from for-hire bowfishers contracted to log their harvest and effort during the 2024 season are nearing completion and will be analyzed with the United States Fish and Wildlife Service's (USFWS) Maryland Fish and Wildlife Conservation Office in winter 2024. Nearly 13,500 pounds of northern snakehead were removed and commercially processed from fish lifts at Conowingo Dam, in collaboration with the department, Constellation Energy, Normandeau Associates, and J.J. McDonnell & Co. A recreational creel card survey has been established at Little Seneca Lake, Gunpowder State Park, Susquehanna River State Park, and Elk Neck State Park. Data obtained from this voluntary survey informs harvest rates, as well as promotes harvest. The department and USFWS continue to issue rewards as part of an incentivized tag reporting program in the upper Chesapeake Bay. These high and low dollar tag rewards will be available until December 2024. The department and USFWS plan to relocate this project to the Potomac River in 2025 with the aim of comparing reporting and harvest rates, as well as incentivizing harvest of snakeheads.

Flathead catfish Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

The department continued collaborative work with PA FBC to survey catfish in Conowingo Reservoir and the lower Susquehanna River during summer 2024. Fish lift operations removed

4,284.5 pounds of flathead catfish at Conowingo Dam in a collaborative effort with MD DNR, Constellation Energy, Normandeau Associates, and J.J. McDonnell & Co.

Blue catfish Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

The department and partners continued efforts to market blue catfish to anglers and consumers, including events for patrons of the Maryland State Fair, United States Geological Survey (USGS), and community groups. A private company was awarded a contract to develop a focus group to gauge consumer interest in blue catfish. Partners continue work to design and implement fishery-independent catfish surveys, and to build and develop population models for the tidal, freshwater Patuxent River. The department formed the Invasive Catfish Advisory Committee to advise the department on issues related to management of invasive catfishes in the state. Several initiatives have been launched toward incentivizing monitoring and harvest of blue catfish. These have included developing a monitoring strategy that implements drone technology and working with USGS to model population dynamics. Future incentives will include supporting and developing statewide invasive fish tournaments, supporting commercial fishing with a small grants project, and continuing a successful diary project that documents harvest of invasive fishes by bowfishing charter boat captains.

Nutria Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

MD DNR funded work to support development of a plan with biologists from Virginia Polytechnic Institute and State University (i.e., Virginia Tech) to eradicate nutria in Virginia's Chesapeake Bay watershed, thereby preventing re-introduction of the species into Maryland wetlands. The Conservation Management Institute (CMI) at Virginia Tech has completed the objectives of this project. The final report was received January 29, 2024. Overall, this project has led to a fully realized plan, as well as successfully solidified agencies and organization relationships and collaboration towards eradicating nutria in Virginia and Maryland. The issue has been elevated to the highest levels of state and federal government, and the outlook for continued financial and logistical support is very good.

Infrastructure Development

- ANS Plan: Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov) The department completed its revision of its Aquatic Nuisance Species Plan, which was approved by the Aquatic Nuisance Species Task Force and is now available on-line. It now includes this species of water chestnut along with other additions (e.g., Alabama bass, freshwater drum) that will justify funding work to prevent their introduction or eradicate them once established in Maryland waters.

Please Visit: https://dnr.maryland.gov/fisheries/Pages/nuisance_species.aspx

- Conowingo Fish Lifts: Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

A fully executed Memorandum of Understanding was established between Maryland Department of Natural Resources and the United States Geological Survey on April 10, 2024 to begin research to enlighten methods of preventing passage of invasive fishes and promoting passage of anadromous fishes using fish lifts at Conowingo Dam. Additional funding to begin building the flume based on NFWF funded designs was secured by the United States Geological Survey from the U.S. Fish and Wildlife Service as part of an annual allocation to the U.S. Fish and Wildlife Service's Maryland Fish and Wildlife Conservation Office in support of work to control the spread of Northern Snakehead. Two planning meetings were held, one in Maryland (2023) and one in West Virginia (2024), between the Maryland Department of Natural Resources and the United States Geological Survey (U.S.G.S). The meeting was held in West Virginia at the U.S.G.S. Eastern Science Ecological Center also included technical planning for flume development and discussion with funding partners from the United States Fish and Wildlife Service.

- eDNA testing: Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

The department continued work to test efficacy of eDNA to detect presence of northern snakehead in freshwater impoundments. Samples from 2023 showed

widespread distribution of the fish in Little Seneca Lake (Montgomery County) and Loch Raven Reservoir (Baltimore County). Liberty and Prettyboy reservoirs (Baltimore County), and the middle Gunpowder River between the reservoirs were surveyed in summer 2024 and results are pending. USFWS eDNA monitoring in Conowingo Reservoir did not find evidence of blue catfish for the second consecutive year of testing (2023, 2024).

- Biocontaminant testing: Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

The department worked with Maryland Department of Environment to reinforce harvest initiatives aimed at lowering abundance of invasive fishes by supporting expanded biocontamination testing of blue catfish and flathead catfish. This project has been accomplished. The Maryland Department of Environment is working to revise its consumption advisories for recreational harvest based upon these results. The revision will be released to the public via world wide web during winter 2024. The website to access this information is:

https://mde.maryland.gov/programs/marylander/fishandshellfish/pages/fishconsumptionadvisory.aspx.

The revision will help the consumption advisories be more understandable to the public. The revised table of recommendations has been completed and will be released to the public in winter 2024.

- Marketing: Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

The department has partnered with a private company and Maryland Department of Agriculture to develop a marketing campaign aimed at refining messaging and broadly delivering it to the public. Following several meetings between Maryland Department of Natural Resources and Maryland Department of Agriculture, two companies with expertise in developing focus groups were interviewed in August (2024). The department is currently establishing a purchase order to engage services of OpinionWorks. It is anticipated that three focus groups will be formed before the end of the year (2024). Several ideas will be presented to the focus groups, including current department initiatives aimed at anglers and customers who would eat invasive fishes.

- Enforcement: Contact: Joe Love (joseph.love@maryland.gov) and Branson Williams (branson.williams@maryland.gov)

The department developed outreach material for Maryland Department of Natural Resources' Natural Resources Police to relay details on ANS identification and regulations or laws. The principal investigator worked with the regulatory division to create a design that illustrated various regulations for invasive species in Maryland. This design was printed as a sticker that fits on the back of the Fishing and Boating Service's Fishing and Crabbing Guide. We paid Maryland Department of Corrections Enterprises to print 350 of these stickers. Stickers have been delivered to Natural Resources Police Area Managers and Natural Resources Police candidates during their training day in November 2023.

State Lakes Protection and Restoration Fund Projects

Deep Creek Lake Contact: Mark Lewandowski (mark.lewandowski@maryland.gov)

- Seven areas within Deep Creek Lake were treated with Sonar ONE® (four treatments conducted between June and August) to treat hydrilla (*Hydrilla verticillata*).
- No hydrilla was detected in any of the areas post treatment in 2024.
- One new infestation was observed in Meadow Mountain Cove. It was treated with contact herbicide one week after discovery and will be added to the final 2024 treatment.

Rocky Gap State Park

- Four areas within Lake Habeeb were treated with Sonar ONE® to control hydrilla, and one area was treated with Clearcast® to control American lotus (*Nelumbo lutea*).
- Hydrilla was still visible but dramatically reduced in three of the treatment areas, and the fourth was there was minimal hydrilla detected. American lotus was not detected after treatment.

Tuckahoe State Park

- Renovate3® was used to control smartweed (*Polygonum hydropiperoides*) and parrotfeather (*Myriophyllum aquaticum*) in Tuckahoe Lake and the stream that feeds into it.
- Smartweed treatments reduced the total biomass surrounding the lake and no parrotfeather was found after the first treatment.

Blair's Valley

- Blair's Valley Lake received a whole lake treatment with Sonar A.S.® to control hydrilla.
- Hydrilla has not been observed in the lake post treatment.

Additional invasive control projects

Beaverdam Pond

- After an unsuccessful manual removal effort in 2023, DNR pursued a drawdown to manage the infestation. A drain pipe was installed through the beaver dam, yielding only a minimal drawdown. The USDA removed the beavers, breached the dam, drawing down the lake and desiccating 100% of the trapa present.
- Beavers have repopulated, so follow up efforts to remove the dam next spring are expected in 2025.

Todd Lakes Community

- Private community in Harford County MD with two lakes with *Trapa natans* infestations. One lake has nearly 100% coverage, the second with 50% coverage.
- A two-day manual removal effort took place in late June, removing approximately 2000 lbs of Trapa from lake 2.
- An applicator was hired to control with Imazomox on July 9th. The application was not effective, so the community did a drawdown in lake one. 90% of the lake is exposed and will remain that way through winter. (which lake was the Imazomox used on?)

Greenbelt Lake

- One day effort in Greenbelt lake with 14 volunteers remove all *Trapa bispinosa* from the lake. This effort took place in 2023 as well and will be ongoing in future years.

Appendix Xc: Delaware Update (Mike Steiger)

Blue Catfish

Low Frequency Electrofishing surveys have been conducted in the upper Delaware River and its tributaries to evaluate the current invasion. Large numbers of Blue Catfish over 20lbs. have been reported by anglers in the C&D Canal which connects the Delaware River to the Chesapeake Bay. This is most likely the source of the influx of Blue Catfish seen in the Delaware River. Five Blue Catfish have been acoustically tagged thus far, with an addition 25 to be deployed this winter and spring.

Flathead Catfish

Low Frequency electrofishing removals have been conducted on Lums Pond beginning in 2022 to decrease the Flathead population in the pond. Since 2022, 130 individuals have been removed from the pond. An increase in effort in 2024 resulted in the removal of 87 individuals totaling 754lbs. Removals will continue in 2024 in an effort to curtail the effects this invasive species is having on the native fish community.

Delaware's Aquatic Invasive Species Management Plan

Delaware's Plan was presented to ANSTF on November 7th. The plan was approved at the meeting making Delaware the 47th approved plan by ANSTF. Thank you to MAPAIS for providing the much needed grant funding that allowed Delaware to develop the plan.

Appendix Xd: New Jersey Update (Chris Smith, Julie lockwood, and Heather Desko)

1. At the time of the meeting I reported that NJDEP Fish and Wildlife was in the process of hiring an Invasive Species Coordinator position who's duties would include implementing the NJAIS Management Plan. Since the meeting the position has been filled.
2. We continue to see range expansion of the snakehead in the Delaware River. The northern expansion of snakehead range was confirmed in the Paulinskill River drainage (Sussex County) and further south to the Maurice River (Cumberland County).
3. An angler reported catching a Blue Catfish in the Raritan River, New Brunswick. Only one picture of the fish was submitted and the fish was released. The picture of the fish was inspected by NJ Fish and Wildlife staff as well as biologists outside of the agency. Identification was not unanimous but ultimately was ruled a Blue Catfish.

Appendix Xe: New York Update (Steven Pearson)

CR-PRISM AIS updates below.

Prevention/E&O

- No new high-threat aquatic invasive species were detected by watercraft stewards stationed at 12 priority launch locations.
- Watercraft stewards of the CR-PRISM inspected 11,420 watercraft preventing the spread of 819 AIS.

Monitoring and Detections

- European Frogbit found in multiple locations in low densities within the Hudson and Mohawk Rivers
- Continuing with the collection of eDNA into the Fall season. Samples have been taken using both Cornell Sampling Kits, and a shared Smithroot Backpack Sampler. Six locations including Round Lake, Saratoga Lake, the Mohawk River (Schoharie Crossing), and Hudson River (Mechanicville, Halfmoon, Henry Hudson Park, Ramshorn Marsh). Samples will be delivered to the Cornell University Environmental DNA & Genomics and Core Facility at the end of the Fall sampling period.
- 'Hotspots' for aquarium dumping includes Round Lake in Saratoga County. Water lettuce was promptly removed from this location upon its discovery.

Management

- Manual and Mechanical water chestnut response guidelines have been created and are available on the CR-PRISMs reports and products page.
- Six water chestnut removals resulted in the cumulative 7,200lbs of biomass composted. Justifications for site selections ranged from emergency access, economic impact, public recreational benefit, and ecological significance. Response locations include Fish Creek Saratoga Lake, Delegan Pond, Camp Road Mohawk River, Ann Lee Pond, Blains Bay Marina Hudson River, and The Cove Hudson River.
- During water chestnut management, plants consistently had a 'mixed bag' of seed development with some already dropped and others just beginning to develop.
- Delegan Pond located at the Wilton Wildlife Preserve in Saratoga County is nearing eradication of water chestnut! Annual management began in the year 2020, with an estimated 2,850lbs biomass removed. In 2024 an estimated 15lbs of biomass were removed. Treatment report available.

SLELO PRISM

- In the SLELO PRISM, a well-established 4-acre population of fanwort (*Cabomba caroliniana*) was found in a pond in Mexico NY, in an area where dam reconstruction to improve fish and wildlife habitat was to occur. Efforts are underway to determine how far it has spread beyond the pond and extensive community outreach is planned to reduce spread to other areas as it is not yet in Lake Ontario / Great Lakes ecosystems.
-
- Restoration efforts in SLELO PRISM continue in riparian areas where phragmites and knotweed have been chemically treated, and yellow iris is being manually removed. Monitoring is being conducted to determine successful/unsuccessful treatment methods, planting methods, and which species are growing best in these habitats in our region. Plans for additional restoration efforts in 2025 are underway with hopes to expand waterfront property owner engagement.

CRISP

- We're still working on the Yellow Floating Heart in the Sus watershed and while it's slow going, we're making progress. I hope to have the 0.5ac pond clear by the end of next season and then we can focus on whatever comes back in the following years.
- We're still working on frogbit in the upper sus and it's become apparent that it's a bit of a losing battle. We're working with local partners to spread awareness and put up signage at the public, non-DEC launches. Luckily, we still haven't found any in Otsego Lake.
- Frogbit was also found at two new locations in Sullivan County, in the Delaware watershed. We're working with the lake association to educate their members and prevent it from spreading to surrounding lakes. The one location is a mix of WC and EFB and almost completely covers the ~20ac lake.
- We're continuing to manage WC at several sites but this year we saw WC pop up at several locations surveyed last year, likely brought in by waterfowl given the locations and lack of launches anywhere nearby. It was only 3-5 plants so they were easily pulled, but we'll keep monitoring for more introductions next year.

- A second population of brittle naiad was found in CRISP in East Sidney Reservoir. It's widespread throughout the waterbody and the camp grounds staff said they have been seeing it for a few years now but it went unreported.

Region 7

Hydrilla

Cayuga Lake

- Continuation of monitoring and management efforts in the sheldrake area, Ladoga Bay/Myers park, and the south Aurora area.
- R7 coordinator oversaw treatments using Sonar H4C by Little Bear Environmental (Subcontract Tigris) in the South Aurora Area
    - Treatment of 127 acres from July 9th to September 10th
- Continuing to work with USACE, USFWS, and FL PRISM on the large-scale Aurora and Ithaca PIS monitoring efforts.
    - Hydrilla was detected outside of current treatment areas, but is within close vicinity to known populations at Sheldrake, South Aurora, and Ladoga Bay.
- Continuation of monitoring in the vicinity of public boat launches, marinas, and other high traffic/ "destination" areas (lakeside restaurants)

Tioga county-

- Management and monitoring of hydrilla in a private pond (Spencer pond), Little Nanticoke Creek, and Owego creek.
    - Little Bear Environmental (Contractor) applied Sonar H4C to Spencer Pond and Little Nanticoke Creek.
- Monitoring for hydrilla with point intercept surveys in the Susquehanna River upstream and downstream of know populations.

Overall, the Region 7 Strike team have completed 5,500 SAV monitoring points (not including those done with USACE), spanning over 1000 acres!

Other

- Worked with US FWS to remove Water chestnut at Montezuma wildlife refuge. On workdays that NYS DEC participated, over 5000 lbs. of Water chestnut were removed.
- Assisted region 8 wildlife staff with water chestnut removal and harvesting on the Seneca river.
- Surveyed Oneida creek and Sterling Creek for water chestnut
- Fanwort removal at black creek (Mexico NY) dam removal site with SLELO PRISM and Region 7 Fisheries staff.
- *Possibly include the start of development of a regional Water Chestnut Management plan – this is in its very very beginning stages, and we are still discussing options and capacity.

Outreach

Region 7 AIS coordinator participated as an exhibitor at the Central Region NYSFOLA meeting (80 registered participants) .

Western NY PRISM

"WNY PRISM had a very successful 2024 field season. Our Watercraft Inspection Stewardship Program successfully intercepted just over 800 aquatic invasives species. Additionally, we continued our early detection and rapid response work; monitoring sites where water lettuce and water hyacinth have been spotted in the past. Luckily, no plants of either species were detected this year. Unfortunately, through public outreach and onsite confirmation, red swamp crayfish were found within Two-Mile Creek, which is a tributary of the Niagara River. This new site is approximately 6.5 miles from the only other known population within the WNY PRISM region."

Region 9

- Regional coordinator is Cat 5A certified and began first season of new management of the Erie Canal Hydrilla Control Project, now in week 10 of 90-day metered injection of Sonar Genesis and seeing promising results of the sporadic patches of hydrilla that remain in the canal. Treatment is not having any observable non-target impacts to native vegetation, which appears to be growing at higher densities this season under the new treatment. Point-intercept plant monitoring is completed with one previously unrecorded patch of hydrilla found outside of fluridone exposure area. Tuber sampling and manual removal of one remaining patch as well as installation of benthic mats at the two small patches not impacted by treatment. Other control projects include European frogbit at Green Lake in Erie County, water chestnut in the Erie Canal and New Albion Lake in Cattaraugus County.
- Piloting Region 9 Aquatic Plant Restoration Program which includes wild stock collection, greenhouse cultivation, and installation of restoration plots (currently testing four locations in the Erie Canal). Primarily focusing on Vallisneria americana, which has been planted and monitored since June as well as grown in the greenhouse to monitor and collect turions for future growing seasons, but also testing cultivation of other native species including several large-leaf pondweeds, Stuckenia spp., and water stargrass. Vallisneria that has been planted has grown 200-500% in height throughout the restoration plots and has begun spreading throughout and outside of cages. We were also able to work with a local girl scout troupe to have them learn about the importance of native plants, design their own restoration plots and install them in the canal.
- Year 2 of Niagara River SAV Mapping project is completed with ~1,000 sampling locations surveyed in the western section of the Upper Niagara River. Last year, ~2,600 points were sampled in the eastern section. A public dashboard of the project is currently being developed with the species abundance data as well as biomass polygons collected with Biobase. The goal of this project is for early detection of hydrilla, which was detected in several locations around Tonawanda Island in the Upper NR in 2022, as well as providing an updated largescale SAV assessment for interagency colleagues as well as other state, federal, and NGO partners who are conducting projects on the river. Other aquatic monitoring projects have been conducted at 18 sites.

- Grass Carp eDNA sampling planned in several lakes in the next two weeks as a result of a connectivity mapping assessment conducted by AIS Coordinator and seasonal staff from 2022-2023, where all Region 9 stock locations of grass carp were mapped and assessed for connectivity to wild lakes and rivers via stream intersections. The goal of the project is to narrow down potential sites for traditional fish sampling (efishing, etc.) in search of wild/escaped grass carp, as sites with connectivity to stocked lakes would be more likely to have occurrences of escaped (and possibly non-sterile) grass carp.

Region 5

- **Spring 2024**: NYSDEC began biweekly backpack electrofishing surveys to monitor upstream invasion front of round goby (RG) in the Hudson River/Champlain Canal, taking over from USGS (2022-2023).
    - **Survey area**: Focus on seven sites from Lock C2 in Mechanicville to Peebles Island, with particular attention to the area up- and downstream of C1.
    - **Results to date**: Since April 2024, these sites have been surveyed eleven times and no RG have been found upstream of C1.
- **June 2024**: eDNA sample (USGS) from jetty upstream of Lock C2 tested positive for RG DNA. Follow-up electrofishing (DEC) and further eDNA tests (DEC & USGS) returned negative results.
- **August 2024**: Another eDNA sample (USGS) at jetty upstream of C2 showed weakly positive detection. Further upstream sampling (electrofishing and eDNA by DEC) yielded no RG or DNA detections.
- **Ongoing Efforts**:
    - Monthly eDNA sampling at multiple sites in Lower Mechanicville (C2-C3) pool through November.
    - Monthly backpack electrofishing at jetty above Lock C2, where positive RG eDNA samples were collected.
    - Expanding sampling efforts and identifying new potential RG habitat in Champlain Canal pools above Lock C2 for future surveys and for updating Rapid Response protocols in RRP.
    - Working with DEC partners (USGS, USFWS, LCBP, VT Fish & Wildlife) to implement coordinated sampling in northern Lake Champlain in response to positive RG eDNA detection in Richelieu River near US/Canada border. USGS, USFWS, and VT are conducting eDNA sampling and NYSDEC will follow up with traditional sampling methods if eDNA samples test positive for RG DNA.
    - Continuing biweekly electrofishing surveys between Lock C2 and Peebles Island through November.

LIISMA

- Water lettuce has been showing up in Nassau County
- Ludwigia control
    - Peconic River and Artist Lake. Chemical control and hand-pulling
    - Wolf's Pond on Staten Island

- Hydrilla and cyanobacteria monitoring
    - NYSDEC, NYSDOH, Susan Wilde
- Region 3
    - Croton River
        - No Hydrilla
        - Restoration attempt on going for vallasenaria
    - Water chestnut removal and recovery
    - eDNA Multiplex –
        - Multi-partner and broad region
    - Dam drawdown surveys
        - Creek road dam
            - Reduced water chestnut in size and density
            - Delay Invasive species grow back, native recovery seemed normal
                - IS were delayed but were recovering, had been dense
                - Continued surveying in the future to track recovering plants
                - Succession of native and invasive species

Appendix Xf: North Carolina Update (Rob Emens and Sarah Mirabilio)

North Carolina Aquatic Invasive Species Report

November 2024

This report is a compilation of AIS updates from state agencies and the NC ANS Management Plan Steering Committee. Agency updates are organized as follows:

NC Department of Agriculture and Consumer Services (NCDA&CS)
NC Department of Cultural and Natural Resources (NCDNCR)
NC Department of Environmental Quality (NCDEQ)
NC Wildlife Resources Commission (NCWRC)

NCDA&CS – Plant Industry Division

Point of contact: Jarred Driscoll, Jarred.Driscoll@ncagr.gov , (919) 707-3741
Program website: NC Regulated Weeds

Program Summary

The State Noxious Weed Regulations, adopted under authority of the N. C. Plant Pest Law, were established to prevent the widespread establishment of harmful non-native plants that are placed on the Noxious Weed List. Any plant on the Noxious Weed List is prohibited entry into the state without a permit. Noxious Weeds already present in the state are contained by prohibiting movement of the plant outside of regulated areas. In addition to the plant itself, articles that could contain Noxious Weed propagules such as soil or hay, are also regulated. In addition, the sale of Noxious Weeds is prohibited unless exempted by provisions of the Noxious Weed Regulations. In addition to the State Noxious Weed Regulations, the General Assembly of North Carolina has adopted the Aquatic Weed Control Act providing the Department of Agriculture with the authority to regulate the importation, sale, use, and distribution of noxious aquatic weeds.

The NCDA&CS Plant Industry Division's Plant Protection Section monitors aquatic nurseries through annual inspections to ensure regulated plants are not being sold online or at retail locations and nurseries.

Yellow Floating Heart (*Nymphoides peltata*) – Class A Noxious Weed

In 2020, several new sites of yellow floating heart were identified in eastern, central and western North Carolina, bringing the total to 12 locations. These sites have continued being surveyed and treated and have shown great progress. Three sites have been eradicated and the remaining nine show promise for the same. Several sites are now in the survey phase of the treatment process, since no yellow floating heart has been observed for at least one season. All sites will continue to be monitored in 2025 with hopes of adding another site to the eradication list.

Wooly Frogsmouth (*Philydrum lanuginosum*) – First find in U.S.

In 2016 the NCDA&CS took regulatory action to prevent further spread of this aggressive growing weed. Initially found in August 2016, this Guam native served as a first find in the U.S. Initially treated in late 2016 and 2017, no treatment was done in 2018 because the plant could not be found. In 2019 Wooly Frogsmouth was also observed in a nearby pond. Treatments began again in 2019 and have continued since. Treatments are done during the month of September to avoid disrupting the rare Gopher Frog (*Rana capito*). Careful consideration for the timing and type of treatment is adhered to. We continue to monitor these two locations for the presence of this weed. During 2024, a couple dozen plants were observed between both ponds. Plants that emerge outside our window for chemical treatment (limited to September) are hand-removed.

NCDNCR – Aquariums

Point of contact: Shawn Harper, Shawn.Harper@ncaquariums.com, 252-475-2333

Program Summary

The North Carolina Aquarium on Roanoke Island's AAUS Scientific Dive Team has been conducting removals of invasive Lionfish (*Pterois spp.*) from shipwreck sites off the coast of Cape Hatteras since 2017, as part of the Aquarium's mission to conserve aquatic environments. Annual funding for this work is provided by the North Carolina Aquarium Society's Conservation Action Committee. Observations and collections of lionfish during the period of May through September 2024 showed a substantial reduction in Lionfish at the shipwreck sites visited.

Lionfish – Observational and Collection Summary – 2024 (Listed by Shipwreck Site)

- Australia – zero lionfish observed or collected.
- British Splendour – 1 lionfish observed and zero collected.
- Catherine M. Monahan – zero lionfish observed or collected.
- Dixie Arrow – zero lionfish observed or collected.
- F. W. Abrams – zero lionfish observed or collected.
- Hesperides – zero lionfish observed or collected.
- Kassandra Louloudis – zero lionfish observed or collected.
- Keshena – zero lionfish observed or collected.
- Lancing – 1 lionfish observed and zero collected.
- Proteus – 1 lionfish observed and zero collected.
- USS Tarpon - 7 lionfish observed and 6 collected.

The Aquarium's AAUS Scientific Dive Team noted large skin lesions, with unknown pathology, on three out of the 130 lionfish collected during the project in 2023. Divers did not observe any skin lesions in 2024, but did note colder waters present during the May 2024 dive operations (compared with previous years). Either of these conditions could be factors related to the reduction of observed and collected lionfish we encountered in 2024. However, the Aquarium's Lionfish Mitigation Project is not designed to study factors effecting lionfish populations. The project's objective is to observe and then focus efforts on collections, in order to help conserve native aquatic life at specific shipwreck sites off of Cape Hatteras.

NCDNCR – State Parks

Point of contact: Oliver Denny, oliver.denny@ncparks.gov , (919) 418-0251

There are several projects in NC State Parks related to Aquatic Nuisance Species. Projects include two boat cleaning stations at Lake Waccamaw, treating Hydrilla in the Eno River, treating parrotfeather (*Myriophyllum aquaticum*) at Occoneechee state park, and a project managing Phragmites in a wetland restoration site at Carolina Beach. Phragmites is managed in several state parks including Carolina Beach, Goose Creek, and Pettigrew state park.

At Lake Waccamaw state park, two boat cleaning stations were installed March 2023 to help prevent the spread of invasive aquatic species. The cleaning stations are waterless systems, that have a vacuum system with hand tools, which can collect debris and water from boats before and after a boat is taken out on the lake.

At Carolina Beach state park, staff have worked to remove Phragmites since 2010. In 2023 a wetland restoration project was started in the footprint of the Phragmites area. Herbicide applications have decreased the abundance of Phragmites, and further planting of native species is anticipated at the restoration site.

At Eno River state park, there is an ongoing project for the last 7 years to manage Hydrilla. The river was treated again this year. We received no reports of Hydrilla in the river in 2024. A river survey was also conducted at the end of the summer and no Hydrilla was observed.

NCDEQ – Division of Water Resources – Aquatic Weed Control Program

Point of contact: Rob Emens, rob.emens@deq.nc.gov, (919) 707-9012
Program website: NCDEQ Aquatic Weeds

Program Summary

Purpose: Provide units of local government and residents of North Carolina with resources that promote the prevention and management of noxious aquatic weed infestations.

Projects are supported by the Aquatic Weed Fund. NCDEQ is authorized to use up to $1M annually from the Aquatic Weed Fund to support aquatic weed control projects. Money spent from the Aquatic Weed Fund requires a 1:1 non-state dollar match. The program develops annual work plans; the 2024 Work Plan identified ~90 specific projects and earmarked $991,420 from the Aquatic Weed Fund.

The program is currently staffed with 2 permanent FTEs and 2 temporary technicians.

Giant Salvinia (2 sites in NC)

Gapway Swamp (Columbus County)

This infestation of Giant Salvinia was brought to our attention during the summer of 2020. Gapway Swamp is a blackwater swamp forest, located in a rural setting, near the NC/SC State line. The initial delineation estimated 250 acres of the watershed to be infested with Giant Salvinia.

Project objective: Eradicate Giant Salvinia from the site.

Project history: Herbicide applications began in 2021; approximately 50 acres was targeted to prevent downstream spread. The target area expanded in 2022 to include ~115 acres, and further expanded in 2023 to include ~150 acres. Herbicide applications continued in 2024. Some areas remain untreated; however, approximately 75% of Giant Salvinia biomass has been removed from the site.

Lays Lake (Columbus County)

This infestation was brought to our attention in October 2024. Lays Lake is a man-made pond (~100-acre) near the NC/SC state line. Lays Lake does not discharge water under normal conditions. Giant Salvinia seems to be contained within the pond.

Hydrilla

Each project is managed as a case-by-case, but generally, the program leverages an integrated pest management approach, whereas both herbicides and triploid grass carp are used. A total of 658 acres of Hydrilla were treated with herbicide in 2024 (not including the Eno River Project). This total includes multiple sites, and multiple cost-share partners. Approximately ½ of the herbicide applications were conducted by program staff, and the other ½ was done through contracts with 3rd party vendors. The program also coordinated the following triploid grass carp releases:

Location	**Number of triploid grass carp stocked in 2024**
Cane Creek Reservoir	2,045
Lake James	2,245
Lake Norman	750
Lake Tillery	3,690
Mountain Island Lake	150
Eno River watershed	83
Lake Benson	20
Total	8,983

Eno River Project (Orange County & Durham County)

This project is unique since it is the only flowing system in NC that is being treated with herbicide. Project is supported by a multi-agency partnership including NCDEQ, NC Parks, Orange County, Durham County, Town of Hillsborough and City of Durham.

Project objective: Eradicate Hydrilla from the Eno River watershed.

Project history: During the late 2000's and early 2010's Hydrilla levels reached nuisance levels throughout the Eno River State Park. A multi-agency partnership, the Eno River Hydrilla Management Task Force, was forged to address the growing problem. In 2015 a ~16-mile section of the Eno River was treated with fluridone using an injection system. The system metered product into the river based on flow (USGS stream gauge data). This was a historic event since this was the first time that this type of treatment method was used in North Carolina. The Eno River was treated with fluridone each year from 2015-2019. Hydrilla was removed from much of the target area but was not eradicated from the watershed. During the years 2020-2021 the treatment was paused. The reason for the pause was to:

- Allow for an evaluation of the treatment.
- Allow time to pursue reconnaissance in the upper reaches of the watershed. Multiple "farm ponds" in the upper reach of the watershed were found to be infested.
- Allow time for the ongoing Hydrilla management operations in the West Fork and East Fork (primary tributaries of the Eno) to progress.

In 2022 the injection systems were re-deployed. Herbicide treatment targeted the section of the Eno which passes through the Eno River State Park. The treatment continued in 2023 and 2024.

More details can be found here: Eno River Hydrilla Project

NCDEQ – Division of Marine Fisheries

Point of contact: Robert Corbett, Robert.Corbett@deq.nc.gov , (252) 381-6010

Blue Land Crabs

The first confirmed observation of a Blue Land Crab, *Cardisoma guanhumi*, in North Carolina occurred on Friday July 21, 2023. Confirmation came from images which were shared to Dr Bronwyn Williams, Research Curator at the NC Museum of Natural Science (NCMNS) for species verification. *Cardisoma guanhumi*, is a species of land crab typically found in tropical estuarian and maritime habitats from southeast Florida and the Gulf of Mexico coast to Central and South America to Brazil. Adults can reach a carapace width of up to six inches and weigh over 500 grams. They are mostly nocturnal and omnivorous, primarily feeding on leaves and fruits but will also readily feed on insects, carrion and other crabs. Recently (since 2008) populations have extended as far north as Charleston South Carolina with reported sightings in Myrtle Beach South Carolina (2022).

On August 15, 2023, Dr. Tim Ellis, Quantitative Ecologist, Albemarle-Pamlico National Estuary

Partnership, hosted a special meeting involving NCWRC, NCDMF, SCDNR, & N.C. Museum of Natural Sciences to collaborate and plan our collective approach on how to respond to this current situation. During this meeting, representatives from S.C. shared the history of how they were contacted back in 2021 with a spate of sighting and the steps they took to notify the public and document all observations. In short, SCDNR developed a website for the public to easily report any observations to: https://survey123.arcgis.com/share/73155cf36b124961a366a8b116147a54. SCDNR advised that they would be open and willing to edit their website to begin a collaborative effort between N.C. & S.C., which they completed shortly after the meeting. In addition, during this meeting it was decided NCDMF would take lead on this situation.

NCDMF proceeded to publish a press release on September 20,2023 (https://www.deq.nc.gov/news/press-releases/2023/09/20/marine-fisheries-asks-public-report-blue-land-crab-sightings) followed up by a social media post on September 23, 2023, urging members of the public to visit NCDMF's newly created blue land crab species profile page (https://www.deq.nc.gov/about/divisions/marine-fisheries/public-information-and-education/species-profiles/blue-land-crabs) where from there they can locate the link to the SCDNR website to report any and all sighting of blue land crabs.

On June 24. 2024 NCDMF proceeded to republish the social media post reminding and urging the public on how and where to record any blue land crab sightings. To date, combined the social media posts received 115 comments and has been shared 1,004 times. Since the press release and social media post the SCDNR website has obtained 58 additional reports from N.C. of which 16 have been confirmed as being blue land crabs. To date the northern most confirmed report of a Blue Land Crab was in Goose Bay, of North River, Staits, N.C.

Tiger Shrimp

NCDMF continues to record observation reports of Tiger Shrimp, *Penaeus monodon*, within N.C. waters. In 2024 NCDMF received 1 report. The Shrimp was caught in a cast net in a small canal towards the back of Goose Creek in Newport, NC.

NCWRC – Inland Fisheries Division

Point of contact: Rachael Hoch, rachael.hoch@ncwildlife.org (919) 707-0130

Zebra Mussels (associated with Marimo Moss Ball trade)

The following is an excerpt from a message sent by Racheal Hoch on 9/23/24:

NCWRC and NCDA&CS visited [pet] stores to determine if any moss ball shipments to NC may have been affected in early August. [Agency specialists determined that] The vast majority of the moss ball being sold in NC were either a different type of algae, were fake, or completely dehydrated. Only two facilities that were visited were selling or distributing Marimo type, *Aegagropila linnaei*, moss balls. NCWRC conducted eDNA testing on one of the moss balls. The test results came back positive for zebra mussels early last week.

WRC worked with the regional offices of the pet store and learned that 17 stores in NC and 7 stores in SC may have received moss ball [shipments] from the same distributor. NC Wildlife Law Enforcement and Inland Fisheries staff coordinated and quickly mobilized to visit all 17 stores and collect additional moss balls and water samples for testing to understand the scope of the contamination.

NC ANS Management Plan Steering Committee

Points of contact:
Rob Emens – (919) 707-9012 rob.emens@deq.nc.gov
Tim Ellis – (919) 707-8106 tim.ellis@deq.nc.gov

A copy of this plan is posted here: https://deq.nc.gov/conservation/natural-resource-conservation

The committee last met on 11/1/2023.

In 2023 the MAPAIS small grants program choose to award a proposal submitted by Tim Ellis. The proposal laid out a roadmap to further develop the NC ANS Management Plan, and ultimately submit the plan to the ANSTF. In September 2024 the grant contract was finalized.

Report compiled by Rob Emens
11/05/2024

Appendix Xg: Pennsylvania Update (Sean Hartzell)

Pennsylvania Fish and Boat Commission

MAPAIS Updates, Fall 2024

· The Pennsylvania Fish and Boat Commission (PFBC), in partnership with Pennsylvania Sea Grant, has been working on establishing more formal an objective criteria for listing prohibited AIS under Title 58 of the Pennsylvania Code, Chapter 71a.11. In the past, species were added to this prohibited list based solely on expert opinion, or to match listings by other state or federal agencies. A proposed process based on what other states use and similar to the process for listing Threatened and Endangered species in Pennsylvania was presented to the PFBC's Commissioners in October 2024 for comment. The agency is currently working on formulating this into a formal standard operating procedure document for implementation.

· Revised Title 58 Pa. Code Chapter 71a became effective on Jan 1st 2024. This regulatory update enhanced regulations related to the introduction of fish and other aquatic organisms into Commonwealth waters. Notable updates include a required Notice of Stocking, regulations requiring boaters to drain and inspect boats to prevent the spread of listed AIS and aquatic plants, regulations prohibiting the release of unused baitfish, and enhanced fish health regulations (which will become effective in 2026).

· During Winter 2023-2024, PFBC installed AIS Composting Stations at select agency-owned boat launches with known infestations of AIS such as Zebra Mussels or Hydrilla. These are intended for boaters to use to help clean boats to prevent the spread of AIS. This was supported by federal AIS Management Plan grant funding in partnership with Pennsylvania Sea Grant and based on a design previously used by the Pennsylvania Department of Conservation and Natural Resources at Pymatuning State Park. Stations were installed at several lakes/reservoirs in western and central Pennsylvania.

· Using AIS Management Plan grant funding, the PFBC created signs to remind anglers of regulations restricting the usage of all live crayfish species as bait and prohibitions on the transport of live crayfish for use as bait statewide. These have been provided to PFBC's Law Enforcement staff for posting statewide in their districts.

· PFBC staff have continued surveys for invasive New Zealand Mudsnails in most regions of Pennsylvania. The only notable new find in 2024 was a new county records for Snyder County, PA (Susquehanna River basin).

· PFBC staff are currently beginning a project to evaluate the impacts of invasive Northern Snakehead in Pennsylvania's reservoirs and bioaccumulation of contaminants in Northern Snakehead tissues in partnership with Penn State University.

· PFBC staff are currently working with Allegheny College on a study to evaluate the movement and abundance of the invasive Round Goby in the French Creek watershed.

· In Spring 2024, PFBC collaborated with PA DEP (panel members Sean Hartzell and Matthew Shank) on a statewide chemical suitability analysis for the invasive New Zealand Mudsnail at the HUC 12 level. Results of this study suggest that water chemistry associated with limestone bedrock, urbanization, and agricultural land use are most suitably for the New Zealand Mudsnail, and that parts of central, southeastern, and southwestern Pennsylvania are at the greatest risk of mudsnail, colonization. This project was written up as a manuscript which was accepted for publication and is available to read in "early view" in the journal *Hydrobiologia*:

Hartzell, S.M. and Shank, M.K. 2024. Chemical variables predicting colonization risk of the invasive New Zealand mudsnail (*Potamopyrgus antipodarum*) in Pennsylvania's flowing waters. *Hydrobiologia.* https://doi.org/10.1007/s10750-024-05711-2

· PFBC staff recently published a manuscript reporting on the use of modified minnow traps as an effective sampling technique for invasive Chinese Mystery Snails in the journal *Freshwater Mollusk Biology and Conservation:*

Hartzell, S.M. and Nauman, B.J. 2024. Funnel traps for sampling Chinese Mystery Snails, *Cipangopaludina chinensis* (Viviparidae). *Freshwater Mollusk Biology and Conservation*. 27:39-41.

Appendix Xh: Virginia Update (Bryan Brown, Virginia Tech)

No State Update was given. Some insights from Virginia Tech were highlighted. Bryan Brown mentioned he will work with colleagues to identify a coordinator for the State of Virginia.

Appendix Xi: West Virginia Update (Katie Zipfel):

1. WVDNR is actively collaborating with Ohio River Basin states and federal partners in managing invasive carp populations in the Ohio River. WV waters are at the leading edge of the invasion, so much of our work involves population expansion monitoring, looking for potential spawning areas and tracking movements via telemetry. Most of our efforts are focused on the Greenup and R.C. Byrd pools of the Ohio River. We continue to capture more Silver Carp every year in the RC Byrd Pool, which is a concerning statistic. We still to date have only captured one

carp in the Greenup Pool (below RC Byrd), and telemetry data suggests they do not spend a lot of time in that pool, so we are looking into what characteristics of that pool exist that make it unfavorable to carp. We have also received additional funding through the partnership for additional equipment and temporary staff to increase our efforts on the water.

2. WVDNR is monitoring the potential presence/expansion of Alabama Bass in our southern waters after VA discovered Alabama Bass in their section of the New River. We have collected numerous tissue samples for several waterbodies, but have not found any Alabama Bass genes to date.

3. No reports of Northern Snakeheads in our eastern waters.

4. With the lack of rain in 2024, we saw quite a lot of hydrilla growth in several of our impoundments and in the Ohio River. For reference, we have had hydrilla in the state for many years, but it usually does not create too many issues. Fisheries staff had to put a lot of effort into treating large patches that were clogging access areas and marinas. We did not hear of too many complaints from anglers on the Ohio River. Given there is very little structure for fish in this river, the hydrilla bloom actually created quite a lot of habitat.