

**Mid-Atlantic Committee on the Ocean
Work Plan and Progress Report Template**

WORK GROUP NAME: Mid-Atlantic Coastal Acidification Network (MACAN)

LEAD(S) and AFFILIATION(S):

Grace Saba - Rutgers University/Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS)

Avalon Bristow - Mid-Atlantic Regional Council on the Ocean (MARCO)

MACO (and/or 2016 Ocean Action Plan) GOALS, OBJECTIVES and ACTIONS

(Complete here. This section can include a narrative with info on goals, objectives, actions, and other details as needed. Please indicate whether this continues work from the 2016 Ocean Action Plan.)

2016 Ocean Action Plan: <https://www.boem.gov/Mid-Atlantic-Regional-Ocean-Action-Plan/>

MACO's work regarding ocean acidification builds on Action 3 in the Healthy Ocean Ecosystem Goal of the Ocean Action Plan (*Develop a Mid-Atlantic Ocean Acidification Monitoring Network*) and is primarily conducted through the Mid-Atlantic Coastal Acidification Network (MACAN). MACAN, which is coordinated by the Mid-Atlantic Regional Council on the Ocean (MARCO) and the Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS), seeks to answer basic questions about the intensity, frequency, and location of acidification events. MACAN also works to understand the causes of those events, whether from atmospheric sources of carbon, land based pollution, or something else. Building upon this increased understanding of the potential causes and impacts of ocean and coastal acidification (OCA), MACAN works to educate managers, elected officials, industry representatives, and the public about solutions to reduce those sources of acidification.

ACTIVITY 1

Description (should include timeframe for completion and info on how/when stakeholders will be involved)

Identify ecological research needs related to OCA in the Mid-Atlantic, and support gap-filling efforts.

A1 Progress Period: January 2019 - December 2019

A1 Progress Description: A MACAN working group, led by Grace Saba (MACAN Co-Coordinator), finalized their effort to compile data from acidification and multi-stressor studies conducted on economically important groups and species in the Mid-Atlantic. From this synthesis, significant research gaps were observed and priorities were determined. In Spring 2019, the results from this effort were published in a white paper entitled, "Recommended Priorities for Research on Ecological Impacts of Coastal and Ocean Acidification in the U.S. Mid-Atlantic" by Saba et al. 2019 (available here: <https://doi.org/10.1016/j.ecss.2019.04.022>).

The outcomes from this effort were discussed with stakeholders in a breakout session during the second MACAN Workshop held in Baltimore, MD in May 2019. The goal of this breakout group was to discuss how to rank these priorities and to identify any potential/interested individuals to begin progress on those identified research gaps. For more detail about the specific gaps that were identified and the content of the breakout group discussion, please download the Workshop Final Report [here](#). After the workshop was held, MACAN has been working with their Steering Committee to identify next steps for supporting efforts to fill the identified research gaps, including the creation of new working groups.

ACTIVITY 2

Description (should include timeframe and info on how/when stakeholders will be involved)

Identify OCA monitoring gaps in the Mid-Atlantic, and support efforts to fill those gaps.

A2 Progress Period: January 2019 - December 2019

A2 Progress Description: A working group was convened to develop a robust monitoring plan for the Mid-Atlantic region from estuary to open ocean in order to improve understanding of the carbonate chemistry variability and change in the region. MACAN recently developed a series of acidification monitoring maps showing the locations of past and present acidification monitoring in the Mid-Atlantic. These maps can be found under the [Oceanography theme on the Mid-Atlantic Ocean Data Portal](#). The working group finalized an effort to analyze these maps to identify potential monitoring gaps in time and space in the Mid-Atlantic, and their results were published in a white paper entitled “Scientific considerations for acidification monitoring in the U.S. Mid-Atlantic Region” by Goldsmith et al. 2019 (available here: <https://doi.org/10.1016/j.ecss.2019.04.023>).

The outcomes from the paper were discussed during a breakout session at the 2019 MACAN Workshop, and more information about the results from this discussion can be found in the Workshop Final Report, [here](#).

ACTIVITY 3

Description (should include timeframe and info on how/when stakeholders will be involved)

Stakeholder outreach to: increase engagement of current members, gain a better understanding of potential industry impacts and concerns related to OCA, and ensure that industry needs are being met through MACAN’s activities.

A3 Progress Period: January 2019 - December 2019

A3 Progress Description: In spring/summer 2019, MACAN conducted Stakeholder Outreach Surveys to gain a better understanding of industry perspectives on acidification. The goals were to identify: 1) Who are MACAN’s industry stakeholders; 2) What are their information needs

related to OCA; 3) How do stakeholders prefer to communicate about OCA; 4) How can MACAN engage stakeholders in future partnerships or outreach efforts to plan for or adapt to changing ocean conditions.

Surveys were administered online to members of the regional aquaculture, commercial fishing, charter boat, and seafood industries and the recreational fishing community. MACAN partnered with cooperative extension agents, Sea Grant programs, state agencies, and fishery management councils to develop stakeholder lists and identify relevant listservs for survey distribution. Survey links were also posted on MACAN's website and on the Mid-Atlantic Fishery Management Council (MAFMC) website.

More than 250 responses were received; preliminary survey results were presented during the May 2019 MACAN workshop. Data analysis was completed in August.

During the May 2019 workshop, MACAN also held a breakout session with stakeholders to discuss additional industry concerns and data needs related to OCA. A summary of this discussion can be found in the Workshop Final Report, [here](#).

ACTIVITY 4

Description (should include timeframe and info on how/when stakeholders will be involved)

Formation of new work groups to focus on other areas of OCA concern.

A4 Progress Period: January 2019 - December 2019

A4 Progress Description:

The MACAN Steering Committee convened on July 19, 2019 and identified potential new work group focus areas, including: outreach and communications, industry, policy and science. MACAN staff are currently identifying next-steps for forming these work groups, including identifying leadership.