

# Pennsylvania ANS Management Program

Final Report to the U.S. Fish and Wildlife Service for Fiscal Year 2023 Funding

**Grant Period:** December 1, 2023 – December 31, 2025

**F23AP01918** Aquatic Invasive Species Management Plan Implementation - Pennsylvania 2023  
(Cooperative Agreement #4100096580)

Reporting Period: December 1, 2023 – December 31, 2025

## 1.0 Summary

**Pennsylvania Fish and Boat Commission has contracted with Penn State University/ Pennsylvania Sea Grant to support implementation of the Pennsylvania AIS Management Plan. Funding through this grant is used for the first three tasks. Tasks 4 and 5 will be completed by the Pennsylvania Fish and Boat Commission.**

*Task 1: Leadership, coordination, and policy activities*

*Task 2: AIS outreach and education*

*Task 3: Support for Mobile Self-Reliant Boat Cleaning Facility*

*Task 4: Regional AIS Signage for PFBC Accesses*

*Task 5: Biosecurity Gear and Supplies for Pennsylvania State Fish Hatcheries*

1) Pennsylvania Sea Grant will participate in the Pennsylvania Invasive Species Council, which brings together representatives from agencies, non-governmental organizations, and industry to communicate and coordinate on invasive species issues in Pennsylvania. Pennsylvania Sea Grant is leading or participating in at least three PISC subcommittees in the next year rapid response, legislative, and PRISMs. Pennsylvania Sea Grant will participate in two regional AIS panels the Great Lakes and Mid Atlantic to coordinate with regional partners, identify AIS efforts that could be replicated in Pennsylvania, and share examples from Pennsylvania. Pennsylvania Sea Grant will participate in national forums when possible, such as ANS Task Force meetings or regional or national conferences, as they also provide opportunities to collaborate and identify AIS efforts from other locations that would be beneficial to Pennsylvania and a chance to highlight Pennsylvania activities that may be applicable elsewhere. Pennsylvania Sea Grant will look for opportunities to facilitate participation by state agencies in the panels, as they present a tremendous opportunity for learning and coordination.

2) Pennsylvania Sea Grant will work with Pennsylvania Invasive Species Council members and other stakeholders (such as watershed associations, angling groups, boating organizations, water gardeners, field staff and researchers) to support programs and develop outreach materials to prevent the AIS introduction and spread, including AIS identification. PASG will conduct 7-9 presentations (guest talks, seminars, meetings, or staffing events) on AIS prevention. Most of the time each presentation is attended by new participants; even when the event is the same (a summer camp or annual meeting), the attendees are new each year and the information may help change their behavior. These efforts will partner and coordinate with state agencies, watershed organizations, and interested Pennsylvania will be better able to understand, remember, and take action to prevent the introduction and spread of AIS in Pennsylvania. Pennsylvania Sea Grant has included funding for one undergraduate internship for summer 2024 as a means to contribute to a diverse ocean/Great Lakes workforce that understands technical and social challenges facing coastal communities and the natural environment, and to prepare undergraduate

students for graduate school and careers in marine/Great Lakes/watershed science, policy, management, and outreach.

3) Pennsylvania Sea Grant will provide a subaward to the Pennsylvania Lake Management Society (PALMS) to continue operating a Mobile CD3 System, a trailerable self-service AIS prevention boat cleaning station. This unit will be placed at public boat launches where dayboaters can clean, drain, and dry their boats. PALMS will work with county conservation districts, state agencies, non-profits, and other public access lakes throughout Pennsylvania to host the mobile unit and provide personnel for outreach and education. The plan is for the unit to be in 8-10 locations for 1-3 weeks in each location. Some adjustments may need to occur based on weather, transportation, and partner availability. The unit will also be used at special public events like invasive hand pulling events, paddling events, and Native Species Day events. Current partners committing personnel and resources are, but not limited to, Bucks County Conservation District, Wallenpaupack Watershed District, PFBC, Regional Science Consortium, and Pennsylvania Department of Conservation and Natural Resources; PALMS will look for additional partners when the project begins. At each location, partners will provide educational AIS programs and demonstrations for the unit and facilitate day boaters and they represent the greatest risk of aquatic invasive species (AIS) spread into and out of the waterbodies of the Commonwealth.

## **2.0 Major Accomplishments**

**Task 1 (Sea Grant) - (P)** To support statewide and regional AIS planning efforts, PASG staff participated in the following state and regional AIS meetings:

*PISC quarterly meetings: September 19, 2024, December 12, 2024, March 13, 2025. Currently participate in legislative, rapid response, communications, and PRISM subcommittees.*

*Great Lakes AIS Panel Meeting: June 25-27, 2024, December 10-11, 2024*

*Mid Atlantic AIS Panel Meeting: April 10-11, 2024, October 9-10, 2024, April 9, 2025*

**Task 2 (Sea Grant) - (EO)** PASG gave presentations and staffed exhibits targeting boaters, anglers, water gardeners, and other recreational water users to increase their awareness about the AIS issue and provide information on the steps they can take to prevent the introduction and spread of AIS (7-9 presentations):

### **Reported December 2024:**

*February 23, 2024 - gave a presentation about AIS prevention at the Keystone Coldwater Conference in State College, Pennsylvania. Approximately 25 people attended the presentation.*

*March 14, 2024 – gave a presentation on AIS prevention as part of Envirothon training in Erie, Pennsylvania. Approximately 6 people attended the presentation.*

*April 6, 2024 – gave a presentation on AIS prevention as part of the Penn State Extension Master Watershed Steward spring training workshop (online). Approximately 150 people attended the presentation.*

*June 20, 2024 – gave a presentation on AIS prevention to the Meadville Kiwanis Club in Meadville, Pennsylvania. Approximately 10 people attended the presentation.*

July 26, 2024 – staffed a booth about AIS prevention at the DCNR Discover Presque Isle event in Erie, Pennsylvania. Approximately 100 people interacted with the booth.

**Reported December 2025:**

August 14, 2024 – gave a presentation in Erie, Pennsylvania on AIS prevention to the Baltimore Aquarium summer camp. Approximately 24 people attended the presentation.

August 14, 2024 – gave a presentation in Erie, Pennsylvania on AIS prevention at the Lake Erie Arboretum at Frontier Park. Approximately 10 people attended the presentation.

August 24, 2024 – staffed a booth about on AIS prevention at the “Fish Field Day” at Asbury Woods Nature Center in Erie, Pennsylvania. Approximately 75 people attended the presentation.

August 27, 2024 – gave a virtual presentation on AIS prevention to the Stewards of Twin Lakes. Approximately 30 people attended the webinar.

September 30, 2024 – staffed a booth and led an educational activity on AIS prevention at the “Children’s Water Festival” at Asbury Woods Nature Center in Erie, Pennsylvania. Approximately 50 people participated.

October 26, 2024 – staffed a booth about AIS prevention at the Penn State Behrend “BOOology” event in Erie, Pennsylvania. Approximately 200 people interacted with the booth.

November 11, 2024 – gave a presentation and shared materials at a booth at the Penn State Behrend “Greener Behrend” event in Erie, Pennsylvania on AIS prevention. Approximately 50 people attended the presentation.

January 4-11, 2025 – shared materials about AIS prevention and led boat-cleaning demonstrations at the Pennsylvania Invasive Species Council exhibit at the Pennsylvania Farm Show in Harrisburg, Pennsylvania. Approximately 900 people attended the exhibit.

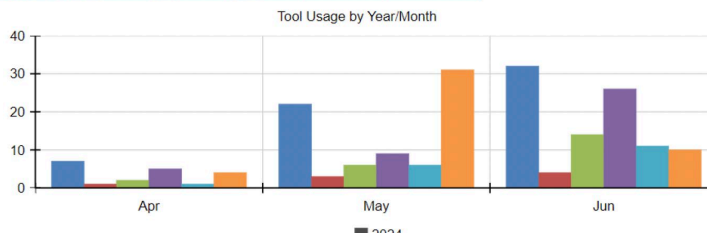
March 17, 2025 – gave a presentation in Erie, Pennsylvania at Mercyhurst College on AIS prevention. Approximately 20 people attended the presentation.

**Task 3 (Sea Grant) - (EO)** The Pennsylvania Lake Management Society will work with county conservation districts, state agencies, non-profits, and other public access lakes throughout Pennsylvania to host a self-service AIS preventing boat cleaning station mobile unit (CD3) and provide personnel for outreach and education.

**Reported December 2024:**

The unit has been at Pymatuning State Park and Goddard State Park during the time period April 1, 2024 – June 30, 2024. The number of cleaning sessions per month are included in the graph below along with the tools that were used.

Sessions					
Location	2024			Total	Percentage
	Apr	May	Jun		
PALMS	0			0	0 %
Trailer					
PALMS	8	30	42	80	100 %
Trailer - Test					
<b>Total</b>	<b>8</b>	<b>30</b>	<b>42</b>	<b>80</b>	
<b>Percentage</b>	<b>10 %</b>	<b>38 %</b>	<b>53 %</b>		



The unit has been at Pymatuning State Park, Moraine, Tamarack, and Conneaut Lake during the time period July 1, 2024 – September 30, 2024. The number of cleaning session per month for this time period are included in the graph below and includes the tools that were used.

**Tools**

Location	Month Name	Air Uses	Brush Uses	Light Uses	Plug Wrench Uses	Reach Grabber Uses	Vacuum Uses	Total	Percentage
PALMS Trailer	Jul	34	14	14	15	39	10	126	38 %
	Aug	57	2	16	29	17	12	133	40 %
	Sep	22	6	8	13	8	2	59	18 %
	Oct	5	2	2	2	4	1	16	5 %
	Total	118	24	40	59	68	25	334	
	Percentage	35 %	7 %	12 %	18 %	20 %	7 %		
<b>Total</b>		<b>118</b>	<b>24</b>	<b>40</b>	<b>59</b>	<b>68</b>	<b>25</b>	<b>334</b>	

**Sessions**

Location	2024				Total	Percentage
	Jul	Aug	Sep	Oct		
PALMS Trailer	42	75	25	6	148	100 %
<b>Total</b>	<b>42</b>	<b>75</b>	<b>25</b>	<b>6</b>	<b>148</b>	
<b>Percentage</b>	<b>28 %</b>	<b>51 %</b>	<b>17 %</b>	<b>4 %</b>		

Tool Uses by Year/Month

**Reported December 2025:**


Progress report for 2025:

In winter 2025, PALMS worked with partners that were interested in using the unit again to come up with a new rotation schedule for spring that now included 2 units. Data for the unit was organized and disseminated with PA Fish and Boat Commission. The data and program were also presented to 150 attendees at the PALMS conference in March. PALMS also talked with potential partners on hosting the unit at the conference. Later in winter, PALMS had a training zoom meeting with the new manager at Pymatuning State Park to go over the unit and program so they can continue to help coordinate the use of the unit in Northwest Pennsylvania. PALMS also worked with PA Fish and Boat Commission’s chief of real estate to get agreements for the unit to be placed near PFBC docks at Lake Wallenpaupack and Northampton’s East Bangor Dam. In Spring, PALMS had a zoom with Lehigh County Conservation District on the possible use of the unit at Leaser Lake and the approvals it would need with potential partners hosting the unit. This conversation started because the lake now listed for Hydrilla.

The original unit started the season at Pymatuning, before beginning its 2025 season rotation and the second unit started at Lake Wallenpaupack before its rotation. User data from each unit is below with locations listed in order. Some maps are also included.

## 2024 Locations

- ▶ Pymatuning
- ▶ MK Goddard
- ▶ Moraine
- ▶ Conneaut Lake
- ▶ Tamarack Lake

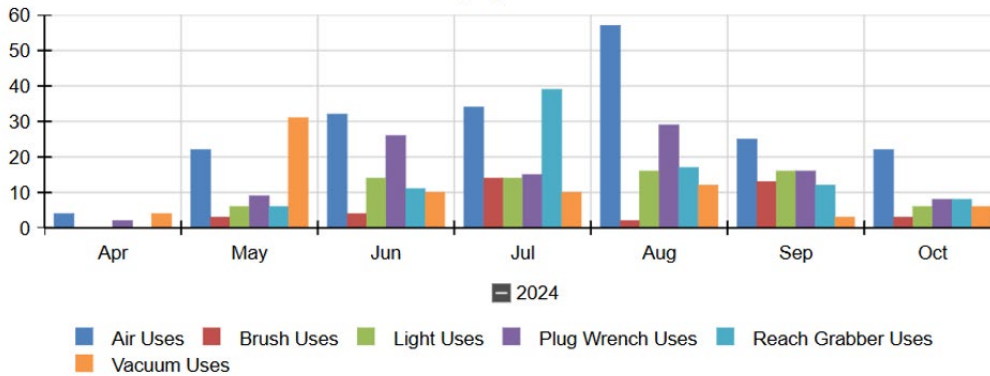


## 2024 Data for Sessions and Tool Use

### Sessions

Location	2024							Total	Percentage
	Apr	May	Jun	Jul	Aug	Sep	Oct		
PALMS Trailer Unit #1 WEST	3	30	42	42	75	25	27	244	97 %
PALMS Unit #2 EAST						7		7	3 %
<b>Total</b>	<b>3</b>	<b>30</b>	<b>42</b>	<b>42</b>	<b>75</b>	<b>32</b>	<b>27</b>	<b>251</b>	
<b>Percentage</b>	<b>1 %</b>	<b>12 %</b>	<b>17 %</b>	<b>17 %</b>	<b>30 %</b>	<b>13 %</b>	<b>11 %</b>		

Tool Usage by Year/Month



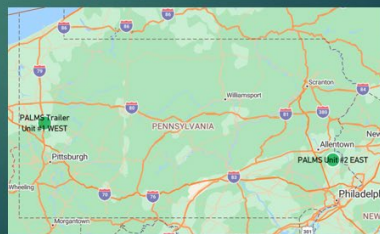
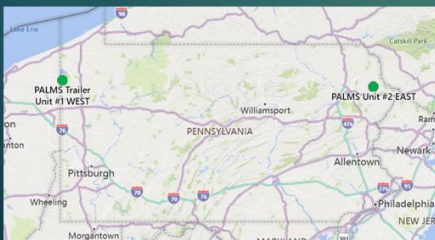
In 2025, We had 2 CD3 units in use, one in the Northwestern part of the state and the other in the Eastern part of the state

#### WEST

- ▶ Pymatuning Reservoir, Crawford Co.
- ▶ Lake Wilhelm, Mercer Co.
- ▶ Conneaut Lake, Crawford Co.
- ▶ Lake Arthur, Butler Co.
- ▶ Pymatuning Reservoir, Crawford Co.

#### EAST

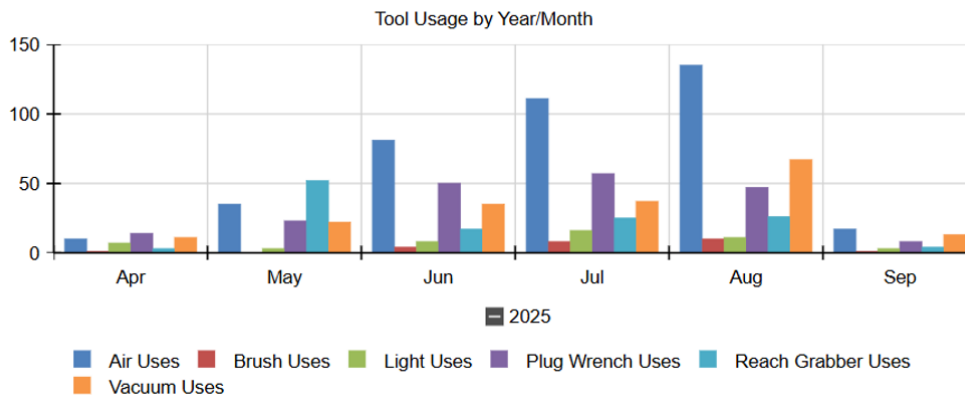
- ▶ Lake Wallenpaupack
- ▶ Lake Towhee, Bucks Co
- ▶ Lake Nockamixon, Bucks Co
- ▶ Lake Galena, Bucks Co
- ▶ Deep Creek Lake, Green lane, Montgomery Co.
- ▶ East Bangor Dam, Northampton Co
- ▶ Lake Wallenpaupack



## 2025 Data for Sessions and Tool Use

### Sessions

Location	2025						Total	Percentage
	Apr	May	Jun	Jul	Aug	Sep		
PALMS Trailer Unit #1 WEST	9	11	30	53	49	4	156	37 %
PALMS Unit #2 EAST	9	39	59	68	74	19	268	63 %
<b>Total</b>	<b>18</b>	<b>50</b>	<b>89</b>	<b>121</b>	<b>123</b>	<b>23</b>	<b>424</b>	
<b>Percentage</b>	<b>4 %</b>	<b>12 %</b>	<b>21 %</b>	<b>29 %</b>	<b>29 %</b>	<b>5 %</b>		



## II. Assess progress relative to original schedule

This project stayed on target with timelines and milestones as listed below. We did ask for an extension to use additional funds since we were under budget in some categories. Fortunately, in 2024, we also receive a grant to support a second CD3 unit therefore increasing our expected outcomes in regard to the locations the unit(s) were at and the number of cleaning sessions that were completed. The results and effort for the second unit is shown in the 2025 tables above, complementing the other unit's data.

## III. Outputs and Outcomes

**Staff:** This project supports PALMS's executive director's direct work on this project on a part-time basis.

**This project's data was presented by:** Principal Investigator, Kate Harms, PALMS Executive Director, March 6<sup>th</sup>, 2025, State College, PA PALMS's 35<sup>th</sup> Annual Lake Conference with a total of 150 attendees.

**People engaged in informal education programs:** A total of 668 people engaged in the direct use of the units at a lake to clean, drain, dry, and dispose of.

PALMS shared the news of the second unit and the data from the first unit in their newsletter in October 2024, this reaches approximately 1,100 people.

**Partnerships: PALMS** has partnered with the following organizations to host the units.

- Lake Wallenpaupack Watershed Management District
- Bucks County Conservation District
- Montgomery County Conservation District
- Northampton County Conservation District
- PA DCNR staff with Pymatuning State Park, MK Goddard State Park, Moraine State Park, Lake Nockamixon State Park.
- Staff at Conneaut Lake

PALMS has now begun a partnership with Lehigh County Conservation District to work on improving AIS prevention at the lake.

PALMS has partnered with Pennsylvania Western Conservancy to continue to share this project through news articles and webinars.

PALMS has partnered with the Army Corps of Engineers at Beltzville Lake, Blue Marsh Lake, and Raystown Lake on the education, the details of this unit, applying for funding for other boat cleaning stations, and data on existing stations used by them.

PALMS has partnered with PA Fish and Boat Commission on the grant program that helps fund the purchase of the units themselves. To date these are the only boat cleaning stations funded by that grant program. PALMS also coordinates with PA Fish and Boat Commission on placing the units at state docks.

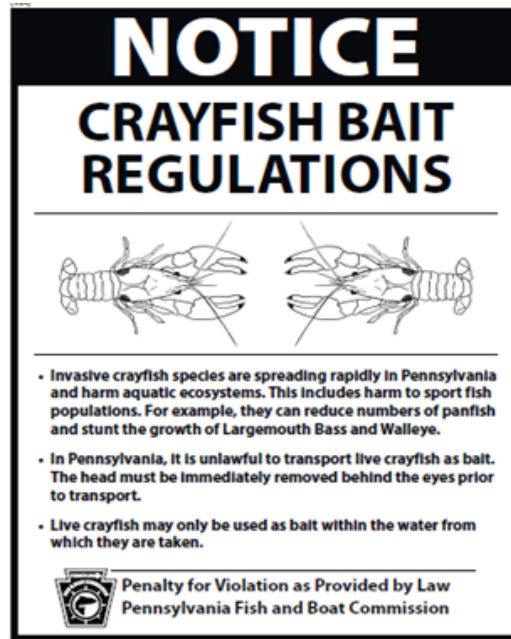
**Grants:** In 2024, PALMS received a \$47,000.00 Grant from PA Fish and Boat Commission's Public Access Grant program to help fund a second CD3 unit. The success of this pilot program and data was highlighted in our grant application.

**Task 4 (PFBC)** – Funding will support signage directed towards anglers for specifically identified, regionally important aquatic invasive species (AIS) messaging. Signage to post at identified recreational access areas has been, or is, in development, but the absence of dedicated funding at the state level for AIS management and outreach has hindered the printing of a final product.

**Method/Approach:** Surveys of Pennsylvania anglers in 2022 indicated that signs posted at public boat ramps/fishing access areas is the preferred method to receive information about AIS (Penn State University and PFBC, unpublished data). While Pennsylvania resource management agencies and partners, including the PFBC, have posted metal signs with general "Clean, Drain, Dry" messaging at public fishing and boating access areas, communications via signage are also needed in certain regions for specific AIS priorities. For example, in recent years the PFBC banned the sale use of all live crayfish as bait statewide (with some exceptions) to prevent the further introduction and spread of invasive crayfish (e.g., Rusty Crayfish, *Faxonius rusticus*; Red Swamp Crayfish, *Procambarus clarkii*) in the Commonwealth. The PFBC has developed signs with the intention of alerting anglers to the presence of invasive crayfish and inform anglers of these regulations where invasive crayfish are known to be present throughout the state. Funding limitations restricted the print run for these signs, so they were posted only at a few locations in western Pennsylvania. There are a large number of locations in eastern and central Pennsylvania where invasive crayfish signs could be posted, particularly in regions where invasive crayfish populations may be spread by anglers into waters in which rare native crayfish of conservation concern occur. In addition to invasive crayfish signs, the PFBC has, or is, developing signs related to regional issues regarding the intentional or unintentional spread of AIS by anglers, such as invasive fishes.

**Reporting Period:** Funding for this task will help Pennsylvania address goals within the state's AIS Management Plan by facilitating signage to alert anglers to specific AIS issues and regulations, such as addressing the spread of invasive crayfish by use as live bait. The Pennsylvania Fish and Boat Commission (PFBC) effectively utilized its budget allocation for this task. The budget was specifically designated for the development and printing of 750 informational signs regarding crayfish, as outlined in the accompanying proposal narrative. These signs were strategically disseminated to each of the regional Bureau of Law Enforcement Offices. Waterways Conservation Officers within these offices were then responsible for posting the signs at relevant locations within their respective districts. This distribution

strategy ensured statewide coverage and effective dissemination of crucial information about crayfish to the public.



**Task 5 (PFBC)** - Funding will support the procurement of biosecurity gear and supplies for State Fish Hatchery staff propagating and stocking sport fish in Pennsylvania waters to better implement biosecurity plans and develop Hazard Analysis Critical Control Point (HACCP) plans for stocking and hatchery operations. Use of these items will help staff maintain biosecurity to reduce the risk of aquatic invasive species (AIS) and pathogen introduction into facilitates, as well as reduce the risk of AIS and pathogen spread among Commonwealth waters during stocking activities.

**Method/Approach:** The PFBC operates 13 State Fish Hatcheries which propagate and rear coldwater and warmwater/coolwater sport fish. These fish are stocked in public waters throughout the Commonwealth to provide or enhance angler opportunities in recreational fisheries where natural production is limited. More than 3.1 million trout are propagated and raised annually in State Fish Hatcheries, as well as numerous warmwater/coolwater species such as Walleye, Muskellunge, and Channel Catfish. As the state agency with regulatory authority over aquatic invasive species and aquatic pathogens in the waters of the Commonwealth, the PFBC has always been cognizant regarding biosecurity in agency operations to reduce the risk of spreading AIS and aquatic pathogens, and staff follow standardized agency biosecurity protocols during all field operations. In addition, each State Fish Hatchery has a specific biosecurity plan which operating staff are required to follow.

**Reporting Period:** Task 5 was completed. The Bureau of Hatcheries coordinated with the procurement department to evaluate biosecurity needs and identify essential materials required to support AIS prevention efforts across all 13 state fish hatcheries. Each hatchery conducted an inventory of necessary biosecurity materials and equipment, including nets, boots, and other critical supplies. This assessment ensured consistency in biosecurity practices and strengthened AIS prevention measures across hatchery operations statewide.

<sup>1</sup> **P = Prevention; DM = Detection & Monitoring; CM = Control & Management; EO = Education & Outreach; R = Research**