

Temporal Variability of Carbonate Chemistry and Ocean Acidification in Coastal Maine

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Given the Gulf of Maine's (GoM) increasing annual production of shellfish, expected to surpass \$20M in annual revenue in 2028, localized research on ocean conditions known to impact shellfish growth is of interest to coastal Maine communities. This summer, I studied the carbonate

and Omega aragonite (ω).

The GoM is warming, and while this can mask some impacts of decreasing pH on ω , coastal runoff and the Labrador current can make coastal sites more vulnerabo

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June-late July. Our measurements show changes in the carbonate chemistry system being closely tied to salinity, and a variation throughout the

values from temperature, salinity, and oxygen records in the Basin could then serve as a proxy for the carbonate chemistry of other bays, basins, and coastal conditions in Maine and determine the relevance of offshore data for coastal stakeholders. Further, this project provides a baseline for future studies in the Basin and will provide a tool for continued collaboration among scientists and oyster farmers to estimate complex carbonate chemistry parameters. This summer has provided