

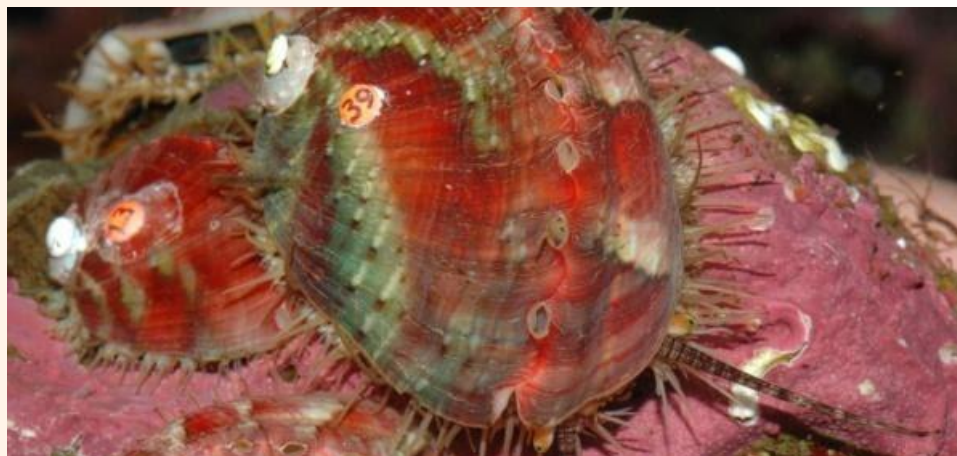


## NOAA FISHERIES

### Office of Aquaculture

Growth of American marine aquaculture is an opportunity to support local seafood production, strengthen coastal community resilience, and ensure a safe, secure, and sustainable supply of seafood.

# California Aquaculture



### **AQUACULTURE IN CALIFORNIA**

California's aquaculture production is very diverse. Key nearshore shellfish species include Pacific oysters, Kumamoto oysters, and Manila clams, and land-based facilities growing red abalone. Offshore species include Mediterranean mussels, rock scallops, a variety of seaweeds and algae. There is also growing interest in the aquaculture of finfish species like native California Yellowtail.

There are many coastal commercial shellfish farms in Northern California. Among the largest are Hog Island Oysters in Tomales Bay and Coast Seafoods in Humboldt Bay. Additionally, a few small-scale growers are exploring opportunities in both Tomales and Humboldt bays.

Highlighting the potential to expand California aquaculture, a number of harbor districts are looking to attract new growers. The Humboldt Bay Harbor District is developing a pre-permitting commercial shellfish project while the Ventura Harbor District has proposed a pre-permitting project for offshore mussel production in federal waters.

### **AQUACULTURE RESEARCH AND RESTORATION EFFORTS**

California is engaged in several native shellfish restoration activities that rely on aquaculture. A shared effort with NOAA Fisheries and its Southwest Fisheries Science Center, the UC Davis Bodega Marine Laboratory, and multiple research and aquaria partners have created a captive breeding research and recovery network to restore the endangered white abalone. The Southwest Fisheries Science Center is also conducting key genetic research on the California Yellowtail.

### ECONOMIC BENEFITS OF AQUACULTURE

U.S. marine aquaculture is an important industry. In many fishing and coastal communities, it creates year-round jobs that support resilient working waterfronts and economic development. In 2014, California’s total shellfish production was over 820 metric tons for all species combined, valued at \$23.8 million.

Nationwide, aquaculture production is valued at \$1.5 billion. The industry also supports sectors such as seafood processing, feed and equipment manufacturing, and food service.

### SHELLFISH INITIATIVE

NOAA Fisheries is working to increase populations of bivalve shellfish in coastal waters—including oysters, clams, and mussels—through commercial production and conservation activities. NOAA recognizes the broad suite of economic, social, and environmental benefits provided by increasing shellfish populations, including:

- Meeting a growing seafood demand
- Cleaner water and nutrient removal
- Shoreline protection
- Native shellfish restoration

To maximize these ecological and economic benefits, NOAA has increased collaboration with public and private partners to seek opportunities to streamline and enhance marine planning and permitting, environmental research, restoration and

farming techniques, and innovative financing. NOAA coordinates with other federal agencies, members of industry, restoration groups, academia, states, tribes, and other stakeholders to boost U.S. shellfish production. Currently, commercial growers are working with NOAA on a California Shellfish Initiative to support sustainable growth of commercial shellfish and native shellfish restoration.

### AQUACULTURE BY THE NUMBERS

- Oceans cover over 70% of the Earth’s surface, but account for only 2% of food production. With limited arable land and fresh water, the world is turning to the oceans for additional food as the global population is projected to increase to 9 billion by the year 2050.
- The U.S. aquaculture industry produced \$1.5 billion worth of seafood in 2018, with 39% of that value coming from the Pacific region.
- The U.S. aquaculture industry is currently focused on production of high-value food species. Thus, while the value of U.S. aquaculture production equals about 21% of the value of total U.S. seafood production, the volume equals about 7% of the total production.
- Globally, aquaculture supplies more than 50% of all seafood produced for human consumption—this percentage continues to rise.



For more information about aquaculture in California, contact Regional Aquaculture Coordinator Diane Windham ([diane.windham@noaa.gov](mailto:diane.windham@noaa.gov)).

*Kelp photo credit: Camille Pagnello, Scripps Institution of Oceanography*

