PAUL S. SARBANES ECOSYSTEM RESTORATION
PROJECT at POPLAR ISLAND
ANNUAL UPDATE
January-December 2024

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Poplar Island Researchers - Please send any updates, findings, or occurrences of note that you have gathered from your monitoring project to Claire Ruark (MES) at cruark@menv.com or call 410-770-6505 so the information can be shared in the update. Also, due to limited boat capacity, when you schedule a site visit, please call ahead of time with the number of people in your party so transport arrangements can be made.

Operations Update

Figure 1. Paul S. Sarbanes Ecosystem Restoration Project at Poplar Island 2024 Master Plan Map

Inflow of maintenance dredged material on Poplar Island occurred December 30, 2023 through March 9, 2024. The United States Army Corps of Engineers (USACE) contractor, Cashman Dredging & Marine Contracting Co., LLC (Cashman), placed approximately 1.5 million cubic yards (mcy) of material into Cells 4, 5CD, 9, and 11 during the 2023/2024 inflow season (Table 1).

Table 1. Inflowed Maintenance Dredged Material 2023/2024

Inflow Point	Location	Project	Total Material Deposited (cy)
1	Cell 4	Baltimore Approach Channels	350,662
2/3	Cell 5CD		283,888
4	Cell 9		257,031
5	Cell 11		592,341

Total Material: ~1.5 mcy

During the 2024/2025 inflow cycle, the USACE contractor, Curtin Maritime Corporation (Curtin) of Long Beach, California is expected to place approximately 1.8 mcy of material into one upland cell on the southern portion of the island (Cell 2AX) and into the upland and wetland cells of the expansion on the northern portion of the island (Cells 8, 9, 10, and 11). Inflow for this cycle is expected to begin in January 2025 and continue through March 2025 (Table 2).

Table 2. Projected Maintenance Dredged Material Inflow During 2024/2025 Cycle

Inflow Point	Location	Project	Total Material Deposited (cy)
1	Cell 2AX	Baltimore Approach Channels	250,000
2	Cell 8		200,000
3	Cell 9		200,000
4	Cell 10		200,000
5	Cell 11		900,000

Total Material: ~1.8 mcy

The USACE contractor, Joint Forces Construction, mobilized onsite in October 2023 to perform work for the spillway rehabilitation project. Work included the sliplining of Spillways 9 and 11 and the abandonment of Spillways 4, 5, 13, and 15. This work concluded in February 2024.

In preparation for the 2024/2025 inflow cycle, MES Operations filled in perimeter trenches of Cell 2AX. A weir was constructed within the crossdike between Cells 2AX and 2A to allow for optimal water flow from the inflow point in Cell 2AX to Spillway 1 in Cell 2C. Approximately 1,400 cy of unsuitable sand material from Cell 2C was moved to build the foundation of the Cell 2AX crossdike weir. The weir was then capped with dredged material from Cell 2C trenches. Operations staff also built an interior bench along Cell 2C in order to dig perimeter trenches for water flow toward Spillway 1.

Throughout the year, MES Operations continued to move sand from the Cell 7 to the Cell 1D sand stockpile. In 2024, approximately 121,000 cubic yards (cy) of sand was removed from Cell 7. Operations will continue to remove the sand until the -8’ target elevation is reached. A weir was cut through the crossdike in the center of Cell 7 to allow water flow to the east dike pump where it was then pumped to Cell 11 to prepare the cell for future material inflow and future development. The footprint of the Cell 1D sand stockpile continued to be expanded to accommodate the material from Cell 7. The sand stockpiled in Cells 4 and 1D will be used in the dike raising project for Cells 6 and 11.

MES Operations staff also conducted trenching and crust management in Cells 1D, 2ABC, 4ABC, and 5CD. Water collected in Cells 4ABC and 5CD was pumped into Cell 6. MES Operations built benches and reinforced them with stone on both sides of Spillway 21 for erosion mitigation along Cell 11's southern dike. Additionally, MES Operations continued dike sand slope erosion management along Cells 8, 9, and 10. The crossdikes between Cells 8/9 and 9/10 were also reinforced according to USACE specifications, with existing eroded material.

Monitoring Update

MES continues to implement the Maryland Department of the Environment (MDE) guidance on discharge monitoring procedures. Discharge during 2024 was associated with rainfall accumulation, the inflow of maintenance dredged material into Cells 4, 5CD, 9, and 11, and the addition of Bay water into Cell 10 for avian botulism mitigation. There were two noncomplying events in 2024. One event was related to sampler error at Spillway 21 (April) and one event was related to discharge with elevated metals at Spillway 19 (May).

MES Environmental staff continued collecting nutrient load data for Poplar Island throughout the reporting period. Under the existing monitoring plan, nutrient data is collected on a monthly basis from representative spillways and inlets, and daily from spillways located in Phases I (Cells 1, 2, and 3) and II (Cells 4, 5, and 6) during times of discharge. The data will serve as a management tool to assist in development of Best Management Practices (BMPs) when Total Maximum Daily Load (TMDL) allocations are assigned for Poplar Island.

Additionally, mass balance nutrient monitoring was introduced during the 2014/2015 inflow season and has occurred during subsequent inflow seasons until the 2019/2020 inflow season. This monitoring did not occur during the 2020/2021, 2021/2022, nor 2022/2023 inflow seasons due to the location of the inflow points in the Poplar Island Expansion (PIE, Phase III). This monitoring resumed with the 2023/2024 inflow season at the Phase II inflow locations and will continue during the 2024/2025 inflow season. The TMDL and mass balance sampling is currently conducted in cells with historical discharge data in order to better recognize trends. PIE spillways may be added to the monitoring plan in the future. This monitoring will help determine whether development of the Poplar Island project sequesters nutrients from the dredged material.

In early June 2024, a meeting between the Maryland Port Administration (MPA), USACE, the United States Geological Survey (USGS), the United States Fish and Wildlife Service (USFWS), and MES, was held to discuss possible avian botulism mitigation measures in the expansion cells for the 2024 season. The bacterium *Clostridium botulinum* is naturally occurring in soil and produces a toxin when environmental factors are favorable for growth. The toxin can become concentrated in aquatic invertebrates and when these invertebrates are ingested by birds (most commonly waterfowl and shorebirds), the toxicity can lead to paralysis and death. In order to eliminate wadeable beach area in the interior of the cells created during the drawing down of the pond as part of the material drying process, the decision was made to pump water from Cell 11 into Cell 10 to raise the water level in the cells identified as the hot zone (Cells 8, 9, and 10). Therefore, Spillway 19 did not discharge June through September 2024. Additionally, Spillway 21 was on hold to discharge while water was pumped into Cell 10.

Table 3. Vegetated Wetland Cells Development Timeline

Wetland Cell	Cell 4D	Cell 3D	Cell 1A	Cell 1C	Cell 1B	Cell 3A	Cell 3C	Cell 5AB	Total Acres of Wetland
Last Dredged Mat. Inflow (month, year)	NA	Jan. 2003	Mar. 2006	Mar. 2006	Mar. 2006	Apr. 2007	May 2010*	Jan. 2012	
Opened to Tidal Flow (month, year)	Apr. 2003	Mar. 2005	Mar. 2009	Jan. 2011	Feb. 2012	Oct. 2014	Sep. 2015	Nov. 2017	
Completed Planting (month, year)	Aug. 2003	Jun. 2006	Sep. 2009	Jun. 2011	May 2012	Jun. 2015	Jul. 2016**	Jun. 2018	
Date Last Monitored (month, year)	NA	April 2016	April 2016	April 2016	April 2016	April 2018	May 2019	May 2021	
Acreage	24	32	45	40	36	55	57	83	372

*2010 inflow of sand from Poplar Harbor channel dredging.
**12 acres damaged by bird predation replanted in 2018.

Framework Monitoring Update

Beginning in June 2021, routine community algae analysis was replaced with Harmful Algal Bloom (HAB) specific monitoring. Algae samples were collected at all spillways with ponded water and were analyzed for the presence of potentially toxigenic (PTOX) cyanobacteria and analyzed for toxin, if necessary, by GreenWater Laboratories. As per the monitoring plan, from May through October, monitoring for signs of the establishment of a HAB was conducted in Cell 6. MES conducted weekly monitoring at Spillways 16 and 19, including the use of a handheld fluorometer to measure the concentration of phycocyanin, a unique pigment found in blue-green algae.

An algae sample collected from the southeast corner of Cell 11 on August 13, 2024, contained *Microcystis sp*., a potentially harmful algal species, resulting in the suspension of discharge from Spillway 21 and of pumping from Cell 11 into Cell 10 as part of the avian botulism mitigation measures. Subsequent toxin analyses revealed a toxin level of 5,300 parts per billion (ppb) in Cell 11, which is above the Environmental Protection Agency's (EPA) recommended threshold for recreation (8 ppb). Samples collected from Cell 11 on August 26, 2024, again contained *Microcystis sp*. Toxin analysis showed a microcystin toxin concentration of 4,710 ppb in the northeast corner of Cell 11 and 2.8 ppb at Spillway 21. Samples collected from multiple locations around Cell 11 (including Spillway 21) on September 9, 2024, and on September 16, 2024, had non-detect toxin levels and did not contain *Microcystis sp.*; therefore, pumping into Cell 10 was permitted to resume on September 24, 2024. *Microcystis sp.* was not observed in samples collected from Cells 8, 9, and 10 in 2024. The PTOX cyanobacterium, *Anabaenopsis sp.*, was observed in Cells 8, 9, and 10 on September 9 and 16 and October 1, 2024. Subsequent toxin analyses were all non-detect. Since all toxin analyses were non-detect, Spillway 19 was permitted to resume discharge in October as long as all other water quality parameters were met, and the avian botulism mitigation measures were lifted. On

November 13, 2024, *Anabaenopsis sp.* was again observed in Cells 8 and 9, but all subsequent toxin analyses were again non-detect.

From July 29 to October 4, 2024, MES and the USFWS responded to an avian mortality event that was primarily concentrated around Cells 8, 9, and 10 in the PIE. Several birds were sent to the National Wildlife Health Center (NWHC) for analyses. Botulism was confirmed as the cause of death in three birds and suspected as the cause of death in another. The event affected 385 individuals across 16 species. The most affected guilds were waterfowl and shorebirds.

The USGS was onsite, collecting separate samples through the summer and winter for a study looking at exposure of avian influenza in seemingly healthy birds. Preliminary results from the winter found active infections. Results from the summer showed no active infections but there were high amounts of antibodies indicating previous infections across several of the migratory populations.

All staff followed biosecurity protocol including boot wash stations and cleaning equipment and not visiting different types of colonies on the same day.

This season, the USGS, with USFWS assistance, continued conducting surveys of Poplar Island's target nesting bird populations (Figure 2). Tern pair counts increased for Common Tern (441) and decreased for Least Tern (146) this year compared to last year (366 and 288 in 2023, respectively). Common Terns were in various locations within Cell 7, the Cell 8 island, the Cell 9/10 crossdike, the east side of Cell 11, and the habitat islands in Cells 1B and 3C. Least Terns were in various locations within Cells 1D and 7. Additionally, a mixed colony of Common and Least Terns were located on the north side of Cell 11. There was also a colony of Forster's Terns located on the island in Cell 8, which is a new nesting species for the site. The USGS continued conducting a banding and resighting program to better document tern fledging success. In 2024, 178 Common Tern chicks and 26 Least Tern chicks were banded.

The USGS and the USFWS also surveyed nesting populations of Osprey, Snowy and Cattle Egrets, and Double-Crested Cormorants (DCCO) on and just offsite. The site's colonial nesting waterbirds and target nesting birds continue to nest successfully on Poplar Island. At the beginning of the 2024 nesting season, there were 25 active Osprey pairs on Poplar Island and Poplar Harbor. At the end of the season, only one nest successfully produced a fledgling. USFWS believes this decline is due to depredation of both the eggs and newly hatched young. Successful nesting by the waterbird colony on the Cell 1C habitat island continues to be monitored since they were displaced by DCCO activity on the historic island located in Cell 3D in 2020.

Figure 2. 2024 Poplar Island Bird Nesting Map

MES continues bimonthly bird surveys for the entire site and confirmed 32 nesting species onsite for the 2024 season with 20 more suspected. Onsite nesting species include Canada Goose, Northern Shoveler, Gadwall, Mallard, American Black Duck, Clapper Rail (new nesting species), Virginia Rail, Common Gallinule, Black-necked Stilt, Killdeer, Willet, Herring Gull, Great Black-backed Gull, Least Tern, Common Tern, Forster's Tern (new nesting species), DCCO, Snowy Egret, Little Blue Heron, Tricolored Heron, Western Cattle Egret, Black-crowned Night Heron, Glossy Ibis, Osprey, Bald Eagle, Barn Owl, Fish Crow, Tree Swallow, Bank Swallow, Seaside Sparrow, Northern Mockingbird (new nesting species), and Red-winged Blackbird.

Outstanding bird occurrences throughout the year included an American White Pelican arriving onsite in May and continuing onsite through June, high counts of Black-necked Stilts (210), Virginia Rails (42), Lesser Black-backed Gulls (133), and Forster's Tern (404), and almost 4,500 ducks in the expansion in October. Additionally, rarities including Purple Sandpipers and Hooded Mergansers in January, Red-necked Phalaropes in May and June, an early Gray Catbird in March, Alder Flycatcher, Grasshopper Sparrow, and Neotropic Cormorant (new species for the site and first Talbot County record) in August, and Orange-crowned Warbler and five Cave Swallows (new species for the site) in November. Bird censuses performed at Poplar Island during the reporting period had daily bird counts that ranged from 1,545 birds utilizing the site during a February survey to 7,657 birds onsite during a May survey.

A pair of Bald Eagles was officially identified as nesting in the Cell 1C habitat island tree in February 2024, due to the observance of an eagle in incubation pose and the length of time in the pose. In June 2024, monthly monitoring was discontinued, and restrictions were lifted when both eaglets were reported to have successfully fledged. In late October through December 2024, a pair of Bald Eagles was observed loafing

and bringing nesting material to a tree on the Cell 1C habitat island, the site of their 2023/2024 nest. On December 15, 2024, monthly monitoring began with buffer zone restrictions put in place. The location will continue to be observed for future activity during monthly eagle monitoring.

Poplar Island was registered as a Monarch Waystation in 2016. Since then, USFWS has monitored both butterfly and milkweed presence in each developed wetland cell in the summer and early fall. In 2024, a continued monarch tagging effort was conducted to provide data on sex ratios, migration patterns, weather influence, and mortality rates. During the 2024 season, 192 monarchs were tagged onsite, which is a decrease from 2023 (442). The 2020 Endangered Species Act listing status was reviewed and determined the monarch is a candidate species and therefore warranted to be listed but precluded by high priority listings. Annual review of this status will be conducted. For this reason, and the fact that Naled, the insecticide used to control adult mosquitoes, also impacts non-target organisms including butterflies, USFWS recommended that mosquito aerial sprays be restricted during monarch migration.

During May and September, the USFWS conducted seasonal monitoring of submerged aquatic vegetation (SAV) in Poplar Harbor, Cell 5AB pond, and reference areas. In Poplar Harbor, USFWS reported 51% coverage in May 2024, compared to 62% in May 2023; no SAV was detected in September. In the reference locations, there was an overall decline in detected SAV coverage for 2024. No SAV was detected in Cell 5AB in 2024.

The Maryland Geological Survey (MGS) conducted the Phase III Expansion post-construction side-scan survey in April 2022 to document changes in the sediment environment due to construction. Surveys included side-scan sonar, acoustic sub-bottom profile, and seabed classification (with sediment sampling to ground-truth). In the period between 2016 and 2022, four stations changed in sediment Shepard class, and approximately 50 acres within the embayment were converted from shelly sand to silty sand. MGS believes the change to be a result of the embayment being sheltered; it is becoming more silty because there is a decreased ability to flush out the silt. This remained consistent with the 2024 exterior sediment results.

The University of Maryland Center for Environmental Science (UMCES) continued collecting rod-Surface Elevation Table (SET) data in order to track accretion rates within the marshes. The accretion rates vary between wetland cells and within cells; generally, areas closer to the inlets are keeping pace with sea level rise (SLR) better than areas further from the inlets. Most accretion rates at Poplar Island are above the current rate of SLR reported for Annapolis (5.7 millimeters per year). The accretion rates in younger wetland cells are generally higher when compared to older wetland cells, which could be due to higher initial elevations and/or soil processes reaching equilibrium in older cells. UMCES plans to analyze data further to examine drivers of variability, including but not limited to, biomass production, starting elevation, and distance of the SET from the inlet. Data collected and analyzed from sediment, porewater, and vegetation samples continues to be used by UMCES to assist in determining the cause of periodic vegetation die-back within the developed wetland cells, as well as monitoring the overall health of the site's restored marshes.

Vegetation studies for UMCES in 2023-2024 included a Before-After-Control-Impact (BACI) study for a controlled burning trial within the low marsh of Cells 1A, 1B, and 3A. These studies facilitated the understanding of how removing standing dead vegetation may impact stem-boring insect populations and other issues such as fungal infections which may be affecting overall vegetation health within Poplar Island marshes. Pre-burn monitoring occurred in 2023 in the designated plots to document conditions before and after the burn, in both treatment and control (non-burned) areas. The burn was conducted on March 18, 2024, and is estimated at 65% coverage. Pre-burn monitoring showed no significant differences in most parameters between the burn and control plots. Post-burn monitoring continued through October 2024.

Preliminary observations showed the vegetation that grew within burned areas reached senescence later than most of the surrounding low marsh. Further results will be in a future report.

The National Oceanic and Atmospheric Administration (NOAA) conducted scheduled monitoring during the reporting period, continuing studies of nekton use of Poplar Island's developed wetland cells and the open-water embayment. NOAA reported that 2023 monitoring results continued to show that species diversity for both resident and transient fish is greater at the reference marshes when compared to the restored marshes. NOAA also reported that restored marshes generally have greater or equivalent finfish abundance when compared to reference marshes. Short-set monitoring of the embayment revealed similar catch metrics to the long-set monitoring; therefore, short-set sampling was used in 2024 and will continue to be used throughout the rest of the research project. Further results to show the decreased total fish mortality while maintaining a standardized sampling schedule will be in a future report.

As part of a broader partnership with USACE, known as Engineering With Nature, NOAA initiated a three-year fish tracking study by deploying an array of data loggers within Poplar Island's developed wetland cells and embayment in May 2023. Fish were subsequently caught, surgically implanted with transmitters, and released. Data from the array was downloaded and additional tagging was performed in September 2023, June 2024, and September 2024. Since May 2023, 254 fish and crabs have been tagged; species include American eel, blue crab, channel catfish, gizzard shad, red drum, spot, striped bass, white perch, and cownose ray. This information will be comparatively analyzed with data from many similar studies being conducted simultaneously throughout Chesapeake Bay to determine how fish use restored wetland habitat on Poplar Island, and throughout local waterways. Preliminary results reveal species-specific patterns of home range size and utilization of specific parts of the marsh cells. Results also show that fish are moving between restored habitats on Poplar Island and the natural marsh habitats in Back Creek, Tilghman Island. NOAA will be onsite again in June 2025 for further array downloading and demobilization.

In early spring of 2024, Ohio University (OU) collected and processed 147 overwintering terrapin hatchlings. Along with the 448 hatchlings that were processed in fall 2023, a total of 595 hatchlings were tagged, measured, and marked for the 2023 nesting season. Between April and June 2024, there were 172 terrapin yearlings released on Poplar Island as part of the Terrapin Education Research Partnership (TERP) Headstart program, where Maryland school children raise the hatchlings collected on Poplar Island in the fall and then release them onsite the following spring. OU reported a total of 456 nests for the 2024 diamondback terrapin nesting season (new site record); 27 nests were left to overwinter until spring 2025. OU collected and processed 764 hatchlings in fall 2024, 172 hatchlings were included in the Headstart program.

In 2023, OU collaborated with NOAA in their telemetry study. Twenty terrapins were tagged with transmitters: 10 females and 10 males (5 adults and 5 juveniles for each). The telemetry study tracks the movement of the terrapins and is confirming some suspected patterns of terrapin behavior differences between sexes and ages. The preliminary data shows that the juvenile females stayed within the same wetland cell that they were found and tagged. Adult females also generally stayed in the same cell, but with a few excursions out of the cell and back, presumably looking for nesting sites. Adult males were more mobile, moving about the island, presumably trying to find and mate with partners. The juvenile males were found to have the most movement around the site, possibly due to higher competition for mates. In 2024, 79 more terrapins were tagged with transmitters, and 26 of them were part of the TERP Headstart program. Further results will be included in future biannual reports.

Wildlife and Invasive Vegetation Management

Under a USFWS Depredation Permit, certain species continue to be managed on Poplar Island. Management of wildlife is conducted to ensure target species and their habitats are protected. During the

2024 season, gull control occurred, with the removal of 40 individuals and the oiling of eggs in 113 nests. One hundred and seventy-eight DCCO, 26 Fish Crows, five Great Blue Herons, three Black-crowned Night Heron, ten Canada Goose individuals, and eggs from 400 DCCO and 13 goose nests were removed throughout the site. Additionally, two Great Horned Owls were removed, one from Poplar Island and one from Coaches Island.

During 2024, MES Environmental staff continued annual invasive control of bull thistle, Canada thistle, tree-of-heaven, mile-a-minute vine, and *Phragmites australis* throughout the site. Environmental staff also conducted maintenance vegetation removal of the sparsely vegetated habitat islands in Cells 1B and 3C, which included mechanical and chemical control. This is done in order to promote colonial waterbird nesting. An aerial spray to control *Phragmites australis* was conducted on October 19, controlling approximately 70 acres throughout the site.

Safety

As discussed at the Poplar Island Working Group meetings, to ensure that all activities occurring on the project site are coordinated and everyone is following the appropriate safety procedures, it is required that all guests contact the site to inform staff of a visit at least one day in advance. This would also be the appropriate time to set up any transportation that is needed. Advanced coordination should also be made for those with their own boat transportation. Safety procedures include wearing high visibility vests at all times while not in a vehicle and closed-toed shoes with appropriate soles. Everyone must sign in when they arrive onsite.

For researchers who will be at the site during off-peak times, please contact the site to let them know when you will be onsite; a sign in sheet and safety vests will be provided for your use during those times. For safety reasons, if you are by yourself, you will need to be accompanied by an MES employee for the time you are on the island. While visitors are welcome, normal operations duties may make it necessary to postpone certain visits if enough notice is not provided.

Tours

During the 2024 tour season, Poplar Island was visited by 1,114 members of the general public, 136 special interest participants, 1,041 students, and 188 birders, for a total of 2,479 visitors. To schedule a tour please send an email to poplartours@menv.com or call 240-444-4025.

Meetings, Media, and Noteworthy

Site Operations meetings were held approximately every three weeks throughout the year including the USACE, MPA, MES, Moffat & Nichol (M&N), and Gahagan & Bryant Associates, Inc. (GBA).

The Poplar Island public website's URL is www.poplarislandrestoration.com. Features of the website include project goals, media highlights, photos and maps, current newsletter, link to the onsite weather station and tide gauge, wildlife link to Ebird.org, social media links for USACE, MPA, and MES, all documents, works cited for any articles, papers, or conferences related to Poplar Island, and a contact page that links directly to MES tour staff to schedule a tour.

Poplar Island has multiple teams composed of representatives of federal, state, and local agencies, environmental groups, educational institutions, and commercial entities with an interest in the success of the project. These teams hold regular meetings throughout the year and provide the Project Team with recommendations on construction and operations, restoration planning, regulatory compliance, habitat development and management, and resource monitoring. The annual Habitat Subgroup meeting was held in a hybrid format on Poplar Island on June 12. The annual Working Group meeting was held in a hybrid format (in person and virtually) on Poplar Island on October 2. Please check the project website www.poplarislandrestoration.com documents list or contact Julia Moya with MES at jmoya@menv.com if

you would like a copy of the meeting summaries. The next Working Group meeting will be held in the fall of 2025.

The following articles and presentations relating to Poplar Island were published and conducted throughout the year:

- Kristina Motley (MES) presented "Poplar Island: An International Model of Innovative Reuse" to two groups. All presentations were in person.
    - Easton Club East on January 25, 2024
    - Chesapeake Forum on June 5 and September 4, 2024
- In January, *Dredging Today* published an article reporting the $29.1 million USACE contract awarded to Cashman Dredging & Marine Contracting of Quincy, Massachusetts for Baltimore Harbor and channels maintenance dredging to restore Poplar Island.
- In February, *Medriva* published two articles on the "Impacts of Sea Level Rise on Tidal Wetlands" and "The Eroding Future of U.S. Tidal Wetlands" in relation to the impacts of sea level rise on sediment accretion, highlighting Poplar Island's efforts in using dredged material from the Port of Baltimore shipping channels to restore depleted tidal wetland habitat.
- In March, multiple articles were published related to Poplar Island updates.
    - On March 10, *Dorchester Star* published an article discussing updates on the Poplar Island project and Mid-Bay project.
    - On March 12, *Severna Park Voice* published an article highlighting high school student Scarlett Grasso's accomplishment for achieving Best Documentary Award for Broadneck High School's 18th annual film festival for her submission titled "Poplar Island – An Educational Adventure".
    - On March 14, *Dredging Today* published an article discussing the budget set in place for USACE projects in the Chesapeake Bay region, which includes Poplar Island and the Mid-Bay islands.
    - On March 18, *Forbes* published an article including Poplar Island in their top "3 Essential Birdwatching Destinations to Explore Across Maryland".
- In April, Lorie Staver (UMCES) presented a poster titled, "Restoration Trajectories in Created Tidal Marsh Habitat – A Case Study from Poplar Island, MD USA," with Jeff Cornwell (UMCES), Elizabeth Murray (USACE), Safra Altman (ERDC), and Abigail Eilar (ORISE) at the National Conference on Ecosystem Restoration (NCER) in Albuquerque, NM.
- In May, *Bay Journal* published two articles on Poplar Island; one discussing the resilience of the Poplar Island marshes against erosion, and the other discussing the first baby eaglets that hatched on the island.
- On May 29, *Kent County News* published an article about the release of a diamondback terrapin on Poplar Island named Shelly who was raised in a sixth-grade classroom in Kent County Middle School as part of the Port of Baltimore TERP program.
- In July and August, *Bay Journal*, *EHN*, and *WBOC* published articles and videos discussing the re-establishment of headstones from the Howarth family—former residents of Valliant, the town that was established on Poplar Island in the early 1900s—to Poplar Island after being on the mainland for the past 60 years.
- In August, *Dredging Today* and the Chris Van Hollen, U.S. Senator for Maryland, website published articles announcing the dedication of $3 million to Maryland water infrastructure projects and investments in port and shipping channels, including the Poplar Island Restoration Project.
- On August 12, USFWS published an article highlighting the contributions of interns Julia Moya (former Chesapeake Conservation and Climate Corps Member now working on Poplar Island with MES) and Estela Garcia (Doris Duke Conservation Scholars intern from NCSU) in the conservation and restoration efforts of USWFS on Poplar Island.

- On August 26, *Dvids* published an article highlighting an exclusive tour led by Baltimore District staff for Assistant Secretary of the Army for Civil Works, Mr. Michael Connor, and his deputies, Mr. Jaime A. Pinkham, and Ms. Stacey Brown, along with Executive Director of the Maryland Port Administration, Jonathan Daniels, of the ongoing Chesapeake Bay's Island Restoration projects, including Poplar Island.
- In September, NOAA and Maryland DNR published articles discussing the research NOAA is conducting on Poplar Island using acoustic tags to track fish movement around the island.
- On September 17, *WBOC* aired the video "Proud to Serve: Poplar Island" which highlighted the Poplar Island Restoration Project and the many benefits of using dredged material to restore remote island habitat.
- In October, *The Baltimore Banner* published the article "100s of black cats roamed a Chesapeake Bay island. Then they disappeared" which dives into the story of the black cat farm established by Charles Carroll in 1847 when he owned Poplar Island.
- On October 8 and 9, multiple presentations and posters were given at the Restore America's Estuaries (RAE) Conference in Washington D. C. discussing research conducted on Poplar Island.
    - Amanda Peñafiel (MPA), Claire Ruark (MES), Jeff Cornwell (UMCES), William Nardin (UMCES), Lorie Staver (UMCES), and Jim Morris (UNC) presented "Twenty Years of Tidal Marsh Restoration at Poplar Island: Advancing Beneficial Use in Chesapeake Bay".
    - William Nardin (UMCES), Limin Sun (Beijing Normal University), Corinne Corbau (University of Ferrara), John McDonald (UMCES), Guilia Franchi (Salisbury University), Qingguang Zhu (UVA), Iacopo Vona (UMCES), and Lorie Staver (UMCES) presented a poster on "Advancing ecological resilience: A comprehensive approach to wetland restoration and ponds monitoring in Maryland (USA)".
    - Qingguang Zhu (UMCES), William Nardin (UMCES), Limin Sun (UMCES), and Lorie Staver (UMCES) presented a poster on "Water and sediment fluxes in a restored tidal marsh: interplay of hydrodynamics, channel morphology, and vegetation".
    - Jeffery Sullivan (USGS), Amy O'Donnell (USFWS), Lauren Lescure (USGS), Andrew Rapp (Chesapeake Bay Foundation), Carl Callahan (USFWS), Peter McGowan (USFWS), Tim Carney (MES), and Diann Prosser (USGS) presented a poster on "Managing conflict between nesting common terns and herring gulls".
- On October 22, multiple presentations and posters were given during the Annual Meeting of the Wildlife Society in Baltimore, MD:
    - "A Joint Bayesian survival-multifate model to estimate nest success of common (*Sterna hirundo*) and least terns (*Sternula antillarum*)" was presented by Joshua Cullen (USGS), Matthew Gonnerman (USGS), Jeffery Sullivan (USGS), and Diann Prosser (USGS).
    - "Dust Management at an Active Construction Area Impacts Monarch Distribution" was presented by Amy O'Donnell (USFWS), Jeffery Sullivan (USGS), Carl Callahan (USFWS), Peter McGowan (USFWS), and Diann Prosser (USGS).
    - "Detection of avian influenza infection and seroprevalence to H5N1 in Double-crested Cormorants (*Phalacrocorax auritus*) of the Chesapeake Bay, USA" was a poster presented by Jeffery Sullivan (USGS), Johanna Harvey (USGS), Rebecca Poulson (SCWDS), David Stallknecht (SCWDS), Cindy Driscoll (MD DNR), Peter McGowan (USFWS), Carl Callahan (USFWS), Amy O'Donnell (USFWS), Jennifer Mullinax (UMD), and Diann Prosser (USGS).
    - "Managing conflict between nesting common terns and herring gulls" was a poster presented by Jeffery Sullivan (USGS), Amy O'Donnell (USFWS), Peter McGowan (USFWS), and Carl Callahan (USFWS).
- In October, Lisa Barry (MES) and Colleen McMullen (MES) presented, "Combating Harmful Algal Blooms in Chesapeake Bay Dredged Material Containment Facilities and Ecosystem Restoration Sites" at the U.S. Symposium on Harmful Algae in Portland, ME.

- In October and November, multiple articles were published discussing Curtin Maritime Corp. of Long Beach, California as the contracted company to conduct dredging of the Baltimore Harbor approach channels for the 2025 Fiscal Year.
- In December, Lorie Staver (UMCES) presented a poster about "Monitoring Elevation Change in Created Tidal Marshes Using Surface Elevation Tables (SETs) to Identify Drivers of Spatial Variability and Support Modeling for Adaptive Management" at the American Geophysical Union (AGU) Conference.

Publications referencing Poplar Island included the following:

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- Roosenburg, W. M. (2024). Recovery of the Diamond-backed Terrapin population at Poplar Island, Maryland, USA. *Strategies for Conservation Success in Herpetology*, pp. 284–286.

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- Morris, J. T. & Staver, L. W. (2024). Elevation Changes in Restored Marshes at Poplar Island, Chesapeake Bay, MD: II. Modeling the Importance of Marsh Development Time. *Estuaries and Coasts*, 47: 1799-1813. https://doi.org/10.1007/s12237-024-01342-x
- Plough, L. V., Lee, B. B. & Staver, L. W. (2024). Effect of vegetation die-back on genetic diversity in large-scale restored *Spartina alterniflora* marshes and comparison to native marshes in the Chesapeake Bay, USA. *Restoration Ecology*, e14311: 1-13. https://doi.org/10.1111/rec.14311
- Staver, L. W., Morris, J. T., Cornwell, J. C., Stevenson, J. C., Nardin, W., Hensel, P., Owens, M. S., and Schwark, A. (2024). Elevation Changes in Restored Marshes at Poplar Island, Chesapeake Bay, MD: I. Trends and Drivers of Spatial Variability. *Estuaries and Coasts*, 47: 1784-1798. https://doi.org/10.1007/s12237-023-01319-2

USGS

- Springer, B. C., Sullivan, J. D., Prosser, D. J., Rambo, K. E., & Price, J. J. (2024). Common Tern (*Sterna hirundo*) Use of a Staging Site in the Chesapeake Bay. *Northeastern Naturalist*, 31(4): 555-564. https://doi.org/10.1656/045.031.0413