Period Accomplishments Southeast Conference Razor Clam Project

Fund 612-01

February 2025 through November 2025

This report is the first for this project.

On March 17th, 2025 Alutiiq Pride Marine Institute (APMI) Director Jeff Hetrick and Mariculture Director Annette Jarosz met with Mike Booz, Lower Cook Inlet Area Manager with the Alaska Department of Fish and Game (ADFG), in Homer and reviewed the history of razor clam research on the Kenai Peninsula and survey techniques for this species. The personnel outlined a summer schedule for APMI team members to assist with sampling on Cook Inlet beaches led by ADFG on the East side of Cook Inlet, broodstock collection and scheduling, and review a study plan to be submitted to ADFG.

The approved Aquatic Research Permit included a study plan involving 10,000 juveniles for out stocking razor clams in 2026. APMI and ADFG will share in sampling and data collection.

In April 2025, APMI set up brood stock holding systems and prepared the larvae rearing tanks.

On June 23, 2025, Jarosz and Hetrick chartered Bottomline Charters (Captain Ernie Kirby) from Ninilchik to Crescent River and collected 150 adult razor clams. ADFG Biologist Mike Booz and staff were on the same trip and shared insights into clamming techniques and habitat observations. These clams were transported back to APMI and induced to spawn on June 25. The spawn was weak with an estimated 200,000 eggs release. By day three, 100,000 made the D-hinge stage, which reflects a typical percent loss post-gamete release. The larvae stage lasted 22 days and the total estimated set was 25,500, in line with expected results.

Adult razor clams do not hold well, and by day eight, after daily challenging the brood with heavy food and increased temperature, all of the brood had died. They were held at ambient temperature of 12 C.

A second shipment of brood stock was collected on July 13th utilizing local charter operator Duke Air to fly to Crescent River (poor sea conditions necessitated alternative transportation to access the clamming beaches). These brood had a small spawning event on July 14, however only 60,000 larvae survived until day eight. They were eventually combined with the spawn that occurred the next day. On July 15th, a good spawn yielded 11 million eggs from 35 females and by day three, 3.5 million D-hinge larvae. By August 16 (Day 22) at the settling stage, the population had reduced to 380,000. The adults were held

on cooler water (7C) but still only lasted 10 days. These settled larvae were used for the substrate size analysis.

The clams were settled in three substrate types: 1) “Large” #4095, 40 mesh, 400-600 microns 2) “Small” #4010, 40 mesh, 300-500 microns 3) “Extra Small” #7030, 30 mesh, 150-300 microns. The Large substrate yielded the best results. The Small had about 10% survival and the Extra Small had almost 100% mortality. This sand proved to be too thick and heavy and restricted water flow.

The surviving clams have been combined into one silo and have been reared at 13.5 C with heavy feeding attempting to maintain a 50,000 cells/mL of *Dunaliella tertialacta*, *Chaetocerus meulleri* and *Isochrysis galbana*. The clams reached 2 mm at the end of September. Presently the estimate of 15,000 juveniles exceeds the 10,000 clams needed for the outplanting experiment.

APMI has contracted Dr. Marina Alcantar, who has worked on strip spawning techniques with APMI for her PhD dissertation. Dr. Alcantar is currently on maternity leave and unable to travel to Seward but is scheduled to visit in 2026. To determine optimum brood collection timing Dr. Alcantar recommended conducting a gonadalsomatic index for samples APMI has collected throughout the summer. Bottomline Charters collected several additional samples for APMI to give a broader time series for the study. A third set of adult broodstock was collected by Hetrick who flew over from Seward to Crescent River with Duke Air. 50 clams were collected to get samples for the gonadalsomatic study. They were challenged to spawn with no success and when dissected they were found to be void of any gametes.

To date, Kenai Peninsula Mariculture Liaison Briana Murphy, APMI’s Mariculture Director Annette Jarosz, and APMI Director Jeff Hetrick have led the outreach efforts for this project. The team has presented this project at various conferences, including the Kenai Peninsula Economic Development District’s Industry Overview Forum in April 2025, the Pacific Northwest Aquaculture Summit in September 2025, and the Alaska Food Policy Conference in March 2025. Several agency personnel, including the DFG Seward Advisory Committee Chairperson, members of the mariculture industry, and the general public have reached out for additional information from APMI, specifically charter operators from the East side of Cook Inlet and representatives from Kachemak Shellfish Mariculture Association.

9mm razor clam BY 2025 October

Razor clam brood tank

Cresent River Beach

Bottomline Charters, Annette Jarosz

Mike Booz and staff

Duke Marloff