GSMFC ARTIFICIAL REEF SUBCOMMITTEE MINUTES
Monday, October 14, 2024 & Tuesday, October 15, 2024
Gulf Shores, AL

APPROVED BY:
COMMITTEE CHAIRMAN

Chairman Craig Newton called the meeting to order at 1:30 p.m. The meeting began with introductions of the members and guests. The following were in attendance:

GSMFC Members
Charlie Robertson, GSMFC, Ocean Springs, MS
Craig Newton, AL DCNR, Dauphin Island, AL
Herb Leedy, BSEE, New Orleans, LA
Keith Mille, FL FWCC, Tallahassee, FL
Mike McDonough, LA DWF, Baton Rouge, LA
Rachel Parmer, TX PWD, Dickinson, TX
Travis Williams, MS DMR, Biloxi, MS

Staff
Ali Wilhelm, GSMFC, Ocean Springs, MS
Dave Donaldson, GSMFC, Ocean Springs, MS
Gregg Bray, GSMFC, Ocean Springs, MS
Michael Brochard, GSMFC, Ocean Springs, MS

Others
Catherine Froehlich, Dauphin Island Sea Lab, Dauphin Island, AL
Daniel Leedy, BSEE, New Orleans, LA
David Walter, Walter Marine, Orange Beach, AL
Denise Kinsey, LDWF, Bourg, LA
Doug Boyd, Boerne, TX
Erik Broussard, MS DMR, Biloxi, MS
Joe Spraggins, MS DMR, Biloxi, MS
Rick Burris, MS DMR, Biloxi, MS
Ryan Montegut, LA DWF, Baton Rouge, LA
Traci Floyd, MS DMR, Biloxi, MS

Adoption of Agenda
Travis Williams made a Motion to adopt the agenda, and the Motion passed unanimously. Rachel Parmer seconded the Motion, and the agenda was approved.

Adoption of Minutes
Travis Williams made a Motion to adopt the minutes from the March 19, 2024 meeting, and the Motion passed unanimously. Keith Mille seconded the Motion, and the minutes were approved.

Public Comment
Chairman **Newton** provided the opportunity for public comment. No public comments were received.

Review of Artificial Reef Subcommittee Listings

Keith Mille stated that since COVID, the GSMFC Artificial Reef Subcommittee (ARS) has not met jointly with the Atlantic States Marine Fisheries Commission Artificial Reef Committee. This appears to have resulted in decreased participation from National Oceanic and Atmospheric Administration (NOAA) and other agencies at ARS meetings. Andy Strelcheck, the NOAA Southeast Regional Administrator, will be contacted about a replacement for the vacant NOAA seat.

Carry Simmons will be contacted about a Gulf Council representative for the ARS.

The Eighth Coast Guard District will be contacted about providing a representative for the ARS.

Craig suggested having another federal agency representative, such as the U.S. Army Corps of Engineers (USACE) involved more to gain some consistency in the application of regulations.

There was a suggestion of adding the USACE, U.S. Coast Guard (USCG), and the Maritime Administration Ship Disposal as non-voting members so the Standard Operating Procedures (SOPs) will not have to be amended. Dave Donaldson suggested leaving the SOPs as is, and request the USACE and USCG to participate.

Herb Leedy suggested potentially including the Bureau of Ocean Energy Management (BOEM) as a non-voting member to address and cover issues related to renewable energy in the Gulf of Mexico.

Action Item: Charlie Robertson will reach out to NOAA, the Gulf of Mexico Fishery Management Council, and the U.S. Coast Guard to request a representative be designated from each agency to participate in future meetings of the Artificial Reef Subcommittee. Charlie will draft a letter/email and send to the ARS members for feedback before sending to the agencies.

Discussion: History of Artificial Reef Projects Supported by GSMFC and Potential Future Work

Keith Mille suggested potentially having a paid reviewer process for peer-reviewed literature, and having researchers at the Artificial Reef Subcommittee meetings.

Dave Donaldson stated that if there is more funding, then coordinated monitoring across the states could be done.

Craig Newton said that he would support research-type activities that would help with planning or executing projects. Looking at sea bed characteristics, fish composition, and being informed on spatial planning would be good.

Keith pointed out that the issue of monitoring has been contended with, and it is very challenging because each state's sampling/monitoring is not standardized. There is still no regional database for artificial reefs. If additional funds were available, there would have to be a call for proposals where states would submit proposals, and the Gulf States Marine Fisheries Commission (GSMFC) would decide which proposals to select.

Herb Leedy mentioned the need for monitoring stability and sustainability of artificial reefs to determine whether they are still inside their permitted areas, or if they have moved outside of them. This is expensive, though.

Gregg Bray suggested approaching monitoring, and coming up with a list of priorities from a regional perspective that could standardize methods to do this, so that when funding becomes available, there would be a plan in place. Additionally, Keith suggested using existing surveys such as Southeast Area Monitoring and Assessment Program (SEAMAP) and Dependent/Independent surveys to inquire if fishermen fished on artificial reefs because there is a cost associated with it.

Travis Williams stated that MDMR's history with the GSMFC began with the lionfish tournament, and recently with the Gulf Artificial Reef Monitoring and Assessment Program (GARMAP). He said GARMAP in particular has recently been very important with helping monitor hypoxic conditions on artificial reefs, and could be helpful for a research project being conducted by Louisiana State University.

The Artificial Reef Subcommittee members feel that informative information such as surveys, monitoring, data mining, etc. should be a priority in the event that GSMFC obtains additional funding.

Action Item: Each Gulf state coordinator will submit to the Artificial Reef Coordinator (ARS) by December 1, 2024 a list of five regional-scale project ideas related to artificial reefs that the Gulf States Marine Fisheries Commission could pursue with additional funding, including the benefits of each (questions answered, gaps filled), formatted per the ARS Coordinator's request.

Background, Innovations, and New Products and Opportunities in Reef Building

David Walter, owner of Walter Marine, provided a PowerPoint presentation on reef building. David and his son are also the owners of Reefmaker in Orange Beach, AL. Walter Marine deployed its first artificial reef in 1986. In the beginning, most of their business was private reefs. Many different items were reefed, including vehicles, cranes, airplanes, concrete rubble, ships, FAA towers, and bridges, which totaled over 75,000 reefs.

In 1996, David began to design artificial reefs, and wanted the designs to meet certain criteria. After years of experimenting with different types of substrates, they learned that a certain Florida limestone rock had all the qualities that allowed every living thing on a natural reef to live on this rock, too. David incorporated the limestone into all of their reef models. All of the artificial reefs feature a patented design of natural reef-like material. The design closely mimics coral reefs. The artificial reefs are environmentally friendly. They are long lasting, stable, and durable enough to withstand hurricane 5 force winds and waves. The limestone reefs can be created in any size, including the largest available in the U.S. There are four divisions of reefs: fishing reefs, snorkeling reefs, wave attenuators, and ships.

Complexity is an important aspect of the artificial reef design. The larger the difference between anchor points is, the greater the potential is for the artificial reef to enhance fish recruitment, and host a diverse range of species. More variability in surface designs increases the likelihood for many species to seek shelter and protection from larger predators. Corals are seen living on many of the reefs.

EcoSystems were developed as just another reef. However; over time they were expanded into wave attenuation, snorkeling reefs, oyster reef restoration, mitigation, personal dock reef, coral reef restoration, and also used as a research tool. They are ideal for defusing wave energy and can be utilized as a Living Wave Barrier to protect shoreline erosion. There are other types of wave attenuators that have been tested; however, have failed for two reasons. One reason is that they sink into the ocean floor, and the other reason is they stop the natural ebb and flow of tides and currents. The EcoSystem units are green solutions to shoreline erosion. Their complex design destroys wave energy, while allowing water to flow freely through them. They have exceeded the U.S. Army Corps of Engineers requirements for permeable flushing, while providing habitat for marine life. The piling mount supports the unit and prevents sinking, turning over, and moving during hurricane force winds and waves.

David stated that he is going to build a special trailer that will transport artificial reefs to restaurants, marinas, etc. The reefs will have a QR code mounted on them that people can access to learn about artificial reefs in Florida, the benefits of they provide, biomass information, and an opportunity to donate to the creation of artificial reefs. A phone app will also be designed for people to donate to artificial reef and saving coral with private funding.

Memorial reefs can be created to honor a loved one. Cremation ashes are mixed into the concrete to create an artificial reef. A plaque can be installed, and the reef can be deployed in an area chosen by the client. It can be a public reef named after a loved one, or a private reef for the family's enjoyment.

David has deployed numerous sculptures created by artists from around the country for the Underwater Museum of Art that is sitting in about 60 feet of water, a mile off Grayton Beach in Walton County, Florida. The sculptures attract a wide variety of marine life, and eventually evolve into a living reef. The area is a favorite diving spot for many people.

David created the Reefs of Fame in Alabama. The reef includes handprints of actors Nicholas Cage, Cody Walker (brother of the late actor Paul Walker), Mario Van Peebles, and Timothy Patrick Cavanaugh.

Through private funding and a donation from LuLu's Restaurant, a large ship that David purchased for a future artificial reef in Florida was deployed instead 17 miles offshore in Alabama. Citizens were able to make donations to have their business logo or name displayed on the sides of the ship before deployment.

After the meeting recessed, the subcommittee members toured the Reefmaker at Walter Marine in Orange Beach, AL.

There being no further business to discuss, **C. Newton** recessed the meeting.

Tuesday, October 15, 2024

Chairman **Newton** called the meeting to order at 8:30 a.m.

Overview of Artificial Reef Activities

Texas

Rachel Parmer reported that there are a lot of structures near the Flower Garden Banks National Marine Sanctuary that may be reefed in place, but there are concerns about equipment moving into the sanctuary boundaries.

In the Southern district, most sites have to go through a NMFS review/consultation. Now, scans and/or ROV or divers will be used to assess bottoms before permits are issued. This will ensure that an existing structure, a natural bottom habitat, corals, or archaeological sites of significance will not be disturbed. This highlights the issues with consistency, where different districts have different requirements for the same types of permits.

A proposed habitat for Rice's whales may be designated in the northern district, which could cause issues and delays during future artificial reef activities and planning.

Herb asked about National Marine Fisheries Service (NMFS) requirements for fishing line on artificial reef sites. Florida has programmatic permits that have expectations of cleanup of fishing lines and gear to prevent turtle entanglements. **Mike** mentioned that some USACE districts care more about NMFS opinions than others, and can hold up permits based on this. **Craig** stated that in Alabama, they do cleanups as funding and resources allow, and some of the models showed exaggerated predictions of the number of sea turtles that could be killed in a permitted area due to entanglements. These numbers are for above-reasonable expected mortalities. Mississippi Department of Marine Resources (MDMR) has permits that require them to do some level of monitoring similar to other states for turtle interactions and fishing gear.

A site assessment was conducted on a monitoring trip for EB-160. The permit application is in progress, and deployment will be done in 2025-2026.

After a site assessment on a monitoring trip, an application was sent to Texas Park and Wildlife Department (TPWD) for EB-165 to be deployed in 2027. The top will be reefed at HI-A-571.

At the HI-A-355 site, structures HI-A-376A, HI-A-376B, and HI-A-376C will be towed and reefed. The permit has been approved, and deployment is pending. Plans are forthcoming to remove one structure near Flower Garden Banks National Marine Sanctuary, but it is a challenge to remove a platform near a sanctuary.

Structure HI-A-596E will be reefed in place at the HI-A-596 site. HI-A-573B will be towed to the site. Once documents have been received, the permit application will be started. This will be a permit renewal. Decommissioning will be done in 2027 and 2028.

Structure HI-A-573A will be reefed in place at the HI-A-573 site. HI-A-382 F will be towed to the site. The permit application will begin once the documents are received. This will be a new permit. Decommissioning will occur in 2027.

At the HI-A-595 site, HI-A-595CF and HI-A-595D will be reefed in place. Once documents are received, the permit application will begin. Decommissioning will be done in 2027. This is a new reef site.

Other reef sites that will be receiving structures in the future are HI-A-520, HI-A-567, MU-A-085, BA-A-132, PN-A-58, EB-125, EB-110, and HI-A-368.

A new nearshore reef, HI-54 Shallow, is close to Sea Rim State Park. The first deployment occurred in June 2024. Materials included repurposed concrete and farm equipment. A second deployment occurred in September-October 2024. Materials reefed were rip rap from Sempra.

Another new nearshore reef, HI-54 Deep, is a future site in partnership with Friends of Sabine Reef and the CCA that will target Red Snapper. RESTORE funds will be used to survey the site and create pyramids and plates for deployment.

On the RGV Reef, RESTORE funds will be used to deploy additional materials consisting of three tugboats and 500 tons of material.

RESTORE funds will be used to deploy additional materials onto the Port O'Connor Nearshore Reef MI-562. The 381-acre site needs to be reverified.

Queen Isabella will be a new nearshore reef. A permit was recently obtained, and Causeway will be used as reef materials.

The Port O'Connor Nearshore Reef MI-562 site needs to be reverified. RESTORE funds will be used to deploy additional materials.

A permit was renewed for a deployment by Eternal Reefs onto Barr's Reef.

For Ships-to-Reefs, tugboats for the RGV Reef will be deployed in the near future.

A recent monitoring trip was very successful. The trip was in partnership with NOAA Flower Garden Banks, Lionfish Invitational, Inc., and the M/V Fling. Monitoring plans included lionfish removal, lionfish genetic research, roving fish surveys, and benthic surveys. Sites included the Kraken and select Rigs-to-Reef sites located near the Flower Garden Banks National Marine Sanctuary.

In collaboration with the Gulf Research Institute for Highly Migratory Species, acoustic receivers were placed at two additional artificial reef sites. Science divers are being trained to assist the artificial reef program.

In partnership with the U.S. Geological Survey (USGS), eDNA samples were collected.

Plans for day trip monitoring of closer sites are being looked into.

Mooring buoys were installed at HI-A-389 and the Kraken for dive access.

Diver training continues to add a few more science divers to the program.

The Programmatic Endangered Species Consultation is in its initial phase. The 10-year plan will be for future reef sites to review USACE and NMFS. Permit approvals have become more challenging during NMFS consults in the lower coast.

For the Ships-to-Reef Program, tugboats for the RGV Reef will be deployed in the near future.

The Facebook page has been more active, and is being updated.

The TPWD is interested in creating a TV show, and Voice of America is interested in filming and interviews. Plans are being made for media professionals to attend reefing trips next year.

Louisiana

Mike McDonough reported that the Artificial Reef Program continues to be very active in accepting new platforms into permitted artificial reef sites. There are 84 established offshore reefs. A total of 458 oil and gas jackets have been accepted. In 2023, eight were accepted and deployed. A total of 77 additional structures have been permitted for deployment, and 34 are in the permit process. Eight drill rig legs have been accepted, and one vessel.

The Program now has 24 established nearshore reefs or reef complexes. This is the area of greatest concern with anglers, and a lot of progress has been made. A new nearshore reef has been created, and two existing nearshore reefs have been enhanced. The enhancements were done with fish boxes, and recycled concrete structures. Multiple new nearshore reefs will be created, and multiple existing reefs will be enhanced.

The Program currently has 35 established inshore artificial reefs. One inshore reef has been created in the last year, and permits have been applied for to create new inshore reefs. The Pelican Island artificial reef was created with 340 "Cajun Coral" reef modules.

Multi-beam surveys of selected reef sites continue.

Multi-beam surveying of the program's offshore reefs is ongoing annually, and is available on the program's website.

LDWF continued monitoring all completed inshore and nearshore artificial reef enhancement sites through funds provided by the Louisiana Restoration Area Trustee Implementation Group. This is part of a five-year plan to assess the success of artificial reefs enhanced in an effort to mitigate for recreational use opportunities lost during the Deepwater Horizon Oil Spill. Monitoring efforts include the study of the aquatic organisms utilizing the reef enhancement sites via the use of gillnetting, rod and reel sampling, and benthic tray observations, as well as observations of recreational users. These efforts are intended to provide insight into the overall biological health of the reef enhancement sites, as well as insight into whether those sites are providing enhanced recreational opportunities to the public.

Mississippi

Travis Williams reported that efforts to renew USACE permits for all nearshore artificial reefs are ongoing. A new permit application was submitted for two new artificial reef complexes approximately 25 miles south of Pascagoula. The application is currently awaiting a maritime

cultural resources survey before proceeding.

Monthly monitoring of fish assemblages and physiochemical parameters continued by the Artificial Reef Bureau (ARB) at several inshore reef sites. From October 2023 through September 2024, a total of 33 sampling events occurred that generated 331 specimens that comprised 20 species. ARB received and stored 94 truckloads of donated concrete culverts, boxes and poles from Design Precast and Pipe, Bottom to Top, and Mississippi Power that totaled 2,043 pieces.

In 2023, 860 artificial reef ecosystem discs were deployed on Cat Island, FH 8, FH 9/11, and FH 10 to enhance the artificial sites. ARB staff has completed three of the eight sampling trips for the year. The sites will continue to be monitored over the next two years to assess recruitment on the artificial reef sites.

The MDMR continued to work on four separate artificial reef projects funded through the National Fish and Wildlife Foundation (NFWF) and their Gulf Environmental Benefit Fund. The projects include Ingalls artificial reef enhancement offshore, an extension of Katrina Key, an inshore reef assessment, and enhancement of Cat Island, FH-8, FH- 9/11, and FH-10 Reefs.

Monitoring continued for the recently deployed material in FH-13 via juvenile tagging studies. Juvenile fish traps were deployed on these sites and allowed to soak for one hour. Twenty-one total traps were set and retrieved. Data was collected off 214 juvenile reef fish from four different species that were captured, weighed, measured, tagged, and released.

The Ingalls artificial reef enhancement offshore project deployed 77 super pyramid structures across 12 sites on FH-1, FH-2, and FH-13. The pyramids were deployed in October and November, and each pyramid contained an Ecodisc structure within it.

Bureau staff continued to work with NFWF to finalize the engineering and design phase of a project to extend Katrina Key from the existing 1.13 miles of structure, to the western boundary of the permitted area, for an additional 2.5 miles of structure. The construction phase of this project is expected to begin during winter 2024.

In 2023, 860 artificial reef ecosystem discs were deployed on Cat Island, FH 8, FH 9/11, and FH 10 to enhance the artificial sites. ARB staff has completed three of the eight sampling trips for the year. The sites will continue to be monitored over the next two years to assess recruitment on the artificial reef sites.

The Inshore Reef Assessment Project is currently ongoing to determine the condition of all Mississippi's inshore artificial reefs. The side scan data collected on the reefs is currently being processed to help determine size and density.

Alabama

Craig Newton reported that funds from the Phase II of the NFWF's Alabama Artificial Reef and Habitat Enhancement Project are almost expired. Once the monitoring/research report is complete, the Alabama Department of Conservation and Natural Resources/Marine Resources Division (AL DCNR/MRD) anticipates approximately $8,000,000 in additional funding from NFWF.

No additional oil/gas infrastructure was converted into reefs, but the AL DCNR/MRD is currently awaiting permit authorization for two Rigs to Reef projects. Also, the AL DCNR/MRD is waiting on asset availability to reef another jacket.

Reef deployments by the private sector have increased over the last decade. Based on consistent feedback, the increase in private reef building activity seems to be due to an increase in access to the red snapper fishery. A total of 790 and 725 reefs were deployed by the private sector in 2022 and 2023. These represent the highest number of deployments by the private sector since 2006. However, deployments by the private sector have decreased during 2024. From January through August 2024, 411 structures were deployed by the private sector. Projections indicate that the total number of reefs constructed by the private sector will not surpass the number of deployments in recent years. Regardless, the availability of habitat due to private sector deployments has added a significant amount of structure for reef fish to utilize.

Mutually beneficial partnerships with non-government organizations, industry, and private entities continues to be pursued. Alabama Power and AL DCNR/MRD have partnered to create a 25 square mile reef zone between 12 and 25 nm offshore of Fort Morgan, AL in the Gulf of Mexico. An application has been submitted to USACE for authorization to create the reef zone, and Alabama Power has executed a $300,000 contract to conduct a Phase I archaeological survey to satisfy requirements of the National Historical Preservation Act. Once the survey is complete, and authorization is granted, Alabama Power will begin constructing reefs, utilizing a variety of second-use materials such as concrete power poles, boiler, tanks, and miscellaneous structures that meet the USACE reef material conditions.

Florida

Keith Mille reported that during FY23/24, eight artificial reef monitoring projects managed by the Florida Fish and Wildlife Commission (FWC) Artificial Reef Program were completed or are ongoing.

During July 2023 – June 2024, 270 new patch reefs were deployed state-wide. Of the 270 patch reefs constructed, 239 were funded by the FWC, and 31 were funded by local government, non-government organizations, and private sources.

From September 2023 – September 2024, 229 patch reefs were deployed. The reefs consisted of modules, concrete, vessels/barges, and metal. They were deployed in Federal waters (137), and state waters (92). A total of 227 were deployed in Gulf waters, and two in Atlantic waters.

In February 2024, FWC hosted the Florida's northwest coast lionfish and artificial reef manager's workshop that was held at the Emerald Coast Convention Center in Fort Walton, Florida. This two-day workshop focused on current research on lionfish, and artificial reefs. Eighty-four attendees participated in the workshop.

Since 2021, 24 vessels and barges have been deployed.

There has been more placement of reefs within state waters. The reasoning behind this is the ease of access, the creation of snorkel and kayak reefs, and the desire of locations with less stringent regulations, such as red snapper. The reefs are species-specific, and more focused ecological considerations.

There has been increased storm activity in the Gulf, and ten major hurricanes since 2017. Improved use of technologies provides for high accuracy of pre- and post-surveys. There is greater data availability for permit applications and review, and increased database accuracy.

Research was conducted to inform artificial reef enhancement, and an understanding of inshore hardbottom use by fishes. A series of grants from the Tampa Bay National Estuary Program were secured. Using baited remote underwater video, it was found that estuarine hardbottom habitats supported unique fish assemblages that were a mixture of species found within estuarine seagrasses and offshore reefs. Estuarine hardbottom may serve as a transitional habitat for estuarine-dependent reef fish that emigrate to shallow reefs farther offshore as adults. The current grant that is active through 2024 is focused on the effects of removing relic tire reefs from Tampa Bay. The feasibility of replacing the tire reefs with new artificial reefs to provide recreational fishing opportunities will be determined.

Hardbottom ledges are the dominant source of vertical relief on the West Florida Shelf, but little is known about the composition of demersal fish communities found associated with ledges, or how they change temporarily and spatially across the shelf. Beginning in 2018, staff surveyed and recorded these fish communities in collaboration with Florida Fish and Wildlife Research Institute (FWRI) Coral Reef staff. Staff obtained grants from the Florida Fish and Wildlife Foundation of Florida. A final report was submitted in March 2023.

The 12th International Conference on Artificial Reef and Related Aquatic Habitats (CARAH) was held in March, 2024 in Santa Marta, Columbia.

Upcoming reef projects include the decommissioning of air combat maneuvering instrumentation towers, and the SS United States Navy ship.

There are 62 existing deployments at the Monroe County Habitat Support structures. Most were deployed from 1982-1989. No deployments have been done since 2009, and there are no active permits. An upcoming reef project there will provide fishing and diving opportunities, and address habitat deficits inside the Florida Keys National Marine Sanctuary (FKNMS). An ontogenetic pathway/connection from nearshore to offshore waters for fishes and mobile invertebrates will be created.

Fishing Pier vs. Snorkel Reef: Which Gets the Most Diverse Floral and Faunal Communities?

Catheline Froehlich gave a Power Point presentation entitled "Fishing Pier vs. Snorkel Reef: Which Gets the Most Diverse Floral and Faunal Communities?"

Most studies done on artificial reef focus only on fish species found there. Catheline spoke on their study to compare two different reef types at the same location to determine if vertebrate and invertebrate communities are the same, to determine if tropicalization (tropical organisms moving to temperate areas) is occurring, and to compare sampling methods. The study area was in Navarre, Florida. The habitats were a snorkel reef and the Navarre Pier. The structures were 3,000 feet apart. The snorkel reef was located in the Navarre Beach Marine Sanctuary. The reef was 300-400 feet offshore, and 10-15 feet deep, submerged. No fishing is allowed, but swimming is. Navarre Pier is a fishing pier that spans from the shore to 1,500 feet out into the water, from surface down to 30 feet deep.

Vertebrates consisted of fish, sharks, mammals, etc. Invertebrates consisted of snails, sponges, crabs, jellyfish, etc.

Snorkel surveys were done for 45 minutes at the structure. iNaturalist was used to help with species IDs, and to keep a catalog of species identified in the area around the survey sites. iNaturalist had fewer species observed until 2023. The snorkel reef had more species in 2023 than 2024.

The characteristics of the different communities are very different between the pier and snorkel reef. Species propelling these differences were stingrays, spadefish, and remora at the pier, and pigfish at the snorkel reef. Comparisons with iNaturalist surveys revealed some other differences. Bottlenose dolphins had high occurrences of reporting with iNaturalist, as well as hardhead catfish, which are easily identifiable by the public. Invertebrates surveys weren't comparable to iNaturalist because the public do not report them there. Invertebrate communities overlapped between the pier and survey reef; however, looked at on a yearly basis, the communities diverged. Species propelling these are encrusting and boring sponges, purple-spined urchins, white crust, and white scroll alga.

The survey found that the snorkel reef and pier have different communities of vertebrates, but not invertebrates. The differences in the communities changed over the last year. There was some evidence of tropicalization. iNaturalist was very helpful for identifying vertebrates that are not seen underwater, but not helpful with invertebrates.

Artificial Reefs in the AARPZ: Effects of Size, Spacing, and Material on Early Colonization Patterns

Mark Albins gave a Power Point presentation entitled "Evaluating the Effects of Artificial Reef Size, Spacing and Materials on fish abundance and diversity in the Alabama Artificial Reef Permit Zone". A study was done to evaluate the effects of artificial reef size, spacing, and materials on fish abundance and diversity in Alabama's Artificial Reef Permit Zone (AARPZ).

Standard ROV surveys and EK80 fisheries echosounder were done on large, medium, and small reefs. The ROV results showed that there were no significance differences among reef sizes. There were potential differences in detectability, with higher minimum safe approach distance for large reefs, and fewer observations of small fishes.

Red snapper were 2.9 times higher on medium reefs than on small reefs; 1.8 times higher on large than on small; 1.6 times higher on medium than on large.

Grey snapper were 3.0 times higher on medium than on small; 4.6 times higher on large than on small; no significant difference between medium and large.

Almaco jack were 8 times higher on medium reefs than small; 24 times higher on large than small; 3 times higher on large than medium.

Greater amberjack were not observed on small reefs; were 2.3 times higher on medium than large.

Echosounder analysis was used for manual counts of fish from echosounder data. Preliminary echosounder results for non-baitfish showed no significant difference between small and medium

reefs, but fish numbers were 1.8 times higher on large than small, and 1.8 times higher on large than medium. Preliminary echosounder results for baitfish showed 1.15 times higher on medium reefs than small; 5.13 times higher on large than small; 4.44 times higher on large than medium.

Larger reefs, particularly those with super pyramids or shipwrecks, tended to support higher fish abundance and diversity compared to smaller reefs, with significant differences observed in species such as red snapper and almaco jack.

Current estimates may not capture the entire halo of fish around large reefs, and may be too low for these reefs. Alternative spatial density models and better reef maps are being created. Current estimates are for numerical abundance of non-baitfish, and ignore any differences in fish size among reefs. Estimates of biomass for baitfish and non-baitfish are being calculated.

Bureau of Safety and Environmental Enforcement Update

Herb reported that they are still attempting to recruit for a new artificial reef coordinator. **Herb** will email the new job announcement to **Charlie** to share with the subcommittee members.

If subcommittee members have lingering decommissioning issues, they can contact **Herb**. Delays could be due to a NOAA oversight and additional requirements related to biological opinion. There is a potential court ruling affecting biological opinion and vacating the previous ruling. This would mean that every decommissioning and oil and gas project would require reevaluation – even those currently covered under existing permits.

Other Business

The next Artificial Reef Subcommittee meeting will potentially be held jointly with the Atlantic States Marine Fisheries Commission Artificial Reef Committee sometime in 2025.

Action Item: Charlie will work with the GSMFC Artificial Reef Subcommittee Chair and Vice-Chair to reach out to the Atlantic States Marine Fisheries Commission Artificial Reef Committee to inquire if they would be interested in meeting jointly for the next meeting.

Public Comments

There were no public comments.

There being no further business to discuss, M. McDonough made a Motion to adjourn the meeting. K. Mille seconded the Motion. C. Newton adjourned the meeting at 12:00 p.m.

Summary of Action Items

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