

Annual Report (09/2021-07/2022)

Project Title: Increasing hatchery production of larval eastern oysters, *Crassostrea virginica*, in the northern Gulf of Mexico through optimization of carbonate chemistry and salinity in source water (NA21OAR4170316)

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This is a part of the project led by Dr. Reginald Blaylock, Thad Cochran Marine Aquaculture Center, University of Southern Mississippi. The following work was accomplished for the portion by Dr. Xinping Hu's group:

1. Water sample analysis

In Year 1, Dr. Hu's lab has been conducting water sample analysis for carbonate chemistry. The samples have been collected at three hatchery locations as well as seawater intake sites. The first batch of samples on 10/18/2021 were received and analyzed at TAMU-CC. From 04/25/2022, weekly samples have been received and analyzed. The latest batch of samples were collected on 07/25/2022.

Total titration alkalinity and calcium concentration were analyzed using acid and EGTA titration, respectively. Carbonate speciation including carbonate saturation states calculations will be done based on site pH, temperature, and salinity. This step is ongoing.

Personnel involved in this project:

Dr. Xinping Hu

Mr. Cory Saryk, Research Technician

Ms. Nicole Kumbula, Graduate Research Assistant

Mr. Christian Amos, Graduate Research Assistant

Note both graduate research assistants do not have salary commitment from the project budget.