U.S. Farm-Raised Catfish Industry
2010 Review and 2011 Outlook

Highlights

► U.S. farm-raised catfish is sixth in the “Top 10” fish and seafood consumption list for Americans, who consume an average of 15.8 pounds per year total and 0.85 pounds of catfish per year in 2009.

► The U.S. catfish industry has been on a contracting course since a high mark in 2003 when 662 million pounds of round weight catfish was processed.

► The top three catfish producing states, Alabama, Arkansas and Mississippi, saw catfish production acres decrease by 15,100 acres (-15%) in 2010, from 103,000 acres in 2010 to 87,900 acres in 2011. Total US water acreage was 99,600 in Jan. 2011.

► The number of U.S. catfish operations decreased by 85 operations (-9%) from 2010 to 2009 and is now at 909 operations.

► Catfish round weight processing in 2010 was 472 million pounds, up 5.6 million pounds (+1.2%) from 466 million pounds processed in 2009. 2008 processing weight was 510 million pounds.

► In 2010 the average price received by producers was 80.2 cents/lb, up 3.1 cents/lb from the 2009 average price of 77.1 cents/lb. In 2010 there was a $0.097 difference between high and low pond bank price received throughout the year.

► Producer’s income in 2010 ($379 million) was up $19.3 million (+5.1%) from 2009 ($359 million).

► In-pond inventories of foodsize fish in January 2011 was 244 million pounds, down 35% from January 2010 levels. Stocker inventory was down 2.4 million pounds (-2.8%) from January 2010 levels. Fingerling inventory pounds for January 2011 were 50% greater than reported inventories in January 2010. This indicates that foodfish supply to processors will be short for 2011 and 2012 if the 2010 round weight processing quantity level is to be maintained.

► Catfish feed prices (32% protein) in 2010 averaged $353/ton, down $14/ton (-3.8%) over the 2009 average feed price ($367/ton). In December 2010 feed prices peaked at $388/ton, while the low feed price in 2010 occurred in April and May at $330/ton.

► Imports of frozen catfish fillets increased by 8 million pounds (+6.3%) to 138 million pounds in 2010; and imports now account for 57% of all U.S. sales of frozen catfish fillet product.
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The following article discusses recent trends of the U.S. catfish industry and connects these trends into a 2010 annual review and a 2011 outlook. Sections in this introduction provide information on American's fish and seafood consumption patterns, imports of "catfish-like" products, U.S. catfish industry statistics on processing, inventory of fresh/frozen product, U.S. farm-raised catfish production statistics on water acreage, fish price, inventories, feed price, and an outlook for 2011.

1. U.S. fish and seafood consumption

Consumers ultimately decide what food products they will purchase based on their likes and dislikes. Consumers have many fish/seafood choices and elect to purchase these products based on product attributes they prefer, such as price, taste, flavor, texture, enjoyment, other protein options, etc. Thus, it is important to understand American fish and seafood consumption patterns and where domestically produced farm-raised catfish fits among consumed fish and shellfish species, and to understand how consumer trends may influence 2011 purchases of domestically produced channel catfish.

Though U.S. per capita fish and seafood consumption was lower in 2009, the long-term trend is rising, Figure 1. There have been some changes in American's species preferences over time, Figure 2. Shrimp became the number one consumed seafood product in the U.S. in 2002 and has stayed in this position ever since. Tuna, primarily canned tuna, dropped to second place and has stayed at this level. Salmon replaced Pollock as the number three preferred product in 2003 and has remained there. In 2006 catfish dropped from fifth to sixth place, though much of this drop in consumption was due to the removal of non-Ictaluridae fish from the database; and in 2009 consumption of catfish decreased to 0.85 pounds per person per year. Tilapia was not among the top ten preferred products before 2002, but went from ninth place in 2003 to fifth place in 2006 and has remained there with 1.21 pounds being consumed by each American in 2009. The surprise entry into the top ten consumed seafoods in 2009 was Pangasius at 0.356 pound consumed per American.
Figure 1. U.S. Per Capita Consumption of Fish and Shellfish Products

Figure 2. U.S. Top Ten Seafood Consumed, per capita consumption.

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<td>Tilapia</td>
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2. Imports

There has been a dramatic increase in imports of catfish (Ictalurus, Pangasius and Siluriformes) frozen fillets, Figure 3, for instance:

- in 2006 the import quantity was 75 million pounds;
- in 2007 the import quantity increased to 85 million pounds;
- in 2008 the import quantity increased to 102 million pounds;
- in 2009 the import quantity increased to 129 million pounds; and
- in 2010 the import quantity increased to 138 million pounds.

In total, the U.S. catfish industry processed and sold 103 million pounds of frozen fillet product in 2008, 96 million pounds in 2009, and 98 million pounds of frozen product in 2010.

Figure 3. Imported Catfish, 1990 – 2010.
The quantity of imported frozen catfish fillet products sold in the U.S. was greater than the quantity of U.S. processed frozen catfish fillet products sold in the U.S. in 2010. Domestically produced frozen catfish fillet products were 43% of the entire quantity sold in the U.S., Figure 4. This is remarkable, given that in 2002 there were 131 million pounds of U.S. processed frozen catfish fillet product sold in U.S. and only 10 million pounds of imported catfish frozen fillet product sold in the U.S. In eight years, imported frozen catfish fillet product has increased from 7% to 57% of the U.S. market share for these products.

Figure 4. Quantity of US Catfish and Imported Catfish-like Frozen Fillets Sold in the US (in parentheses are US percentages of frozen fillet sold).

3. U.S. catfish processing and frozen/fresh inventory

U.S. catfish processing and inventory quantities of fresh and frozen fish at the processing plants (and in the pond, discussed later) provide a view of what was demanded and supplied to the U.S. market place. In 2010, the U.S. catfish industry processed 472 million pounds, Figure 5, a slight increase from 2009. The U.S. catfish industry has been contracting since 2003, and from 2003 to 2009 there was a 190 million pound decrease in U.S. farm-raised catfish processed. In 2008 there was a 13.4 million pound increase in catfish processing quantity from 2007; in 2009 there was a 43 million pound decline compared to 2008; and in 2010 there was a 5.5 million pound increase from 2009 levels.
Fresh product (on ice) inventory held at processing plant refrigeration warehouses is small compared to frozen inventory quantities. In 2009 there was an average monthly inventory of approximately 702,000 pounds of fresh whole, fillet and other product forms on hand and this increased to 777,000 pounds in 2010. In contrast, the average monthly 2009 frozen inventory of whole, fillet and other products was approximately 11.3 million pounds and this decreased to 10.7 million pounds in 2010. Of these frozen forms, the fillet form dominates, with the average monthly quantity in inventory increasing from 6.9 million pounds in 2002 to 8.6 million pounds in 2009. In 2010 the frozen fillet quantity decreased to 7.2 million pounds per month in inventory.

Figure 5. Round Weight Processed by U.S. Processors

![Graph showing round weight processed by U.S. processors from 1975 to 2010.]

*Foodsize Catfish Only

4. U.S. farm-raised catfish production

Sales of catfish products (foodfish, broodfish, stockers, fry, and fingerlings) in 2010 were approximately $403 million, up $30 million from 2009 ($373 million). This level of sales was last seen in 2003. This is remarkable as production acreage has decreased significantly from 2003 levels (-72,100 acres). U.S. farm-raised catfish production acres have declined to 99,600 acres (projected use from January 2011 NASS survey) from a 2002 high of 196,760 acres, a 97,160 acre decrease (-49%) in nine years, Figure 6. From 2002, Alabama acreage has declined 6,700 acres (-26%), Arkansas acreage has declined 24,800 acres (-65%), Louisiana acreage has declined 10,600 acres (-88%), and
Mississippi acreage has declined 56,000 acres (-50%). Escalating feed and fuel costs combined with volatile annual prices to the producers and weakened demand for final products have made profits very difficult in the U.S. catfish industry during this period and led many producers to turn their pond acreage into corn and soybean acres.

Figure 6. Water Acreage Used in US Catfish Production, 1998-2011.

5. Fish price and in-pond fish inventory

The farm bank price paid to catfish producers averaged 76.7 cents/lb in 2007, increased to 78.0 cents/lb in 2008, decreased to 77.1 cents/lb in 2009, and increased to 80.2 cents/lb in 2010. It is noteworthy that 2010 prices are as high as they have ever been (nominal price) and are reflecting the severe shortage of fish inventory in the ponds, Figures 7 and 8. Prices received by producers were volatile in 2007 and 2008, with a $0.19/lb high/low price spread in 2007 and a $0.17/lb high/low price spread in 2008. The low January 2008 price sent shock waves through the U.S. catfish industry, leading all to wonder if there would be a catfish industry and triggered many decisions concerning stocking and feeding that have led the industry to the shortage of fish it is now experiencing. In contrast, the 2009 high/low price spread was $0.05/lb and in 2010 it was $0.10/lb. This lack of volatility was welcome news and allows all to better plan when such volatility is reduced. However, high grain prices have pulled many catfish producers out of the industry.
Figure 7. Nominal Prices Paid to Producers

In-pond fish inventory

Round weight processed catfish was 472 million pounds in 2010. If this quantity is to be processed in 2011 and 2012, the fish will have to come from foodsize catfish in-pond inventories for the immediate need (and frozen stored product discussed earlier), from stockers to supply demand in late 2011 and into early to mid-2012, and from fingerling inventory to supply demand in late 2012 and early to mid-2013.

January 2011 foodsize catfish in-pond inventories (small, medium and large sizes) was reported to be 244 million pounds, down 35% from January 2010, and indicates that foodsize fish to the processing sector will be very short, by a gap of 133 million pounds if 2010 processing levels (466 million pounds) are to be maintained, Figure 9. However, stocker sized fish must be added to the current foodsize fish to determine if enough fish are available for processors in 2011.

Figure 9. U.S. Catfish Foodsize In-pond Inventory, lbs.
Small and large stocker inventories reported in January 2011 were down from 2010 by 2.4 million pounds (-2.8%), but down 51 million (-37%) from 2009 levels. Since stocker quantity in 2011 is similar to 2010 levels, this portion of the in-pond inventory will not be enough to make up the shortage in in-pond foodsize fish inventory, Figure 10.

**Figure 10. U.S. Catfish Stockers In-pond Inventory, lb.**

![Graph showing U.S. Catfish Stockers In-pond Inventory from 2004 to 2011.](image)

A positive note is that fingerling quantity and numbers are up in 2011, the first increase seen since 2008, Figures 11a and 11b, indicating an increase in future production (?).

**Figure 11a. U.S. Catfish Fingerlings in Inventory, January of each year, lb.**

![Graph showing U.S. Catfish Fingerlings Inventory from 2004 to 2011.](image)
January 2011 catfish fingerling inventories (number) were 32% greater than reported inventories in January 2010, indicating an increased quantity of foodsize catfish that will be available in late 2012 and early mid-2013. Many operations have gone out of business and others have reduced their level of production by choosing not to restock. This decision reverberated into the hatchery portion of the industry and they responded by reducing the number of fingerlings and broodstock they keep on hand. Broodstock pounds in inventory in January 2011 were still lower than in 2010, but the rate of decline lessened with only 13% less broodstock pounds in 2011 compared to 2010 compared to 17% less broodstock in 2010 compared to 2009. Maybe this is the bottom level broodstock will reach and may indicate the demand for fingerlings may turnaround in 2011, especially when the early 2011 shortage in foodsize fish and high price to producers. The demand for fingerlings should increase immediately and also increase the quantity of broodstock in 2011 and 2012, Figure 12. The dampening effect on this rebound will be the high price of feed, both at the hatchery/fingerling level and at the grow-out operational level.
Thus, from an “in-pond” inventories perspective, there will **not** be enough foodsize fish and advanced stockers in 2011 for processing quantities equaling the 2010 round weight processing quantity. For the future, the increased number of fingerlings on hand will provide need foodsize fish in early and mid-2012. Short foodsize catfish product supplies could necessitate seafood buyers turning to imported sources of fish as substitutes to meet their needs. This could lead to further decreases in market share for U.S. catfish processors and reduce the quantity required from U.S. catfish producers as well. Thus, this is a very critical time in the evolution of the US catfish industry.

6. Feed price

A continuing concern for U.S. catfish producers in 2010 was the high price of catfish feed, which averaged $353/ton, a $14/ton decrease from the 2009 annual average price for 32% protein feed, Figure 13, but nevertheless still a great concern. However, in 2010 the July through December feed price averaged $366/ton. High catfish feed component prices for corn and soybean meal have resulted in high catfish feed prices from 2008 to the present. However the 2011 catfish feed price is on the rise and with expected record high corn and soybean prices this trend is expected to continue. Additionally, acreage battles with rice and cotton are occurring and could further increase the scarcity of corn and soybean and elevate their prices.

The trend for higher catfish feed prices in 2011 can be seen by the average January plus February catfish feed price for 32% crude protein at $409 per ton, which is $56/ton (+16%) higher than the 2010 average feed price.
Figure 13. Prices for 28% and 32% Crude Protein, Floating Catfish Feed, 2006-2009.

The Feed Delivered report from USDA/NASS, Figure 14, graphically depicts and compares the monthly tons of feed delivered to the U.S. Catfish Industry. From this figure, it is clear the total feed being fed to fish, and therefore an indicator of overall catfish production, is declining. Additionally, when graphed according to the state the feed was delivered to, the sharp declines in production occurring on an individual state basis can be seen, Figure 15. Mississippi and Arkansas had greater reduced feed purchases in 2007 to 2010 compared to relatively lower feed delivered reductions in Alabama.

Figure 14. Comparison of Total Catfish Feed Delivered between 2006 and 2010.
Figure 15. Catfish Feed Delivered to each State and Remaining Other States.

Farm-Raised Catfish Outlook for 2011

The long term trend shows an increasing consumption of fish and seafood products by U.S. consumers. Among the fish and seafood species consumed, domestically produced farm-raised catfish is number six among the most consumed fish and shellfish species in the U.S. The surprise fish to enter the top ten fish and seafoods consumed in the U.S. list is Pangasius, at 0.356 pounds consumed per person per year. This is an imported product and acts as a substitute product to the channel catfish grown in the U.S.

Recent trends in the industry show there is an increasing quantity of imported frozen catfish and catfish-like fillets (and other fish substitutes, i.e., tilapia) coming into the U.S. This import trend did not change in 2010 and is not likely to change during 2011. Round weight processing in the U.S. catfish industry was slightly higher than in 2009. However, due to a severe shortage of domestically produced catfish available it is unlikely that 2010 levels will be processed in 2011.

Using USDA/NASS catfish inventory figures, there seem to be a dearth of foodsize catfish immediately available for harvesting and processing. Stocker catfish inventories are flat compared to 2010 inventories (reported in January) and provide no bump to increase fish available in the latter part of 2011. Thus, it seems the 471 million pounds processed in the U.S. in 2010 will not be achieved in 2011. However, fingerling quantities are greater in January 2010 compared to 2011 which is encouraging as it
demonstrates that hatchery operators have prepared for increased demand for catfish fingerlings by producers. While catfish broodstock quantity is down from 2010 levels the high price being paid for foodsize catfish will increase the demand for fingerlings and thus broodstock numbers are likely to increase in 2011.

The U.S. catfish industry in early 2011 is in the position of having a severe shortage of fish, and it will last throughout 2011. Short fish supplies during processors and wholesaler’s time of need could force seafood buyers to buy more imported catfish or turn to alternative white-flesh fish species to meet their needs. This could lead to further decreases in market share for U.S. processors, especially for frozen catfish fillets. This, in turn may reduce the quantity of catfish required from U.S. producers. This could occur because, unlike poultry, beef and hogs, increased catfish production costs cannot be easily passed onto consumers as catfish has a huge seafood import competition (that other U.S. livestock industries do not have) that would swoop in to replace domestically produced catfish with less expensive fish substitute products if domestic production prices are passed on to consumers. However, there is a demand for U.S. produced catfish products and, like in other industries, increased food prices are needed to keep up with increasing input prices. As the U.S. economic recovery provides increased numbers of main street worker jobs, the increased food prices are likely to be accepted compared to the last couple of years when high unemployment and no jobs in sight made passing on higher prices less likely to be accepted.

Escalating feed and fuel costs, even with a higher price received by producers, is making profits very difficult for U.S. catfish producers. The result has been a decrease in the number of operations and a dramatic decrease in the number of production acres. Prices received by producers were volatile in 2007 and 2008, with a $0.19/lb high/low price spread in 2007 and a $0.17/lb high/low price spread in 2008. In contrast, the 2009 high/low price spread was only $0.05/lb, a welcome relief from the tumultuous swings in 2007 and 2008 pond bank fish prices; and in 2010 the price spread was $0.10/lb. It is very difficult to guess what price producers may receive during this time of product shortage. Already in late February 2011, processors were paying $1.05 to $1.10/lb to producers. This price level has never been seen before in this industry before. What will be on everyone’s mind in 2011 is how high can the pond bank price go and the processor still being able to sell product to wholesalers at elevated prices. The price of feed is already escalating in early 2011, and even with a higher price received, it is uncertain if producers and processors will be able to be profitable in 2011.

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