

Aquatic Resources Team Outcomes & Impact Report 2024

► Alabama Extension's Aquatic Resources Team provides quality, science-based programs to promote the long-term, profitable, and sustainable benefits of well-managed, diverse aquatic resources.

Aquaculture

Project Leaders: Luke Roy, Anita Kelly, Andrea Tarnecki, Rusty Grice, Taryn Garlock, David Cline, P. J. Waters, Melissa Partyka, Emily Nichols

Institutional Lead: 1862 Extension-AU

Coleaders/Collaborators: Timothy Bruce, Ian Butts, D. Allen Davis, Auburn University Department of Horticulture

Background/Situation/Issue:

Aquaculture in Alabama is an important industry, producing freshwater fish (catfish, tilapia, crawfish, and sport fish for stocking), marine shrimp, and marine organisms (oysters). Americans eat 19 pounds of fish and seafood per person yearly, yet in 2023, approximately 80 percent of the seafood consumed in the United States was imported. The US ranks low in the volume of seafood produced compared to other countries. Seafood is the largest nonpetroleum component of our imbalance in trade, creating a \$20.3 billion deficit in 2023. The aquaculture program assists producers in providing US farm-raised aquaculture products that are safe, healthy alternative protein sources to consumers.

Outputs: Conducted 104 events, including aquaculture education and tours to industry, educators, and the public about fish and shellfish farming; trained and helped start two new oyster hatcheries in the northern Gulf of America; conducted two 1-week fish camps for high school students; hosted five webinars; developed a free self-paced online aquaponics course for educators.



Figure 1. Auburn University Shellfish Lab personnel attend Aquaculture America 2024.

- Auburn produced 41 million oysters for the commercial industry, research, restoration, and outreach and provided 25 ploidy verification reports for oyster producers, allowing them to sell seed to the industry.
- 232 students enrolled in the Introduction to Aquaponics for Educators online course.
- Tabletop aquaponic systems were constructed for educational use in eight counties.
- Disease diagnosis on 70 oysters and more than 500 catfish.
- External grant funding totaled \$2.7 million for research and Extension to support aquaculture.

Audience Diversity:

63% Male, 37% Female; 64% Adult, 44% Youth
 63% White, 34% Black, 2% Hispanic, 1% Asian.

Evaluation Techniques:

Pre- and post-tests were used to evaluate knowledge gained.



Figure 2. Big fish are extracted from aquaculture ponds.

Value Statement/Synopsis:

An aquaculture-literate society has numerous benefits. Professional development of teachers improves teaching capacity and ultimately delivers a more competent workforce. Exposing youth to more career opportunities positively impacts the next generation of aquaculture professionals, including scientists and practitioners. Assisting producers with problems (management, production, disease diagnostics) related to the species they grow enables producers to be more profitable and sustainable. The social benefits include environmental protection, economic growth, and job opportunities.

Social Media Channels:

Facebook: www.facebook.com/profile.php?id=61571747204242

Key Web Pages:

Alabama Extension

www.aces.edu/blog/topics/fish-water/meet-the-team-aquatic-resources

Aquaculture Education and More

www.youtube.com/channel/UCDMI9h1htXeNkgKT8pJai-Q

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Recreation

Project Leaders: Rusty Wright, David Cline, P. J. Waters, Taryn Garlock, Emily Nichols

Institutional Lead: 1862 Extension-AU

Co-Leaders/Collaborators: Corey Courtwright; Extension Agents, County Extension Directors, Alabama Scenic River Trail, Alabama Department of Conservation and Natural Resources (ADCNR) Wildlife and Freshwater Fisheries Division, Alabama Wildlife Federation, state parks, local outfitters, community groups

Background/Situation/Issue:

Alabama is a water-rich state with more than 77,000 miles of streams, 3.6 million acres of wetlands, 60 miles of Gulf of America coastline, the most extensive artificial reef system in the United States, and 560,000 acres of lakes, ponds, and reservoirs. Across the country, fishing license sales have declined consistently during the last 20 years. The result is a public with less connection to aquatic environments, which may result in less support for aquatic conservation. Alabama stakeholders need to recognize the value of the state's shared aquatic resources and advocate for their protection. This program provides educational support for students and adults interested in fishing and aquatic environments. In Alabama, approximately 250,000 small impoundments are used for many purposes, including livestock water, irrigation, aquaculture, aesthetics, hunting, and the most common use, recreational fishing. These ponds affect the water resources of everyone in the state and are often where young people first experience wildlife and fisheries. Increasing environmental literacy and the amount of time spent outdoors will inform stakeholders of these critical resources and help them learn to play a role in conservation and protection.

Outputs:

- 25 events were conducted.
- 28 bodies of water across the state were explored through educational programming.
- 107 miles of Alabama fresh water was paddled by adult and youth.
- Casting, fishing, and aquatic education events and activities were held.



Figure 3. Children enjoy learning at a fishing recreation activity.



Figure 4. Family recreation events offer opportunities for young people to experience wildlife and fisheries.

- Native fish and public waters awareness promoted through the Biggest Catch Fishing and Fish Art statewide contests.
- 9 new instructors were certified in fishing education.
- 1 new adult paddling education leader was certified, and water safety continuing education was provided for 11 leaders.
- Youth paddlers cited water safety (how to save a drowning person, always wear a PFD and be safe, water safety is important, wear your life vest) as the most important things they learned and could describe accurate paddling techniques, identify the proper water rescue device, define natural resources, and select the appropriate first aid essentials for paddling.
- Youth anglers knew the age at which an Alabama fishing license is required, basic freshwater fish groups, proper water rescue devices, and the definition of *habitat*.

Audience Diversity:

50% Male, 50% Female; 66% Adult, 44% Youth
63% White, 21% Black, 7% Hispanic, 7% More than one race, 1% Native American, 1% Asian .

Evaluation Techniques:

Certification exams, pre- and post-tests.

Value Statement/Synopsis:

Adults and youth benefited from the program activities by becoming empowered to act as local stewards by gaining knowledge, earning certifications, and developing abilities to teach others; experiencing Alabama public waters; partnering with our organizations and accessing technical expertise and resources; and generating interest in natural resources-related careers. After participating in Extension aquatic education programs, most youth expressed an interest in natural resource-related careers, knew how to be a steward of the environment, and felt comfortable in and around water.

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Key Web Page:

Alabama Extension

www.aces.edu/blog/topics/fish-water/meet-the-team-aquatic-resources



Figure 5. Extension plays a role in restoring streams throughout the state.

Stewardship

Project Leaders: P. J. Waters, Mona Dominguez, Brianna Minton, Jessica Curl, Taryn Garlock, Melissa Partyka, Eve Brantley, Emily Nichols

Institutional Lead: 1862 Extension-AU

Co-Leaders/Collaborators: Alabama Department of Conservation and Natural Resources, Alabama Department of Public Health, Mississippi-Alabama Sea Grant, Mississippi Department of Environmental Quality, Mississippi Department of Marine Resources, National Wildlife Habitat Education Program, county Extension directors, Extension agents

Background/Situation/Issue:

Access to abundant, safe water supplies is critical for maintaining a prosperous society, ensuring community health, and preserving ecological integrity. Achieving this involves supporting the public in developing and demonstrating effective management practices. These practices include enhancing watershed education, monitoring, planning, and improvement efforts, such as water quality and quantity management, domestic well water safety, and increasing oyster populations in coastal zones to improve ecological health.

Outputs:

- 70 events, including Alabama Water Watch, Alabama Watershed Stewards, Alabama Drought Reach, private wells, oyster gardening for restoration
- 253 citizens certified as Alabama Water Watch monitors
- 4,625 water data records collected at 462 sites on 232 waterbodies for a total of 116,586 total records in the Alabama Water Watch database
- 99 students enrolled in the Alabama Watershed Stewards online course
- 40 drought reports and 40 crop impact reports published
- Complimentary bacteria screening for private well workshop attendees
- 30 youths demonstrated ecological and management expertise by developing wildlife habitat management plans for riparian sites at a state wildlife contest

- 442,884 advanced stocker-size oysters produced by oyster gardeners for restoration planting with a restoration potential of 22 acres
- Improved water quality of the various estuaries within the operational footprint, improved nursery production as a key element in available seafood harvesting, erosion control, and the nonuse value of the restoration potential generated by the active participants, all benefit to the public from oyster gardeners.



Figure 6. Auburn University Marine Extension and Research Center (AUMERC) participates in a pickup event.



Figure 7. The Alabama Watershed Stewards program promotes litter cleanup efforts across Alabama.

Audience Diversity:

55% Male, 45% Female; 92% Adult, 8% Youth;
76% White, 16% Black, 1% Hispanic, 2% Asian, 5%
More than one race.

Evaluation Techniques:

Certification exams, pre- and post-tests.

Value Statement/Synopsis:

Adults and youth benefited from the program activities by becoming empowered to act as local stewards by gaining knowledge, certifications, and developing abilities to teach others; experiencing Alabama public waters; partnering with the organization and accessing technical expertise and resources; and generating interest in natural resources-related careers. After participating, individuals knew how to be stewards of the environment.

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Key Web Page:

[Alabama Extension](https://www.aces.edu/blog/topics/fish-water/meet-the-team-aquatic-resources)

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Figure 8. Volunteers are an important component of the Alabama Watershed Stewards program.



Figure 9. Volunteers learn to be stewards of the environment through Extension efforts.



Anita Kelly, *Extension Professor*, Fisheries, Aquaculture, and Aquatic Sciences, Auburn University

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