

# MAKING SENSE OF USDA SILURIFORMES INSPECTION

By: Evelyn Watts & Katheryn Parraga

Fish within the Siluriformes order are a diverse group, primarily found in fresh water. There are 3,093 species reported in this order, including 36 families and 478 genera.



Catfish are the most abundant group within the Siluriformes order. In the U.S., both farm-raised and wild-caught siluriform catfish are processed. Channel catfish (*Ictalurus punctatus*) are primarily domestic farm-raised. Although the industry is based on large-scale farming operations in the southeastern region, smaller farms can be found in many states. On the other hand, the wild-caught industry's most commonly harvested species are Blue catfish (*Ictalurus furca-*

*tus*), Flathead catfish (*Pylodictis olivaris*) and Yellow catfish (*Ameriurus natalis*). Some other species such as Gafftopsail catfish (*Bagre marinus*), and Bullheads [Brown bullhead (*Ameriurus nebulosus*) and Black bullhead (*Ictalurus melas*)] are harvested in low amounts. In 2016, these wild-harvested species were reported to have a combined total production of 13,143,000 pounds. Other fish in the Siluriformes order, usually exported from Asia, are Swai and Basa, members of the Pangasiidae family. In addition, the Armored

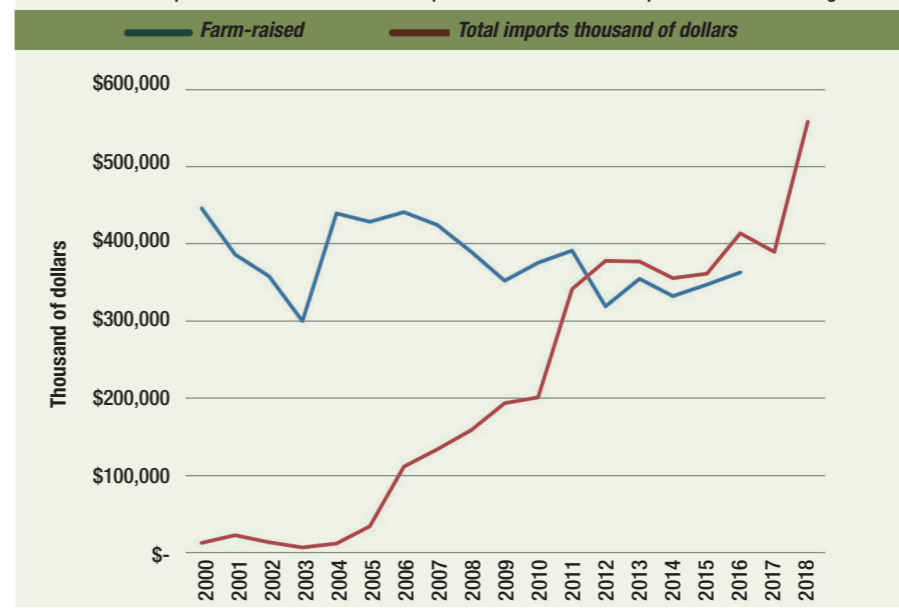
Catfish from the family Loricariidae has become an invasive species in the state of Florida (Table 1).

In the U.S., apart from farming operations, catfish are found in natural waters such as large reservoirs, lakes, ponds and streams characterized by sluggish, moderate and occasionally fast flows. Most growth occurs during warm water temperatures (85°F). The spawning season can go from February to August depending on the location. Usually in the state of Mississippi, the spawning time is in May.

The main production of farm-raised catfish in the U.S. occurs in the southeastern states of Mississippi, Arkansas, and Alabama, where Channel catfish are usually raised in earthen ponds. The proliferation of the catfish industry developed in the mid to late 1900s in the Delta region. The principal areas of catfish production are the alluvial valley along the Mississippi River that is in western Mississippi, northeastern Louisiana, and southeastern Arkansas (also known as the Delta Region). This area has 73,618 acres of catfish production. In 2016, the gross farm value of catfish production in U.S. was \$363 million, the U.S. Wild-caught catfish value was \$6.7 million, and the total value of catfish imports was \$414 million. From 2000 to 2016, domestic farm-raised catfish showed a decrease, while catfish imports continued to increase (Figure 1). In 2017, catfish imports declined, but in 2018 the value recovered and surpassed the value of previous years (Figure 1).

The National Oceanic and Atmospheric Administration (NOAA) had not yet released information for domestic aquaculture values for 2017 and 2018 at the time this summary was compiled (Figure 1). From 2000 through 2017, wild-caught catfish volumes and values showed a declining trend (Figure 2). In the U.S., Louisiana is the largest harvester of wild catfish, followed by Maryland and Virginia, where the blue catfish in particular is considered an invasive

**Figure 1** Domestic catfish production for farm-raised compared with total catfish imports from 2000 through 2018.



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species (Figure 3). Large farm-raised processors can process as much as 400,000 pounds per week, while small farm-raised and wild-caught processors can account for as little as 200 to 9,000 pounds weekly.

### Mandatory Inspection of Fish of the Order Siluriformes

Historically, the U.S. Food and Drug Administration (FDA) was in charge

of the safety of all seafood and seafood characterized products; however, in 2008 in the Food, Conservation, and Energy Act (Farm Bill) congress moved the inspection of fish in the order Siluriformes to the U.S. Department of Agriculture's Food Safety and Inspection Service (USDA/FSIS). This effort began in 2001, because catfish producers were complaining about imports of cat-

fish affecting local prices. The Catfish Farmers of America (CFA) trade group insisted that there was unfair trade regarding the importation of catfish.

In the 2002 Farm Bill, congress amended the Federal Food, Drug, and Cosmetic Act (FD&C Act), stating that only fish classified in the family Ictaluridae can be labeled as 'catfish' and recommended importers to use alternative names for non-ictalurid species. However, this was not the first time catfish labeling had been addressed. Some state agencies such as the Louisiana Department of Wildlife and Fisheries (LDWF) had regulated 'catfish' labeling since 1991 (LA Statutes Title 56) (Table 1). In 2008, the Farm Bill gave the USDA/FSIS the authority to determine which fish the term 'catfish' would apply to, and amended the Federal Meat Inspection Act (FMIA) adding catfish as an amenable species. The amendments were not to apply until the date on which the Agency issued final regulation.

In February 2011, the USDA published the proposed rule "Mandatory Inspection of Catfish and Catfish Products," where the agency proposed to inspect catfish under the same regulations governing the inspection of other species under the FMIA, with some modifications. In addition, USDA recognized that there are situations in which wild-caught catfish are also processed for com-

**Figure 2** Wild-caught catfish pounds per year and dollars per pound from 2000 through 2017

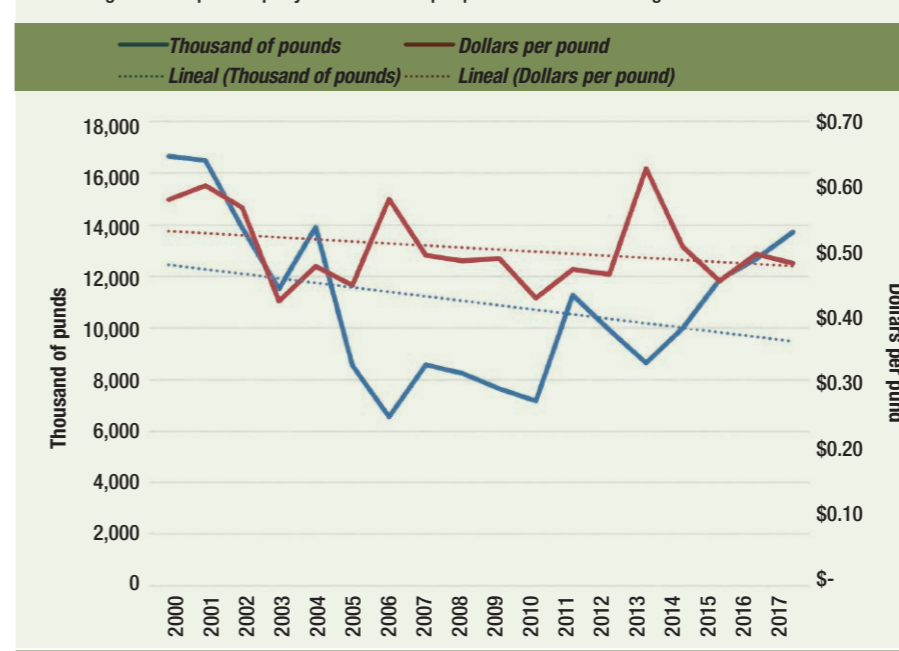
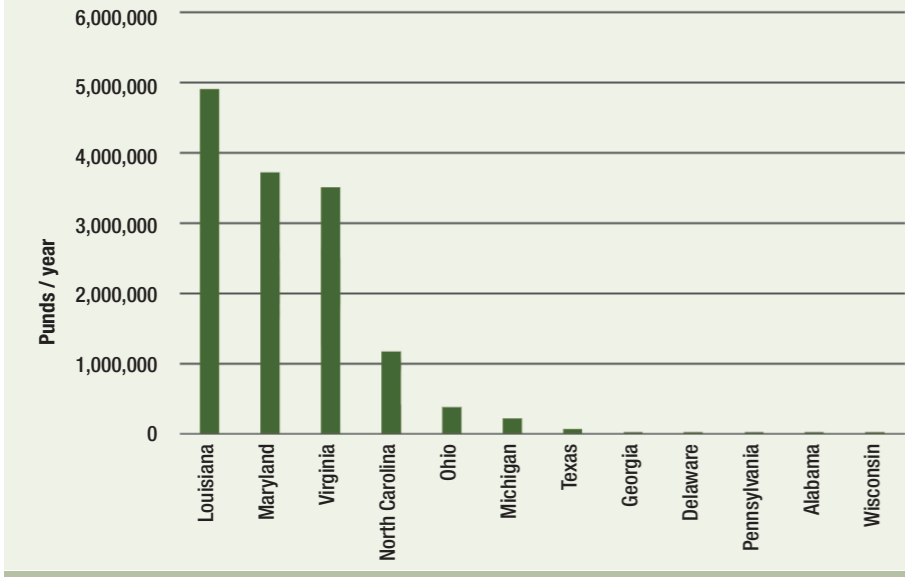




Figure 3

U.S. Wild-caught Catfish pounds harvested in 2017 by states, data obtained from the National Oceanic and Atmospheric Administration - National Marine Fisheries Service.



mercial distribution. Furthermore, the agency settled on two options for defining ‘catfish.’ The first option recognized ‘catfish’ to be only fish of the family Ictaluridae and the second option was an order definition including all fish under the order Siluriformes.

On December 2, 2015, USDA published the final rule “Mandatory Inspection of fish of the order Siluriformes and products derived from such fish.” The final rule became effective on March 1, 2016. In this rule, domestic as well as foreign facilities that process Siluriformes fish and fish products for wholesale are required to comply with the USDA/FSIS inspection program. However,



Figure 4. USDA stamp of inspection.



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Hazard Analysis and Critical Control Points (HACCP) to assure the safety of the product. After implementing food safety programs, facilities have a period of 90 days to validate them.

The Siluriformes rule included an 18-month transition period to allow catfish slaughterers and processors to understand and comply with the Food Safety Inspection Service (FSIS) food safety requirements. During this time, FSIS worked with farm-raised and wild-caught catfish processing establishments provid-

Table 1

List of common names recognized by USDA for Siluriform fishes.

Order	Family	Common Name
Siluriformes	Ictaluridae	Catfish
	Pangasiidae	Swai, Sutchi, Striped Pangasius, Tra, Basa
	Ariidae	Gafftopsail catfish, Hardhead catfish
	Loricariidae	Armored catfish, Suckermouth catfish

ing guidance to ensure compliance. To assist the industry, on March 24, 2017, FSIS published the “Compliance Guideline for establishments that slaughter or further process Siluriformes fish and fish products.” In the guideline, USDA/FSIS only addresses hazards associated with farm-raised catfish processing.

In many parts of the country outside of Arkansas, Mississippi and Alabama, independent farm-raised catfish producers process their harvests on a much smaller scale, relying on local markets and consumers. During the transition period, FSIS estab-



lished inspections at all hours of operation for facilities processing more than 5,000 pounds per week, quarterly inspections for facilities processing 1,000 to 4,999 pounds per week, and inspections for facilities processing less than 1,000 pounds per week at a frequency “to be determined.” At the end of the transition period, FSIS adjusted inspection coverage from all hours of operation to once per production shift for all processing facilities. Facilities are granted 40 hours a week (Monday-Friday) of inspection at no cost; however, processors are required to pay for overtime, holidays, and weekends. Full enforcement has been in place since September 1, 2017.

During the transition period, FSIS conducted random and targeted sampling and testing of domestic and imported Siluriformes fish. Testing included drug, pesticide, and other chemical residues, as well as for *Salmonella* spp. to determine the baseline prevalence and levels on raw Siluriformes fish and fish products.

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though hazards as well as harvesting procedures differ between farm-raised and wild-caught, the rule and guidance materials were developed for large-scale processors, most of which process farm-raised catfish. Whether processing farm-raised, wild-caught, domestic, or imported, all operations must display the USDA stamp of inspection (Figure 4). ◀



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