



Advancing sustainable aquaculture through research and outreach

Fall 2020

Sea Grant provides funding, technical assistance and professional development to support a sustainable U.S. aquaculture industry.

\$80.3 MILLION
economic impact



Sea Grant invests in the development of sustainable marine and Great Lakes aquaculture to help coastal communities maintain a safe and sustainable local seafood supply. Sea Grant's investment in aquaculture focuses on research and technology transfer, often through one-on-one interactions with extension agents, to support and expand America's aquaculture industry.

\$13 M
Sea Grant's national strategic investment in aquaculture in 2020

1052
aquaculture-related jobs created or sustained

408
aquaculture-related businesses created or sustained

More information at seagrant.noaa.gov/aquaculture

In 2019, Sea Grant established 11 Advanced Aquaculture Collaborative Programs to assess the current state of science and industry for specific areas of aquaculture, including seaweed, biosecurity of shellfish seed, and aquaculture in the Great Lakes region among other topics. These interdisciplinary teams are planning and focusing the next generation of aquaculture investments while enhancing the synthesis and transfer of past research advances to the industry.

107
Sea Grant professionals working on aquaculture full- or part-time around the country
(does not include many partners)

196
aquaculture projects supported by Sea Grant in 2020

Sea Grant work is integral to aquaculture growth across the U.S.

Sea Grant's 2020 investment in aquaculture included funds to supplement localized work occurring at the 34 Sea Grant programs as well as rapid response funding to mitigate negative impacts from the COVID-19 pandemic.

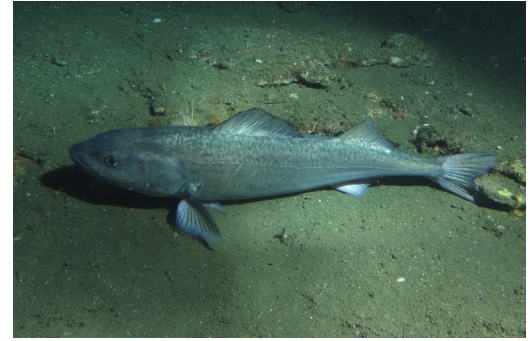
*Numbers are approximate and based on available data



Sea Grant work leads to commercially viable sablefish aquaculture in Washington

processes and disease previously stymied efforts to produce sablefish at commercial scale. In partnership with the Jamestown S'Klallam Tribe and Northwest Fisheries Science Center, Washington Sea Grant has overcome these barriers. The project has already benefited the local fishing community, who were hired to help harvest and process the initial product, over 40,000 pounds of fish.

Several innovations from Washington Sea Grant-funded projects have made sablefish aquaculture commercially viable. With an annual U.S. market value of over \$100 million and a declining wild stock, sablefish are poised to become a valuable aquaculture species. However, steep hurdles such as poor-quality eggs and larvae, lengthy production



Sablefish, also known as black cod, are found in the northeastern Pacific Ocean from northern Mexico to the Gulf of Alaska, westward to the Aleutian Islands and into the Bering Sea. Photo: NOAA



Many Sea Grant programs, including Delaware Sea Grant have revived shellfish aquaculture in their area. Photo: Robert Kerton

After 20 years of applied research, extension and education programs, Delaware Sea Grant and partners have revived commercial shellfish aquaculture in Delaware's Inland Bays. Though Delaware has a rich history of shellfish aquaculture, the practice was terminated in 1979 due to a disease outbreak that devastated oyster abundance. Thirty-eight years later, in 2017, Delaware opened nearly 350 sites for shellfish farming and, in 2018, saw the first commercial sales of farmed oysters in 20 years. From researching disease-resistant oysters, to helping create laws and regulations that allow Delaware shellfish aquaculture and helping growers raise and market oysters, Delaware Sea Grant played an integral role in the return of shellfish aquaculture.

Sea Grant and partners revive commercial shellfish farming in Delaware

Sea Grant reduces legal barriers to shellfish aquaculture

The National Sea Grant Law Center collaborated with four Sea Grant legal programs to conduct research and outreach that enhanced understanding of multiple legal barriers to shellfish aquaculture across the United States. They released a report of seven case studies and shared important findings with stakeholders through multiple avenues. During the development of the report, discussions led to changes in legislation and permitting process mechanisms that reduced permitting barriers to shellfish aquaculture in California and Georgia.

Sea Grant brings aquaculture to the classroom

Maryland Sea Grant's Aquaculture in Action program trains teachers to bring aquaculture systems into their classroom as a project-based, learning opportunity in biology, chemistry, mathematics, nutrition, engineering and digital technology. The projects provide students with knowledge and skills that are directly applicable to potential careers. In 2018, Maryland Sea Grant trained 12 teachers and supported 22 ongoing aquaculture projects. The programs reached 1,400 students who raised and released over 2,000 native fish.

Sea Grant creates replicated farm-scale aquaculture facility

New Hampshire Sea Grant-funded researchers established three farm-scale aquaculture and hydroponics facilities for large-scale testing before commercial implementation. In 2018, the integrated aquaculture and hydroponic system functioned successfully enough to produce 20,000 heads of lettuce and almost 3,000 lbs. of fish (tilapia, rainbow trout, and brown trout) that were donated to the New Hampshire Food Bank. This is the first U.S. replicated farm-scale research project of its kind.