

WRAC fact sheet

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Characterization of Aquaculture in the Western U.S.

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CLAM FARMING

Photo: Manila clams.

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Clams are the fourth-leading aquaculture crop (by sales) produced in the U.S. according to the 2018 Census (Figure 1). Total sales of clams across the U.S. have increased over time, more than doubling from 1998 to 2018, but at a decreasing rate of growth (Figure 2a). The number of clam farms nationally, however, has decreased by 44% from its peak in 2005 to 2018 (Figure 2b). Clam farmers in the U.S. raise a variety of species, including Manila, geoduck, butter, native littleneck, and softshell clams. Overall, hard clams accounted for 41% of all clam sales in the U.S. in 2018, followed by geoduck (35%),

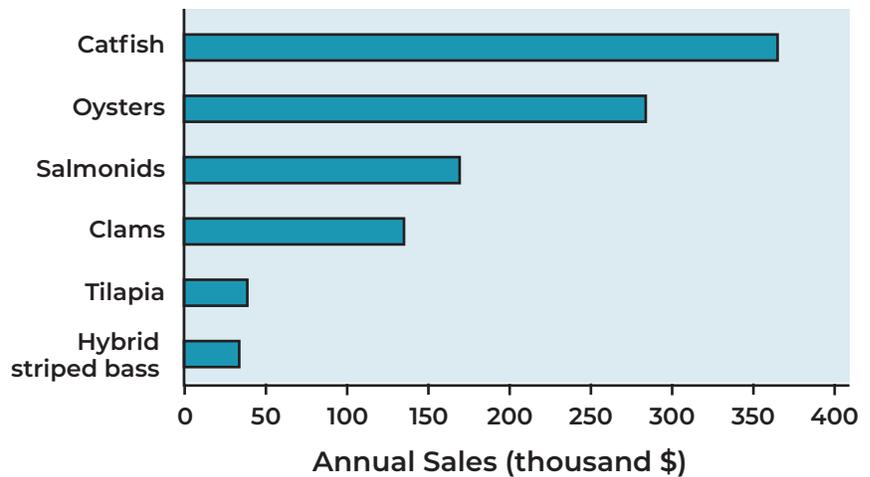


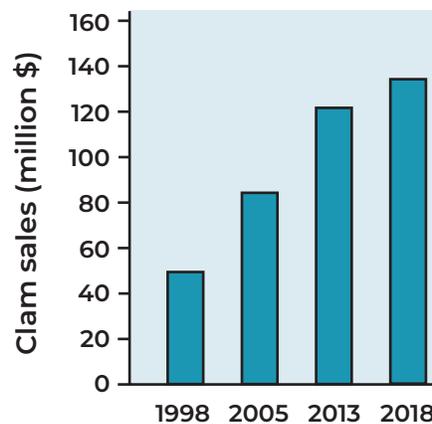
Figure 1. U.S. Aquaculture sales by species group.

Source: USDA-NASS (2019)

Clams are the fourth-leading aquaculture crop (by sales) produced in the U.S.

Clams also provide critical ecosystem services in marine environments.

a) clam sales



b) number of clam farms

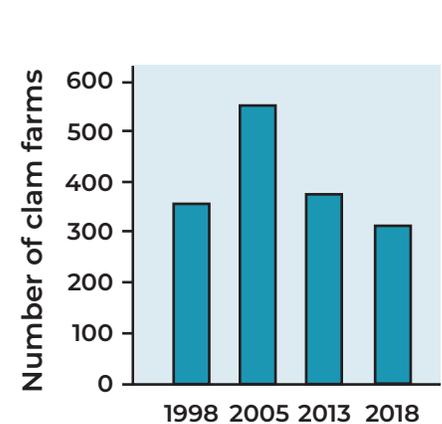


Figure 2. Trends in clam farming in the U.S. by: a) sales; and b) number of farms. Source: USDA-NASS (2000, 2006, 2014, 2019)

Manila (21%), and other softshell clams (3%) (Figure 3). Washington leads the nation in clam production, followed by Virginia and Florida (Figure 4), and California ranks ninth.

In the Western Region, clam sales have increased faster than the national rate, more than doubling from 2005 to 2013, with an additional 40% increase by 2018 (Figure 5a). The number of clam farms declined in the Western Region as it did nationally, from 2005 to 2013, but appears to have stabilized through 2018 (Figure 5b). By dollar value, 96% of the clams raised in the Western Region were either geoduck (61%) or Manila clams (35%). By volume (pound [lb]), however, the region produces nearly four times more Manila than geoduck clams.

Clam farmers in the Western Region have developed and supported distinct supply chains. A generalized supply chain map for clams in the Western Region is illustrated in Figure 6. Clam supply chains begin with the various upstream businesses that supply inputs for clam farms. Hatcheries, either as separate businesses or integrated into growout farms, provide seed for growout.

Clam supply chains include the companies that manufacture the various types of gear used in clam farming. Boat manufacturers supply the landing craft and work barges needed to travel to and from the farming beds and to convey harvested clams to on-shore facilities. Innovations by these upstream companies include development of a work tractor for harvesting clams in intertidal areas. Other businesses

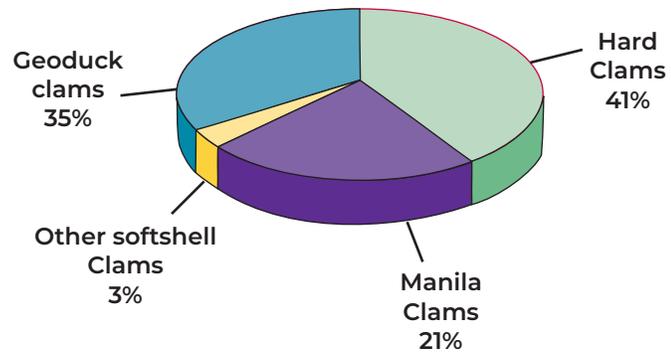


Figure 3. Major types of clams raised in U.S. by sales.

Source: USDA-NASS (2019)

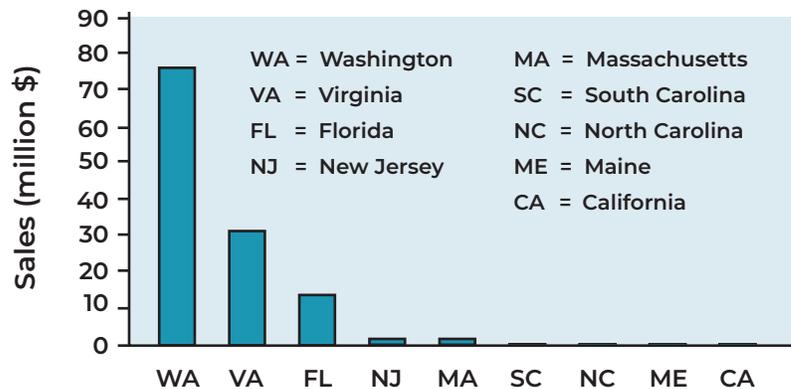
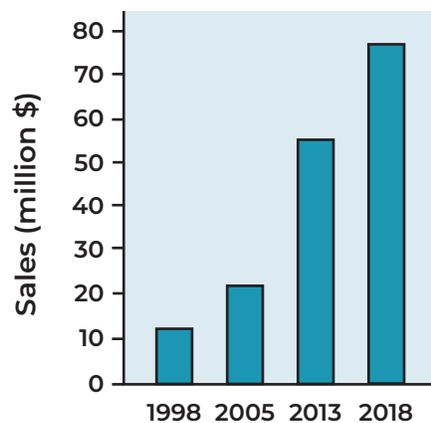


Figure 4. Top clam-producing states by sales (million \$). Sales values for states other than those presented were suppressed for confidentiality reasons. Source: USDA-NASS (2019)

a) clam sales



b) number of clam farms

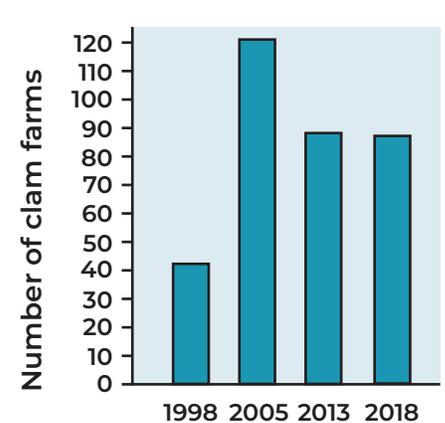


Figure 5. Clam sales (\$) in Western Region, 1998 to 2018 by: a) sales; and b) number of farms. Source: USDA-NASS (2000, 2006, 2014, 2019)

supply the plastic mesh used to protect clams from predators and materials used for packaging clams for market. Other upstream partners include the businesses that supply waders and gear for employees, lenders, fuel companies, and internet and telephone service providers. Workforce labor is a major production cost of clams and a critical input in clam farm supply chains.

Clams are sold downstream through various market channels. Of note is that geoduck clams are one of the very few U.S. aquaculture products for which international export markets have been developed successfully. Geoduck clams are sold primarily through distributors for export to markets such as those in mainland China and Hong Kong. Manila and other clams raised in Washington are sold primarily in the U.S. from farms to retailers (supermarkets and restaurants) or through online sales.

The growth of shellfish farming, including clams in the Western Region, has been constrained by various permitting issues, particu-



Photo: Hog Island Oyster Company

Geoducks.

larly those of the U.S. Army Corps of Engineers (van Senten et al., 2020). The major permitting issue with West Coast shellfish farms has been the extensive delays in permitting that result from sequential rather than concurrent approval processes across agencies as well as changing requirements throughout the

process. The regulatory compliance burden on Western Region shellfish farms generally was estimated to account for 29% of total costs of production. Of greater concern is that lost revenue was found to be \$280 million/year across the region, suggesting that shellfish farming in the Western Region could be

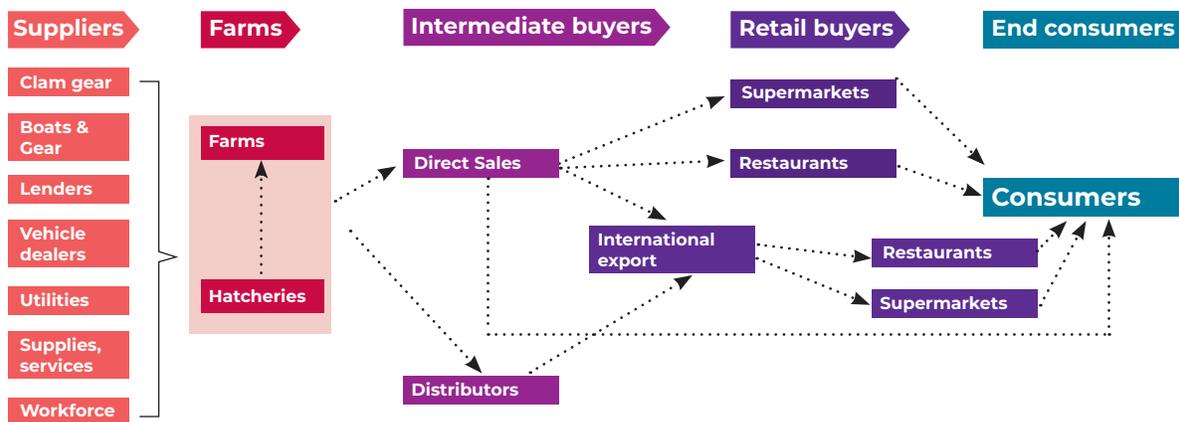


Figure 6. Generalized supply chain for clams raised in the Western Region.

several times greater than its current size. Lost revenue consisted of markets that were lost from regulatory action or trade barriers in addition to opportunities lost because of regulatory barriers to expansion and diversification.

Summary

Clam farms in the Western Region have created jobs in hatcheries and on farms as well as in the many businesses that participate upstream and downstream in the clam supply chain. Clams also provide critical ecosystem services in marine environments. Identifying more efficient ways to provide adequate oversight of clam farming but without the extended delays in permitting would allow farmers to meet demand for clams across the U.S.

References

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* *Census of Aquaculture 2005, 2013, and 2018 available at: https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Census_of_Aquaculture/index.php*



Photo: Keri Rouse

Manila clams.

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This project was supported by the Western Regional Aquaculture Center award number 2020-38500-32561 from the United States Department of Agriculture National Institute of Food and Agriculture. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the view of the U.S. Department of Agriculture.