

Aquaculture

Aquaculture is the breeding, rearing and harvesting of fish, shellfish, algae and other organisms in all types of water environments. It is used to produce food and other commercial products, restore habitat and replenish wild stocks, produce baitfish, provide fish cultures for zoos and aquariums and rebuild populations of threatened and endangered species. Aquaculture operations can be found in marine and freshwater environments. Marine fish farming consists of approximately 20% of all aquaculture operations in the United States and is typically found in net pens in the water or in tanks on the land. Freshwater fish farming usually takes place in ponds or other manmade systems and makes up about 70% of all aquaculture operations in the country. It is one of the fastest growing forms of seafood production in the world and recognized as an effective method to meet seafood demands around the world.

Aquaculture in the Chesapeake Bay

The Bay primarily focuses on oyster aquaculture, and those operations are the largest on the East Coast of the United States. According to the [2018 Census of Aquaculture](#), Maryland has 28 saltwater farms covering 1,770 acres, while in Virginia, that number rises to 157 farms, covering 17,949 acres. The Nature Conservancy [estimates](#) that oyster aquaculture operations in the Chesapeake Bay has grown 600% over the past decade, selling close to 400 million oysters per year. Besides oysters, some of these farms also raise shrimp and clams.

Aquaculture operations also take place in fresh waters across the watershed, raising such species as striped bass and trout. The most recent Census indicates that while Maryland has 15 freshwater farms covering 548 acres and Virginia has 46 covering 303 acres, aquaculture operations are also found in Delaware (one farm), New York (48 farms covering 584 acres), Pennsylvania (72 farms covering 1,529 acres) and West Virginia (29 farms covering 208 acres). The value of aquaculture operations across all of these states¹ is valued at \$159,225,000 million.

Aquaculture Benefits

Aquaculture provides several benefits to the Chesapeake ecosystem. Academic studies have shown that oyster aquaculture in particular can help restore water quality, as oysters are known as filter-filterers for their ability to remove harmful pollutants out of the water. For example, The Nature Conservancy found that for every 100,000 oysters grown and harvested annually, six pounds of nitrogen and phosphorus pollution are removed from the Chesapeake Bay ([Environmental and Ecological Benefits and Impacts of Oyster Aquaculture](#)). About five years ago, the Chesapeake Bay Program approved private oyster aquaculture operations as a best management practice under the Chesapeake Bay Total Maximum Daily Load.

Aquaculture is also believed to help reduce wave energy and protect vulnerable shorelines. Materials from these operations are being repurposed to provide a different type of habitat for species that reside on oyster reefs. And aquaculture can help stock public fisheries, meeting the demand for sportfishing.

¹ Figure represents the entire state, not just the portion found in the Chesapeake Bay watershed.