EXTENSION NEWSLETTER

E.W. Shell Fisheries Research Center Supports Fee-Fishing Operators in East Alabama

Larry L. Lawson Jr. and Taryn Garlock
EWSFRC, SFAAS

Figure 1. Happy fisherman with a stringer full of catfish after a great day of fishing at Baird's Catfish Farms in Goodwater, AL.

Since its peak in the 1990s, fee-fishing, where anglers pay to fish in stocked ponds, has regained popularity as a recreational and agritourism activity in east Alabama. Fee-fishing operations range widely in scale and structure, from a single pond owner diversifying their traditional agricultural business to integrated aquaculture farms with multiple ponds completing the full production cycle.

Most fee-fishing farms in this region grow or stock channel catfish or hybrid catfish. However, some offer species like rainbow trout and Nile tilapia, depending on availability and customer demand. Many farms have expanded their offerings to include rental spaces for events, concessions, and fish cleaning to create a more comprehensive outdoor experience and additional revenue streams.

Like any aquaculture enterprise, fee-fishing farms in east Alabama face a range of operational challenges, including mortalities associated with fish disease, rising input costs, and narrowing profit margins. In response, the E.W. Shell Fisheries Research Center (EWSFRC) has actively supported these farms by offering technical guidance on fish health management, water quality, husbandry practices, and sourcing essential supplies such as feed and equipment.

Unlike the more established catfish industry in west Alabama, fee-fishing farms in the eastern part of the state operate without a robust support network, making it difficult to access fish and supplies at competitive prices. To address this, the EWSFRC has helped connect local operators with larger industry partners at feed mills and source farms, facilitating access to critical resources. Additionally, they collaborated with the fish health laboratories at the EWSFRC and the Alabama Fish Farming Center (AFFC) to improve diagnostic capabilities and fish health outcomes.

For many of these farmers, the support has evolved into ongoing, two-way communication allowing for real-time technical assistance and problem solving as new challenges arise. This relationship has proven valuable in helping operators remain resilient and responsive in a dynamic production environment.

In 2025, SFAAS faculty and staff at the EWSFRC and AFFC, led by Dr. Taryn Garlock, were awarded an Alabama Agricultural Experiment Station research grant to investigate the catchability of channel catfish versus hybrid catfish in fee-fishing settings. In June, they completed a three-day intensive fishing trial at the EWSFRC with three ponds stocked with only channel catfish and three ponds stocked with only hybrid catfish. More than 50 volunteers participated in this event, resulting in over 230 hours of fishing effort.

Preliminary results suggest differences in catchability between the two species, which may impact customer satisfaction and farm profitability. The next phase of this research will involve developing an economic model using data from fee-fishing operators and the fishing trial to better understand the financial impacts of species selection. They hope to expand this research with additional trials and further analysis to improve the sustainability and profitability of fee-fishing operations in Alabama.

Figure 2. Entry sign to Jackson Farm's Catfish Lake in Lafayette, AL.

Alabama

Catfish Conference '26

Thursday, January 8, 2026

Blackbelt Research & Extension Center
Marion Junction, Alabama

Featuring: Industry updates, catfish lunch, & door prizes!

Jay Park Joins School of Fisheries, Aquaculture and Aquatic Sciences with Expertise in Aquaculture Engineering

Dr. Jeonghwan "Jay" Park recently joined the School of Fisheries, Aquaculture, and Aquatic Sciences at Auburn University as an Associate Professor. Dr. Park brings more than 25 years of experience in aquaculture engineering and system design, combining biological insight with engineering innovation to enhance production efficiency and sustainability across aquaculture systems.

Before joining Auburn, Dr. Park served as Assistant Professor at the University of Arkansas at Pine Bluff, where he focused on improving split-pond systems for catfish and advancing both pond-based and recirculating aquaculture systems (RAS) for largemouth bass. He later worked as an Associate Professor at Pukyong National University in South Korea, leading studies on RAS and aquaponics for marine and freshwater species. Earlier in his career, he was a research scholar at North Carolina State University, where he studied intensive marine RAS and water quality management for finfish culture.

Dr. Park's research focuses on the development and optimization of advanced pond systems and RAS integrating hydraulic/production optimization, sustainable water management, and digital technology. His work spans both freshwater and marine species, including catfish, bass, flatfish, bream, and red drum.

At Auburn, Dr. Park aims to collaborate closely with Alabama farmers and Extension specialists to apply engineering-based design and production management in ways that strengthen production stability and environmental sustainability. He looks forward to meeting producers across the state and learning about their innovations and challenges firsthand.

Aquatic Vegetation Control: Alligator weed, *Alternanthera philoxeroides*

Jesse James, AFFC

Alligator weed, or *Alternanthera philoxeroides*, is a perennial emergent aquatic weed native to South America. It was first seen in waterways near Mobile, Alabama, in the late 1800s. Once introduced, it spread quickly across the southeastern United States, forming dense floating mats (Figure 1). If not controlled, alligator weed can block waterways and cover ponds and shorelines, creating significant challenges for commercial operations and recreational activity. This plant has long, hollow, segmented stems with a green or reddish-purple color that grow from the sediment and spread along the water's surface. Multiple leaf-bearing branches protrude upwards from the main stem every 4-6 inches. The leaves are typically about 4 inches long, oval-shaped, with a soft, waxy appearance. From May to October, small, white, clover-like flowers appear at the end of each branch (Figure 2).

For proper control of this invasive plant, treatment should begin in early spring to prevent mat formation and seed dispersal. Glyphosate and 2,4-D (amine) herbicides are both highly effective against alligator weed. Because alligator weed can spread by fragmentation, complete coverage is necessary to ensure a complete kill. Repeated treatments may be needed for excessively dense mats. In situations where mats cover 50% or more of a pond, treat smaller sections over time to prevent water quality deterioration. Always follow the instructions on herbicide labels for mixing and application. Additionally, Alligator weed flea beetles can be used as a biological control when available.

For more information on aquatic weed identification and control, please contact the Alabama Fish Farming Center (334) 624-4016.

Figure 1. Alligator weed mat. Photo courtesy of Alabama Department of Conservation and Natural Resources, Outdoor Alabama.

Figure 2. Alligator weed showing the flower, red stem, and long slender leaves. Photo courtesy of Aquaplant, Texas A&M Extension.

Alabama Drought Reach: Why accurate drought reporting is important and what you can do about it

Laura Cooley, Alabama Drought Watch

Figure 1. Cows and a pond during a time of drought. Source: Alabama Extension.

For the third year in a row, fall drought conditions in Alabama have been tough for many producers. Since September, the western part of the state has seen prolonged extreme drought, and much of central and south Alabama have also experienced prolonged severe drought.

Drought in Alabama

Alabama is known for its hot summers, mild winters, and humid climate. Although the state experiences a large total annual rainfall (about 55 to 65 inches), the overall precipitation varies throughout the year and across the region. This results in alternating periods of above-normal rain and drought. Drought affects us all, but it has a significant impact on our agricultural community. Alabama's 38,000 farms span nearly 8.2 million acres, providing jobs to 600,000 Alabamians and accounting for $70 billion of the state's economy. Although drought is a normal part of living in Alabama, there are things we can do to help.

Making the Connection: Drought Maps and Federal Drought Relief

Drought Maps

The U.S. Drought Monitor produces weekly maps showing drought locations and severity across the United States and its territories. The Alabama Office of the State Climatologist provides expert input for the Alabama-specific map, which highlights portions of the state by the following drought categories: D0: Abnormally Dry, D1: Moderate Drought, D2: Severe Drought, D3: Extreme Drought, D4: Exceptional Drought.

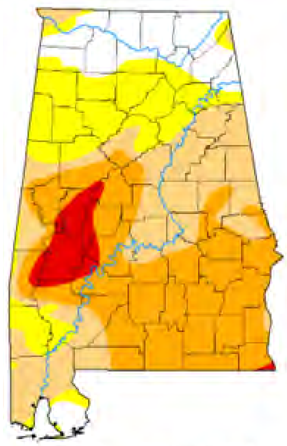
The State Climate Office and the U.S. Drought Monitor use an array of data and models to understand drought conditions across Alabama and other states, but they can improve their reporting via direct drought reporting. That’s where Alabama Drought Reach and CMOR citizen science reports come in.

Alabama Drought Update

For the assessment period ending October 28, 2025

This Week's Drought Monitor Map of Alabama

From the US Drought Monitor, authored by Richard Tinker (NOAA/NWS/NCEP/CPC) with input from the Alabama Office of the State Climatologist



Last Week's Map

Alabama State Climatologist | Alabama Drought Reach | Auburn

Statewide Condition Summary

What's Changed? The majority of Southeastern counties have deteriorated into D2 Severe Drought, while several areas in North and West Central AL have seen 1-category drought improvements. A large swatch of North AL along the TN border is now back to normal.

What's New? Many parts of AL saw much-needed rain this week, with CoCoRaHS reports showing up to 12 inches along the Gulf Coast. That rainfall helped ease drought conditions in several areas. Unfortunately, the Southeast corner missed out again and is still dealing with dry soils and below normal streamflow levels.

What's Next? With only scattered showers in this week's forecast, expect conditions to remain the same or worsen.

Statewide Coverage by Category

Category	Coverage This Week	Changes Since Last Week
D0: Abnormally Dry	20.29%	0.91%
D1: Moderate Drought	26.94%	18.90%
D2: Severe Drought	34.91%	18.37%
D3: Extreme Drought	5.08%	4.92%
D4: Exceptional Drought	0.00%	0.00%

Figure 2. U.S. Drought Monitor Weekly Map with additional information. Source: Alabama Drought Reach.

Drought Reporting, Maps, and Federal Aid

By getting an exact location of drought impacts in Alabama, the State Climate Office and the U.S. Drought Monitor can create drought maps that accurately represent the drought impacts to producers. This is important because many producers rely on Farm Service Agency (FSA) drought relief funding to help compensate them for production losses due to drought.

FSA eligibility is in part determined by the drought maps produced by the U.S. Drought Monitor, so helping to make these maps accurate is very important.

Programs like the Livestock Forage Disaster Program (LFP) and Emergency Assistance for Livestock, Honeybees, and Farm-Raised Fish (ELAP) are administered by FSA. LFP offers financial support to livestock producers who experience grazing losses due to qualifying drought conditions or fire on federally managed rangelands. The program is designed to help producers recover from significant forage losses, ensuring the continuity of their operations and the well-being of their livestock. LFP provides payments to eligible producers to compensate for lost grazing opportunities and to help cover additional feed costs incurred due to the disaster. ELAP offers financial aid to producers who suffer losses from specific adverse conditions not covered by other USDA disaster assistance programs. This includes losses due to disease, certain adverse weather events, and other qualifying conditions affecting livestock, honeybees, and farm-raised fish. Producers can contact their local FSA agent for more details about compensation programs available.

Figure 3. Alabama Drought Reach (ADR) Logo.

How to Help Report Drought Conditions

There are two primary ways to assist with drought reporting. Extension agents can work with the ADR program to submit reports to the State Climate Office. Individual producers can submit their own drought reports directly to the U.S. Drought Monitor through their citizen science platform called CMOR (Condition Monitoring Observer Reports).

Alabama Drought Reach

For over three years, ADR has been working to enhance drought communications and drought impact monitoring in Alabama. ADR is a collaborative partnership between the Auburn University Water Resources Center, the Alabama Office of the State Climatologist at the University of Alabama in Huntsville, and the Alabama Cooperative Extension System. ADR works directly with trusted Extension agents across the state. Agents submit drought reports for their counties via the ADR survey, and ADR passes these on the ground reports to the State Climate Office. The State Climate Office, in turn, uses these reports to refine its Alabama Drought Maps as they provide input about drought severity across Alabama to the U.S. Drought Monitor Map. Extension agents interested in participating in the program should contact drought@auburn.edu.

Condition Monitoring Observer Reports

Drought reporting can also be done directly by farmers and producers. Individuals can submit their own drought reports directly to the U.S. Drought Monitor through their citizen science platform called CMOR. These are reports made by the public about on the ground drought conditions in the state. To learn more about CMOR reporting or to help with the Alabama Drought Reach Surveys, please visit aub.ie/drought or contact the program coordinator at drought@auburn.edu.

Stay informed

The Alabama Drought Reach Program posts weekly drought graphics generated by the Alabama Office of the State Climatologist. These graphics can be found on the AL Drought Reach Facebook Page and the AL Water Resources Center ADR Page. You can also sign up for Drought Reach newsletters via the Water Resources Center website: https://aub.ie/wrcnews.

Figure 4. Cows in pasture during drought. Source: Alabama Extension.

Figure 5. Pond foreground shows exposed mud and usable part of pond is in background. Overall catfish production area in this pond is reduced by nearly half due to drought.

An Update on Shrimp Trade

Taryn Garlock and Kowshik Ahmed, SFAAS

According to NOAA, 94% of shrimp consumed in the U.S. are imported, primarily from Asia and Latin America. Over the last decade, shrimp imports have grown rapidly, peaking at 1.98 billion pounds in 2021. Since then, annual shrimp imports have trended downward, reaching 1.68 billion pounds in 2024 (Figure 1). A combination of factors has contributed to the decline in imports including historic oversupply, soft demand and new antidumping and countervailing duties.

About a decade ago, equal amounts of shell-on and peeled shrimp were imported into the U.S. Since then, imports of peeled shrimp have grown more rapidly and have taken market share. During the pandemic, a spike in peeled shrimp imports was observed, largely due to increased consumption at home and higher demand for easy-to-prepare products. Today, peeled shrimp account for nearly 50% of total shrimp imports, and this figure is growing, signaling strong demand for convenience.

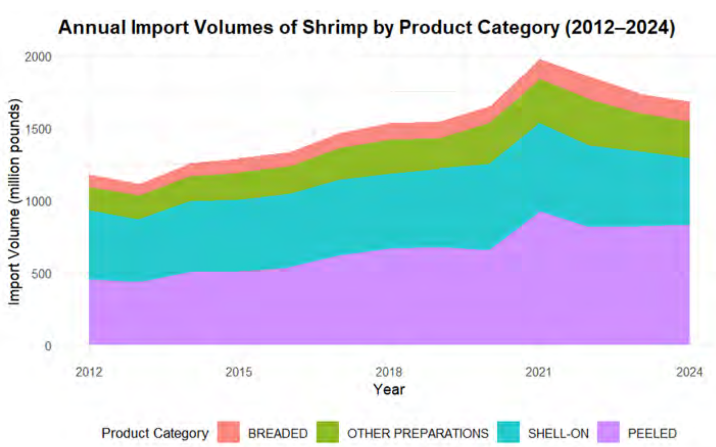


Figure 1. Annual import volume of shrimp by product category.

We use a Herfindahl-Hirschman index (HHI) to examine market concentration in shrimp suppliers. U.S. shrimp imports, which largely reflect the broader U.S. market for shrimp, are increasingly concentrated, indicating fewer exporters with greater market share. Leading up to the COVID-19 pandemic, India's share of the U.S. market was rapidly increasing, peaking at 43% in 2019. In 2020, India lost market share to Ecuador and Indonesia due to lower production associated with the pandemic's supply chain challenges. However, U.S. shrimp imports have remained highly concentrated, and Ecuador is playing a growing role in this trend. India's share of the market has remained relatively constant around 38%, while Ecuador is rapidly gaining market share, growing from 12% in 2019 to 25% in 2024.

As competition in the global shrimp market has intensified, producing nations have become more specialized in specific product forms to maximize their competitive advantages. Countries such as India and Indonesia, which have relatively low-cost labor, have focused on labor-intensive product forms such as peeled and deveined. Historically, Indonesia was the leading supplier of peeled shrimp to the U.S. market; however, India has steadily gained market share, reaching a peak in 2019 of 61% (Figure 2). Since the pandemic, Ecuador has also increased its share of the U.S. peeled shrimp market, becoming the second largest supplier and contributing about 23% of peeled shrimp imports in 2024. Ecuador's main export products have been shell-on product forms. Since 2019, Ecuador has rapidly taken shell-on market share from India and is now the top supplier of shell-on shrimp to the US market, providing about 50% of shell-on imports.

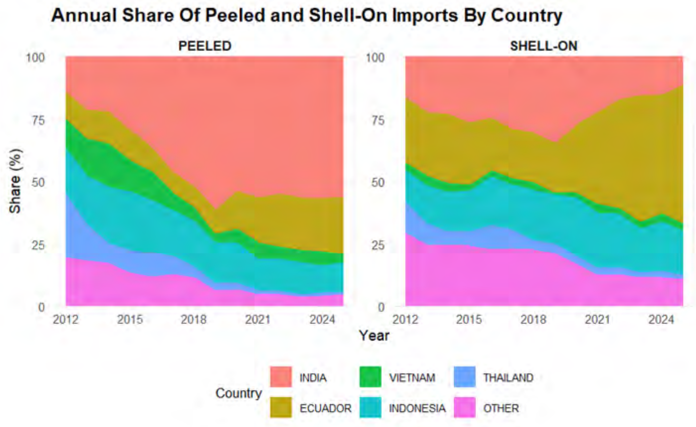


Figure 2. Annual share of peeled and shell-on shrimp imports by country of origin.

U.S. shrimp imports were high in the first half of 2025 as importers rushed to stockpile products before the new tariffs took place. Imports from January to July 2025 were up 18% compared to the same period in 2024. Peeled shrimp imports saw the largest growth, up 25% year-over-year, while shell-on imports were up by 3.3% year-over-year. For peeled shrimp, Ecuador (39.5%) and India (21.6%) showed substantial growth in exports to the U.S., whereas shell-on imports from Ecuador increased moderately (0.5%), and India's shell-on exports to the U.S. declined (-3.9%).

With the introduction of tariffs, trade flows will change globally. Tariffs will likely amplify changes that were already underway, namely growth in U.S. imports of Ecuadorian shell-on and peeled shrimp.

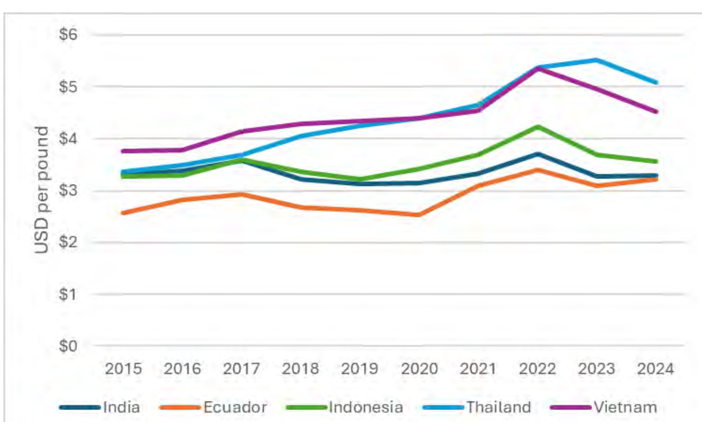


Figure 3. Inflation-adjusted price of peeled frozen shrimp imports by country.

The U.S. has imposed a 50% tariff on shrimp from India on top of existing anti-dumping and countervailing duties. This tariff rate is significantly higher than other major shrimp producing countries. While Latin America has a tariff advantage, Asian producers, particularly India, will continue to be important in the U.S. market as Ecuador will not be able to ramp up capacity to produce more value-added products, at least in the short term. This will likely lead to price increases after lower-priced inventory is depleted and an overall decline in shrimp consumption in the U.S.

An increase in import price is important for domestic fishers and farmers as the import price drives the price of domestically produced shrimp. While higher prices can be beneficial to domestic producers by making domestic products more competitive, be mindful that as prices rise, the risk of demand contraction is inevitable. More so, it is unlikely that domestic production will take significant market share from imports as there are other constraints to domestic production beyond price competitiveness.

Figure 4. Bagged shrimp ready for sale.

UAB Nursing Students Visit Horseshoe Farm and the Alabama Catfish Industry for Rural Healthcare and Farm Safety Experience

Sunni Dahl, AFFC

Each year, Horseshoe Farm in Greensboro has the privilege of hosting students from the University of Alabama at Birmingham (UAB) Nursing Program, offering them a unique opportunity to explore rural healthcare firsthand. During their visit, students make rounds at a local hospital, ambulance service, and healthcare clinic, gaining valuable insight into the challenges and rewards of working in a rural setting.

As part of the experience, the Alabama Fish Farming Center (AFFC) works with a local catfish farm to present a farm safety session and a tour. At the AFFC, students learn about the aquaculture industry, as well as safety measures essential to farming in our region. After the presentation, they tour a nearby catfish farm, where they get a firsthand look at farm operations and the potential hazards farm workers face when raising catfish.

In Fall 2025, we were excited to host eight nursing students and three faculty members from UAB. The group was highly engaged and asked thoughtful questions throughout the tour. It was a pleasure to connect with them and share our unique rural healthcare and farming perspectives. These tours will occur in the Fall, Spring and Summer semesters going forward.

Figure 1. UAB Nursing students were able to watch catfish feeding at a local farm.

Figure 2. UAB nursing student holds a catfish while on tour.

RESEARCH ROUNDUP

Addressing the "Black Hole": Is it Possible to Reduce Transportation Stress and Catfish Fingerling Losses Right After Stocking?

James Tuttle[1,2], Luke Roy[1,2], Anita Kelly[1,2], Timothy Bruce[2], Hisham Abdelrahman[3], Julio García[4], Benjamin Beck[4]

AFFC[1], SFAAS[2], Texas A&M University–Corpus Christi[3], USDA-ARS Aquatic Animal Health Research Unit[4]

Channel and hybrid catfish are raised across the southern United States, and Alabama produces about one-third of all domestic food-sized catfish. Since there are no commercial catfish hatcheries in Alabama, catfish are transported to farms as fingerlings or stockers. Most of these come from Mississippi or Arkansas, meaning these fish must be transported in large fiberglass or stainless-steel hauling tanks for up to six hours, and sometimes longer. Transportation can be very stressful, and there are a lot of things that can lead to dead fish in the hauling tanks, or fish so stressed that they die shortly after being stocked in ponds. The term used to describe this phenomenon of unexpected losses or seemingly missing juvenile fish is called the "Black Hole."

The "Black Hole" issue has been known since the 1990s, but the exact causes of the fish losses remain unknown. Cannibalism, bird predation, inventory mistakes, overstocking or understocking, and water quality issues have all been suggested as explanations for fish losses shortly after stocking. However, the main cause of the Black Hole phenomenon is currently thought to be bacterial infections, primarily Columnaris disease (a common bacterial disease that attacks the skin and gills of freshwater fish). Once catfish are added from a hauling tank filled with well water to a new environment, such as a grow-out pond, the fish might be experiencing Columnaris-causing bacteria for the first time. We also know that just because there are bacteria in a pond, it does not mean the fish will automatically get sick; the fish must experience at least one or multiple stressful events for an infection to happen.

If the "Black Hole" problem is the result of Columnaris outbreaks shortly after stocking, then we need to reduce fingerling transport stress. The main objective of this project was to see if a less labor-intensive and more cost-effective way to reduce transport stressors was available. One option is to use a commercially available water conditioner that would increase the slime layer on catfish. Water conditioners are used often with salmon, trout, and other cold-water fish species, but they are very rarely used in warmwater fish. We chose a product that is less expensive than salt, as one gallon of this water con-

Figure 1. Set up of our small-scale fingerling hauling tanks.

Figure 2. Tanks used to expose fish to Columnaris.

ditioner could treat just over 15,000 gallons of water.

This experiment used 720 Marion strain channel catfish (*Ictalurus punctatus*) fingerlings (average = 0.44 ounces) and split them into two even groups. The fish were transported 158 miles in 64°F oxygenated water from Greensboro, AL to Auburn, AL at a density of 0.45 kg/L (Figure 1). One group was exposed to the water conditioner (*V*) and the second group was not (*NV*). After the 2 hour and 48-minute drive, the two containers of 360 fish were each split into four separate groups.

The groups were as follows:

1. Placed in holding tanks at 64°F (*VCFN* and *NVCFN*)
2. Stocked at 81°F (*VHFN and NVHFN*)
3. Exposed to the Columnaris and stocked at 64°F (*VCFC* and *NVCFC*)
4. Exposed to a lethal dose of Colum naris and stocked at 81°F (*VHFC* and *NVHFC).*

This resulted in 8 total groups, and each group was made up of 6 flow-through tanks (2 for sampling, 4 for survival monitoring) containing 15 fish each, with the flow-through tanks housed in a biosecure system (Figure 2). To track stress-related markers, blood, mucus, gills, kidney, and spleen were collected from 3 individuals from each treatment at time-points before and after transport, and at 2, 6, 24, and 48 hours after stocking. Fingerling losses were monitored over a 10-day period (Figure 3). Dead fish that were exposed to Columnaris were dissected to confirm that they died from a Columnaris infection, and non-infected fish were dissected to make sure their cause of death was not Columnaris disease.

After the 10-day challenge period (Figure 1), all the fish that were not exposed to the Columnaris had survival rates of 95% or higher, and the individuals that were exposed to the bacterial pathogen had survival rates as low as 1.6% (VCFC = received the water conditioner and were housed at 64°F) and as high as 31.5% (NVCFC = did not receive the water conditioner during hauling and were housed at 64° F). Stress and immune response biomarkers, such as blood cortisol levels, glucose levels, and lysozyme activity levels, changed over time, but did not show any differences between treatment groups that received or did not receive the water conditioner.

The findings of this experiment were unexpected. Under the conditions that existed in this experiment, the use of this commercial water conditioner did not reduce transport stress or improve survival after stocking. There are other types of commercial water conditioners and other options available to the industry, but there are many more factors that can contribute to this complex "Black Hole" problem. This issue will require more research and more experiments to ultimately find effective management solutions.

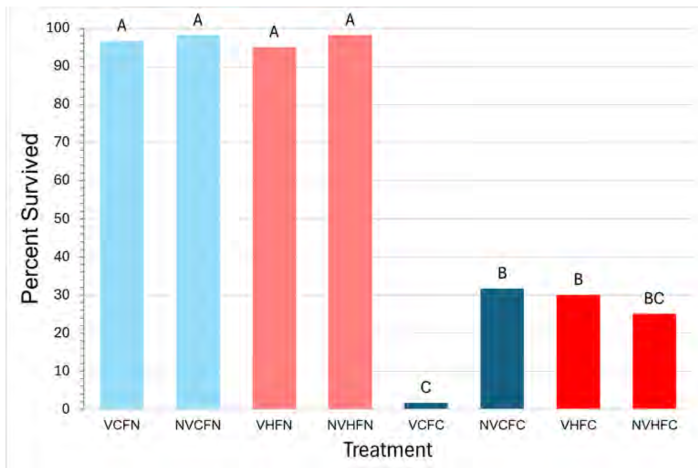


Figure 3. Columns with different letters are significantly different in percent survival.

Groups are as follows:
VCFN = received the water conditioner and were housed at 64°F
NVCFN = did not receive the water conditioner during hauling and were housed at 64°F
VHFN = received the water conditioner during hauling and were housed at 81°F
NVHFN = did not receive the water conditioner during hauling and were housed at 81°F
VCFC = received the water conditioner, were exposed to Columnaris, and were stocked at 64°F
NVCFC = did not receive the water conditioner, were exposed to Columnaris, and were stocked at 64°F
VHFC = received the water conditioner, were exposed to Columnaris, and were stocked at 81°F
NVHFC = did not receive the water conditioner, were exposed to Columnaris, and were stocked at 81°F

Lesser Scaup did not Consume Catfish Fingerlings on a Commercial Catfish Hatchery During the Winter of 2025

Luke Roy[1], Jesse James[1], Benjamin Beck[2], Troy Bader[2], Allison Wise Addison[2], Anita Kelly[1]
[1]AFFC, [2]USDA-ARS Aquatic Animal Health Research Unit

Fish-eating birds can be problematic for catfish producers, particularly during the winter months when large numbers of birds migrate south. The impact of double-crested cormorants (*Nannopterum auritum*) has been well documented in numerous research studies. Cormorants and other fish-eating species consume large amounts of catfish each year, resulting in significant financial losses for commercial producers. Besides cormorants, great blue herons (*Ardea herodias*), great egrets (*Ardea alba*), American white pelicans (*Pelecanus erythrorhynchos*), and wood storks (*Mycteria* americana) have also been documented to consume catfish. Catfish fingerling producers are particularly vulnerable to bird predation, as the smaller fish size allows an even larger number of smaller bird species to target them in addition to the usual fish-eating birds present on food-fish farms. Fingerling ponds are typically much smaller than production ponds, which can also make them easier for birds to target.

Figure 1. Lesser scaup were collected at a catfish hatchery to determine if they were consuming catfish fingerlings in the winter of 2025.

In the winter of 2024, the Alabama Fish Farming Center and the U.S. Department of Agriculture Aquatic Animal Health Research Unit (USDA ARS AAHRU) were contacted by a catfish hatchery in Mississippi with more than normal numbers of lesser scaup (*Aythya affinis*) present on fingerling ponds. These birds were seen actively foraging in catfish fingerling ponds, but direct fish consumption was not observed by farm personnel. The lesser scaup (hereafter referred to as scaup) is a diving duck with a documented history of consuming fish on baitfish and sportfish farms in Arkansas. Because of its smaller size compared to fish-eating birds that typically target catfish and experience working with this species, we suspected it was un-

Figure 2. Phosphate-buffered saline was injected into the collected lesser scaup digestive tract to preserve the contents of recently consumed food items.

Figure 3. Lesser scaup were processed at the hatchery before transport to the Alabama Fish Farming Center on ice.

likely scaup were targeting catfish fingerlings, unless targeted fingerlings were smaller than 3.5 inches in total length. A 3.5 -inch fish is roughly the maximum fish size typically targeted by scaup on Arkansas baitfish and sportfish farms. To answer the question of whether scaup were eating catfish fingerlings at this hatchery, appropriate scientific collection permits were secured from the U.S. Fish and Wildlife Service and the Mississippi Department of Wildlife, Fisheries, and Parks to conduct exploratory sampling of a small number of scaup in the winter of 2025.

In January of 2025, 35 scaup were collected with shotguns on the farm after they were allowed to forage for at least 10 minutes (Figure 1). Phosphate buffered saline (50-60 milliliters) was injected with a syringe into the throat of collected scaup and secured with a zip tie (Figure 2; Figure 3). Ducks were transported on ice to the AFFC where they were necropsied. Gizzards were removed and emptied into Petri dishes, then dried in an oven for at least 48 hours at 160°F. The contents of the gizzards were examined with a microscope for fish parts (otoliths and fish bones) and other food items according to established procedures. The contents of the esophagus and crops were collected and frozen until further microscopic examination for fish, fish parts, and other food items.

There was no evidence of fish consumption by any scaup collected in the esophagus, crop, or gizzard. The most common prey items observed included several species of snails, other invertebrates, and plant material such as seeds (Figure 4). By far, the most abundant prey item observed was snails. While scaup were observed foraging on catfish fingerling ponds, they were foraging on other food items in the pond besides fish. It is likely that in most circumstances, catfish fingerlings produced each season are already beyond the maximum size that would be targeted by scaup by the time these ducks migrate down to the south for the winter. While this was a small-scale preliminary study, findings from this study and what we know from documented cases of scaup consumption in the sportfish and baitfish industries suggest catfish fingerling producers likely do not need to be concerned about the presence of this particular diving duck, unless they still have ponds over the winter with fingerlings less than 3.5 inches in total length. While a more detailed and comprehensive study would be necessary to fully study this issue, we feel that it is likely that scaup present on catfish hatcheries during the winter are most likely foraging on other food items present in ponds besides catfish fingerlings. Based on these preliminary results and what we already know about this species, we do not intend to carry out a more comprehensive study.

Figure 4. Snails and other invertebrates were everyday food items found in lesser scaup in this study.

Jaky J. Broussard
Accountant III
jjb0033@auburn.edu

Sunni L. Dahl
Research Assistant IV
sld0036@auburn.edu

Jesse B. James
Research Associate III
jbj0023@auburn.edu

Anita M. Kelly
Extension Professor
amk0105@auburn.edu

Luke A. Roy
Extension Professor
Assistant School Director of AFFC Operations
royluke@auburn.edu

James Tuttle
Graduate Research Assistant
jtt0039@auburn.edu

Alabama Fish Farming Center

529 South Centreville Street
Greensboro, AL 36744
334-624-4016

Luke A. Roy & Anita M. Kelly, Technical Editors
Jaky J. Broussard, Layout Editor

Fish Farming News, 2025(2):1-16