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# Farm Bill Primer: USDA Support for Aquaculture Operations

Aquaculture operations that grow aquatic animal and plant species under controlled conditions—in accordance with U.S. Department of Agriculture (USDA) policy and statutory definitions—are generally eligible for support available to other U.S. farmers and ranchers. In addition, the most recent farm bill, the Agriculture Improvement Act of 2018 (2018 farm bill; P.L. 115-334), included provisions specifically providing for USDA aquaculture research and assistance. Congress may consider these programs and other related policies as it debates the next farm bill.

## Overview of U.S. Aquaculture

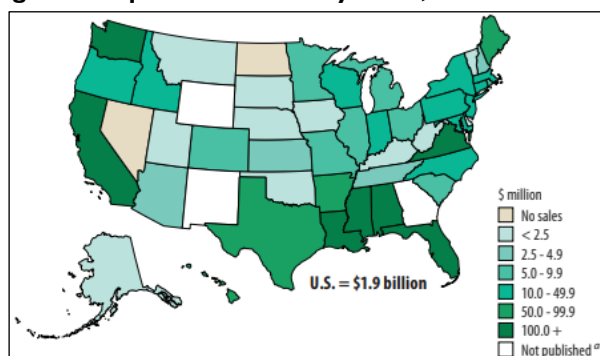
*Aquaculture* is defined in statute as “the propagation and rearing of aquacultural species, including, but not limited to, any species of finfish, mollusk, or crustacean (or other aquatic invertebrate), amphibian, reptile, ornamental fish, or aquatic plant, in controlled or selected environments” (7 U.S.C. §3103). *Aquaculture* is also defined in statute as “the propagation and rearing of aquatic species in controlled or selected environments, including, but not limited to, ocean ranching” and includes certain exceptions (16 U.S.C. §2802). In practice, aquaculture systems refer to the propagation, breeding, rearing, and harvesting of animal and plant species using interventions such as seeding, stocking, feeding, and protection from predators.

In contrast with wild-caught fisheries harvesting aquatic species from open waters, aquaculture involves either land-based closed-circuit systems (e.g., aboveground tanks, enclosed structures, artificial ponds) or water-based systems (e.g., ocean enclosures, open sea cages, pens, nets) in freshwater or saltwater (marine) environments, according to USDA. Aquaculture systems also include aquaponics that combine growing fish and plant species without soil or external fertilizer, using fish waste as a substitute for plant nutrient supplementation while continually recirculating water between the animal and plant growing systems. Based on acreage in 2023, aquaculture facilities are mostly (72%) freshwater systems (both surface and groundwater); the remainder are saltwater (ocean or estuary) systems.

USDA reports there were 3,453 aquaculture farms located in the United States in 2023, with total farm-level sales of \$1.9 billion. Leading U.S. states with aquaculture farms, based on 2023 sales, were Mississippi (\$277 million in sales), Washington (\$277 million), Louisiana (\$195 million), Florida (\$166 million), Alabama (\$132 million), California (\$119 million), and Virginia (\$104 million) (**Figure 1**). According to USDA, aquaculture product types include food fish (such as catfish and trout), mollusks (oysters, clams, mussels), crustaceans (crawfish for food and saltwater shrimp), ornamental fish (such as koi), sport fish (bass and salmon), baitfish (such as fathead minnows),

and other miscellaneous species (including algae, alligators, caviar, eels, frogs, snails, tadpoles, and turtles) (**Figure 2**).

**Figure 1. Aquaculture Sales by State, 2023**



**Source:** USDA, *Aquaculture*, ACH22-21, 2024. Some state data not published to avoid disclosing data for individual operations.

**Figure 2. Number of Farms and Product Type, 2023**

| Type of product | Number of farms | Top species (number of farms and top state) |
|-----------------|-----------------|---|
| Mollusks        | 1,140           | Oysters (900 farms, 21% in MA)              |
| Food fish       | 968             | Catfish (398 farms, 30% in MS)              |
| Crustaceans     | 848             | Crawfish (751 farms, 97% in LA)             |
| Ornamental fish | 315             | Koi (138 farms, 21% in FL)                  |
| Sport fish      | 249             | Largemouth bass (193 farms, 17% in OH)      |
| Baitfish        | 205             | Fathead minnows (150 farms, 15% in AR)      |
| Miscellaneous   | 238             | Algae (63 farms, 29% in ME)                 |

**Source:** USDA, *Aquaculture*, ACH22-21, 2024. Numbers shown refer to the number of U.S. farms. Farms may produce more than one type of product and sums shown may exceed the total number of farms.

## USDA Aquaculture Support

Federal authority supporting U.S. aquaculture is provided through the National Aquaculture Act of 1980 (NAA; P.L. 96-362; 16 U.S.C. §§2801 et seq.). NAA directs the Secretaries of Agriculture, Commerce, and the Interior to establish and implement a National Aquaculture Development Plan (NADP) to promote and support the development of U.S. aquaculture. NAA also directs coordination among various federal agencies that have aquaculture programs and policies. The Subcommittee on Aquaculture (SCA) serves as the federal interagency coordinating group tasked with increasing the effectiveness and productivity of federal aquaculture research, regulation, technology transfer, and assistance programs, including through the NADP. SCA is a statutory subcommittee that operates under the Committee on Environment of the National Science and Technology Council (NSTC) under the White House Office of Science and Technology Policy.

USDA support for aquaculture is provided within the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (7 U.S.C. §§3322, 3324(a)(2)), which was reauthorized in the 2018 farm bill (P.L. 115-334, §§7510, 7133). The 2018 farm bill (§7614) also amended USDA's Aquaculture Assistance Grant Program (7 U.S.C. §3322(b)). Under the program, USDA awards grants for research and extension activities to colleges and universities, Regional Aquaculture Centers, state agricultural experiment stations, and private nonprofit institutions. Activities include research and development of new aquaculture technologies; designing systems to promote healthy growing environments; developing improved genetics and on-land recirculating systems; and protecting aquatic animal health (including the development of reliable supplies of seed stock and therapeutic compounds). Other activities include training and educating aquacultural producers; facilitating or expanding production and marketing; and educating consumers on the nutritional benefits of farmed fish and seafood as well as the sustainability of responsible aquaculture production.

Aquacultural producers may also be eligible for other USDA programs available to all U.S. agricultural producers. For example, previously awarded Local Agricultural Marketing Program grants (7 U.S.C. §1627c) have funded projects supporting aquacultural market development. USDA grants for new and beginning producers (7 U.S.C. §2279) and USDA loans may also be available to support aquaculture producers in some cases. Aside from USDA, the Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) supports research, education, and technical assistance for U.S. marine aquaculture, including ocean-based farmed seafood such as finfish and shellfish.

### Farm Bill Considerations for Congress

As Congress considers the next farm bill, it might consider proposals debated in the 118<sup>th</sup> Congress. For example, the farm bill proposals in each chamber, H.R. 8467 and S. 5335, would have reauthorized existing USDA programs and expanded research for aquaculture. Both bills would have reauthorized USDA's Aquaculture Assistance Grant Program, but S. 5335 would have further expanded funding and made certain programmatic changes. Both H.R. 8467 and S. 5335 would have made changes to national aquaculture policy, planning, and development support. For example, H.R. 8467 would have established an aquaculture advisory committee as well as a USDA center of excellence for aquaculture; S. 5335 would have created an aquaculture liaison at USDA and supported research for developing crop insurance policies for aquacultural producers.

Other 118<sup>th</sup> Congress proposals would have expanded support for U.S. aquaculture. For example, proposed legislation would have increased federal procurement and grant funding (H.R. 5087), research funding (H.R. 3542/S. 2619, H.R. 4162/S. 2316), and disaster assistance (H.R. 1020, H.R. 4127/S. 2704). Other bills would have created an Office of Aquaculture at USDA (H.R. 3951/S. 2211) or addressed offshore aquaculture (H.R. 4013/S. 1861). Some legislative proposals involving primarily NOAA authorities (e.g., H.R. 4770/S. 2534, H.R. 5944) would likely fall

outside the jurisdiction of a farm bill. Other proposals addressing competition from foreign seafood imports or food safety concerns involving the imported seafood would also likely fall outside a farm bill.

In 2020, USDA hosted an *Aquaculture Is Agriculture* colloquium “to provide the domestic aquaculture industry an opportunity to communicate on how USDA can best serve this farming community” across several listening sessions involving more than 300 aquaculture stakeholders. Proceedings from USDA's colloquium highlight federal support for fish, shellfish, and aquatic plant operations. The proceedings describe feedback and recommendations from participating stakeholders on topics related to aquacultural research, animal health, environmental management, wildlife interactions, production innovation and technology, marketing, and USDA support for U.S. aquaculture (see **text box**). Congress could consider the feedback and recommendations as it debates the next farm bill.

### USDA Summary of Selected Feedback from Aquaculture Stakeholders

**Aquaculture Production Research:** Support aquaculture production and consumer research of U.S. farm-raised seafood and marine plants; reduce financial risks to producers; increase domestically produced/processed species in the marketplace; and reduce U.S. reliance on imports.

**Aquatic Animal Health:** Develop a national plan to support aquatic livestock health; address aquatic animal interstate and international trade issues; adapt current federal programs to cover diverse aquaculture species, production settings, and end uses; address diagnostic assay issues; increase accessibility to veterinarians knowledgeable in aquatic species; and develop and approve vaccines/drugs while removing regulatory redundancies.

**Environmental Management:** Ensure USDA staff know that aquaculture is eligible for farm programs; fill open extension positions and support extension funding; strengthen collaboration between USDA and NOAA's Sea Grant Marine Extension professionals; clarify USDA's environmental management roles; engage with the Environmental Protection Agency on water quality/quantity regulations; conduct research and technology transfer related to effluent reduction and treatment, water quality/conservation, and alternative materials; develop life cycle analyses related to aquaculture's environmental impacts; advocate for aquaculture as a climate-resilient approach to protein production; and update the regulatory framework related to the use of biotechnology for genetic improvement.

**Aquaculture and Wildlife Interactions:** Extend USDA resources to conduct bird experiments on freshwater ponds to include open-water shellfish farms.

**Production Innovation and Technology:** Expand USDA activities to address automation, noninvasive sampling, genetic improvement, closing life cycles of nondomesticated species, and nutrition; and expand USDA educational and extension activities.

**Product and Consumer Marketing:** Expand USDA procurement of aquacultural products and explore options for aquaculture within federal domestic nutrition programs; develop organic production standards for aquaculture products.

**Supporting Aquaculture:** Deliver programs that support aquaculture and aquaponics; update and enhance USDA insurance products for aquaculture producers; and educate county, state, and national staff that “aquaculture is agriculture.”

**Source:** CRS from *Aquaculture Is Agriculture Colloquium: USDA's Role in Supporting Farmers of Fish, Shellfish, and Aquatic Plants*, 2020.

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