

Fiction: Fish feeds are not healthy.

Fact: In the United States, fish feeds are regulated by the FDA as well as respective State Departments of Agriculture and the American Association of Feed Control Officials (AAFCO). Scientists and industry across the country are actively working to develop a variety of sustainable feeds to ensure that the fish consume a nutritionally balanced diet to promote optimum health and growth, maintain great flavor and texture, and contain all of the important nutrients that consumers demand. Soybean farmers in America’s heartland play an important role in this effort.



Fiction: The use of fishmeal in fish feeds depletes wild stocks of fish.

Fact: Fishmeal is used in a variety of animal feeds including those for swine, poultry, cattle, some species of fish, and household pets. Fishmeal is produced from fish that people do not readily consume or from the by-products of seafood processing. Because they do not expend energy searching for food and spawning, farm-raised fish are much more efficient than wild fish in converting fishmeal to muscle. For some species in the wild, it takes 10 pounds of forage fish to produce one pound of wild fish. For the aquaculture sector as a whole, the ratio of wild fish inputs to farmed fish output has fallen to 0.63 as a result of more efficient feed formulations.

Fiction: Farm-raised fish and shellfish aren’t safe.

Fact: Fish and shellfish farm-raised in the United States must meet rigorous standards for both product wholesomeness and environmental impact. Seafood processors and packers comply with the requirements of the Hazard Analysis Critical Control Point (HACCP) Program administered by the FDA. The program identifies potential hazards and develops strategies to help ensure that they do not occur.

Farm-raised oysters, clams, and mussels are monitored by the Interstate Shellfish Sanitation Conference (ISSC) in cooperation with the FDA and state agencies.



Fiction: Farm-raised fish contain hormones, antibiotics, and other drugs.

Fact: In the United States, very few drugs have been approved for use with aquatic organisms. Drugs and hormones are not used to promote growth. Before a drug is approved for use in the U.S., it must be shown that it will not harm the environment or public health. When a drug is used, strict withdrawal times are followed so that drug residues do not remain when the fish and shellfish reach the market.

Fiction: Farm-raised fish and shellfish are low in important Omega-3 fatty acids.

Fact: The Omega-3 fatty acid content of all fish varies depending upon the species and the diet. In wild fish stocks, other factors such as seasonality also affect the fatty acid content of the fish flesh. Farmed fish such as salmon, trout, barramundi, and cobia are naturally high in Omega 3s. Studies indicate that, for some species, farmed fish actually have a higher Omega-3 content than their wild cousins do. A few growers have been experimenting with the diet fed to farmed fish to increase the Omega-3 content.

In all cases, consuming more fish and shellfish just makes good nutritional sense. Because the USDA regards seafood as an incredibly nutrient dense food, the “2010 Dietary Recommendations for Americans” suggest that Americans increase the amount and variety of seafood consumed by choosing seafood in place of some meat and poultry.



Fiction: Seafood contains high levels of mercury.

Fact: Mercury occurs naturally in the environment, and can also be released into the air through industrial emissions. Some large, long-lived, deepwater marine fish tend to accumulate more mercury than other species. For these reasons, the FDA recommends that pregnant women, nursing mothers, women who may become pregnant, and small children avoid the consumption of shark, swordfish, king mackerel, and tilefish, and limit the consumption of albacore (white) tuna to 6 ounces per week. Many of the fish and shellfish considered low-mercury, including shrimp, channel catfish, tilapia, trout, and salmon, are farm-raised.

www.cfsan.fda.gov/~dms/admehg3.html

Fiction: Consuming raw shellfish is dangerous.

Fact: Molluscan shellfish, including clams, oysters, and mussels, are filter feeders and can concentrate marine bacteria and viruses. One such type of bacteria, called *Vibrio*, is naturally occurring in the marine environment, and is found most often in waters of the southern United States during the summer months. These organisms can cause fever, chills, abdominal pain, nausea, vomiting, and other gastrointestinal symptoms.

In a few high-risk individuals, the symptoms may be more severe or even life threatening. These include: people who are immune compromised (AIDS and cancer patients), any one undergoing radiation therapy or taking immunosuppressive drugs, diabetics, those with liver diseases or iron overload disease (hemochromatosis), those affected by alcoholism, or those with stomach or intestinal disorders. These individuals should **not** consume raw or partially cooked shellfish or fish.

Since thoroughly cooking oysters, clams, and mussels will destroy the bacteria, these seafoods can continue to be enjoyed in many fully cooked preparations.

www.fda.gov/Food/ResourcesForYou/HealthEducators/ucm085365.htm



Fiction: Pregnant women should avoid the consumption of seafood.

Fact: A well-balanced diet that includes a variety of fish and shellfish can contribute to heart health and children’s proper growth and development. So, women and young children in particular should include fish and shellfish in their diets because of the many nutritional benefits. They should, however, follow the advice given in the mercury advisory. Some studies have shown that modest fish consumption (2 meals per week) during pregnancy may actually improve motor skills, brain function, and communication in young children. Other research shows that seafood consumption may help mothers carry their babies to full term and avoid low birth weight.



Fiction: Water leaving an aquaculture facility pollutes surrounding bodies of water.

Fact: Discharges from U.S. aquaculture facilities must meet the standards of the Environmental Protection Agency as well as stringent state and local regulations. The waters leaving fish farms are of the same or higher quality than the waters receiving them.

Fiction: Aquaculture damages the health of our oceans.

Fact: The development of U.S. aquaculture is critical to maintaining the long-term sustainability of wild caught fisheries and the environment. It is estimated that wild caught fisheries have reached maximum sustainable yield, while the world’s appetite for seafood is growing. Our aquaculture industry can satisfy the growing demand for seafood in an environmentally friendly and sustainable manner. There are even examples of aquaculture actually improving the environment.

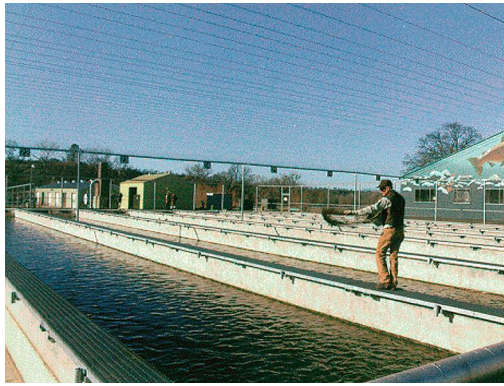
U.S. aquaculture operations raise fish such as trout, tilapia, barramundi, and cobia that can replace more familiar species on menus yet meet customers’ wants and needs. Other farms are raising traditional marine species such as cod, flounder, and halibut. The availability of these species allows fish stocks to recover and allows wild harvest commercial fishermen to work closely with government agencies to help ensure that those stocks aren’t overfished in U.S. waters.

In the U.S., fish farms along the coast are not located in environmentally sensitive areas. The National Marine Fisheries Service identifies areas that are considered essential to living marine resources and regulates the use of those areas to help ensure that those habitats remain healthy and can support sustainable fisheries.

The production of bivalve molluscan shellfish (clams, oysters, and mussels) provides positive environmental impacts. These shellfish remove nutrients from the water by feeding on algae and particulate matter. This helps to maintain good water quality and minimizes the loss of oxygen, which is critical to the survival of other organisms. While farmed shellfish are growing, they spawn and help to reseed wild shellfish beds. Because of their three-dimensional structure, shellfish form habitats and hiding places for other organisms, adding to the biodiversity of the marine environment. These impacts are so important that in some areas, community volunteers are restoring oyster and clam populations.



Over two-thirds of all fish and shellfish consumption in the United States takes place in restaurants. Diners want seafood, but how can you plan ahead and maintain your profit margins when seafood is subject to drastic swings in supply and price?



Buying United States farm-raised seafood is the answer. Aquaculture, or fish-farming, defined as the raising of finfish and shellfish under controlled conditions, makes keeping great tasting fish and shellfish selections on the menu easy and, better yet, cost effective. Aquaculture quality, price, and supply tend to be consistent, allowing you to plan pricing strategies in advance and ensuring that profit margins are predictable. Because of strict federal and state government oversight, you can meet your customers' expectations that the U.S. farm-raised seafood you serve is sustainable, environmentally friendly, high quality, and wholesome.

Many people are confused about aquaculture, and this brochure can help answer your questions. Aquaculture includes the production of finfish and shellfish for human consumption, for stocking sport fishing ponds and streams, and to enhance wild populations. It also includes the production of baitfish for recreational fishing, and ornamental fish for fish tanks and backyard ponds. Other farms produce aquatic plants for food, garden ponds, aquaria, and even for fuel and medicine.

Some types of aquaculture are practiced in the open ocean and in bays, where products such as mussels, clams, oysters, salmon,



flounder, and cobia are grown. Earthen ponds are the primary source of catfish, tilapia, bass, and crawfish. Trout, because they have high oxygen requirements, are often raised in raceways where water continuously flows through the system. In some areas, production takes place in high-tech recirculating systems that recirculate, or reuse, the water after it has been cleaned.

Fiction: Aquaculture systems are unsanitary and the water is dirty.

Fact: For an aquaculture system to be profitable, it is essential that sanitary conditions and good water quality be maintained. If good environmental conditions are not maintained in the system, the fish can become stressed and die. That means the farmer has no crop to sell.



Fiction: Aquaculture degrades the environment.

Fact: Because of federal and state government oversight, you can meet your customers' expectations that the U.S. farm-raised fish you serve is sustainable, environmentally friendly, high quality, and wholesome. Federal agencies including the Department of Agriculture (USDA), the Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), the Fish and Wildlife Service (USFWS), and the Food and Drug Administration (FDA) oversee the production of aquatic organisms in the United States.

States establish additional management practices that deal with water quality, wetlands protection, wastewater treatment, water supply, non-native species, and fish health programs.

An important component of all of these programs is a requirement to prevent the escape of farmed fish into the wild. Farmed fish are routinely tested to help ensure that they are free of important diseases and aquatic nuisance species that might be harmful to the environment. All of these steps help to ensure that U.S. aquaculture products are safe and sustainable.

Fiction: Aquaculture is not sustainable.

Fact: In the United States, growers are required, by law, to use farming methods that do not harm the environment, ensure the wise use of natural resources, and help protect wild stocks of finfish and shellfish.

Many environmental organizations place U.S. farm-raised fish and shellfish on their Best Seafood Choices list. Those lists consider environmental impact and sustainability.

Fiction: Farmed fish contain high levels of PCBs.

Fact: The main dietary sources of PCBs are fish (especially sport fish caught in contaminated lakes or rivers), meat, and dairy products. A factor that tends to minimize potential risks for people who consume seafood is that they are likely to eat a variety of fish from many different locations.

Both farm-raised and wild-harvest salmon are well below the U.S. Food and Drug Administration action level (point at which products are removed from the marketplace) for PCBs and provide a host of positive health benefits. Farm-raised salmon is one of the most available and well-accepted fish in the American market.

People who are concerned about contaminants such as PCBs in fatty fish can take steps to reduce any potential intake of these chemicals. Since contaminants accumulate slowly over a long period of time, select smaller fish. Cooking techniques that allow fats to drip away from the fish, such as grilling, broiling, or baking on a rack can also be used.



Fiction: Restaurants should only purchase seafood that carries the seal of a third party certification program.

Fact: U.S. farms and the products that they raise must meet or exceed all standards set by the federal and state governments and there are severe penalties for violating these regulations. In essence, both the farm and the products that they raise are certified by the U.S. government.

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