2025 MACAN Work Plan and Semi-Annual Progress Report

Reporting Period: December 2024 - November 2025

Work Group Webpage: https://midacan.org/

Work Group Leads: Kirstin Wakefield (MARACOOS); Janet Reimer (MARCO)

Work Group Members: MACAN is guided by a Steering Committee, and has four sub-working groups that are open to government and non-governmental entities operating in the five Mid-Atlantic states and the District of Columbia.

Current Steering Committee Members Include:

Last Name	First Name	Organization
Bokunewicz	Henry	Stony Brook University and NY OA Task Force Chair
Casey	Mark	Delaware Cultured Seafood
Ford	Mary	MARACOOS
Goldsmith	Kaity	NOAA Ocean Acidification Program
Hassell	Kevin	New Jersey Department of Environmental Protection
Horodysky	Andrij	NOAA Northeast Fisheries Science Center
Jacobs	Stephanie	US Environmental Protection Agency (Region 3)
Langley	Susan	Maryland State Underwater Archaeologist, MD Department of Planning
Mazzeo-Pfoertner	Christie	New York Department of State
Miller	Whitman	Smithsonian Environmental Research Center (SERC)
Personius	Casey	New York Department of Environmental Conservation
Reimer*	Janet	Mid-Atlantic Regional Council on the Ocean

Rivest	Emily	Virginia Institute of Marine Science (VIMS)
Rowe	Pete	New Jersey Sea Grant
Riggins	Byron	US Environmental Protection Agency (Region 3)
Saba	Grace	Rutgers University
Tomasetti	Stephen	University of Maryland Eastern Shore
Wakefield*	Kirstin	MARACOOS
Wark	Kevin	Captain, F/V Dana Christine II

* Co-Lead

Work Group Goal: Foster collaboration and coordination across sectors and states in the Mid-Atlantic regarding ocean and coastal acidification.

Outcomes:

- Build upon the monitoring gaps paper from 2019 by identifying areas of opportunity for acidification monitoring in the Mid-Atlantic.
- Continue to build understanding among MACAN stakeholders about research and programs related to acidification in the Mid-Atlantic.
- Support and inform the Interagency Work Group on Ocean Acidification's *Coastal Community Vulnerability Assessment*.
- Coordinate with partners such as NOAA Ocean Acidification Program, other Coastal Acidification Networks, the OA Alliance, and other MACAN members.

ACTIVITY 1 (OAP Workplan)- Host Q1 and Q2 annual webinar series addressing topics of interest to stakeholders.

MACAN will continue to host an annual webinar series. Each year's topics will be based on expressed interest by MACAN participants. MACAN will poll the membership at meetings as well as add topics that are timely. Recordings of the webinars will be posted on the MACAN website and shared with our membership through Constant Contact emails.

2025 Topics include: Place-Based mCDR and Community Perceptions, OA and Harmful Algal Blooms (HABs), Blue Carbon, and Project Highlights from MACAN's Education Fellow

Expected Completion Date: June 2025

ACTIVITY 2 (OAP Workplan) - Hold quarterly meetings with the Steering Committee to share funding opportunities and discuss areas for potential coordination/collaboration amongst MACAN members.

The MACAN steering committee provides guidance on topics including, but not limited to, current MACAN projects, webinar topics, funding proposals, and MACAN meeting planning.

Expected Completion Date: Ongoing

ACTIVITY 3 (BIL Workplan) - MACAN Workforce Development Fellowship

MACAN will continue to provide workforce development fellowships to college students on a yearly basis. Fellowships provide an opportunity to support students in developing hands-on experience and knowledge about OA science, policy, and communications. MACAN has access to various subject matter experts and partnerships that can enhance career development. Each year, up to $70,000 in funding will be available to support up to two fellowship awards. The themes/topics will be largely outlined by the students, however, in some years there will be prescribed topics based on needs expressed to MACAN by partner organizations/researchers. Each project will have at least one deliverable defined in the student's scope of work. Deliverables could include, but are not limited to, peer-review papers, posters at meetings, digital media, other printed materials, and data layers for the Mid-Atlantic Data Portal and/or MARACOOS' Oceans Map. Travel to scientific or educator conferences and other relevant meetings will support student's professional development and enhance networking opportunities for future career development. Funding availability for the student will follow the BIL funding cycle.

- *Fellowship for Fall 2024 - November 2025* (Education/outreach theme): Partnering with the Chesapeake Bay VA National Estuarine Research Reserve, MACAN will expand on the Coastal Acidification Curriculum provided through the Teachers On The Estuary (TOTES) workshops in 2021-2023. The student will be mentored by staff from the CBNERR to align the Coastal Acidification Curriculum with NGSS standards, so that this curriculum can be expanded beyond Virginia. Funding will include travel support to present at meetings such as, but not limited to, the Mid-Atlantic Marine Educators Association or National Marine Educators conferences. Using economically important species from the Mid-Atlantic, lessons/classroom activities on the biological effects of acidification will be developed. Pilot lesson plans can be trialed at CBNERR-VA TOTE workshop in

summer of 2025. All deliverable lesson plans will be accessible on the MACAN website. In subsequent years, this program will be expanded and tailored to include the NERRs in the other Mid-Atlantic states as well. The selected Fellow, Jennifer Porcheddu, is a student at Stony Brook University, School of Marine and Atmospheric Studies.

Expected Completion Date: November 2025

- *Fellowship for December 2025 - November 2026* - (Social Science) – the call for applications will be developed throughout the first quarter and the open call will be published towards the end of Q2. Applications will be requested with a focus on social science or application of science to decision-making needs. The funding for the student would be available following the BIL funding cycle.

Expected Completion Date: Summer 2026

ACTIVITY 4 (OAP Workplan) - Coordinate with partners, including the NOAA Ocean Acidification Program, other CANs, states within the region, and the OA Alliance.

- Engage in the Ocean Acidification Information Exchange
- Work with other CANs and partners to participate in and disseminate information about the annual webinar series
- Participate in all CAN-calls as coordinated by NOAA OAP
- Work with the OA Alliance to lead and coordinate a U.S. State Working Group
    - This Work Group will be convening in 2025 in response to discussions and outcomes from the MACAN-OA Alliance State-to-State Workshop in September 2024.
- Other activities as they arise.

Expected Completion Date: Ongoing

ACTIVITY 5 (BIL Workplan) - MACAN Biennial State-of-the-Science Meeting

This year, as a pilot effort, OAP will be working in partnership with MACAN to build on MACAN's biennial State-of-the-science meeting with a technical assistance workshop. The partnership will allow a diverse group of stakeholders, researchers, program managers, resource managers and communications specialists to collaborate around the most up to date monitoring and capacity building needs. By hosting a joint state of the science and technical training workshop, we aim to:

- Improve/support regional collaboration on standards of practice/validation methods for various types of instruments and coastal and estuarine waters
- Build capacity to fill spatio-temporal gaps in coastal acidification monitoring, by connecting people and resources to set up effective monitoring, while leveraging existing programs/sensors
- Build capacity for mCDR readiness (monitoring, research, and validation)

Potential outcomes could include: a technical memo on best practices/standard methodology on validation sampling and community needs, the opportunity for an internal consistency check for participants, and the development of an understanding of needs for a low cost suite of monitoring equipment.

Expected Completion Date: September 2025

ACTIVITY 6 (OAP & BIL Workplan) - Develop outreach materials for stakeholders, including policymakers, industry, and educators, using lessons-learned from other regions.

- Refine and disseminate the Mid-Atlantic Ocean and Coastal Acidification Toolbox for middle school to early college teachers and Informal Educators in the Mid-Atlantic that was created in 2021
- Communicate advances in ocean and coastal acidification research and policy to the MACAN membership using a bi-monthly Constant Contact email “news and updates” and via its website (see also, Activity 11)
- Enhance industry outreach and engagement around ocean and coastal acidification, including marine carbon dioxide removal (mCDR) topic
- Connect community scientists with opportunities for ocean and/or coastal acidification monitoring
- MACAN will create social media pages on Facebook, Twitter, and Instagram.
- Scope STEAM competition topics and target competitions for FY26-27

Expected Completion Date: Ongoing

Activity 7 (BIL Workplan) - Revisit and enhance the MACAN website

- In order to efficiently act as the regional information hub for ocean acidification our website needs regular updating and attention to meet the changing needs in the region.

- Update the website to make it more widely accessible, including but not limited to, a searchable database of reference and educational resources

Expected Completion Date: Ongoing

Activity 8 (BIL Workplan) - Development of carbonate chemistry layers on the Portal (formerly "hotspots")

By mapping carbonate chemistry values by locations in the Mid-Atlantic, researchers and decision-makers can assess the state of acidification chemistry and potentially determine areas that are at a high risk for, and vulnerable to, acidification events. By integrating and analyzing regional carbonate chemistry data, including glider and ship data, this task will build a better understanding of where and how Mid-Atlantic nearshore ecosystems will be impacted by ocean acidification. Carbonate chemistry data has been submitted to The Portal and is in the process of being staged for publication in Q1. Various FY23-24 and FY24-25 projects will be contributing data to Portal layers in FY25-26.

Expected Completion Date: April 2025

Activity 10 (OAP Workplan) - Acidification on the Half Shell Project

MACAN has been invited to participate with the CBNERR VA and The Nature Conservancy Shellfish Growers Climate Coalition on a pilot partnership project. MACAN will partner with The Nature Conservancy's (TNC) Shellfish Climate Growers Coalition and VIMS Educators at the CBNERR-VA to train teachers in our areas (southeastern VA) about coastal acidification and impacts to shellfish and to help teachers set up a field experience for their students, visiting a local shellfish grower to make connections to acidification, aquaculture, and workforce development.

- VIMS Educators and MACAN leads will provide 1-day, in-person training for Middle School and High School teachers from various school districts (to be determined by which teachers express interest).
- TNC will identify local shellfish growers interested in providing an on-site field experience for middle school and high school students. VIMS Educators will assist teachers in planning field trips for students to local shellfish farms.
- MACAN coordinators and the steering committee will evaluate the feasibility of expanding this pilot to TNC's National Shellfish Growers Climate Coalition.
- MACAN will work with TNC and CBNERR to scope/develop the project in 2025 with implementation of the pilot project in 2026.

- MACAN and/or the other partners on this project will present lessons learned, challenges, and successes at a regional scientific or outreach meeting at the end of the project.

Expected Completion Date: December 2026

Activity 11 (OAP & BIL Workplan) - MACAN Social Media

Through use of a volunteer and Co-Coordinators, MACAN will continue to maintain its social media presence on FaceBook, Instagram, the Ocean Acidification Information Exchange, and the Constant Contact listserv. MACAN posts and emails topics related to acidification in the Mid-Atlantic, MACAN research, education products and opportunities, events, webinars, and general information of interest to membership.

Expected Completion Date: Ongoing