US Aquaculture Industry 1990 to 2008

Aquaculture is a diverse industry in the United States based on differences in production systems, species, practices, aquatic environments and directions in development. According to Gary Jensen (USDA, 2008), the number of farms and the value of aquaculture sales increased between 1998 and 2005, but it was at a slow rate of growth. Farm numbers grew from 4,028 to 4,309, an increase of 281 farms or about 7% increase. Sales growth was from $978,012,000 to $1,092,386, 000, an increase of $114,374,000, or an increase of about 11.6%.

Contributing to this slow growth and possibly limiting future overall growth is at least in part due to challenges facing the channel catfish industry. While still the most important farmed-species in terms of value and volume in the United States, the number of acres in production declined from 175,000 in 1999 to 151,000 in 2007. This decline paralleled the reduction in small foodsize inventory grown in the four major producing states (Mississippi, Alabama, Arkansas and Louisiana) from 240 million in 1999 to 135 million in 2007. The industry is challenged by low-priced imports of basa (*Pangasius spp*.) from Vietnam and channel catfish (*Ictalurus spp*.) from China. The increasing costs of production driven by higher feed and fuel costs are contributing factors as well.

Dr. Gary Jensen USDA 2008, says that the US domestic aquaculture industry is made up of primarily small farms with annual income of less than $250,000 and small businesses defined as annual revenues of less than $750,000. Many rely on local or regional markets to which they sell a premium-priced special product. There are also some large-scale businesses that market through regional and national outlets and take advantage of larger economies of scale. Many sectors of the domestic aquaculture industry are challenged by imports. Tilapia imports alone have risen from about 35 million lbs. in 1994 to nearly 250 million lbs. in 2004 with continued fast-paced growth. Tilapia is also another whitefish that competes with channel catfish as another species choice for consumers.

Contributing to the increase in imports of seafood, which represent over 80 percent of total US domestic demand, is the growing demand for farmed fish. While wild-catch decreased by 2.1 lbs. per capita consumption since 1970, farmed fish increased by 7.0 lbs over this same period. New information on the health benefits of fish, the growing demand for frozen and easy to prepare meals, and changes in lifestyles are trends impacting seafood consumption. In brief, more people eat out or purchase prepared foods.

Confirmation of this growing trend for seafood is a study conducted in 2005 by the Alaska Seafood Marketing Institute. The study confirmed that 58 percent

more people ate more seafood than two years previous. Their reasons for doing so include health (64%), good-tasting (60%), increased variety (50%), less interest in red meats and chicken (50%), and the meal of choice when eating out (60%).

Another study in 2006 by O'Dierno, et al., revealed that some of the key reasons that could limit future increases in seafood consumption are: lack of consumer knowledge (86%), negative media coverage (54%), price (46%), preference for meat (11%), preference for poultry (3%), and safety concerns (3%).

A separate focus group study conducted by O'Dierno, et al., found that the descriptors of seafood that conveyed the highest quality were "all natural" (23%), "organically grown" (24%) and "harvested from the wild" (53%). The focus group findings seemed to be representative of the general public's changing buying habits in that the sale of natural foods and organic foods are up 7% and nearly 15%, respectively. Of special interest is the increase for organic meat, poultry and seafood, which were up 120%. About 70% of the consumers were willing to pay a 10% premium for fish labeled as sustainable.

The US Dept. of Commerce, NOAA, National Marine Fisheries Service reported on US fish and shellfish aquaculture production and sales in two separate tables from 1990 to 2004 (see below). These numbers are slightly different than the numbers reported by USDA from 1999 to 2005. The reporting period was different, and the NMFS tables show a decrease in Trout production and sales from 2000 to 2004, and a decrease in Salmon production and sales from 2000 to 2004.

Both USDA and NMFS data would show a decrease in US marine shrimp aquaculture production if the reporting period were extended from 2004 to present. Texas marine shrimp production, for example, makes up about 70% of US production, dropped from 5 million pounds of whole shrimp produced in 2006 to 3.4 million pounds in 2007. This drop was also a nationwide trend. Florida also had a decrease in farm-raised shrimp production in 2007.

The United States' reliance on imported seafood is on the increase. According to USDA, the value of US fish and shellfish imports was $9.9 billion in 2000, and continues to grow steadily as can been seen below.

2001	2002	2003	2004	2005	2006	2007
$9.7B	$10B	$10.9B	$11.2B	$11.9B	$13.2B	$13.5B

According to USDA, US fish and shellfish deficits increased for the same period:

-$6.4B	-$6.8B	-$7.5B	-$7.3B	-$7.7B	-$8.8B	-$9.1B

U.S. Fish and Shellfish Aquaculture Production
Years 1990-2004 (1,000,000 pounds)

	1990	1995	2000	2004	Rate of Change 1995–2004
Finfish:					
Catfish	360	446	593	630	41%
Salmon	9	31	49	33	7%
H.S. Bass	1.5	8.3	11.2	11.5	38%
Tilapia	--	15	20	20	33%
Trout	56.8	55.9	59.1	54.9	-2%
Shellfish:					
Clams	3.6	4.3	9.9	20.9	385%
Crawfish	71	58.1	17	70.3	21%
Mussels	0.6	0.4	0.4	0.5	45%
Oysters	22	23.2	16.8	26.2	13%
Shrimp	1.9	2.2	4.7	10.5	377%
Total lbs. (X000,000)	**527**	**645**	**782**	**879**	**36%**

Source: NOAA, National Marine Fisheries Service 2004.

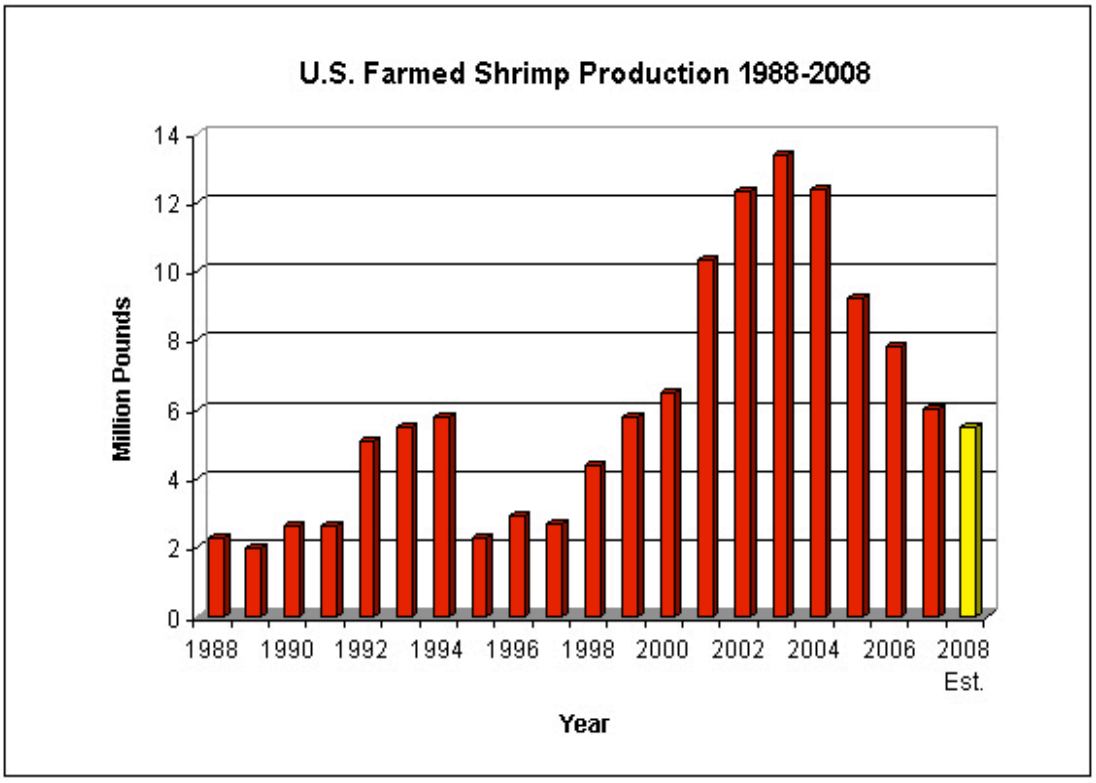
U.S. Aquaculture Production
Years 1990 to 2004 (1,000,000 dollars)

Year	1990	1995	2000	2004	Rate of Change 1995–2004
Finfish:					
Catfish	273	351	445	439	25%
Salmon	26.3	75.9	99.2	56.6	–25%
H.S. Bass	—	21.1	29.5	31.3	48%
Tilapia	—	22.6	30	40	77%
Trout	64.6	61.4	63.6	57	–7%
Shellfish:					
Clams	13.4	19.7	32.5	73.3	272%
Crawfish	34	34.7	27.6	42.8	23%
Mussels	1.1	1.2	0.525	3.9	224%
Oysters	77.9	70.6	42.4	80	13%
Shrimp	10.3	8.8	14.5	21.2	141%
Total $ (X000,000)	**501**	**667**	**786**	**845**	**27%**

Source: NOAA, National Marine Fisheries Service 2004.
Note: — = not available.

The US fish and shellfish deficit ranked between 17th to 25th among all other trade deficits in the US from 2000 to 2007. It was ranked 22 among other deficits in 2007 and in 2007 the US fish and shellfish deficit passed the $9B mark($9.19 billion, a 3,8% increase over 2006).

However, the US Aquaculture Production tables above would tell a different story if they were projected from 2004 to the present. There has been a decline in US shrimp aquaculture production since it peaked in 2003 at 13 million pounds. It declined to 7.8 million pounds in 2006 and declined to 6 million pounds in 2007. It is expected to be lower in 2008.



Apparently what is happening in the US finfish aquaculture industry is also happening in the US shellfish aquaculture industry. The flood of shrimp imports into the US is contributing to lower farm-gate prices for the farmers and higher operating costs such as feed and fuel, are all making it difficult for US producers to compete in the world market.

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