

A person is silhouetted against a bright, hazy sky, standing in a small boat on the water. The sun is low on the horizon, creating a shimmering reflection on the water's surface. The person appears to be handling equipment, possibly related to shellfish harvesting. The overall mood is serene and industrious.

The Gulf of Mexico Shellfish Initiative:
Stakeholder Feedback

Introduction

Shellfish in the Gulf of Mexico Region creates jobs, improves water quality, creates habitat, increases food security and sustains our seafood communities' culture. To focus shellfish restoration and farming efforts, shellfish initiatives have been developed for Washington, Oregon, and California. The Gulf States Marine Fisheries Commission provided funding to the Mississippi-Alabama Sea Grant Consortium to advance the nation's first regional shellfish initiative. The Gulf of Mexico Shellfish Initiative (GoMexSI) team engaged a broad range of stakeholders including shellfish farmers, shellfish harvesters, environmental organizations, state and local management agencies, foundations, and others to identify strategies to be implemented in the future to ensure sustainable shellfish populations for current and future generations.

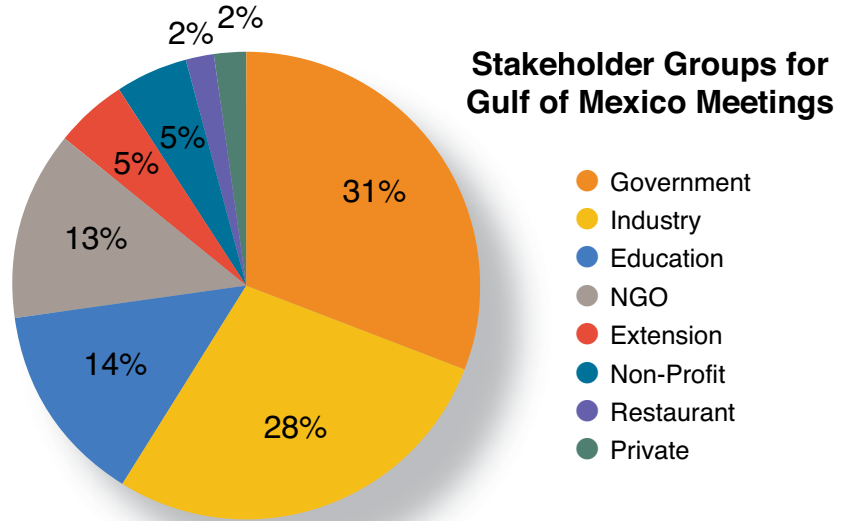
Regional and state-specific priorities and concerns have been identified by stakeholders through a series of face-to-face meetings, an online survey, and personal communications to capture their feedback on shellfish resources in the Gulf of Mexico. Input from more than 400 people

was obtained from the fisheries, restoration, and aquaculture sectors. The GoMexSI team worked closely with Sea Grant Extension agents in each of the five Gulf States to identify stakeholders to participate in GoMexSI planning. The Nature Conservancy was also helpful in identifying stakeholders within their network. At least one stakeholder meeting per state was conducted to obtain input on state and regional shellfish needs. The intent was to determine what stakeholders thought was going well and what was not going well. Furthermore, stakeholders were asked to envision what the shellfish industry could be in the region and what specific accomplishments would constitute success. In this Stakeholder Input Report, the stakeholder input is summarized regionally and by state.

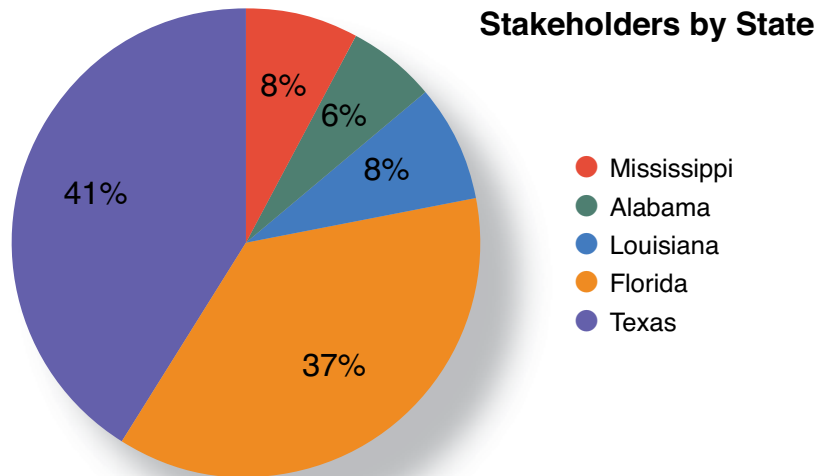
The diverse and often passionate stakeholder input ensures that the GoMexSI is truly representative of the region's needs and creates champions who will support the implementation of the GoMexSI. A GoMexSI Implementation Plan will incorporate stakeholder input and include regional and state-specific actionable objectives.

Gulf States

At the ten meetings across the region, participants were primarily associated with government and industry. This was followed closely by participants involved in education and non-governmental organizations (NGOs), and from a variety of other stakeholder groups.



Participants were predominantly male (70%). Participants drew most heavily from Texas (41%), followed by Florida (37%), Louisiana (8%), Mississippi (8%), and Alabama (6%). This distribution is roughly equivalent to the population distribution among states.

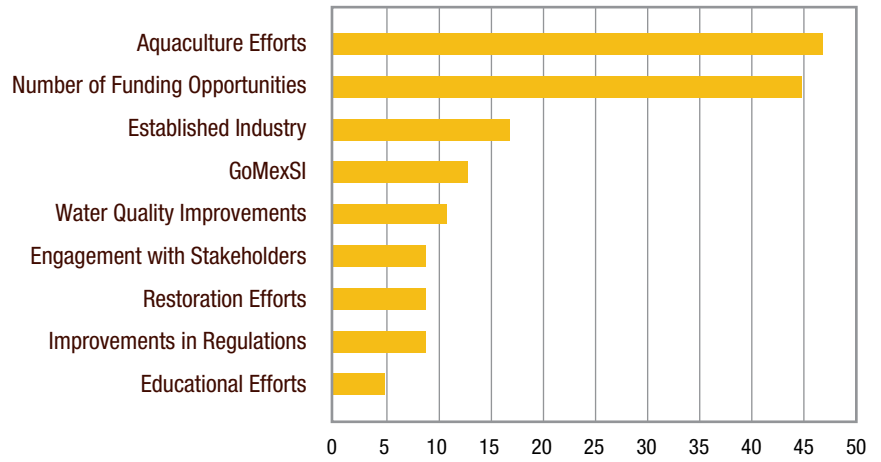


What is Going Well?

When asked what was going well, participants identified a broad range of issues. Specifically, two items were mentioned most often: aquaculture and funding opportunities. For aquaculture, most participants were focused on off-bottom oyster aquaculture, but clam farming and on-bottom oyster farming were also mentioned. For funding opportunities, participants primarily raised the potential funding opportunities arising from the Deepwater Horizon oil spill.

Participants also reported a number of other issues that were going well, including an established, valuable industry with strong community ties. Related to this, improved regulations were mentioned in a number of meetings. Restoration efforts and educational efforts were recognized as well. In terms of the environment, improvements to water quality in some locations were cited.

Finally, the work towards a regional shellfish initiative as well as engagement of stakeholders were recognized as positive and beneficial efforts.

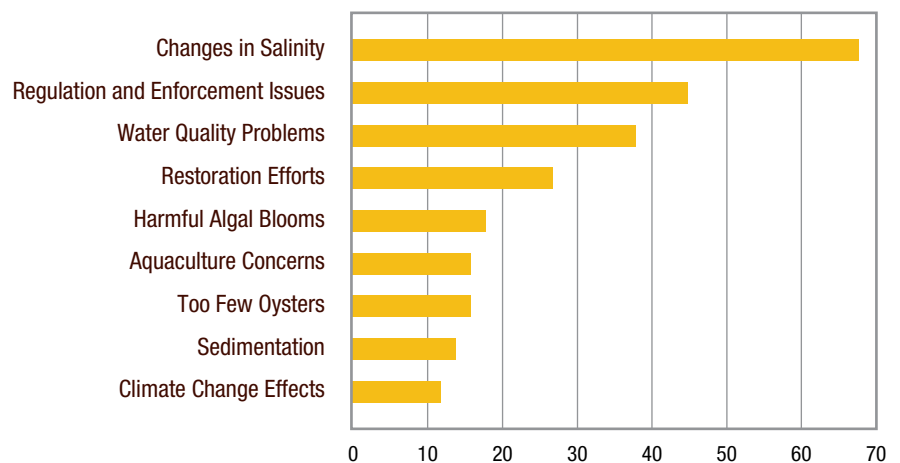


Aquaculture – Auburn University Shellfish Laboratory

What is Not Going Well?

In regards to what is not going well, participants identified a wide range of issues. The leading issue across the region, however, was changes in salinity. This included concerns about too little fresh water in some areas, and too much freshwater in others. In many cases, though, the cause of changes in salinity was anthropogenic.

Notably, a number of issues were raised that overlapped with issues that were identified as going well. These included: regulation and enforcement issues, water quality problems, restoration efforts, and aquaculture. Despite the successes recognized by some participants, the identification of problems associated with these highlight the complexity of the concerns and the potential trade-offs



amongst stakeholder groups. For example, while the success of oyster aquaculture led the list of what is going well in the region, a significant number of stakeholders raised concerns about oyster aquaculture, including potential conflicts with fishermen. Furthermore, in a number of cases, stakeholders indicated that the regulatory and permitting process for off-bottom oyster aquaculture was confusing, time-consuming, and expensive.

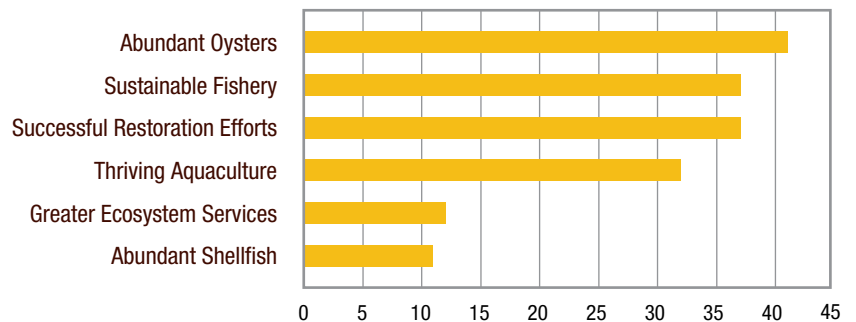
Stakeholders identified a number of environmental concerns in addition to salinity changes, including water quality problems, harmful algal blooms, sedimentation, and effects of climate change. All these were considered threats to shellfish, regardless of sector.



Oyster Drills – MS Dept. Marine Resources Shellfish Bureau

What is Your Vision for Shellfish in the Gulf of Mexico?

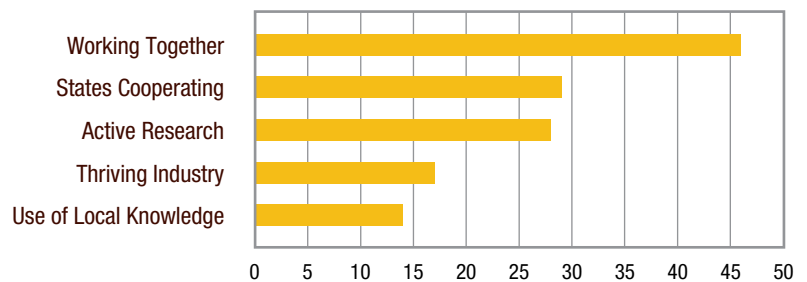
As might be expected, participants envisioned both abundant oysters and, more broadly, shellfish in the region. This included successes in the three sectors of sustainable fisheries, successful restoration efforts and thriving shellfish aquaculture. Interestingly, a substantial number of participants explicitly identified an increase in ecosystem services associated with shellfish.



What Would a Successful Shellfish Initiative Look Like?

When asked how they would define success of implementation of the Gulf of Mexico Shellfish Initiative, participants most commonly cited the concepts of different stakeholders working together and the various states cooperating on regional efforts.

Success also included active research programs focused on shellfish, including programs based at universities. In addition, a number of stakeholders defined success as including thriving commercial shellfish industries. Importantly, use of local knowledge was also named as a metric of success.





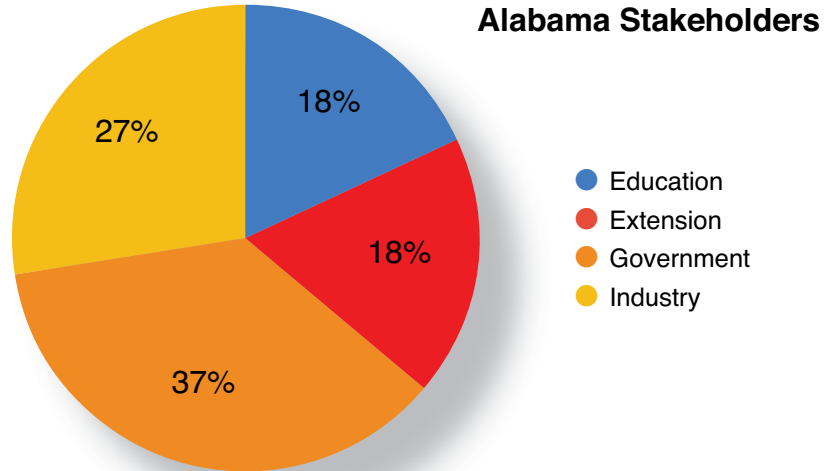
Oysters – Mississippi-Alabama Sea Grant Consortium



Sunray Venus Clams – University of Florida / IFAS

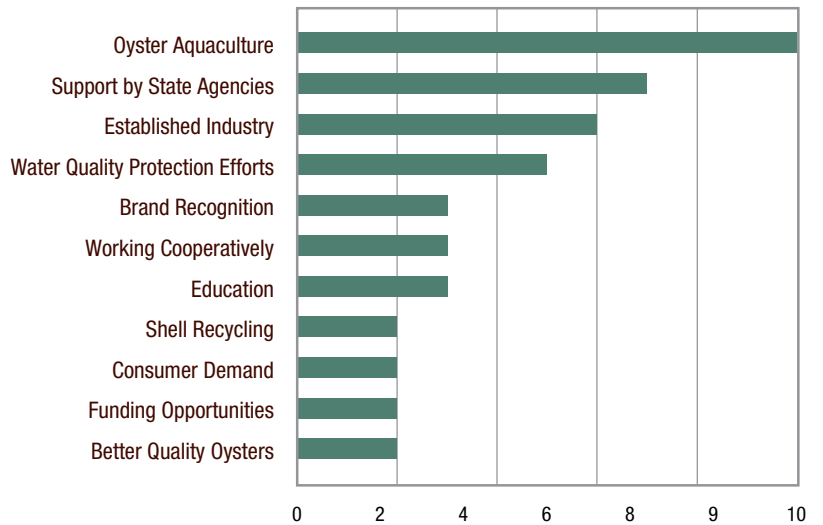
Alabama

In Alabama, participants were mostly from government (37%) and industry (27%). Education and extension were both at 18%.



What is Going Well?

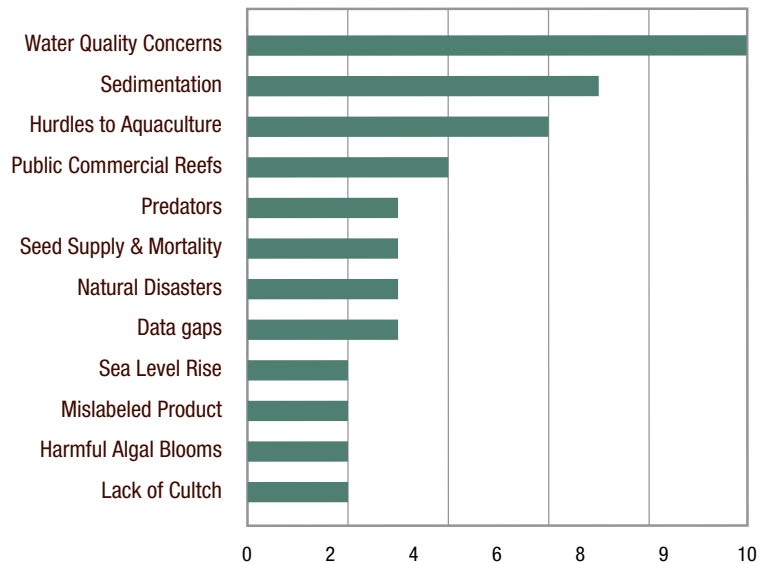
In Alabama, a wide variety of issues were cited as positive outcomes. The most commonly identified issues were off-bottom oyster aquaculture, support by various state agencies (with Marine Resources Division, Department of Public Health, the State Lands Division, and Department of Environmental Management being specifically mentioned), the strength of the established industry in the community, and efforts to protect and recognize the value of water quality.



What is Not Going Well?

The greatest concerns mentioned by Alabama participants were associated with concerns about current and future water quality and effects of sedimentation on oysters. The current status of the public commercial reefs was also frequently mentioned as disappointing. Lack of cultch was also mentioned as a concern (though less frequently).

A number of concerns related to off-bottom aquaculture efforts, including hurdles to industry expansion (permitting challenges and start-up costs, specifically), were mentioned. Participants also noted mortality issues, seed supply concerns, harmful algal blooms and seafood fraud/mislabeling.



What is Your Vision for Shellfish in the Gulf of Mexico?

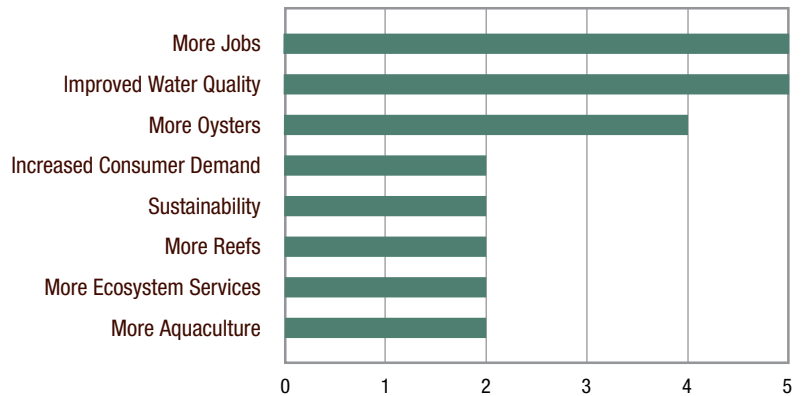
In Alabama, participants envisioned more abundant oysters in the region, with thriving aquaculture and productive commercial reefs. In addition, participants wanted increase public awareness and education about shellfish.

The vision also included supportive state agencies with the capacity to support the industry, with specific mention made of support of the agencies' efforts with off-bottom oyster aquaculture, and making use of local, industry knowledge. Moreover, participants envisioned Alabama oysters earning a nation-wide reputation for quality.



What Would a Successful Shellfish Initiative Look Like?

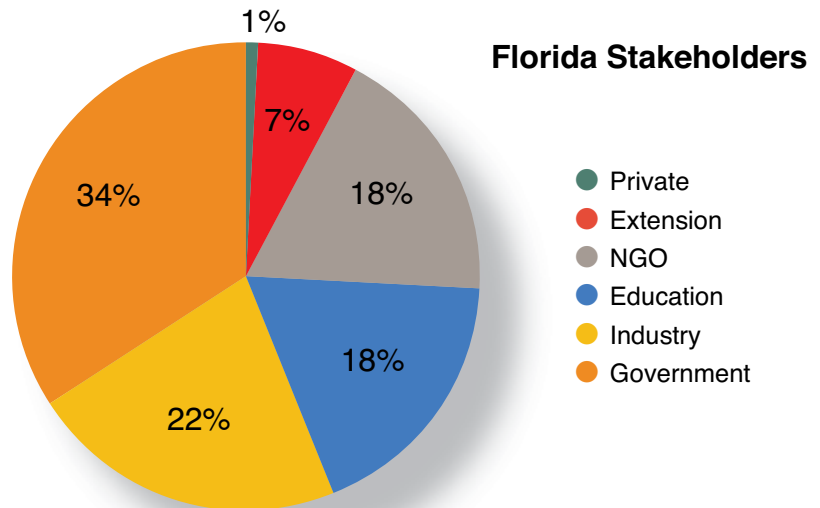
When specifically asked what a successful shellfish initiative would accomplish, Alabama participants indicated the desire for more jobs and improved and protected water quality. There was also a desire for increased oyster abundance in coastal waters, including more reefs and more aquaculture along with the associated ecosystem services. Finally, participants recommended that these efforts be done in a sustainable fashion (with regard to economics, the environment, and the community)



Oysters – Mississippi-Alabama Sea Grant Consortium

Florida

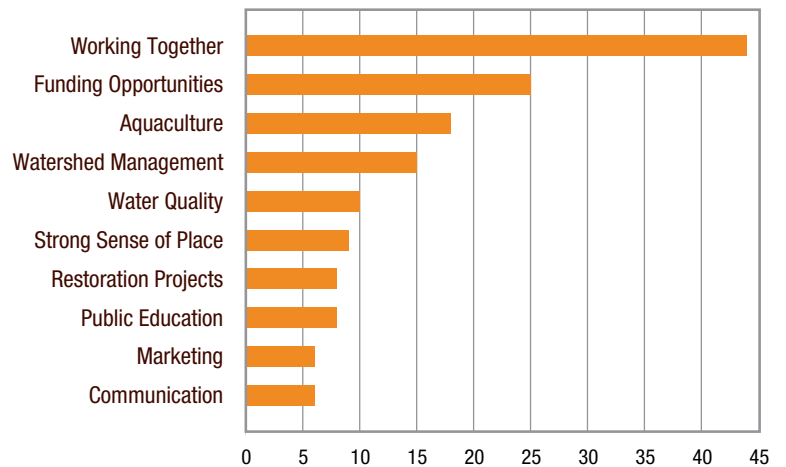
In Florida, participants were mostly from government (34%), followed by industry (22%). Education and NGOs were both at 18%, followed by extension (7%), and private consultants at 1%.



What is Going Well?

In Florida, working together across stakeholder sectors was mentioned as something going well. This was followed by funding opportunities, aquaculture (clam and oyster), and watershed management.

Water quality, a strong sense of place, restoration projects, and public education were mentioned frequently by participants. Finally, attendees also recognized strong market demand and communication as positive directions in Florida.

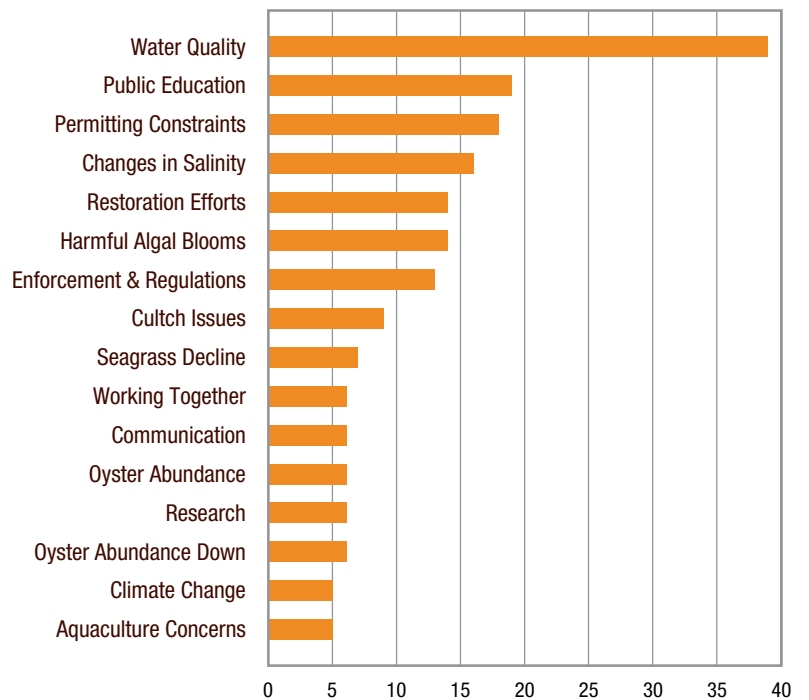


What is Not Going Well?

Participants in Florida had a diverse list of concerns, with some overlap with what participants listed as what is going well (e.g., communication and working together). First, though, was water quality (distinct from changes in salinity, which was also widely mentioned). Permitting constraints and concerns about enforcement and regulations were also widely mentioned. Public education efforts and restoration efforts were also considered to be open to improvement.

For oysters, concerns included cultch issues, oyster abundance, and aquaculture (both in terms of user conflicts in some areas and hurdles to the industry including lack of oyster seed).

In addition to water quality, environmental concerns were raised in regards to



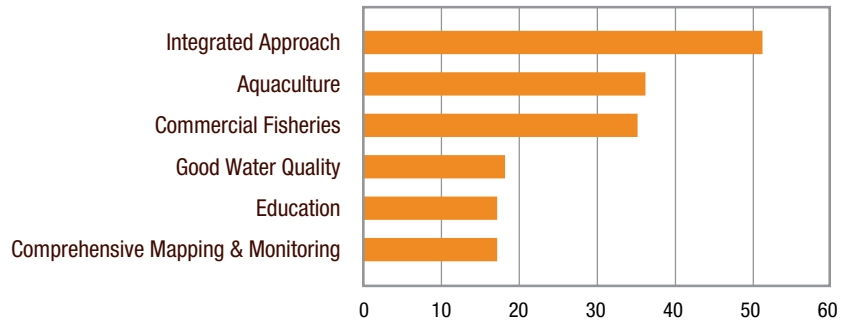
harmful algal blooms, seagrass decline, and climate change.

Finally, there was recognition of problems with working together, communication, and research.

What is Your Vision for Shellfish in the Gulf of Mexico?

In Florida, participants heavily emphasized an integrated approach to shellfish across different sectors and interests. This was followed by productive aquaculture industries and productive commercial fisheries.

The vision of participants also mentioned good water quality (including living shorelines and coastal protection), a strong educational effort focused on shellfish, and a comprehensive program of mapping and monitoring natural resources.

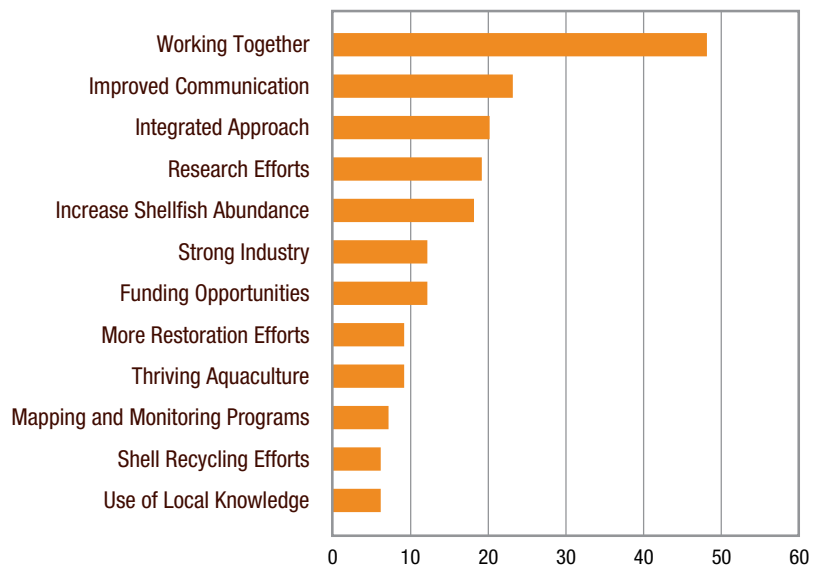


What Would a Successful Shellfish Initiative Look Like?

In Florida, implementing a shellfish initiative most commonly included stakeholders working together, with improved communication, using an integrated approach to shellfish resource management.

In addition, participants indicated a desire for greater research efforts focused on shellfish resources, along with additional funding opportunities. This would result in increased shellfish abundance, more restoration efforts, and a more productive aquaculture sector.

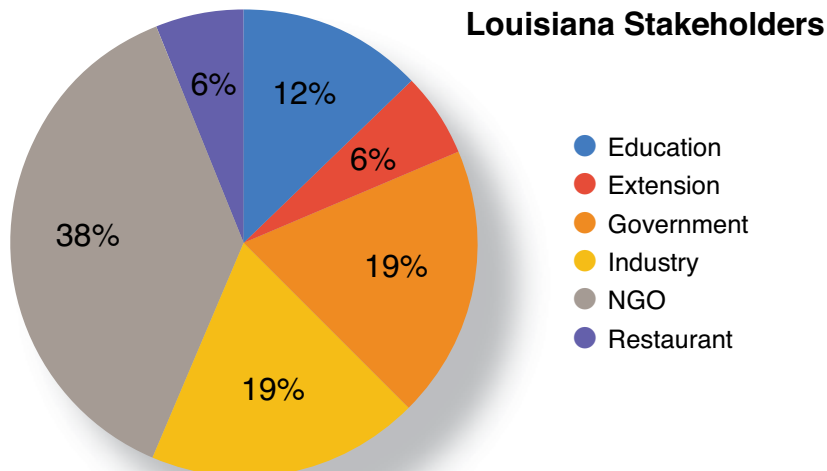
Participants also emphasized the need to implement mapping and monitoring programs, a shell recycling program, and use of local knowledge to guide management.



Restoration – Florida Sea Grant

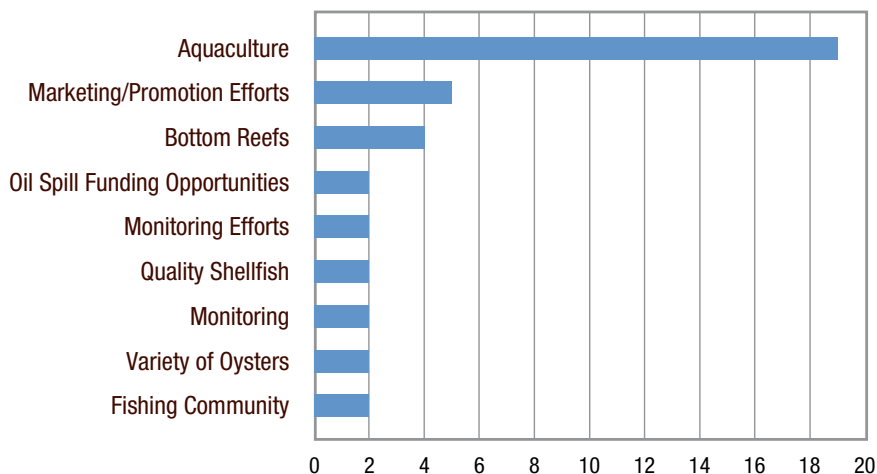
Louisiana

In Louisiana, participants were mostly from NGO (38%), followed by industry (19%) and government (19%). Education was next at 12%, with extension and restaurant both at 6%.



What is Going Well?

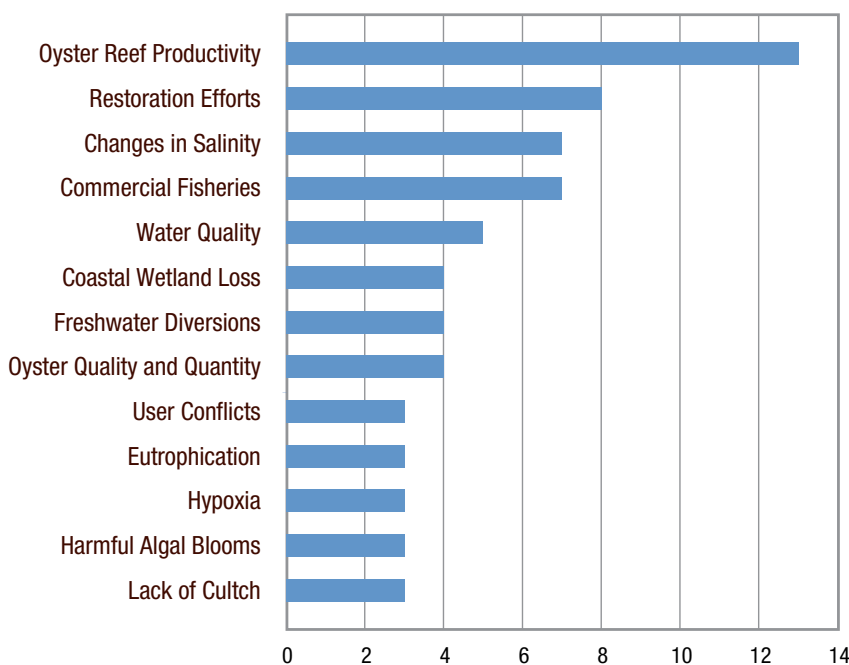
In Louisiana, there was broad consensus that oyster aquaculture efforts were going well. There was also frequent mention of marketing/promotional efforts, as well as the natural production of bottom reefs. A variety of other issues were also mentioned.



What is Not Going Well?

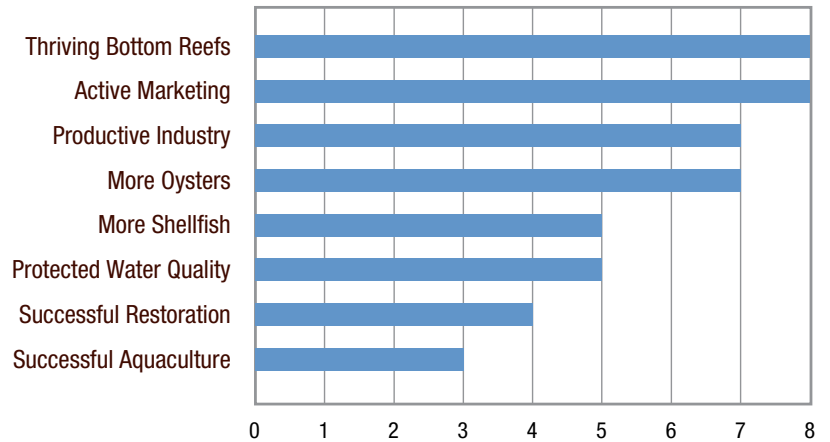
A wide variety of issues were raised by participants as not going well. Participants most frequently mentioned concerns about oyster reef productivity. There were also frequent mentions of concerns about restoration efforts.

A number of participants noted problems associated with river flow and salinity, including changes in salinity and freshwater diversions and, more broadly, water quality. Coastal wetlands loss was also a recognized problem.



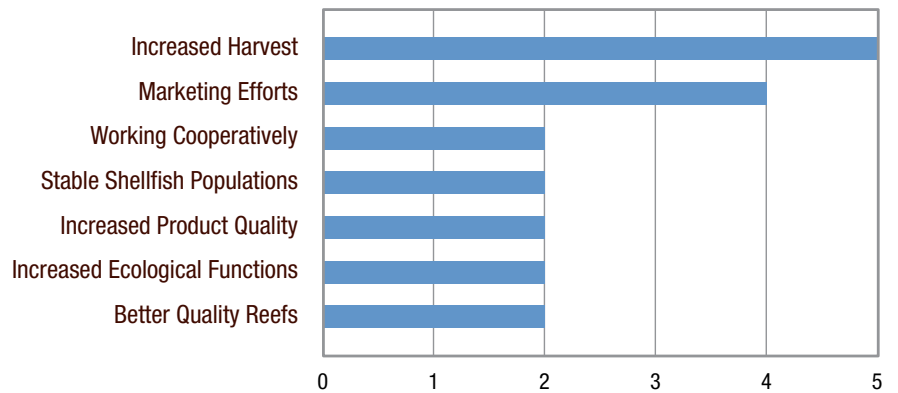
What is Your Vision for Shellfish in the Gulf of Mexico?

In Louisiana, participants envisioned thriving bottom reefs with a productive industry and an active marketing and promotion effort. This vision included greater abundance of oysters and shellfish generally, and protections for water quality. Additionally, participants called for successful restoration and aquaculture as components of the vision.



What Would a Successful Shellfish Initiative Look Like?

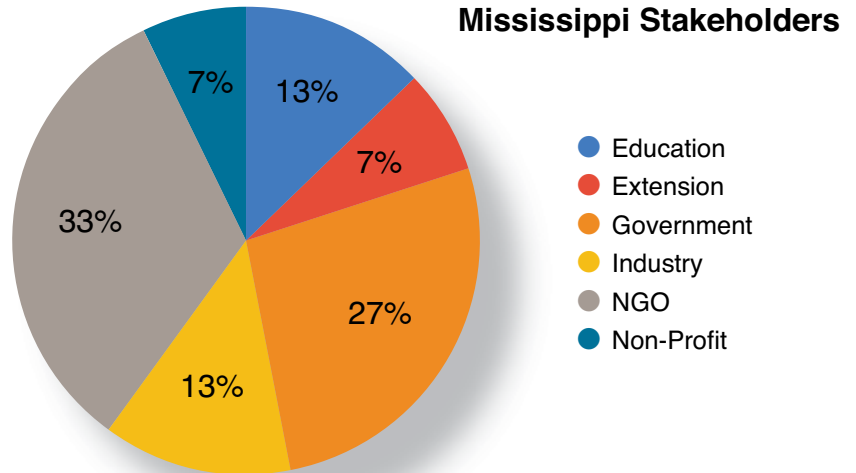
In Louisiana, participants indicated that markers of success of an initiative would include increased harvest and greater marketing efforts. Success would also include stable shellfish populations, increased product quality, greater ecological functions, and better quality reefs. In addition, success would include different stakeholder groups working together.



Productive Oyster Reefs – Mississippi-Alabama Sea Grant Consortium

Mississippi

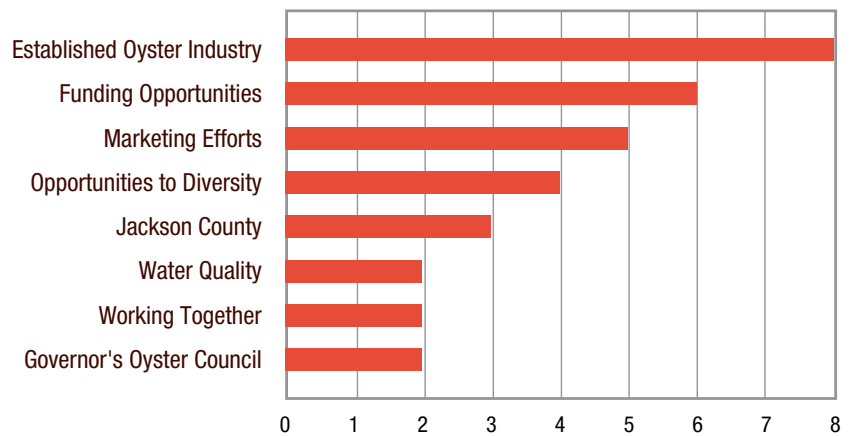
In Mississippi, participants were mostly from NGO (33%) and government (27%). Industry and education were both at 13%, with non-profits and extension making up 7% each of the in-person attendees.



What is Going Well?

In Mississippi, a wide variety of accomplishments were cited as positives. The most commonly identified strength was the established oyster industry, followed by funding opportunities and marketing efforts.

Participants also identified opportunities to diversify.



What is Not Going Well?

The greatest concerns mentioned by Mississippi participants were associated with concerns about current and future water quality. This was followed closely by user conflicts (reflected in contentious meetings) and hurdles to off-bottom oyster aquaculture.

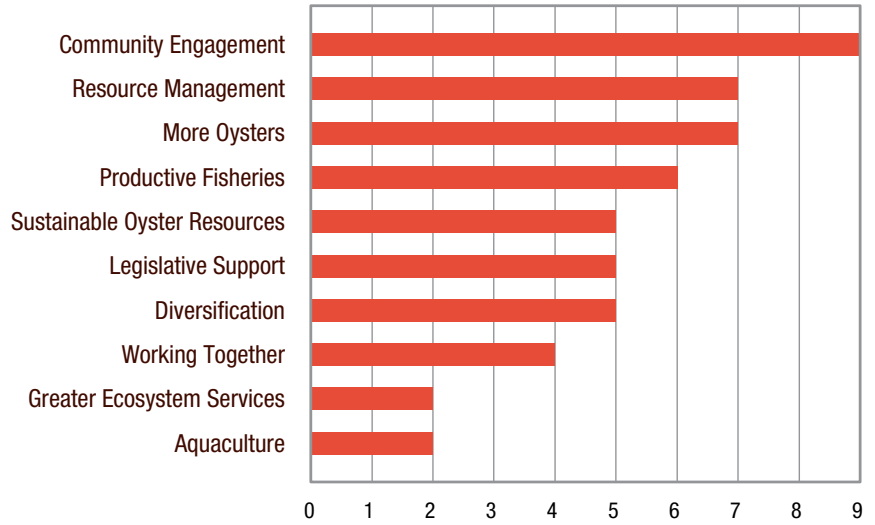
Amongst other concerns raised, changes in salinity (including freshwater diversions) and the lack of the oyster resource were frequently cited by participants.



What is Your Vision for Shellfish in the Gulf of Mexico?

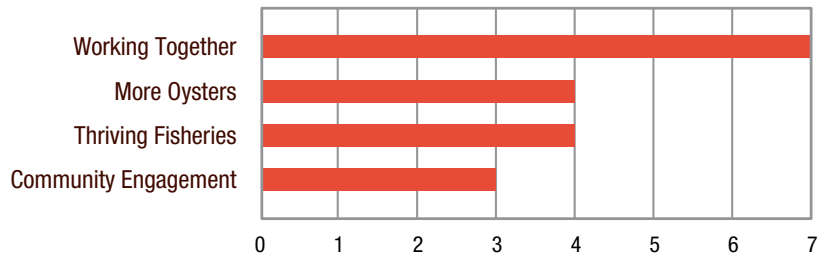
In Mississippi, participants called for a vision of community engagement, sustainable resource management, more abundant oysters in the state, and productive commercial fisheries.

In addition, participants called for legislative support for the various sectors of the community as well as diversification of opportunities.



What Would a Successful Shellfish Initiative Look Like?

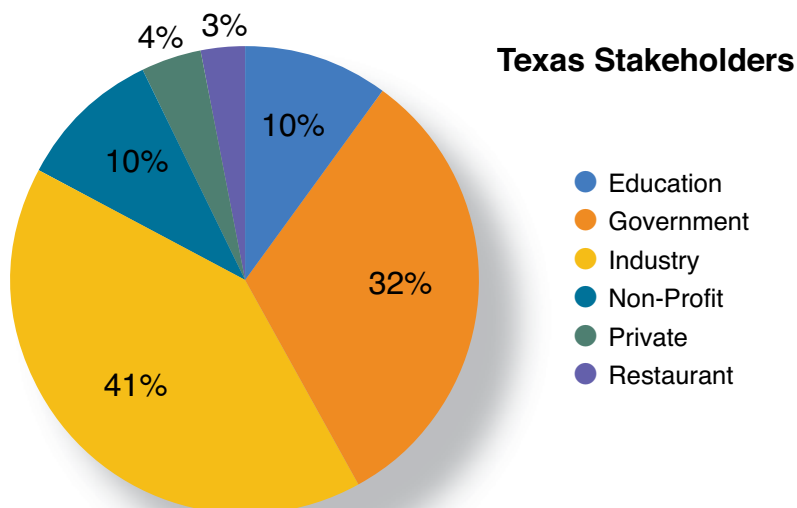
In Mississippi, participants defined success as a combination of community interactions (both working together across sectors and community engagement) as well as oyster production (measured in terms of oyster abundance and fisheries production).



Mississippi Oyster Gardening Program – Mississippi-Alabama Sea Grant / Alabama Cooperative Extension System

Texas

In Texas, participants were mostly from industry (41%), followed by government (32%). Education and non-profit were both at 10%, followed by private consultants (4%) and restaurants at 3%.



What is Going Well?

In Texas, participants mentioned several issues that were going well. Of these, working together and cooperating was the most often mentioned positive. This was followed by funding opportunities, primarily associated with the 2010 oil spill. Interestingly, though off-bottom oyster aquaculture is not practiced in Texas, this came in as the third most frequently mentioned factor going well (presumably in the region).

Shell supply, bottom reefs, and oyster consumption increasing were also mentioned. Improvements to regulations and educational efforts were also commonly referenced, as was good water quality.

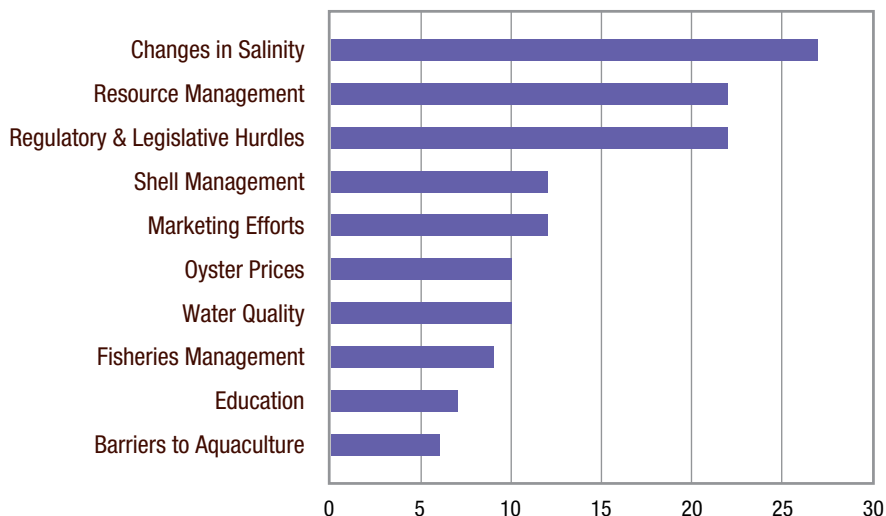


What is Not Going Well?

The most frequent concern in Texas was salinity alterations (predominantly too little freshwater input, despite recent storms). There were also concerns with water quality more broadly. The concern about changes in salinity was followed by resource management, which overlapped with fisheries management and regulatory & legislative problems.

Participants also cited issues with shell (cultch) management, marketing efforts, and oyster prices being too low.

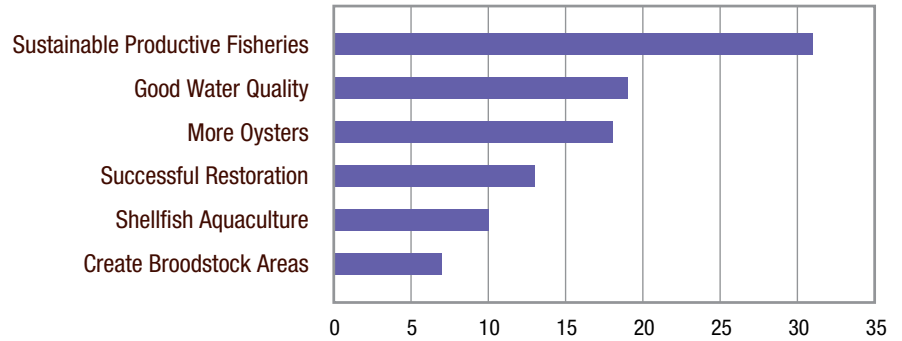
Finally, public education and barriers to aquaculture were also mentioned by multiple participants.



What is Your Vision for Shellfish in the Gulf of Mexico?

In Texas, the vision for shellfish first and foremost included sustainable and productive oyster fisheries that provide jobs and environmental benefits. This was followed by good water quality and greater abundance of oysters.

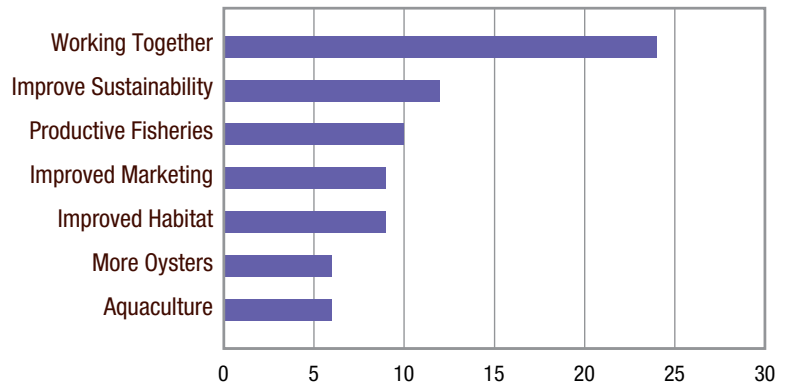
In addition, the vision included successful shellfish restoration and aquaculture of various shellfish species (oysters, clams, and scallops). Finally, there were multiple mentions of the establishment of broodstock areas for oysters.



What Would a Successful Shellfish Initiative Look Like?

In Texas, successful implementation of an initiative includes stakeholders working together across sectors. Additionally, sustainability of the resource would be improved along with productive commercial fisheries. Participants also wanted to see greater abundance of oysters.

Participants also asked to see improved marketing and higher average prices earned for oysters. Finally, participants indicated that they wanted to see aquaculture of shellfish included in what Texas does.

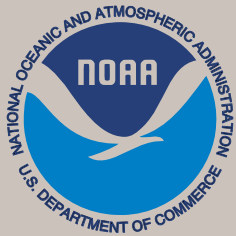


Stakeholders Meeting – Mississippi-Alabama Sea Grant Consortium

Stakeholder Input Sessions

City	State	Date
Biloxi	Mississippi	June 5, 2017
Spanish Fort	Alabama	June 16, 2017
Tampa	Florida	July 31, 2017
Cedar Key	Florida	Aug. 1, 2017
Apalachicola	Florida	Aug. 2, 2017
New Orleans	Louisiana	Aug. 16, 2017
Milton	Florida	Sept. 14, 2017
Texas City	Texas	Nov. 28, 2017
Port Lavaca	Texas	Nov. 29, 2017
Corpus Christi	Texas	Nov. 30, 2017

Cover Photo: Oyster Fisherman – Mississippi-Alabama Sea Grant



MASGP-18-015

This publication was supported by the U.S. Department of Commerce's National Oceanic and Atmospheric Administration under NOAA Award NA15NMF4720399, NOAA Fisheries, the Gulf States Marine Fisheries Commission and the Mississippi-Alabama Sea Grant Consortium. The views expressed herein do not necessarily reflect the views of any of these organizations.