

Executive Summary

Recommendations for Developing a Statewide New Jersey Ocean Acidification Monitoring Network



Recent ocean acidification (OA) research points to future impacts that will affect coastal ecosystems, vibrant industries, and the communities that depend on sustainable ocean and coastal resources. Executive Order 89, signed into law by Governor Murphy in 2019, addresses this threat through the directed development of a Statewide Climate Change Resiliency Strategy with a Coastal Resilience Plan. This plan advocates for the creation of an OA Action Plan that describes real, tangible actions that the state is taking, or plans to take, to better understand and respond to the local threat of OA and other climate-ocean stressors and impacts.

Because the current OA monitoring efforts in New Jersey are a mosaic of individual projects without cohesiveness, the state is focusing part of the OA Action Plan efforts toward the development of a comprehensive statewide OA monitoring network to ensure the delivery of timely and decision-relevant information for the state.

Here are five major recommendations that could be used as a framework to develop a statewide New Jersey OA monitoring network.

1) Convene an OA working group that will:

- *Inventory current monitoring assets*
- *Assess gaps in monitoring*
- *Prioritize and fill gaps to improve network*

2) **Enhance availability for discrete sample analysis** to facilitate gap-filling sample collection by water quality monitoring organizations

3) **Adopt community best practices to ensure data quality control.** This would include training for data collectors and providers.

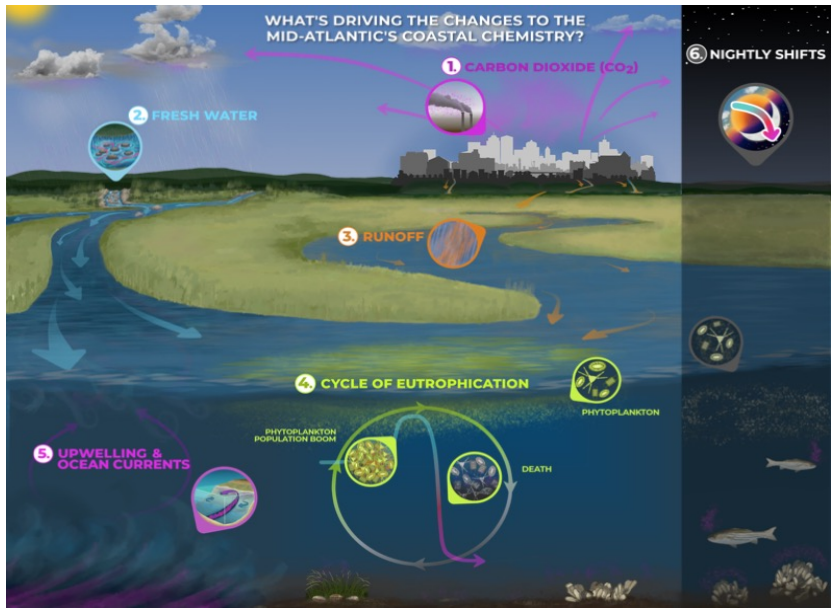
4) **Develop network data management** to ensure relevant data are submitted to a pre-established portal, allowing for inventory updating and maintenance

5) **Coordinate the OA network** to enable development of partnerships to optimize network and maintenance of monitoring inventory

Why a statewide ocean acidification monitoring network?

Ocean acidification, resulting from the ocean's uptake of approximately one third of atmospheric carbon dioxide (CO₂) and subsequent changes in ocean carbonate chemistry, is a global-scale issue.

The U.S. Mid-Atlantic coastal region is also subject to great complexity due to many stochastic nearshore physical, chemical, and biological drivers that can cause highly variable and episodic acidification events.



- *Since the industrial age, ocean pH levels have declined and the ocean is now 30% more acidic.*
- *If carbon dioxide emissions continue at current rates, ocean pH levels are expected to fall, creating an ocean that is more acidic than has been seen for the past 20 million years.*
- *Southern New Jersey counties rank second in the United States in economic dependence on shelled mollusks, which will suffer from increasing ocean acidity.*



Referenced information modified from: New Jersey Department of Environmental Protection. 2020. New Jersey Scientific Report on Climate Change, Version 1.0. (Eds. R. Hill, M.M. Rutkowski, L.A. Lester, H. Genievich, N.A. Procopio). Trenton, NJ. 184 pp.

A New Jersey comprehensive OA monitoring network would facilitate efforts through a coordinated membership that can cohesively identify observation gaps, coordinate observation efforts to maximize temporal and spatial coverage, and expand observing capabilities within the network. The scientific understanding gained from a monitoring network would expand the management options available on the state level.

For more information, see the complete document "Recommendations for Developing a Statewide New Jersey Ocean Acidification Monitoring Network" here: https://njclimateresourcecenter.rutgers.edu/wp-content/uploads/2020/09/Recommendations-for-NJ-OA-Monitoring-Network_FINAL.pdf

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