

# Alabama Shellfish Aquaculture Situation & Outlook Report 2018

► Alabama's shellfish aquaculture industry produces oysters (*Crassostrea virginica*) through off-bottom farming using an adjustable long-line system and floating cages. The first farm started in 2012, and although jobs have been created, the economic value has been limited. An anonymous survey of Alabama operators revealed the industry's situation and outlook for the 2018 production year.

All survey values were compiled so individual responses would not be revealed. Total values were based solely on responses provided and, thus, may be underestimated. The survey was modeled after the shellfish aquaculture survey program conducted by the Virginia Institute of Marine Science and Virginia Sea Grant and the Rutgers University New Jersey Agricultural Experiment Station and New Jersey Sea Grant.

## Highlights for 2018

- The Alabama Department of Public Health reported 22 commercial oyster aquaculture operations in Alabama, and 13 of these completed the survey.
- Farm gate value for Alabama oyster commercial operations was \$1,062,473.
- Total number of single market oysters harvested in 2018 was 1,921,586.
- Oyster market prices realized for respondents ranged from \$0.30 to \$0.70 with an average price of \$0.46.
- Operators reported 34 full-time employees and 30 part-time employees.
- There were at least 64 acres permitted for oyster aquaculture with at least 37 acres used in production.

## Methodology

The 2018 Alabama Shellfish Aquaculture Survey was conducted with the web-based tool Qualtrics. The survey was anonymous and did not track respondents' IP addresses. An introductory email with a link to the survey was sent to all shellfish operators certified by the Alabama Department of Public Health. Two follow-up requests were sent to all respondents encouraging them to complete the survey if they hadn't already done so.



## Summary of Findings

Of the 22 oyster aquaculture operations certified by the Alabama Department of Public Health, 14 responded to the survey and 13 were complete enough to be included in this report. No other types of shellfish were reported as being farmed.



## Hatchery and Nursery Operations

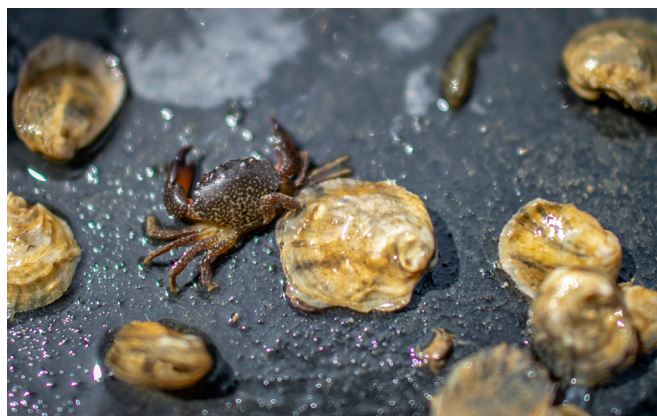
Three respondents reported combined sales of approximately 18 million seed.

## Oyster Sales and Prices

There was a wide range of wholesale prices reported by farmers with a low price of \$0.30 each to a high of \$0.70 each. The average price was \$0.46 each and the mode was \$0.50 each.

## Employment

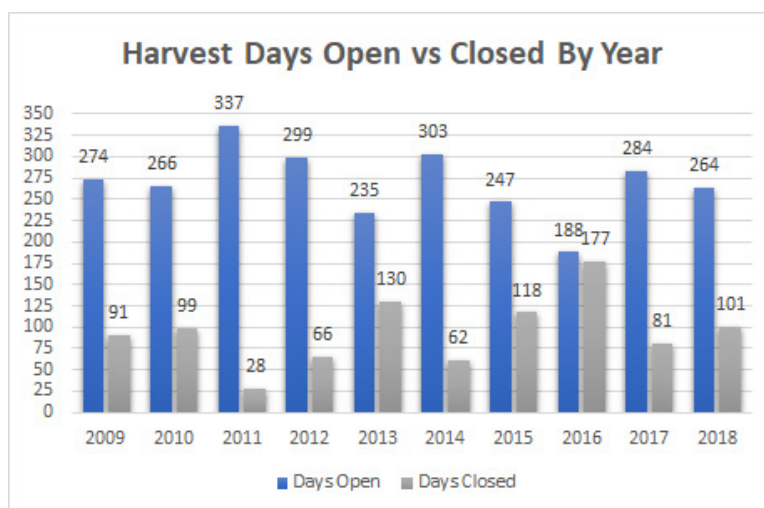
The respondents reported 34 full-time employees and an additional 30 part-time employees. The 30 part-time employees averaged 19 hours per week, which equates to 14.25 full-time employees per year.



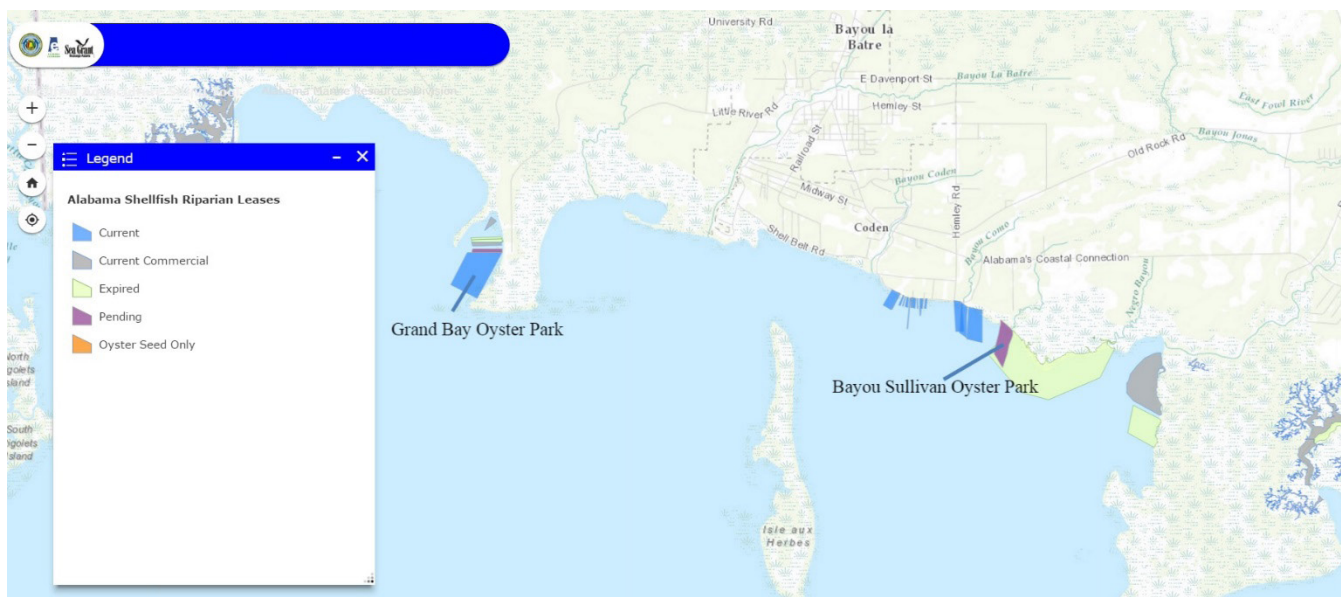
## Challenges

In 2018, the Alabama oyster aquaculture industry dealt with several factors that had negative impacts on profitability and sustainability of the industry.

- There were prolonged closures due to harmful algal blooms and rainfall in some of the growing areas. A total of 101 days were not open to harvest in Alabama waters (see chart). Area II was closed 46 days.
- Seed supply transitioned from Auburn University Shellfish Lab to private industry. There was high demand for seed in the Northern Gulf late in the year, possibly due in large part to high mortality caused by Hurricane Michael's effects in the Florida Panhandle.
- The Mobile Bay area has experienced more harmful algal blooms in recent years and the Bayou La Batre Waste Water Treatment Plant could eventually limit areas available for shellfish aquaculture.







Map Showing Locations of Two New Oyster Parks in Alabama - 2018

## Opportunities and Outlook

In 2019, Alabama oyster aquaculture likely will grow in number of operations and permitted acres for farming. There is also growing interest in commercial aquaculture under existing piers, which has an easier, less costly permitting process. Two new oyster farms began operation in 2019.

The Grand Bay Oyster Park (in Grand Bay on the Western side of Point of Pines) has more than 40 acres for off-bottom oyster farming and is managed by Alma Bryant High School.

The Bayou Sullivan Oyster Park has 20 acres available for commercial off-bottom aquaculture with some additional area being used for research by the Auburn University Shellfish Laboratory (*Alabama Shellfish Riparian Leases* map shown above).

There is a strong demand for seed and eyed larvae. In addition to Alabama, growth continues in Florida and Louisiana, and new farms began operation in Mississippi in early 2019. Texas recently passed legislation to allow off-bottom oyster farming.

In this year's survey, respondents were asked to identify both top *opportunities* for the commercial oyster industry and *needs* for their farms. For each of these, there was a wide range of responses. Commonly identified opportunities included the following:

- Marketing/market development (including expanding brands)
- Promoting innovations in gear

- Educating consumers and the general public
- Improving water quality

Top needs included the following:

- Finding skilled, reliable labor and improving efficiency with mechanization
- Protecting and monitoring water quality
- Having more available areas to expand farms

Respondents were also asked about what *research* and *outreach* the Auburn University Shellfish Laboratory should do for the industry. Many research suggestions were made, but one respondent indicated that the area is over-researched. Listed are some of the common research priorities:

- Identify causes of mortality and reduce losses
- Improve genetic stocks through a breeding program
- Identify threats to water quality and improve monitoring and prediction of adverse events
- Assess effects of different gear types on growth and shell shape.

Survey respondents also indicated the following top outreach, training, and workshop needs for the industry:

- Guidance on gear choice and installation
- Assistance with marketing and possible direct sales
- Promotion of innovation and preparedness

The complete unedited list of responses is in Appendix A.

## Alabama Oyster Farmer 2018 Harvest Survey



### Welcome

Thank you for taking a few minutes to complete the following ANONYMOUS oyster aquaculture survey. With your help, this survey and report will be a means to document the growth and increasing economic value of shellfish aquaculture businesses in the State. We believe the survey will strengthen the industry's ability to promote research, reasonable policies and practices that ensure clean growing waters and a sustainable and profitable future for our oyster farmers.

All information submitted by participants will be held in strictest confidence and only used when combined with all other participants' data to provide the Situation and Outlook Report.

Please complete the survey at your earliest convenience and skip any questions that do not apply to your business operations.

If you have any questions or need assistance with the survey please contact:

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#### Block 4

How many acres did you have permitted and used for production for oyster aquaculture as of December 31, 2018?

Acres Permitted

0      2      4      6      8      10      12      14      16      18      20

Acres Production

0      2      4      6      8      10      12      14      16      18      20

In what county is your operation located?

- ☐ Mobile
- ☐ Baldwin
- ☐ Both
- ☐ Other (Please explain)

#### Jobs

How many full-time and part-time employees/contractors did you have in 2018, including yourself?

Full-time

0      1      2      3      4      5      6      7      8      9      10

Part-time

0      1      2      3      4      5      6      7      8      9      10

How many hours did your part-time employees work a week on average (if none, leave blank)?

Average hours worked per week

0      4      8      12      16      20      24      28      32      36      40

#### Production

How many total market size oysters did you sell last year (2018)?

What was the average WHOLESALE price for the oysters you sold?

Did you have hatchery sales (larvae) last year?

- ☐ Yes      ☐ No

How many total larvae did you sell last year?

What was the average price for larvae sold?

Did you have nursery sales (seed) last year?

☐ Yes ☐ No

How many oyster seed did you sell last year?

What was the most common size seed you sold last year?

What was the average price for seed (per 1000) that you sold last year?

Did you farm any other type of shellfish last year and if so what type? (i.e. clams, scallops)

### **Research and Outreach Needs**

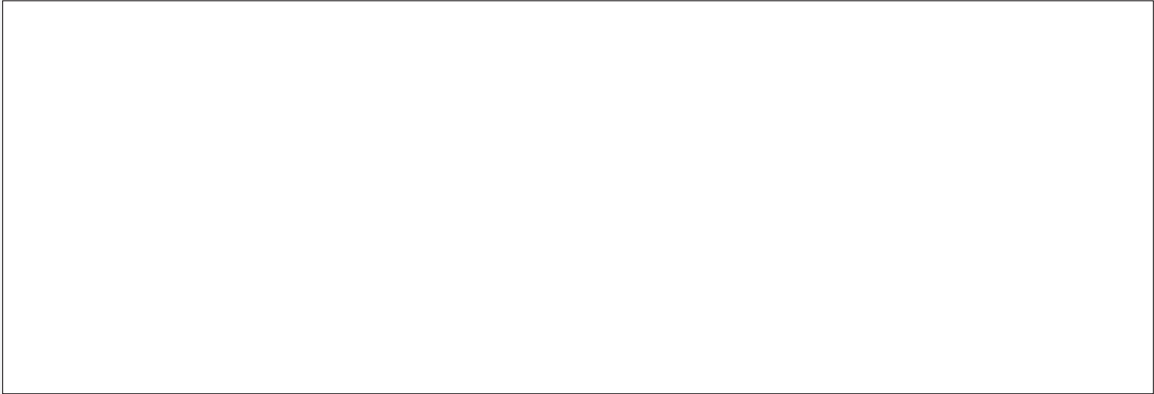
What are up to 3 top opportunities for the commercial oyster industry in Alabama?

What are up to 3 top needs for your commercial oyster farming operation?

What research would you like to see Auburn University Shellfish Lab do for commercial shellfish farming?

What types of outreach, training or workshops would you like to see Auburn University Shellfish Lab do for the industry?

Please add any comments, questions or suggestions below.

A large, empty rectangular box with a thin black border, intended for users to provide feedback, comments, or suggestions.



**Q25. What are up to 3 top needs for your commercial oyster farming operation?**

Salinity

Depth

Avoiding reclassification

mechanized seed grader

more labor

mechanized bag washer

more land to plant, higher wholesale prices, state and AU has been us keep supporting us

Completing infrastructure

Farm insurance

More hatcheries to spread out risk

Gear improvement

Water quality regulations

another water monitoring station at the west end of Dauphin Island

Salinity

finish building out our farm

establish a stable workforce

develop efficient work practices

1. Dependable part-time labor

2. Marketing assistance

3. near-by cold storage

Easier process for expanding growing area lease.

Keep sewage spills from killing oysters and losing sales

more structure, more vessels, baskets

**Q26. What are up to 3 top opportunities for the commercial oyster industry in Alabama?**

Build shellevators

Partner shore residents with commercial fishermen

Relocation services

Branded, quality single oysters for raw market

Hatchery/Nursery products

Selling gear

distributors in other markets pushing our products and our local ones reciprocating

Market development

Consumer education

Reduce gear cost

educating the young about this industry

improve water quality:

-oppose destructive practices like dredging and water pollution

-improve public awareness of importance of above

-encourage efforts to prevent pollutants entering the estuary from the water shed

1. Mid-range price single oysters for the "Wintzells-of-the-world"

2. >3-inch oysters for the grilling market

3. local retail outlet for "doubles", back-bends, etc.

Lose money research r

Not being closed for over 1/3 of the year

Marketing, Sales person, farm hands

**Q27. What research would you like to see Auburn University Shellfish Lab do for commercial shellfish farming?**

Investigate automated portable culture platforms

Develop management tools for predicting and managing risks (vibrio purge calculator, growth/mortality)

Network growers to report water quality observations

Broodstock program

Reduce mortalities

salinity and flavor profiles relative to the last 2-4 weeks before harvest

Very specific dessication times to prevent biofouling without risk to the oyster relative to oyster size, temperature, humidity, wind, etc

1. Shelf life of oysters - it would be very helpful to challenge the paradigm that oysters are not edible raw after 7-10 days.

New genetic tools make this very approachable.

2. Select for superior growth lines.

3 development of dermo resistant lines.

4. Develop and encourage/implement a synoptic water quality sampling program to test the need for Barry Steam Plant closure of Mobile Bay to oyster harvest. This will be very important for expanding oyster farming in appropriate growing areas. The closer pattern over the past two years has really been constraining.

how to increase salinity cost effectively

My vision for Portersville Bay: An ecologically balanced estuary with predictably high quality water (low turbidity, proper oxygen, pH, and salinity), stable shorelines, and controlled natural and man-made effluents (minimizes flood of fresh water, silt, and bacterial contaminant).

Useful research would identify and prioritize the needs of the estuary in the above categories. Then match the low hanging fruit with local resources. I think the stakeholders would support an informed plan.

Useful research would identify the top hazards to the estuary: dredging, waste water and storm water effluent

Is DO mortality during summer a cause of significant mortality?

1. disease-resistant seed

2. more selective breeding for shell shape

3. growth rates at different stocking densities

Over researched already

I would love to see some studies on the different types of growing gear and how that affects the overall shape of the finished oyster.

More zones not affected by river stage

not sure

**Q28. What types of outreach, training or workshops would you like to see Auburn University Shellfish Lab do for the industry?**

Seafood safety

Storm preparedness

Forming cooperatives

Produce single page instructions that detail gear installations line long lines and floating cage lines.

Single website for gear suppliers, hatcheries, nurseries

helping the current farmers keep innovating and bringing more in

Help guide farmers

1. Marketing techniques/skills

2. Assist the farmer in navigating the regulations so the farmer can sell direct to the end- consumer

Education about above activities

elementary education

see Vision for Portersville Bay above

1. more public advertising of OBOF

2. marketing services

3. tagging and transport strategies

maybe a workshop on the differences on the types of growing gear and advice on which type would be better for a particular farm.

not sure

**Q29. Please add any comments, questions or suggestions below.**

Crowd source science

you all do a great job!

Oyster South is doing a great job of coordinating between industry and others

The AUSL oyster aquaculture project has already achieved many successes. Most overnight successes take about 15 years so there's time yet for many more positive achievements. However there have been events which have had a significant and generally adverse effect on my farming operation including natural events like rain and storms and the self imposed effects of internal naivete and mismanagement. External forces outside our control caused us to move and at about the same time we suffered horrible mortality resulting in very disappointing sales for 2016, 2017, and 2018. The regulatory agencies have helped out with bulk tags and the waste/storm water management has improved. We still need a way to sell through closures due to river stage and a more reasonable precaution for HAB. Throughout the process AUSL has been a great resource and we as a community are indebted and grateful to the wonderful staff there, notably Bill, Scott, Glenn, Rusty and the rest of the crew at the lab.

It would be beneficial to have some form of near-by or mobile cooler storage especially for warmer months with short out-of-water times

**Acknowledgements:** The survey was modeled after the Virginia Shellfish Aquaculture Crop Reporting Survey conducted by Thomas Murray and Karen Hudson, Virginia Sea Grant Extension Program, Virginia Institute of Marine Science and the New Jersey Shellfish Aquaculture Situation and Outlook Report prepared by Lisa M. Calvo, Aquaculture Program Coordinator, New Jersey Sea Grant Consortium and Haskin Shellfish Research Laboratory, Rutgers, The State University of New Jersey, and Gef Flimlin, Professor, Marine Extension Agent Rutgers Cooperative Extension. Photo credits: USDA, G. Grice.

This report is based on data generated by the Auburn University Shellfish Lab and the Mississippi-Alabama Sea Grant Consortium.



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