MOLLUSCAN SHELLFISH SUBCOMMITTEE MEETING
MINUTES
Tuesday, October 17, 2023
New Orleans, LA

APPROVED BY:
COMMITTEE CHAIRMAN

On Tuesday, October 17, 2023, the Subcommittee Chair, **Portia Sapp,** called the meeting to order at approximately 1:30 p.m. The following were in attendance:

Members
Robert Caballero, LDWF, New Orleans, LA
Erik Broussard, MDMR, Biloxi, MS
Evan Pettis, TPWD, Corpus Christi, TX
Jason Rider, MDMR, Biloxi, MS
Portia Sapp, FDACS, Tallahassee, FL
Ryan Gandy, FL FWC, St. Petersburg, FL

Staff
Ali Wilhelm, GSMFC, Ocean Springs, MS
Charlie Robertson, GSMFC, Ocean Springs, MS
Dave Donaldson, Ocean Springs, MS

Others
Christopher Mace, TPWD, Corpus Christi, TX
Chris Nelson, Bon Secour Fisheries, Bon Secour, AL
Ellen Coffin, MDMR, Biloxi, MS
Emma Clarkson, TPWD, Corpus Christi, TX
Kindra Arnesen, LA Sea Grant, Buras, LA
Larry Beggs, Reef Innovations, St. Cloud, FL
Paul Mickle, Northern Gulf Institute/ MSU, Stennis Space Center, MS
Rusty Grice, Auburn University, Dauphin Island, AL
Tony Reisinger, TX Sea Grant, Palacios, TX

Adoption of Agenda

Evan Pettis moved and it was seconded by Erik Broussard to adopt the agenda. Motion carried unanimously.

Approval of Minutes

Evan Pettis moved and it was seconded by Erik Broussard to approve the minutes as written for the October 17, 2022 meeting. Motion carried unanimously.

State Oyster Updates

The meeting began with updates from each state focusing on the status of the oyster resource, on- and off-bottom harvest, and oyster restoration efforts. Each state participated in this session.

Texas

Evan Pettis presented updates from Texas covering various aspects of the state's oyster management and restoration efforts. Over the past two decades, the commercial oyster landings in Texas, including both public and private reefs, have exhibited significant fluctuations. After a low point in 2016 with

315,424 sacks, landings increased to a peak of 878,548 sacks in 2020 but have recently dropped to a 25-year low of 218,746 sacks in 2023. Notably, public reef landings in 2023 decreased by 77% compared to the 5-year average, while the number of active oyster vessels decreased by only 15%.

The 2023 oyster season experienced lower harvest rates during the first 60 days, with over two-thirds of the harvest occurring in the first 30 days. Many harvest areas remained closed to commercial oyster harvest due to insufficient market oyster catch rates, as determined by Targeted Oyster Sampling (TOS) with dredges before the season. Several bays had to close shortly after opening due to similar reasons.

The Off-Bottom Cultivated Oyster Mariculture program was initiated following rules adopted in 2020. The program includes two types of permits: Grow-Out (Farms) for market oysters and Nursery-Hatchery for raising larval-juvenile oysters. Currently, seven Grow-Out facilities and two Nursery-Hatcheries have been permitted, with six Grow-Out facilities and one Nursery-Hatchery conditionally permitted. Two Nursery-Hatcheries are pending review. The program aims to refine its processes, procedures, and applications, with the online application portal now live and additional features expected by the end of the year.

Oyster restoration efforts have been significant, with the Texas Parks and Wildlife Department (TPWD) restoring a total of 611 acres through contracted cultch placement, primarily in the Galveston Bay system. Additionally, 1,104 acres of oyster reef were enhanced through bagless dredging. Post-restoration monitoring includes biannual sampling, reference sites, and various metrics such as live/dead counts, recruitment, growth, and infauna assessment.

Pettis discussed the success of the Oyster Shell Recovery Program, which mandates dealers to return 30% of the total quantity of oysters harvested the previous license year to public reefs or pay a fee. The current fee is $1.32 per sack. Since 2018, dealers have returned 70% of the required cultch and 25% as monetary payments, with 5% remaining unpaid. As of September 2023, dealers have restored 55 acres of oyster reef habitat, totaling 85 acres under the program.

Stakeholder engagement is a vital part of oyster management in Texas, involving Oyster Regulation Workgroups, Oyster Restoration Workgroups, and Industry Workshops. These groups collaborate to address challenges, share insights, and facilitate restoration projects. The current focus is on "maintenance restorations." TPWD held three workshops across the state in 2023 with participation from 37 industry members and were able to prioritize locations for future restoration efforts.

Some upcoming restoration projects include the allocation of $3.7 million from the CARES Act for the Galveston Bay System, with plans to place 3-6 inches of cultch on previously permitted areas. The Mesquite Bay Complex will receive $2 million for a maintenance approach with a 1-2-inch layer. East Galveston Bay is slated for restoration with the creation of subtidal reef mounds and concrete culverts.

Oyster Conservation Areas have been established in seven minor bay complexes, which are closed to harvest. These areas serve as spawning reserves due to their shallow nature and proximity to sensitive habitats like seagrass. Efforts to map and monitor oyster populations involve aerial imagery assessments, sonar surveys, and verification and monitoring processes. Aerial imagery is useful for shallow reefs, while sonar-based surveys are used for bay-wide surveys of deep reefs and small-scale, targeted reefs.

Louisiana

Robert Caballero provided a comprehensive overview of the oyster industry in Louisiana, including the 2023 Public Seed Grounds Oyster Stock Assessment and 2023/2024 Season Recommendations presentation. In recent years, the state experienced fluctuations in oyster landings due to various factors, including natural disasters, the COVID-19 pandemic, and restaurant shutdowns. In 2020, oyster landings hit a record low at 469,157 sacks, but there was a notable recovery in 2021, with 836,247 sacks (a 78.2% increase) and further growth in 2022, reaching 897,052 sacks (a 7.3% increase).

The assessment highlighted the distinction between private leases and public seed grounds, emphasizing the significant shift in landings between these two categories. In 2021, 99.6% of the oyster landings came from private leases, with only 0.4% from public seed grounds. However, in 2022, there was an uptick in public seed ground harvest, accounting for 3.3% of the total landings. A map depicting Louisiana's coast indicated the locations of public oyster areas and sampling stations used for data collection. Biologists conducted SCUBA dive samples in these stations in July 2023 to estimate the oyster stock's size using density data.

Louisiana Department of Wildlife and Fisheries (LDWF) is charged with managing oyster resources on nearly 1.7 million acres of available public oyster areas. The estimated reef acreage is roughly 62,700 for stock assessment calculations. In addition, there are approximately 400,000 acres of privately-leased water bottoms in Louisiana and approximately 930 leaseholders manage these private leases. **Caballero** emphasized that Louisiana's oyster industry plays a crucial role in the state's economy, with an annual value of up to $46 million in dockside sales. Despite challenges, including natural disasters and other setbacks, Louisiana remained a leader in oyster production in 2021.

Stock assessment data revealed trends in oyster populations. There was a substantial increase in seed oysters and sack-sized oysters in 2023, driven by recent cultch plantings. However, the overall stock remained 21% below the 20-year long-term average.

Caballero further broke down the results for different Coastal Study Areas (CSAs) across the state. It was recommended that some areas be opened for oyster harvesting, while others remained closed due to various factors such as environmental conditions and resource availability. For instance, the Lake Borgne/MS Sound area showed signs of recovery after the 2019 flooding event, and a recommendation was made to open this area for harvesting. Additionally, the Black Bay, Bay Gardene, and Lake Fortuna areas had decreasing seed oysters but an increase in sack oysters, warranting an opening recommendation.

Sister Lake was highlighted as a success story, with a significant increase in oyster resources, prompting suggestions for an extended season. The Vermilion Bay and Atchafalaya reefs were also showing positive signs, and recommendations were made to open this area, with provisions for managing health closure lines.

Calcasieu Lake exhibited consistent improvements and exceeded its 20-year long-term average, resulting in staggered openings between the East and West coves. Plans for cultch plantings in this area were also discussed.

In the context of oyster recruitment, there was an overall 118% increase in oyster population across

the state in 2023, which was attributed to lower river levels and higher salinities. Recommendations were made to push back the oyster season in several areas to facilitate fall spawn and spat growth.

The recommendations for the 2023/2024 oyster season included specific opening dates and daily limits for various areas. LDWF recommended a 1-day bedding season in Sister lake and Vermillion-Atchafalaya Bay opening and closing on October 9th, with a 20-day market-size oyster season opening on October 10th carrying a 30 sacks per day limit. All areas east of the Mississippi River and Vermillion-Atchafalaya Bay will open for sack harvest only beginning November 13th with a 30 sacks per day limit. On October 15th, the West Cove in Calcasieu lake will open with a 15 sack per day limit, and on January 1, 2024, the east side will open with a limit of five sacks per day. The importance of reporting harvest information to the Louisiana Department of Wildlife and Fisheries (LDWF) was highlighted to ensure sustainable oyster harvesting. A new e-reporting system was introduced to streamline this process.

In closing, a report published by Louisiana Sea Great made the determination of saturation of the oyster market, with recommendations for oyster farmers to focus on larger farms of four acres or more for profitability. The report also noted low demand for half-shell oysters and plans for a new alternative oyster culture (AOC) park near Port Fourchon.

Mississippi

Jason Rider began with a focus on the current state of the oyster resource in Mississippi (MS) and the agency's objectives. The oyster population had been significantly impacted by environmental disasters, leading the Department of Marine Resources (DMR) undertaking efforts to restore and rebuild oyster reefs. The primary goal was to enhance the oyster reef population while balancing size-class dynamics to ensure sustainable public harvesting.

DMR recognizes the various ecosystem services provided by established oyster beds, such as serving as nursery grounds for popular fish species like Spotted Seatrout and contributing to water quality improvement. Oyster reefs also play a crucial role in shoreline protection, reducing the impact of waves, floods, and tides during tropical storms and hurricanes.

Oyster reefs and growing areas are closely monitored for compliance in MS, including the collection of monthly sea water samples for fecal coliform bacteria, which helps minimize seafood-borne illnesses and identifies pollution sources. Water sample sites are strategically located to assess potential pollution risks, and the state maintains a historical database spanning 20 years. Growing area classifications for shellfish include Approved, Conditionally Approved, Restricted, Prohibited, and Unclassified areas, each with specific regulations governing shellfish harvesting. Maintaining these classifications is important for ensuring the safety of shellfish consumption.

Replenishment and restoration efforts in the state included the deployment of cultch material in both small-scale and large-scale projects to restore oyster beds. The recruitment patterns of Crassostrea virginica (Eastern oyster) in the Mississippi Sound are being examined, with a focus on identifying recruitment hotspots for future restoration projects. So far, results have indicated the western MS Sound observes high recruitment than other parts of the state.

A Remote Oyster Setting Facility - Phase 1 project aims to determine the feasibility of rebuilding oyster reefs at an accelerated rate. The initial phase included a feasibility study, resulting in the deployment of millions of spat-on shell oysters. This project demonstrated potential cost-

effectiveness and efficiency in oyster reef restoration. They deployed over 200,000 oysters per cubic yard of material deployed with an average setting rate between 15-20%, which amounts to an estimated cost of half a cent per oyster.

Rider covered the progress of the Off-Bottom Oyster Aquaculture program, which has seen the graduation of 70 oyster farmers. The acreage available for off-bottom leases has increased significantly, and over a million oysters have been harvested, with strong market demand and high prices.

DMR began a new program offering previously public oyster bottom to be acquired for use as private on-bottom molluscan shellfish leases, promoting the prosperity of coastal communities, job creation, and economic development. Senate Bill 2544 established this new program as well as regulations, leasing terms, propagation requirements, and the role of MDMR staff in inspecting and ensuring compliance with lease conditions. Leases can be for fifteen years with total acreage not to exceed 2,500 acres per individual or business. The leasing rate is three dollars per acre per year and lessees must propagate a minimum of 50% of the total bottom area leased within the first five years, with a minimum of 20% propagated by year two. The minimum planting density is no less than 60 cubic yards of cultch per acre or no less than five cubic yards with a minimum of 75,000 oyster spat per cubic yard. Failure to meet the leasing requirements may be deemed an "event of default."

Mississippi emphasized the need for to diversify its oyster harvest and restoration strategies, investing in off-bottom aquaculture and seeking to create a resilient and diverse oyster production system to support the state's oyster industry. The DMR remains dedicated to balancing the preservation of the resource with the growth of the industry and its benefits to both the environment and the economy.

Alabama

Jason Herrmann provided an update on valuable insights into the state's oyster populations, management strategies, and restoration efforts. He covered the state's commercial oyster landings from 2014 to 2023, including data from public reefs and private landings. The data is reported through the Alabama Trip Ticket Program, with the 2023 data noted as preliminary and subject to change.

In 2023, the Alabama Marine Resources Division (AMRD) continued its efforts to monitor oyster densities on public oyster reefs. From June 14 to July 25, a total of 185 SCUBA quadrat samples were collected and processed. The samples were obtained from both planted and non-planted reefs for comparative analysis. Notable findings include slightly lower legal oyster densities on Cedar Point East (CPE) and Cedar Point West (CPW) reefs, while Heron Bay (HB) reefs experienced slightly higher densities. Sublegal oysters decreased in density on CPE and CPW but increased on HB. All three reefs observed a significant decrease in spat abundance, attributed to an extended freshet caused by high rainfall in the spring of 2023. Oyster drills were not found in many quadrat samples. Based on these findings and following the analysis of the 2023 oyster reef quadrat surveys, public reefs were opened for harvest on October 2, 2023. To-date harvest has continued for five working days, resulting in the harvest of 679.6 sacks, including both standard commercial and standardized recreational sacks, from oyster reefs on CPE. This equates to an average harvest of 135.92 sacks per day with 30.6 harvesters per day.

To manage harvest effectively, AMRD employs an oyster reef grid system supported by Esri software. They open and close specific grids as needed to distribute harvest evenly across productive reefs, monitor sacks harvested, and track adult oysters on culling boards. Harvesters can access real-

time information on grid availability via a smartphone interface.

Innovations in the 2023 season include the sale of recreational harvest tags at the Oyster Management Station. Recreational harvesters are required to purchase tags, allowing AMRD to collect data on recreational harvest, which had been challenging to assess previously.

AMRD is managing several funded projects aimed at restoring Alabama's public oyster reefs. These projects include side scan mapping of oyster reefs to identify suitable areas for restoration and oyster cultch relief and reef configuration studies to improve oyster recruitment, survival, and growth. The studies involve deploying different types of cultch material to assess their effectiveness in enhancing oyster populations.

Two detailed side-scan images were displayed to the group to illustrate the progress made in identifying suitable oyster reef locations and demonstrates cultch configuration and relief studies. These studies involve the deployment of oyster shell and limestone in comparison to standard broadcast methods. Results from these studies showed higher spat count on the crests of most of the mounds than the bases, and spat was also higher on mounds constructed of oyster shell than those of limestone during multiple years of the study.

In summary, the Alabama Molluscan Shellfish Report for October 2023 provides comprehensive information on the state of Alabama's oyster resources, management efforts, and ongoing restoration projects. It highlights the importance of monitoring and adapting strategies to ensure the sustainability of Alabama's oyster populations.

Florida

Ryan Gandy explained Florida's public oyster resources have experienced fluctuations in landings from 2007 to 2022. The data, sourced from the Florida Fish and Wildlife Marine Fisheries Information System Trip Ticket Program, highlights the changing dynamics of oyster harvesting in the state and the steady decline in the number of sacks harvested with a recent low of just a few thousand sacks.

The Florida Fish and Wildlife Conservation Commission (FWC) is actively involved in monitoring and restoration projects to address the challenges facing the oyster population in Apalachicola Bay. Monitoring efforts reveal a system that remains depleted, with slow progress in oyster recovery. On natural reefs that have not been cultched, oyster sizes larger than 30 mm and shell budgets exceeding 5 kg/m^2 have yet to be achieved. The system is deemed severely substrate-limited based on the shell budget minimum. However, areas restored in 2017 (through the RESTORE project) and 2021 (NFWF) using #4 Kentucky Limestone are showing signs of improved growth, prompting ongoing evaluations of these reefs.

FWC staff are actively engaged in actively engaged in Phase II of a National Fish and Wildlife Foundation (NFWF) funded project focused on Apalachicola Bay. This initiative includes ongoing monitoring, mapping, and resource assessments for Apalachicola Bay and Suwannee Sound. Maps and a shell budget are being refined to guide restoration efforts. In spring of 2024 it is anticipated to start testing reef heights (1' and 2') using larger 4-8" limestone in 24 one-acre plots. The results from this endeavor will inform future large-scale restoration projects in the bay. The University of Florida continues assisting in assessing oyster population dynamics and fisheries management options while exploring economic aspects associated with oysters. The aim is to develop oyster management options for Apalachicola Bay and Suwannee Sound, along with facilitating oyster restoration decisions.

The Florida Trustee Implementation Group (FLTIG) is actively addressing data gaps to enhance restoration efforts. This includes developing tools for guiding restoration, which encompass historical trends, new monitoring techniques, HSI modeling, and mapping across four regions along Florida's West coast. Collaborating with different partners in each region, this work aims to establish regional baselines for oysters, making this valuable information accessible through the OIMPP web portal.

Portia Sapp covered Florida's aquaculture sector and described its status, with over 800 aquaculture leases nearing 3,000 acres. However, this industry faced a severe setback when Hurricane Idalia struck. Industry surveys indicate that the hurricane caused an estimated impact of $35 million. Many oyster products were almost ready for harvest when the storm hit, and next year's harvest had just been planted. To improve future resilience and coordination in leasing programs, the State Marine Aquaculture Coordinators Network has been initiated. It includes members from most Gulf states and aims to collaborate with the National Marine Fisheries Service (NMFS) in developing a comprehensive database, streamlining operations, and enhancing disaster preparedness for this vital sector

Follow-up from State of the Oyster Workshop – Historic Landings

Charlie Robertson reintroduced the background, concept, and discussions from the oyster workshop that was held in August of 2023. He briefly mentioned the action items from the workshop, which collectively aim to enhance data-informed decision-making in oyster resource management and encourage stakeholder engagement. These include evaluating historical harvest data to uncover patterns and successful practices, investigating potential correlations between oyster declines and other species within the ecosystem, discussing these findings at the upcoming Commission meeting with the Mississippi Shellfish Subcommittee (MSSC) to foster exchange of ideas, and initiating discussions on sustaining momentum for addressing oyster resource challenges in a collaborative manner. At the time of the meeting, the group had no further ideas or discussions related to the historic landings information or action items presented before them. Once the summary report from the workshop is finalized, the group will be reengaged concerning these topics.

Standardizing Gulf Oyster Landings and Restoration Assessment Metrics

Jason Rider introduced the next topic for discussion and explained **Ellen Coffin** leading the group through it. She introduced the idea for an initiative to standardize Gulf oyster landings and restoration assessment metrics emerging from a collective goal to compare oyster reef health and harvesting practices across Gulf states, thereby identifying successful strategies. Each Gulf State manages its oyster resources, and annual reef assessments play a pivotal role in determining the overall health of oyster resources, sustainable harvest levels, and the course of future restoration efforts. However, over the decades, these states have developed varying protocols, sample strategies, metrics, and definitions, making it challenging to establish a uniform or standardized measure of health for harvestable reefs and restoration projects throughout the entire Gulf of Mexico.

To address this challenge, **Coffin** proposed a project concept emphasizes the need for all Gulf States to speak the same language and acknowledge the interconnectedness of state reefs within the Gulf of Mexico. The objectives of the project would be multi-fold: 1) compare oyster reef health assessments and harvesting practices across Gulf States and establish shared metrics of importance for oyster reef assessment. These shared metrics will provide a common framework for evaluating reef health, 2) set

Gulf-wide standards for what constitutes a "healthy" reef and determine benchmarks for successful restoration activities. Establishing these standards will enable a more consistent evaluation of restoration efforts, and 3) identify sustainable levels of oyster harvest that are recognized across all Gulf States. This is crucial to ensure a balanced approach to oyster management.

One key driver behind this initiative is the collective exposure of Gulf states to various challenges, including hurricanes, oil spills, overharvesting, and extreme weather events, such as the Bonnet Carré Spillway opening. These events have posed significant management challenges for local reefs. The Bonnet Carré Spillway event, in particular, led to over 90% oyster mortality in the western Mississippi Sound, creating an opportunity for states like Mississippi and Louisiana to reevaluate restoration strategies and identify effective practices.

A significant component of the project would involve establishing a collaborative platform where Gulf states could collectively shape reef assessment standardization. This would involve determining the most valuable metrics to capture during reef assessment sampling activities and creating standards to assess the health of reefs categorically, distinguishing between healthy, recovering, and poor/degraded reefs.

Moreover, the project would acknowledge the importance of streamlining the data collected to evaluate the success of restoration activities on a large scale, considering factors such as time, cost, and feasibility. By standardizing metrics and reporting, it could become possible to determine a sustainable level of harvest that all states can agree upon, eliminating variations in targets like sacks per acre, oysters per square meter, recruitment levels, and size distribution.

The project would involve conducting a "Blind State Assessment," where all Gulf states would submit reef assessment data from a healthy reef, a recovering reef, and a poor degraded reef based on their individual protocols. This data will then be anonymized and combined to form a universal format, which states would subsequently use to grade the health of these reefs, set harvest potentials, and make recommendations based on the historical numbers of the past three years. This process would create a common baseline for discussions and evaluations.

If the concept were adopted, it would be expected to progress through various stages over the next few years, culminating in a more synchronized and consistent approach to oyster reef assessment and restoration across Gulf states. Ultimately, it could create a universal language of assessment, improving oyster management and sustainability in the Gulf of Mexico.

Other Business

With no other business to discuss, Portia Sapp moved and it was seconded by Evan Pettis to adjourn the meeting at 5:00 p.m. Motion carried with no opposition.