A BLUEPRINT FOR GEORGIA OYSTER AQUACULTURE:

2017 - 2022



A collaborative report prepared by: University of Georgia Marine Extension and Georgia Sea Grant | Georgia Department of Natural Resources | Georgia Department of Agriculture The goal of the University of Georgia Oyster Hatchery is to establish an aquaculture industry for single oysters that can be sold on the half shell.

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Georgia is launching a new industry in **aquaculture**, cultivating oysters for the lucrative half-shell market. Nationally, consumer demand for high-quality, raw-bar-grade oysters is rising. At the same time, the regions traditionally sourcing this product have experienced a decline in supply, resulting in an increase in price and profit margin. This has created a prime opportunity for Georgia to enter the aquaculture market.

The University of Georgia, Georgia Department of Natural Resources and Georgia Department of Agriculture are partnering to expand the Georgia aquaculture industry, with the goal of gaining enough growers to sustain a private, commercial oyster hatchery.

By working together and leveraging resources, this partnership has previously experienced tremendous success in growing Georgia's clam industry from \$64,973 in 1995 to \$991,000 in 2014. This is a **15-fold increase** in the value of the crop, and oysters have greater potential due to stronger market demand. Georgia seeks to follow the example of Virginia, who has shown what state investment in the single oyster market can produce. In just 10 years, Virginia expanded their oyster harvest value from **\$196,125 in 2004** to **\$27.96 million in 2014.**

Using both state and federal investment, the **University** of Georgia Oyster Hatchery opened in 2015 at the UGA Shellfish Research Laboratory on Skidaway Island, Georgia. At full capacity, the hatchery will produce 15 million oyster spat with an estimated harvest value of \$3-5.25 million.

Additional investment in oyster research, training for shellfish growers, resource management and consumer safety is needed to sustain continued growth and realize the goals and actions outlined in this collaborative Blueprint for Georgia Oyster Aquaculture.





In 2016, the UGA Oyster Hatchery produced between **500,000–750,000 spat**, or baby oysters, with an estimated harvest

value of \$100,000-\$280,000.

The hatchery has distributed 900,000 oyster spat to harvesters

to train them in new growing methods.



At full capacity, the hatchery will produce 15 million oyster spat, with an estimated harvest



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University of Georgia Oyster Hatchery

The UGA Oyster Hatchery seeks to **increase economic growth** in the state of Georgia and in coastal communities by strengthening the foundation of the Georgia shellfish industry.

With funding from National Sea Grant and the Department of National Resources Coastal Incentive Grant Programs, the UGA Shellfish Research Laboratory, part of UGA Marine Extension and Georgia Sea Grant, has launched the state's first oyster hatchery, provided training to Georgia growers and distributed 900,000 oyster spat to harvesters. The current grant funding expires in 2016 and continued investment is needed to stimulate this burgeoning industry.

Once the hatchery is operating at full capacity, it will produce 15 million spat, with an estimated harvest value of \$3-5.25 million. Hatchery-grown farmed oysters offer a significant return on investment. The UGA Oyster Hatchery can save growers roughly 260 man-hours, and single oysters generate three to four times the market value over clustered, wild-grown oysters.

While this will create market momentum, it will not be enough to sustain the state's goal of 50 additional growers entering the market. In order to have sustained industry growth, Georgia will need to attract a private commercial oyster hatchery capable of consistently producing high amounts of seed. The establishment of a commercial hatchery in Georgia is dependent upon proving that there is a large and stable demand for oyster seed and that both the state and Georgia shellfish growers are ready to make a significant capital investment.

The Virginia Example

Georgia can look to Virginia as an example of what can happen when private, state and university resources align to launch a new aquaculture industry. Since Hurricane Katrina, the Gulf of Mexico region has experienced an exponential decline in wild product from traditional sources in that region. Virginia has seized upon this lack of supply, ramping up state efforts to expand their aquaculture production. In roughly 10 years, Virginia's market value has grown substantially, from **\$196,125 in 2004** to **\$27,963,244 in 2014**.

Other states have been extremely successful growing the market value through state-funded investments and a focus on harvesting high value choice oysters. Over the past five years, eastern oysters harvested from the Northeast have increased in value to \$37.48 per pound, while the oyster market in Georgia has remained flat at \$5.55 per pound. While Georgia's oyster stock has idled at 28,570 pounds annually, the Northeast region has seen its annual harvest climb to 737,735 pounds per year.

According to the Food and Drug Administration (FDA), Georgia's remote coastal region has amongst the best water quality in the country, comparable to that only of Alaska. These pristine conditions are ideal for cultivating delicious, high-quality oysters attractive for fine dining, raw bars and backyard roasts.

PLAN GOALS AND ACTION STEPS TO IMPLEMENT BLUEPRINT

01 GOAL: Sustainably manage the UGA oyster hatchery to stimulate new industry.

Action: The UGA Oyster Hatchery is using innovative research and growing methods developed by the UGA Marine Extension and Georgia Sea Grant to develop a farmed oyster industry, known as aquaculture. To assure the sustainability of Georgia's first oyster hatchery, a hatchery manager is needed to oversee the spawning and setting of oyster larvae. An aquaculture extension agent is needed to conduct field studies and work directly with oyster growers to provide training.

02 GOAL: Increase commercial leasing of shellfish growing areas and document suitable areas for growing commercial oysters.

Action: The Georgia Department of Natural Resources (GA DNR) aims to increase the number of permitted shellfish growers from 10 to 50 over the next six years. GA DNR will first need to substantially increase the availability of commercial leases, or state-owned water-bottoms designated by GA DNR for shellfish harvest. Field inventories of current Shellfish Growing Areas will identify habitat suitable for oyster aquaculture. Suitable areas may then be subdivided or expanded to accommodate the new growers. There is also a need to define and implement transparent and fair methods of distributing permits to potential need growers.

Action: In order to select the best locations for growing oysters, factors such as habitat type and water quality need to be taken into account. Spatially depicting this information on a map would allow GA DNR to determine which areas are suitable for aquaculture and where lease areas could be established.

03 GOAL: Protect water quality in shellfish growing areas.

Action: GA DNR implements federal guidelines to ensure that the waters where oysters grow are clean and uncontaminated. GA DNR will need to expand its monthly water quality-testing program, which collects and processes water samples, to support classification of growing area waters and new lease areas.

04 GOAL: Ensure the safety of oyster products.

Action: The Georgia Department of Agriculture (GA DOA) regulates food safety from the dock until it reaches the consumer. Significant growth in the industry will require

additional resources for the certification and inspection of new shellfish processing facilities. GA DOA will need to hire more standardized shellfish inspectors to fulfill these duties.

Action: GA DNR's Law Enforcement Division protects valuable commercial oysters in permitted lease areas. Additionally, in the case of theft, GA DNR's Law Enforcement Division monitors and investigates the activity. In order to protect new lease areas, additional officer support will be needed.

05 GOAL: Provide education and training to shellfish growers.

Action: For over 40 years, the University of Georgia Marine Extension has provided innovative research and training for the Georgia shellfish industry. In addition to technical aquaculture assistance, UGA Marine Extension and Georgia Sea Grant will help growers learn the finance and business skills needed to generate farm-level feasibility budgets, income statements, cash flow statements and balance sheets. Often, a sound business plan is required to access capital from banks or federal sources for initial investments. If funding is available, UGA Marine Extension and Georgia Sea Grant will develop an Oyster Aquaculture training program to provide growers with these and other skills.

06 GOAL: Establish a privately-run commercial hatchery.

Action: In order to entice private industry into Georgia, the state will need to illustrate the viability of a private commercial oyster hatchery. This blueprint entails creating a budget and prospectus for a commercial hatchery to prove its profitability. The state will also need to demonstrate support for the additional infrastructure that industry growth will require.

07 GOAL: Establish methods for growers to access start-up capital for new oyster aquaculture businesses.

Action: Working with the UGA Center for Agribusiness and Economic Development, enterprise budgets and feasibility analysis will be developed for those considering starting a growing operation. We will also work to identify low interest loan opportunities available through USDA and other potential sources.

FUNDING NEEDS

The future growth of Georgia's aquaculture industry is dependent upon a consolidated effort between state and university resources. To accomplish the goals and activities in this plan, the following resources are required initially:

\$150,000 for the University of Georgia Marine Extension and Georgia Sea Grant

\$150,000 for the Georgia Department of Natural Resources Coastal Resources Division

Other needs are expected as the industry grows and will be sought through grants and other sources in the future.

Funding for the Georgia Department of Natural Resources Law Enforcement Division

Funding for Georgia Department of Agriculture inspectors

Funding for the UGA Center for Agribusiness and Economic Development

Funding to establish an Oyster aquaculture training and certification program

This investment is expected to produce a multi-million dollar economic impact for Georgia, improve water quality and create numerous jobs. UGA Marine Extension and GA DNR are currently partnering with the UGA Department of Agricultural and Applied Economics to obtain grant funding to study the potential economic and workforce impact of aquaculture expansion in Georgia. Economic development in Georgia's aquaculture industry will also generate regional impacts throughout the Southeastern United States.

Much can be done to encourage the future growth of Georgia's aquaculture industry. In addition to state support, implementing this blueprint will include continuing to work with partner organizations to aggressively pursue grants and other external sources of funding.



The Blueprint for Georgia Oyster Aquaculture was developed in partnership with the above organizations. These partners actively support Georgia's aquaculture industry, water quality monitoring and aquaculture research.







