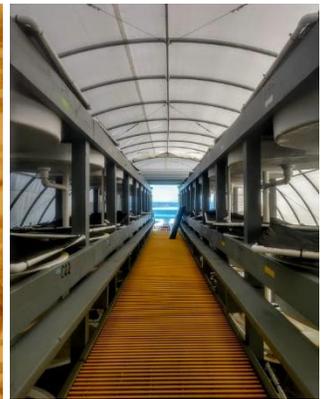
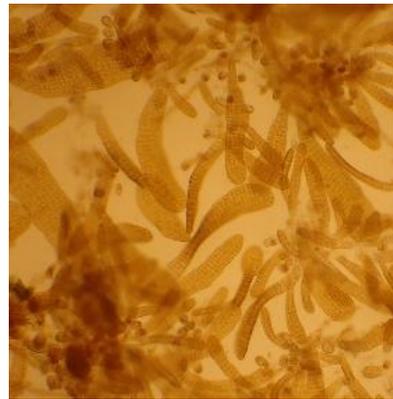




The Kenneth K. Chew Center for Shellfish Research and Restoration (Chew Center), at NOAA's Manchester Research Station, has been operated by Puget Sound Restoration Fund (PSRF) since 2013 through a Cooperative Research and Development Agreement with NOAA. The Washington State Legislature provided \$448,000 to support operations during the 2017-2019 biennium through a contract administered by the Washington Department of Fish & Wildlife (#17-09749).

During the 2017-2019 biennium, PSRF cultured Olympia oysters, pinto abalone, basket cockles, sea cucumbers and native kelp species to advance restoration efforts throughout Puget Sound, implement multiple recommendations of the Blue Ribbon Panel on Ocean Acidification and the Washington Shellfish Initiative, and provide a hub for research. The Chew Center has grown considerably in recent years and now consists of the following facilities: hatchery, nursery, greenhouse, kelp lab, floating upwelling system, ocean acidification research system, intertidal nursery, and a flow-through trough system to support a kelp/ocean acidification investigation. Read on for 2017-2019 highlights of conservation aquaculture in action.



2017-2019 HIGHLIGHTS

Olympia oyster restoration Produced 1,279 shell bags set with 2,609,950 Olympia oysters as spat on shell, and 307,000 single oysters from 3 brood groups for multiple sites in Puget Sound.

Pinto abalone rebuilding Produced and reared 6,559 juvenile pinto abalone that were outplanted to sites throughout the San Juan Islands in spring 2019. Several thousand additional abalone are currently being reared for outplant in 2020.

Kelp propagation Propagated and outplanted bull kelp and sugar kelp for the purpose of developing a canopy kelp restoration practice and researching the ameliorative effects of kelp on ocean acidification.

Kelp lab study Commenced a new, 3-year study to better understand the effect of kelp growth on seawater carbonate chemistry.

Sea cucumber aquaculture techniques Cultivated over 1,000 juvenile sea cucumbers to support research on the ability of mussel waste and decaying macroalgae to serve as high quality food sources.

Basket cockle aquaculture techniques Cultivated ~1 million juvenile cockles to support indigenous subsistence harvest on tribal beaches, and establish new methods to screen broodstock for presence of disseminated neoplasia.

Ocean acidification research Reconfigured and relocated an expanded ocean acidification treatment system with the capacity to accommodate 4 treatment groups (2 temperature, 2 pH).

Genetics Continued development of new genetic markers for Olympia oysters and pinto abalone (using next-generation RAD-sequencing) to understand the genetic population structure of wild remnant populations and characterize the genetics of outplanted individuals in relation to wild broodstock.

Disease testing Continued producing healthy, disease-free seed, with no reportable diseases detected in 5 years of seed production.

Facilities improvements Completed a new, 80-tank abalone nursery building with associated plumbing, heating and water quality control and monitoring systems. Constructed an expanded dedicated kelp lab facility for production of bull and sugar kelp for research and restoration. Developed a second larval rearing station.

Outreach Hosted tours, produced videos, updated webpages, and publicized hatchery work through Facebook and Instagram postings and multiple in-depth articles documenting the use of hatchery reared seed and juveniles for restoration and research efforts.

Partners Joined collaboratively with federal, state, and local agencies, Tribes, shellfish growers, Marine Resources Committees, researchers, academics, Marine Science Centers, and foundations to harness conservation hatchery capabilities to rebuild and research native marine species and habitats in Puget Sound.

PHOTOS. Front: 1. Olympia oyster setting tanks, 2. micro-algae greenhouse, 3. kelp gametophytes for propagation, 4. abalone nursery catwalk. Back: 1. Olympia oyster spat set on Pacific oyster shell, 2. tagged hatchery-reared juvenile abalone ready for outplanting, 3. bull kelp blade with sorus patches collected for propagation, 4. troughs for kelp study, 5. hatchery-produced juvenile sea cucumbers, 6. juvenile basket cockle seed, 7. upgraded ocean acidification system.

CONTACT

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