



Aquaculture in the United States: An Introduction to the Industry

Rural Enterprise and Alternative Development Initiative Report

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Introduction

Aquaculture is the cultivation of aquatic animals and/or plants in a controlled environment for all or part of their life cycle. Channel Catfish, Rainbow Trout, various species of Salmon, Hybrid Striped Bass, Tilapia, Yellow Perch, numerous shellfish and shrimp, and bait Minnows are examples of the fish species commercially cultured around the United States. Water Chestnuts, many types of Algae, Hyacinths, Seaweeds, Water Lilies, and wetland plants are a few of the plants cultivated. The aquatic animals and/or plants may be used for recreation, food, or fiber.

Rural Enterprise and Alternative Development Initiative Report number five (5) introduces and describes the World Aquaculture Industry. Please refer to it for world aquaculture trends. The purpose of this fact sheet is to introduce and briefly describe the United States Aquaculture Industry, sometimes referred to as Domestic Aquaculture.

Status of

U.S. Aquaculture

U.S. Aquaculture production currently contributes about 800 million pounds (200 to 300 million pounds edible weight) to the U.S. seafood supply. Domestic Aquaculture was up again in 1999, with Catfish leading the way. Pond sales of Catfish increased from 564 million pounds to 597 million pounds. Catfish production is up 250 million pounds since 1987. Domestic Tilapia production was flat at 18 million pounds. Trout production rose to 60.3 million pounds. And farmed Salmon production fell from 46 to 41 million pounds (Figure 1).

Catfish

If Catfish were ranked with U.S. commercial landings for annual volume, it would have placed third in 1999, ahead of Pacific Cod

U.S. Finfish Aquaculture Production 1990 - 1999
Farmed Salmon Production Falls as Catfish Jumps

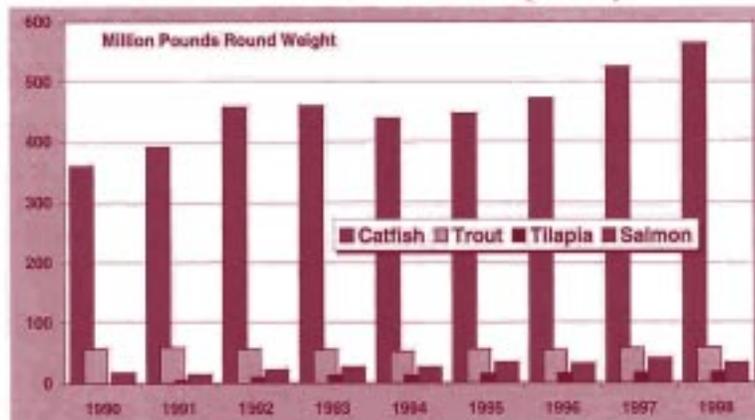


Figure 1.
U.S. Finfish Aquaculture Production 1990 - 1999.
Source: USDA



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The major constraint to market development for fresh Tilapia fillets is consumer awareness.

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(524 million pounds) and behind Alaskan Pollock (2.3 billion pounds) and Pacific Salmon (815 million pounds). In 1999 Catfish farmers sold a record 597 million pounds (pond weight) worth \$440 million, or \$0.737 per pound. Nearly 300 million pounds were processed (Figure 2).

The Catfish Journal states that Catfish is the “cash crop” in four counties in Mississippi and Louisiana. According to the October 2000 Aquaculture Outlook, favorable feed prices and relatively stable farm prices for Catfish have encouraged growers to expand their operations. By the end of 2000, 179,200 acres of ponds are expected to be in use. That is 2% higher than in 1999.

The number of pounds produced in the US is up nearly 50% from 1993, but, at 18 million pounds, it did not change from 1998 (Figure 3). U.S. production is expected to increase as several large farms begin production within the next few years.

Imports accounted for 128 million pounds in 1999 (7:1 ratio of imports to U.S. production). Frozen fillets from China (76,000 pounds in 1998 versus 1.5 million in 1999 – 20 fold increase) and fresh fillets from Costa Rica, Ecuador (where they are converting Shrimp ponds to Tilapia ponds), and Honduras increased rapidly. In the first six months of 2000, Ecuador shipped 4.4 million pounds, 43% of all fresh Tilapia fillets, to the U.S.

The major constraint to market development for fresh Tilapia fillets is consumer awareness. When the average U.S. consumer discovers this mild, skinless, boneless fish fillet for under \$4.00 per pound, the market will grow. However,

Tilapia

The US Tilapia market continues to grow, however, domestic production is not expanding to meet the demand.

U.S. Catfish Production 1990 - 1999
Almost 600 Million Pounds

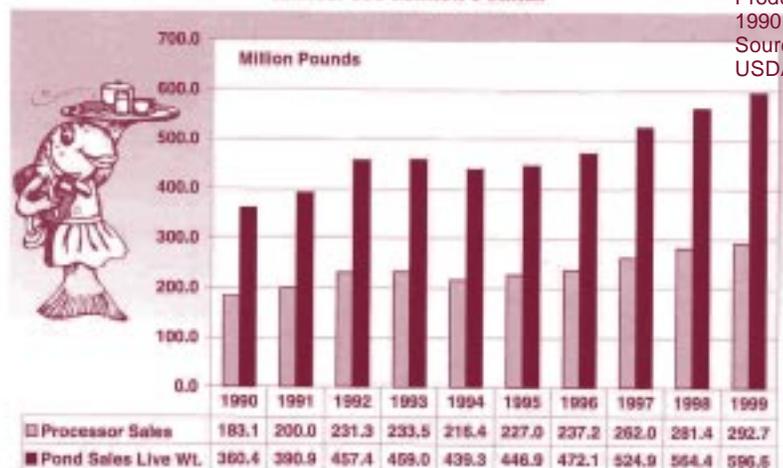


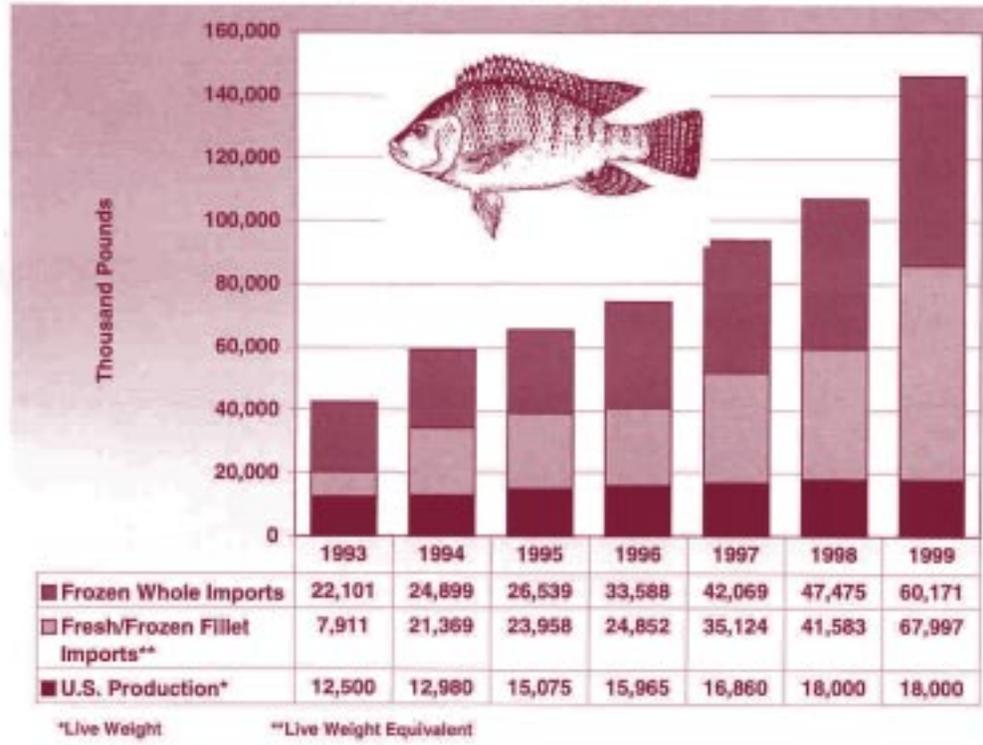
Figure 2.

U.S. Catfish Production 1990 – 1999.
Source: USDA





U.S. Tilapia Supply 1994 - 1999
Fillet Imports Up Sharply



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Fresh, quality Salmon is now more common in supermarkets and restaurants.

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Figure 3. U.S. Tilapia Supply 1994 – 1999. Source: Am. Tilapia Association

domestic growers must find a way to compete effectively with imports in order to secure a significant share of the expanding Tilapia market.

Trout

U.S. Trout production has been up and down over the last decade (Figure 4). The lowest amount was in 1994 at 52.1 million pounds, but it has increased ever since. In 1999 Trout production increased 2.4% from 57.9 million pounds to 60.3 million pounds. The State of Idaho is the leading producer of Trout with 76% of the total, and North Carolina is a distant second

with 4.5 million pounds in 1999. The 1998 Census of Aquaculture lists a range of average per pound prices for foodsize Trout, depending upon which region of the U.S. is reported. The lowest average per pound price was \$0.90 in the Western Region (the region including Idaho), whereas the highest average was in the Northeastern Region at \$2.44. The average in the North Central Region was \$2.29 per pound, which included Illinois at \$1.93, Missouri at \$2.00, Nebraska at \$2.11, South Dakota at \$2.20, Michigan at \$2.22, and Wisconsin at \$2.79. Wisconsin, with 531,000 pounds,





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 *Permission was granted by Howard M. Johnson & Associates to utilize data, graphs, and tables from the 2000 Annual Report on The United States Seafood Industry, Eighth edition, in this factsheet.

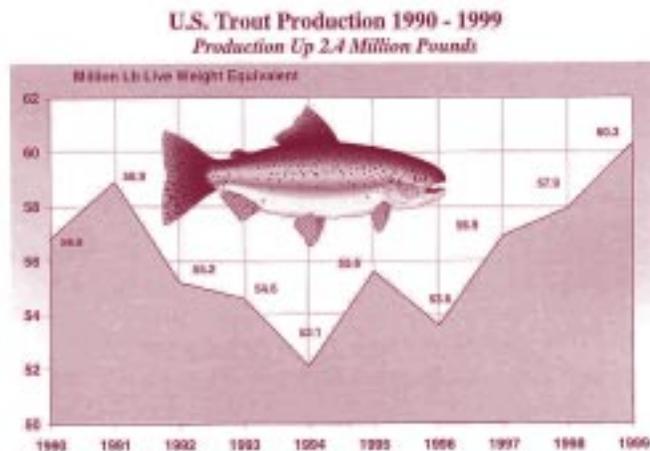


Figure 4. U.S. Trout Production 1990 – 1999. Source: USDA

and Missouri, with 478,000 pounds live weight, were the two leading states in that region for pounds produced.

Salmon

Salmon passed Pollock in 1999 and is now the third leading seafood in the U.S., as measured on a per capita basis. Canned Tuna is first at 3.5 pounds per person per year, Shrimp is second at 3.0 pounds, Salmon is third at 1.7 pounds, Pollock is fourth at 1.57 pounds, and Catfish is fifth at 1.16 pounds. Due to farmed Salmon, the increasing supply continues to drive down the price and move Salmon into more and more market niches. Fresh, quality Salmon is now more common in supermarkets and

restaurants.

Farmed Salmon production in the U.S. for 1999 was a little down at 37 million pounds compared to 42 million in 1998. The ban on farming Salmon in Alaska stalls domestic expansion. But Norway, Chile, and the United Kingdom continue to produce more. In 1999, farmed Salmon, at 1.9

billion pounds, likely exceeded wild Salmon volumes.

The Future of Domestic Aquaculture

Many factors could increase Domestic Aquaculture, other than Catfish, but they are still in development. Such factors would be the use of genetic engineering to produce the “ideal” fish for a specific region, advances in Recirculating Aquaculture Systems (RAS), and changes in Alaskan laws to allow fish farming in that state. On the negative side, government regulations affecting water usage and quality, as well as limited site availability, will limit future aquaculture expansion.