Mid-Atlantic Panel on Aquatic Invasive Species

Annual Report for USFWS Grant F18AP00243

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Fiscal Agent: UMCES-Maryland Sea Grant College

Annual Report to the Aquatic Nuisance Species Task Force for 2021

The mission of the Mid-Atlantic Panel is to assist state and federal agencies and other stakeholders in developing and implementing strategic, coordinated, and action-oriented approaches for the prevention and control of aquatic invasive species in the mid-Atlantic region, and to coordinate and communicate these activities with the other Regional Panels, the ANSTF, and other partners.

Funding from USFWS is used to support MAPAIS business, including coordination and logistics for MAPAIS meetings, travel for MAPAIS participants at ANSTF meetings and regional panel meetings, the MAPAIS website, the MAPAIS small grants competition, and indirect recovery for the fiscal agent (Maryland Sea Grant).

Panel Coordination

Edna Stetzar of the Delaware Department of Natural Resources and Environmental Control is the current chairperson of the Mid-Atlantic Panel. Sean Pearson of the New York Department of Environmental Conservation serves as vice-chair. Stetzar, as chair, has participated in meetings of the Aquatic Nuisance Species Task Force and the meetings of Regional Panel Principals during 2021. Maryland Sea Grant has continued to serve as fiscal agent during this time. Katlyn Fuentes of the Chesapeake Bay Program serves as a staffer for the Panel.

Due to the COVID-19 pandemic, panel meetings continue to be held virtually. The spring 2021 MAPAIS meeting was held on two consecutive days, April 28 and 29, 2021, using the WebEx platform. The Panel meeting focused on routine business items including budget and funded project updates, a report out from the ANSTF and the mossball response, membership requests and updates, and recommendations that should be brought forth to the ANSTF. Additionally, we received informational briefings on AIS introductions in the Mid-Atlantic (Ian Pfingsten), an invasive flathead catfish public perceptions survey (Megan Kepler Schall – a grantee), and *Rapana venosa* whelk invasion history and current research near Hampton Roads, VA (Roger Mann – a grantee).

The second session was dedicated to review of grant proposals submitted to the MAPAIS 2021 RFP and to panel member updates. The agenda and minutes from this meeting are maintained on our website, www.midatlanticpanel.org.

The fall 2021 meeting was held virtually on the Microsoft Teams platform on December 1 and 2, 2021. The panel's routine business included a review of minutes and action items, welcome of new representatives from member organizations, recommendations for the ANSTF, a review of research priorities and considerations the upcoming 2022 MAPAIS RFP, and a budget and funded projects update. The panel heard updates on the ANSTF, the USGS NAS species alerts, the new Sea Grant AIS liaison position, the International Conference on Marine Bioinvasions, Sea Grant communication efforts through the 15 Second Science series, agency preferences on the use of eDNA for monitoring AIS, and an effort to pull together a regional AIS law enforcement group. Member organizations also shared state updates.

Due to the pandemic and associated travel restrictions, no funds were spent for the virtual meetings in April or December 2021 or for travel for the chair to attend ANSTF meetings. Minimal funds were spent on web resources. Hence, the Panel has travel and meeting support funding to carry over into next project year and is considering other relevant uses of those dollars.

Small Grants Competition

The Panel conducted its annual grants competition to fund activities addressing MAPAIS's mission and regional priorities between January and April 2021. Between 2007 and 2020, the Panel awarded $614,680 in project funding. At the spring meeting, three grantees were selected for 2021. Several continuing and these new projects are outlined below. Annual reports for projects are attached.

Maryland Sea Grant administers the subawards for all projects, including the projects in the chart below. As of December 2021, the panel awarded $136,330 in MAPAIS funds for small grants projects across the first four years of the award. A total of $61,820 has been spent (years 1-3 projects only). Year 4 projects started September 1, 2021 and thus have not billed yet. Additionally, Fowler's marine bioinvasions survey had to be delayed to August 2022 due to the COVID pandemic, so no expenses have yet been incurred on that 2020 award. Several projects have also been delayed due to the pandemic and so have required no cost extensions. Those are noted below.

Current Small Grants Portfolio

Promoting tidal and marine invasive species awareness and response in DE among diverse stakeholders	Kate Fleming, University of Delaware	This project will increase recreational anglers' awareness of and ability to identify, handle, and respond to encounters with three priority invasive fishes in Delaware (i.e. Blue Catfish (*Ictalurus furcatus*), Flathead Catfish (*Pylodictis olivaris*), and Northern Snakehead (*Channa argus*)).	September 2019 to February 2021

Early detection of invasive Phragmites australis at the tidal marsh forest ecotone with airborne LiDAR	Keryn Gedan, George Washington University	This project will validate the use of LiDAR data to assess canopy understory for early Phragmites invasion.	September 2019 to August 2022 (NCE)
Assessing the potential impact of Dominion Cove Point LNG export facility on ballast mediated invasions in Chesapeake Bay	Jenny Carney, Smithsonian Environmental Research Center	This project will assess potential introductions following a new source of ballast water discharge coming online in Chesapeake Bay.	September 2019 to May 2022 (NCE)
Revisiting *Rapana venosa* in Hampton Roads as TBT abates	Roger Mann, Virginia Institute of Marine Science	This project will assess invasive rapa whelk populations in lower Chesapeake Bay as part of a study on the toxin TBT in sediments.	September 2020 to February 2022
An integrative approach to studying Flathead Catfish invasion in the Susquehanna River Basin: linking ecological field studies and public perception for effective outreach on aquatic invasive species	Megan Kepler Schall, Penn State University	This project will administer a human dimensions survey of angler attitudes on flathead catfish to inform improved outreach materials.	September 2020 to August 2022 (NCE)
Marine bioinvasions of the Mid-Atlantic coast: Rapid assessment survey for introduced marine organisms from NJ to VA	Amy Fowler, George Mason University	This project will conduct a rapid assessment of several marinas for aquatic invasive species along the Mid-Atlantic coast.	September 2020 to August 2022 (NCE expected)
Test an environmental DNA assay to detect nutria in the Mid-Atlantic and explore how activity patterns impact detection	Stephanie Coster, Randolph-Macon College	This project seeks to test a new eDNA assay for monitoring and tracking nutria (*Myocaster coypus*) in the Mid-Atlantic states. In addition to testing this assay in high density freshwater pond in Virginia, we will sample inflows and outflows of that system to see how flow conditions impact detection.	September 2021 to August 2023
Development of an Aquatic Invasive Species Management Plan for Delaware	Michael Stangl, Delaware Department of Natural Resources and Environmental Control	This project will fund a scientist to gather baseline information, engage with partner agencies, coordinate the content, and draft a comprehensive state-wide AIS plan.	September 2021 to August 2022
Evaluating the impact of a rural to urban land use gradient on the incidence of chytridiomycosis, ranavirus, and overall salamander health in the Chesapeake Bay Watershed	Jennifer Wanat, Washington College	This project will study change surrounding critical ephemeral wetlands impacts disease prevalence and amphibian health using a new dermal swabbing technique.	September 2021 to August 2023

Small Grants Project Reports

1. **Post-Final Report:** Merovich, Quantifying multiple ecosystem-level threats to the upper Juniata River system from the invasion and occupation of rusty crayfish
2. **Final Report:** Fleming, Promoting tidal and marine invasive species awareness and response in DE among diverse stakeholders
3. **Annual Report:** Gedan, Early detection of invasive *Phragmites australis* at the tidal marsh-forest ecotone with airborne LiDAR
4. **Annual Report:** Carney, Assessing the potential impact of Dominion Cove Point LNG export facility on ballast mediated invasions in Chesapeake Bay
5. **Annual Report:** Mann, Revisiting *Rapana venosa* in Hampton Roads as TBT abates
6. **Annual Report:** Schall, An integrative approach to studying Flathead Catfish invasion in the Susquehanna River Basin: Linking ecological field studies and public perception for effective outreach on aquatic invasive species
7. **Annual Report:** Fowler, Marine bioinvasions of the Mid-Atlantic coast: Rapid assessment survey for introduced marine organisms from NJ to VA