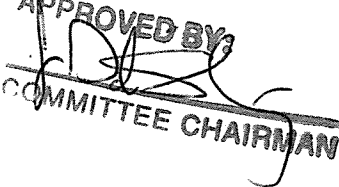


**JOINT GSMFC & ASMFC ARTIFICIAL REEF SUBCOMMITTEE
MINUTES**

**Wednesday, February 28, 2018 and Thursday, March 1, 2018
New Orleans, LA**

APPROVED BY:

COMMITTEE CHAIRMAN

Chairman Mille called the meeting to order at 9:00 a.m. The meeting began with introductions of the members and guests. The following were in attendance:

ASMFC Members

Peter Clarke, NJ DWF, Port Republic, NJ
Christine Kittle, FL FWCC, Tallahassee, FL
Lisa Havel, ASMFC, Arlington, VA
January Murray, GA DNR, Brunswick, GA
Jason Peters, NC DMF, Morehead City, NC
Mark Rousseau, MA DMR, Gloucester, MA
Eric Schneider, RI DEM, Jamestown, RI
Mike Malzeppi, MD DNR, Annapolis, MD
Jeff Tinsman, DE DFW, Dover, DE

GSMFC Members

James Ballard, GSMFC, Ocean Springs, MS
Mike McDonough, LA DWF, Baton Rouge, LA
Keith Mille, FL FWCC, Tallahassee, FL
Craig Newton, AL DCNR, Dauphin Island, AL
Douglas Peter, BSEE, New Orleans, LA
Jimmy Sanders, MS DMR, Biloxi, MS
Dale Shively, TPWD, Austin, TX

Staff

Ali Wilhelm, GSMFC, Ocean Springs, MS

Others

Mike Barnette, NOAA Fisheries Service, St. Petersburg, FL
Larry Beggs, Reef Innovations/Reef Ball Foundation, St. Cloud, FL
Jordan Byrum, NC DMF, Morehead City, NC
Ashley Ferguson, LA DWF, Baton Rouge, LA
George Frankel, Eternal Reefs, Sarasota, FL
Zach Hugbanks, Steel Coast, LA
Bill Maxwell, NJ DEP, Port Republic, NJ
Tim Mullane, Coleen Marine, Inc., Virginia Beach, VA

Adoption of Agenda

A motion was made to adopt the agenda, and the motion passed unanimously.

Approval of Minutes

The minutes from the meeting held on February 7-8, 2017 were presented for approval. The motion was seconded and the minutes were approved.

Overview of Louisiana's Inshore Reef Program

Ashley Ferguson reported that there are 31 established inshore reef sites. They consist of shell, limestone, concrete, and reef balls. East Calcasieu was completed in July 2017. In Lake Pontchartrain, St. John Artificial Reef will be created 1.3 miles from Frenier Landing, using crushed limestone. Point Mast Reef will be enhanced with limestone. The original reef was deployed in 2009, and the planning area was expanded to 50 acres in 2015. Inshore reef funding for the three reefs will be funded by LDWF, CCA, and partners.

Marine Turtle Considerations in Reef Module Design

Mike Barnette gave a PowerPoint presentation entitled "Sea Turtles and Artificial Reefs – Considerations for Material Use and Site Planning". The primary considerations for sea turtles and artificial reefs are entrapment, entanglement, and predation. If modifications are made to new reef modules, it would resolve the entrapment problem. Larger hole openings, and removing the tops from concrete pyramids would prevent turtles from becoming trapped inside. A larger threat to marine sea turtles is entanglement in fishing line, fishing nets, and anchor lines near reef habitats. When new artificial reefs are designed, modifications should be made to minimize snags and marine turtle entanglement.

Summary of the 2017 National AFS Meeting Artificial Reef Symposium

Mille gave a PowerPoint presentation entitled: AFS 2017 Artificial Reef Symposium – Marine Artificial Reef Research and Development: Integrating Fisheries Management Objectives". The symposium was held August 22-23, 2017 in Tampa, Florida. There were 1,600 attendees. There were 1,000 oral presentations given, 74 symposia, and 17 contributed paper sessions. The National Artificial Reef Workshop held in June 2016 in Alexandria, Virginia had 80 participants, and the results from the workshop helped guide the foundation of the 2017 AFS symposium. The presentations can be viewed online at: flseagrant.org/artificialreefs

Overview of Alabama's Large Ship Project Including RFP Process

Newton reported that in 2017, they had a budget of \$1 million to convert a vessel into an artificial reef. Taken into account would be: the volume of the vessel, and how interesting the vessel would be to the diving community. Proposals were received for three vessels. The vessel selected was the New Venture, a well-built 250-foot oceanographic surveying ship, which will be deployed in 2018 approximately 22 nautical miles south of Orange Beach in about 125 feet of water. The ship is in the process of being cleaned and prepared for deployment. The contractor, Cahaba Disaster Recovery, had some issues with the engineering company on models for sinking the ship, so some bulkheads were added within the interior of the ship in order to direct water to keep it stable and upright as the ship sinks.

A discussion by the panel members followed on other review criteria that could be included into future RFPs, such as ship metal thickness, quality of ship construction, and costs. It is challenging to do comparisons on one proposed ship to another, due to construction differences of each vessel.

Update on Florida's Oriskany PCB Reef Fish Monitoring Project

Mille gave a PowerPoint presentation entitled "PCB Analysis of Reef Fish Associated with the Sunken Ex-Oriskany Aircraft Carrier, an Artificial Reef in the Northeastern Gulf of Mexico off Pensacola, FL". The USS Oriskany was deployed as an artificial reef 23 nm of Pensacola Pass on May 17, 2006. There are human health reasons for monitoring PCBs on the Oriskany Reef. PCBs are persistent organic pollutants that are capable of bio-accumulating, and are a probable human

carcinogen. They have been banned in the U.S. since 1979. There is potential exposure to recreational fishers via fish caught. If the PCB value of 20 ppb is not exceeded in 15 or more legal-size recreationally targeted fish of the same species, then no additional corrective action will be taken.

It is estimated that there were approximately 723 pounds of solid PCBs on board the ship at the time of sinking. A total of 97.6% were scattered in varying concentrations in remaining cable insulation. The remaining PCBs were in paint, remaining bulkhead insulation, rubber gaskets, and vent gaskets.

Prior to sinking the ship, PCB sampling was done in the area. This was to establish a PCB baseline for selected fish and invertebrates. The PCB content of offshore sediments and water column was below detection limits. All sampled reef fish had total PCB of 20 ppb or less. One four year old gag grouper had 22.6 ppb. PCB concentrations in red snapper from artificial reefs near deployment site averaged a Mean of 3.0 ppb, wet weight.

Post-sink Tier 1 monitoring was done by sampling 30 recreationally-targeted, legal-size grouper and snapper in the spring and fall for two years – then annually sample them. Skin-on fillets would be analyzed for all 209 PCB congeners. A minimum of 15 specimens of each of two species were collected during each sample round to compute the average PCB value for each species. If the Mean PCB for a given species exceeds the EPA screening level of 20 ppb, the EPA would be consulted for Tier 2 monitoring.

In the first two years, PCB levels exceeded the EPA threshold. After 3.5 years, red snapper levels were below the EPA threshold, but were elevated in years 9 and 10 samples. No vermilion snapper samples exceeded the EPA threshold. Red snapper, scamp, bank seabass, red porgy, and whitebone porgy had the highest PCB levels. There was no correlation between PCB levels and fish length and weight. On June 27, 2017 the DOH issued consumption ‘guidelines’ of two meals per week of bank seabass, and one meal per week of scamp grouper. Tier 1 sampling continues, and the next sampling event will be in April 2018.

Status of Historical Resource Reviews for New Artificial Reef Permits

Mille stated that in Florida, they have some permitted areas off Panama City that are being delayed due to historical resources, and the requirement that magnetometer surveys be done at the sites. Last week they were informed by Bay County that they had purchased a magnetometer, which is part of FWCC’s grant funding. At the end of the grant, FWCC will keep the magnetometer in-house. This can be used in tandem with their side-scan sonar to help keep costs down. An archaeologist would still be hired to do the analysis. They are hoping to complete the magnetometer surveys soon.

Newton stated that for their artificial reefs, magnetometer and side scan sonar are operated by an ACOE marine archaeologist, who also processes and writes the report.

Shively said that in Texas, an archeological survey is required in state waters. At one of their reef sites is a liberty ship reefed in 1976. They have had the permit since the 1990s, but to expand it and use NRDA funds, the site had to be surveyed, since it was discovered that they did not have an archeological permit for the site. It was required that a buffer of 50 meters had to be placed around the ship. They now do archeological surveys on a routine basis for reef sites.

Murray stated that they finally got their reef permit last year for offshore sites. They have not had problems with reefing. For a new reef site they recently created, ACOE only requested that they survey the site, and DNR submitted screen shots from their side-scan and GPS coordinates, with no issues.

Update on BP/NRDA/NFWF Artificial Reef-Associated Projects

Texas

Shively reported that in May 2017, reefing was completed for a \$5 million NRDA-funded project. At the Freeport nearshore reef, 800 reef pyramids were deployed, and 1,600 reef pyramids were deployed at the Matagorda nearshore reef. At the Matagorda reef site, several pyramids across the area of the deployment area appear to have been disturbed. Several areas show reef pyramids in a “pile”. There are also drag marks running in a general northeast-southwest direction, which suggests that multiple large double-rigged gulf shrimpers entered the reef area and drag multiple reef pyramids.

The *Kraken* (NRDA Project HI-A-424) was deployed on January 20, 2017. Controlled flooding without explosives was used, and 2,200 tons of concrete was poured into the hold to facilitate landing the ship in an upright position. The ship took over an hour to sink, and landed in an upright position on the ocean bottom in 141 feet of water, with zero degrees list. The cost of the project was \$3.9 million.

In the March/April 2018 edition of the *Texas Journey*, the magazine for AAA members, there was an article about diving Texas artificial reefs.

Louisiana

McDonough reported that their artificial reef funding is approximately \$8 million. If they partner for future reef sites, they will be larger than any that have previously been done. Ashley Ferguson reported that they will soon have the final draft of the restoration plan.

Mississippi

Sanders reported that their project was completed June 30, 2013. The project was \$2.6 million. They deployed 28,000 cubic yards of limestone on 47 of 67 nearshore reefs. Sites around piers received approximately 300 cubic yards of material. Low-profile wade fishing reefs received approximately 600 cubic yards.

AL

Newton reported that they had \$11.8 million to spend for 2016-2018. They have been working on projects for estuaries, near-shore, and off-shore. Reef zones are being expanded, as well.

Florida

Mille reported on their 2017 deployments. There were 105 patch reefs constructed statewide – 11 in the Atlantic, and 94 in the Gulf. As of January 2018, there are 3,343 patch reefs.

Florida NRDA is involved in an \$11.4 million artificial reef project of five NW Florida counties. There are multiple modular designs for snorkeling and recreational fishing. Construction began in September 2016. As of November 2017, 121 patch reefs with 1,167 total modules have been deployed.

In Okaloosa County, 704 tons of concrete was deployed as two patch reefs. In Charlotte and Sarasota Counties, 100 modules were deployed, and 226 tons of limestone. In Manatee County, a large match was received from the County to initiate new habitat to mimic nearby low relief ledges. Despite permitting challenges, 1,400 tons of limestone boulders were deployed. In Lee County, 1,000 tons of secondary-use concrete was deployed as two patch reefs. The last reef there was deployed in 2012. In St. Lucie County, the "Kerry Dillon Memorial Reef" was deployed in summer 2017 at a depth of 57 feet. The Dixie Barge was also deployed, at a depth of 171 feet. The "Okinawa" Tugboat was deployed off Pompano Beach at a depth of 70 feet. There is a life-size "Dive Bar", mermaid, and eel. In Palm Beach County, the largest secondary-use deployment in 2017 was done, with 16,250 tons of Flagler Bridge material. Artform reefs were deployed in West Palm Beach (lighthouse replica), Deerfield Beach (Barefoot Mailman Reef), and in Ft. Lauderdale (Okinawa Reef).

Upcoming reef projects include deploying a 90-foot tugboat and a 150-foot cargo vessel in Volusia County. In Palm Beach County, the USS Clamagore (SS-343), a 311-foot submarine, will be deployed at a depth of 90 feet. The USS Clamagore Artificial Reef Project is a fundraising campaign.

On January 9-11, 2018, Florida Coastal Mapping Program (FCMP) will host a workshop in St. Petersburg, Florida. This will be an interagency strategic regional mapping effort.

On April 18, 2018, the North Central Florida Artificial Reef Workshop will be held in Cedar Key, Florida.

Discussion about State Protocols For Scuba Diving

Murray explained to the panel members that their old Director, who recently retired, was a scuba diver, but their new Director is not, so their dive committee questioned whether or not they should re-evaluate their diving protocols, given that their new Director is not a scuba diver. They want to find out what other states are doing, and to evaluate their own dive program to see if they should have all of their divers diving to AAUS (American Academy of Underwater Sciences) standards. Their divers range from Open Water to Instructors.

Murray said that they only have state employees as divers, and no volunteer divers. They do have a guest diver program, but a letter must be written, approved by the Director and Commissioner, stating why the person is diving, what their skill is, if they have been medically checked, and that there is no liability on the state.

Peter stated that at BSEE, they belong to AAUS. It is burdensome to have such a rigorous dive program, but it covers yourself and the state if there is a diving accident. For membership, the AAUS standards must be adhered to by the agency. Divers must have yearly physicals and swim tests. Every dive must be covered under an approved dive plan.

Shively stated that they went on the AAUS website and used the AAUS manual template to create their own manual template. TPWD volunteer divers must be AAUS certified. The AAUS holds an annual conference, and new technology is discussed.

Mille stated that the AAUS Membership fee for an agency is \$500.00 yearly. There is an application that must be submitted, and then approved, along with dive plans. Members have access to the AAUS website, where divers log their dives, and certifications can be tracked.

Rousseau stated that in MA, they are not AAUS certified, but they follow the same standards. They have a Diver Control Board, a Diver Safety Officer, and a dive manual that all of their divers are required to follow, including logging all dives, and getting medical examinations.

Using Aerial Flight Data to Estimate Economic Impacts of Delaware's Reef's

Tinsman gave a PowerPoint presentation entitled "Economic Value of Delaware's Artificial Reef Sites, Based on Angler Trip Expenditures". Angler trips are calculated by seventy annual randomized flights that count head boat and private/charter vessels. MRIP data is used to separate private (75%) and charter (25%), and number of anglers per mode. Lowell (2013) is used for average trip expenses, and Consumer Price Index is used for year-to-year fluctuations. Scott Steinback (NMFS) developed the methodology as part of the SMZ request to MAFMC. A Cessna 172 airplane is used, and trip expenses include gas, food, bait, motel, licenses, charter fees, etc.

In 2016, the estimated angler trip annual expenditures for private and for-hire trips combined for all reef sites totaled \$7,812,374.63. In 1997, annual angler trips totaled 10,409 for head boats, and 20,761 for private/charter boats. In 2004, annual angler trips totaled 30,011 for head boats, and 25,185 for private/charter boats. The annual total fishing effort by reef site (vessel modes combined) totaled 31,170 in 1997. In 2004, the total was 55,195. In 1997, the residency of Delaware saltwater fishing participants was 38.7% resident and 61.3% non-resident. In 2004, it was 32.5% resident and 67.5% non-resident.

Overview of North Carolina's 3D Mapping Program & Artificial Reef Guide

Jordan Byrum gave a PowerPoint presentation entitled "North Carolina Artificial Reefs – Reef Mapping and Public Dissemination". North Carolina artificial reefs were originally sited using loran, but transitioned to GPS once it became more accurate. The 2016 reef guide had each reef mapped using sidescan sonar. The reef materials were identified, and deployment records were used to corroborate the reefs. There was also a digital interactive guide.

Waypoint and trail downloads will be coming soon. Information can be downloaded onto a card and loaded onto a GPS unit. An overlay of material layers or centroid points will be provided. Regions and reefs can be selected.

Also coming soon will be a mobile reef guide that can be used on a cell phone or tablet. The guide will use real-time GPS positions, and provide overlays of material layers. Reef maps can be saved for offline use.

Schneider stated that they are considering incorporating reef balls into the construction of a fishing pier that they will be constructing in the future, and asked for feedback on how far away from the fishing pier they should site the field of reef balls. They want to balance the ability for people to enhance their fishing experience without losing their gear due to snagging it. They are considering placing some of the balls under the pier so that fishing lines will not get snagged on it, which is a problem with nearshore reefs. **Mille** said that in Florida, they have local organizations that schedule cleanups of monofilament lines from the reefs, and it can take several hours to remove all the lines, hooks, and lead. Several members suggested placing the balls far enough away from the pier so fishing lines could not get snagged.

Other Business/Public Comment

George Frankel of Eternal Reefs spoke on a reef project they are working on. The reef will be a memorial reef honoring all 66 of the American submarines and their crews that never returned from war. The reef site will be named the "On Eternal Patrol" Memorial Reef.

Since 1900, the U.S. has lost 66 submarines, and over 4,000 officers and crew who remain on eternal patrol. Many of these submarines and crews have never been formally recognized and honored for their service and sacrifice. The On Eternal Patrol Memorial Reef is planned and designed to honor these lost boats and the men who served on them by deploying 66 reef balls, and one reef ball representing the crews and boats lost in non-sinking accidents. This is the first-ever underwater memorial honoring these men and their boats in the environment where they rest. The 67 Eternal Reefs in the On Eternal Patrol project will contain no cremated remains, only a bronze plaque on each, recognizing the lost veterans and their boats. The On Eternal Patrol Memorial Reef will be dedicated in Sarasota, Fla. on Memorial Day, May 28, 2018. Formal Military Honors for the lost officers and crews will be presented on May 27, 2018. A complete list of the 66 boats On Eternal Patrol and the boats lost in non-sinking events can be found at <http://www.OnEternalPatrol.com>.

There being no further business to discuss, **Mille** recessed the meeting at 4:30 p.m.

Thursday, March 1, 2018

Chairman **Mille** called the meeting to order at 9:00 a.m. The Chairman again provided the opportunity for public comment. No comments were received.

Mille gave a PowerPoint Presentation on the *USS Clamagore*, a 320-foot decommissioned WWII submarine that will be sunk as an artificial reef off Juno Beach in Palm Beach County at a depth of 90 feet. A land-based museum will also be built. The sub is currently located in Charleston, South Carolina. Joe Weatherby, Senior Project Manager for Artificial Reefs International – USS Clamagore, and clothing brand Salt Life are working together on the project. The ship is being cleaned of hazardous materials in order to be environmentally pristine before being deployed. The project will begin in early 2018. Salt Life has created limited-edition t-shirts for those who wish to support the extensive project. More information can be found at ClamagoreReef.com.

Guidelines for Marine Artificial Reef Materials Revision

Ballard suggested that the Concrete (2.1) section should be left as a separate chapter. The Designed Structures (2.7) section also needs updating. **Ballard** wanted feedback from the panel members on whether ferro-cement, dry docks, and aircraft should be moved to the new chapter, Historically Used Materials That Are No Longer Considered for Reef Deployment. Tires are no longer considered suitable for artificial reefs. It was decided instead that ferro-cement and aircraft would be moved to the Miscellaneous chapter, along with fly ash. **Ballard** said that there are four chapters that need to be addressed in the new version: Steel Hulled Vessels, Concrete, Natural Materials, and Designed Structures.

Ballard suggested that the layout in the new version needs to be more visual, with color, graphs, tables, photographs, etc. instead of just plain text. Also, to add more photos of the reef materials covered in each chapter of the document. **Ballard** stated that there is very little on the biological

side, so he suggested that if anyone has any studies that have been done on reefs, with numbers of recruitment rates, etc. they could be added as examples. He also suggested having more scientific information for Monitoring to look at the biological impacts. Also suggested was to add a short summary of each state's monitoring program.

It was suggested to add in the Introduction section that it is recommended that a follow-up monitoring plan be implemented to ensure the deployed reef landed in the designated spot, that there was no drift of the materials, etc.

Tinsman stated that he had a problem with tires being listed under the Historically Used Materials That Are No Longer Considered for Reef Deployment section. He deployed approximately 9,000 tons of large off-road ballasted tires with 3,000 lbs. of concrete in them years ago, and they have never drifted. Large quantities of flounder are abundant around the tires. However, there have been other materials of opportunity that were deployed that do drift. **Ballard** suggested that tires could be moved to the Miscellaneous section, and **Tinsman** can add a paragraph explaining how he uses large, heavy equipment tires, and how they are stabilized.

Shively made a Motion to change the wording of Historically Used Materials That Are No Longer Considered for Reef Deployment to Historically Used Materials That Are Rarely Used for Reef Deployment, and to also add an introductory paragraph explaining that the materials were used by programs in the past, but are not readily used currently. The Motion was seconded and passed.

Ballard said that he is hopeful that the revisions will be completed by the end of the year. He stressed that the revised version should not include anything that will potentially hinder a state's reefing program, since some regulatory agencies are referencing the document as a regulatory document in their artificial reef permits, even though it is not regulatory in nature.

State/Federal Artificial Reef Program Updates

ASMFC

Havel reported that she met with the Atlantic Commission representatives, and they suggested that each state's monitoring information should be compiled into one document that can be shared. By next year, monitoring gaps in best management practices could be identified. **Havel** will be working on compiling the monitoring information.

Similarly, two years ago, the Habitat Committee Policy Board asked that each state's climate change efforts (i.e. trying to have caps on emissions by a certain year, etc.). be identified and compiled. This was done in the first year. In the second year, gaps in efforts made by the states for climate control were identified, and recommendations were made. The Policy Board approved the document in March 2018.

BSEE

Peter reported that overall, the number of platforms is diminishing. There were only two installations last year. They are down to approximately 2,000 platforms in the Gulf. Decommission applications have also dropped. Last year, there were only 100 applications. There are 54 platform removal applications for reefing that have been approved. They are currently

working on 20 other de-commissioning projects for Rigs-to-Reef, which have not been approved by BSEE yet.

At the last meeting, **Peter** stated that there might be a policy change with where well conductors are cut. There has not been an official policy change on the partial removal, but there has been a procedural change. The districts are authorized to allow the operator to cut them 15 feet from below the mud line by standard regulations, or 15 feet above the mud line. If the state programs and operators want to cut those conductors at the height of the jacket where it will be cut, or somewhere between 15 feet above the mud line, the operator must make an official request to BSEE, and explain why they want to leave the conductors higher in the water column within the structure, which must then be approved by the Regional Director.

GA

Murray reported that they are continuing doing deployments. For FY2017, they were only able to do one reef deployment, due to permit issues. Their permit was reauthorized on April 11, 2017 for 30 offshore reefs. In summer 2017, seven reef sites were visited, and conducted 54 dives.

In August 2017, a new beach offshore reef site (BSF) was created with \$30,000 received from the Savannah Sportfishing Club.

Inshore reefs are continuing to be deployed. Wooden marker pilings are also being replaced with concrete ones, which is costly and time-consuming.

There is a new fishing license regulation fee change, which is an additional \$100,000 for DNR. There is a new Georgia vehicle tag available for purchase, showing a red drum swimming over an oyster reef, which generates \$19-20 each for DNR for habitat enhancement.

NC

Peters reported that the NC DMR reef programs have spent a considerable amount of time in preparation for increased enhancements and development in the coming years. The Program completed several construction projects in 2017, and has several more slated for 2018, pending permits. In 2017, a 3-year inshore reef project, Swan Island Oyster Sanctuary, was started. In the first year of development, 15 acres of habitat was built using 30,000 tons of marine limestone marl. Year two will be constructed using approximately 25,000 tons of granite rip rap during summer 2018. Two offshore reef projects were completed in 2017. Nine eternal reef balls were deployed at AR-360.

The NC DMF Shellfish Rehabilitation Program annually builds low-profile estuarine reefs. The Program's goal is to provide a suitable substrate in areas that will support oyster recruitment, survival, and growth. Sites are selected by biologists on the basis of salinity, bottom type, tidal flow, exposure to wave action, historical oyster data, prevailing winds and location of other natural oyster rocks, along with input from public interests.

Upon receipt of a permit, two small experimental reefs will be constructed in Bogue Sound. Another reef under permit review is slated to receive a 100-foot class tugboat offshore of Atlantic Beach. Planning for the demolition of the Herbert C. Bonner Bridge continued in 2017.

Four offshore reefs are scheduled to receive up to a total of 100,000 tons of concrete from this bridge. Demolition of the bridge and construction of the reef are both scheduled to begin in early 2019.

In 2017, estuarine fish and oyster sampling was conducted at 18 reef sites. This served as year two of a pilot study assessing reef fish diversity and abundance, and oyster population demographics.

The Artificial Reef Program continues to visit fishing and diving clubs throughout North Carolina to deliver presentations highlighting the reef construction process, new reef developments, and how to find information about artificial reefs.

The interactive reef guide has been updated, and reef information has been made more readily accessible to anglers and divers. GPX files of material centroids and outlines have been created, and can be downloaded from the Artificial Reef website. An interactive reef guide mobile application is now being developed.

At a saltwater and bass fishing expo in January 2018, staff distributed approximately 500 reef guides, and made contact with several thousand attendees. A short demonstration was shown at the booth, which detailed recent and future reef developments, and upcoming plans for the mobile reef guide and GPX downloads.

NC DMF has been working to reconcile reef boundaries. Tracking the location of reef material deployments has transitioned from loran to GPS, and has resulted in inaccurate published locations of materials. Side-scan sonar has given the reef program accurate locations which can be used to define reef boundaries and update navigational charts.

The Artificial Reef Program worked to remove class 4 and 5 buoys present on most estuarine reefs, and replace them with a smaller spar-style buoy. This was completed in April 2017.

MD

Malpezzi reported that in the last year, he has done mid-deployments from mainly two sources of materials, and continues to use donated secondary-use material. There are several reef ball projects, and CCA chapters have started a program with vocational masonry programs at local public schools to build reef balls. During the school year, approximately 7-10 reef balls are created by the students per week. The reef balls are stored by DNR at a facility until being placed on an artificial reef site in Chesapeake Bay. This year, 144 reef balls have been deployed. Several hundred reef balls will be deployed in the near future.

DNR will be getting a consumer-grade side-scan system, and he plans on conducting shallow water monitoring trips this summer. He will report on this at the next meeting.

A bridge that will be demolished later this year will provide approximately 1,000 tons of material for deployment at an artificial reef site at the mouth of the Potomac River.

DE

Tinsman reported that in 2017, DFW bought the MV Twin Capes ferry, a 320-foot vessel that was once one of the Cape May-Lewes ferry's fleet. It will be sunk in May as an artificial reef located at a point 26 miles in the ocean from Cape May, Indian River, DE, and Ocean City, MD.

A bid is being put out for a comprehensive reef contractor to do DFW's reefing to eliminate having to bid each vessel project individually.

The ACOE 10-year core permit is up for renewal. It went through public notice, there were no comments, and it will be renewed for the next 10 years. This includes for all sites.

NJ

Clarke reported that in 2017, there were three vessel deployments, 151 dredge rock deployments, and one precast concrete deployment. The *Zuni Tamaroa*, a 210 ft. long ship deployed as an artificial reef in Del Jersey Land, participated in the attack on Iowa Jima when it was a navy ship, and was the vessel in "The Perfect Storm" movie that saved the USCG Helicopter Rescue Team.

In February 2018, NMFS published a proposed rule to designate 13 New Jersey artificial reef sites as special management zones. This action would establish year-round special management zones for all 13 New Jersey artificial reefs, and allow only handline, rod and reel, or spear fishing (including the taking of fish by hand) in these areas.

RI

Schneider reported that they are working on some reef ball projects. They are also revising and updating their Artificial Reef Plan.

They do a lot of oyster restoration work, which they do not consider as part of their artificial reef program. It falls under one of two other programs – Shellfish Restoration Program, or Fish Habitat Enhancement Program.

MA

Rousseau reported that they have two open reef permit sites in Nantucket Sound. There were no deployments this year. They do not have anywhere to store donated reef materials, so they are attempting to find locations where the materials can be stored for future deployments. They are also looking at direct deployments, where the materials would be loaded onto barges and taken directly to reef sites for deployment.

They are working on a NFWF project on the beneficial re-use of Boston Harbor dredge rock material to demonstrate how beneficial re-use materials can be incorporated into a living shore line or a habitat enhancement project that involves multiple habitat types.

Last year, acoustic receivers were deployed at all five artificial reef sites. The receivers will detect any fish that were tagged for projects, and identify what species of fish are utilizing the reefs, or just swimming by. Also, the seasonality of fish occurrence on the reefs.

Last summer, 12,000 acres were surveyed in lower Cape Cod Bay, with the goal of identifying four to five potential new artificial reef sites. Site selection will continue this summer. They are also looking at a sight in New Bedford Harbor that can be used permanently for reef material storage.

LA

McDonough reported that the Artificial Reef Program now has six established nearshore reefs. The Artificial Reef Council approved 12 Nearshore Planning Areas. The Program has permit requests for two reefs within the Ship Shoal Nearshore Planning Area. Several ‘pre-proposals’ have been received from potential conservation partners.

There are 76 established offshore reefs. Nine were deployed in 2017. There are 41 additional structures permitted for deployment, and 32 in the permit process.

The Program now has 29 established inshore reefs. Most recently, two new inshore reef sites were completed – one located in the southwest portion of Lake Pontchartrain, and the other in the southeast portion of Calcasieu Lake. Existing reef sites have been enhanced, and permits have been approved for the enhancement of nine inshore recreational-use reef sites that will be created using NRDA funds.

MS

Sanders reported that the Artificial Reef Bureau (ARB) secured and deployed artificial reef materials throughout the year. In 2017, 663 concrete culverts were stockpiled at the Gulfport staging site for future offshore deployments. In February, 204 tons of material was deployed in the Cat Island Reef Zone, creating four new individual sites. In June and July, 5,600 tons of material was deployed in FH-1, FH-2, and FH-3 artificial reef zones, creating 11 new individual sites. Fish assemblages and physiochemical parameters at selected inshore reef sites were monitored during 2017, and 23 nearshore reefs in the three coastal counties were periodically checked and re-marked to assist small boaters in locating low-profile reefs. Offshore reef sites were visited to check reef sustainability, subsidence rates, and fish community structure.

In April, a collaborative effort with the Gulf Coast Research Lab accomplished the release of approximately 500 tagged juvenile Red Snapper. The tags have a fish identification number and a phone number that anglers can call to report a capture of the released fish.

Throughout 2017, the ARB staff represented MDMR by contributing to multiple outreach events and educational meetings.

The ARB is currently preparing for and working on ongoing projects. In addition, staff will revisit all of the deployment sites created in 2017 to map them with side-scan sonar technology. Pre-existing artificial reef sites will also be mapped to obtain precise coordinates, and monitor for subsidence damage.

AL

Newton reported that in 2017, two new reefs were constructed in Alabama waters of the Mississippi Sound and in Pelican Bay.

Alabama Marine Resources Division continues to develop reef habitats within the nearshore zones offshore of Alabama. A \$1,200,000 project to construct 600 concrete/limestone reef modules within newly permitted reef zones in 30 mi² of Gulf of Mexico water bottoms is underway. A new USACE permit has been issued to construct three 8-acre reefs near the littoral zone of the Gulf of Mexico. The project to construct the three new shallow-water reefs will begin in July 2018.

In the Rigs-to-Reef Program, the jacket of the MP 261 platform is scheduled to be reefed approximately 50 nm south of Dauphin Island later in 2018. The top section will be cut at 110' and placed adjacent to the base.

Offshore reef habitat continues to be enhanced, and there are numerous ongoing projects. The 250' New Venture is near the final stages of preparation, and will be completed in May 2018. Also underway is a project to construct 120 concrete/limestone reef modules that are 25' in vertical relief, and also the conversion of a 102' tugboat into a second shipwreck reef, which will be completed in April 2018. Existing offshore reef sites will be enhanced with the deployment of approximately 300 pieces of large concrete pipe, junction boxes, and culverts.

FL

Mille reported that they had approximately 107 deployments from January 1, 2017-January 30, 2018. There were 11 patch reefs deployed on the Atlantic coast, 94 patch reefs on the Gulf coast (mostly in the Florida panhandle). Statewide, there are 3,300 patch reefs to date.

For the past two years, federal and sportfish funding received has been \$600,000. The \$11.4 million NRDA funding received in 2016 has approximately 50% funds remaining.

TX

Shively gave an update on the Rigs-to-Reef Program. He reported that their first deepwater platforms were reefed in 2017. Locations include Brazos, High Island, Mustang Island, the East Breaks, and the Garden Banks. The current status is 156 petroleum platforms reefed.

No new nearshore reef sites were permitted in 2017. Currently, TPWD is in the process of getting a new 160-acre reef site (Kate's Reef) surveyed offshore of Galveston. All permits needed for reefing should be received in 2018.

In spring 2018, reefing of 250 concrete pyramids interspersed with 250 low-relief concrete plats containing cinder blocks will be done at the Rio Grande Valley Nearshore Reef to compare the impacts of high vs. low-relief structure on juvenile red snapper. Additionally, the volunteer group *Friends of Rio Grande Valley Nearshore Reef* reefed an obsolete tug and shrimp boat, and then placed hundreds of pieces of material at numerous locations in the reef.

In 2017, a new artificial reef site was created nine miles offshore of Freeport at the George Vancouver Nearshore Reef BA-336, through deployment of 800 concrete pyramids at a water depth of 70 feet.

In 2017, a new artificial reef site was created ten miles offshore of Matagorda County at the Matagorda Nearshore Reef BA-439, through deployment of 1,600 concrete pyramids at a water depth of 60 feet.

At the Port O'Connor Nearshore Reef MI-562, 500 concrete pyramids were constructed and reefed in June 2017 in a section of the reef designated "Keeping it Wild Reef". In an area of the reef designated "Shell Oil Reef", 200 pyramids were constructed and reefed in June 2017.

There are currently 11 nearshore reefs, with reef sizes ranging from 31 acres to 1,650 acres.

A Request for Proposals was submitted to the public on December 10, 2015 for a project to acquire, clean, and reef a large vessel offshore Texas as a diving and fishing attraction. Bids closed in March 2016, and the project was awarded to a disaster recovery company from Alabama. The SCM *Fedra*, a 371 foot general cargo carrier/tween deck was located and towed from Trinidad to Brownsville, Texas for remediation and modification. Before the ship was towed, the title needed to be changed, which required a new name for the vessel. The ship was renamed M/V *Kraken*, and was approved for reefing by the U.S. Environmental Protection Agency (EPA) on November 21, 2016. Since the ship was modern, there was no asbestos or PCB materials on board. Cleanup included removal of hydrocarbons, debris and floatables, and ammonium sulfate. The *Kraken* was deployed on January 20, 2017. Controlled flooding without explosives was used, and 2,200 tons of concrete was poured into the hold to facilitate landing the ship in an upright position. The ship took over an hour to sink, and landed in an upright position on the ocean bottom in 141 feet of water, with zero degrees list. The cost of the project was \$3.9 million.

The Biological Monitoring and Research Program has increased its dive locker equipment and maintenance and diver training over the years. During 2017, weather prohibited some of the dive biological monitoring trips. However, 192 dive hours were completed by staff and volunteer scientific divers.

The 4th Annual Texas Artificial Reef Program Consortium was held on January 26-27, 2017. While restricted to the Program's contractors and other interested people, the event grows larger each year. Typically, over 50 contractors, professors, graduate students, and others attend.

Next Meeting/Other Business/Public Comment:

Shively suggested that the State/Federal reports be given on the first day of the meeting instead of on the second day, to give the members more time to give their reports.

The next meeting location will be in Savannah, GA.

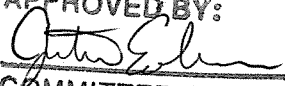
The next meeting date will be in February 2019.

Election of Officers

GSMFC: **Shively** was elected as Chairman.

McDonough was elected as Vice-Chairman.

There being no further business to discuss or public comments, Mille adjourned the meeting at 12:30 p.m.

APPROVED BY:

COMMITTEE CHAIRMAN

FISHERIES INFORMATION NETWORK (FIN)
MINUTES
Tuesday, March 13, 2018
Panama City Beach, FL

Chairman **Justin Esslinger** called the meeting to order at 8:30 a.m. The following members, staff, and others were present:

Members

Chris Denson, AMRD, Gulf Shores, AL
Thomas Sminkey, NOAA/ NMFS, Silver Spring, MD
Steve Brown, FFWCC, St. Petersburg, FL
Beverly Sauls, FFWCC, St. Petersburg, FL
Nicole Beckham, AMRD, Gulf Shores, AL
Nicole Smith, LDWF, Baton Rouge, LA
Nick Farmer (proxy for Jessica Stephen), NOAA/SERO, St. Petersburg, FL
Ken Brennan, NOAA/SEFSC, Beaufort, NC
Dave Gloeckner, NOAA/SEFSC, Miami, FL
Darin Topping (proxy for Faye Grubbs), TPWD, Corpus Christi, TX
Justin Esslinger, TPWD, Rockport, TX
Carly Somerset, MDMR, Biloxi, MS
Darrin Stewart, MDMR, Biloxi, MS

Staff

David Donaldson, GSMFC, Ocean Springs, MS
Gregg Bray, GSMFC, Ocean Springs, MS
Donna Bellais, GSMFC, Ocean Springs, MS
Joe Ferrer, GSMFC, Ocean Springs, MS

Others

Linda Lombardi, NOAA Fisheries, Panama City, FL
Bud Miller, Fish and Game Scales, Destin, FL
Jackie Wilson, NOAA Fisheries, Atlanta, GA
Stephanie Freed, FFWCC, Panama City, FL
Richard Cody, ECS Federal/NOAA Fisheries, Silver Spring, MD
Joe Jewell, MDMR, Biloxi, MS
Gary Fitzhugh, NOAA Fisheries, Panama City, FL
Andrew Petersen, Bluefin Data, Prairieville, LA
Trevor Moncrief, MDMR, Biloxi, MS
Julie Defilippi-Simpson, ACCSP, Arlington, VA

Approval of Agenda

C. Denson moved to approve the agenda as written. **D. Topping** seconded.

Approval of Minutes

The minutes of the Fisheries Information Network (FIN) meeting held on March 14, 2017 in Gulfport, MS were approved as presented.

MRIP Update

FES Presentation

R. Cody gave a presentation on the Marine Recreational Information Program (MRIP) transition to the new Fishing Effort Survey (FES). The FES is a mail survey using USPS records and state-based license and registration data and will replace the Coastal Household Telephone Survey (CHTS). The FES has been benchmarked with the CHTS for three years and provides more accurate estimates because the survey instrument reaches more anglers and has significantly higher response rates. The transition plan was developed in collaboration by NOAA, state agencies, regional fishery management councils and interstate commissions. Currently the FES calibration model has been selected and calibration adjustments to the Access Point Angler Intercept Survey (APAIS) will be finalized in March 2018. Once both calibration methods have been finalized NOAA Fisheries will re-run current and historical estimates and make those available for stock assessment by July 1, 2018.

2019 APAIS Form Proposed Changes

T. Sminkey gave a brief presentation on 3 potential new questions to be added to the APAIS form for 2019. NOAA Fisheries would like to add a gender question and how old the respondent was on their last birthday. These questions are also asked in the FES and NOAA is trying to determine if there are differences in demographics between the two survey respondents. NOAA also added a question on the Atlantic Coast to determine if anglers fished near an artificial reef. **T. Sminkey** also stated by 2019 it might be possible to remove the question asking about how anglers receive their mail. He stated that it is not being used for what it was initially intended for and they will have a few years of data to analyze if needed. The three MRIP states seemed to be in favor of adding the new questions if the mail address question could be removed. **G. Bray** stated he would send out an email after the meeting detailing the proposed questions and get confirmation on their willingness to add them for 2019.

Gulf MRIP Implementation Plan Discussion

G. Bray asked **R. Cody** for an update on current progress with the Implementation Plans received by NOAA Fisheries. **R. Cody** stated that plans have been received from Gulf of Mexico, Atlantic Coast, Caribbean, Atlantic HMS, and Pacific Islands. NOAA is still waiting on plans from the Pacific States and Alaska. NOAA Fisheries is trying to consolidate the specific priorities from multiple plans to develop a national priority list of data needs. Having a priority list that is informed by the regions will help NOAA obtain funding to support the various regional needs. NOAA Fisheries has been working most recently with the Caribbean and Pacific Islands plan as they are in need of an adequate governance structure to properly identify priorities. **G. Bray** asked if the savings from the removal of CHTS would help support funding requests in these plans. **T. Sminkey** stated yes but uncertain how much. **B. Sauls** noted the money should go to the restoration of APAIS sampling first. **G. Bray** stated lack of funding is extremely concerning due

to cutting into base landings programs to collect samples and hopes funding will be available through this process. **G. Bray** asked for an update on the survey certification process. **R. Cody** stated the only survey certified is LA Creel and they are working on the calibration process. Mississippi Tails n Scales is in the review process and is working to implement the recommended enhancements for the validation component. Alabama is a more difficult survey to implement for certification and are working on reviewer recommendations. Florida had a survey certification review workshop and awaiting reviewer recommendations.

Recreational Red Snapper Season

2017 Landings

N. Farmer showed results from preliminary 2017 red snapper landings. NOAA Fisheries is still waiting on high-use season estimates from Texas. The federal for-hire component harvested close to their ACT while the private angler component harvested approximately 100% more than their ACT.

2018 Projected Season

N. Farmer stated projecting the 2018 season is not possible at this point. Each Gulf state submitted an exempted fishing proposal to the Gulf Council and seasons cannot be determined until the Gulf Council rules on each EFP. The goal of each EFP is to allow the states to demonstrate the effectiveness of state management for red snapper and the utility of state data collection programs during the two year pilot studies. Currently, the public comment period on the EFPs ends on April 2nd. Once the Gulf Council rules on the status of each EFP, a federal for-hire season will be determined and if necessary a federal private angler season too.

SEFHIER Presentation

N. Farmer gave a presentation on the SEFHIER program which is aimed at developing an electronic reporting and monitoring system for the federally permitted for-hire vessels in the Gulf of Mexico and South Atlantic.

ACCSP Update

J. Simpson gave a presentation on current issues and work areas at ACCSP. She explained how the data flow into their two databases – SAFIS and Data Warehouse. The Data Warehouse hosts the most complete set of fisheries-dependent data for the Atlantic coast. The query interface has recently been rebuilt and the confidentiality access has been automated based on credentials. SAFIS is a unified reporting system that houses live data collected via the SAFIS apps. SAFIS is used virtually by all partners, supports traceability, allows multiple entry methods, and stores data in standard codes. ACCSP manages MRIP APAIS on the Atlantic coast and supports for-hire logbook reporting. ACCSP is overhauling its data management system for APAIS and is moving towards tablet-based data collection. ACCSP has been selected as the data repository by SEFHIER for the Atlantic and possibly the Gulf with the goal to unify the for-hire repository. Some of ACCSP's tailored services include homogenous unified data feeds for HMS dealer data and unified vessel permits and state individual licenses for lobster trap tag management. Modifications to SAFIS are being developed to include integrated reporting, requiring Trip Management System,

the ability to integrate with Electronic Monitoring (VMS) and have a more flexible database design. **J. Esslinger** asked if TMS would be a national database to integrate regional data. **J. Simpson** stated the idea of TMS is to have federal data available from each of the regions available on a single portal with the Atlantic only at this point.

Status of Biological Sampling and Analysis Activities

G. Bray stated all states are caught up with data collection and entry with a few outstanding fish to be aged. Funding ran out for data collection on March 31, 2017 but some states continue to collect ageing data and are providing that to GulfFIN Data Management System (DMS). Florida's data submission process is running smooth and GulfFIN can now provide Florida data to SEDAR analyst's in a standardized format. Most recently, GulfFIN has provided red grouper data for the upcoming assessment and gray triggerfish data are ready for delivery for the upcoming assessment. **G. Bray** mentioned that NOAA Fisheries SEFSC may be providing some funding to support biological sampling for the next 2 to 3 years. Unfortunately we do not know exactly when and the total amount so it is hard to make exact plans at this time. **G. Bray** also mentioned that he hopes to get started on a project that NOAA FIS funded in 2017 to make several improvements to biological sampling components associated with the DMS. Plans are to develop a new data entry program, make database improvements, institute a record tracking system, and implement new, more stringent quality control methods. GSMFC has been waiting on NOAA Fisheries SEFSC developers and delays in existing work have resulted in delays in getting our work started. **C. Denson** asked when we might start sampling with the proposed new money. **G. Bray** stated that until we know when and how much we are receiving it is tough to say but it is unlikely we would back date the money for January 1, 2018 and pay for samples already collected. **S. Brown** asked if it was possible to revisit the priority species list. **B. Sauls** suggested that we get away from prioritizing species and prioritize segments of the fishery that we want to representatively sample. It would be more efficient to sample all species that come in from a representative trip. **G. Bray** stated that having a meeting to discuss sampling methods would be useful and he will work to make that happen in 2018 if possible.

Next Strategic Planning Meeting Discussion

G. Bray mentioned that GulfFIN received some money from NOAA Fisheries to support another strategic planning session. All of the major tasks identified from the last strategic planning session have been accomplished or are in development. **G. Bray** suggested that a summer 2018 meeting would be beneficial to identify current gaps or priorities for the next 3-4 years. **G. Bray** stated the Hoshin process from the most recent strategic planning session was beneficial for him even though the process was slightly difficult to endure. The committee agreed that the time was right for another planning session and it was suggested to contact the Quality Management professional specialty group within NOAA FIS to gain insight on the best possible method for us to use. **G. Bray** is a member of the NOAA FIS professional management team and will reach out to gather more information and report back to the FIN Committee in the early summer.

Utility of Citizen Science Research

D. Donaldson stated that Dale Diaz from the Gulf Council is interested in developing a citizen science program and is interested determining the desire to develop a similar program to what the South Atlantic has developed. He stated there might be funding available through some of the various restoration funding sources. **Donaldson** wanted to gauge the level of interest amongst the

states before moving forward with anything specific. **Esslinger** asked if a certain amount of state or federal oversight would be necessary with any project. **Donaldson** stated that funding could come through the commission and the states would receive money to support monitoring or data collection activities depending on the project specifics. We would also want to ensure that the project was collecting data that was going to be used in science and management. **Smith** stated Louisiana used to have a tagging program that was citizen science driven and their experience showed that knowing what the project plans to collect and having knowledge that it can be used in science is important. They ended up not being able to use some of their results because of different data collection and reporting problems. **Smith** also stated if their red snapper EFP is passed they plan to test a citizen science reporting application. **Donaldson** agreed that asking anglers to provide data and then not being able to use it actually could be worse for long term relations between managers and constituents. **Sauls** assists with the development of the South Atlantic Citizen Science Council and the process is complicated and has been a struggle. One good development is they have outlined how to identify useful projects and that would contribute to assessments in the region. The hope is that this would turn into an endorsement program for projects that would help address data needs and be implemented in a way that data could be used in science. The principal investigators would have an endorsement that might help as they search for funding to support specific projects. **Donaldson** wondered if a workgroup under GulfFIN might be formed to further address this topic. **Sauls** stated that it takes a full-time employee to completely run the program the South Atlantic is developing and its unlikely it could be tasked out to committee members with other responsibilities. **Bray** wondered if we could build off the endorsement program being developed in the South Atlantic and use it as a template for endorsing projects in the Gulf of Mexico utilizing the Data Management Subcommittee. **Donaldson** said he would discuss further with Diaz and report back to the FIN Committee if further input is needed.

Ongoing Activities

Testing Results and Feedback from GulfFIN New End-User Query Tool

D. Bellais reported the new GulfFIN end user query tool was sent out at the beginning of February to the state partners for testing. Some comments have been received and **D. Bellais** is addressing some necessary edits and changes as she receives them. The committee asked for more time to continue reviewing the query tool. The committee approved turning on the public portion of query tool April 30, 2018 pending any modifications. The confidential portion of the query tool will be further tested and implemented hopefully in early summer 2018.

Progress on Florida and GSMFC FIS Proposals

S. Brown provided some feedback on the progress of Florida's work to develop and test an electronic swipe card system for initiating electronic trip ticket transactions at the point of landing. The design is for swipe card readers to be integrated with a web based application developed by Bluefin Data. Development began in fall 2017 and implementation is scheduled for April 2018. Florida will test the system with 10 commercial dealers and will provide either a desktop version or two different mobile device readers for them to choose from based on preference. **S. Brown** thinks this system will provide more accurate data at the point of initiating the transaction. A large amount of data will be coded to the card which will eliminate the need for data entry and possible errors. This will allow for validation of licenses and checks for species specific endorsements. Also hope to collect more accurate information on the date the landing occurred. **S. Brown** also

hopes this system will increase the number of dealers that report electronically. Florida has purchased all the data card printers and the blank cards. The encoding for the printers was completed and they have successfully tested the cards against all three card readers. Florida's licensing section is working with Bluefin to develop an automated process for exporting license data to Bluefin for incorporation into the VESL web application. The desktop interface is completed but the 2 mobile interfaces are still in development. **S. Brown** also continues to work with Florida on the development of the web application. He plans to start with state-only dealers and the federal dealers will be brought into the pilot project 3-4 months later.

FIN Data Management System (DMS) Issues

Review of list of personnel with access to confidential data

D. Bellais provided a list of personnel with access to the FIN Data Management System (DMS) and requested that members look over it and provide any changes to her. **D. Gloeckner** will provide the SEFSC statement of non-disclosure list to members for any modifications or deletions.

Status of FIN DMS

D. Bellais reported on the status of the FIN DMS and presented public access counts by commercial and recreational business areas for the previous year. An update was given on record counts in the FIN DMS for commercial landings. The Louisiana and Alabama recreational fishing license data are being loaded on a monthly basis and Mississippi and Texas are loaded yearly. NMFS has access to the data for importing into the Angler Registry Database and they continue to publish their findings. Quota Monitoring/HMS data from the Bluefin Trip Ticket program continues to be loaded into the FIN system. An update on the biological sampling data, marine recreational fishery catch estimates and marine recreational fishery effort data was also presented.

Status of Metadata Compilation and Reporting

G. Bray provided a presentation on the progress of metadata compilation. Completed tasks include biological sampling programs, marine angler fishery, marine fishing business and non-market evaluations. Current tasks include social media, economic data, sustainability programs, seafood testing programs, and linking related items. Future tasks include redesigning nodes and migrate data for fisheries economics, create nodes/enter data for social dimension of gulf fisheries, continue updates and maintenance, continue data discovery and continue linking all nodes though related items.

Review and Approval of 2017 FIN Annual Report

FIN Committee members were provided with copies of the draft 2017 FIN Annual Report. This is a summary of what GulfFIN accomplished over the prior year. **D. Bellais** requested that members of the Committee review the Annual Report and provide comments, revisions or corrections to **G. Bray** by June 30, 2018. **N. Smith** moved to accept the **FIN 2017 Annual Report with pending editorial changes**. **T. Sminkey** seconded and the motion passed unanimously.

Subcommittee and Work Group Reports

Otolith Processors Training Workshop

G. Bray stated this continues to be a successful meeting for keeping our state processors trained on standardized ageing methods. They expect 2018 participation to include 8 to 9 different labs. The Otolith Processors Training Workshop was held in May 2017 in Panama City, Florida. After review by the committee **C. Denson moved to accept the report. J. Esslinger seconded and the motion passed unanimously.**

Gulf Geographic Subcommittee

The Gulf of Mexico Geographic Subcommittee/TCC Data Management Subcommittee (DMS) met in October 2017. No significant motions or action items needed to be addressed at the FIN meeting. **J. Esslinger moved to accept the report. C. Denson seconded and the motion passed unanimously.**

Operations Plan

Status of 2018 Activities

The FIN Committee was provided with the status of the activities currently being conducted. The Committee reviewed the various activities and noted that all activities were either completed or being addressed as outlined in the Operations Plan. **G. Bray** noted for task B8 - The Approach for Validating Commercial Conversion Factors at the last FIN meeting there was discussion with the need for preliminary proposals with shrimp being the initial species using the ACCSP East coast methodologies. **N. Smith** stated LA has been tasked to work on oysters. **J. Simpson** stated the east coast methodology report is still draft but will likely be the final report. The Data Management Subcommittee previously identified shrimp as an important species to build an initial proposal for. **G. Bray** suggested the Commercial Technical Workgroup complete a proposal and submit it to NOAA FIS's 2019 RFP. A few states had differing ideas as to what species to focus on. **D. Bellais** will organize the Commercial Technical Workgroup to start developing a pre-proposal for submission to NOAA FIS.

Review/approval of 2019 Operations Plan

The FIN Committee was asked to review the 2019 Operations Plan. The Operations Plan is in preliminary form, pending edits and comments by the committee and will be finalized later this year after the strategic planning session in late summer.

Discussion of FIN Funding Issues

2019 FIN Funding Priorities

Committee members were provided with a list of items for funding consideration in 2019. Items were categorized as ongoing work or potential new work to be considered for available funding. The committee was tasked with identifying high priority jobs that will be forwarded to the S/FFMC for their review at the October 2018 meeting. At that time, they will decide which items will be included in the 2019 FIN Cooperative Agreement. All items listed as high priority will require budgets and statements of work to be delivered to **G. Bray** by August 1, 2018. The committee discussed adding just the ongoing work as high priority jobs. **B. Sauls** stated that

funding is running out for their at-sea work in 2018 and these data are valuable to stock assessment scientists. She stated they will be looking for funding from other sources but would like GulfFIN to consider it as a possibility for 2019. She also enquired about the possibility of using biological sampling money to help support this work. **G. Bray** stated that once that money arrives and we have more information about total amounts and any limitations, we could determine how best to support all pertinent work. After further discussion **N. Smith made a motion to include all ongoing activities as high priority and move Biological Sampling of FIN Priority Species for Commercial and Recreational Catches along with At-Sea Sampling for Catch and Discards Data from Large Capacity For-Hire Boats as high priority. J. Esslinger seconded and motion passed with no opposition.**

Ongoing

- H - Coordination and Administration of FIN Activities
- H - Collecting, Managing and Disseminating Marine Recreational Fisheries Data
- H - Operation of FIN Data Management System
- H - Trip Ticket Program Operations
- H - Head Boat Port Sampling (potentially funded through NOAA Fisheries SEFSC)


New

- H - Biological Sampling of FIN Priority Species for Commercial and Recreational Catches (potentially funded through NOAA Fisheries SEFSC)
- H - At-Sea Sampling for Catch and Discards Data from Large Capacity For-Hire Boats

New

- L - Gulf Menhaden Port Sampling
- L - Commercial Conversion Factor Development
- L - Recreational Red Snapper Data Collection for Catch and Effort
- L - Collection of Catch and Effort Data via Logbooks for For-Hire Boats
- L - Highly Migratory Species Sampling

There being no further business, the meeting was adjourned at 4:55pm.

APPROVED BY:

COMMITTEE CHAIRMAN

**GMFMC Law Enforcement Technical Committee/ GSMFC Law Enforcement Committee
Joint Meeting Summary
Panama City Beach, Florida
March 13, 2018**

APPROVED BY:

COMMITTEE CHAIRMAN

The meeting was called to order at 8:30 a.m. by LETC Chair Scott Bannon. Two of the agenda items scheduled near the beginning of the meeting (Spiny lobster Amendment 13 revised actions and Coral Amendment 9 new SSC recommendation) were deferred until later in the meeting to allow time for a late-coming Committee member to arrive. The agenda was adopted as revised, and the summary of the October 18, 2017 LETC/LEC meeting was approved as written.

GMFMC LETC Session

Recreational Red Snapper State Management Programs – updated delegation action

Staff noted that, in the amendment for state management of recreational red snapper, under actions pertaining to delegation of management authority, Louisiana and Mississippi have selected **Alternative 2** (delegation) as their preferred alternative. This alternative includes a tentative list of management measures that may be delegated to a state. The LETC was asked if there were any enforcement concerns about the list. Committee members felt that it would be a challenge to enforce area-specific regulations, but once the regulations are established, enforcement agencies could share information to make enforcement more manageable.

LT Mark Zanowicz stated that there is confusion as to whether or not regulations promulgated under the Red Snapper State Management Amendment would be enforced by both federal and state agencies or just state agencies. In other words, will these regulations be classified as state regulations (because they will be developed by the states) or federal regulations (because they are developed under authority delegated by a federal FMP)? It was understood that under the 2-year EFPs regulations be enforced by both, it has not been determined if this will be the case for regulations under the state management. Also, it was unclear whether regulations would be enforced on the water or upon landing the fish. For example, if the waters were closed off of one state but open in an adjacent state, could a vessel from the state that was open fish off of the state where it was closed? Cynthia Fenyk (NOAA/GCES) responded that the NOAA position on enforcement of regional regulations is evolving as the regional management amendment/EFPs move forward. One Committee member from Alabama noted that, under the EFP, transit through state waters with red snapper aboard would not be allowed when the state season is closed.

Review of List of Authorized Fisheries and Gear

Staff reviewed the list of authorized fisheries and gear for the Gulf of Mexico that was published by NMFS in 1999. Some gears on the list are no longer allowed (e.g., pots and traps for reef fish), and the Stone Crab FMP has been withdrawn (although stone crab traps are allowed in federal waters, per extension of Florida's regulations into federal waters). In addition, there may be gears that may be considered for addition. One Committee member suggested adding cast

4

nets or drop nets to the gear allowed for Spanish mackerel. Another Committee member questioned the inclusion of the oyster fishery and gear since that fishery does not occur in the EEZ. The Committee asked staff to check to make sure all gears in the authorized list have been defined in either § 622 or § 600 of the codified regulations.

Joint Spiny Lobster Amendment 13 (revised actions)

Staff reviewed the modified and additional actions and alternatives since the LETC last reviewed the draft amendment. Most of the changes were to allow federal regulations to be more consistent with Florida state regulations.

Action 1 includes an alternative to add the use of bully nets to the federal regulations to be consistent with Florida state regulations. The Committee had no comment beyond checking to make sure the federal and Florida state definitions of a bully net were consistent.

Action 2 includes alternatives to align state and federal spiny lobster commercial trip limits. For Alternative 3, which sets trip limits when diving offshore of specific counties (Broward, Dade, Monroe, Collier, and Lee), Committee members felt that the regulations need to include specific latitudes for the county boundaries.

Action 3 includes an alternative to make federal specifications of degradable panels in spiny lobster traps consistent with the more restrictive Florida state regulations. A Committee member stated that most fishermen are already building their traps based on the Florida specifications in order to have the greatest flexibility on where to fish them.

Action 4 includes an alternative to restrict harvest of spiny lobster within 10 yards of artificial habitat. A linear measurement of 10 yards is currently used by Florida Law Enforcement, but it was noted that enforcement of a 10-yard rule could be difficult to enforce.

Action 5 is primarily administrative and the Committee was not requested to provide comments.

Coral Amendment 9 – New SSC recommendation

Staff reviewed comments and motions made at the January 9-10, 2018 SSC meeting that reviewed draft Coral Amendment 9.

Action 2 proposes setting 3 new HAPC areas in the southeastern Gulf within the 400-600 meter (219-328 fathom) depth range. Each HAPC would be rectangular in shape. The SSC recommended a new alternative to create a single HAPC encompassing all 3 proposed HAPCs. This would create a larger rectangular shaped HAPC. Committee members felt they could enforce either proposal as long as the latitude-longitude coordinates are given.

Action 3 proposes setting 6 new HAPC areas in the northeastern Gulf. Bottom tending gear would be prohibited in these areas, except that in one area, Viosca Knoll 862/906, there would be an exemption for bottom tending gear for fishermen possessing a royal red shrimp endorsement for fishing with royal red shrimp fishing gear. This exemption was proposed because, although

royal red shrimp fishermen do not trawl on the reef itself, the vessel must travel a few miles while retrieving the trawl due to the depth fished. The SSC proposed alternative wording to allow permitted royal red shrimp vessels to transit the area while fishing for royal red shrimp, but with the trawl gear off the bottom. Committee members questioned the enforceability of the SSC proposal because they would have no way of knowing if the gear was on or off the bottom. Committee members instead suggested that it would be more enforceable to say that vessels must be actively retrieving the gear. The purpose of this suggested wording is to ensure that the gear is off the bottom while the vessel is in the proposed HAPC.

Discussion of Possible Team of the Year Award

The Current Officer of the Year award is for an individual officer. Committee members noted that all agencies have enforcement teams of 2 or more people, and a Team of the Year award may be appropriate. In some cases, teams could be multi-agency teams. Committee members were in support of developing a Team of the Year award. It was noted that care would need to be taken for teams that included undercover agents (e.g., names might need to be withheld, and a surrogate might need to accept the award). Colonel Bannon offered to put together some notes on modifying the Officer of the Year award into a Team of the Year award for discussion at the next LETC meeting.

LETC Other Business – Commercial IFQ Reporting

A Committee member discussed situations where a vessel in the commercial red snapper IFQ program underestimates its catch when hailing in while returning to port. In one case, a vessel hailed in with an estimate of 500 pounds of red snapper, but at the dock it unloaded 1,100 pounds. In that instance, an officer was present to observe the unloading, but if no officer is present, are the fish accurately deducted from the red snapper commercial quota? The concern by the Committee is that some commercial red snapper landings could be unreported, or reported and sold as a different species such as vermilion snapper.

Under current regulations, vessels are required to notify NMFS at least three hours in advance of the time of landing to report the time and location of landing, and the estimated red snapper landings in pounds gutted weight, but there is no guidance on how accurate that estimate has to be. All that is required in the landings notification is that there be an estimate of the pounds of red snapper to be landed. One Committee member felt that some fishermen don't take the hail-in requirement seriously, and just provide any number of pounds. Committee members discussed requiring estimates to be within a certain percentage (e.g., within 10%) of the actual landings. Jessica Stephen stated that this suggestion had been previously discussed by the LETC¹, but was rejected because of difficulty in determining an appropriate percentage. For example, requiring an estimate to be within some percentage would be more difficult for a smaller amount of fish

¹ From the summary of the October 2013 LEAP meeting:

Some Committee members reported that, under the IFQ hail-in requirements, they had reports that fishermen were under-reporting their catches. The reason was because it was easier for the dealer to correct an underestimate than to go through the paperwork needed to correct an overestimate. When officers were present to observe the vessel being offloaded, any corrections needed were made, but there was some question whether those corrections to the under-reporting were being made when officers were not present. It was suggested that NMFS have an auditor investigate this.

than a larger amount of fish (e.g., 10% of 100 lbs compared to 10% of 1,000 lbs). Requiring landings estimates to be within a specific poundage was also considered by NMFS, but it was felt that this would be more difficult for newer fishermen to estimate. Instead of using these approaches, NMFS matches every landing notification to a landings transaction (completed by the dealer) so that the landings can be audited. That information is available to enforcement officers through the JEA system, and can be used to look for patterns of abuse. However, a Committee member noted that enforcement officers in the field may not have immediate access to the IFQ system. Dr. Stephen added that NMFS has discussed adding summary settlements to the penalty schedule for mis-estimating landings, but that might need to be a judgement call by the enforcement officer. Also, because of the 3-hour hail-in requirement, some vessels making day trips will both hail-out and hail-in when they are leaving the dock before actually catching any fish.

One Committee member suggested that dealer records could be examined for discrepancies between the estimated weight and the actual weight of landed fish. If all landed fish are being legally sold, then the dealer's purchase records and sales records should be about the same. After further discussion, the Committee passed the following motion.

The LEC/LETC recommends that Gulf Council entertain discussion regarding the accuracy of reporting estimates in the advanced notification of landing in the Red Snapper IFQ Program due to an increased observance of under-reporting.

GSMFC LEC Session

Future of JEA and JEA Funding Discussion

Colonel Bannon (AMRD) reported that the President's budget would eliminate the JEA program which is funded at approximately \$18 million. Dave Donaldson reminded the Committee that, while these cuts have been threatened in the past, they have always been reinstated. The goal of Congress is to get the budget in place earlier this year than in the past. Hopefully there will be no continuing resolution.

Regarding funding, there was no discussion in Washington as to making JEA a line item. Mr. Donaldson stated it is much harder to move money from line items.

Per Colonel Bannon, if the proposed budget cut does remain in 2019, the work will still be done and violations will not be passed up. Even though the JEAs are in question, the agencies still have the CEAs (Cooperative Enforcement Agreements) which still allow for the states to perform federal patrols, just without funding support.

Potential Updating of Two-Year Operations Plan 2019-2020

Steve VanderKooy indicated that the Gulf's Fisheries Enforcement Operations Plan will expire at the end of this year. The LEC will review the plan on behalf of both committees and suggest any additions, edits, or deletions in an effort to update the Operations Plan through 2019 and

2020. The Plan identifies tasks the agencies may pursue to accomplish the goals identified in the four-year strategic plan. Mr. VanderKooy will work to collect the changes and update the document for presentation and approval by both the Council and the Commission later this year.

IJF Program Activity

Cobia Profile – Patrick Carron discussed the profile and stated that he still needs Florida’s section. He stated that the last meeting was held in December and the next meeting is planned for late April on Dauphin Island. The Task Force is moving swiftly in the drafting process and would like to have a final draft in time for the Gulf Cobia SEDAR in 2019.

Officers’ Pocket Guide – Debbie McIntyre explained that the purpose of the Officers’ Pocket Guide is for use by officers in the field. She stated that, due to budget issues in the recent past, the waterproof, spiral-bound version of this publication was discontinued and made available online only. She indicated that, as it turns out, the budget constraints still exist and the Commission is unable to print and distribute waterproof copies. She will email the LEC members later this month to ask for each state/agency’s updates to this publication.

Annual License and Fees – Ms. McIntyre indicated that she will contact LEC members in May to ask for updates to the Annual License and Fees publication. This publication is printed in-house and distributed to the LEC by mail. Ms. McIntyre encouraged any new members of this committee to contact her with questions or for assistance with any of the enforcement publications.

Law Summary (red book) – Ms. McIntyre displayed a copy of the 2017 Law Summary (red book) and explained that this publication is too large to print for distribution but is made available online only. She will contact LEC members for their updates to this document in August. For the benefit of those new on the committee, she explained that this document is a compilation of all five states’ latest saltwater regulations books (commercial and recreational) as PDFs. She urged new committee members to contact her if they have questions.

State Report Highlights

With the exception of Mississippi and Florida, written state reports were submitted prior to the meeting. **On motion by Assistant Commander Reeder, seconded by Major Hebert, the written state reports were accepted as written.**

Other Business

Colonel Bannon will give the LEC/LETC report to the Commission on Thursday. He informed Committee members that this will be his last meeting and he will be replaced soon.

Mr. Atran explained that he will retire in June. He stated that there are a lot of changes going on in the Council.

The meeting adjourned at 2:15 p.m.

LETC Members in Attendance:

Scott Bannon, ADCNR, Chair
Neil “Scott” Pearce, FWC, Vice-chair
Patrick Carron, MDMR
Cynthia Fenyk, NOAA/GCES
Chad Hebert, LDWF
Brandi Reeder, TPWD

Staff:

Steven Atran, GMFMC
Morgan Kilgour, GMFMC (via GoToMeeting)
Steve VanderKooy (GSMFC)
Debbie McIntyre, GSMFC
Dave Donaldson, GSMFC

GMFMC Council Members

Doug Boyd

LEC Members in Attendance:

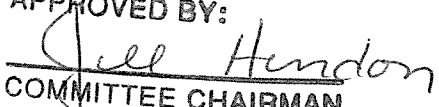
Chad Hebert, Vice-chair
Scott Bannon, ADCNR
Patrick Carron, MDMR
Cynthia Fenyk, NOAA/GCES
Mark Zanowicz, USCG
Brandi L. Reeder, TPWD
Neil “Scott” Pearce, FWC

Others:

Chris Schieble, LDWF
Jessica Stephen, NOAA/SERO (GoToMeeting)
Joseph “Pete” Harwell, NOAA/OLE
Scott Lee, Florida FWC
Troy Williamson

**TCC SEAMAP SUBCOMMITTEE
MINUTES**

**Tuesday, March 13, 2018
Panama City Beach, FL**

APPROVED BY:

COMMITTEE CHAIRMAN

Chairman T. Switzer called the meeting to order at 8:30 a.m. The following members and others were present:

Members

John Mareska, ADCNR/MRD, Gulf Shores, AL
Jill Hendon, USM/GCRL, Ocean Springs, MS
Ted Switzer, FWC/FWRI, St. Petersburg, FL
Brett Falterman, LDWF, Grand Isle, LA
Fernando Martinez, TPWD, Corpus Christi, TX
Christian Jones, NOAA Fisheries, Pascagoula, MS

Others

Eric Hoffmayer, NOAA/NMFS, Pascagoula, MS
Sean Keenan, FWC/FWRI, St. Petersburg, FL
Mark Lingo, TPWD, Austin, TX
Chris Mace, TPWD, Rockport, TX
Skyler Sagarese, NMFS, Miami, FL
Travis Williams, MDMR, Biloxi, MS
Gary Fitzhugh, NOAA/SEFSC, Panama City, FL

Staff

Jeff Rester, *SEAMAP/Habitat Program Coordinator*, GSMFC, Ocean Springs, MS
James Ballard, *Sport Fish Restoration/ANS Coordinator*, GSMFC, Ocean Springs, MS
Ashley Lott, *Staff Assistant*, GSMFC, Ocean Springs, MS

Adoption of Agenda

Under Agenda Item #5, need to add a discussion on a Vertical Line issue J. Mareska found. **J. Mareska moved to adopt the agenda. B. Falterman seconded and the motion passed.**

Approval of Minutes

J. Hendon moved to approve the SEAMAP minutes from the October 17, 2017 meeting as submitted. J. Mareska seconded and the motion passed.

Administrative Report

J. Rester reported that SEAMAP will begin its 37th year of sampling in 2018. The Spring Plankton and Bottom Longline Survey will begin in April. The Summer Shrimp/Groundfish Survey, Reef Fish Survey, Vertical Line Survey, Fall Plankton Survey, and Fall Shrimp/Groundfish Survey will start later this year. We will still be doing Real Time data this summer so please submit data as soon as possible in the correct format. At the October Commission meeting, the State/Federal Fisheries Management Committee (S/FFMC) met and discussed SEAMAP surveys and SEAMAP funding levels. **J. Rester** gave the committee an overview of current SEAMAP surveys and their approximate costs. The S/FFMC sets the sampling for FIN, but SEAMAP is different because we do not have a budget as of yet. **J. Rester** will keep the S/FFMC abreast of SEAMAP activities. A Vertical Line Workgroup meeting was held in

December to discuss the vertical line database and ways to improve the accuracy of submitted and historical data within the database. The Work Group reviewed the Operations Manual and added new data collection fields to make the data more useful for stock assessment purposes. Please make sure to submit old and new data in the new format. At this time, SEAMAP is still unsure of FY2018 funding. Still hoping not to have as much taxes taken out. The Bottom Longline stations have been sent out to everyone. Alabama has received their 2018 vertical line stations. Louisiana and Texas should be receiving their stations in the next few weeks. **J. Rester** did mention to the group that he is seeing a lot less oil and gas platforms than in previous years.

SEAMAP Vertical Line Data and the Red Snapper SEDAR

E. Hoffmayer stated that an index was put together by M. Campbell based on SEAMAP data and at the last meeting this data was discussed along with concerns and issues with the data. Because of these concerns, it was decided not to use the index. M. Campbell sent out a paper regarding this, assuming all have received and read the paper. The biggest concern was that 70% of the drops were saturated and we are not capturing the abundance. Not sure how the committee would like to proceed with this. **E. Hoffmayer** recommended that if we want to continue with this, need to put cameras on the line. **T. Switzer** stated that a better approach would be to use GoPro's to get species counts. **J. Mareska** noted that Alabama has been doing this with ROVs. They have dropped the cameras before and after the vertical line drop. He is giving a presentation to the TCC Committee tomorrow on cameras and fishing effort if you can stay for that. **E. Hoffmayer** feels that if we can put cameras on the lines, maybe we can glean some information that can help get a better understanding as to what is out there. **B. Falterman** has a concern over the time it will take to look at all of the archive data and video. **J. Hendon** noted that she is doing a pilot study in April using the unused plankton funds, and offered to do a trial run with cameras and lights. Can do some of the drops before and some after. **J. Mareska** stated that if we are going to do something like this, we need standards. Plus there are differences in the Eastern and Western Gulf of Mexico. All of these things need to be addressed. He is not ready to make any changes, but something needs to be done. Another meeting needs to be set up to address these issues/concerns. Need to have the Science Center involved. **T. Switzer** feels that ultimately this has to fold into the Reef Fish Survey. **T. Switzer** stated that he will send around a picture of the camera on the hook gear that Florida has been using, noting that in Florida this was used for habitats but can be modified for fish counts. Also look at a central reader to read the video so it will be standard across the board. No change to camera approach for 2018 Vertical Line. **J. Hendon** will get with T. Switzer to get the design for the GoPro, light and custom housing to be used on the pilot study. She will keep the committee updated as to what is happening with the pilot study.

J. Rester noted that a Vertical Line meeting was held in December. At that meeting, the group came up with another table that will handle multiple drops, however, J. Mareska found situations where each backbone had a different soak time because of hang ups on structures. So we are **proposing, on the drop data table, to add a variable called backbone and backbone would be indicated by hook size.** **J. Mareska made the above motion, F. Martinez seconded and the motion passed.**

2018 Shrimp/Groundfish Survey Station Selection Process

J. Rester wanted to go over the station selection process with the committee. **E. Hoffmayer** noted that in years past, the stations would be selected and then they would go back and eliminate stations based on hangs and sponge habitats. We are now trying to buffer on the front end, which will hopefully simplify the process and add buffers each year as get more information. With the goal of protecting the sponge habitats, came up with a 250m buffer for sponges. **J. Mareska** asked how did we get the 250m buffer? **T. Switzer** stated that it is based on distribution of tows with sponge biomass, and anticipation of what

we may find using new technology. It is based on some science and some educated guesses. Another question was how to handle hangs in the Western Gulf of Mexico. It was decided to apply a buffer on hangs gulf wide using 2000 data forward. There will also be a buffer around all coral catches. Will also incorporate a 250m buffer for artificial reefs. **J. Rester** will update the data and start the buffering process. Hopes to have station selection done by the end of the month.

2018 Joint SEAMAP Meeting Agenda Discussion

The Joint meeting is set for Wednesday, July 25, 2018 in St. Petersburg, Florida. The plan is to meet 1pm-5pm on Wednesday and run through noon on Thursday, July 26. At this time, the South Atlantic does not have a coordinator, but feel like they will be fine with whatever we have planned for the meeting. The goal of this Joint Meeting is to be more productive and more interactive than in previous years. Have presentations, tours, hands on activities. Trying to work out an agenda within the next month or so. Please share any topics/ideas you may have for this meeting to make it more interesting and informative. The Gulf SEAMAP meeting will be Wednesday morning, July 25, before the Joint Meeting.

SEAMAP Sampling in Louisiana

B. Falterman gave a presentation on the use of small boats in Louisiana for Bottom Longline sampling. Smaller boats (25ft) can run longlines. They can catch and handle sharks on smaller boats. They are a cost-effective solution to sample sites and are a back-up option to the larger vessels.

Fishery Independent Data Collection Prioritization

T. Switzer gave a presentation on Florida's evaluation and prioritization of offshore survey activities. Preliminary evaluations are underway for many surveys and survey components. The goal is to have this completed by October 2018. The results from this will direct Florida's survey prioritization. However, this all depends on funding so looking to adequately fund high-priority efforts rather than insufficiently fund all.

Other Business

There being no further business, the meeting was adjourned at 12:07p.m.

**S-FFMC MENHADEN ADVISORY COMMITTEE
MINUTES**

**Tuesday, March 13, 2018
Panama City Beach, FL**

APPROVED BY:

Jim Christie 10/16/18
COMMITTEE CHAIRMAN

Chairman Adriance called the meeting to order at 1:00 p.m. with the following in attendance:

Members

Jason Adriance, LDWF, New Orleans, LA
Ray Mroch, NOAA Beaufort Lab, Beaufort, NC
Mark Lingo (proxy for Jerry Mambretti), TPWD, Dickinson, TX
Peter Himchak, Omega Protein, Tuckerton, NJ
Joe Jewel (proxy for Matt Hill), MDMR, Biloxi, MS
Al Vidrine (proxy for Scott Herbert), Daybrook Fisheries, New Orleans, LA
John Mareska, ADCNR/MRD, Gulf Shores, AL
Shane Treadaway (proxy for Borden Wallace), Westbank Fishing, LLC, Empire, LA

Others

Travis Williams, MDMR, Biloxi, MS
Tabitha Lindley, Omega Protein, Inc., Houston, TX
Ben Landry, Omega Protein, Houston, TX
Robert Leaf, USM GCRL, Ocean Springs, MS
Ed Swindell, Marine Process Services LLC, Hammond, LA
Gavin Rhodes-Harrison, Daybrook Fisheries, Inc., New Orleans, LA
Chad Hanson, Pew Charitable Trust, Crawfordville, FL
Jeff Short, JWS Consulting LLC., Juneau, AK
Skyler Sagarese, NOAA Fisheries, Miami, FL
Matthew Nuttall, RSMAS – University of Miami, Miami, FL
David Chagaris, University of Florida, Gainesville, FL
Gary Fitzhugh, NOAA Fisheries, Panama City, FL

Staff

Steve VanderKooy, GSMFC, Program Coordinator, Ocean Springs, MS
Jeff Rester, GSMFC, Program Coordinator, Ocean Springs, MS

Introductions

Chairman Adriance welcomed everyone and **VanderKooy** addressed housekeeping issues. Introductions were made.

Adoption of Agenda

Adriance moved to add the Louisiana Trip Ticket changes and **Himchak** asked to add the NOAA List of Fisheries to other business. **Jewel** moved to approve the adjusted agenda, **Mroch** seconded, and the agenda was approved.

Approval of Minutes

The MAC reviewed the draft minutes from the last annual meeting on October 17, 2017 in Mobile, Alabama. **Landry** moved to accept the minutes, **Mareska** seconded, and the minutes were accepted.

Public Comment

Adriance offered the audience a chance to provide any comment related to the agenda topics or anything else menhaden-related. There were no comments.

Review of 2017 Gulf Menhaden Season and Forecast for 2018

Mroch provided a review of the 2017 Gulf and Atlantic fishing seasons and provided a forecast for 2018. Last season, 460,707 metric tons, were landed Gulf-wide which was a slight decrease (5.2%) from 2016 and the previous 5-yr average which was around 4.5% decrease. **Mroch** noted that 2017 was a wet spring with high river/nutrient flow which contributed to a large Gulf of Mexico Hypoxic Zone. In addition, it was a “hyper-active” hurricane season with 10 hurricanes in succession resulting in the highest accumulated cyclone energy (ACE) season on record. ACE is used by NOAA to explain the amount of time hurricane winds are above a critically damaging threshold for a season. May and June landings were a little low due to bad weather along with August and October. As a result, effort was down 13% from the previous year. He reported that 29 regular steamers operated at three plants with three run boats in 2017. Because the SEDAR for Gulf menhaden is coming this summer, the Beaufort Lab pushed to age all the port samples from our region first to be sure they were ready for the data workshop. The age comps were a little skewed to most of the one year olds east of the Mississippi River. The total population that was fished on was dominated by age-1 fish (61%) and 2s and 3s making up 38% Gulfwide. There were a number of older fish much more toward central and western Louisiana (74%). In 2018, **Mroch** forecasted that with existing capacity and similar effort, the fleet should land around 423,000 mt.

Update on the Atlantic Menhaden Fishery

Mroch also reviewed some of the activities related to fishing on the Atlantic coast and noted that the biggest change was related to the adoption of Amendment 3. In 2012, the ASMFC established a 170,800 mt coastwide TAC for total removals and in 2015 increased the TAC to 187,880 mt. In 2017, the Atlantic TAC was increased again to 200,000 mt and this year, the TAC was again increased to 216,000 mt in the amendment to the FMP. Under the new TAC, Virginia will receive nearly 79% of the TAC which is for reduction at 168,000 mt in 2018.

In 2017, seven vessels fished for the reduction plant at Reedville along with one bait vessel (snapper-rig) from Virginia. Four bait purse boats also landed menhaden on the Atlantic. The Northeast continues to have good menhaden populations so another ‘episodic event’ was declared allowing for more bait to be landed. The catch on the Atlantic was dominated by age-1s and -2s with a few older fish showing in Chesapeake Bay.

Updated Indices of Abundance from Louisiana Fishery-Independent Sampling

Adriance provided an update to the indices of abundance for Gulf menhaden sampled in LA waters. The three IOA are used to explore juvenile and adult fish annually from their fishery-independent sampling program. In general, the two juvenile indices (seined and trawl) have gone down a little the last couple years but do tend to fluctuate with the exception of a high year around 2013. The adult index informed by the gillnet data indicates a relatively flat trend generally the last several years.

Gulf Menhaden Benchmark Assessment SEDAR 63

VanderKooy went through the schedule for the benchmark SEDAR for Gulf menhaden. The Commission will be covering the costs of the Data and Assessment Workshops which will be held the first week of June and August in New Orleans. The SAFMC will be covering the Review Workshop which will also take place in New Orleans the first week of November. The MAC was told that there would be a deadline

for all FID relative to menhaden would have to be submitted to Dr. Schueller by May 1. The Commission is sending out a letter of request for any additional data to all the management and academic entities throughout the region in hopes of identifying additional data streams related to biology and environmental/ecosystem level data beyond what the state agencies have. The draft SEDAR report should be completed just prior to the October Commission meeting and the CIE reviewers should get the document immediately after. The MAC reviewed and discussed the Terms of Reference for all three workshops and after much discussion, moved and approved the TORs by majority.

An Update and Status Report of Project: Examination of Age Composition of *Brevoortia patronus* in Fishery-Independent Sampling.

Dr. Robert Leaf (GCRL) provided a short overview of the latest age composition data study using the Gulf menhaden from the four states in Fishery Independent sampling gill nets. Using both scales and otoliths (whole and sectioned), Dr. Leaf's lab and NOAA Fisheries Beaufort have received fish from the states and then processed them under the current ageing protocols and also through standard otolith techniques from the same fish. The need for collection of information on age composition from the fishery-independent state surveys is critical and was identified by the CEI reviewers in the last benchmark. Only the gill net survey efforts from Louisiana provide information about the length composition of the stock but there were no ages associated with these data. In paired blind readings, both scales and whole otoliths have resulted in 90%+ agreement between GCRL and NOAA which suggests either technique can be discussed. These data will hopefully be ready for inclusion in the coming assessment.

Turner Rebuttal Paper

Dr. Leaf also updated the group on the rebuttal that NOAA and GCRL have provided to the paper published by Eugene Turner late last year. The paper was 'peer reviewed' but utilized highly questionable approaches to the data he used on the menhaden fishery. The appearance was that the entire raw dataset was used to generate the results which he used to explain his results related to effects of climate change on the fishery. He borrowed results from a number of the stock assessments previously completed for Gulf menhaden and made gross generalizations on data that had already been manipulated in the models and were only summary in nature. The rebuttal has been accepted by the journal and will be coming out in the next couple of months.

Identifying Plausible Predators of Menhaden (*Brevoortia* sp.) for Ecosystem Modeling in the US Gulf of Mexico

Dr. Skyler Sagarese and **Matt Nuttall** (Univ of Miami) presented the preliminary results of Gulf-wide ecosystem model exploring the potential predators of menhaden in the region. **Nuttall**, along with several other contributors from NOAA and academia, pulled all the available literature which mentioned Gulf or Atlantic menhaden, unidentified menhaden, or clupeidae in general, provided any historical published bycatch data on the reduction fishery, and evaluated the potential for menhaden to overlap spatially and seasonally with major predator groups. The ultimate goal is to integrate information on ecosystem stressors and predator-prey interactions into the assessment and management process. They hope that this work may provide a framework for inclusion of ecosystem models into fisheries management for both menhaden and gag initially (based on SEDAR timing) and other species in the future. The MAC is reviewing the current predators and predator functional groups and will provide comment back to the PIs on their concerns or any additional species that may have been missed. Members may respond directly to **Dr. Sagarese** or **Nuttall** with comments or through **VanderKoooy** at the Commission.

Marine Stewardship Certification (MSC) of Gulf Menhaden

Landry explained how the reduction industry entered into a pre-assessment for certification through the Marine Stewardship Council (MSC) and the progress that has been made to date. It is believed that certification should be announced sometime this summer for the Gulf and late summer for the Atlantic. This is a dual effort by Omega and Daybrook to gain a sustainable designation for their fishery products which are being assessed by SAI Global (Global Trust) on behalf of the MSC.

Indirect Effects of the Deepwater Horizon Blowout on Gulf Menhaden

Dr. Jeff Short (under contract by Daybrook) presented his work exploring the overall condition of Gulf menhaden following the DWH oil disaster. It is Short's premise that a large year class recruited during the winter just before the DWH disaster and were 'released' from predation with the subsequent death of a large number of bird predators. As a result, he believes a food bottleneck occurred with more menhaden surviving to age-1 than normal resulting in the population effectively starving due to limited food availability. Based on his experience in Alaska following the Exxon Valdez spill, the population may be much larger than the Gulf's carrying capacity which could make them potentially susceptible to a population crash in the future.

Other Business

Adriance reported that the Louisiana Trip Ticket has been updated for the menhaden fishery. The new form has been improved for scanning purposes.

Himchak noted that under the Endangered Species Act's Annual Determination, published in October 2017, the Gulf menhaden purse seine fishery is now listed as a Category II fishery for the next 5 years and must accommodate a NMFS observer, if requested. The Gulf menhaden purse seine fishery had already been listed as a Category II Fishery under the Marine Mammal Protection Act. The NMFS is now under two legal mandates to provide observers for the Gulf menhaden purse seine fishery to document any interactions or takes of marine mammals and/or endangered, threatened, and protected species.

VanderKooy reported that the next Commission meeting will be in October somewhere in Texas and the Benchmark Assessment Report should be made available at that time and be presented to the Commission in advance of the Review Workshop; more details will be coming.

There being no further business, the meeting was adjourned at 5:00pm.

APPROVED BY:

COMMITTEE CHAIRMAN

Gulf States Marine Fisheries Commission
Sea Grant Fisheries Extension Advisory Committee
Panama City, Florida
March 14, 2018
1:30 pm

Members Present

Julie Lively– LA Sea Grant
Bill Balboa – TX Sea Grant (via phone)
Charles Adams -FL Sea Grant
Scott Jackson – FL Sea Grant
Huiping Yang – FL Sea Grant
Dominique Seibert –LA Sea Grant
Beth Walton – MS-AI Sea Grant

Guests

Lively called the meeting to order at 1:35 p.m.

Introduction of committee and guests

Approval of Minutes

Seibert moves to approve minutes, Adams seconds – minutes approved as written.

Gulf Sea Grant Fisheries Extension Updates

Florida

Scott Jackson – FL –Barotrauma remains a priority with the Fisheries Action Group. Gulf Council updated a barotrauma “policy” statement that discusses various barotrauma reduction techniques – the document is still in review. Florida Sea Grant is evaluating marketing and promotion to encourage use of barotrauma reduction tools. The website at <http://catchandrelease.org/> is intended to educate the public on barotrauma issues and the need for public participation to reduce mortality due to barotrauma. **Adams** discusses the issue with staff turnover and the challenges this presents in terms of continuity in effective barotrauma education. Florida Sea Grant is trying to pull individual efforts into a cohesive, programmatic effort that can integrate effectively with FWC efforts. **Seibert** inquires about a charter captain (Dylan Hubbard) in Florida that presented at the Gulf Council meeting about his efforts as a headboat/charter captain to educate the angling public. **Lively** discusses funding issues and other challenges to implementing a Gulf-wide, consistent message to address barotrauma issues. **Jackson** offers the Florida website to use as a regional barotrauma info repository. **Lively**

mentions the use of Florida's You Tube videos at the Fisheries Forward Summit in Baton Rouge. **Adams** discusses additional survey efforts by Dr. Kai Lorenzen to assess and solicit catch-and-release and barotrauma data.

Jackson discusses artificial reef program workshops along the Florida coast. The programs are broadcast live via the Florida Artificial Reef Facebook page. The program archives the programs and makes them available via a dedicated You Tube channel. Sea Grant has a contract with UF to facilitate management of social media efforts. Florida is using many forms of both live and archived social media e.g. Twitter, Facebook, You Tube etc. The National Extension Technology Community (NETC) hosts a conference that provides information on how to host and use live and archived social media resources. The next NETC conference will be held in Blacksburg, Virginia June 18-21.

Florida has a new work action group – the **Estuarine Coastal Health Initiative (ECHI)** which includes living shorelines, invasive species, water watch program and micro-plastics. The Florida water watch program is based on Georgia's water watch program and is currently in the early implementation phases in Florida.

Florida has implemented a Hurricane Irma response plan with Sea Grant assisting with various aspects of recovery e.g. Florida Keys lobster fishery. There are efforts underway to develop proactive measures to mitigate hurricane impacts on fisheries etc. rather than the traditional reactionary post-storm response.

The derelict vessel response now includes an "at risk" vessel turn-in program that facilitates title transfer, cleaning and disposal of vessels at high risk of becoming "derelict".

Adams mentions a new guide certification program that provides a voluntary training curriculum that may help with individual marketing efforts. The **Florida Friendly Fishing Guides** program is being developed in coordination with FWC and will incorporate 12 modules on fish handling, safety etc.

Florida contracted with aerial surveyors to locate crab traps lost in hurricane Irma. The effort will help fishermen locate lost gear and will also prevent ghost fishing and minimize navigation hazards.

Mississippi-Alabama

Beth Walton –MS/AL briefly discussed the Shellfish Initiative and respective state responses to the effort. She believes cooperation among and between Gulf states could streamline the adoption of oyster farming and facilitate improved production levels. Information was collected from biologists, producers, wholesalers and retailers and consumers. **Adams** commented that molluscan shellfish culture seemed to be a win-win situation for the vast majority of coastal stakeholders. The group discussed current marketing efforts and the need for an information clearinghouse that may reduce duplication of effort and reduce expense.

Marcus Dryman – MS/AL has created a new and updated version of the Gulf Coast Fisherman newsletter. The newsletter is available in digital format and is in its second month of circulation/distribution and growing in popularity. Marcus has formatted the new newsletter to address both recreational and commercial fishing interests and issues. He and his staff have been attending boat shows to supplement education and outreach efforts directed at the recreational angling community. CCA also requested Marcus and staff participate in local Kid Fishing Tournaments and provide educational displays at the event. Marcus is also planning a series of free information seminars to provide an overview of his red snapper data collection efforts. The seminars will be held in all Gulf States and will be advertised and coordinated with state resource agencies and Sea Grant staff. A series of 30-second information videos have been developed to supplement educational efforts.

Amanda Jefferson, one of Marcus' graduate students, will be replacing Peter Nguyen as the new Fisheries Extension Associate.

Louisiana

Julie Lively – LA discussed attendance and participation at the last Fisheries Forward Summit held in Kenner, Louisiana. Over 500 pre-registered which is the highest for the event to date. There are plans to convene another conference in collaboration with LDWF in 2020. Displays and presentations included issues in the crab shedding industry, TED updates, black gill in shrimp and black spot in shrimp processing. The group discussed challenges with coordinating and implementing similar events in their respective states, and Lively explained it was a process that began slowly but has grown in popularity. The Summit also provided a forum for researchers to present posters on current studies pertinent to fisheries and environmental issues challenging stakeholders along the Louisiana coast. Academics were directed to format information and data on poster presentations in a manner that would convey intent without confusing laypersons. The group discussed challenges with language barriers in the Vietnamese stakeholder population. The Summit coordinators are trying to include freshwater fisheries into the historically marine fishery oriented efforts.

Louisiana Sea Grant is reviewing methods to hold more effective and efficient stakeholder and task force meetings by refining rules and meeting protocols etc. – including providing a gavel to the chairperson.

Lively reports that shrimp, crab and oyster industry landings are down from historic averages.

Lively is currently funded via an S-K grant to study viral diseases impacting the blue crab shedding industry. **Adams** discussed past efforts in Florida to initiate a blue crab shedding industry that was initially popular but had little follow-through and experienced rapid declines in participation.

The group discussed the use of plate freezers for processing shrimp in Louisiana. Some processors may be thawing shrimp frozen using salt boxes or other techniques and re-freezing with plate freezers and re-branding the product.

Dominique Seibert discussed the results of a panel discussion on Mississippi River sediment diversions in Plaquemines Parish at the Fisheries Forward Summit. The Louisiana Coastal Protection and Restoration Authority (LCPRA) is proposing some very large diversion projects to direct Mississippi River flood flows into the historically sediment starved deltas in an effort to address subsidence of the state's coastline. The LCPRA is expediting permitting for some of the projects which could deliver large sediment loads to local waterways and impact the livelihoods of family-owned fishing industries in the area. The panel's discussion was focused on immediate impacts to stakeholders in the proposed diversion areas. Despite the massive scale of the proposed sediment diversion project, state officials are acknowledging the project will not affect a cure but might delay the combined impacts of subsidence and sea level rise. Consideration is being given to buyout plans for communities located in high subsidence rate areas and residents are being notified of this potentiality. Most of the area near Venice is being targeted for future buyouts and includes relocating a shipping port. Commercial oyster lease owner buy-outs have not been addressed and remain an issue. There remains a lot of uncertainty about implementation and operation of the project which further complicates efforts to educate the public. A report generated from the panel discussion will be provided on the Louisiana Sea Grant website in the near future.

In a related matter, **Seibert** is also working with the Louisiana SAFE (Strategic Adaptions for Future Environments) Program which was initiated after tropical storm Isaac. The program presented 6 options to address resiliency challenges and asked residents to prioritize these options at regional parish meetings. **Seibert** believes the Fishermen's Loan Program, a program created to address loss of commercial fishing income from coastal flooding and resilience mitigation, may receive the priority vote in Plaquemines Parish. Additionally, she is facilitating some community development grant applications to possibly stimulate the growth of microprocessing and value-added seafood processing.

Seibert is also working with restoration efforts in St. Bernard Parish and a black mangrove restoration project. Local high school students collect propagules, grow them at a local greenhouse and then plant them in area marshes. This effort complements other replanting's that include cypress, black rush and marsh grass. A living shoreline project is being constructed in partnership with a local community college to educate and involve rural Louisianans in green infrastructure resilience efforts.

So far there is no solution to the Roseau cane mealy bug issue in Louisiana marshes.

Texas

Bill Balboa – TX discussed Harvey recovery efforts and the Rebuild Texas Commission and impacts to lower coast communities and industries. Oyster industry appears to be the most heavily impacted due to flooding. TPWD is working towards comprehensive management of red snapper both state and federal water.

There are currently efforts to draft oyster legislation to enable the oyster farming industry in Texas. The oyster hatchery should be open and in operation sometime in October 2018. There are currently efforts to permit experimental oyster grow-out plots in Matagorda Bay.

Gary Graham is retiring and Texas Sea Grant has selected his replacement with the announcement coming in the near future. Texas Sea Grant has hired some new coastal planning staff and it appears the face of Texas Sea Grant may be changing.

Rhonda Cummins has been working with the Path to Plate initiative developed by Texas A&M Agrilife Extension.

Scott Jackson discussed the use of a Dropbox account to facilitate sharing of information between the state Sea Grant organizations.

Balboa discussed the Lone Star Coastal Natural Resource Area as a landscape-scale effort to address coastal flooding and resilience issues.

Guest Reports

Invited guests were snowed-in and unable to attend.

Other Business

The Integrated Fisheries and Aquaculture Visioning Meeting will be May 14-17, 2018 in New Orleans. Register via the National Sea Grant website.

Next meeting will be October 17-19th in Texas.

Spring 2019 will be March 17-19th in Louisiana.

Meeting adjourned at 5:15 p.m.

APPROVED BY:

Darin Topping
COMMITTEE CHAIRMAN

**TECHNICAL COORDINATING COMMITTEE
MINUTES**

**Wednesday March 14, 2018
Panama City Beach, FL**

Chairman Darin Topping called the meeting to order at 1:00 p.m. The following members, staff, and others were present:

Members

Harry Blanchet, LDWF, Baton Rouge, LA
Jason Froeba, LDWF, Baton Rouge, LA
Beverly Sauls, FWC/FWRI, St. Petersburg, FL
Dan Ellinor, FWC, Tallahassee, FL
Chris Denson, ADCNR/MRD, Gulf Shores, AL
Glenn Constant, USFWS, Baton Rouge, LA
Travis Williams, MDMR, Biloxi, MS
Joe Jewell, MDMR, Biloxi, MS
John Mareska, ADCNR/MRD, Dauphin Island, AL
Darin Topping, TPWD, Rockport, TX
Christopher Mace, TPWD, Rockport, TX
Dave Gloeckner, NOAA, Miami, FL

Staff

James Ballard, GSMFC, Sport Fish/Aquatic Invasives Coordinator, Ocean Springs, MS
Joe Ferrer, GSMFC, Systems Administrator, Ocean Springs, MS
Ali Wilhelm, GSMFC, Sport Fish/Aquatic Invasives Staff Assistant, Ocean Springs, MS
Jeff Rester, SEAMAP Coordinator, Ocean Springs, MS
Dave Donaldson, GSMFC, Executive Director, Ocean Springs, MS
Steve VanderKooy, GSMFC, IJF Coordinator, Ocean Springs, MS
Gregg Bray, GSMFC, FIN Data Program Manager, Ocean Springs, MS

Others

James Reinhardt, NOAA, Silver Spring, MD
Laurie Rounds, NOAA, Mobile, AL
Matt Nuttall, UM, Miami, FL
Marcus Drymon, MSU, Biloxi, MS
Chris Blankenship, ADCNR, Montgomery, AL
Stephanie Freed, FWC, Panama City, FL
Richard Cody, NOAA, Silver Spring, MD
Skyler Sagarese, NOAA Fisheries, Miami, FL
Gary Fitzhugh, NOAA Fisheries, Panama City, FL
Tom Sminkey, NOAA Fisheries, Silver Spring, MD
Andy Strelcheck, NOAA Fisheries, St. Petersburg, FL
Steve Brown, FWC, Cedar Key, FL
Mark Lingo, TPWD, Austin, TX

Adoption of Agenda

A motion to adopt the agenda was made by Joe Jewell and passed unanimously.

Approval of Minutes

A motion to approve the minutes from the October 18, 2017 meeting as written was made by Joe Jewell and passed with no opposition.

DWH NRDA Restoration Planning Process and Open Ocean Fish Restoration

Laurie Rounds and Jamie Reinhardt provided an overview of the process used for the Deepwater Horizon and Open Ocean – Fish Restoration funding opportunities. Laurie first outlined the natural resource damage assessment that followed the Deepwater Horizon oil spill that laid out the overarching goals to restore the injured or lost resources. These funding opportunities are part of the BP civil settlement that totaled \$20.8 billion, and more specifically the \$8.8 billion designated for restoration of the natural resource damages (NRD) (\$8.1 billion for NRD and up to \$700 million for unknown injuries and adaptive management). She stated that the trustees (one from each of the five Gulf states and four federal agencies), that are overseeing the restoration of these damages, developed a Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement (PDARP) that outlines an ecosystem based approach to restoring the damages as well as the governance structure for the trustees. One of the overarching goals of the PDARP is monitoring and adaptive management through the restoration process so restoration projects can be modified through the process with the best available science. The Plan also lays out the Trustee Implementation Group (TIG) restoration planning cycle which starts with soliciting project ideas from the public. From those ideas project alternatives are identified and the TIG determines how those project alternatives will line up with the goals identified in the PDARP and pulls together a draft restoration plan. After a public comment period and comments are addressed, restoration projects are identified and a final restoration plan is produced and implemented. Through the implementation of the restoration the TIG conducts its monitoring efforts which feeds into the adaptive management process at which time they start the cycle over again by soliciting more project ideas to address the needs they identified through the adaptive management process. Laurie pointed out that a lot of the information about the program can be found on the Trustee Council Website <http://www.gulfspillrestoration.noaa.gov>. Laurie also provided a brief overview of planning that has been completed by the Open Ocean TIG. The TIG has started drafting their first two draft restoration plans. The first will address damages to birds and sturgeon and is expected to be released for public comment in the summer of 2018 and the second will address sea turtles, marine mammals, fish and water column invertebrates, and mesophotic and deep benthic communities and will be released near the end of 2018. Following Laurie's overview, Jamie provided more details on some of the restoration goals the PDARP identified for fish and water column invertebrates. These included restore injured species across the range of coastal and oceanic zones by reducing direct sources of mortality and increase the health of fisheries by providing fishing communities with methodologies and incentives to reduce impacts to fishery resources. Through the Open Ocean TIG's first draft restoration plans they are looking to specifically reduce bycatch and bycatch mortality, fill data gaps and information needs to inform future restoration, and enhance restoration outreach and education for reef fish, highly migratory species (HMS) other than sharks, and coastal migratory pelagic species. Jamie stated that some of the project alternatives they are working into their current draft restoration plans include reducing post-release mortality caused by barotrauma using fish descender devices and outreach and education, improving bycatch reduction devices in Gulf of Mexico shrimp trawl fisheries, improving tools and information to identify and avoid areas of high bycatch, and improving information to reduce bycatch of HMS. Following the presentation, the group had a long discussion about how some of the established long-term fishery dependent and independent monitoring programs could be expanded or modified to serve as a mechanism for assessing the success of the restoration efforts. Laurie and Jamie pointed out that the best way to get these monitoring programs as well as other priority projects the Commission and/or the Gulf states many have incorporated in future restoration plans is to stay engaged through the process and they feel that being engaged in the

Commission's meetings is a good way for them to stay informed about those priorities.

Overview of Methods Used to Determine Red Snapper Abundance Estimates

Marcus Drymon provided a presentation on the methods for estimating absolute abundance of red snapper in the Gulf of Mexico. He pointed out that Congress made funds available in 2017 for this independent estimate of red snapper abundance that is supposed to be completed by the end of 2019. To achieve this goal the multi-disciplinary team of investigators are implementing several different methods including habitat mapping, tagging, direct counts, and depletion methods. They started by breaking the Gulf of Mexico into 4 distinct ecological boundaries based on sediment type, presence of artificial reefs, turbidity, and dissolved oxygen and then stratified those four regions into three different water depths and three different habitat types (artificial reefs, natural reefs, uncharacterized bottom). Marcus then provided an overview of a high dollar tagging proof of concept project (\$250/tag) that was conducted off Alabama in 2016. They tagged a total of 724 fish over a three week period just prior to the opening of the recreational snapper season. This project was repeated for the 2017 snapper season and from these studies they were able to estimate an exploitation rate. A similar tagging study will be used Gulf-wide as part of this overall project. Next Marcus talked about the direct counts component of the project utilizing ROVs (towed camera array) equipped with special equipment that allows the group to measure fish and assess the habitat. Finally, Marcus covered the depletion methodologies they will be implementing in this study. First they will use a change-in-ratio method that calculates how a known, selective removal changes the ratio of the population and an index-removal method (survey-removal-survey method) that looks at how an index of relative abundance changes due to a known removal. **Harry Blanchet** asked for some clarification on the uncharacterized bottom strata and Marcus stated that this strata is going to be the hardest area for the group to assess but they estimate it makes up about 80% of the red snapper habitat. He will be testing a serial depletion method utilizing bottom longline gear to assess the snapper population in this area. **Joe Jewell** asked about their post-release mortality differences between the SeaQualizer released fish and those released with a release cage? Marcus stated that the mortality rate was not significantly different between the two methods, however, the cages took more time to deploy so the total number of fish they were able to tag and release with the cages was reduced. **Beverly Sauls** asked about the return rate of the high dollar tag program and Marcus stated that it was about 10-12%.

Cold Weather Impacts

Harry Blanchet stated that in Louisiana the weather killed a lot of giant salvinia which was a good thing. They also had some minor fish kills (10s of fish). Also seeing some secondary infections in fish which is normal after a cold winter.

Chris Mace pointed out that in Texas they had two cold fronts that pushed temperatures below freezing this past winter. To date, they have had a minimum of 70,000 fish killed by the cold weather which was comprised of less than ten species, most of which were non-recreational species. Recreationally important species made up less than 10% of the total killed. They also had a record number of cold stunned sea turtles, highest number since 1980 (preliminary number 3,642 turtles).

Beverly Sauls reported that Florida saw some fish kills, mostly of their sub-tropical species. There were also some sea turtle and manatee strandings in the northern part of the state.

Joe Jewell stated that Mississippi also had two major cold fronts move through the state. They didn't receive any reports of major fish kills, just a few minor kills comprised of non-recreational species. They also didn't see any notable increases in sea turtle or dolphin strandings over the January – February time frame.

John Mareska reported that Alabama didn't see any abnormal mortalities of their recreationally important species; however, they did see some isolated mortalities of sheepshead and silver perch that got trapped in shallow water. They also didn't see any significant impacts of the cold weather on sea turtles.

Subcommittee Reports

Data Management

Gregg Bray reported that the GulfFIN Committee heard a presentation from Richard Cody on the NOAA Fisheries MRIP transition to the new Fishing Effort Survey (FES). The FES is a mail survey that is in the final year of a 3 year benchmarking period with the old Coastal Household Telephone Survey. The FES provides better data as it reaches more anglers, does better at collecting data from the appropriate anglers and obtains higher response rates than the old telephone survey. MRIP is working with independent consultants to determine the best methods for calibrating estimates of effort and harvest from the new APAIS and FES survey methods and new calibrated estimates should be available for use in stock assessments around July 1st.

Nick Farmer gave a presentation on the 2017 recreational red snapper landings. NOAA is still waiting on 2017 high use period estimates from Texas but the federal for-hire component harvest estimates are just below their ACT while private angler component greatly exceeded their ACT. Nick stated that projecting a 2018 season remains difficult at this point because each state has submitted an exempted fishing permit request to the Gulf Council for the 2018 season. The federal for-hire and private angler red snapper seasons will be determined after final decisions are made on the EFPs.

Nick Farmer also gave an update on the SEFHIER process that is tasked with developing the framework for an electronic logbook reporting system for federally permitted charter vessels. Work is ongoing in 6 major focus areas including data housing, minimum data elements, survey design, compliance and monitoring, outreach and education, and program management and budget. A white paper is being developed that provides direction and necessary funding levels to build and implement this program. Nick stated that the program will be expensive and no funding is currently identified to support this work, so a tentative start date is currently not known.

Finally the GulfFIN committee discussed funding priorities for 2019. The committee recommended that all ongoing activities be included as high priority. Those activities include Coordination and Administration of FIN Activities, Collecting, Managing and Disseminating Marine Recreational Fisheries Data, Operation of FIN Data Management System, Trip Ticket Program Operations, Head Boat Port Sampling (funded through NOAA Fisheries SEFSC), and Biological Sampling for Recreational and Commercial Catches (funded through NOAA Fisheries SEFSC). Florida requested that the committee add At-sea Sampling for Catch and Discards from Large Capacity For-Hire Vessels as a high priority item. The hope is that head boat port sampling and biological sampling will be funded through a secondary funding source provided by NOAA Fisheries freeing up GulfFIN funds to better support ongoing programs. Budgets and statements of work will be compiled and the S/FFMC will make final funding decisions based on available funding at the October GSMFC meeting in Texas.

Chris Denson made a motion to accept the report as presented, and it passed unanimously.

SEAMAP

Jeff Rester reported that SEAMAP will begin its 37th year of sampling in 2018; however, SEAMAP is still unsure of the FY2018 SEAMAP funding level.

At the Subcommittee meeting, the use of Vertical Line Survey data in the upcoming Red Snapper SEDAR was discussed. Vertical Line Survey data will be used in the upcoming stock assessment, but comments from the SEDAR were discussed as to how the survey could collect additional data that would provide more and better information on reef fish in the Gulf of Mexico. The Subcommittee along with NOAA Fisheries personnel are trying to determine how video can be incorporated into the survey design that would provide additional information on fish species that are not as aggressive at biting hooks as Red Snapper. Video capture would provide additional data on habitat and abundance levels of reef fish that are not currently being captured. The Subcommittee would like to pursue funding to host a workshop to discuss video capture options and also funding to test camera options.

The Subcommittee finalized the trawl station selection process. The new process will try to eliminate the capture of sponges and avoid coral without impacting the capture of reef associated fish. This summer will be the first year that the new station selection process will be used.

The SEAMAP Subcommittee meets jointly with the South Atlantic and Caribbean SEAMAP components every year. All three components are working at developing an agenda that will incorporate more topical scientific and fishery independent agenda items that will allow the components to learn from each other to strengthen our fishery independent sampling. The Joint Meeting will be held in St Petersburg, Florida in late July.

Brett Falterman from the Louisiana Department of Wildlife and Fisheries discussed their use of smaller vessels in the Bottom Longline Survey. Using smaller vessels allows LDWF to still collect data, but reduces their costs significantly.

Ted Switzer from the Florida Wildlife Research Institute (FWRI) discussed the prioritization process that FWRI is currently conducting for their fishery independent data collection. FWRI has received NFWF funds that have allowed them to collect additional data and supplement their SEAMAP sampling. FWRI also has other fishery independent surveys that are paid for with other funds. Their NFWF funds will run out this year and cuts will have to be made to their fishery independent data collection which will impact SEAMAP sampling unless additional funds are obtained. The Subcommittee may be facing the same prioritization process and sampling declines if we do not receive additional funds soon.

A motion to accept the report was moved by Joe Jewell, and passed without opposition.

Artificial Reef

James Ballard reported that the Subcommittee held a joint meeting with the Atlantic States Marine Fisheries Commission's Artificial Reef Subcommittee on February 28th and March 1st in New Orleans, Louisiana. At that meeting, Mike Barnette from NMFS provided a presentation on marine turtle considerations in reef module design. He outlined some cases of entrapment within artificial reef which have mostly been resolved by modifications to new reef modules. He pointed out that the larger threat to marine turtles was entanglement in fishing gear (line and nets) and anchor lines associated with reef habitats. Reef programs should take this into consideration when developing new reefs and try to minimize the snags that may lead to fouling by fishing gear and possible marine turtle entanglement.

Craig Newton provided an overview of Alabama's large ship project including the pros and cons of the RFP process they used for this project which was different than the process usually used by states for ship reefs. He pointed out that it was challenging to compare one proposed ship to another because there

construction was so different. The overview was followed by a good discussion on other criteria that could be worked into future RFPs to eliminate some of the review challenges.

The Subcommittees had a long discussion on the revision of their “Guidelines for Marine Artificial Reef Materials” document. It was pointed out that this document is being used by some regulatory agencies as a regulatory document even though it is not regulatory in nature and some states are referencing the document in their artificial reef permits. Because the document is being used in this manner, we need to make sure that the revised version doesn’t include anything that will potentially hinder a state’s reefing program. The group identified the last three chapters that are in need of updating and outlined a plan for getting the revisions completed by the end of the year.

Doug Peter with BSEE reported that we are down to about 2000 oil/gas structures in the Gulf and they are still being removed with very few new ones being added. Doug also stated that over the last year two of the bigger oil companies that control a number of the rigs in the Gulf have declared bankruptcy (Black Elk and Fieldwood) which may complicate some of the rigs-to-reefs programs.

The next joint meeting will be held in Savannah, GA in February, 2018.

The GSMFC’s Subcommittee elected Dale Shively as Chair and Mike McDonough as Vice Chair.

Beverly Sauls made a motion to accept the report as presented, and it passed unanimously.

State/Federal Reports

Joe Jewell made a motion to accept the reports by acclamation into the record, the motion passed without oppositions. To see the full reports that were provided to the TCC, please see the minutes from the Commission Business meeting held on Thursday, March 15, 2018.

There being no further business, the meeting was adjourned at 5:00 p.m.

**COMMISSION BUSINESS MEETING
MINUTES**

**Thursday, March 15, 2018
Panama City Beach, FL**

APPROVED BY:

COMMITTEE CHAIRMAN

Chairman Brett Allain called the meeting to order at 9:00 a.m.

The following Commissioners and/or Proxies were present:

Senator Brett Allain, **Chairman**, Jeanerette, LA
Jason Froeba, LDWF, Baton Rouge, Louisiana (*Proxy for Jack Montoucet*)
John Roussel, Zachary, LA
Troy Williamson, Corpus Christi, TX
Representative Wayne Faircloth, Galveston, TX
Mark Lingo, TPWD, Austin, TX (*Proxy for Carter Smith*)
Joe Spraggins, MSDMR, Biloxi, MS
Read Hendon, USM/GCRL, Ocean Springs, MS (*Proxy for Joe Gill*)
Scott Bannon, ADCNR/MRD, Gulf Shores, AL (*Proxy for Chris Blankenship*)
Dan Ellinor, FWC, Tallahassee, FL (*Proxy for Nick Wiley*)
Representative Jay Trumbull, Tallahassee, FL

Staff

Dave Donaldson, *Executive Director*, Ocean Springs, MS
Nancy Marcellus, *Administrative Officer*, Ocean Springs, MS
Chery Noble, *Administrative Assistant*, Ocean Springs, MS
Steve VanderKoooy, *IJF Program Coordinator*, Ocean Springs, MS
Jeff Rester, *SEAMAP/Habitat Coordinator*, Ocean Springs, MS
Gregg Bray, *FIN Program Manager*, Ocean Springs, MS
Joe Ferrer, *Systems Administrator*, Ocean Springs, MS
James Ballard, *Sport Fish Restoration/Aquatic Invasives Coordinator*, Ocean Springs, MS
Donna Bellais, *ComFIN Programmer*, Ocean Springs, MS
Ali Wilhelm, *Staff Assistant*, Ocean Springs, MS

Others

Glenn Constant, USFWS, Baton Rouge, LA
Joe Jewell, MSDMR, Biloxi, MS
Julie Lively, Louisiana Sea Grant, Baton Rouge, Louisiana
Darin Topping, TPWD, Rockport, TX
Andy Strelcheck, NMFS/SERO, St. Petersburg, FL
Diana Lane, Abt Associates, Boulder, CO
Paul Anninos, Abt Associates, Rockville, MD
Nicolas Alvaredo, NOAA HMS, St. Petersburg, FL
Jennifer Cudney, NOAA HMS, St. Petersburg, FL
Elizabeth Fetherston-Resch, FIO/FLRACEP, St. Petersburg, FL
Julian Lartigue, NOAA RESTORE Science Program, Ocean Springs, MS
Jamie Reinhardt, NOAA DWH Program, Silver Spring, MD
Laurie Rounds, NOAA DWH Program, Gulf Breeze, FL
Cheryl Faircloth, Galveston, TX
Buck Sutter, GCERC, Brooksville, FL

Brief Overview of Commission Voting Procedures

D. Donaldson gave a brief overview of the Commission's voting procedures. He then recognized several employees who had milestone anniversaries with the Commission: Nancy Marcellus, 30+ years, Steve VanderKooy and Jeff Rester, 20 years, and James Ballard 10 years.

Adoption of Agenda

The agenda was adopted as submitted.

Approval of Minutes

J. Roussel moved to approve the October 19, 2017 minutes as submitted. **S. Bannon** seconded the motion and the minutes were approved as submitted.

Public Comments

There was no public comments.

GSMFC Standing Committee Reports

Law Enforcement Committee (LEC)

S. Bannon reported the LEC met Tuesday in conjunction with the Gulf Council's LETC. The beginning of the meeting was mostly Council items. Then they discussed the budget, specifically the JEAs and stated the President's budget allows for the elimination of the JEA program. **D. Donaldson** reminded the Committee that these cuts have been threatened in the past but the JEA program has always been reinstated. **S. Bannon** said the goal is to get the budget in place earlier this year than in the past and hopefully a budget will be passed instead of the continuing resolution. The Committee discussed if the states would still enforce federal violations if the JEA funding was cut or reduced and they concluded they will because there is a cooperative enforcement agreement where the states are allowed to perform federal fisheries enforcement. The states will not ignore federal violations. The Two-Year Operations Plan 2010-2020 will be updated and hopefully approved by the end of the year. He said P. Carron discussed the Cobia Profile and D. McIntyre updated the Committee on the Officers' Pocket Guide, Annual License and Fees and the Law Summary. The State reports were submitted prior to the meeting and were accepted as written. **S. Bannon** stated he will be replaced on the Committee before the next meeting and S. Atran is retiring but he may not be replaced by another Council representative.

The Law Enforcement Committee Report was accepted by the Commission.

Technical Coordinating Committee (TCC)

D. Topping reported G. Constant, USFWS, discussed the importance of developing proposals for future NRDA funding opportunities and better crafting proposals so they match the criteria specified in the final programmatic damage assessment and restoration plan. Jamie Reinhardt and Lori Rounds discussed how they developed their Open Ocean Restoration Plan. Marcus Drymon gave a presentation on a gulf-wide project involving a multidisciplinary team of scientists with the goal of estimating the abundance of red snapper in the Gulf. He presented some of the various methods being proposed to accomplish this monumental task. **D. Topping** said there was also discussion on impacts of the past winter's cold weather. Some of the Gulf States experienced prolonged cold events in mid-January. Most of the states did not report any wide-spread fish kills or cold stunned turtles but Texas and Florida did experience these issues. Texas fish kills were not as bad as in previous years, with an estimated minimum of 70K fish, but they

had a record number of cold stunned turtles across the state. Preliminary numbers are coming in around 3,600. Many of the turtles were saved due to a state-wide effort. Each Subcommittee gave a report on their meeting and details are in their section of the minute book.

The Technical Coordinating Committee Report was accepted by the Commission.

State/Federal Fisheries Management Committee (S/FFMC)

Menhaden Advisory Committee (MAC)

S. VanderKooy reported R. Mroch, NOAA Fisheries, provided a review of the 2017 Gulf fishing season as well as a forecast for the 2018 fishing season. He also reported on the landings in 2017. J. Adriance provided an update to the Indices of Abundance for Gulf menhaden sampled in Louisiana waters. These were the indices of abundance used in the benchmark stock assessment and are updated each year to monitor trending patterns that might be of interest. **S. VanderKooy** reported he reviewed the schedule for the benchmark SEDAR63 Stock Assessment for Gulf menhaden which will start this year. R. Leaf provided a short overview of the latest age composition comparison data study that he is conducting with NOAA. M. Nuttal presented the preliminary results of a Gulf-wide ecosystem model exploring the potential predators of menhaden in the region. B. Landry explained the reduction fisheries process going through a pre-assessment for certification through the Marine Stewardship Council (MSC) and the progress that has been made to date. The certification should be announced this summer for the Gulf and late summer for the Atlantic. Dr. Jeff Short presented his work on exploring the overall condition of Gulf menhaden following the DWH oil disaster.

The Menhaden Advisory Committee Report was accepted by the Commission

Sea Grant Fisheries Extension Meeting Report

J. Lively reported that all of their guest presenters were snowed in at the Boston Seafood Show so they had a small group and short agenda. She said each state gave a report on their current activities. She said C. Adams from Florida stated they are trying to get their barotrauma survey results published in a peer review journal for wider dissemination. S. Jackson informed them the barotrauma work is still continuing, with efforts to create a cohesive state program with marketing and state wide efforts. The committee discussed how this can fit into the larger Gulf Council Policy Statement on Barotrauma and all of the Gulf Programs. She said B. Staugler from Florida recently shared her expertise on barotrauma at the Louisiana Fisheries Forward Summit. S. Jackson gave updates on their artificial reef workshops and stated they have streamed these live and archived them on the FLSG You Tube channel. FL Sea Grant has added a new Working Action Group: Estuarine Coastal Health Initiative to include topics like water watch programs, living shorelines, water quality, invasive species and micro plastics. Due to Hurricane Irma, there has been a focus on internal extension continuity of operation plans so that agents and staff can secure and recover quickly to be better able to serve their communities. FL Sea Grant has also been active in hurricane recovery of lobster boats and traps. C. Adams also gave an update on the Charter For-Hire Green Certification which now has a name – the Florida Friendly Fishing Guides, with a logo selected from a contest and most of the curriculum is outlined and would be done through online videos.

For MASGC, B. Walton gave an update on her work with the Gulf of Mexico Shellfish Initiative. This began a committee discussion on the various resources each state has of off-bottom Aquaculture. M. Drymon gave an update on his work to update and revamp a monthly fisheries newsletter in Mississippi, and Alabama involvement in boat shows and fishing rodeos, and outreach with the Sea Grant funded red snapper research. He is hoping to host meetings for all interested parties this fall across the gulf. They

are also creating 30-90 second videos summarizing the different research happening with the two-year funded projects. Amanda Jefferson has been hired as Peter Nguyen's replacement.

J. Lively stated she gave the Louisiana report. She provided a summary of the Louisiana Fisheries Forward Summit held last week near New Orleans. She said 4 other Sea Grants participated and they do not have the final attendance numbers yet but over 500 industry members were preregistered to attend. Through the Louisiana Fisheries Forward Program they are beginning efforts on how to give public comment and how to run an effective meeting/task force with Robert's Rules of Order. The crab, shrimp and oyster landings were low this last year. There has also been a significant decline in commercial soft shell crab products although interest exists. Louisiana Sea Grant is hoping to begin a large extension effort to help this declining industry. They have also began a NOAA funded project on value-added plate frozen shrimp products in Louisiana. LASG will also be hosting a National Sea Grant visioning exercise for Fisheries, Aquaculture, and Seafood in May in New Orleans. D. Seibert provided an overview of the Diversion Panel held at the Summit which used clickers to gather instantaneous, real time, anonymous opinions from the fishing industry of their concerns of 'near term' and current adaption plans if one is necessary with the diversion. A report on the results will be coming soon. Sea Grant has been working with Louisiana SAFE on projects to help the coastal communities adapt to change with funded projects. LASG is working to promote locally produced value-added seafood products to try to help fishermen, docks and processors separate some of their product from the import commodity market. She stated the Roseau Cane Scale/invasive insect is still a big problem for the cane/phragmites which are holding lower Plaquemines Parish together.

J. Lively reported B. Balboa from Texas updated the Committee via telephone on the updates from Texas. He stated he is helping to facilitate meetings with legislators to get legislation written to help off-bottom oyster culture in Texas. With RESTORE funding, a hatchery is planned for Palacios in Matagorda Bay. G. Graham is officially retiring and his replacement has been selected to start this summer. They are still in Hurricane Harvey recovery mode with extension helping with restoration efforts to help fill in blow outs from the storm. Rhonda Cummins has been helping Ag Extension with their Ag Path to Plate program by adding marine seafood to help Texas consumers know where their food is coming from.

J. Lively stated C. Adams will be retiring in August of 2019 and he is developing a survey on qualifications for a new marine economist. A survey will be going out very soon to extension, state agencies, and partners like NOAA, NMFS, Gulf Council and GSMFC to identify the anticipated needs and skill set.

J. Lively stated the Sea Grant Panel recommended to ask the Commission to work with them to compile a "clearing house" of all Off-Bottom Aquaculture work being done in each state.

D. Donaldson asked **J. Lively** to contact **S. VanderKooy** after the meeting to determine how they will compile the information.

The Sea Grant Fisheries Extension Advisory Panel Report and Recommendation was accepted by the Commission.

NOAA Fisheries Southeast Regional Office Comments

A. Strelcheck stated the complete report is Under Tab B of the Briefing Book and he will review a few of the items in the report. He said NOAA released a public notice asking for input on exempted fishing permits. Each of the five Gulf States is requesting exempted fishing permits for this red snapper season.

If authorized, those permits would allow the states to manage private anglers and in some cases charter boat captains, in both state and federal waters. The public comment period for this will end April 2, 2018. The goal is to make a decision on those exempted fishing permits prior to the Gulf Council meeting in April, then the states can set their seasons. Most of the states are opening red snapper season June 1 but Mississippi is proposing a May 1 opening. He said NOAA is working on the final rule for opening Greater Amberjack on May 1-31, close, then reopen for fall in August. He said the states are interested in increasing the number of stock assessments and NOAA presented the new process at the Atlantic Council meeting and will present the process to the Gulf Council in June. He stated the final rule for skimmer trawls is still pending but they expect the ruling by the end of this year or early next year. **A. Strelcheck** said litigation is still ongoing with the gulf Aquaculture amendment. He said NOAA is working with Kampachi Farms to do a pilot project off the coast of Florida. A representative with the company gave a presentation at the Council meeting in January and is supposed to present at the April meeting. Hopefully, they can move forward with this pilot scale offshore aquaculture project in the Gulf.

USFWS Region 4 Office Comments

G. Constant gave a brief report on the FWS and stated a new regional director has not been announced and DOI is still undergoing reorganization. He stated A. Brown sends his regrets for not being able to attend the meeting but he is Acting Assistant Regional Director and was not able to attend. He wanted to convey his appreciation to the Commission and staff for administering the small grants program for ANS. **G. Constant** thanked J. Reinhardt and L. Rounds for addressing the TCC yesterday on their work with the Natural Resource Damage Assessment.

D. Donaldson asked if FWS would give a presentation at the next Commission meeting on the changes at DOI/FWS. **G. Constant** stated if it is appropriate at that time, he would give a presentation/update on the changes at FWS at the next Commission meeting.

Update on GSMFC Aquaculture Activities

S. VanderKooy gave an update on the GSMFC Oyster Aquaculture Activities. He stated detailed information of each project is in Tab C of the Briefing Book. There was a General Session at this meeting on the Aquaculture projects. He said each project will submit a final report shortly and the final reports and a summary of the general session will be made available on the Commission website. He said the Commission has released another RFP (Tab D) for a new opportunity for oyster funding in 2018. The RFP includes the same basic scope and intent to address oyster farming in the gulf region as the previous opportunity, and will total \$370,000 with no single proposal to exceed \$75,000.

NOAA Fisheries Budget Update

D. Donaldson reviewed Tab E of the Briefing Book, NOAA Budget Summary 2019. He stated the FY19 President's Budget has NOAA Fisheries at \$840 M which is a decrease of about \$110 M. **D. Donaldson** said this is disconcerting but congress actually passes the budget. He said there are proposed cuts that could have a major impact on the Commission and the 5 Gulf States. These include a decrease of \$5 M for development and implementation of agency-independent and alternative approaches to research and stock assessments for reef fish in the Gulf of Mexico and the elimination of the Joint Enforcement Agreements (JEA). **D. Donaldson** said he and the 5 Gulf State Directors met with various congressional staffers last week to discuss the importance of these programs. They seemed to be supportive of the programs and were willing to reinstate the cuts if it came to that. They also met with NOAA Fisheries personnel and they understood the situation also. The budget process for FY19 is just beginning and he will keep the Commission informed of any changes.

Discussion of 2018 Gulf State Directors Trip

D. Donaldson said they plan to visit aquaculture facilities in Maine this year during the summer for the state Directors' trip and invited the legislatures to attend. **B. Allain** asked D. Donaldson to poll the legislature to see if they are interested in attending and the best times for them to be able to attend.

Presentation of Amendment 11 to the 2006 Consolidated HMS Fishery Management Plan (FMP)

Jennifer Cudney, NOAA HMS, gave a presentation on *Amendment 11: Shortfin Mako Shark Issues and Options*. She reviewed the purpose, background, potential management options and ways to provide feedback to the HMS Management Division. She said public comment ends on May 7, 2018 and the Final Rule will be decided in March 2019. The complete presentation is available upon request to the GSMFC office.

Presentation of Red Snapper Research Program

Marcus Drymon, MSU, gave a presentation on an *Overview of Methods for Estimating Absolute Abundance of Red Snapper in the Gulf of Mexico*. He discussed the issue, which is the historical overfishing of red snapper in the Gulf of Mexico which led to the depletion of the stock. Despite decreased season lengths, the stock remains overfished yet recreational anglers perceive the stock to be healthy. This has led to mistrust between recreational anglers and federal managers. Congress made funding available to independently estimate red snapper abundance. The project started in 2017 and will be completed by 2019. The project has a well-integrated, multidisciplinary team of investigators. He discussed the methods being used in the project which are habitat mapping, tagging, direct counts and depletion methods. The power point presentation is available upon request to the GSMFC office.

D. Donaldson asked M. Drymon to present results of the project if completed at the October 2019 Annual GSMFC Meeting. **M. Drymon** said he will give a presentation.

Presentations and Updates on Restoration Activities

Paul Anninos gave a brief overview on the restoration activities since DWH. **Diana Lane**, Abt Associates, reviewed DWH Restoration funding sources and key DWH court settlements. She stated there were criminal penalties, Clean Water Act violations, fishery closures, and injured natural resources. The 2013 settlement of criminal penalties of \$2.5 B went to the National Fish and Wildlife Foundation for the BEBF and the overall goal is to fund projects benefiting the natural resources of the Gulf Coast impacted by the spill. The Clean Water Act violations resulted in civil penalties based on volume of oil spilled and environmental harm. The fishery closures provided compensation for economic and property damage and the injured natural resources settlement went to NRDA to fund restoration. She then reviewed how the funding was distributed to different agencies and the goals of the funding. **Laurie Rounds**, NOAA DWH Program then reviewed the Natural Resource Damage Assessment (NRDA) – Open Ocean Restoration component and **Jamie Reinhardt**, NOAA DWH, reviewed the fish restoration component of the program. **Buck Sutter**, GCERC, gave a presentation on the role of the Gulf Coast Ecosystem Restoration Council for the restoration. **Julien Lartigue**, NOAA, gave a presentation on the NOAA Restore Science Program and **Libby Fetherston-Resch** gave a presentation on the Florida Restore Act Centers of Excellence Program. All of the presentations are available upon request to the Commission office.

Lyles-Simpson Award Recipient Selection for 2018

M. Lingo nominated Chris Blankenship to receive the Lyles-Simpson Award for 2018. Nominations were closed and the Commission agreed Chris Blankenship will be the 2018 recipient of the *Lyles-Simpson Award*.

GSMFC Program Reports

Interjurisdictional Fisheries Program (IJF)

S. VanderKooy stated the full report is under Tab G of the Briefing Book. He said they are working on the Cobia Management Profile for the Gulf of Mexico and expects it to be completed in time for the next SEDAR benchmark for the Gulf of Mexico Cobia population scheduled for 2019. They continue to work on the Otolith Manual revision but does not know when to expect it to be completed. **S. VanderKooy** stated he continues to serve on the Audubon Nature Institute's G.U.L.F. Project's TAC working on sustainability. They are still collecting genetic samples for Tripletail for the Profile. The Commission is covering the costs of the first two workshops for the SEDAR63 Gulf Menhaden Benchmark Stock Assessment. He said, as stated earlier, he continues to assist the NOAA Office of Aquaculture by administering the small grants program for oyster off-bottom aquaculture and marine aquaculture pilot projects in the Gulf of Mexico.

Southeast Area Monitoring and Assessment Program (SEAMAP)

J. Rester reported SEAMAP is in its 37th year of sampling. The Spring Plankton Survey and Bottom Longline Survey will begin in April and the Summer Shrimp/Groundfish Survey, Reef Fish Survey, Vertical Line Survey, Fall Plankton Survey, and Fall Shrimp/Groundfish survey will start later this year. The Vertical Line Work Group met in December to discuss the vertical line database and ways to improve the accuracy of submitted and historical data within the database. The work group also reviewed the operations manual and added new data collection fields to make the data more useful for stock assessment purposes. SEAMAP is still examining ways to minimize trawling impacts to hardbottom and sponge habitat on the west Florida shelf. The SEAMAP continues to examine potential buffers around known hardbottom areas so they can be excluded before the station selection process while also trying to minimize any potential impacts to abundance estimates of reef associated species. The Commission continues to manage SEAMAP data and distribute the data to interested parties. The Commission has fulfilled 7 SEAMAP data requests since October. **J. Rester** stated they are not sure of the FY2018 SEAMAP funding level yet. While funding levels have remained level the past several years, the actual amount of funding going to SEAMAP partners for fishery independent sampling has decreased due to increased NOAA assessments or taxes. He said they were told they would see a reduction in the assessments this year. The amount of fishery independent data collected in the Gulf of Mexico is about to decrease significantly as NFWF funds that the states have been using to conduct fishery independent data collection and some SEAMAP surveys are running out. SEAMAP is actively pursuing additional funding sources such as NRDA.

M. Lingo expressed his concern on the vertical line data not being used for stock assessments. He feels the funding could be used for other programs if the data is not being used. **J. Rester** said he agreed with him but he said one reason they do not use the data is because they do not have the spatial or the temporal coverage they wanted.

D. Donaldson said in reference to the NOAA assessment taxes, he has been assured they will be reduced or eliminated.

Sportfish Restoration Program (SFRP)

J. Ballard stated the complete report is in Tab I of the Briefing book. He reported they hosted the joint meeting of the GSMFC's and ASMFC's Artificial Reef Subcommittee on February 28th – March 1st in New Orleans, Louisiana. This is a meeting held annually to discuss issues concerning the artificial reef programs on both coasts. Final edits are being made on the update of the 2004 publication "Guidelines

for Marine Artificial Reef Materials: Second Edition.” He said he is continuing to collect information for the development of a proposal for a gulf-wide standardized artificial reef demonstration project that will fill some of the key science gaps that were identified at the 2016 National Artificial Reef Workshop. He reported they are still working to establish a Gulf-wide Lionfish Removal Program modeled on Florida’s Lionfish Challenge.

Fisheries Information Network (FIN)

G. Bray reported the full report is under Tab J of the briefing book. He said they continue to work with the states of Florida, Alabama, and Mississippi on the MRIP program collecting recreational landings data and the Commission also warehouses the LA Creel data and the Texas Parks and Wildlife data, mostly for disseminating to federal partners for use in science and management. He said recreational data collection is going well but the crunch of limited funding has impacted the number of man days for the surveyors at the docks making the potential downstream effect of less precise estimates of harvest.

There are trip ticket programs in all five Gulf States for commercial landings and they are working to improve the electronic reporting tool which helps ease the burden by providing data faster than paper reporting. The biological sampling funding for data for age structures, lengths and weights, which are extremely important for the stock assessment ran out on March 31, 2018. They are trying to secure funds to continue the sampling. **G. Bray** said they are also working to improve the data management system to provide easier access to data and cleaner data faster. He reviewed the proposed 2018 funding priorities and stated they are at a 10.8% deficit. He informed the Commission about the NOAA Fisheries FIS program which has \$5.2 M available for projects in 2019. He stated he sent the information to the states’ data collection supervisors and if they are interested in submitting a proposal, to contact him

Aquatic Nuisance Species Program (ANS)

J. Ballard stated he has been working to expand Florida’s efforts of their lionfish removal and awareness day and lionfish challenge to other Gulf States. The Aquatic Nuisance Species Task Force that oversees the regional panel was finally cleared through the Department of Interior’s FACA review that had placed all of its associated actions on hold for the past year. He said they will start holding panel meetings again and is in the process of planning a three day meeting in DC in May or June. They have been able to fund 26 projects totaling \$556K through the Region 4 USFWS AIS Small Grants Program over the last 3 years. The Invasive Species Traveling Trunks have been updated adding 3 more species, for a total of 14. The GSARP’s spring meeting is scheduled for April 10-11 in Jackson, MS.

State Directors’ Reports

The state reports were submitted to the GSMFC office and are in Attachment I. Each Director gave a brief report.

Florida - D. Ellinor reported their Commission approved 5 different scallop season regions from Port St. Joe to Tarpon Springs. They extended the permit spawning season closure inside the special permit zone and are still working with the commercial harvesters on their gear. The Spiny Lobster Trap tag fees for the 18-19 season have been waived. They received a \$137,000 NFWF grant to remove gear around Duck Key and surrounding channels. The recreational/commercial cobia bag has been reduced to 1 fish inside state waters per person and the vessel limit from 6 to 2 fish. Work is continuing on lionfish. A \$25,000 donation was made to the Foundation so there will be some big ticket tag items. The final public hearing on reducing the bag limit for recreational sheepshead from 15 to 5 will be at the next Commission meeting in April.

Alabama - **S. Bannon** reported the Claude Peteet Mariculture Center released about 75,000 red drum into coastal waters. He said Oyster Aquaculture has traditionally been on public reefs so they are adjusting the rules and regulations to accommodate private business. They have changed their trigger fish rules to match the federal regulations, making it easier on anglers. The artificial reef program surveys have been completed and they received permits for 7 individual reef zones inside the 9 miles of state waters. The reefs will be placed in a specific manner to research the best placement to receive maximum benefit of the reef. They have also set aside a small corner of the zones for memorial reefs. AMRD is developing sink plans for a 102' tug and 256' former work vessel which will be done soon. One of the Rigs-to-Reef projects should be completed within the next month.

Mississippi – **J. Spraggins** said they have been monitoring the Bonnet Carré Spillway effects. He said the Red Snapper reporting system “Tails n’ Scales” completed a successful landings program for the 2017 Red Snapper season. The season length for private recreational anglers was 60 days and the charter for-hire season was 49 days. 4,185 Red Snapper trips were reported through the Tails n’ Scales system for a total harvest of 27,189 fish which totaled 154,000 pounds. The program was submitted for certification by NOAA and MDMR is awaiting feedback on the application. He said all other programs are mentioned in the report.

Louisiana – **J. Froeba** reported Louisiana has increased sampling in Lake Ponchartrain and other areas to monitor the effects of opening the Bonnet Carré Spillway to ease flooding concerns along the Mississippi River. He reported that in December, NOAA Fisheries announced the certification of the LA Creel Program. He congratulated the staff that has worked on this for the past 4 years. He said they have reinstituted the Louisiana Finfish Task Force and they had their first meeting last December. This is the first time the commercial fisheries industry has met in a formal capacity since the 1980s. He said they implemented a 30 day closure across the state on all blue crab harvest due to the stock assessment showing the stock below the target level. He said this was not received well by the fishermen so at a recent Commission meeting they passed a declaration of emergency to change that closure to a female only closure for 2 months instead of 1 month. The season is March 1 through the end of April. The 2017 oyster stock assessment has showed the lowest stock size ever recorded in Louisiana. There is pressure to open Sabine Lake for harvest but they have completed a 100 acre cultch plant in Calcasieu Lake with state funding. The artificial reef program and the oyster program has teamed up to focus on creating reefs in areas that will be conducive to oyster growth. These are being called stock reefs.

B. Allain stated that he and Representative Stuart Bishop worked on the legislation that created the LA Creel Program and it is funded entirely by recreational fishermen who pay a \$7.50 fee.

Texas – **M. Lingo** reported the oyster license buyback legislation was passed last year so they will be going out on bid for the first round of the program. He said they just finished the abandoned crab trap removal program and a large number of traps was recovered due to Hurricane Harvey. Hurricane Harvey was mostly a fresh water event and there was not a large silting over of reefs as in past hurricanes but some sites had 100% mortality on the oysters from the fresh water event but those areas was very localized so the harvest should be good this year.

Future Meetings

N. Marcellus said the next meeting will be held in the state of Texas so she will be working with the Texas Commissioners to decide a location. The meeting will be October 17-19, 2018.

Review of Committee Listings

D. Donaldson stated the committee listings for each state is in Tab N of the briefing book. He asked the Commissioners to review the listings and send any updates or changes to Cheryl Noble.

Publications List and Web Statistics

The Publication List is available on the website and J. Ferrer gave a brief presentation on the activity of the website.

Special Election of Officers

Jamie Miller left the employment of MSDMR leaving the Chairman position of the Commission vacant. Based on the Bylaws of the Commission, the 1st Vice Chairman, Senator Brett Allain, automatically became the Chairman. The Commission must vote to fill the 1st Vice Chairman position.

B. Allain moved to fill the 1st Vice Chairman position with a member from Mississippi. S. Bannon seconded the motion and it passed.

B. Allain moved to elect Joe Spraggins 1st Vice Chairman. J. Roussel seconded the motion and it passed.

There being no further business, the meeting was adjourned at 3:46 p.m.

APPROVED BY:

COMMITTEE CHAIRMAN

**COBIA TECHNICAL TASK FORCE
MEETING SUMMARY
March 27 & 28, 2018
Dauphin Island, Alabama**

Moderator VanderKooy called the meeting to order at 8:30 a.m. with the following in attendance:

Patrick Carron, MDMR, Biloxi, MS
John Pituch, LDWF, New Orleans, LA
Ryan Easton, TPWD, Port O'Connor, TX
Jim Franks, GCRL, Ocean Springs, MS
John Mareska, ADCNR, Gulf Shores, AL
John Anderson, GCRL, Ocean Springs, MS
Hannah Hart, FWC, Titusville, FL
Maxwell Westendorf, Gulf Shores, AL
Steve VanderKooy, GSMFC, Ocean Springs, MS
Debbie McIntyre, GSMFC, Ocean Springs, MS

Introductions and Housekeeping

VanderKooy, IJF Program Coordinator and the group's moderator, opened the meeting and welcomed attendees. Everyone welcomed **Hannah Hart**, **Maxwell Westendorf**, and **John Mareska** to the Task Force. **Hart** replaces Krista Shipley as Florida state representative and **Westendorf** joins the TTF as Aquaculture specialist. John **Mareska** is replacing Josh Neese temporarily until a representative from the state of Alabama is appointed.

VanderKooy pointed out that **Westendorf** will help tie his past experience at the Panama Cobia hatchery to Franks' information regarding the Columbia hatchery. The section will essentially cover the status of Cobia aquaculture globally and make up the Appendix so as not to dilute any Gulf or US specific information in the rest of the Profile. **Westendorf** will help as much as possible but is very busy with the hatchery. Some of this will be repetitive between chapters because people typically go straight to one chapter or topic for what they are looking, so there must be different degrees of overlapping detail in each section.

VanderKooy reviewed the GSMFC travel policies and referred everyone to the *GSMFC Travel Guidelines* for detailed information. The Commission was covering the rooms and meals for the most part so only travel related expenses should be claimed. Any questions regarding travel should be addressed to Alice Wilhelm, the Commission's travel coordinator.

Adoption of Agenda

The agenda was adopted unanimously with a few minor rearrangements to accommodate attendees.

Approval of Minutes

*The minutes from the last meeting held on December 12 and 13, 2017 in West Palm Beach, Florida were reviewed and, on motion by **Anderson** and second by **Franks**, the minutes were approved unanimously with minor changes by **Franks**.*

Task Force Dropbox

VanderKooy made sure that everyone has access to the Dropbox to share literature, upload current drafts, and provide reviews of other sections. He shared the Genealogybank.com link so that everyone can use this resource. **VanderKooy** reminded the group about the bibliography search available for use on the GSMFC website which provides a vast amount of fishery-related information.

Draft Reviews

VanderKooy explained that the table of contents will continue to serve as a means to follow up on progress and keep track of assignments. With the change in membership, some of the assignments will need to change and the group will address those as they come up.

Research Priorities

VanderKooy reminded everyone to make mental notes and notes in the margins as they draft material specifically identifying things that are still needed related to the authors topic. The research needs in the back of the Profile will provide future research ideas to address the gaps in data or understanding of the species. These items can be simply unknown or out-dated.

Sociology

It was agreed that a sociologist is not necessary for this group since there would be no way to differentiate between everyday anglers and those who opportunistically target Cobia. In addition, any commercial fisherman is likely to hold a dual permit and simply sell their recreational catch. **VanderKooy** will include as much about the social aspects of this fishery as possible in the general Fisheries section but a separate chapter is not going to be informative. **Pituch** suggested possibly using the Social Economics (SEAS) MRIP survey which could provide some valuable information regarding expenditures, etc. **VanderKooy** will check with **Adams** to see what he knows about this survey.

Economics

Adams was not able to attend the meeting but would submit his draft to the group in the near future.

Enforcement

Carron reviewed some of the Mississippi regulations to familiarize state reps with what each of their state enforcement sections should look like. Mississippi is structured with state statutes by the Legislature. Bag limits and sizes are set forth in Title 22 regulated by the Commission on Marine Resources. State statute outlines Cobia as a game fish, the only one designated in Mississippi.

VanderKooy encouraged everyone to review what their state LE reps have submitted and not to assume that it is up to date and correct. Be sure to include license exemption information because this is often left out.

One of the items **VanderKooy** was unsure of was how the various designated fishing piers operated. Does an access fee for the fishing pier include what would be a daily license? Are resident and/or non-resident anglers on those piers not required to purchase a regular fishing license? This led to more discussion that has importance in the Fishery chapter such as whether or not Cobia being caught by pier anglers are quantified and incorporated into the MRIP data, especially during April and early May in the Panhandle and Alabama? **Hart** will check into pier licensing vs individual licensing in the Florida panhandle. **Easton** will check into pier licensing off Padre Island - if Cobia are landed there and if the data is captured. Everyone was encouraged to incorporate pier fishing for Cobia into this and the fisheries section.

Hart stated that she will contact Scott Pearce regarding Florida's LE section for Carron.

VanderKooy will update the federal component and will provide the Council authority. He may include the JEA information and will work with **Carron** on this since Cobia are federally managed and addressed in the JEA patrols.

VanderKooy reminded everyone that we need to include any regulations that may have caused ups and downs in landings in the historic changes section of each state's summary. He will also add information on historic weather events which may contribute to the interpretation of landings trends over time.

Fisheries

VanderKooy stated that this section is divided into commercial and recreational. A basic introduction speaks widely about Cobia landings in general and includes a little on the world population. Pakistan has the highest landings (wild caught) per the chart he displayed.

VanderKooy found a lot of historic information about fishing for Cobia using the Genealogy.com software which provides much more than family history. The software provides access to old newspapers and magazines which have been scanned and converted to actual text for the search of ANY word or combination of words. A quick search on Cobia resulted in a lot of articles from around the Gulf in the early 1900s to 2000. One useful article mentioned an interesting report

on shrimpers who landed huge Cobia way back in the day and suggested that they were free gaffed off the back of the shrimp boats opportunistically. However, this didn't match the NOAA gear data, suggesting a lot more Cobia were harvested with trawls than just by occasional happenstance. A review of the SEAMAP data showed that a number of large adult Cobia have been landed in the routine trawl sampling which were not captured outside the gear. **Franks** had indicated that Cobia have a tendency to simply lay on bottom and are physiologically built to do so. Therefore, it's possible that they roll into the net when the trawl is bottom dragging.

VanderKooy reviewed the historical use of gears to catch Cobia over the years. While most of the landings are reported as a 'hook and line' type of gear, a greater number of Cobia are being harvested using spears in the last decade. At the last TTF meeting, the group met the owner of a restaurant in West Palm Beach who provided a lot of insight into the Atlantic Coast fishery and would be a good contact for **Hart** in reference to the fishery on that coast.

Commercial landings were reviewed by **VanderKooy** briefly, revealing the ebbs and flows of landings from 1950-2015. We need to find out why these happened - if they were a result of weather, changes in licensing, oil spill, etc. Each state representative should help to recognize the reasons for these ups and downs in landings.

VanderKooy went briefly through the Florida and Alabama fisheries sections to familiarize the new members from those states with what is needed from them in the fisheries section. Mississippi declared Cobia a sport fish in 1990 so there is no reporting from that state. **Pituch** reported that Louisiana limited entry in 1995 added to their apparent decline in landings. He will forward more information to **VanderKooy** justifying the trends.

Easton does not have a lot of information available for Texas but will try to gather more for this section. **VanderKooy** reminded everyone that confidential information must be handled carefully.

Easton also reviewed some recreational information he had gathered regarding the history of Cobia fishing. It seems that snook was referred to as Cobia in some cases in the very old popular press. A number of magazine articles and books from the early 1900s mentioned a mangrove associated fish that resembled what we know as snook (*Centropomus undecimalis*) as Cobia.

VanderKooy asked the task force members to let him know the names of the big rodeos across the states as a lot of Cobia are landed for these. Like pier fishing, fishing tournaments are probably a huge contributor to Cobia overall landings. Cobia are typically very high dollar prize categories. Entire tournaments are dedicated to Cobia which can last a single day to several weeks and may not be intercepted as part of the MRIP program. **VanderKooy** would like to expand this section considerably to include how the tournaments may be contributing to management by setting strict guidelines on qualifying fish. **VanderKooy** will work with **Franks** to highlight some of the larger events in the Gulf.

VanderKooy will talk about NOAA's saltwater fishing in general participation by state. He will draft each state's section with what he has and send each out to the reps for their review and input.

Aquaculture

Westendorf shared his Cobia presentation from Open Blue Sea Farms in Panama where he did an internship several years ago. The farm has operated in a deficit for ten years but is able to produce fish with great success but a lot of manpower and input. Marketing has been a problem. The fish are raised along the Gulf side of Panama using submersible cage technology. Westendorf will use some of his knowledge to explain in general, how the various fish cage, pen, net systems work which are being utilized elsewhere in the world. The hope is that the information will aid individuals looking for information on how to begin Cobia aquaculture in the U.S. and provide them the basic resources in one location. It is thought that **Adams** could include any global economics info in the appendix as well and focus on only the U.S. in the rest of the Profile.

Habitat

Easton has incorporated **Franks'** changes and comments. Much of the opening material on generalized habitats in the region comes from the various boilerplate documents developed in the past. **Easton** has made the chapter Cobia-specific and will continue to update it as needed.

There was considerable discussion with **Franks** over the importance of Sargassum to Cobia and it was agreed that perhaps that section should be reduced a little since it is not as critical for Cobia as it is for Tripletail. The chapter will contain information on habitats along the Atlantic Coast of Florida but the break point for the "two stocks" should be decided in June by the South Atlantic Fishery Management Council.

Each state was reminded to provide their hydrology ranges and means for any Cobia collected in their fishery-independent sampling. Again, there will be some overlap with the biology chapter which also has temperature and salinity info. We may want to combine these two or possibly create a table format with summaries of state info, juveniles, temps, salinities, and where harvested. Dissolved Oxygen may need to be shared in the biology section with **Anderson's** verbiage and hypoxia needs to be added to Habitat Section as it may drive habitat choice in Cobia, especially when associated with 'laying on the bottom'. In addition, HABs should be included as well, as these may have a strong effect on the habitat choices of a surface dwelling fish.

Regarding FADs, **Easton** needs to update the numbers of active and decommissioned oil/gas platforms which attract Cobia and any other references to types of FADs. This may need to be blended with any discussion elsewhere in the document. **VanderKooy** will have some limited discussion of FADs in the Fisheries section and needs to be able to refer elsewhere to the specifics.

Biology

Anomalies and Abnormalities

Pituch kept pug-headed information as it was. He added short spine to the spinal deformity section as well as 'piebald' fish. He added background information on pigmentation and how it affected the fish and the abnormality. **VanderKooy** asked **Franks** to let him know if he comes across a pug-head or spinal deformed Cobia for **VanderKooy** to x-ray. **Franks** will contact Tom Herrington regarding a blue Cobia that Herrington caught 40 years ago and has a photo of for the section.

General behavior and coloration

Anderson reviewed his draft material and will share and coordinate with **Easton** for the temp and salinity info.

Parasites and Disease

Anderson will address this section in person with Dr. Overstreet for his input so that he can check the accuracy of the section.

Predator/Prey

Anderson revised Table 3.2, organisms found in stomachs of Cobia, based on the discussion from the last meeting. Because Cobia gulp their prey, most of the stomach contents are easily identifiable so there are some good references to predation in the literature. He also added some predators of Cobia which are rather limited.

Description of Stocks

VanderKooy discussed the material that had been assigned to **Shipley** and now should be taken over by **Hart**. He encouraged her to contact him for help with references, although most are available on the Dropbox. A lot of the information in the introductory section is available and readily accessible. While **Anderson** and **Easton** have picked up the FADs section, **Hart** needs to take a look and add whatever she can due to the fact that Florida is the epicenter for FADs and most of the drafted material was related to **Shipley's** experience with the Tripletail fishery.

Age and Growth

Mareska will do what he can on this section and pick up where **Neese** left off. We will need Gulf and East Coast of Florida data. **VanderKooy** provided the draft Cobia chapter from the ongoing revision to the otolith manual for some background info. **Mareska** will see what he can do until the point that a new representative is identified for Alabama.

Migration

Mareska may attempt to pull some of the published information into a draft but will need to rely on **Franks** for a lot of the Gulf info. **VanderKooy** will contact Chris Kalinowsky from Georgia for help with the Atlantic Coast tagging data. **Franks** stated that he is still trying to track down two tagging projects which were conducted in Texas and Louisiana. He is unsure of how much of that data still exists and who would have access to it.

Reproduction

Franks presented the pertinent points of reproductive biology. His introductory paragraph includes historical and recent studies for both the Gulf and South Atlantic. He will eventually include some images and tables developed by Richards.

Franks pointed out that the spring-summer spawning season is directly related to migrations. Small pods form and may be related to spawning behavior.

Regarding spawning, **Franks** explained the gonadosomatic index (GSI). This is a gross look at reproductive condition by comparing ovarian weight to body weight over time. Cobia migration in relation to spawning is still not fully understood and little is known about the life history of the juvenile Cobia.

Franks stated that his colleague, Nancy Brown-Peterson, has pretty much set the accepted protocols for gonadal histology and has published what is considered the standardized terminology. In general, the protracted Cobia spawning season in the northern Gulf is April – September. However, the literature reports that the male Cobia peak spawning season is May – July off Louisiana, while females off Louisiana were spent by July. There is a theory about two populations (or sub-populations) of Cobia in the northern Gulf, one that migrates offshore in winter and one that migrates along the coast back to the south during winter. Coincidentally, Brown-Peterson has found that some Cobia spawn all spring and summer and some do not. **Franks** pointed out that satellite tagging would be very helpful to understand this. Brown-Peterson has also suggested that ‘skip spawning’ may also occur in Cobia, i.e., skipping a spawning season. **Franks** will speak with Brown-Peterson about referring to the theory of skipping and whether that should be used in this section. **Franks** intends to add more ovarian slide pics to this section as well.

In reference to batch fecundity, **Franks** stated that females produce (release) millions of eggs per each of multiple spawning events (approximately every five days) each spawning season, and **Franks** explained the formula for figuring that out. What drives the timing of each spawning event is not known. All fertilization occurs externally, but large aggregations of cobia during spawning season are not common. . Release of eggs without the presence of a ripe male (or males) would be wasteful. There is some kind of cue for the expulsion of the eggs for fertilization, but it is not known what that cue is. Since Cobia are following bait and migrating during the spawning season, they do not spawn all in one place.

Age and size at maturity is a serious issue. The current regulations of a 33 inch fork length minimum size for harvest is right at the size that many female cobia are maturing. In addition, larger, older Cobia actually continue to be reproductively active, suggesting the largest females are in fact the largest contributors to the population. Therefore, recommendations may be required to increase the size limit, region-wide, to give the younger fish more time to mature and spawn. The stock assessment guys need to look at what this change would do. **Franks** said that changes are occurring and fishermen are more receptive now since they are seeing potential issues in the population. He will add South Atlantic fecundity information although there is not much.

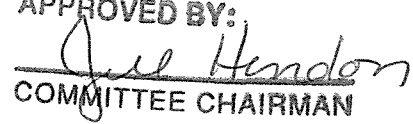
Very little is currently known about courtship and spawning behavior but it is thought that we will find more out through aquaculture systems.

Genetics is a separate section following Reproduction, not under aquaculture. It's more about the stock unit definition. **Easton** touched base with Dr. Joel Anderson (TPWD geneticist) who said that he would be willing to help write something up about the genetics of Cobia. **Franks** will pull together what he can and **VanderKooy** will contact Joel Anderson for further help.

Next Meeting

The next meeting will be held in June, possibly in the Cedar Key region. **VanderKooy** will send out a Doodle poll and look further into the location of the next meeting. At that time, everyone should have considerable material for review. It is anticipated that the Profile should be near completion by the end of the summer. The ultimate deadline is to have a final document for use in the 2019 Cobia SEDAR.

With no further business, the meeting adjourned at 3:00pm.

APPROVED BY:

COMMITTEE CHAIRMAN

**TCC SEAMAP SUBCOMMITTEE
MINUTES
Wednesday, July 25, 2018
St Petersburg, FL**

Chairman T. Switzer called the meeting to order at 8:30 a.m. The following members and others were present:

Members

John Mareska, ADCNR/MRD, Gulf Shores, AL
Jill Hendon, USM/GCRL, Ocean Springs, MS
Ted Switzer, FWC/FWRI, St. Petersburg, FL
Brett Falterman, LDWF, Grand Isle, LA
Fernando Martinez, TPWD, Corpus Christi, TX
Christian Jones, NOAA Fisheries, Pascagoula, MS

Others

Eric Hoffmayer, NOAA/NMFS, Pascagoula, MS
Sean Keenan, FWC/FWRI, St. Petersburg, FL
Kelly Donnelly, NOAA Fisheries, St Petersburg, FL
Ryan Jones, FWC/FWRI, St. Petersburg, FL
Eric Weather, FWC/FWRI, St. Petersburg, FL
Brent Winner, FWC/FWRI, St. Petersburg, FL
Ed Matheson, FWC/FWRI, St. Petersburg, FL
Steve Warner, FWC/FWRI, St. Petersburg, FL

Staff

Jeff Rester, *SEAMAP/Habitat Program Coordinator*, GSMFC, Ocean Springs, MS

Adoption of Agenda

B. Falterman requested to add a discussion on the bottom longline operations manual under other business. With that change, the agenda was adopted as written.

Approval of Minutes

The minutes from the March 13, 2018 meeting were approved as submitted.

Administrative Report

J. Rester reported that the SEAMAP Database Manager had almost completed the updates to the vertical line database. He stated that they would only be releasing 2012 through present vertical line data since the Subcommittee agreed that the vertical line methods in 2010 and 2011 were not standardized and should not be used for analysis. **J. Rester** stated that the Commission could maintain any other vertical line data that the states had that used SEAMAP protocols. He stated that they could add a field for the data source and whether it was collected by SEAMAP or NFWF. **J. Rester** stated that he had provided Alabama with their vertical line stations before the March meeting and that he provided Louisiana and Texas their stations and alternates in April. **J. Rester**

stated that he had started compiling data for the 2017 SEAMAP Biological and Environmental Atlas and that he hoped to have it completed shortly. **J. Rester** reminded everyone to send him data and cruise reports as soon as they could after the data were collected.

Survey Activities and Budget Needs for FY2019

Each SEAMAP partner discussed their budget needs for FY2019.

| | FY2019 Funding <u>Needed</u> |
|-------|------------------------------------|
| FL | \$558,924 |
| LA | \$410,613 |
| USM | \$400,964 |
| TX | \$186,000 |
| AL | \$185,000 |
| GSMFC | \$230,000 |
| NMFS | \$724,931 |

Each partner realized that since we did not have a total for the SEAMAP FY2019 budget that these totals may change once a final budget becomes available.

Review of the Summer Shrimp/Groundfish Survey Station Selection

J. Rester stated that he wanted to see if the new trawl station selection helped the partners complete more stations, damage less gear, and lessen the impact to coral and hardbottom habitat. **T. Switzer** stated that Florida only ripped one net during the summer survey when they had typically ripped or damaged ten nets during each shrimp/groundfish survey. **E. Hoffmayer** stated that NMFS had damaged one net and they also usually damaged ten nets during the survey. **J. Rester** stated that even after all of the sea days lost to repairing the Oregon II, SEAMAP was able to complete 302 stations in 2018. The Subcommittee told J. Rester to select 350 stations for the 2018 Fall Shrimp/Groundfish Survey.

T. Switzer stated that Florida had deployed trawl sensors on their trawl to see when sponge catch affects the trawl efficiency. **E. Hoffmayer** stated that NMFS was also deploying GoPro cameras to examine trawl efficiency on sand bottoms and found that the trawl net does fish differently on sand bottoms than it does on mud bottoms. He stated that he would keep the Subcommittee informed as they continued to analyze trawl efficiency.

E. Hoffmayer asked if SEAMAP needed to continue to measure 200 shrimp during the Summer Shrimp/Groundfish Survey. **J. Rester** stated that he was not sure why 200 shrimp were originally measured and sexed. He suggested that E. Hoffmayer check with NMFS Galveston to determine if anyone is using those data in the shrimp stock assessments before we discontinue measuring 200 shrimp.

The Subcommittee decided to stop collecting reproduction information unless the staging information is obvious. We would continue to sex every fifth specimen, but not record the reproduction information since it probably was not accurate.

Changing the Cable Angle to Avoid Mud Tows off Louisiana

B. Falterman stated that in certain areas around the mouth of the Mississippi River, Louisiana catches lots of mud in the trawl which can make it impossible to work up the sample. He asked if they could deviate from the 5:1 cable out to depth ratio. He stated that they change their second tow attempt to 4:1, but that does not always solve the mud problem. He asked if they could use a 3.5:1 or 3:1 ratio on the third tow. After discussion, the Subcommittee decided to add language to the trawling operations manual that stated that around the mouth of the Mississippi River, partners can start with a 4:1 ratio and then change to 3:1 if the first attempt was not successful.

B. Falterman also brought up the issue of the bottom longline operations manual specifying a line diameter as well as a breaking strength. He stated that LDWF uses smaller winches and that they could fit more line on the winch if they just used the breaking strength. The Subcommittee agreed that only the breaking strength should be listed in the bottom longline operations manual.

NOAA RESTORE Act Science Program Proposal Review

J. Rester reported that the NOAA RESTORE Act Science Program was currently soliciting proposals that would identify, track, understand, and/or predict trends and variability in the Gulf of Mexico's living coastal and marine resources and the processes driving them. While SEAMAP had initially wanted to submit a proposal, the Subcommittee decided to not pursue funding. **T. Switzer** stated that FWRI was submitting a reef fish video survey proposal for possible funding. FWRI would partner with NMFS on this proposal and it would have benefits for SEAMAP if funded. **J. Hendon** stated that GCRL was submitting a proposal for an acoustic telemetry project to monitor fish movement.

Ways to Avoid Interactions with Commercial Fishermen While Sampling

B. Falterman stated that LDWF personnel had had three interactions with commercial fishermen this year when conducting bottom longline sampling. He stated that his personnel were having problems judging the speed and direction of commercial fishermen when deciding when and where to set the longline. Some shrimpers set the vessel on autopilot and then work on the back deck and it was hard to get their attention to warn them that they are about to run over the longline. Around the mouth of the Mississippi River, they will often encounter multiple shrimpers that trawl in circles so you cannot judge their direction. He stated that in the future they may not be able to sample as many stations due to trying to avoid conflict and damaged gear.

Habitat Mapping

T. Switzer stated that SEAMAP will soon have a side scan sonar unit that all SEAMAP partners will be able to use to map areas off their respective states. He stated that SEAMAP needed to develop a mapping protocol for the Gulf of Mexico. **T. Switzer** also stated that SEAMAP needed to develop centralized training for everyone for the side scan equipment and also the interpretation of the collected data.

Hooked Gear Survey Proposal

T. Switzer stated that we need to develop some type of fishery independent survey that captures other reef fish species besides red snapper. He stated that we need to find a better gear to provide life history data on reef fish. A funding announcement for the Cooperative Research Program

(CRP) was recently released. CRP provides funding for projects seeking to improve and strengthen the relationship between fisheries researchers and the recreational and commercial fishing industry in the Gulf of Mexico. Average awards are usually made for around \$150,000. **T. Switzer** thought that the SEAMAP Subcommittee should use the old RESTORE Act Science Program proposal that was previously developed as a start for the CRP proposal. Since CRP required researchers to partner with fishermen, **F. Martinez** stated that he would have to check with his superiors to see if TPWD would be able to charter vessels to conduct the project. **J. Rester** stated that proposals were due September 21, 2018 and that he could help coordinate conference calls to discuss developing the project.

Biocode Issues

J. Rester stated that the SEAMAP biocode list needs to be modified. The biocode list allows researchers to search by species, genus, family, or order etc. quickly. The problem is that taxonomists are continually updating and changing scientific names and changing and tracking scientific names can become cumbersome especially when the databases that the biocode draws names from do not update their data on a regular basis. **J. Rester** stated that David Hanisko currently uses several databases to update and maintain the biocode list. **J. Rester** reported that David was looking to revise the biocode list and just wanted to inform the Subcommittee of possible changes.


Other Business

J. Rester asked about the status of the FSCS update. **E. Hoffmayer** stated that Chuck Schroeder was still working on it and they hoped to be able to release it in 2019.

There being no further business, the meeting was adjourned at 11:45 a.m.

**GULF & SOUTH ATLANTIC REGIONAL PANEL
ON AQUATIC INVASIVE SPECIES
MINUTES**

**Tuesday, April 10, 2018 – Wednesday, April 11, 2018
Jackson, MS**


Approved by chairman

On Tuesday, April 10, 2018, Chairman **Kristen Sommers** called the meeting to order at 8:30 a.m. The meeting began with introductions of the members and guests. The following were in attendance:

Members & Proxies

James Ballard, GSMFC, Ocean Springs, MS
Tim Bonvechio, GA DNR, Waycross, GA
Rob Emens, NC DEQ, Raleigh, NC
Pam Fuller, USGS, Gainesville, FL
Lisa Gonzalez, HARC, The Woodlands, TX
Tom Jackson, NOAA, Miami, FL (via conference call)
Peter Kingsley-Smith, SC DNR, Charleston, SC
David Knott, At-Large Member, Charleston, SC
Jon Lane, USACE, Jacksonville, FL
Leigh McDougal, USDA Forest Service, Atlanta, GA
Monica McGarrity, TPWD, Austin, TX
Robert McMahon, UT Arlington, Arlington, TX
Michael Pursley, MS DMR, Biloxi, MS
Stephanie Otts, MS-AL Sea Grant, University, MS
Matt Phillips, FWC, Tallahassee, FL
Bobby Reed, LDWF, Lake Charles, LA (via conference call)
Dennis Riecke, MDWFP, Jackson, MS
Kristen Sommers, FL FWC, Tallahassee, FL
Cindy Williams, USFWS, Atlanta, GA

Staff

Ali Wilhelm, GSMFC, Ocean Springs, MS
Joe Ferrer, GSMFC, Ocean Springs, MS

Others

Nathan Aycock, USFWS, Jackson, MS
Mike Beiser, MDEQ, Petal, MS
Chelsea Bohaty, USACE, Jacksonville, FL
Michael Eggleton, UAPB, Pine Bluff, AR
Michael Flinn, Murray State University, Murray, KY
Jan Hoover, U.S. Army Engineer Research and Development Center, Vicksburg, MS
Trevor Knight, MDWFP, Jackson, MS
Gregory Moyer, Mansfield University, Mansfield, PA
Linda Nelson, USACE, Vicksburg, MS
Louise Nicholson, California University of PA, California, PA
Angelie Rodgers, USFWS, Jackson, MS

Gray Turnage, MSU, Starkville, MS

Public Comment

Chairman **Sommers** provided the opportunity for public comment. No public comments were received.

Adoption of Agenda

After a minor change to the agenda, **a motion to adopt the agenda was made, and passed unanimously.**

Approval of Minutes

The minutes of the May 11-12, 2017 GSARP meeting in Savannah, GA were presented for approval.

A motion was made to approve the minutes. The motion was seconded, and the motion passed.

Rotenone Sampling of Oxbow Lakes With and Without Asian Carp

Nathan Aycock gave a PowerPoint presentation entitled “Effects of Asian Carp on Sport Fish in Oxbow Lakes of the Lower Mississippi River”. In 2016 and 2017, studies were done in three large Mississippi River oxbows to determine how silver carp and bighead carp affect game fish. The study sites were: Lake Whittington, a 3,000 acre oxbow of the MS River that is river connected, with Asian carp; Tunica Cutoff, a 3,800 acre oxbow of the MS River that is river connected, with Asian carp; Eagle Lake, a 4,700 acre oxbow of MS River that is not river connected, with no reproducing Asian carp. The current fish community composition by rotenone sampling was determined, compared to past samples from the 1980s and 1990s done in those locations, prior to silver and bighead carp introductions. The same methodology was done as the past sampling. In July and August, an 8-man crew set nets, applied rotenone, and picked fish up on the first day. On the second day, fish were picked up. The length and weight were collected on all fish.

In Lake Whittington, Asian carp made up 31% of the total weight of fish caught. In Tunica Lake, Asian carp made up 42% of the total fish weight. In Eagle Lake, Ictaluridae made up 29% of the total fish weight, with Clupeidae making up 21%. The average number of species in the 1990s from the three locations was 22-29. The average number of species currently is 23-30. There was no change in species richness.

It was concluded that when silver carp are present and reproducing, they dominate. There is a dramatic decline in shad and game fish numbers after silver carp are established. Rotenone sampling was highly variable. There is much work to be done to prevent Asian carp expansion into Mississippi reservoirs. There are still fisheries at Lake Whittington and Lake Tunica. Sampling will be replicated at Lake Whittington next summer.

Overview of the Aquatic Invasive Plant Research at Mississippi State University

Gray Turnage gave a PowerPoint presentation entitled “Overview of the Aquatic Invasive Plant Research Program at Mississippi State University”. There are two classes of projects at MSU:

Laboratory/mesocosm, and Field. The focus areas of the Turnage Lab are: Aquatic/Wetland Plant Biology and Ecology; Aquatic/Wetland Nuisance (Invasive) Plant Control; UAS Operations (Plant detection and monitoring protocols). There are two facilities at MSU dedicated to aquatic/wetland plant research. Most projects of the MSU program have an extension or outreach component. There are technical reports, professional presentations, poster presentations, and workshops. A *Weed Control Guidelines for Mississippi* was published by MSU for 2017.

At the MSU Aquatic Plant Research Facility (APRF), multiple experiments are running at any given time. In 2017, there were 14 experiments, with some ongoing. The APRF and Greenhouse facilities allow staff to run small pilot projects prior to large field trials. Phenology negates the need to travel to the field as often. Control trials allows staff to screen multiple control options at one time, saving money. UAS operations allows staff to determine issues that arise with flight protocols/plans prior to field ops.

In 2017, 42 waterbodies were surveyed, with 105 aquatic plant species observed, and 15 nonnative plants. The survey was used to prioritize species for control efforts in Mississippi. It was the first statewide survey done.

Overview of the Coastal Mississippi Invasive Species Program

Mike Pursley gave a PowerPoint presentation entitled “Coastal Mississippi’s Invasive Species Program”. Giant salvinia is a state and federal noxious weed that is common in the Pascagoula and Pearl River. Its biomass doubles every 3-4 days. Weevils are used to help control it. Lionfish moved into Mississippi waters in 2015. They are predatory, with few natural enemies. Full control is not considered feasible. Asian tiger shrimp eat native shrimp and shellfish. They were first sighted in Mississippi in 2009, and appear to be reproducing in the Gulf. They have the possibility to introduce diseases. Sightings are often not reported. Hydrilla is an aquarium plant from Asia that is cold and salinity tolerant. Millions of dollars are spent on maintenance control in Florida. Silver carp outcompetes native fish for plankton. A silver carp was caught in Hancock County in 2014, and there have been recent sightings.

Giant apple snails are a freshwater South American snail sometimes sold as “Mystery Snails”. They are “perfect invaders”, since they mature in 60-80 days, produce egg masses every two weeks (2,500 eggs/mass average), eggs hatch in 10-14 days, and they spread naturally and are transported by other species. They strip marshes of vegetation, and change plant communities to algal-based. They are carriers of rat lungworm parasite. Millions of dollars of damage to rice crops in Asia was caused by the snails. One Louisiana farmer lost 220 acres of crawfish production. Giant apple snails were discovered in Robinson Bayou in 2014. Since 2014, 11,945 egg masses have been destroyed, and 450 live snails captured. Recent flooding may have spread the infestation. There have been sightings in Louisiana, Alabama, and Mississippi. Control options are limited. In 2001, the MDAC BPI adopted an emergency apple snail regulation. Movement of live apple snails into and within the state is prohibited. In 2006, the USDA banned importation and interstate transport of most apple snails. However, young, immature snails sold in the aquarium trade are difficult or impossible to accurately identify. Taxonomic confirmation can be done on the two species. Mystery snails are *Pomacea bridgesii*, and in many cases not *Pomacea maculata*.

Control methods in coastal Mississippi consist of trapping, capture, and the elimination of egg masses. In Robinson Bayou, the approximate cost of weekly giant apple snail control missions total \$624.00. The yearly cost total from 2014-2017 was over \$63,000. In 2018, help was received from the Gulf Corps.

A free downloadable app, Workforce for ArcGIS, was created for field data collection. It is easily configurable for any type of project. Work area assignments can be set, data can be remotely uploaded, and the data downloaded in a variety of formats.

Overview of Riparian Plant Control Efforts in Texas

McGarrity gave a PowerPoint presentation entitled “Overview of Riparian Plant Control Efforts in Texas”. The TPWD Healthy Creeks Initiative has specific goals: To reduce dominance and impacts of arundo on creeks; enhance habitat for fish and wildlife in important areas for conservation; engage private landowners in conservation efforts. Integrated arundo management consists of biological, cultural, mechanical, and chemical treatments. In 2018, management will expand to two new river basins – Medina and Guadalupe.

In 2016/2017, 6,700 acres along the Upper Brazos River were treated for saltcedar. The Brazos River is a critical habitat for smalleye and sharpnose shiners. Aerial surveys were done, as well as hydrological and biological monitoring. Saltcedar beetles are being used to help control saltcedar.

Don't Let Your Pets Become Pests

McGarrity gave a PowerPoint presentation entitled “Don’t Let Your Pets Became Pests”. The goals of this campaign are to prevent the introduction and spread of aquatic invasive species in order to help preserve native Texas marine ecosystems; create awareness of impacts of dumping aquarium fish, animals, and plants; inform aquarists of alternatives to dumping their tanks, via information provided on www.TexasInvasives.org/NeverDumpYourTank.

The primary target audience are aquarium owners from Texas coastal areas, between the ages of 18 to 60 years old. The secondary target audience are aquarium stores and pet superstores that are uniquely positioned to increase awareness, and might be able to offer to take back aquarium pets and plants. Marketing tactics include: website, print ad, direct mail, social media, vinyl banners, posters, digital advertising, billboards, and vehicle magnets. The online ad campaign delivered the message to over 225,000 people, with 11,310 clicks to the website, and 2,580,578 impressions in nine weeks.

Efforts in 2018 will include: messaging scuba divers; TPWD television episode and/or video news releases on invasive species; local television station visits with biologists catching lionfish, plecos, etc.; e-banners in TPWD e-newsletters and website; print ads in TPW Magazine and saltwater magazines; press releases to publicize the campaign; possible email campaign.

USACE-ERDC Research on Aquatic Invasive Plants

Linda Nelson gave a PowerPoint presentation entitled “USACE-ERDC Research on Aquatic Invasive Plants”. The Aquatic Plant Control Research Program (APCRP) develops effective, economical, and environmentally compatible strategies for assessing and managing invasive

aquatic plant problems. The current focus areas are: biological control, chemical control, ecological assessment, management strategies and applications, and harmful algae.

Funded FY18 projects include: Biological Control of hydrilla and floating hearts in the U.S., and the development of insect biocontrols for *Phragmites* and flowering rush; Chemical Control with ProcettaCOR, evaluating grass-specific herbicides to enhance aquatic restoration, linking plant biology with management strategies to improve control of monoecious hydrilla, comparing generic aquatic herbicides with proprietary compounds, and management of water chestnut.

Ongoing research and development include overseas searches for new insect agents for monoecious hydrilla, phragmites, flowering rush, and crested and yellow floating heart. Monoecious hydrilla, a biotype believed to have originated from Korea, is expanding in the U.S. Leaf-mining *Hydrellia* flies are the only agents for hydrilla in the U.S., but are not effective against the monoecious biotype. Recent genetic characterization was done of hydrilla samples collected from China and Korea. Sites in both countries have been located which contain hydrilla matching the U.S. biotypes (monoecious and dioecious). Genetic characterization indicated the greatest genetic diversity of hydrilla occurs in China, and supports greater array of insect fauna and potential biological control agents. New insect agents identified include: Weevil (*Bagous rufipennis*), fly (ephryidae), midge (chironomidae), moth (cramidae). The next steps will be to quarantine, establish rearing, and host specificity tests. Two moth species (*Archanara germinipuncta* and *Archanara neurica*) have been selected out of nine potential agents. They are a very low risk of negative impact to native *Phragmites* haplotypes. The next step will be to submit a petition to TAG for field release.

Research is being done to evaluate grass-specific herbicides to enhance aquatic restoration. The objective is to identify and develop grass-specific herbicides for aquatic plant management. Sequential treatments in the late spring worked well, and spot treatment concentrations are most promising for single applications.

USACE-ERDC Research on Invasive Fishes

Jan Hoover gave a PowerPoint presentation entitled “ERDC Research on Invasive Fishes”. In the 1990s, research was done on grass carp for age and growth, movements, stocking densities, and innovative collecting techniques. Currently, on entrainment by and dispersal from Bonnet Carré.

Field studies are being done on suckermouth armored catfishes for shoreline erosion in natural and urban waterways, greenhouse demonstrations of reduced aquatic vegetation and periphyton, increased turbidity/phytoplankton, and literature review and workshop identifying multi-level impacts. Field studies are being done on sea lamprey for response to metals and swim performance. For Asian carp, empirically-based population models are being created that reflect extreme capabilities of the species, and management scenarios including barriers and harvest are being evaluated. Tournament-based harvest enables selective sub-sampling from 1000s of fish for jump parameters and population metrics. Observational studies were done on silver carp for spatial patterns and environmental influences. Videographic studies were done of their jump parameters.

External tags were attached to Asian carp entrained at Bonnet Carré. The populations were monitored in the Pearl River system, coincident with Gulf sturgeon studies. Paddlefish are less robust with prolonged exposure to Asian carp.

Developing technologies include chemical disinfection, and synthetic biology for engineered pathogens and engineered fishes with limited lifespans and daughterless strains. Developing industries include dog/cat treats and fish cake patties made from silver carp.

Implications of the Lacey Act Ruling for States

Sommers gave a PowerPoint presentation entitled “Changes to Lacey Act Injurious Species Interpretation”. The USFWS and state regulatory lists for injurious species do not always match up. The Lacey Act was established in 1900, with amendments. It prohibits importation into the U.S. Until 2017, interstate transport in the continental U.S. was prohibited. The April 2017 court ruling on the Lacey Act removed the interstate transport provision. Species that may pose a risk to each state, but are not currently regulated at the state level, may now enter from other states.

The direct impacts of injurious species are: direct predation, competition, disease risks, human and safety concerns, social and economic impacts, and secondary impacts. Do nearby states regulate or allow those species? Have they been reported in nearby states? What is the “risk” in each state? There are stakeholder interests for aquaculture, the pet industry, zoos/aquariums, and pet owners/hobbyists.

Possible options for states include: A case-by-case risk assessment for those injurious species not regulated in a state; a one-size-fits-all regulation in a state that places current injurious species into one of the state’s regulatory categories; incorporating or referencing injurious wildlife into state regulations; a combination of approaches.

Region 4 USFWS/Small Grants Program/Regional Coordinators Meeting

Williams reported that they will have to now go through a rigorous request, review, and approval for federal expenditures of funding. A table was provided to the panel members showing review levels, and what was required. A spreadsheet must be filled out and sent in with all grants requesting funding. If the amount is over \$50K, the request must be sent to the Senior Advisor. If under \$50K, it must be sent to the FWS Director. Gulf States Marine Fisheries Commission is 501c(3). **Williams** submitted a request for \$97K, followed by a second request for \$40K to be added to the small grants program. It is a minimum of 6-8 weeks for the initial review. When approved, it must be sent to the FWS Director. This is the same process as the state grants. It is anticipated that final approval for issuing any grants will not be given until sometime in July. When approval for GSMFC project funding is given from the department, it will be posted on grants.gov for at least five days. **Ballard** will then post funding availability on the GSMFC website, and distribute through the panel members, and those who have applied for funding in the past. **Williams** and **Ballard** are working on how long the advertisement should be posted that project funds are available, to give people time to get their proposal together. **Ballard** will send out the RFP, contingent on the funding being approved, and then go through the ranking process with the review committee, and hopefully have the review completed by the time the funding becomes available.

Update on New Introductions

Fuller gave a PowerPoint presentation entitled “New Non-native Species Occurrences and Program Updates”. A bullseye snakehead was found in a Miami-Dade golf course pond. In October 2017, zebra mussel veligers were found in a water sample from the North Fork San Gabriel River in Texas. Lake Georgetown of the San Gabriel River declared to be reproducing later that year. Also in October 2017, six adult zebra mussels were found in Richland Creek at the Richland Chambers Reservoir. An African jewelfish was found in Starke Lake in the Upper St. Johns Drainage in Ocoee, Florida. They appear to be established. Giant salvinia was found in Yellow Creek in the Pickwick Lake Drainage, near Burnsville, Mississippi. More plants were found upstream in Indian Creek, close to the confluence with the Tennessee River. Giant water sensitive plants were found in a pond near Oak Creek in the Peace Drainage in Florida. It is the fourth sighting in the state of Florida, and only the fifth in the country. Crested floating heart was found established in a pond near Beaver and Chocolate Creeks, in the Haw Drainage in North Carolina. Pagoda tiara were found in Lee County, Caloosahatchee, and Big Cypress Swamp Drainages in Florida. They appear to be established in these areas. These are native to Asia, and were an aquarium release. They were recently found in Florida in August 2017, and now on the west coast as of January 2018 and March 2018.

Alert Risk Mapper (NAS ARM) and Flood and Storm Tracking Maps (NAS FaST)

Fuller gave a PowerPoint presentation entitled “USGS Nonindigenous Aquatic Species Aquatic Risk Mapper (NAS ARM)”. The NAS Alert System provides a framework for the rapid dissemination of new invasions, and notifies registered users of new sightings. It is part of a national early detection/rapid response system. The National Anthropogenic Barriers Dataset (NABD) includes over 56,000 dams. Barriers within the watershed can limit the spread of aquatic invasive species.

NAS FaST (Nonindigenous Aquatic Species Flood and Storm Tracker) is a new tool to track the possible spread of nonindigenous aquatic species from flood waters of Hurricane Maria. Flooding during storm and hurricane events has the potential to transport nonindigenous aquatic species. As part of the EDRR system the NAS program is interested in alerting managers of these possible new introductions. The program was created to help assess transportation of nonindigenous aquatic species between drainages due to storm surge and inland flooding, and to help natural resource managers determine potential new locations for individual species, or to develop a watch-list of potential new species within a watershed. NAS FaST has current flood maps of Hurricanes Harvey, Irma, Maria, and Nate. There are three stages for the maps after a flooding occurrence. Stage 1 (2-4 days) is the initial response and the creation of a map of potential flooded HUCs. Maps will include information about NAS that could spread. Stage 2 (6-8 weeks) is a follow-up of assessment of drainages that had flooding conditions that could breach drainage divides from coastal storm surge or inland flooding. Stage 3 (12-18 months) is the final review of which drainages were connected from flooding and any records of potential NAS transport due to coastal storm surge or inland flooding.

Aquatic Nuisance Species Task Force Update

Williams reported that the last meeting of the Aquatic Nuisance Species Task Force was held on November 9-10, 2016. In April 2017, the department began a review of its advisory boards, which necessitated the postponement of committees, subject to the Federal Advisory Committee

Act, including the Gulf and South Atlantic Regional Panel. On January 10, 2018, a new Task Force charter was signed for operations to resume. The next Task Force meeting is scheduled for June 12-14, 2018. The Notice of Funding Opportunities was posted on March 30, 2018. It closes on April 30, 2018. GSARP funding will remain at \$40,000.

Discussion about the Panel's Website Redesign

Joe Ferrer reported that he has been designing the website, but needs assistance with content. **McGarrity** suggested posting information about the most problematic species, what states are doing, products that have come out, and resources. **Pursley** suggested having an archive of past presentations as a reference. **Emens** suggested listing basic information as bullet points about aquatic invasive species, and to post upcoming GSARP meetings. **Kingsley-Smith** suggested a “frequently-asked questions” section, and an experts/agency database. **McMahon** suggested having a database for research reports/publications, and links to other panel websites. **Fuller** suggested having information for public education, with limits. **Bonvechio** suggested having state ANS management plans available. **Gonzalez** suggested providing links to various state’s websites for invasive species lists. **Sommers** suggested also having information available just for the panel members, and not for the general public. **Ballard** agreed, and suggested that there be a priority list of the top 10 highest invasive species, with images that could be clicked on to take you to a facts page on that species. He would like the website to be two-fold – information and resources for the public, and for the panel only. **Williams** suggested that the top 10 list would be beneficial. **McDougal** suggested making the website easy to find for the public, and to organize the publications/reports by topics, etc. so they are easier to find on the website. **Riecke** suggested adding a section that explains about invasive species threats and why management and eradication are important, and having information for the general public, boat owners, exotic pet owners, etc. on how they can help stop the spread, report a species, or get assistance on identifying a species. Also, provide links to Habitattitude, Stop Aquatic Hitchhikers, etc. **Ott** suggested having the most relevant issues on the opening page to make it easier to navigate, especially for mobile phone users.

Ballard stated that panel members are needed to work on the website to help review the content and update it. **Pam Fuller**, **Lisa Gonzalez**, and **Dennis Riecke** volunteered to help with the website.

The Chairman again provided the opportunity for public comment. No comments were received.

Wednesday, April 11, 2018

The meeting reconvened at 8:30 a.m. The Chairman again provided the opportunity for public comment. No comments were received.

Tracking of Asian Carp in the Tenn-Tom Waterway

Trevor Knight gave a PowerPoint presentation entitled “Tracking Asian Carp in the Tennessee River and Tenn-Tom Waterway with Acoustic Telemetry”. The objectives of the project are to evaluate movements of Asian carp in the TN and Tenn-Tom Waterway, evaluate Asian carp movement through locks and dams, and to continue to update leading edge of Asian carp invasion. From April 2015 through November 2017, staff with the MS Department of Wildlife,

Fisheries and Parks sampled rivers and lakes for Asian carp. Ten adult silver carp were implanted with acoustic tags and external floy tags. The transmitter transmits every 60 seconds, and has a battery life of approximately four years. Data is downloaded via Bluetooth.

Eight of ten tagged carp have been detected at Indian Creek. Nine of ten tagged carp have been detected at the mouth of Yellow Creek. The carp appear to over-winter in Indian Creek. Pulses in the current appeared to trigger movement between Indian and Yellow Creeks. The shortest time between detection of a carp at Indian and Yellow Creeks was eight hours and 49 minutes.

Receiver data will continue to be downloaded and analyzed. Fish will continue to be tagged during cool water. Their movement and passage through locks and dams will continue to be tracked. More receiver sites will possibly be added.

Asian Carp Effects on Age-0 Fish Dynamics in the Lower White River

Michael Eggleton gave a PowerPoint presentation entitled “Silver Carp Establishment in the Lower White River, Arkansas: Effects on Native Fishes”. Bighead carp and silver carp population ranges have grown tremendously during the past 10-15 years. In 1975, they were found in the White River drainage. From 2005-2015, they were recorded along the borders of 23 states, with self-sustaining populations in the Mississippi, Missouri, Ohio, and Tennessee Rivers. The fish compete directly with adults of some native species, and juveniles of many species. They can consume up to 20% of their weight per day, most of which is plankton. They mature one year sooner than in China, and their mean sizes exceed those in China by 26%.

The Lower White River is a unique habitat, and has high fish diversity of over 150 fish species, with 11 endemics. It is less altered than most river-floodplain ecosystems, and the nearby Cache-Pottawatomie White River confluence is listed as RAMSAR “Wetlands of International Significance”. Bighead and grass carps are present, but at low densities. Silver carp have been established within the last decade, but are now highly abundant in many areas. Black carp are still rare, but becoming more common in nearby drainages.

A study was done at the Dale Bumpers White River National Refuge in 15 lakes to compare present-day (2017 post-carp invasion) oxbow lake fish assemblage attributes with historical datasets collected during 2002-2005 (pre-carp invasion), and to examine the relationship between present-day oxbow lake fish assemblage attributes and silver carp densities in oxbow lakes. Results of the study found that in 2017, 12 species were not found, compared to historical (2002) datasets, but 13 new species were collected. Shifts in fish assemblage structure was likely, with some sport fishes affected. It cannot be stated unequivocally, however, that assemblage shifts are due to carps, as periodic or constant assemblage shifts could be normal for these types of systems. More analyses will be done.

Another study was done to quantify juvenile (age-0) fish characteristics (abundance, growth, condition) of selected fish species in lower White River oxbow lakes, and examine the relationships between juvenile fish characteristics and carp densities in these same lakes. Nine “target species” were examined – four piscivores, two planktivores, two omnivores, and one common cyprinid. Results of the study have found that the mean length, weight, and CPUE were all inversely related to carp abundance. Samples are currently being processed that will be used

to estimate total fat content from composite samples of each target species and lake. One total fat estimate will be generated per species and lake, with fat estimates modeled vs. carp rank abundance. The general condition and fitness after first growing season and entering first winter will be reflected, which is critical to future year-class strength for many species. Additional juvenile measures vs. carp rank abundances will be modeled. Research will allow for the development of further hypotheses on carp effects, and will possibly be the basis for future experimental work. More analyses will be done in spring and summer 2018.

Diet Overlap Between Asian Carp and Gizzard Shad in Kentucky Lake

Michael Flinn gave a PowerPoint presentation entitled “Differential Niche Overlap of Invasive Silver Carp and Native Planktivores at Various Life Stages in Kentucky Lake”. Kentucky Lake is the largest flood storage reservoir east of the Mississippi River. It has a large commercial fishery, and is a popular destination for bass and crappie fishing.

Silver carp were first officially reported in Kentucky Lake in 2004. They likely invaded the lake through the lock and dam. There was evidence of silver carp reproduction in 2015. There is evidence of competition, as the body condition of native bigmouth buffalo and gizzard shad was reduced, and bigmouth buffalo populations decreased.

Research was done to determine if competition between silver carp and other planktivores could be quantified; determine how ontogeny influences the potential for competition; seasonal (spring/summer) influence on the potential for competition; spatial differences in resource utilization and niche overlap in Kentucky Lake, Lower Tennessee River, Ohio River, Clarks River, and the Illinois River. Fish were collected via gill net and boat electrofishing. The length and weight were measured, and aging structures and tissue samples were extracted. The tissue samples were analyzed at Southern Illinois University in Carbondale. Isotopic niche is tightly correlated with trophic niche, which allows for estimate of shared resource use. Trophic niche equals resource use (food and habitat). Seasonal results showed that in the spring, the niche overlap does not equate to gut content overlap. Adult silver carp and juvenile threadfin shad do not share resources. Adult silver carp and adult gizzard shad share resources. Juvenile silver carp and juvenile gizzard shad share resources. Adult silver carp and juvenile gizzard shad share resources. In summer, there was no overlap between adult silver carp and juvenile threadfin shad. Trophic positions are similar. There was no overlap between adult silver carp and juvenile threadfin shad. Trophic positions are similar. Adult silver carp share resources with adult gizzard shad. Seasonal shifts showed that path direction indicates what is contributing to their diet. Adult silver carp and phytoplankton have similar path directions. Phytoplankton is the primary diet item. Adult gizzard shad and zooplankton have similar path directions. Zooplankton is the primary diet item. Juvenile threadfin shad do not follow path directions of end members. Juvenile threadfin shad switch feeding mechanisms. Groups become more enriched in nitrogen during the summer, with the exception of juvenile threadfin shad. Spatial differences in resource utilization and niche overlap results showed that there is spatial variation in niche overlap. Silver carp appear to consume more pelagic prey items than gizzard shad. Silver carp and gizzard shad share resources in Kentucky Lake, but threadfin shad do not. Juvenile silver carp and gizzard shad share more resources than adults. Competition is also occurring in the Illinois River. Core isotopic niche overlap varies by system. There is no resource overlap in the Ohio and Clarks Rivers. Competition depends on food and space availability. If competition ensues, there could

be declines in zooplankton and phytoplankton populations, body condition of planktivores, and abundance of plantivores.

Future research will be done on management strategies for mass removal of silver carp. A telemetry project to determine movement patterns through the systems is ongoing. Silver carp abundance, body condition of native planktivores, and phytoplankton and zooplankton abundance and community dynamics will continue to be monitored.

Developing eDNA Protocols for the Early Detection of Rusty Crayfish

Louise Nicholson gave a PowerPoint presentation entitled “Environmental DNA (eDNA) Protocols for Early Detection of Rusty Crayfish in Lotic Systems”. Rusty crayfish are invasive in 20 states. They are native to the Ohio River basin. They were introduced through bait buckets, educational use, and intentional release. Rusty crayfish impact native species through: Increased interspecific competition and displacement of native crayfishes; increased rates of predation by fishes; hybridization with native crayfishes. They impact other species through destruction of aquatic plant beds and trophic shifts in predator-prey/grazer-vegetation relationships, and shifts in macroinvertebrate/fish assemblages.

The potential advantage of environmental DNA (eDNA) detection of invasive species is that it provides a highly sensitive method for detecting invasive species at low densities without the need for invasive sampling, but it has had varying degrees of success. In question are what factors affect eDNA detection rates for rusty crayfish, and if eDNA sampling is an effective method for detecting rusty crayfish in lotic systems. Water samples were collected under varying laboratory conditions, and preserved by filtration and ethanol and 3M sodium acetate. A field test protocol was done. Crayfish were collected from Blacklog Creek and maintained in aquaria. A laboratory model stream was used, and the crayfish were introduced to the stream in tethered cages. Tissue samples were used for initial protocol testing. PCR primers amplified cytochrome c oxidase subunit 1 (COI) gene. Results showed that eDNA detection is affected by crayfish density, but not by crayfish size. The sex ratio affects detection strength. In lotic conditions, eDNA detection is more variable. Detection reliability increased when appendages/moulted exoskeletons were present. Sites will be re-sampled in spring/summer, when crayfish are likely to be moulting. The detection method will be modified. Water quality parameters that influence detection rates will be identified.

Monitoring for *Didymosphenia geminata*: An Environmental DNA Approach

Gregory Moyer gave a PowerPoint presentation entitled “Applications of eDNA Methods for Inventory and Monitoring of Aquatic Species”. The goal of the project was to monitor for *Didymosphenia geminata* using eDNA. Didymo, also known as “snot rock”, is an extracellular polysaccharide stalk.

A total of 31 Tennessee streams were surveyed for snot rock. Stream water was filtered using a drift net, 240 mm in diameter. After a two minute soak, 5ml of water was taken for microscope analysis. It was concentrated to 50ml and then frozen. Samples were duplicated. Methods used were microscope analysis and eDNA analysis. An assay was developed, with negative and positive controls, and an internal positive control. Results from eDNA showed all positive rxns

worked. There was no contamination in negatives, and no PCR inhibition. Standard microscope evaluation was fast, and can be used with limited training.

Detection of quagga mussels using eDNA will be done to confirm their presence in a quarry linked to the Susquehanna River.

A Motion was made to move the Vice Chairman (Gonzalez) into the Chairman position. It was seconded, and the Motion passed.

State Reports/ Members Forum

Florida

Sommers spoke on FWC's development of innovative control methods to increase the number of lionfish removed from shallow water reefs by incentivizing divers and dive boat operators, and to fund research to develop methodologies to remove lionfish from waters beyond the reach of recreational divers. The FWC is asking for assistance from Florida's divers and dive organizations to increase lionfish harvesting efforts, and the FWC created the Lionfish Harvest Reimbursement Program, which began in January 2018. Dive boat captains will conduct a lionfish harvest trip, and be eligible for reimbursement if the total lionfish harvest from the day's trip is equal to six lionfish multiplied by the total number of divers. The qualifying total harvest is achievable for divers removing lionfish from areas of the state that vary in population density. This system also allows for experienced harvesters to compensate for less experienced individuals, since the eligibility is based on the total number of lionfish removed during the trip, and not on the number of lionfish harvested per diver.

The FWC will launch their new Tagged-Lionfish Program in May 2018. This program uses dart-tagged lionfish to incentivize divers to continue removing lionfish from Florida waters. The tagged lionfish will be released on public artificial reef sites, and those divers who harvest the tagged lionfish will be rewarded either monetarily or in product form. Four to six lionfish will be tagged at each of 50 randomly-selected public artificial reef sites statewide between the depths of 80-120 feet. Additionally, the program can provide valuable data on the movement of lionfish based on the location of the fish when tagged, and when harvested.

In 2017, the FWC announced a funding opportunity for stakeholders to research, test, and develop equipment and methodologies for harvesting lionfish recreational dive limits that are greater than 130 feet. The request for proposals was announced in September 2017, and eleven proposals were submitted. Five vendors were awarded contracts in December 2017. Contracts with vendors have been compiled, and are under review by both parties prior to execution. The FWC's Wildlife Impact Management Section contracted with the University of Florida's Tropical Aquaculture Laboratory staff to generate biological synopses of other members of the scorpionfish family, and to test, evaluate, and apply the Aquatic Species Invasiveness Screening Kit (AS-ISK) to the lionfish genera *Dendrochirus*, *Parapterois*, and *Pterois*. The biological synopses for 13 species of lionfish have been completed. To date, one UF assessor has evaluated all 13 species using the AS-ISK tool, and other independent evaluations are in progress. *Pterois volitans* and *P. miles* were assigned risk scores of 34 and 35, which are higher than any other

species of lionfish. The completed assessments will provide an estimate of risk category for each species (low, medium, or high) and an estimate of relative risk of all the species.

Fishbrain is one of the largest fish reporting apps available to anglers around the world. The FWC and Fishbrain have partnered to use these reports as a tool to help determine the distribution of selected nonnative fish species. To date, 2,169 usable nonnative fish reports have been reviewed by the FWC. A total of nineteen freshwater, and one marine nonnative fish species were confirmed in these submitted reports.

A two-day "Fish Slam" event was held on November 7-8, 2017 in which 31 fishery biologists from 11 agencies used a variety of sampling methods to collect nonnative fishes. The objectives of Fish Slams are to sample waterbodies not normally sampled by biologists, and to determine if nonnative fish populations are established or spreading. A total of 20 nonnative fish species were collected from 35 sites in Broward and Miami-Dade counties. No new nonnative species were collected.

A population of bay snook was discovered in 2014 in a series of interconnected waterbodies in Pinecrest Gardens in Miami-Dade County. These waters also held a variety of other nonnative fish species, including koi, pacu, redbtail catfish, rip saw catfish, and blue mbuna. Using rotenone to eradicate these fishes was not practical, due to the property owner's desire to protect the koi. When Hurricane Irma struck in September 2017, most of the large-bodied nonnative fish, including the koi, perished due to low dissolved oxygen levels caused by a power outage, or by stranding after flood waters within the property receded. However, the bay snook and blue mbuna survived. Rotenone was then applied to the pond by FWC personnel. Eight species of nonnative fish were collected, including 158 bay snook, and 145 blue mbuna. Follow-up sampling have not yielded any additional bay snook or blue mbuna. The pond is being restocked with native freshwater fish, with the goal of establishing a native fish community.

The FWC's standardized electrofishing program monitors native and nonnative fish populations in southeast Florida urban canals. To increase the power of this approach, the FWC's WIM Section coordinated with FWC FFM staff to develop a modified sampling protocol based on their long-term monitoring program. The new protocol keeps three fixed-starting point transects that the FWC NFWP has used since 1997. Additionally, 3-5 randomly-chosen daytime transects were added to this protocol. The addition of new transects increased the mean number of nonnative fish species collected per canal by 14%, and the number of native species collected increased by 32%. No new nonnative species were collected.

The winter of 2017/2018 was the coldest in Florida since 2010. Nonnative fish species' intolerance to cold-weather temperature is the primary environmental limiting factor that determines their distribution in Florida. The FWC received 49 cold-water related fish-kill reports through the Fish Kill Hotline. Reports from anglers of dead nonnative fish were also received. The winter fish-kill of 2018 had relatively minor impacts to populations of nonnative fish species, with no expected long-term detrimental effects on them.

In Riverview, FL a population of African clawed frogs was discovered in a small retention pond in 2016. Several ponds were renovated with hydrated lime, but were soon repopulated with

frogs. Traps were placed on the bottom of the pond, but native and African clawed frogs were both killed. Traps set on the surface of the pond were ineffective. A “B” shaped minnow trap proved to be successful, as it kept frogs alive and native species could be released unharmed. A total of 117 waterbodies were sampled, with 12 supporting African clawed frog populations. A total of 20,441 frogs and tadpoles were removed over a four-month period.

The WIM Section will contract with two universities to conduct genetic and disease analysis on African clawed frogs. These frogs are potential vectors of chytrid fungus, a disease linked to global declines in amphibians. The objectives of the study are to determine the adaptive genetic variation in these frogs, and to determine if pathogens may be facilitating or hindering the invasion front of the frogs. The WIM Section will also contract with UF to better understand the spatial extent, invasion potential, and potential management of the frogs by doing a study to determine the spatial extent of the frogs using comprehensive surveys, perform thermal tolerance trials to set geographic limits on the potential distribution of the frogs in Florida, and to assess efficacy of removal methods. Both projects will begin in July 2018.

Python Removal Permits comprised most permits issued during September 2017 – February 2018. A total of 50 permits were issued, including 38 issued for the removal of conditional reptiles from FWC Wildlife Management Areas.

The 8th Annual Everglades Cooperative Invasive Species Management Area Nonnative Fish Round-Up is scheduled for April 27-28, 2018. This tournament increases awareness of nonnative fish issues in Florida, and encourages consumptive use of nonnative fish.

The FWC/USGS co-host a “Fish Chat” approximately every two years in southeast Florida. Fisheries professionals from a variety of universities, state, and federal agencies provide updates on ongoing or completed projects. The next Fish Chat will be held in May 2018.

The first Snakehead Round-Up of the 2018 season will be held in April, and will continue through September. The FWC will act as the weigh-master and provide outreach materials to participants and spectators. These tournaments provide valuable data on effort and harvest of bullseye snakehead and catch rates of co-occurring largemouth bass.

The FWC will host the 2018 Lionfish Removal and Awareness Day on May 19-20, 2018, with a 2-day festival in Pensacola. Additional events at locations around the state will take place on the same weekend.

The FWC has begun planning for a 2018 Lionfish Summit scheduled for early October. The agenda will include invited speakers, breakout sessions, poster presentations, and more.

Georgia

Bonvechio reported that during the 2017 sampling season, 3,713 flathead catfish were removed. The average size fish captured declined in 2017 to two pounds. For the past two years, the average length has declined from 365 mm TL in 2016, to 310 mm TL in 2017. Biomass per effort also has been declining from a high of 77.5/kg/hr, but was down to 15.7 kg/hr in 2017. Since 2007, over 79,700 flathead catfish have been removed.

In the Satilla River, seven blue catfish were found in 2011 in sampling. In 2016, 225 blue catfish were harvested. In 2017, 379 were caught. Continued monitoring and removal will occur, as the obvious increase concerns resource managers.

A pacu was caught by a Fulton County angler in July 2017 in a subdivision pond. The fish was identified via photo. Unfortunately, the fish was released back into the pond.

The GA DNR Fisheries Management Section is instituting a protocol to collect and test grass carp in an effort to monitor grass carp ploidy, and to minimize the potential establishment of wild grass carp populations in state-managed waters. Fifteen wild grass carp were captured and submitted for triploid testing. All 15 of the fish tested positive as triploids, including several from the Coosawatee and Etowah Rivers.

The Traveling Trunk was displayed at the Blackshear Elementary 4H Day on November 16, 2017. The python skin was a big hit. Approximately 250 students and 20 adults were reached.

Louisiana

Reed reported that they are monitoring the Red River for the presence of zebra mussels.

The apple snail invasion is still a major issue. During 2017, they had over 250 reports of apple snail infestations. Hurricane Harvey in August 2017 caused excellent spreading conditions in the southwest corner of the state. There were populations discovered along the Mermentau River basin during the fall of 2015, and there are now zebra mussel populations reported in 27 of the state's 64 parishes. In the fall of 2017 and spring of 2018, apple snails have been reported in rice fields, as well as some crawfish aquaculture farms. This has caused problems with harvesting due to the snails clogging up trap entrances.

The spread of Asian carp in large rivers is being monitored. Black carp brood stock are being collected for life history studies.

Following massive eradication efforts of tilapia in 2008 and 2009 in Port Sulphur, monitoring is still ongoing. Following the Rotenone applications, native predators have been stocked in hopes that they would deplete any remaining tilapia. Staff collected 30 tilapia during electrofishing sampling to see how the cold weather might have affected the population. Sampling will be done again this summer.

Lionfish monitoring was being done at offshore platforms that are part of the artificial reef program, but Hurricane Harvey interfered with that. Monitoring will begin again this spring and summer.

Giant salvinia continues to be a big threat in Louisiana. Since 2008, LDWF has treated 20,000 acres of giant salvinia per year with herbicides. Control efforts for all aquatic invasive plants include chemical, physical (drawdowns and booms), and biological (salvinia weevil and grass carp). Their annual budget for aquatic invasive plant control is \$8 million, of which 50% of the budget is spent on giant salvinia management alone.

Mississippi

Freshwater report:

Riecke reported that invasive plant species were chemically treated in the Ross Barnett Reservoir, Bogue Homa State Fishing Lake, Percy Quinn State Park Lake, and Crystal Lake.

MDEQ personnel posted 50 northern snakehead awareness and reporting signs along the Mississippi and Yazoo River boat ramps.

Asian carp were sampled in Pickwick Lake, and 10 silver carp were tagged with acoustic transmitters. Vemco receivers were deployed to track silver carp.

New detections of giant salvinia were found in TTW (Divide Cut, Lock A, Aberdeen) and Pickwick Lake (Indian Creek).

Distribution of “Stop Aquatic Hitchhikers” cards along with all boat registrations and renewals continues. Printing of the “Stop Aquatic Hitchhikers” logo and bullet list in annual regulation guides continues. The “Stop Aquatic Hitchhikers” brochures will be revised to include more invasive species that are present in Mississippi.

Aquatic herbicides will be purchased, and contractors hired to treat public and private waters infested by invasive plants.

An EDRR monitoring program will be established comprised of state and federal personnel who sample aquatic species in Mississippi public waterways on a routine basis.

Saltwater report:

A program of integrated pest management using salvinia weevils and spot herbicide application was used to treat existing populations of common salvinia, giant salvinia, and water hyacinth.

During monitoring of existing infestations, and early detection of AIS, two aerial surveys totaling 405 miles, and 21 boat surveys totaling 205 miles were conducted.

In an ongoing effort to control and contain an infestation first discovered in 2014, 610 giant apple snail egg masses were destroyed, and 12 live snails were removed from Robinson Bayou in the Pascagoula River. The bayou flooded during Hurricane Nate, drowning some egg masses, but possibly distributing snails to new locations on the river.

Training, equipment, and coordination was provided to Gulf Corps crew members who are helping MS DMR this spring to control and map the giant apple snail infestation.

North Carolina

Emens reported that crested floating heart has been found for the first time in NC. It is in a small, isolated site. There is a new hydrilla infestation in a NC bay. Hydrilla management in Lake Waccamaw has been successful using only herbicides. Very few tubers are being found. Management plans are being decided on for White Lake due to hydrilla being found in 85% of sample points that were surveyed across the lake.

The Wildlife Resource Commission is funding UNC Wilmington to do a non-native carp study in the lower Cape Fear. Feeding habits of the fish will be studied.

No tiger shrimp reports have been received in the last year.

In the Eno River, there has a project under way to treat hydrilla in a flowing system with fluridone. The project has been going well. Monitoring of invertebrates and fish is being done for impacts from the treatments. The treatment area will be expanded further upstream in the future.

South Carolina

Kingsley-Smith reported that the College of Charleston graduate student who has been doing research on the population genetic structure, salinity tolerance, and parasite prevalence for the island apple snail successfully defended her thesis on March 8, 2018, and was hired by the SC DNR to lead a new research avenue on comparative ecology of native and non-native coastal crayfish species.

Since 2017, the SC DNR Crustacean Research and Monitoring Section has been conducting research for a project on the impacts and spread of the invasive red swamp crayfish (*Procambrus clarkii*) in the undeveloped ACE Basin watershed of South Carolina. This species has been shown to alter structural and functional components of freshwater ecosystems where it is introduced, and at times, fundamentally alter the nature of the ecosystem that it invades. The objectives of the research project include investigating the potential for resource competition between the invasive red swamp crayfish and two native species of crayfish (eastern red swamp crayfish and hummock crayfish); investigate the effects of sea level rise on these crayfish. Laboratory experimental trials are being conducted to determine the salinity tolerances of these crayfish. Results have shown the crayfish have the ability to tolerate high salinity waters, suggesting potential resilience to increases in salinity due to storm surge or sea-level rise in short term. However, the two salinity trials conducted using hummock crayfish suggest that prolonged exposure to oligohaline and mesohaline is physiologically stressful, and reduces the ability of this species to survive short-term exposures to polyhaline water.

The levels of reporting and concern over Asian tiger shrimp continue to decline since their peak in 2011. No reports have been reported to SC DNR or the USGS Non-Indigenous Aquatic Species database in 2018. The total number reported to date from South Carolina is 440 specimens.

The redeye bass (Bartram's Bass) in the Savannah Basin is one of three priority species listed as a species of highest concern in SC DNR's State Wildlife Action Plan (SWAP). This listing is primarily due to the effects of hybridization with the Alabama bass, which was introduced into the reservoir systems in the Savannah River Basin in the 1980s. The hybridization between the two species in the reservoirs has been documented in the field and confirmed by genetic analysis. A current study by the SC DNR Marine Resources Research Institute's Population Genetics Research Section is being done to fill knowledge gaps, and inform management decisions aimed at securing self-sustaining pure populations of redeye bass. In spring/summer 2017, egg samples were collected in eight tributaries to the upper Savannah for quantitative PCR genetic analysis to confirm species identity and the extent of hybridization of redeye bass with closely-related shoal bass species throughout the range in the Upper Savannah River Basin.

During electrofishing sampling in the Cooper River in December 2017, a tilapia was collected and identified as a hybrid between blue and Nile tilapia, based primarily on caudal fin colorations. In January 2018, a member of the public reported 12 dead tilapia in a storm water retention pond in Mount Pleasant, SC, most likely due to unusually low water temperatures associated with snowfall in coastal SC. All reports of non-native tilapia are submitted to the USGS Non-Indigenous Aquatic Species database.

Texas

McGarrity reported that currently, there are 14 lakes in Texas fully infested with zebra mussels. Five lakes and downstream rivers are designated as positive. TPWD and partners continue to intensively monitor approximately 60 lakes designated as at-risk for zebra mussel infestations. Recently, zebra mussel infestations were detected in Lake Austin Lake and Lady Bird Lake in the Colorado River Basin, downstream of infested Lake Travis.

Efforts to manage giant salvinia and water hyacinth for recreational boating access continues. Currently, 20 lakes in Texas have significant infestations of giant salvinia, four lakes have new infestations. Giant salvinia is believed to be eradicated from five lakes. In 2016/2017, 36,383 acres of giant salvinia were treated in Texas. Detection and rapid response efforts continue. TPWD also continues to work to establish salvinia weevils in lakes. In 2016/2017, over 880,000 adult weevils were released in Texas lakes. In some areas, self-sustaining weevil populations are now present. A severe cold weather event in January greatly reduced the acreage of salvinia on many lakes.

There are currently 58 lakes in Texas that have significant infestations of water hyacinth. However, it is believed that it has been eradicated from 11 lakes. In 2016/2017, 8,989 acres of water hyacinth were treated in Texas. Cold weather greatly impacted infestations statewide. Efforts continue on riparian invasive plant management, with a focus on improving habitat in Texas' Native Fish Conservation Areas. In 2016/2017, 6,700 acres along 178 miles of the Double Mountain Forks of the Brazos River watershed were treated with herbicides in large-scale efforts to manage saltcedar there. Saltcedar beetles, a biological control agent, are present, but population numbers remain low in the treatment area.

In the Nueces River basin, arundo control has been a model for successful management through building partnerships with riverside landowners along the rivers in priority areas to treat over 300 acres of arundo along 90 river miles over the past seven years. In 2018, efforts are continuing and expanding to the Upper Medina and Upper Guadalupe river basins.

Supported by funding from Texas Parks and Wildlife Department and the ANS Task Force state grant, invasive species research continues to evaluate downstream dispersal and population dynamics of zebra mussels, which are a significant concern in the river-lake ecosystems of Texas. Additional zebra mussel research will be supported in 2018.

To support efforts to prevent new giant salvinia and zebra mussel infestations, outreach/public awareness campaigns continue to be a priority, with increased focus on outreach to marinas to prevent the movement of zebra mussel-infested boats. The "Protect the Lakes You Love" campaign for 2018 will begin in May. The campaign includes billboards, digital, radio, social

media, and print ads that will focus on infested and high-risk areas during the summer boater season.

A new “Arundo Control Man – Prevention Program for Texas” outreach campaign was launched in March 2018 to target construction, roadside maintenance, and fill-dirt and aggregate suppliers to prevent new introductions of arundo into waterways of Texas.

The “Never Dump Your Tank” campaign continues to target invasive species prevention messaging to aquarium owners along the Texas coast, and spotlight the lionfish problem in the Gulf.

University/Research

McMahon reported that he recently finished a 2016/2017 study of the population dynamics of the three major longest existing zebra mussel populations in Lakes Texoma, Ray Roberts, and Belton. Monthly collections of zebra mussels were done at each lake. In mid-summer, there is no settlement, so there are two distinct generations of zebra mussels. Larvae do not develop to the petty veliger stage at high temperatures, which stops the development of larvae until settlement. Random sampling of 100 veligers was done monthly, and lengths were measured. While larvae may be present, the petty veligers that can actually settle appear for much shorter periods.

Lake Ray Roberts had a very dense population of zebra mussels. In October 2016, the pH in the lake fell below 7, and stayed at that level until August 2017. This prohibited settlement of veligers to juveniles. The adult population has disappeared from the lake. It is not known why the pH fell so low.

In Lake Belton, surface water oxygen tensions dropped to 15% of total air saturation in September 2016. Zebra mussels cannot tolerate anything below 30%, and the adults died off in the lake.

In 2015, massive rain fall in the spring caused the water levels in Texas lakes to rise dramatically. The water temperatures rose, and drove the existing zebra mussels below the thermal climate, which made it too hypoxic for the adults to survive. That fall, water levels dropped, and the populations are rebounding from the die-off.

SEA GRANT

Ottis reported that they have been looking at the Lacey Act. She is tracking notices through some of the legal databases when states have taken action to do what Texas and Florida are considering doing, which is to add additional species to the prohibited species list. She is compiling the actions in progress information into a Microsoft Word document.

Also at issue is the live bait trade and their regulations. The Minnesota legislature has been looking at possibly allowing the import of Golden Shiners, but only from Arkansas, and if restrictions could be placed on importing one species, but not others.

HARC

Gonzalez reported that they have an invasive species field guide for the upper Texas coast and Galveston Bay area, and have distributed 10,000 copies. The field guide was recently updated again. She will send some field guides to James for the Traveling Trunk, and bring some to the next GSARP meeting.

In the Houston/Galveston area, HARC has an invasive species working group that meets regularly under the auspices of the local estuary program. One of the issues is that several of the organizations on the working group are non-profits, land trusts, and land conservation organizations, and a down-side of their success is that they are struggling with management of invasive species on lands, and how to fund control efforts. It was discussed as to how they could come together in a more coordinated way, and obtain funding through collaborative grants, and leverage resources. A Cisma (Cooperative Invasive Species Management Area) was created for the Houston/Galveston region that will cover invasive plants and animals, and a range of habitats to include riparian areas. They will be working over the next few months on prioritizing activities, and getting organizations to sign on. The next step will be to reach out to the public agencies.

US FWS Region 4 AIS Small Grants Program

Williams stated that there is \$2 million available for aquatic invasive species - \$1 million of it is for prevention, and the other \$1 million is for control. There is a component in each approved state management plan that addresses control and prevention. The amount of money that comes to each region in the FWS is dependent upon the number of interstate-approved management plans that the ANS Task Force has approved.

Ballard reported that he was contacted by a Commissioner from Florida to try and expand their efforts with the Lionfish Challenge. **Ballard** has been working with the other Gulf states to see if a season-long removal effort is possible for each state. He is working with an app developer on creating an app to take a photo of the lionfish caught, along with a record of location, water depth, weight, length, etc. He envisions a more "image-based tournament", where a photo of the lionfish tail would serve as verification that the lionfish was actually killed, instead of having to bring in the actual lionfish. A concern is how to incentivize a lionfish category in a tournament, since there is no funding for that. He is working with **Cindy Williams** to obtain funding to incentivize it. He is working with vendors from Florida to get incentives to motivate divers to remove lionfish for the tournaments.

ANSTF

Ballard reported that the ANSTF has been in a "holding pattern" for a year, and unable to meet. They will be having a meeting in June 2018 to plan on how the Task Force will move forward, and what its new direction will be.

Discussion of ANSTF Recommendations

Recommendations:

- 1.) To request that the ANSTF work closely with AFWA (Association of Fish & Wildlife Agencies), as AFWA considers the implications of the recent court ruling on the Lacey Act.

- 2.) To facilitate cross-regional summaries that will identify state gaps in regulating these species, and identifying road blocks to states protecting themselves from injurious wildlife by gaps that have been identified by that.

There were not enough panel members present to make motions for recommendations to the ANSTF.

Election of Officers

Lisa Gonzalez was nominated Chairman. It was seconded, and with no other nominations, **Gonzalez** was elected Chairman.

Peter Kingsley-Smith was nominated Vice Chairman. It was seconded, and with no other nominations, **Kingsley-Smith** was elected Vice Chairman.

A Motion was made to close nominations. The Motion was seconded, and passed unanimously.

Other Business

Next Meeting Time and Place

The possible location of the next meeting in Texas will be San Antonio.

The date will be sometime in October. **Ballard** will inform the panel members of the final details for the meeting.

Public Comment

Kristen Sommers provided the opportunity for public comment. There was none.

A Motion was made to adjourn the meeting, and the Motion was approved. There being no further business, the meeting adjourned at 5:00 p.m.

APPROVED BY:

COMMITTEE CHAIRMAN

TCC CRAB SUBCOMMITTEE MINUTES
Tuesday, October 16, 2018
South Padre Island, TX

Chairman Burris called the meeting to order at 8:30 a.m. with the following in attendance:

Members

Harriet Perry, USM/GCRL, Ocean Springs, MS
Ryan Gandy, FWRI, St. Petersburg, FL
Rick Burris, MDMR, Biloxi, MS
Glen Sutton, TPWD, Dickinson, TX

Others

Zach Darnell, USM/GCRL, Ocean Springs, MS
Dan Ellinor, FWC, Tallahassee, FL, *GSMFC Commissioner*
Meg Oshima, GCRL, Ocean Springs, MS
Robert Leaf, USM/GCRL, Ocean Springs, MS
Traci Floyd, MDMR, Biloxi, MS
Benny Gallaway, College Station, TX
Claire Crowley, FWC, St. Petersburg, FL
Don Johnson, USM/GCRL, Ocean Springs, MS
Chris Blankenship, ADCNR, Montgomery, AL
Nathan Putman, LGL Ecological Research Assoc., Bryan, TX
Julie Falgout, LA Sea Grant, Houma, LA
Jerry Mambretti, TPWD, Dickinson, TX
Luis Hurtado Clavijo, TAMU, College Station, TX
Nicole Lundberg, LA Sea Grant, Houma, LA
Traci Floyd, MDMR, Biloxi, MS
Erik Broussard, MDMR, Biloxi, MS
Carey Gelpi, TPWD, Port Arthur, TX

Staff

Dave Donaldson, GSMFC Executive Director, Ocean Springs, MS
Steve VanderKooy, GSMFC Program Coordinator, Ocean Springs, MS
Debbie McIntyre, GSMFC Staff Assistant, Ocean Springs, MS

Introductions

VanderKooy addressed housekeeping issues with those present. **Cagle** has replaced Marx (LDWF) but was not able to make this meeting. Chairman **Burris** led the audience and the committee members in introductions.

Adoption of Agenda

***Perry** moved to adopt the agenda. **Gandy** seconded the motion, and the agenda was adopted.*

Approval of Minutes

The Subcommittee reviewed their minutes from the meeting held on October 17, 2017, in Mobile, Alabama. *Gandy moved to accept the minutes as written, Perry seconded, and the minutes were approved unanimously.*

Public Comment

Burris offered the audience a chance to provide any comment related to the agenda topics. There were no comments.

Fecundity and Seasonality of Spawning and Blue Crab Larval Dispersal Model

C. Crowley and Gandy (FWC) presented ongoing work on fecundity and seasonality of blue crab spawning in Florida waters and a larval dispersal model exploring the transport of various local populations based on the prevailing current data available from NOAA. The results suggest that Florida crabs may provide larvae mostly back to Florida and up the east coast. The results suggest that the population breaks used in the regional assessment (GDAR02) may have more support.

Population Genetic Differentiation and Diversity of the Blue Crab in the Gulf of Mexico inferred with Microsatellites and SNPs

Dr. Luis Hurtado Clavijo provided some preliminary genetics work looking at crabs from Texas, the Florida Panhandle, and the Chesapeake. His results indicate that the previous approach using neutral markers didn't provide the resolution necessary to determine a single or multiple stocks. Using more selective markers, some east-west stock break was found, although the location was not known since only the east/west extremes were examined.

Surplus Production Model Gulf of Mexico's Blue Crab Stock

Meg Oshima (GCRL) provided a presentation on her surplus production model using the existing FID from each state and found similar results to GDAR02 with an apparent stock break somewhere along the Florida Panhandle. The Western Gulf (AL-TX) seemed to show declining abundance indices while the Eastern Gulf (FL) had relatively stable abundances. Oshima's work could be considered a pre-assessment and help define the parameters and terms of reference for the next assessment.

Update on Gulf-wide Blue Crab Tagging Program

Dr. Zach Darnell (GCRL) presented the current status of the Blue Crab tagging efforts in the Gulf of Mexico. Darnell is continuing to partner with the state agencies and others to expand the tagging throughout the region. It is expected that the results of the migration study will be incorporated into a future stock assessment.

Recreational Crab Fishing Survey and Terrapin Reporting System

Burris presented results of both the recreational crab trap fishing survey and the commercial fishery terrapin interaction phone app. Both are preliminary but will provide useful data in the future to address both recreational and commercial effort as well as hotspots for potential terrapin research.

Update on FID Data for Blue Crabs

Perry noted that she will provide a written report at next meeting to reflect the considerable amount of information which has been reviewed today. **Wagner** and **Perry** will work on a synopsis of the data and send it out to the committee members for correction and verification. She encouraged everyone to contact her with any information published or new work regarding blue crabs and they will incorporate it.

There was further discussion as well as questions for **Darnell** regarding crab recapture. The lack of reports from shrimpers is pretty consistent and more cooperation is definitely needed.

Hurtado reported that the longevity of the microsatellite signal on the crabs is not known. He feels that five years of data is needed to gain adequate results. **Hurtado** stated that they need muscle tissue and high quality DNA of 10 to 20 samples from as many sampling areas as possible. **VanderKooy** agreed to help provide materials for additional sampling Gulf-wide. **Sutton**, **Perry**, and **Burris** agreed to provide crab legs to **Hurtado** for DNA samples. **Hurtado** would get results in time for our next March meeting if sampling takes place soon. He would like to receive samples from east and west of the river from Louisiana as well.

Over time, it is hoped that these kind of discussions will help form the basis for minimum size limits and whether they should be consistent across the Gulf.

VanderKooy pointed out that, while the FMP will probably not need total revision, a stock assessment could be done in the future which could include an extensive report of up-to-date information without creating another management plan. This would also be a benchmark, at this point. Each state's data would be tied together as a regional approach. We do have funding to support a GDAR as well as any contractual work that may be necessary along the way. **Leaf** suggested that the research recommendations that came from the last GDAR be used because there are some fairly pressing needs that should be prioritized. **VanderKooy** asked that Committee members give some thought to this process and how it should be handled. It was agreed that, at the next meeting, we should further explore the various model options and have presentations regarding our future needs and what we want to try to accomplish, a planning workshop.

The subcommittee decided that they will discuss data needs for various assessment model options and any additional items that might need to be worked on in advance of the next benchmarks. Staff will assist in generating an agenda for the March meeting which will include more of the tools and parameters needed for a future assessment and evaluate the potential of those items and data streams presented today.

State Reports

The state representatives on the subcommittee had provided written reports to include derelict trap removals prior to the meeting so the state reports agenda item was not addressed in the interest of time. These reports are available on the Commission website or by request to Commission staff.

Election of Chair

Burris nominated **Gandy** from Florida. **Perry** seconded and **Gandy** was unanimously elected Chair.

Public Comment

Nathan Putman, LGL Ecological Research Associates, stated that the Kemp's Ridley folks are looking at doing a stock assessment in the next year or two and would be very interested in blue crab biomass data. Committee members agreed that this group would address this request and work with the Kemp's Ridley group to that end.

Other Business

There being no further business, the meeting was adjourned at 12:15pm

APPROVED BY:


COMMITTEE CHAIRMAN

**TCC DATA MANAGEMENT SUBCOMMITTEE
MINUTES**

**Tuesday, October 16, 2018
South Padre Island, TX**

Chairman Justin Esslinger called the meeting to order at 8:35 a.m. The following members and others were present:

Members

Nicole Beckham, AMRD, Gulf Shores, AL
Chris Bradshaw (proxy for Steve Brown), FLFWC, Saint Petersburg, FL
Beverly Sauls, FLFWC, Saint Petersburg, FL
Cindy Bohannon, TPWD, Rockport, TX
Justin Esslinger, TPWD, Rockport, TX
Vince Cefalu, LDWF, Baton Rouge, LA
Darrin Stewart, MDMR, Biloxi, MS
Carly Somerset, MDMR, Biloxi, MS
Ava Lasseter, GMFMC, Tampa, FL
Dave Gloeckner, NOAA SEFSC, Miami, FL

Staff

David Donaldson, GSMFC - Executive Director, Ocean Springs, MS
Gregg Bray, GSMFC - FIN Program Manager, Ocean Springs, MS
Donna Bellais, GSMFC - ComFIN Programmer, Ocean Springs, MS
Joe Ferrer, GSMFC - Systems Administrator, Ocean Springs, MS

Others

Andrew Petersen, Bluefin Data, Prairieville, LA
Richard Cody, NOAA Fisheries, Silver Spring, MD
Les Casterline, TPWD, Corpus Christi, TX
Jarret Barker, TPWD, Austin, TX

Adoption of Agenda

G. Bray requested to provide an update on the FIS Commercial Conversion Factor proposal under Other Business. **D. Gloeckner** requested to present some commercial vessel issues provided by Mike Travis. **V. Cefalu** made a motion to adopt the agenda as amended. Seconded by **C. Bradshaw**.

Approval of Minutes

The minutes of the Data Management Subcommittee (DMS) meeting held on October 17, 2017 in Mobile, AL were approved as written.

Impact of FES Calibrations on Important Species in the Gulf of Mexico

R. Cody gave a presentation on the results of the transition to the Fishing Effort Survey (FES). This mail survey replaces the old Random Digit Dial (RDD) telephone survey for estimating effort in shore and private boat modes. This new mail survey produces higher effort estimates but estimates are more accurate than the old RDD estimates. The mail survey does a better job of reaching actual anglers in fishing households and has a higher response rate than the RDD. Generally the FES produces estimates that are two times larger for private boat mode and almost 4 times higher for shore mode. **Cody** presented detailed results for several important management species in the Gulf of Mexico. Cobia, Gag, gray snapper, gray triggerfish, greater amberjack, Spanish mackerel, red snapper, spotted seatrout estimated catch and harvest were approximately two to three times larger after the FES and APAIS calibrations. **D. Gloeckner** stated for red snapper the SEFSC is going to pause from doing any updates with calibrated MRIP estimates since red snapper is being managed with the state specific survey estimates under the 2 year exempted fishing permit program. They plan to develop some calibrations using the state survey data and work toward including them in benchmark red snapper assessment in 2020. **Gloeckner** stated it is possible that the large changes in estimated harvest might force the fishery management councils to revisit appropriate allocations for several managed species.

MRIP Update

R. Cody discussed MRIP is running a push-to-web study with the FES. An additional sample will be added and provide some respondents with a web survey option that will also have some additional survey questions. MRIP staff will be able to evaluate survey instruments and the opportunity to ask additional questions. **Cody** also stated MRIP commissioned Mike Brick from WESTAT to develop a summary white paper on use of angler apps for collecting data for recreational fisheries. That report should be available from the MRIP website soon. **G. Bray** discussed adding questions to the APAIS form for 2019. If MRIP staff can confirm the ability to remove the question regarding the method anglers receive postal mail then the Gulf MRIP states would be willing to add the gender and age questions. **Bray** stated that we also needed to agree on the wording for adding a question about fishing near or adjacent to artificial reefs. GSMFC staff will be printing forms for 2019 next month so a decision needs to be made soon. **Bray would follow-up with MRIP staff on removing the mail question and provide a mock form for state and MRIP partners to review prior to printing.**

Discussion of Future Data Collection Efforts for State Permitted For-hire Vessels

G. Bray noted with the federal for-hire vessels being mandated to report via electronic logbooks, we need to continue to monitor landings and effort from state permitted vessels. Currently, MRIP samples all for-hire vessels for effort with the For-hire Telephone Survey (FHTS) and catch with APAIS. **B. Sauls** stated due to the state EFP's, there is also a present need for properly sampling state vessels. **C. Somerset** stated Mississippi had an issue with state for-hire vessels taking private charters during snapper season and agreed that sampling the state permitted for-hire fleet is important. **Bray** asked if any of the states envisioned switching to a different sampling method if the SEFHIER process becomes implemented. No states expressed a current desire to change from the existing methods. **R. Cody** suggested a presentation from the SEFHIER group at the March FIN meeting for a status update and possibly help with this reporting issue. Bray will coordinate with **J. Stephen** to determine if a SEFHIER presentation would be possible in March 2019.

Discussion of Recreational Landings Availability in the GulfFIN Data Management System

G. Bray stated the GulfFIN Data Management System (DMS) has typically been a repository for marine recreational catch, harvest and effort estimates. **Bray** asked if the states would be willing to share state survey estimates with GulfFIN so interested scientists could obtain them from one place for use in science and management. The committee agreed that to be successful the commission would need to compile information from each state as to what is collected and how the results should be used properly. **Bray** agreed that a large amount of coordination with state program managers would be necessary to present the estimates with the proper metadata. **B. Sauls** suggested that the GulfFIN Recreational Technical Workgroup (RecTech) would be useful for developing these products. **Bray will convene the RecTech in the coming weeks to confirm willingness and discuss short term needs.**

Update on Status of GulfFIN Data Management System Query Page

D. Bellais stated the public query tool for the GulfFIN Data Management System has been active on Gulf States Marine Fisheries Commission's (GSMFC) website since April 2018. This tool provides public access to non-confidential commercial data and recreational catch and effort data with biological sampling data to be added in the near future. The confidential part of the query tool is still in the testing phase and some additional programming changes are needed to fix minor issues. The expectation is to have the confidential side active by the end of 2018 pending any programming modifications and state approval.

Status of Certification of State Surveys and Findings from Red Snapper Workshop #4

R. Cody stated that the only survey in the Gulf region in the certification process is the Florida Gulf Reef Fish Survey. The review is in process and a decision and roll-out plan is planned for the near future. **Cody** discussed that the recent red snapper workshop #4 was held to discuss ways for integrating state survey data with the MRIP general survey. The states are working to provide a matrix of landings and discard data to the consultants for analysis purposes. The goal is to reconvene the workshop participants in 2019 to discuss their findings and discuss appropriate methods for producing combined estimates.

Update on Future Funding Opportunities

D. Donaldson informed the committee on several funding opportunities. BIO and HB funded through 2020. Possible additional money for IJF in 2019 and beyond. IJF might have additional funds above what their program requires and may allow us to spend some additional money on monitoring activities. FY2019 has an increase in the FIN line items for the Senate budget. This would cover all multiple FIN regions but it's possible the GulfFIN allocation might increase by a small amount. NRDA is interested in doing a barotrauma study that has several components. Monitoring would be a large component of that research. It would be essential to develop the study to quantify how the resource is recovering from the oil disaster.

Status of Biological Sampling Analysis and Activities

G. Bray provided an update on processing and data entry of biological sampling activities for 2017 and 2018. Funding for sampling ran out in March 2017 but a new agreement is in place to support sampling and processing that will run through February 2020. GulfFIN is working with a contractor to develop a new data entry program that is utilized by Alabama, Mississippi, and Texas. Development is progressing fairly quickly and GulfFIN is hoping to have a program available

before the end of 2018. GulfFIN continues to provide biological data to support federal and state stock assessments. Red grouper and gray triggerfish were recently provided in 2018. The next species will be determined by future SEDAR and Gulf Council discussions and **Bray** will let everyone know when the next species and data deadline is announced.

Other Business

G. Bray stated the FIS Commercial Conversion Factor proposal submitted by GSMFC and state partners was approved and funding will be awarded with the 2019 GulfFIN Cooperative Agreement. Funding should be available in summer of 2019 and GSMFC will develop subawards with each state to allow sampling and analyses to begin. **J. Esslinger** suggested the states start thinking about which species should be used next for the conversion factor study.

D. Gloeckner stated that **M. Travis** from NOAA Fisheries stated it would be a large benefit to be able to accurately count unique commercial vessels in the Gulf region. **Travis** is specifically interested in shrimp vessels. **D. Donaldson** stated that GulfFIN has worked extensively on this issue in the past. A database has been created but getting data from the states to populate it has met many difficulties. **Donaldson** mentioned that the states have requested a white paper from **Travis** that would explain why these data are important and what specific analyses it would be used for.

J. Esslinger discussed they have seen individuals trying to sell shrimp landings on Facebook marketplace. He was asking if the other states have seen similar activities on social media. Several other states have discussed using social media to detect potential violations and most are being handled by state law enforcement personnel.

Review of 2017 Commercial Data

Each state provided feedback based on a review of the spreadsheets **D. Bellais** sent out prior to the meeting. The States mentioned that the GulfFIN DMS numbers were close to their state totals and the slight differences likely indicated they collected some additional data or made updates to the data that has yet to be delivered to GSMFC. State representatives also mentioned there were a few coding errors on their part. All necessary corrections to the 2017 data will be made at the state level and submitted to GSMFC for loading into the GulfFIN DMS. The states requested the spreadsheets be sent quarterly to correct the majority of errors before the yearly review of data.

There being no further business, a motion was made to adjourn and the meeting was adjourned at 3:30pm.

**TCC SEAMAP SUBCOMMITTEE
MINUTES
Tuesday, October 16, 2018
South Padre Island, TX**

APPROVED BY:

COMMITTEE CHAIRMAN

Vice-Chairman J. Hendon called the meeting to order at 8:30 a.m. The following members and others were present:

Members

Jill Hendon, USM/GCRL, Ocean Springs, MS
Sean Keenan, FWC/FWRI, St. Petersburg, FL
Brett Falterman, LDWF, Grand Isle, LA (by phone)
Fernando Martinez, TPWD, Corpus Christi, TX
Christian Jones, NOAA Fisheries, Pascagoula, MS (by phone)

Others

Eric Hoffmayer, NOAA/NMFS, Pascagoula, MS
Darin Topping, TPWD, Rockport, TX
Paul Grammer, USM/GCRL, Ocean Springs, MS
Christopher Mace, TPWD, Rockport, TX
Lance Robinson, TPWD, Austin, TX
Trevor Moncrief, MDMR, Biloxi, MS

Staff

Jeff Rester, *SEAMAP/Habitat Program Coordinator*, GSMFC, Ocean Springs, MS
Dave Donaldson, *Executive Director*, GSMFC, Ocean Springs, MS
James Ballard, *Sport Fish Restoration/ANS Coordinator*, GSMFC, Ocean Springs, MS
Ashley Lott, *Staff Assistant*, GSMFC, Ocean Springs, MS

Adoption of Agenda

Under Other Business, a discussion regarding Request for Samples from Lee Fuiman was added. **E. Hoffmayer** added a discussion on the Shrimp Trawl Protocol. **F. Martinez moved to adopt the agenda.** **S. Keenan seconded and the motion passed.**

Approval of Minutes

B. Falterman moved to approve the SEAMAP Minutes from the July 25, 2018 meeting as submitted. **F. Martinez seconded and the motion passed.**

Administrative Report

SEAMAP published the 2018 SEAMAP Annual Report to the Technical Coordinating Committee which discussed SEAMAP FY2018 survey activities in the Gulf of Mexico. **J. Rester** reported that since the July meeting, the Bottom Longline survey had been completed. For the Vertical Line Survey, Alabama was still trying to get out and Texas was missing a few stations. The Fall Plankton survey was from September 16-30, 2018, with participation from Louisiana, Alabama and Mississippi and 131 stations were sampled. Alabama went out right after Tropical Storm Gordon and the plankton sample was not what is had historically been. The Subcommittee

discussed whether or not they needed to develop protocols to handle these types of situations. **E. Hoffmayer** stated he would discuss this with Glen to gather more information and will report back to the Subcommittee on what he finds. For the Fall Shrimp Groundfish Survey, stations were chosen in July, however, there had been a major hurricane since then, Hurricane Michael. Because of this, Florida had lost several days of the survey and with bad weather in Texas, they lost a few days as well. **E. Hoffmayer** noted that they are dropping 12 stations in the east and about that same number in the west. Mississippi stated that they were able to do the line along the coast to Panama City, Florida, so for future reference, this is doable for Mississippi. **E. Hoffmayer** noted that Andre Dubois was able to go out on the boats and that this was helpful with protocols and getting everyone on the same page procedure wise.

SEAMAP Habitat Mapping Protocol

The Subcommittee addressed developing standardized protocols for the side scan sonar. Florida currently uses the side scan sonar. The side scan costs approximately \$60,000 and it is a portable system. However, when the cost of the bathymetric is added, the cost increases too approximately \$150,000. T. Switzer and S. Keenan developed a summary which outlined Florida's protocol on the side scan. The outline will be distributed to the Subcommittee. A more accurate total cost of the side scan will be distributed to the Subcommittee as well.

Review of Species Identification During Trawl Surveys

E. Hoffmayer expressed concern over how confident the Subcommittee is on species identification. Some species are difficult to identify. For these species, leave identification at the genus level. **J. Hendon** suggested a workshop be held to discuss species identification. FSCS training would also be done at this time. The Subcommittee planned to hold the workshop sometime between January and March 2019 at the NMFS Pascagoula Lab. It was suggested that Harriet Perry be invited to participate in the workshop. After the workshop, the findings can be passed on to the Trawl Workgroup for further discussion.

GCRL Hooked Gear Survey Results

P. Grammer provided an update to the Subcommittee. Since the last report, the drop cameras and bases have been built. However, due to boat issues and camera problems, they have not been able to test. As of now, they are up and running and ready to test. **J. Rester** asked what the final goal of this study was. **T. Moncrief** stated that this gear would be best used for trigger fish and would inform the Subcommittee on ways to make it more efficient for other species. **J. Hendon** stated that this is a pilot study to move to a plan that will be more efficient. **E. Hoffmayer** suggested that the Subcommittee continue working on the pilot and get more data, but talk with the stock assessment people to determine if the data is actually useful. **J. Hendon** stated that at a previous meeting, it was agreed that a 10lb weight would be used because it matched with SEAMAP protocol. However, this is too much weight, and at certain times less weight needs to be used. **J. Rester** stated that you want the same angle on the line, not just the weight. The goal is to keep the line as vertical as possible. **J. Hendon** stated that she would discuss with the Red Snapper group about presenting to the Subcommittee at the March meeting.

2019 SEAMAP Budget and Sampling

The indirect cost for SEAMAP will be less than expected this year. The Subcommittee only needs about \$170,000 which leaves around \$60,000 that can be used elsewhere. Once the Subcommittee

receives the final FY19 budget, the exact numbers will be known. The Subcommittee discussed areas where the extra money could be used. Three suggestions were put forward as to where the extra money can be spent: Flex time for vessels; side scan sonar program; and Vertical Line Survey for Texas.

Use of Cameras to Characterize Bottom Habitat in All SEAMAP Surveys

E. Hoffmayer stated that NMFS had implemented deploying GoPro cameras on all CTD deployments during their surveys. The Subcommittee discussed whether or not this is something they would be interested in doing and if they were capable of doing. If this was implemented, after a few years, the Subcommittee would have several thousand data points. Mississippi and Alabama expressed interest. The Subcommittee will need to talk with Alabama and Louisiana to see if they would be interested. **J. Rester** stated that GSMFC can house the data. **E. Hoffmayer** will send out pictures of the camera, lights and deployment system for the subcommittee to review. **J. Rester** asked E. Hoffmayer to bring the camera and lights to the March meeting.

Election of Chair

J. Hendon moved to nominate **T. Switzer** as Chairman. **F. Martinez** seconded and the motion passed. **F. Martinez** moved to nominate **J. Hendon** as Vice-Chairman. **S. Keenan** seconded and the motion passed.

Other Business

Lee Fuiman from the University of Texas sent a request for samples in conjunction with his proposed project for NOAA's Restore Program. The Subcommittee discussed his request and felt that it was a large request and that Mr. Fuiman did not fully understand what he was asking for. The Subcommittee will respond to him that his personnel are welcome on the boats, but ask that they be field competent.

E. Hoffmayer questioned the Shrimp Trawl protocol as to why it calls to measure and sex 200 shrimp at every station. He suggested using 100 shrimp. He will get some further information and will report back to the Subcommittee. He would like to implement the 100 shrimp for the 2019 Shrimp Groundfish survey.

There being no further business, the meeting was adjourned at 12:00pm.

**S-FFMC MENHADEN ADVISORY COMMITTEE
MINUTES**

**Tuesday, October 16, 2018
South Padre, TX**

Chairman Adriance called the meeting to order at 1:00 p.m. with the following in attendance:

Members

Jason Adriance, LDWF, New Orleans, LA
Ray Mroch, NOAA Beaufort Lab, Beaufort, NC
Jerry Mambretti, TPWD, Dickinson, TX
Peter Himchak, Omega Protein, Tuckerton, NJ (on conference call)
Trevor Moncrief, MDMR, Biloxi, MS
Al Vindrine, Daybrook Fisheries, New Orleans, LA
John Mareska, ADCNR/MRD, Gulf Shores, AL (on conference call)
Borden Wallace, Westbank Fishing, LLC, Empire, LA
Joe O'Hop, FWC, St. Petersburg, FL

Others

Ben Landry, Menhaden Advisory Council, Houston, TX
Amy Schueller, NOAA Beaufort Lab, Beaufort, NC
Robert Leaf, USM GCRL, Ocean Springs, MS
Jeff Short, JWS Consulting LLC., Juneau, AK
Francois Kuttel, Westbank Fishing, LLC, New Orleans, LA
Shane Treadaway, Westbank Fishing, LLC, New Orleans, LA
Tommy Williams, Daybrook Fisheries, Baton Rouge, LA
Fernando Martinez-Andrade, TPWD, Corpus Christi, TX
Eric Hoffman, NOAA Pascagoula Lab, Pascagoula, MS
Paul Grammer, USM/GCRL, Ocean Springs, MS
Jason Froeba, LDWF, Baton Rouge, LA (Commissioner)
Roy Crabtree, NOAA SERO, St. Petersburg, FL
Chris Blankenship, ADCNR, Montgomery, AL (Commissioner)
Lance Robinson, TPWD, Austin, TX (Commissioner)
Jill Hendon, USM/GCRL, Ocean Springs, MS
Casey Gelpi, TPWD, Port Arthur, TX

Staff

Dave Donaldson, GSMFC, Executive Director, Ocean Springs, MS
Steve VanderKooy, GSMFC, Program Coordinator, Ocean Springs, MS
Jeff Rester, GSMFC, Program Coordinator, Ocean Springs, MS
Debbie McIntyre, GSMFC, Staff Assistant, Ocean Springs, MS

Introductions

Chairman **Adriance** welcomed everyone and **VanderKooy** addressed housekeeping issues. Introductions were made.

Adoption of Agenda

Mroch moved to approve the agenda, **Mambretti** seconded, and the agenda was approved.

Approval of Minutes

The MAC reviewed the draft minutes from the last annual meeting on March 13, 2018 in Panama City Beach, Florida. **Mambretti** moved to accept the minutes, **Landry** seconded, and the minutes were accepted.

Public Comment

Adriance offered the audience a chance to provide any comment related to the agenda topics or anything else menhaden-related. There were no comments.

Update on 2018 Gulf Menhaden Season

Mroch provided an update on 2018 Gulf Menhaden Season. As of September, the landings were up almost 20% from 2017 and 22% over the five year average with another month still remaining to fish. While there were a few tropical systems that came through this year, the storms had little impact on the fishing grounds. Fishing essentially averaged around 100,000 mt each month from May through August resulting in 506,000 mt through September and it is expected that the industry will cut out at around 563,000 mt for the year. Using this year's effort and landings, NOAA forecasts that landings in 2019 could be around 469,000 mt.

Update on the Atlantic Menhaden Fishery

Mroch provided a brief update on the 2018 fishing season along the Atlantic as well. One factory operates along the Atlantic and fishes under a 165,000 mt TAC for reduction. Through September, 104,000 mt had been landed which was a 14% increase from 2017 but a 4% decrease over the last five-year average. Seven vessels operated out of Reedville and four boats landed bait. Two stock assessments are being run concurrently for Atlantic menhaden next year, a single-species and a multispecies which will explore ecological-based reference points.

SEDAR63 Gulf Menhaden Assessment Draft Report

Dr. Schueller presented the results of the draft Gulf Menhaden Assessment SEDAR 63. Overall the population looks good and healthy and the benchmark indicates that the fishery is not overfished nor is overfishing occurring for the last two decades. **Schueller** provided a detailed overview of the model, the parameters that are included in the model and the various analyses that went into generating the results. Since the Assessment Workshop, there have been numerous discussions about the reference points presented in the report. The previous benchmark and the fishery management plan had agreed to SPR-based benchmarks for target and threshold. However, with the new data on reproduction and fecundity, not only was MSY not estimable, but the previous SPR reference points were not either. This suggests that the population is even more resilient to fishing pressure than the previous assessment considered but because the reference points were no longer useful, alternative benchmarks were considered. SSB and fishing mortality equal to natural mortality was put forth by the assessment panel and will be presented to the CIE reviewers at the workshop the first week of November. It is expected that the reviewers may provide their own suggestions for alternative reference points but it will be up to the MAC to discuss management goals and future reference points specifically for management. The industry needs defined goals, benchmarks, and

harvest control rules as part of their MSC certification process. The MAC will take up these items before, during, and likely after their meeting in March. Without a regional management plan, it will be up to the states to determine how they work with the recommendations from the MAC.

Texas Cap for 2018

Mambretti presented the reduction fishing in 2018 that were applied to the Texas Cap. So far, the industry fished two days in Texas waters making seven sets and harvested only 1.5M lbs which is 4% of the available TAC.

Review of Port Sample Acquisition and Processing in 2018

Mroch reported that this year they have had three port samplers to process the scale samples between state personnel picking up samples in Louisiana and one sampler in Mississippi. **Mroch's** bottleneck is in the ageing, not in the processing. **VanderKooy** indicated that port sampling in both states will likely be covered by the Commission's IJF program going forward. The IJF program covered the 2018 Mississippi samples and FIN funds from Louisiana has been covering the two plants in Empire and Abbeville. **VanderKooy** will work with LDWF to allow those funds to be returned to Louisiana in 2019 for other data collection needs.

Marine Stewardship Certification of Gulf Menhaden

Landry reported that they are through with the scoring process and passed, but there are a few items that must be addressed to get the scores higher over the next few years. The reviewers are seeking confirmation from the various state agencies and federal partners to confirm that they will be supported. The GSMFC was unable to provide a letter to the reviewers in support of the Client Action Plan. Hopefully there will eventually be enough buy-in to move forward. He noted that the Atlantic is a lot further along but the Gulf is not far behind. **Landry** explained the qualifications for this certification.

Election of Chairman

Mroch became the next chair of the MAC as the 'feds' were next in rotation and **Wallace** reported that this would be his last MAC meeting in an official role. He is retiring and will be replaced on the Committee. This was his 95th annual meeting. **Wallace** passed the 'scroll' to **Mambretti** to carry on the task of reporting and recording the chairmanship into the future.

Other Business and Public Comment

Adriance offered the audience a chance to provide any comment related to the agenda topics or anything else menhaden-related. There were no comments offered.

There being no further business, the meeting was adjourned at 4:00pm

**GMFMC Law Enforcement Technical Committee/ GSMFC Law Enforcement Committee
Joint Meeting Summary
South Padre Island, Texas
October 17, 2018**

The meeting was called to order at 8:30 a.m. with election of Joint Committee Chair and Vice-Chair. **Carron** was unanimously elected Chair on nomination by **Hebert**, seconded by **Pearce**. **Downey** was unanimously elected Vice-Chair on nomination by **Hebert**, seconded by **Pearce**. The agenda was adopted unanimously on motion by **Pearce** and second by **Barker**. The summary of the March 13, 2018 LETC/LEC meeting was approved as written on motion by **Pearce** second by **Hebert**. Introductions were made and **VanderKooy** welcomed **Lasseter** on board from the Council.

GMFMC LETC Session

State Management Amendments

Staff addressed LETC members' questions from the March 2018 meeting, one of which was whether state management regulations would be enforced on the water or upon landing. Staff explained that state management programs would primarily rely on dockside enforcement of red snapper regulations. LETC members expressed some concern about the need to reorganize their use of enforcement funds and crafted the following consensus statement.

The dockside enforcement component for red snapper is in direct conflict with the JEA contract's requirement that for federal purposes red snapper must be enforced within the EEZ. This is due in part to the appropriations bill that specified federal dollars could not be used for reef fish enforcement within 9 nm; thus, it is not possible to simply change the JEA contract. If enforcement is able to enforce red snapper within state waters using JEA funds, this issue would be resolved. **Fenyk** informed the LETC that use of JEA funds would not run afoul of the appropriations act if have federal nexus and people acknowledge that they caught the fish in federal waters. However, FWC has been directed not to claim JEA boardings for enforcing red snapper within state waters.

LETC members will request that their state directors communicate with the appropriations staff regarding this priority.

Commercial IFQ Program Modifications: Advance Landing Notification Issue

Lasseter reviewed the actions in Amendment 36B and the LETC did not feel Actions 1-3 raised enforcement concerns. The LETC discussed the action for requiring a degree of accuracy for advance landing notifications and provided the following consensus statement:

The LETC recommends to the Council in Action 4 for advance landing notifications, that notifications be accurate to within 20% of actual landed weight for vessels landing over 500 lbs (in any share category). The LETC feels that fishermen can be accurate to within 10% of 100

lbs, and wouldn't accept any less accuracy from the dealer to whom they are selling. Going with a 20% accuracy requirement allows some leeway for errors in reporting while allowing for more accountability.

Although the requirement to include a weight estimate during advance landing notifications of IFQ species was not intended to expose fishermen to violations based on the accuracy of their estimation, the lack of necessity for accurate weights on the advanced landing notification has been exploited by some fishermen to under report actual catch weights.

Requiring more accurate estimates of weights on the advance landing notification would benefit management of the fishery, as the LETC has seen abuse in the system and wants to minimize the level of under reporting. This would provide a management tool to close a gap that allows for fraud in the management of the resource. While the majority provide accurate estimates, there are no repercussions for the minority that don't; those who don't are able to avoid having the allocation deducted from their account which could then be used again, may sell the fish on the black market, and avoid paying the lease fee and cost recovery. This creates instability in the market from unaccounted fish being sold illegally. The LETC believes that this proposed regulation and potential for penalty would increase self-compliance within the industry.

In the case of red snapper, this would benefit management of the species as any unreported catch could cause you to exceed the total allowable catch, slowing the recovery of the stock. As an example, in one state, there have been consistent occurrences of a fisherman who is also the dealer reporting 500 lbs in both the advance notification and notification of landing (dealer report). However, when this same fisherman/dealer is inspected during offloading, the actual landed weight is routinely 1,500 lbs. Had the officer not been present for offloading, 1,000 lbs could go straight to a restaurant or unpermitted dealer, bypassing reporting measures and avoiding the allocation being deducted from the IFQ system.

Coral 9 HAPCs Update on Final Action

Lasseter reviewed a summary of the Council's final preferred alternatives on Coral Amendment 9, which will establish several new HAPCs. In addition, the LETC is aware of the likely expansion of the Flower Garden Banks National Marine Sanctuary. Although the new HAPCs and Sanctuary are located far offshore, LETC members noted the additional burden on enforcement from establishing new protected areas with gear or fishing restrictions.

New "Fish Rules" App

The LETC spoke well of the new Council app, "Fish Rules", which contains both state and federal regulations. Several members reported they already use it. Due to the availability of electronic regulations, the LETC does not see the need for the Commission to continue printing copies of the regulatory pocket guide and made the following recommendation (see motion below).

GMFMC Enforcement Team of the Year Award

Lasseter requested that LETC members begin considering criteria for a potential Enforcement Team of the Year Award. Due to changes in the staff and membership on the LETC, there is a need to continue discussing the specifics for the guidelines before it is brought to the Council. During the meeting, it was thought this had already been accomplished where in fact, the group had previously suggested further discussion.

Joint LEC/LETC Items

2019-2020 Operations Plan

VanderKooy addressed the 2019-2020 Gulf of Mexico Cooperative Law Enforcement Operations Plan. **Lasseter** had recommendations re: Objective 1.3 better cooperation and input by Council and LEC. She proposes to provide a link by email to the committee one week prior to Council meetings. She encouraged everyone to respond with questions or input. She will also email the committee following Council meetings providing updates as to what occurred at the meeting. It was the consensus of the group that this would be greatly appreciated.

VanderKooy asked for any other comments and approval of this plan for the next two years. On motion by **Hebert** and second by **Pearce**, the Ops Plan was unanimously approved.

Diaz made comments regarding the use of Civil Air Patrol in Mississippi and suggested that Law Enforcement may want to consider looking into this.

On motion by **Pearce**, second by **Barker**, the LEC recommended that the GSMFC discontinue printing and distributing the Commission's pocket guide which was useful in the past but with the existing technology is probably outdated now. Officers generally have internet access and are able to utilize much more current information through their smart devices. The motion passed unanimously.

Overview of Current IUU Fishing Issues

Casterline (TPWD) and **Zanowicz** (USCG) provided an overview and update on the IUU fishing issues in Texas and along the US Mexico border specifically. This presentation was made at the last Gulf Council meeting but **Casterline** had some additional cases and information to provide. They will continue to monitor these foreign incursions and likely present to the Commission in the future.

GSMFC LEC Session

Future of JEA and JEA Funding Discussion

Carron referred back to the meeting in March when there was discussion as to whether this funding is going to continue. It was the consensus of the group that nothing had changed since that time.

Fish Attracting Devices (FADs); Misuse and Management

Each state discussed to what degree FADs are a problem. Texas does not see much in the way of FADs while **Pearce** concurred that it is not a widespread problem to his knowledge in Florida. **Carron** and **Hebert** stated that MS and LA see most FAD activity in relation to Tripletail pursuit. **VanderKooy** stated that the biologists working on management plans state that these are found on a routine basis and that Cobia fishermen have related stories for years about the use of FADs. Cobia tournaments banned FADs use in their tournament rules. **VanderKooy** pointed out that it might be worth looking at from the enforcement side. The first step may be to educate people. **VanderKooy** encouraged everyone to check with their biologists and samplers to find out their impression of what is happening.

IJF Program Activity

Cobia Profile

On behalf of the Cobia Technical Task Force, **Carron** reported that this document is nearing completion. He encouraged everyone who still has contributions to forward their remaining information in to him or **VanderKooy** ASAP.

New Species

VanderKooy provided the group with a list of how the Law Enforcement rotation works on task forces. Florida will be the next LE rep for the next species. **VanderKooy** will inform everyone of the new species when it is decided.

Annual License and Fees

For the benefit of several new committee members, **McIntyre** explained how she gathers the information from them for the Annual License and Fees and Law Summary (Red Book). She encouraged any member who needs examples or assistance with these requests to contact her for further explanation.

State Reports Highlights

Written state reports were submitted prior to the meeting. *On motion by Carron, seconded by Hebert, the written state reports were accepted as written.*

Other Business

Hebert offered thanks to the Florida group for their help after the hurricane.

Diaz expressed that as a Council member, he has found this meeting particularly helpful to his view and that this is a valuable tool to the Council process.

Carron recognized **Hebert** and thanked him for his service on this committee for the past several years.

There being no further business, on motion by **Downey**, second by **Pearce**, the meeting adjourned at 4:51p.m.

Members

Chad Hebert, LDWF, Baton Rouge, LA
Patrick Carron, MDMR, Biloxi, MS
Jason Downey, AMRD, Dauphin Island, AL
Scott Pearce, FWC, Tallahassee, FL
Jarret Barker, TPWD, Austin, TX
Cynthia Fenyk, NOAA, St. Petersburg, FL
Joseph Scarpa, NOAA OLE, St. Petersburg, FL
Mark Zanowicz, USCG, New Orleans, LA (LEC only)

Others

Dale Diaz, GMFMC, Biloxi, MS
Andrew Petersen, Bluefin Data, Baton Rouge, LA
Les Casterline, TPWD, Austin, TX
Justin Esslinger, TPWD, Rockport, TX
Christopher Mace, TPWD, Rockport, TX
Darin Topping, TPWD, Rockport, TX
Scott Bannon, AMRD, Dauphin Island, AL

Staff

Ava Lasseter, GMFMC, Tampa, FL
Donna Bellais, GSMFC, Ocean Springs, MS
Steve VanderKooy, GSMFC, Ocean Springs, MS
Debbie McIntyre, GSMFC, Ocean Springs, MS

**SEA GRANT FISHERIES EXTENSION ADVISORY COMMITTEE
MINUTES
Wednesday, October 17, 2018
South Padre Island, TX**

L. Picariello called the meeting to order at 1:40 pm.

Members Present:

Laura Picariello- Texas Sea Grant (acting chair)
Julie Falgout- Louisiana Sea Grant
Nicole Lundburg- Louisiana Sea Grant
Betty Staugler- Florida Sea Grant

Guests:

Gary Graham- retired Texas Sea Grant
Laura Deighan- Audubon G.U.L.F.
John Fallon- Audubon G.U.L.F.
Chris Nelson- Bon Secour Fisheries, GSMFC Commissioner

Introduction of committee and guests

Approval of Minutes

Staugler moves to approve minutes, **Falgout** seconds – minutes approved as written.

Gulf Sea Grant Fisheries Extension Updates

National

Picariello noted several activities across national Sea Grant that have recently taken place or are upcoming:

May 2018- Louisiana Sea Grant cohosted the Sea Grant Fisheries, Aquaculture and Seafood Visioning Workshop. National workshop with representation from most of the state Sea Grant programs and National Sea Grant office. All 4 Gulf Sea Grant Programs were represented

Sea Grant Week- in Portland, OR in September 2018 (also all 4 Gulf programs there). The Gulf of Mexico Oil Spill Science Outreach Team received the National Superior Programming Award for their excellent work in synthesizing and communicating research results related to the 2010 Deepwater Horizon Spill.

Upcoming: the National Sea Grant Fisheries Extension Network plans to hold a one-day meeting in New Orleans on **March 11, 2019** in conjunction with the World Aquaculture Conference (March 7- 11) being held in New Orleans during that week

Florida

Staugler – The Fisheries Working Group met in September to set priorities for the next year. 3 main priorities:

1. Continued education and outreach on Barotrauma mitigation. Florida Sea Grant has recently published a brochure (Straugler distributed copies to the group).
2. Fishing Guide Certification Program. Florida Sea Grant is collaborating with FWC and Florida fishing guides to create this program. It is a voluntary program that will primarily be done online. There are 12 modules total and the modules have now been completed. They are working on final details and expect this program to launch in 2019. **Picariello** asked about cost of the program for participants. **Staugler** confirmed that there will be a fee, still to be determined. **Lundburg** asked if there was any in person component. **Staugler** stated that they are still working on those details. They are thinking about a final meeting with an agent before awarded certification, but there are challenges (for example- don't have agents in every county). Existing guides that have been involved in the development liked the idea of some component or requirement of "giving back". They are also still discussing recertification timeframe/requirement.
3. Artificial Reef Summit. They have begun the planning for the 2020 statewide summit which is planned for North East Florida.

Staugler also noted that the Aquaculture Team has recently produced a series of fact sheets/infographics on Aquaculture (Aquaponics, Shellfish, Offshore Finfish, Teach Aquaculture, Baitfish, Sponge Restoration, Scallop restoration, and Oyster Gardening) and provided samples to the group. The team is also hosting monthly Facebook events on aquaculture topics. Last week-hosted one on offshore aquaculture. **Picariello** noted that she listened to the talk and it appears that they are moving forward with the offshore aquaculture for Almaco Jack with an experimental permit and plan to use the site to educate lawmakers and industry on offshore systems. **Graham** stated that he attended the Gulf of Maine Research Institute's MREP Aquaculture program sessions in Maine and New Orleans, and that particularly the session in Maine touring existing aquaculture facilities in the U.S. was very informative and highly recommended.

Staugler also discussed the ongoing algae challenges, both Red Tide and blue green algae that are occurring in Florida this year. Excessive nutrient issues have been a concern in Florida for some time. Florida Sea Grant is receiving numerous requests for information from both recreational and commercial fisheries on safety due to fish kills and fishing closures in some areas as well as from media outlets regarding the issue. Steve Otwell has returned temporarily to assist with some of these challenges and communications particularly with relation to seafood safety concerns and is hosting HACCP trainings. This is a global problem Florida Sea Grant is receiving requests from both natural and aquaculture systems around the world on how to deal with algal blooms.

Mississippi/Alabama

Picariello noted that there were no representatives from Mississippi Alabama Sea Grant, but an update was sent by Marcus Drymon prior to the meeting, as follows:

- The Gulf Coast Fishermen Newsletter now has a monthly distribution of over 500 subscribers.
- Provided materials to Senator Wicker for the recent Senate hearing on sharks
- Conducted 4 talks at the recent Sharks International conference in Brazil
- Coauthored 2 talks at Annual ICES Conference

- Launched the outreach efforts for the Great Red Snapper Count Project, including: produced 1 MSU Extension Publication, launched the website, created a YouTube Channel for the project, produced 3 videos and 3 fact sheets so far to communicate aspects of the project and have presented to both the SSC and full Council.
- Tagged and tracked 10 tarpon
- Participated in 11 outreach/education events (boat shows, shark week, fishing rodeos)
- Publications 5 papers in 2018 and 4 additional submissions are in review

Nelson also provided a brief update regarding the oyster aquaculture work in MS and AL. Operations in Alabama continue to expand, there is some effort to incentivize industry on the development of private hatchery capabilities. In Mississippi, the first class of training is underway.

Louisiana

Lundberg provided an update on Louisiana's Direct Seafood Market Program. The program has now established a website feature to handle direct sales through the website. There is a facility to house and ship product managed by the Port Commission of Delcambre. Louisiana Sea Grant will be hosting a Seafood Processors Conference is scheduled for January 30, 2019. This conference will present new technologies for processing facilities, microprocessor exhibits and demonstrations and information/exhibits on eco-friendly packaging/atmospheric packaging.

Falgout noted that the Louisiana Fisheries Facebook page (managed by Louisiana Sea Grant) is now up to over 4900 users. Louisiana Sea Grant is celebrating its 50th anniversary this year and will host a Gala on November 9th. Louisiana Sea Grant also recently cohosted workshops on integrating traditional community knowledge and customs into fisheries management and decision making (tribal, subsistence and local communities).

Lundberg also noted that LASG's Seafood Specialist, Evelyn, has done significant work this past year with the catfish industry assisting with the transition and new requirements under USDA.

Falgout discussed the recent mandate from Louisiana Governor for Sea Grant to facilitate workshops and development of a Fisheries Adaptation Plan with industry, CPRA and LDWF on methods and opportunities for fisheries to adapt to changing coastlines in Louisiana from natural changes as well as planned coastal restoration activities in the Louisiana Coastal Masterplan. 4 areas of focus- oyster, shrimp, finfish, crab. LASG is hosting public outreach meetings on assessment and needs of industry.

Lundberg mentioned that Rusty and Kevin will be conducting a series of industry meetings to address finfish issues in LA, particularly regarding different gear types utilized within different regions of LA including trawls.

Texas

Picariello discussed the recent staffing changes, including herself as the new Fisheries Specialist, along with two other new specialists hired in the last few months in Coastal Planning and Natural Resources. Texas is also hiring a new Marine Agent in Jefferson/Chambers county area to come onboard by early 2019.

Picariello notes that Texas Sea Grant is continuing to provide industry assistance for the shrimp fishery including TED/BRD assistance through courtesy checks at the docks. There are also a few projects developing to address shark depredation, which is an increasing issue for industry due to net damage and catch loss. TX, LA, MS/AL, GA Sea Grants collaborated on a regional proposal to investigate shark predation and potential mitigation through use of magnets in nets (MS/AL acting as lead on the proposal). Texas Sea Grant is also working on a project utilizing a device that produces an electric current to deter shark interactions (based on Australia projects in development over last 10 years call Shark Shield). The company is currently in development of a new device that would be adapted for fishing and should be available in early 2019. There have also been discussions (Texas and Georgia taking the lead) on hosting a regional workshop with industry representatives to share current mitigation techniques in use and develop new strategies for research and implementation, but need to identify a possible funding source for this.

Picariello also discussed labor issues that have been a significant challenge in last two years, particularly for the shrimp industry, which relies on H2B visa workers for both vessel crew and processing facilities. **Graham** mentioned there is a new survey coming up that was commissioned by NOAA. Northern Economics has been contracted to conduct crew surveys for the federal fisheries in the Gulf and South Atlantic. A representative has recently been down in the Gulf meeting with industry, assisted by Graham and Sea Grant, to do the initial scoping for the survey design. The survey will likely occur in 2019/2020.

Picariello also notes that there is a new initiative developing in the Gulf, it is very early stages and a Planning Team was recently put together in September 2018 to develop a Gulf of Mexico Young Fishermen's Development Program. The initiative is being spearheaded by the Reef Fish Shareholders Alliance and Bob Gil from Florida to address the 'graying of the fleet' and to cultivate new entrants into commercial fisheries in the Gulf. Picariello has joined the Planning Team and will keep the group updated as the project progresses.

Picariello also noted that Andrew Ropicki is working on a Baitfish Aquaculture project. They recently surveyed bait dealers in Texas and have a publication (in review) on the potential for baitfish aquaculture in Texas, both bait houses and producers have expressed interest.

Oyster Aquaculture continues to slowly make progress in Texas. RESTORE funds were earmarked for a hatchery in the Palacios area- still awaiting final award. Industry members and the Harte Research Institute have been working with TPWD on draft legislation for the upcoming 2019 legislative session. Permitting has been completed for 2 experimental research sites to do initial research on cages.

Picariello is also in the process of planning Red Snapper Decision Support Tool Workshops for early 2019 (dates still TBD) for the development of a Management Strategy Evaluation (MSE) model to assist decision-making in the red snapper fishery. This work is through a RESTORE grant awarded to Florida International University (FIU). The upcoming workshops will be held in Louisiana and Alabama with stakeholders to gather input on the design of the tool.

Picariello and Falgout also noted that the Sea Grant Oil Spill Science Communication Team is hosting two workshops in the northern Gulf on Health, Social, and Economic Disruptions from Spills. The first one is planned for Houma, LA on December 4-5, 2018 (flyer distributed)

Guest Reports

Graham provided an update on his ongoing work with the Deepwater Horizon Oceanic Fish Restoration Project (OFRP). The goal of the project is to restore fish stocks damaged by DWH spill, working with the Highly Migratory Species fishery (tuna, swordfish, mahi, etc.). They are going into the third year of the project and eligible HMS longline fishermen have been selected for the next round of a voluntary repose (are paid not to longline from Jan-June 2019). Most participants have selected to try alternative gear during the repose while not longlining- buoy gear, green stick gear and deep drop gear options. So far, alternative gears are not producing the quantity of fish needed to meet market needs.

Fallon mentioned that Audubon G.U.L.F. also worked on this project, specifically to assist in the challenges up the supply chain. G.U.L.F. conducted dealer and industry meetings to discuss impacts of the OFRP project on supply chain dynamics. Impacts to dealers and up the supply chain were reported due to the lack of quantity of fish being produced by the alternative gears. Recommendations were compiled and submitted to both NFWF and NOAA based on industry feedback during a workshop facilitated by Audubon in Fall 2017.

Deighan provided an update on other Audubon G.U.L.F. activities:

Certification: The G.U.L.F. Responsible Fisheries Management (RFM) certification recently received Global Sustainable Seafood Initiative (GSSI) recognition. This is the final piece that G.U.L.F. has been working towards to receive full market acceptance. Many retailers, such as Walmart and Kroger have policies accepting certifications from ‘any GSSI recognized scheme’.

Fishery Improvement Projects (FIPs): FIPs are a step by step process guiding fishery towards meeting certification requirements (MSC and/or G.U.L.F. RFM). G.U.L.F. continues to lead four shrimp FIPs in the Gulf- Alabama, Mississippi, Louisiana, and Texas (Florida FIPs are run independently by industry- there are 3 of them). FIPs receive scores based on their progress towards specific requirements. Alabama- score increased to a B; Mississippi- B (highest score possible without MSC pre-assessment); Texas and Louisiana- both have A ratings and are posted on FisheryProgress.org.

The primary actions within the shrimp FIPs are:

1. Voluntary gear checks (TEDs/BRDS) to minimize bycatch.
2. Bycatch research: LDWF is initiating an inshore bycatch study in Louisiana for the 2019 shrimp season, and there is a project proposal underway to address some data gaps in the federal observer program bycatch reports. Currently, the Observer Program does a modified bycatch characterization, not full characterization, therefore, there is a 27% “other finfish” grouping. Audubon is working with LGL Ecological Associates, Gary Graham, Sea Grant and NOAA on a proposal to collect unidentified samples and bring to shore for analysis in lab.
3. Tow time app for skimmer trawls- working with MSCFU in Mississippi on developing a mobile app (possibly with net sensors) to track tow times on skimmers

Deighan also mentioned that G.U.L.F. is also working with crawfish industry on a sustainability project/FIP, but somewhat different because the majority of crawfish in Louisiana is pond raised.

Fallon also updated the group on Audubon's outreach activities, including:

- the G.U.L.F. Restaurant Partnership. Recently updated G.U.L.F. app with map of restaurant partners, talking with Texas Sea Grant and Texas State Aquarium about expanding to include partners in Texas.
- Traceability project- small scale- with a few industry members in Louisiana.
- Marine Plastic Pollution- working with the AZA's Aquarium Conservation Project (ACP) Group to tackle ocean plastics. **Staugler** also notes that Florida SG is working on microplastics. They have agents in each area conducting water sampling to measure microplastics. This effort started in 2015 and the lead agent on this project is Maya McGuire.

Other Business

Next meetings:

Spring 2019 meeting: New Orleans, March 19-21, 2019

Fall 2019 meeting: Mississippi, October 15-17, 2019

There being no further business, the meeting was adjourned at 4:45pm

APPROVED BY:

COMMITTEE CHAIRMAN

**STATE-FEDERAL FISHERIES MANAGEMENT COMMITTEE
MINUTES**

Wednesday October 17, 2018
South Padre Island, TX

Scott Bannon called the meeting to order at 3:30 p.m. The following members and others were present:

Members

Scott Bannon, ADCNR, Gulf Shores, AL
Luiz Barbieri, FLFWC, Saint Petersburg, FL
Rick Burris (proxy for Joe Spraggins), MDMR, Biloxi, MS
Jason Froeba, LDWF, Baton Rouge, LA
Lance Robinson, TPWD, Austin, TX
Roy Crabtree, NOAA Fisheries, Saint Petersburg, FL
Dave Donaldson, GSMFC, Ocean Springs, MS

Others

Dan Ellinor, FLFWC, Tallahassee, FL
Dave Van Voorhees, NOAA Fisheries OST, Silver Spring, MD
Chris Blankenship, ADCNR, Montgomery, AL
Jill Hendon, USM/GCRL, Ocean Springs, MS
Eric Hoffmayer, NOAA Fisheries, Pascagoula, MS
Traci Floyd, MDMR, Biloxi, MS
Lindsay Fullenkamp, NOAA Fisheries, Silver Spring
Jerry Mambretti, TPWD, Dickinson, TX
Andrew Peterson, Bluefin Data, Gonzalez, TX

Staff

Gregg Bray, FIN Program Manager
Jeff Rester, SEAMAP Program Manager
Steve VanderKooy, IFJ Program Manager
Angie Rabideau, GSMFC Senior Accountant
James Ballard, Sport Fish Restoration/Aquatic Invasives Coordinator
Joe Ferrer, Systems Administrator, Ocean Springs, MS
Donna Bellais, ComFIN Programmer, Ocean Springs, MS
Alice Wilhelm, Sport Fish Restoration/Aquatic Invasives Staff Assistant/Travel Processor, Ocean Springs, MS

Adoption of Agenda

The agenda was approved as written.

Discussion and Final Approval of GulfFIN Funding Activities for 2019

G. Bray outlined the status of 2019 funding for data collection and management activities. **D. Van Voorhees** stated the likelihood of operating under a continuing resolution resulting in level funding is high. The preliminary numbers show the GulfFIN line item at \$4.296M and RecFIN line item at \$3.477M. The Gulf portion of the RecFIN line item works out to be about \$1.072M. In addition, there is an additional \$855K provided by the NOAA OST to allow for large base sampling allocations for MRIP dockside surveys and \$25K for travel participation support. NOAA Fisheries Southeast Fishery Science Center has provided funding assistance to support headboat port sampling and biological sampling programs that covers all of 2019. **Bray** also stated that GulfFIN has \$375,000 of unallocated funding that can be applied to 2019 funds. GulfFIN is entering its last year of the current 5-year cooperative agreement and needs to spend all unallocated funding before 2020. Based on preliminary funding the amount available for FIN in 2019 totals \$5.913M. The breakdown of the funding is as follows:

| 2019 Proposed Funding* | | |
|------------------------------|-----------|-----------|
| GulfFIN line item | 4,296,000 | |
| OMB administrative fee | (321,393) | |
| SER administrative fee | (2,425) | |
| GulfFIN - available | | 3,972,182 |
| | | |
| RecFIN line item | 3,477,000 | |
| OMB administrative fee | (260,807) | |
| RecFIN - available | 3,216,193 | |
| Gulf portion of RecFIN (1/3) | 1,072,064 | |
| SER administrative fee | 0 | |
| Economics survey | (155,372) | |
| SEFSC data collections | (231,114) | |
| RecFIN - available | | 685,578 |
| | | |
| Additional funds | | |
| MRIP funds | | 880,000 |
| SEFSC funds | | 0 |
| SER funds | | 0 |
| HQ funds | | 0 |
| GulfFIN Unallocated funds | | 375,000 |
| | | |
| TOTAL AVAILABLE | | 5,912,760 |

G. Bray then provided a brief overview of the documents that were distributed to the group. He also discussed the summary of the activities for potential funding in 2019 that was developed by the FIN Committee. The list is attached (Attachment A).

The original amount proposed for 2019 for all the jobs proposed was approximately \$6.268M, which results in a deficit of \$355K (-5.67%) deficit.

After discussion **L. Barbieri moved** to fund Job 1 (Coordination and Administration of FIN Activities), Job 2 (Collecting, Managing, and Disseminating Marine Recreational Fisheries Data), Job 4 (Operation of FIN Data Management System), and Job 5 (Trip Ticket Program Implementation and Operation) and was seconded by J. Froeba. The motion passed **unanimously**. The committee motion still resulted in a funding deficit of 5.67%. The committee agreed that the deficit would be applied equally to all programs. GSMFC staff will work with all program coordinators to obtain revised budgets that reflect the reduced totals for 2019.

The group discussed the situation where the funding level was either higher or lower than the amount discussed at the meeting. In the past NOAA Fisheries has provided additional S/K funds in the summer to support reducing funding cuts or funding new projects but no information is currently available on whether funds will be available in 2019. It was noted that if the additional money was obtained or substantial reductions were realized then the Committee would convene (via conference call) to discuss how to handle revised reduction or surplus. The reductions are as follows:

| | Proposed | Reduction | Revised total |
|-------------------|-------------|------------|---------------|
| GSMFC | \$868,330 | -\$49,215 | \$819,115 |
| Texas | \$189,018 | -\$10,713 | \$178,305 |
| Louisiana | \$1,199,992 | -\$68,013 | \$1,131,979 |
| Mississippi | \$832,679 | -\$47,194 | \$785,485 |
| Alabama | \$558,486 | -\$31,653 | \$526,833 |
| Florida | \$2,454,511 | -\$139,116 | \$2,315,395 |
| Bluefin Data (TT) | \$165,000 | -\$9,352 | \$155,648 |
| | | | |
| TOTAL | \$6,268,016 | -\$355,256 | \$5,912,760 |

Donaldson stated that we are not up against a pending deadline for submitting our 2019 budget and cooperative agreement to NOAA Fisheries. GSMFC staff will wait to inform state personnel on potential changes to their existing budgets until more specific information is obtained regarding 2019 final funding.

Discussion of SEAMAP Funding Activities for 2019

J. Rester provided some background on the SEAMAP budget and surveys for the Gulf of Mexico. The FY2018 SEAMAP appropriation was \$5.125 million and Jeff stated that SEAMAP received approximately \$4.74 million for fishery independent sampling for all three SEAMAP components. All three SEAMAP components based their FY2019 budget on level funding of \$5.125 million. The State/Federal Fisheries Management Committee reviewed the various SEAMAP surveys along with their associated costs. SEAMAP does not know how much funding they will receive in FY2019 and will not know their funding level until weeks after an FY2019 budget is passed, so it is not possible at this time to prioritize surveys based on anticipated funding. For FY2019 SEAMAP will continue the current SEAMAP survey work and sampling effort and hope that level funding or additional funding will be appropriated.

After considerable discussion **L. Barbieri** moved to accept the proposed funding for SEAMAP surveys for 2019 as presented and was seconded by **J. Froeba**. The motion passed unanimously.

GFID Database Discussion

S. VanderKooy asked the SFFMC if pursuing a centralized Fishery Independent Database (FID) housed at the Commission would still be of use. This effort was begun in 2012 with some unspent IJF funds but ceased since there was no additional funding to continue. During the data gathering portion of the current SEDAR 63 Benchmark Assessment for Gulf Menhaden, it became clear that something similar to the GFID concept would still be useful. The SFFMC indicated that they would have no problem providing the data to the Commission for continuing this effort through the Commission. **VanderKooy** state he would send a formal request to each agency detailing the project needs.

Next IJF Species for Revision or Profile Development

S. VanderKooy reported that the IJF program was completing the Cobia Profile at this time and is asking the SFFMC for the next species to put together in a management profile. With the additional funds now available, a second species will be considered as well on a staggered start from the next profile. The committee reviewed the list of priority species and directed staff to begin on Red Drum followed by Mangrove Snapper. **VanderKooy** would contact the agencies for representation on a Red Drum Task Force.

Election of Officers

S. Bannon was nominated for chairman and **P. Mickle** was nominated for vice-chairman. The nominations were closed and both were approved unanimously by the committee.

Other Business

D. Donaldson discussed a proposal provided by Texas Parks and Wildlife Department to increase their recreational dockside sampling efforts to provide better data for red snapper sampling during their 2019 Exempted Fishing Permit season. **L. Robinson** stated the goal would be to increase the number of samplers and creel surveys conducted at boat ramps where red snapper are landed. **R. Crabtree** encouraged Texas to consider going through the MRIP Certification process with their survey. Once certified they could then be available to receive federal funding support through MRIP. **Donaldson** also mentioned there may be additional funding opportunities available such as NRDA or NFWF.

There being no further business, the meeting was adjourned at 5:15 p.m.

GULFFIN ITEMS FOR CONSIDERATION IN 2019

High Priority

Coordination and Administration of FIN Activities – *Ongoing*

Collecting, Managing and Disseminating Marine Recreational Fisheries Data – *Ongoing*

Operation of FIN Data Management System – *Ongoing*

Trip Ticket Program Operations in Texas, Louisiana, Mississippi and Alabama – *Ongoing*

Head Boat Port Sampling in Texas, Mississippi, Alabama, and Florida (funded via alternative source) – *Ongoing*

Biological Sampling of Commercial and Recreational Catches – *Reinstating*

At-Sea Sampling for Catch and Discard Data from Large Capacity For-Hire Boats – *New*

Low priority

Gulf Menhaden Port Sampling – *Ongoing* (will be funded by IJF in 2019)

Collection of Catch and Effort Data via Logbooks for For-Hire Boats – *New* (waiting on SEFHIER)

Highly Migratory Species Recreational Catch and Effort Sampling in the Gulf of Mexico – *New*

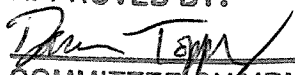
Biological Sampling for FIN Secondary Priority Species – *New*

Recreational Red Snapper Data Collection for Catch and Effort – *New* (working through state survey process)

Commercial Conversion Factor Research – *New* (current project funded by NOAA FIS)

**TECHNICAL COORDINATING COMMITTEE
MINUTES**

**Wednesday October 17, 2018
South Padre Island, TX**

APPROVED BY:

COMMITTEE CHAIRMAN

Chairman Darin Topping called the meeting to order at 1:30 p.m. The following members, staff, and others were present:

Members

Jason Froeba, LDWF, Baton Rouge, LA
Luiz Barbieri, FWC/FWRI, St. Petersburg, FL
Dan Ellinor, FWC, Tallahassee, FL
Erik Broussard, MDMR, Biloxi, MS
Rick Burris, MDMR, Biloxi, MS
Scott Bannon, ADCNR/MRD, Dauphin Island, AL
Darin Topping, TPWD, Rockport, TX
Christopher Mace, TPWD, Rockport, TX
Roy Crabtree, NOAA Fisheries, St. Petersburg, FL

Staff

James Ballard, GSMFC, Sport Fish/Aquatic Invasives Coordinator, Ocean Springs, MS
Joe Ferrer, GSMFC Systems Administrator, Ocean Springs, MS
Ali Wilhelm, GSMFC, Sport Fish/Aquatic Invasives Staff Assistant, Ocean Springs, MS
Jeff Rester, GSMFC, SEAMAP Coordinator, Ocean Springs, MS
Dave Donaldson, GSMFC, Executive Director, Ocean Springs, MS
Steve VanderKooy, GSMFC, IJF Coordinator, Ocean Springs, MS
Gregg Bray, GSMFC, FIN Data Program Manager, Ocean Springs, MS
Angela Rabideau, GSMFC, Accountant, Ocean Springs, MS
Donna Bellais, GSMFC, ComFIN Survey Coordinator, Ocean Springs, MS

Others

Justin Esslinger, TPWD, Rockport, TX
Trevor Moncrief, MDMR, Biloxi, MS
Lindsay Fullenkamp, NOAA, Silver Spring, MD
Jill Hendon, USM/GCRL, Ocean Springs, MS
Carly Somerset, MDMR, Biloxi, MS
Andrew Petersen, Bluefin Data, Baton Rouge, LA
Lance Robinson, TPWD, Austin, TX
Carey Gelpi, TPWD, Port Arthur, TX
Eric Hoffmayer, NOAA, Pascagoula, MS
Traci Floyd, MDMR, Biloxi, MS
Jerry Mambretti, TPWD, Dickinson, TX
Read Hendon, USM/GCRL, Ocean Springs, MS

Adoption of Agenda

A motion to adopt the agenda was made by Luiz Barbieri and passed unanimously.

Approval of Minutes

A motion to approve the minutes for the March 14, 2018 meeting was made by Jason Froeba and passed with no opposition.

Overview of Year One of the Red Snapper Exempted Fishing Permits

Each state provided a brief overview of the first year of state management of the red snapper recreational fishing season under the new exempted fishing permits. **Darin Topping** Stated that Texas had an allocation of 16% (241,245 lbs.) of the total Gulf of Mexico TAC and their primary goal was to not go over their allocation. They maintained their 365 day season in state waters (out nine miles) and had an 82 day federal season starting on June 1st and ending August 21st. Their quota monitoring was carried out by utilizing their field staff to do weekly creel surveys and those surveys were proved to the scientific staff and estimates were generated on a biweekly basis. At the end of their federal season they had collected approximately 160,000 lbs. and they have no intentions to reopen a federal season because they are anticipating their state water season will collect the majority of the remainder of their allocation. For next year, they will be conducting public scoping meetings to get input from the recreational community on any possible changes for the 2019 season. **Luiz Barbieri** reported that Florida had a 40 day recreational red snapper season that started on June 11th and ran through July. Florida received an allocation of about 42% of the total Gulf of Mexico TAC (~1.8 million lbs.). They used MRIP and the Gulf Reef Fish Survey to assess catch and effort data to monitor their quota. Because the final numbers are not available from wave 4 of MRIP, they have not been able to generate their final season estimates yet, but they harvested about 1.1 million lbs. in June. **Erik Broussard** stated that Mississippi's season opened on May 25th and ran through July 9th, then there was a two week mid-season closure to assess their catch data which is all collected through their Tails n' Scales program and to generate new harvest projection. The season reopened on July 23rd and ran through August 24th. The season was also reopened on Labor Day weekend and the weekend of September 14th–16th to utilize the rest of the allocation. The total recreational allocation for Mississippi was 135,149 lbs. and the estimated recreational harvest was 128,678 lbs. **Jason Froeba** reported that Louisiana's recreational allocation was 743,000 lbs. and they planned on using LA Creel to monitor their harvest. The season was opened on May 25th and was open seven days a week until July 13th when it switched to weekends only. By August 12th the total harvest was 737,000 lbs. and the season was closed. **Scott Bannon** stated that in Alabama they anticipated having a 47 day (weekend only) recreational red snapper season that would start on June 1st and run through Labor Day. However, their harvest effort was double historical estimates at about 40,000 lbs. per day which forced them to close the season at the end of July (28 day season total). They used Snapper Check to monitor their harvest data which was critical, because if they would have just relied on historical catch and run their season for their original 47 days, they would have greatly exceeded the ACL. Alabama's total allocation was 984,291lbs. and their total harvest was about 986,298 lbs. For future years, they are looking at ways to increase the reporting rates in their Snapper Check program.

Presentation on the Draft Cobia Profile

Steve VanderKooy provide a presentation on the draft Cobia Profile. Given the fact that this is only a profile and does not provide management recommendations, the TCC will provide the final approval of the document following their final review. Steve pointed out that the document is not ready for the committee to review now, but it will be distributed to the TCC for their final review in about 30 days. In his presentation Steve briefly outlined the biology of cobia including their

distribution, the commercial and recreational fishery, the population status, their aquaculture potential, as well as the future research needs for the cobia population in the Gulf of Mexico that are outlined in the draft profile. Steve stated that he will distribute the draft profile to the committee as soon as it is ready for a 30-45 day review.

Subcommittee Reports

Data Management

Justin Esslinger reported that Richard Cody gave a presentation on the results of the transition to the Fishing Effort Survey (FES). This mail survey replaces the old Random Digit Dial telephone survey for estimating effort of inshore and private boat modes. Cody presented detailed results for several important management species in the Gulf of Mexico and in general the new FES calibrated estimates average two to three times more than previous Coastal Household Telephone Survey estimates. Impacts on stock assessments and the management advice produced has yet to be determined for specific species but FES calibrated estimates will be used for future benchmark assessments.

The committee discussed the potential impact of the proposed federal for-hire electronic logbook program on data collection efforts for state permitted vessels. If all federally permitted charter vessels are mandated to report through the SEFHIER process, they still need methods for sampling state permitted vessels. Currently state permitted vessels are sampled with the MRIP For-Hire Telephone Survey, LA Creel or TPWD survey. At this time no states suggested an alternative method or preference for collecting data from state permitted vessels but recognized appropriate sampling methods would be important for this subset of the for-hire fishery.

Justin stated that Dave Donaldson informed the subcommittee on several potential funding opportunities that could benefit monitoring data collection activities. Biological Sampling and Headboat port sampling have received funding through 2020. The Interjurisdictional Fishery Program may potentially receive increased funding in 2019 and beyond. This will fully fund the IJF program and may allow us to spend some additional money on monitoring activities. FY2019 Senate budget has an increase in the FIN line items. This would cover multiple FIN regions but it's possible the GulfFIN allocation might increase by a small amount. NRDA is interested in doing a barotrauma study that has several components with monitoring being a large component of that research. It would be essential to develop the study to quantify how the resource is recovering from the oil disaster but if obtained these funds would support research and monitoring for up to 10 years.

Dave Gloeckner informed the subcommittee that Mike Travis with NOAA Fisheries Southeast Regional Office has reiterated the need for GulfFIN to collect and provide a database that identifies all unique commercial vessels operating in the Gulf of Mexico. GulfFIN has developed a database structure with all the necessary data elements but states have had difficulty providing data for a variety of reasons. GulfFIN has asked if Mr. Travis could provide a white paper that details the need for these data and how they are intended to be used to help the states in their efforts to obtain and provide these critical data.

The subcommittee also reviewed the 2017 commercial landings data from their respective state. No major problems were identified but state representatives will make necessary corrections to the 2017 data and re-submit to GSMFC to correct minor coding problems.

Luiz Barbieri made a motion to accept the report as presented, and it passed unanimously.

Crab

Rick Burris stated that the Crab Subcommittee covered a number of topics which were all directly related to current and future regional stock assessments. FWC presented ongoing work on fecundity and seasonality of blue crab spawning in Florida waters and a larval dispersal model exploring the transport of various local populations based on the prevailing current data available from NOAA. The results suggest that Florida crabs may provide larvae mostly back to Florida and up the east coast. The results also suggest that the population breaks used in the regional assessment (GDAR02) may have more support. Meg Oshima (GCRL) developed a surplus production model using the existing FID from each state and found similar results to GDAR02 with an apparent stock break somewhere along the Florida Panhandle. The Western Gulf (AL-TX) seemed to show declining abundance indices while the Eastern Gulf (FL) had relatively stable abundances. This may be a model available for the next assessment.

Luis Hurtado provided some preliminary genetics work looking at crabs from Texas, the Florida Panhandle and the Chesapeake. His results indicate that the previous approach using neutral markers didn't provide the resolution necessary to determine a single or multiple stock. Using more selective markers, some east west stock break was found. Additional samples are needed from all of the states in the north central Gulf to determine the heterogeneity of the population and where a population break may actually exist.

Zachary Darnell (GCRL) updated the group on the 18,000 tags that have been released on female blue crabs over the past couple of years. Tag returns are providing some insight into adult movements. It was hoped that commercial shrimpers could provide additional info on the potential offshore crab population but there are definitely low returns coming from the shrimp fishery Gulf-wide. It is hoped that more outreach could improve the responsiveness of this critical sector.

Rick Burris presented results of both the recreational crab trap fishing survey and the commercial fishery terrapin interaction app. Both are preliminary but will provide useful data in the future to address both recreational and commercial effort as well as hotspots for potential terrapin research.

The subcommittee will discuss data needs for various assessment model options and any additional items that might need to be worked on in advance of the next benchmark assessment. The agenda for the March meeting will include more of the tools and parameters needed for a future assessment.

Ryan Gandy was elected Chair.

A motion to accept the report was moved by Scott Bannon, and passed without opposition.

SEAMAP

Jill Hendon reported that Jeff Rester provided the administrative report to the subcommittee. To date for 2018 spring plankton, summer trawl, bottom longline, vertical longline, reef fish video, and the fall plankton surveys have been completed by all participating states. Fall trawl is still in progress with the Mississippi and Alabama components being complete, Florida is currently sampling and Louisiana will conduct their survey at the beginning of November. The high number of tropical systems this fall has affected the number of sea days that fall trawl will be able to conduct; however, the final effect of these on the allocated stations will not be known until the SEAMAP partners complete their portions of the survey. The high number of tropical systems also raised the question of how their paths affect sampling efforts; especially for surveys that conduct work immediately prior to or immediately post the storm's passage. This seems to be of greatest concern for plankton as these samples are highly dependent on the state of the water column and water movements. NOAA noticed a low plankton volume from an AL plankton survey that was conducted one day after the passing of Tropical Storm Gordon. The subcommittee asked the NOAA plankton lead and the SEAMAP plankton workgroup to address this concern and set up some guidelines for the future.

Jill stated that the subcommittee has been trying to implement a habitat mapping component for quite a while. The habitat information would be beneficial to correlate with the catch data. Florida has been conducting some habitat mapping work through NFWF funding and has developed a standardized protocol for its implementation. The subcommittee members are currently reviewing this protocol to determine its utility across the Gulf and are discussing the purchase of a side scan sonar with bathymetric package that could be shared by the states. The scanning would be conducted on existing surveys during down times. They hope to set up a workgroup to flesh out the details of this proposed addition. Also, NOAA is currently deploying a GoPro camera on all CTD deployments during their surveys which allows for a quick snapshot of the bottom type at that deployment point. If this was conducted by the states at all stations on all surveys the subcommittee would have an expansive understanding of the point habitat types across the Gulf. As the cost for this employment is minimal, SEAMAP partners hope to implement this on the state surveys for 2019.

The subcommittee has decided to conduct a small pilot study to evaluate the effectiveness of a new vertical line gear. The gear used during the current vertical longline study was developed to target red snapper, and accordingly 95% of the catch is red snapper. The pilot study was developed by the subcommittee and will be implemented by the Mississippi group. It includes minimizing the weight of the backbone and gangion monofilament, as well as shifting the mainline to spectra line. It also implements fewer gangions per backbone (from 10 to 4) and employs a smaller hook size replacing the 15/0 from the SEAMAP protocol with a 2/0. Video and a depletion fishing methodology will also be used to see how effective the new gear is at sampling all species present. These changes will hopefully result in more collections of triggerfish and grouper which would increase the value of the survey.

The subcommittee met in July with all three SEAMAP Components (Caribbean, Atlantic, and Gulf). At that meeting, they discussed the budget for FY19 and are planning on level funding.

Ted Switzer was reelected as Chair, and Jill Hendon was reelected as Vice Chair.

Luiz Barbieri made a motion to accept the report as presented, and it passed unanimously.

State/Federal Reports

Darin Topping stated that written reports were provided to the TCC members prior to the meeting for their review and if there is no objections, by acclamation he would like to have them placed in the record and forgo reading them into the record. The committee had no objections. To see the full reports that were provided to the TCC, please see the minutes from the Commission Business Meeting held on Thursday, October 18, 2019.

Election of Officers

Darin Topping was reelected as Chair, and Beverly Sauls was reelected as Vice Chair.

There being no further business, the meeting was adjourned at 2:47pm

APPROVED BY:

COMMITTEE CHAIRMAN

Commission Business Session
Thursday, October 18, 2018
South Padre Island, TX

Due to inclement weather, Chairman Brett Allain did not attend the meeting. 1st Vice Chairman Joe Spraggins called the meeting to order at 9:08 a.m.

The following Commissioners and/or Proxies were present:

Joe Spraggins, MSDMR, Biloxi, MS
Read Hendon, USM/GCRL, Ocean Springs, MS (*Proxy for Joe Gill*)
Chris Blankenship, ADCNR, Montgomery, AL
Scott Bannon, ADCNR/MRD, Gulf Shores, AL (*Proxy for Chris Blankenship*)
Chris Nelson, Bon Secour Fisheries, Bon Secour, AL
Dan Ellinor, FWC, Tallahassee, FL (*Proxy for Nick Wiley*)
Representative Wayne Faircloth, Galveston, TX
Lance Robinson, TPWD, Austin, TX (*Proxy for Carter Smith*)
Jason Froeba, LDWF, Baton Rouge, Louisiana (*Proxy for Jack Montoucet*)

Staff

Dave Donaldson, *Executive Director*, Ocean Springs, MS
Nancy Marcellus, *Administrative Officer*, Ocean Springs, MS
Chery Noble, *Administrative Assistant*, Ocean Springs, MS
Steve VanderKooy, *IJF Program Coordinator*, Ocean Springs, MS
Jeff Rester, *SEAMAP/Habitat Coordinator*, Ocean Springs, MS
Gregg Bray, *FIN Program Manager*, Ocean Springs, MS
Joe Ferrer, *Systems Administrator*, Ocean Springs, MS
James Ballard, *Sport Fish Restoration/Aquatic Invasives Coordinator*, Ocean Springs, MS
Donna Bellais, *ComFIN Programmer*, Ocean Springs, MS
Angie Rabideau, *Senior Accountant*, Ocean Springs, MS
Debbie McIntyre, *Staff Assistant*, Ocean Springs, MS
Ali Wilhelm, *Staff Assistant*, Ocean Springs, MS
Ashley Lott, *Staff Assistant*, Ocean Springs, MS

Others

Roy Crabtree, NOAA Fisheries, St. Petersburg, FL
John Fallon, Audubon Nature Institute, New Orleans, LA
Laura Deighan, Audubon Nature Institute, New Orleans, LA
Laura Picariello, Texas Sea Grant, Corpus Christi, TX
Darin Topping, TPWD, Rockport, TX
Frank Hernandez, USM/GCRL, Ocean Springs, MS
Mark Zanowicz, USCG, New Orleans, LA
Lindsay Fullenkamp, Silver Spring, MD

J. Spraggins congratulated C. Blankenship for receiving the Lyles-Simpson Award and thanked Texas for hosting the meeting.

Brief Overview of Commission Voting Procedures

D. Donaldson gave a brief overview of the Commission's voting procedures and stated they do have a quorum.

Adoption of Agenda

W. Faircloth *moved* to adopt the agenda as submitted. **L. Robinson** seconded and the agenda was adopted as submitted.

Approval of Minutes

J. Froeba *moved* to approve the March 15, 2018 minutes as submitted. **L. Robinson** seconded the motion and the minutes were approved as submitted.

Public Comments

There was no public comments.

GSMFC Standing Committee Reports

Law Enforcement Committee (LEC)

S. VanderKooy reported that Patrick Carron was elected Chairman and Jason Downey was elected Vice Chairman for both the LEC and LETC. He stated a number of council related items was discussed during the meeting. One item discussed was the JEA's enforcement of red snapper in state waters. The appropriations bill specifies federal dollars cannot be used for reef fish enforcement within 9nm. The LEC/LETC members will request their state directors meet with appropriations staff regarding this issue. If enforcement is able to enforce red snapper within state waters using JEA funds, this issue could be resolved. He reported the Operations Plan for 2019-2020 has been revised and was approved by the Committees. The Committees decided to discontinue printing and distributing the *Officers' Pocket Guide* due to officers having smart phones and access to new fish apps. He said an update on IUU along the Texas/Mexico border was given by Les Casterline and Mark Zanowicz. They will continue to monitor IUU and update the Commission at future meetings. There was a brief discussion on the status of the IJF activities.

D. Donaldson stated that he and the other two Executive Directors from the Atlantic and Pacific Commissions will be in DC next month and will meet with the new appropriations staff. He will discuss the importance of resolving the JEA/red snapper issue.

The Law Enforcement Committee Report was accepted by the Commission.

Technical Coordinating Committee (TCC)

D. Topping reported the TCC discussed the status of each state's Red snapper EFP. He said for the most part, all states were able to stay within their quota or cut off federal fishing as soon as they projected that their quota had been met. He said all of the states have methods that appear to be working and keeping them within the targets while providing the anglers with the opportunity to enjoy the Gulf resources to their potential. He said **S. VanderKooy** gave an overview on the draft Cobia Profile and it is expected to be finalized for approval by the TCC at the beginning of next year. The TCC had no action items to bring before the Commission.

Data Management Subcommittee (DMS)

D. Topping reported Richard Cody gave a presentation on the results of the transition from the old random digit dial telephone survey to the Fishing Effort Mail Survey (FES). The new FES calibrated estimates were two to three times larger on average than previous Coastal Household Telephone Survey estimates. Impacts on stock assessments are being assessed. The DMS discussed the potential for electronic logbooks for state permitted charter vessels. He said currently, state permitted vessels are sampled with the MRIP For-Hire Telephone Survey, LA Creel or TPWD survey. At this time, no states suggested an alternative method or preference for collecting data from state permitted vessels, but recognized the need for appropriate sampling methods for the state For-hire fishery. Dave Donaldson informed the committee on several potential funding opportunities that could benefit monitoring data collection activities. There was also discussion on the need for GulfFIN to collect and provide a database that identifies all unique commercial vessels operating in the Gulf of Mexico. GulfFIN has developed a database structure with all the necessary data elements but there are still some work to be done with the states and data elements.

Crab Subcommittee

D. Topping reported the Crab Subcommittee covered a number of topics related to regional stock assessment. Claire Crowley, FWC, presented work on fecundity and seasonality of blue crab spawning in Florida. The results suggest that Florida crabs may mostly provide larvae back to Florida and up the east coast. Luis Hurtado, Texas A&M, provided some preliminary genetics work on crabs from Texas, the Florida Panhandle and the Chesapeake using more selective markers, an east west stock break was found. Additional samples are needed to examine the population and explore the population break. Meg Oshima, GCRL, presented a surplus production model and found an apparent stock break somewhere along the Florida Panhandle. The Western Gulf (AL-TX) seemed to show declining abundance indices while the Eastern Gulf (FL) had relatively stable abundances. This model may be available for the next assessment. Zack Darnell, GCRL, gave an update on a female tagging project. 18,000 tags have been released on female blue crabs over the past couple of years and tag returns are providing some insight into adult movements. Rick Burris, MSDMR, presented results of both the recreational crab trap fishing survey and the commercial fishery terrapin interaction app. Both are preliminary but will provide useful data in the future to address both recreational and commercial effort and terrapin interaction. Ryan Gandy was elected Chairman of the Crab Subcommittee.

SEAMAP Subcommittee (SEAMAP)

D. Topping reported Jeff Rester provided the SEAMAP administrative report. There was some discussion on how the tropical systems this year have affected the number of sea days; however, the final effect of these on the allocated stations will not be known until all states complete their portions of the survey. There was discussion on waiting a certain amount of time after a storm passes to sample within an area to acquire samples that are representative, especially when sampling plankton. They also discussed developing a standardized protocol for habitat mapping, and possibly acquiring a side scan sonar. The hope is to better characterize the habitats that are currently being sampled with other gears. The habitat information would be beneficial to correlate with the catches. Also related to

habitat, NOAA is currently deploying a camera on all CTD deployments during their surveys to determine bottom type, and the states are considering doing the same to help collect that data. Jill Hendon discussed the status of a pilot study of vertical longline gear that is modified to try to increase species diversity of catches. They seek to accomplish this by use of a smaller hook, exploring new baits, and minimizing the gear. The SEAMAP Subcommittee re-elected Ted Switzer as Chairman, and Jill Hendon as Vice Chairman.

The Technical Coordinating Committee re-elected Darin Topping as Chairman and re-elected Beverly Sauls as Vice Chairman.

D. Donaldson stated in reference to data management compiling the vessel information, this has been an ongoing issue for a number of years. There is a variety of impediments and stumbling blocks but the Subcommittee understands the importance of it and the need to get that information. He said Mike Travis with NOAA Fisheries is frustrated that that information has not been compiled yet but it is not from the lack of trying.

The Technical Coordinating Committee Report was accepted by the Commission.

State-Federal Fisheries Management Committee

S. Bannon reported there was a discussion and final approval of GulfFIN funding activities for 2019. He stated Gregg Bray outlined the status of 2019 funding for data collection and management activities. **Dave Van Voorhees** from NOAA Fisheries Office of Science and Technology stated the likelihood of operating under a continuing resolution in 2019 with essentially level funding is high. The preliminary 2019 funding levels show the GulfFIN line item at \$4.296M and RecFIN line item at \$3.477M. The Gulf portion of the RecFIN line item works out to be about \$1.072M after splitting the full line amount evenly between the Gulf, Atlantic and Pacific. In addition, historically there is an additional \$855K provided by the NOAA OST to allow for large base sampling allocations for MRIP dockside surveys and \$25K for travel participation support. With administrative fees removed the amount available for FIN funding in 2019 totals \$5.912M. The original amount proposed for 2019 for all the jobs was approximately \$6.268M, which meant there was about \$355K (-5.67%) deficit.

After considerable discussion **Luiz Barbieri** moved to fund Job 1 (Coordination and Administration of FIN Activities), Job 2 (Collecting, Managing, and Disseminating Marine Recreational Fisheries Data), Job 4 (Operation of FIN Data Management System), and Job 5 (Trip Ticket Program Implementation and Operation) and was seconded by Jason Froeba. The motion passed unanimously. The committee motion still resulted in a funding deficit of -5.67%. The Committee agreed that the deficit would be applied equally to all programs. The GSMFC staff will work with all program coordinators to obtain revised budgets that reflect the reduced totals for 2019. If additional 2019 money is realized the committee will be convened to decide how to spend the additional funds.

The above mentioned motion was accepted by the Commission.

S. Bannon reported the Committee discussed SEAMAP funding activities for 2019. The FY2018 SEAMAP appropriation was \$5.125 million but SEAMAP received approximately \$4.74 million

for fishery independent sampling for all three SEAMAP components. All three SEAMAP components based their FY2019 budget on level funding of \$5.125 million. The Committee reviewed the various SEAMAP surveys along with their associated costs. SEAMAP does not know how much funding they will receive in FY2019 and will not know their funding level until weeks after a FY2019 budget is passed, so it is not possible at this time to prioritize surveys based on anticipated funding. For FY2019 SEAMAP will continue the current SEAMAP survey work and sampling effort and hope that level funding or additional funding will be appropriated.

After considerable discussion **Luiz Barbieri moved to accept the proposed funding for SEAMAP surveys for 2019 as presented and was seconded by Jason Froeba. The motion passed unanimously**

The above mentioned motion was accepted by the Commission.

S. Bannon stated the Committee then discussed the GFID Database. He said Steve VanderKooy asked the Committee if pursuing a centralized Fishery Independent Database (FID) housed at the Commission would still be of use. This effort began in 2012 with some unspent IJF funds but ceased since there was no additional funding to continue. During the data gathering portion of the current SEDAR 63 Benchmark Assessment for Gulf Menhaden, it became clear that something similar to the GFID concept would still be useful. The Committee indicated that they would have no problem providing the data to the Commission for continuing this effort through the Commission. **Steve VanderKooy** stated he would send a formal request to each agency detailing the project needs.

S. Bannon stated the Committee then discussed the next IJF Species for Revision or Profile Development. He said Steve VanderKooy reported that the IJF program was completing the Cobia Profile at this time and is asking the S/FFMC for the next species to put together in a management profile. With the additional funds now available, a second species will be considered as well on a staggered start from the next profile. The Committee reviewed the list of priority species and directed staff to begin on Red Drum followed by Mangrove Snapper. S. VanderKooy will contact the agencies for representation on a Red Drum Task Force.

Scott Bannon was elected Chairman and Paul Mickle was elected Vice Chairman of the Committee.

S. Bannon stated Dave Donaldson discussed a proposal provided by Texas Parks and Wildlife Department to increase their recreational dockside sampling efforts to provide better data for red snapper sampling during their 2019 Exempted Fishing Permit season. Lance Robinson stated the goal would be to increase the number of samplers and creel surveys conducted at boat ramps where red snapper are landed. Roy Crabtree encouraged Texas to consider going through the MRIP Certification process with their survey. Once certified they could then be available to receive federal funding support through MRIP. Dave Donaldson also mentioned there may be additional funding opportunities available such as NRDA or NFWF.

Menhaden Advisory Committee (MAC)

S. VanderKooy reported Ray Mroch provided an update on the 2018 Gulf Menhaden Season. As of September, the landings were up almost 20% from 2017 and 22% over the five year average with another month still remaining to fish. While there were a few tropical systems that came through this year, the storms had little impact on the fishing grounds. Dr. Amy Schueller presented the results of the draft Gulf Menhaden Assessment SEDAR 63. Overall, the population looks good and healthy and the benchmark indicates that the fishery is not overfished nor has been overfished in the last two decades. A. Schueller provided a detailed overview of the model, the parameters that are included in the model and the various analyses that went into generating the results. Since the Assessment Workshop, there have been numerous discussions about the reference points presented in the report. The previous benchmark and the fishery management plan had agreed to SPR based benchmarks for target and threshold. However, with the new data on reproduction and fecundity, not only was MSY not estimable, but the previous SPR reference points were not either. This suggests that the population is even more resilient to fishing pressure than the previous assessment considered, but because the reference points were no longer useful, alternative benchmarks were considered. SSB and Fishing mortality equal to natural mortality was put forth to the assessment panel and will be presented to the CIE reviewers for the workshop in the first week of November. It is expected that the reviewers may provide their own suggestions for alternative reference points, but it will be up to the MAC to discuss management goals and future reference points, specifically for management. The industry needs defined goals, benchmarks, and harvest control rules as part of their MSC certification process. The MAC will take up these items before, during, and likely after their meeting in March. Without a regional management plan, it will be up to the states to determine how they work with the recommendations from the MAC.

S. VanderKooy stated port sampling in MS and LA will likely be funded by the Commission's IJF program. The program covered the 2018 MS samples and the FIN funds LA has been directing to cover the two plants in Empire and Abbeville will be available to LDWF in 2019 for other data needs. Ray Mroch was elected Chairman of the MAC and Borden Wallace reported that this would be his last MAC meeting in an official role. He is retiring and will be replaced on the Committee. This was his 95th annual meeting.

W. Faircloth moved to accept the S/FFMC report. L. Robinson seconded the motion and it passed.

Sea Grant Fisheries Extension Meeting Report –

L. Picarriello reported they had limited representation due to the inclement weather. She stated on the National/Regional level, the Louisiana Sea Grant cohosted the *Fisheries, Aquaculture and Seafood Visioning Workshop* in May 2018. All four Gulf Sea Grant Programs were represented. The Gulf of Mexico Oil Spill Science Outreach Team (housed through MS-AL Sea Grant) received the National Superior Programming Award for their excellent work in synthesizing and communicating research results related to the 2010 Deepwater Horizon oil spill. The National Sea Grant Fisheries Extension Network plans to meet in New Orleans on March 11, 2019 in conjunction with the E World Aquaculture Conference. She then gave a brief overview of each state's activities:

Florida – The Fisheries Working Group met in September to set 3 priorities for the next year: Barotrauma mitigation; develop a Fishing Guide Certification Program in collaboration with FWC (expected to launch in 2019); and the statewide Artificial Reef Summit in 2020. The Aquaculture Team recently produced a series of fact sheets/infographics on Aquaculture and is hosting monthly Facebook events on Aquaculture topics. Florida is experiencing HABs and the Sea Grant Program is very involved in these issues. They are experiencing issues with both Red Tide and blue green blooms. There have been numerous requests for information from both recreational and commercial fisheries on safety due to fish kills and fishing closures in some areas. Steve Otwell has returned to FLSG temporarily to assist on seafood safety concerns and training and they have received many requests for information on microcystis due to increases in algal blooms affecting fisheries and aquaculture systems globally.

Mississippi/Alabama – The Gulf Coast Fishermen Newsletter now has a monthly distribution of over 500 subscribers. They have continued with work on sharks. They have provided materials to Senator Wicker for the recent Senate hearing on sharks. They also gave 4 presentations at the recent International Shark Conference in Brazil earlier this year. They are one of the lead PIs on the Great Red Snapper Count Project and have produced one publication, launched a website, created a YouTube Channel, and developed 3 videos and 3 fact sheets for the project. They also presented to both the SSC and full Council. They have been working on a Tarpon tracking project which has a lot of outreach information. They have tracked 10 tarpon in MS and AL waters in 2018. Those tarpon have all shed their tags though, so they are looking into more durable tags to continue the project in future years. Bill Walton is continuing to assist both Alabama and Mississippi in getting their oyster aquaculture up and running. They are working with Auburn to try to transition that hatchery to a commercial hatchery.

Louisiana – the Direct Seafood Marketing Program has now developed an online component in which seafood can be purchased online. The Delcambre Direct program has now established a website feature for direct sales through the website. The Seafood Processors Conference is scheduled for January 30, 2019 at LSU. Topics that will be discussed are new technologies for processing facilities, microprocessor exhibits and demonstrations and info on eco-friendly packaging/atmospheric packaging. Sea Grant is also working on the Fisheries Adaptation Plan which is a recent mandate from Louisiana's Governor to facilitate workshops with industry, CPRA and LDWF on methods/opportunities for fisheries to adapt to coastal changes. LASG's Seafood Specialist has done significant work this past year with the catfish industry assisting with the transition and new requirements under USDA. LASG is cohosting Traditional Knowledge Visioning Workshops integrating traditional community knowledge and customs into fisheries management

Texas – **L. Picariello** stated Gary Graham has retired and she is now the new Fisheries Specialist for Texas Sea Grant. Texas Sea Grant has been going through several staff changes and priorities changes so there is a new Resilience and Coastal Planning Team which is in the process of replacing the Port Arthur area marine agent. Texas Sea Grant is continuing to work with the shrimp fishery which has been a priority of Texas Sea Grant. Texas is working regionally with other Sea Grants on shark predation issues within the shrimp fishery. This has been an increasing issue for industry due to net damage and loss of catch due to shark interactions. There is one proposal out which is a collaboration with TX, LA, MS/AL, and GA Sea Grants to do a full regional study on

shark predation and potential mitigation through use of magnets in nets. Texas is also working on a Baitfish Aquaculture project. Texas is potentially allowing Oyster Aquaculture and RESTORE funds have been dedicated to building a hatchery in the Palacios area, but they are still awaiting release of the funds to get the project up and running. TPWD, researchers from the Harte Institute and some industry members are working on drafting a Bill to get legislation through to the Texas legislature in this current session. There are two research sites that are approved with experimental permits to get cages in the water and start doing sampling to get that process started. The Gulf Young Fishermen's Development Program is an initiative being led by the Gulf of Mexico Reef Fish Shareholders Alliance to develop a young fishermen's program across the Gulf. They will address the "graying of the fleet" and will be focusing on federal fisheries.

L. Picariello said NOAA SE contracted with Northern Economics to evaluate federal fisheries cruises in the Gulf and South Atlantic and Gary Graham gave an update on that, the Deepwater Horizon Oceanic Fish Restoration Project (OFRP), and the HMS longline fishermen voluntary repose program.

C. Nelson stated he may have unintentionally given her misleading information during the meeting about the Auburn Hatchery. He said he did not mean to imply that Auburn was going to take that hatchery and transition it to the private sector, his comment was that Auburn is looking for private individuals to begin to operate hatcheries to provide seed to the off-bottom oyster aquaculture industry independent of that hatchery.

C. Blankenship stated he wanted to mention that the Tarpon satellite tagging project has been fascinating to watch on how quickly the Tarpon moved from one area of the Gulf to other areas. He thinks this will really help to understand the life cycle and the movement of some of those pelagic fish like tarpon and this is an extremely valuable and interesting study

J. Spraggins stated in reference to the off-bottom work, MS started off-bottom classes and they just signed their first lease. They should get started in January or February and they have 50 acres now and are looking to add another 100 acres in the future.

D. Donaldson stated that there will be a general session at the March 2019 Commission meeting on barotrauma and he invited Sea Grant to participate and provide input.

NOAA Fisheries Southeast Regional Office Comments

R. Crabtree stated the full report is in Tab B of the briefing book. He said Chris Oliver could not attend due to a NOAA Senior Executive Leadership Retreat and he sends his regrets. He said as D. Donaldson stated they are operating under a Continuing Resolution and are waiting to see what Congress does in terms of appropriations after that. He said as most are probably aware, the Council approved an Aquaculture FMP some years back but NOAA is now involved in litigation over the plan. The plan would have set up a permitting process in federal waters in the Gulf of Mexico, but several environmental groups and fishermen's organizations sued stating NOAA does not have authority under the Magnusson Act to regulate aquaculture. Last month the US District Court for the eastern district of Louisiana concluded that NOAA Fisheries does not have authority to regulate aquaculture under the Magnusson Act. They basically ruled that aquaculture is not fishing in the context of the Magnusson Act and they vacated the rule implementing the Gulf

Council's Aquaculture Plan. The department along with the department of Justice are still considering whether to appeal the ruling or not. He said he wants to emphasize that the ruling is not a prohibition on Aquaculture or Aquaculture in the Gulf of Mexico. NOAA and the Department of Commerce continue to support Aquaculture and will continue to work through existing policies to improve Aquaculture permitting efficiency and Aquaculture in the United States. He said he feels the court ruling emphasizes the need for congress to take action on a framework for allowing permitting of aquaculture in the Gulf of Mexico. He said Senator Wicker has sponsored a Bill on Aquaculture and he thinks there is a sponsor on the House side.

R. Crabtree stated in reference to the Velella Epsilon Pilot Project that the Council has reviewed to issue an exempted fishing permit (EFP) to Kampachi Farms for the culture of almaco jack, it his understanding they do not need an EFP and if they are able to get the proper siting permits from the Army Corps of Engineers and Clean Water Act permits from the EPA they would be able to proceed with that project.

R. Crabtree said in April NOAA Fisheries approved EFPs enabling each of the five Gulf States to manage private anglers targeting red snapper in state and federal waters during the 2018-2019 fishing seasons. The Council meets next week and they are working on an amendment that would establish a program for state management of the recreational red snapper fishery after the EFPs expire. The two main items that are still being debated are whether or not the plan should include for-hire vessels and the appropriate state by state allocations. He said all information on this topic is available at <https://www.fisheries.noaa.gov/southeast/state-recreational-red-snapper-management-exempted-fishing-permits>.

C. Nelson stated that he was blindsided by the court's ruling aquaculture and asked **R. Crabtree** to clarify what he meant that it does not prohibit aquaculture. **R. Crabtree** said it stops the Gulf Council's aquaculture permitting system that they had in place for net pen aquaculture. It included reporting systems, a list of what species would be allowable and how long the permit would last. There was a whole host of conditions on those permits and with the court vacating the rule, none of that will exist unless the ruling is appealed and the permitting is reinstated. He said Aquaculture can still be done in the Gulf with the proper Army Corp Siting and EPA permits. The Commission discussed this further and it was suggested to write a letter supporting overturning the decision. **R. Crabtree** suggested if NOAA decides to appeal, the states should write letters of support but does not think the Commission should at this time.

USFWS Region 4 Office Comments –

D. Donaldson informed the Commission that Glen Constant could not attend the meeting and he did not send in a report or update. Hopefully, he will be able to attend the next meeting and provide an update on USFWS activities.

Briefing on Sea Turtle General Session

J. Rester reported they had a very good general session on the Kemp's Ridley Sea Turtle. He said most of you here are familiar with the Kemp's Ridley Sea Turtle and their plight and what has happened to their population over the past 35 or 40 years. Seven presentations were given from experts who have been working on Kemp's Ridley Sea Turtle for quite a while. **J. Rester** gave a brief summary on each presentation and stated a proceedings of the session will be available on

the Commission website in the very near future. He then showed a video from Gladys Porter Zoo summarizing some of the work they have done with the Kemp's Ridley Sea Turtle.

Status and Overview of Aquaculture Activities

S. VanderKooy gave a brief report on the Oyster Aquaculture and Regional Pilot Projects. He stated the complete report is in Tab C and D of the Briefing Book. He said in 2017-2018 the Commission funded 6 Off-bottom Oyster Projects for a year duration. The funds came from a cooperative agreement with the Office of Aquaculture. Those projects were completed. The Commission funded 7 new projects with \$375,000, all of which are ongoing. Unfortunately, one of the projects, the Wakulla Environmental Institute in Wakulla, Florida, received a heavy storm surge during Hurricane Michael and the damage to the gear was extensive. The project is on hold and it is not known when they will be able to start again. He said the Commission is also helping to coordinate three Offshore Pilot Projects that were funded last year. He said they are in the process of starting the third year of oyster off-bottom projects. In discussions with the Office of Aquaculture, they expect a substantial increase in funding for the projects in 2019.

NOAA Fisheries Budget Update

D. Donaldson reviewed Tab E and F of the Briefing Book. He said Congress has passed a Continuing Resolution that funds the government through December 7, 2018. The FY19 budgets for the House and the Senate have come out and at this point, the programs of interest to the Commission are to be either level or receive increased funding in both the House and the Senate.

He said for the House side, Fisheries Data Collections, Surveys and Assessments is being proposed at \$165M, Aquaculture \$15M, Regional Councils and Fisheries Commissions at \$37M, IJF at \$3.5M and Enforcement at \$70M. There is new language that the committee supports the Fishery Information Networks and the recommendations include an additional \$500K of the enacted level, and \$613K above the request. SEAMAP includes the same language as last year in that they encourage NOAA to ensure that it has adequate funding to complete its mission. There is additional new language about enforcement that the committee does not adopt the proposals to decrease the Cooperative Enforcement Program or to eliminate the funding for Joint Enforcement Agreements with State and territory partners. When the first budget or request came out there was a move to eliminate that money which would have had a severe impact on the states' ability to do enforcement. **D. Donaldson** said he and others talked with some of the House and Senate staffers and fortunately, they heard their concerns and incorporated new language.

On the Senate side, Fisheries Data Collections, Surveys and Assessments is at \$170M, Aquaculture \$15M, the Councils and Commissions line items is at \$4M, IJF is at \$3.5M and Enforcement at \$70M. For the Exempted Fishing Permits for Red Snapper Fishing, the committee commended each of the states for developing strong proposals for reef fish management and in the language they provided under Fisheries Data Collection Surveys and Assessments an additional \$5M for NMFS to deliver technical support needed for the states' to successfully implement these plans. The Fisheries Information Networks is funded at \$23M and again there is language for an increase over last year. Unfortunately, the allocation will not be realized until NMFS distributes the funds and he stated the Commission would like to encourage NMFS to allocate the appropriate amounts to the Gulf of Mexico. For regional pilots for sustaining aquaculture, this is the continuation of the projects S. VanderKooy reported on, \$2.5M - \$500K to each of the Interstate

Commissions. For the regional pilots and oyster aquaculture research and restoration it provides \$5M to support ongoing research in off-bottom aquaculture and it expands it to the Pacific and Atlantic regions. Then lastly, the Council and Commission line item is funded at \$40M. This represents about a 12% increase over last year and the language says that funding will be allocated across the Councils and the Commissions. If it is equally allocated the increase represents almost another \$400K to the IJF program. **D. Donaldson** says he views this as positive and thinks after the years of stressing to them the importance of data collection and the need for the Gulf States, it seems they are finally responding by increasing the budgets.

R. Crabtree stated he feels it will be extremely challenging to receive budget increases due to the budget deficit projections.

Discussion of Legislative Issues and Actions

D. Donaldson reviewed Tabs G and H of the Briefing Book. **H.R. 200**, which is an Act to amend the Magnuson-Stevens Fishery Conservation and Management Act to provide flexibility for fishery managers and stability for fishermen, and for other purposes. He said that was passed by the House on July 11, 2018. He said this essentially amends the Magnuson Act to provide more flexibility for fisheries managers and stability for fishermen, it gives Councils the proper tools and flexibility to manage the fisheries and allows Councils to base fisheries stock rebuilding timeframes on science rather than one size fits all. It includes the public in FMP development and requires the Secretary of Commerce to develop the plan for implementing cooperative research and further improve science and data for the Councils to base their management on. He said the bill has been sent to the Senate and referred to the Senate Commerce and Science and Transportation Committee but he does not feel the Senate will pass this.

D. Donaldson said **S.3138** establishes a regulatory system for marine aquaculture in the United States exclusive economic zone, and for other purposes. He said it was introduced in the Senate on June 26, 2018. There is initial funding for the bill at \$60M for potentially this year and then it will increase to \$80M by 2022. It establishes an Office for Marine Aquaculture and NOAA will be the lead federal agency.

Update on Gulf United for Lasting Fisheries (G.U.L.F.) –

J. Fallon, Director of Sustainability and Coastal Conservations at Audubon Nature Institute, presented an update on the Gulf United for Lasting Fisheries (G.U.L.F.) which is their sustainable fisheries program. He gave a brief background of the program stating they are based out of the Aquarium and Zoo in New Orleans and they have been operating since 2012. He said they work in three capacities on sustainability fisheries – certification, fishery improvement projects, and outreach and education. He stated they are a regional program and the original funding to start the program came through the Commission from 2013-2015. He reviewed each component of the program and future priorities. The complete presentation is available upon request to the GSMFC office.

The Commission agreed that this is a valuable program to maintain. **D. Donaldson** will discuss with J. Fallon ways to communicate the importance of the program to industry Gulf wide and possibly finding funding sources to keep the program going.

Presentation of NOAA RESTORE *Sargassum* Project Findings –

F. Hernandez gave a presentation on the results of the NOAA Restore *Sargassum* Project which evaluates the importance of *Sargassum* to fisheries management in the Gulf of Mexico. He reviewed the objectives of the project: quantify *Sargassum* variability in distribution and biomass at gulf-wide scales in the northern Gulf of Mexico; quantify the nursery-role function of *Sargassum* relative to temporal/spatial variability, habitat morphology, and alternative open water habitats; and develop and test the efficacy of remote sensing and field-derived habitat indices for inclusion in stock assessments of managed species associated with *Sargassum*. He said the simple explanation of the project is - does a good *Sargassum* year equate to good recruitment the following years. He stated the project used data from SEAMAP surveys to determine the results. He said the early results of the project are encouraging. The complete presentation is available upon request to the GSMFC office.

Update on Red Snapper Research Program –

G. Stunz gave an update on “The Great Red Snapper Count” which is estimating the absolute abundance of Red Snapper in the U.S. Gulf of Mexico. He stated they are mid-way through the project and hopes that by this time next year they will have some concrete numbers to report back in terms of the abundance of snapper. He said the lack of absolute abundance data hinders management and the goal of the project is to do an independent estimate of the abundance of Red snapper outside of the SEDAR process. He stated there are 21 leading scientists from 12 institutions as well as constituents that are involved in the project. He discussed the methods being used in the project which are habitat mapping, tagging, direct counts and depletion methods. He stated if anyone wants to participate in the project they can contact snappercount@harteresarchinstitute.org or visit the website for more information www.snappercount.org. The power point presentation is available upon request to the GSMFC office.

D. Donaldson asked when is the end of the project and when will the results be available. **G. Stunz** said this is a no-extension project so they will have an estimate by the end of next year – 2019.

R. Crabtree stated the next benchmark red snapper stock assessment is in 2020 and they hope to incorporate the results from this study into the assessment.

GSMFC Program Reports

Interjurisdictional Fisheries Program (IJF)

S. VanderKooy stated the full report is under Tab I of the Briefing Book. He said as mentioned earlier the Cobia Management Profile should be ready for approval by the TCC early in 2019. Work continues on the Otolith Manual Revision, Tripletail Genetics, and he continues to serve on the Audubon G.U.L.F. Project’s Technical Advisory Committee and the Data Deficient Working Group. The SEDAR63 Benchmark for Gulf Menhaden Review Workshop will take place in November in New Orleans. He stated the *License and Fees* and *Officer’s Pocket Guide* publications are available if anyone is interested in receiving a copy.

Southeast Area Monitoring and Assessment Program (SEAMAP)

J. Rester reported since the March meeting the Spring Plankton Survey, Summer Shrimp/Groundfish Survey, Bottom Longline Survey, Reef Fish Survey, and Fall Plankton Survey have been completed. The Vertical Line Survey and Fall Shrimp/Groundfish Survey are currently ongoing. He stated the 2018 SEAMAP Annual Report to the Technical Coordinating Committee is in the handouts and it contains more detailed information on all of the SEAMAP Surveys.

He said while SEAMAP appropriations have remained steady at \$5.125 million over the past several years, NOAA taxes, assessed at more than 16% of the appropriation, were impacting SEAMAP's ability to collect fishery independent data. Taxes were reduced in 2018 to 7.5% which provided an additional \$500K to be used for collecting data. All three SEAMAP components met in July to discuss ongoing activities and the FY2019 SEAMAP budget. All components gave a presentation on their reef fish trap and video sampling surveys and discussed reef fish habitat mapping within the regions. SEAMAP is still examining ways to minimize trawling impacts to hardbottom and sponge habitat on the eastern Florida shelf. SEAMAP used the new station selection protocol during the Summer Shrimp/Groundfish Survey and the new protocol was very successful. SEAMAP will continue to evaluate how the new station selection process impacts catch rates of reef associated species.

J. Rester reported that while the standard SEAMAP trawl works very well at sampling benthic organisms in the western Gulf of Mexico, Florida and NMFS are starting to examine trawling efficiency on the sand bottoms of the eastern Gulf. Florida is starting to deploy trawl sensors on their trawls to see when sponge catch affects the trawl efficiency. NMFS has deployed GoPro cameras on trawls to examine trawl efficiency on sand bottoms and found that the trawl net does fish differently on sand bottoms than it does on mud bottoms.

He said the Commission continues to manage SEAMAP data and distribute the data to interested parties. The SEAMAP Data Manager has made major changes to the Vertical Line Survey database over the past few months.

Sportfish Restoration Program (SFRP)

J. Ballard stated the complete report is in Tab K of the Briefing book. He said he is currently working on final edits of the updated edition of the GSMFC's and ASMFC's 2004 publication *Guidelines for Marine Artificial Reef Materials: Second Edition*. He is also working to establish a Gulf-wide Lionfish Removal Program by trying to establish season-long lionfish removal events in the other Gulf States modeled after Florida's Lionfish challenge. He said they were able to establish a tournament in Mississippi and Alabama this year and state representatives from Alabama and Mississippi participated in the 2018 Lionfish Removal and Awareness Day event. He is planning to work with MSDMR in 2019 to help support another Mississippi Lionfish Removal tournament as well as work with Louisiana and Texas to establish tournaments in their states. He said he will be working with ASMFC to set up the next joint meeting between the two artificial reef subcommittees that will be held in Savannah, GA in February 2019 and the SFRP also supports all the activities under the ANS program which will be presented under that item in the agenda.

Fisheries Information Network (FIN)

G. Bray reported the full report is under Tab L of the briefing book and it provides a summary of the items GulfFIN submitted for funding this calendar year. Those jobs are all ongoing and he will provide a summary of some of those results at the next meeting in March.

G. Bray reported last month GulfFIN helped coordinate the fourth in a series of red snapper workshops that brings state and federal partners together to discuss the current methods for recreational red snapper data collection efforts. This specific meeting was more focused on data and the results and how a combined estimate can be produced using the existing general survey results with the new results that are being produced by specialized states' surveys that have been put in place for the last few years. He said there is still work to be done but they do have independent consultants guiding the group on making decisions on what methods to use to come up with an appropriate combined estimate. They expect to hold another workshop next summer and hope to have the appropriate methods in place so the information can be used in the next benchmark assessment in 2020. GulfFIN is holding a strategic planning session in November to plan for the next 3 to 4 years. He reported they are in the middle of an overhaul on the data management system focusing on data modernization. NOAA Fisheries FIS projects are helping to fund that. He said they recently provided biological data for the upcoming red grouper and grey triggerfish assessment and will continue to support any and all future federal or state stock assessments. He said lastly they are completing work on revising the system making it easier for end users to access the data.

Aquatic Nuisance Species Program (ANS)

J. Ballard stated this report is in Tab M of the Briefing Book. He reported the Commission set-up and hosted the spring Gulf and South Atlantic Regional Panel (GSARP) meeting on April 10-11, in Jackson, MS. This is one of 6 regional panels that serve as advisory panels to the National Task Force. The National Task Force was able to hold its first meeting since 2016 in June in Silver Spring, MD. The large gap between meetings was a result of the DOI strategic pause to review all FACA groups. The bulk of that meeting was spent in breakout sessions to redevelop the 2018-2022 Strategic Plan for the Task Force and hope to complete that by the end of this year.

He said the Region 4 USFWS AIS Small Grants Program, the partnership that the Commission joined into with USFWS back in 2014, has funded 26 projects totaling \$556K. The Commission has closed out all but two of those projects with the final two scheduled to be completed by the end of this year. This funding opportunity was not offered in 2017 because of the delay in federal funding becoming available, then there was also a very restrictive review process to receive federal funds, but this year the program is up and running again and 7 projects will be funded totaling \$154,235.

He said the Commission still administers the Invasive Species Traveling Trunk project that was developed by the Regional Panel. An update to the three trunks was completed at the end of last year. Three new species were added and the information for the other 11 species was updated. The trunks are being used by schools across the region. In just this year they have been used for over 160 days. J. Ferrer on the Commission staff is developing a new website for the regional panel and a clearinghouse of outreach materials and risk assessments will be incorporated. The

GSARP's fall meeting is scheduled next week in San Antonio, Texas and the next ANSTF meeting is tentatively set for December in the DC area.

Executive Committee Report

Discussion of GSMFC Audit

A. Rabideau reviewed the 12/31/17 Audit with the Committee. An unqualified opinion was received. An unqualified opinion means that the financial statements were fairly presented in all material aspects. Page 31 of the audit report outlines the summary of the audit results. **J. Spraggins moved to accept the audit report. The motion was seconded by S. Bannon and passed unanimously.**

Discussion of Department of Commerce IG Audit

D. Donaldson reviewed the ongoing Department of Commerce Inspector General audit. He outlined the purpose, goals and potential findings. There were 6.7 million in potential unallowable subrecipient costs from the Oil Disaster Recovery Program and the Stock Assessment and Enhancement Program. 5 million of the unallowable subrecipient costs are due to the inability to review the source documentation for the expenses incurred by the Gulf and South Atlantic Fisheries Foundation. **D. Donaldson** agreed to initiate a discussion with the IG to discuss potential ways to clear the finding. If that is unsuccessful, the GSMFC will contact an attorney to possibly subpoena the records. The Louisiana Fisheries Foundation was unable to provide enough source documentation for \$300K of contractual costs in relation to the Great American Seafood Cookoff. The Louisiana Dept. of Wildlife and Fisheries had \$700K in unallowable costs incurred in the biological sampling and trip ticket programs under the Stock Assessment Enhancement program. There are \$140K potential unallowable administrative costs from GSMFC due to a disagreement with a cost allocation plan. Potential findings also include noncompliance with the requirement of a cost-price analysis when procuring contractors and noncompliance with a matching funds record retention policy. Auditors stated that they felt that all programmatic objectives were met under both awards. The IG audit should be completed around the end of the year. The Commissioners will be kept informed of the progression of the audit.

Approval of Changes to the Administrative Manual

D. Donaldson discussed a change to the GSMFC administrative manual regarding the travel per diem. A statement was added that the per diem is not a daily rate and each meal may not exceed the percentage breakdown as listed in the travel policy. After some discussion, it was decided that the Commission is going to pursue changing the travel policy to a daily per diem rate in an effort to simplify the travel expense reimbursement process.

Financial Report

A. Rabideau noted that the Commissioners receive the financial report every month by email. She stated that the high-risk designation was lifted in May 2018 and draw down processes are back to normal. Due to the ASAP fiscal year shut down that happens annually in September, a drawdown was not performed until the first week of October

which explains the significant amount of outstanding balances that were reimbursable to the Cash account.

Presentation of 2019 Budget

A. Rabideau reviewed the 2019 budget. She pointed out that the Commission budget is very similar to last year's budget. The total projected budget for fiscal year 2019 is \$7,242,694. Since final numbers haven't been established for IJF and SEAMAP and discussions were held yesterday concerning the FIN budget, the total budget will change. Also, the NOAA administrative grant that funds aquaculture tasks and other identified priorities remains unknown until the spring when NOAA has selected activities to fund. **S. Bannon moved to accept the 2019 budget. The motion was seconded by D. Ellinor and passed unanimously.**

Staff Compensation

The Executive Committee recommended the following regarding staff compensation:

- 2.5% or a minimum of a \$1,000 raise for all staff.

J. Spraggins moved to accept these recommendations. The motion was seconded by S. Bannon and passed unanimously.

Being no further business, the meeting was adjourned at 9:00 a.m.

S. Bannon moved to accept the Executive Committee Report. R. Hendon seconded the motion and it passed.

State Directors' Reports

All state reports were submitted for the record before the meeting and are in the Briefing Book. The Commissioners agreed to accept each report as written and each Director will give a brief summary on their report. The state reports are in Attachment I.

Florida

D. Ellinor reported that as everybody knows, Florida is dealing with the aftermath of two hurricanes and he thanked the states who have sent teams over to assist and evaluate problems. Another thing Florida is working on is red tide. The Lionfish Challenge was a success and all details are in Florida's report.

Alabama

S. Bannon stated Alabama is very proud of their reef program. He said they sunk a 250 ft. vessel for an artificial reef and through the Rigs to Reef Program they are working with a company to reef an oil rig. He said oysters have been a challenge so they are continuing to map the oyster reefs and are doing surveys and projects to try to enhance the oyster reefs. In the last year the hatchery has released red drum and Florida pompano. He said they are also working with organizations on Flounder enhancement.

Mississippi

J. Spraggins reported they are very proud of the Tales and Scales program and Mississippi did not exceed the ACL so they reached their goal. He reported they are continuing the off-bottom work and thanked Alabama for their help. He said the Jimmy Sanders Lionfish Trophy was presented recently. They are working on cultch planting and they had a great spat season this year. The shrimp season is not as good it is down by 2 million pounds but the white shrimp are coming in.

Louisiana

J. Froeba reported through the LA Creel program, 7,752 fishing trips with 22,102 anglers were surveyed during the 2018 sample weeks 9-35. He said they finalized 2 stock assessments - striped mullet and blue crab - and both of those came back as not overfished. He said they have a number of research projects ongoing and they are in the middle of an age class fecundity study for spotted sea trout and they are expecting the results in 2019. They are also collecting extra otolith and gonads on red drum through the SEAMAP cruise. They have a southern flounder tagging study ongoing. They have used Sport Fish funding to increase vertical line sampling during SEAMAP cruises. They are doing Oyster projects and collecting videos with GoPro of the vertical line surveys. He said the shrimp landings are above the 5-year average but the crab landings are 23% below the 5-year average. The oyster stock assessment for this year showed a 6% decrease from last year so this is the new worst stock assessment Louisiana has had. It is 91% below the long term average. He said they are doing cultch planting and putting artificial reefs in areas that will grow oysters,

Texas

L. Robinson had a conference called and stated before the agenda item that his report is as submitted.

Future Meetings

N. Marcellus said the spring meeting will be held in Louisiana but she has not signed a contract with a hotel at this point. The fall meeting will be in Mississippi and she will be working with the local commissioners on preferences for where they wish to hold the meetings.

Publications List and Web Statistics

The Publication List is available on the website and J. Ferrer gave a brief presentation on the activity of the website.

Election of Officers

S. Bannon moved to elect Joe Spraggins as Chairman. C. Nelson seconded the motion and it passed.

C. Nelson moved to elect Dan Ellinor 1st Vice Chairman. S. Bannon seconded the motion and it passed.

C. Nelson moved to elect Lance Robinson 2nd Vice Chairman. S. Bannon seconded the motion and it passed.

There being no further business, the meeting adjourned at 2:30 p.m.

Attachment I

Florida State Report

**Gulf States Marine Fisheries Commission
Technical Coordinating Committee
October 2018**

This report summarizes activities in the state of Florida during 2018 in support of restoration, monitoring and assessment of fishery resources in the Gulf of Mexico region. Activities on the Atlantic coast of Florida funded through FIN and/or related to monitoring and assessment of Gulf stocks are also summarized. Research, monitoring and assessment work summarized in this report was conducted at the Fish and Wildlife Research Institute (FWRI), which is the research arm of the Florida Fish and Wildlife Conservation Commission (FWC). FWC's Division of Marine Fisheries Management (DMFM) is responsible for working through the Agency's state-appointed Commission to manage state fisheries.

Red Tide Monitoring and Response

Throughout 2018, the Southwest coast of Florida has experienced a large and persistent red tide bloom that has resulted in high numbers of finfish, invertebrate, mammal and turtle mortalities. The presence of the bloom was first detected in November 2017, and throughout 2018 FWRI continued to routinely monitor the concentrations and geographic extent of the bloom and reported conditions weekly to the public. For more information about red tide monitoring and research at FWRI, visit: <http://www.myfwc.com/research/redtide/>

During 2018, FWRI responded to public reports received through the Fish Kill Hotline (<http://myfwc.com/fishkill>), the Florida Sea Turtle and Salvage Network (<http://myfwc.com/research/wildlife/sea-turtles/mortality/>), and the Wildlife Alert Hotline (888-404-FWCC). Throughout 2018, FWRI's Fisheries-Independent and Fisheries-Dependent Monitoring Programs continued to track relative abundance, fishing effort, and catch rates through a variety of ongoing programs (described below). Having continuous long-term monitoring programs in place is vital for measuring and accounting for the impacts of large-scale events such as the 2018 red tide.

While red tide continues to impact the region, additional protection was provided for Common Snook and Red Drum through an Executive Order in late August that made these species catch-and-release only from Manatee County south to Collier County (<http://myfwc.com/news/news-releases/2018/august/30/snook/>).

Fisheries Dependent Monitoring

Commercial Fisheries:

Since early 2017, we have been working with Bluefin Data, along with Texas, on the development of the new web-based wholesale dealer reporting application. The state-only version of the application will be available this month (September 2018) just as we will be rolling out to dealers a pilot project to utilize a point of sale swipe card system for initiating electronic fisher-dealer

landing transactions. Development of the swipe card project began in September 2017. The 2017 commercial landings information are now complete, but subject to revision. To date, over 76% of the trip records received for 2017 are electronic, and account for 82% of species records. When compared to 2016, the number of trips reported on paper forms remained about the same, but there was an 11% decrease in the number of trips reported electronically in 2017. Since the number of electronic dealers in Florida increased slightly in 2017, the decrease in effort may have been influenced by environmental factors such as hurricane Irma. To date for 2018, nearly 82% of processed trips and 88% of species records were reported electronically.

Through July 2018, Florida Fish and Wildlife Conservation Commission staff that participate in the NOAA Fisheries Southeast Fisheries Science Center (SEFSC) Trip Interview Program (TIP) for sampling of commercial catches along the Gulf coast of Florida, accounted for 382 TIP interviews, almost 14,687 fish measured, and nearly 8,966 age structures. TIP sampling in Florida is funded from a variety of funding sources that include: State of Florida, NOAA Fisheries, Gulf FIN and NFWF.

Southeast Headboat Survey activities supported through Gulf FIN:

Field biologists in this category are tasked with intercepting recreational headboat vessels in Florida to collect bio-statistical data from landed finfish. Data collected by state biologists is submitted to NMFS Southeast Fisheries Science Center Beaufort Lab for inclusion in the Southeast Headboat Survey. State biologists covering Southeast Florida work out of FWC's Tequesta field lab and cover ports from Ft. Pierce to Hollywood, FL. Biologists in Southwest Florida are located at FWRI headquarters in St. Petersburg and cover ports from Tampa Bay to Charlotte Harbor. Biologists are also tasked with maintaining QA/QC of captain's vessel logs, headboat activity reports, and editing of species bio-profiles. Biological samples are either provided to NMFS or processed at FWRI in St. Petersburg where they are processed for ageing. Through August 2018, 142 intercepts were conducted in Southwest Florida with 2,725 fish sampled; and in Southeast Florida, 78 intercepts yielded 1,521 fish sampled. Since January 2017, Southeast Florida headboat sampling is performed by a single staff member while two staff work together sampling Southwest Florida headboats.

Marine Recreational Information Program activities supported through Gulf FIN:

State conduct of the Access Point Intercept Survey (APAIS) and For-Hire Survey (FHS) components of the Marine Recreational Information Program (MRIP) continued over the past year. Reductions in assignment quotas continued in 2018 in response to reduced Gulf FIN funds available to Florida; thus, the numbers of interviews collected and fish measured over calendar year 2018 were comparable with 2017, which were reduced from 2016 levels. During the first three waves of 2018, 10,049 angler interviews were conducted throughout the state (Table 1).

Table 1. Number of angler interviews collected during state conduct of the APAIS.

| Year | Mode | West Florida | East Florida |
|------------------|--------------|--------------|--------------|
| 2017 (waves 1-6) | Shore | 3,157 | 1,640 |
| | Charter | 3,811 | 1,053 |
| | Private Boat | 10,856 | 5,119 |
| | Total | 17,824 | 7,812 |
| 2018 (waves 1-3) | Shore | 1,403 | 456 |
| | Charter | 1,963 | 507 |
| | Private Boat | 3,921 | 1,799 |
| | Total | 7,287 | 2,762 |

Gulf Reef Fish Survey (GRFS) supported through NFWF's Gulf Environmental Benefit Fund:

Florida's Gulf Reef Fish Survey was designed in consultation with MRIP statistical consultants and staff to complement the general MRIP survey. Gulf reef fish effort is estimated directly through a mail survey of subscribers to the survey (required to harvest reef fishes from the west coast of Florida). CPUE is estimated by combining intercept data collected through MRIP's APAIS and supplemental intercept assignments that specifically target private boat anglers returning from reef fish trips. Biological samples, including age structures, are also collected during GRFS intercepts.

The GRFS was initiated in 2015 and is funded through 2020. In 2018, the GRFS underwent a formal statistical review of the survey design and estimation methods for MRIP certification. The in person review meeting took place during February 2018 at FWRI headquarters in St. Petersburg, Florida. A final report was provided to FWC in April. The reviewers found that the methods used to survey the recreational private boat fishery in Florida were appropriate and statistically sound. The report also included a list of recommendations to further refine and improve upon the existing methods. In response, FWC implemented some of the recommended improvements immediately and outlined a timeline for testing and evaluating the remainder of recommendations. This timeline was provided to NMFS S&T, along with a formal request for MRIP certification. A determination is expected by fall 2018.

The GRFS is the primary survey used to monitor landings for the 2018 recreational red snapper season. The recreational season was managed in state and federal waters this year under an exempted fishing permit issued to the State of Florida. Florida's red snapper season for private anglers and charter vessels that do not possess a federal Gulf reef fish permit was open from June 11 through July 20. Preliminary landings are being shared with NMFS SERO as they become available, and may be viewed at: <https://www.fisheries.noaa.gov/southeast/state-recreational-red-snapper-management-exempted-fishing-permits>

Staff from FWC also participated in a regional workshop hosted by GSMFC in September 2018. The purpose of the workshop was to develop methods to calibrate newly certified surveys with historic MRIP data, so that the new time series may be used in regional stock assessments and management.

For-Hire At-Sea Monitoring supported through NFWF's Gulf Environmental Benefit Fund:

Data collected through this work provides the only information available on the size composition, capture condition, and mortality of recreational discards for use in stock assessments. The 10 most frequently observed discards include red snapper, red grouper, gray triggerfish, yellowtail snapper, white grunt, vermilion snapper, gag, black sea bass, greater amberjack and tomtate. In addition, age structures are collected from harvested fish. Funding to place fishery observers on charter boats and headboats off the west coast of Florida from the panhandle through the Florida Keys was secured through NFWF in 2014 and is set to expire at the end of 2018. State funds have been secured to continue this data stream through 2019; however, this program cannot be sustained without long-term funds. Staff continue to search for funding to continue this program after 2019.

Operators of more than 250 vessels voluntarily participate in the study and allow FWC biologists to ride along during for-hire recreational fishing trips that are randomly selected throughout the year for observer coverage. As anglers fish, mates and captains assist with allowing biologists to observe fish harvested or discarded and collect vital statistics. Biologists record for each fish information on the species, size, capture depth, capture location, hook type and hook location. For each discarded fish, biologists also record whether fish were vented or recompressed, gill injuries, whether fish re-submerged immediately or floated at the surface, and whether fish were preyed upon at the surface. Discards for managed species are also marked with conventional tags so that mark-recapture models may be developed to estimate overall mortality for fish released in the recreational hook-and-line fishery.

Representative Biological Sampling on the East Coast of Florida

FWRI continued a three year MARFIN project to develop a biological sampling program on the Atlantic coast of Florida that provides catch composition data that are representative of recreational fisheries. Landing sites for important federally managed species are randomly selected throughout each month and harvested fish are sampled for species composition, size, age, sex, genetics, and fecundity. Additional assignments were drawn during the Atlantic red snapper mini-season, which was open six days in August 2018. Over 1,000 red snapper were sampled during these assignments to collect samples for ageing and genetics, along with length, weight, and sex information.

Data Delivery to Gulf FIN and NMFS SEFSC

Length, weight and age data collected through Florida's Fisheries Dependent Monitoring programs are being delivered to Gulf States Marine Fisheries Commission routinely for inclusion in the Gulf FIN database so they are available for inclusion in regional stock assessments. During 2018, age and growth data for harvested catch and length frequency data for discards were provided to analysts for SEDAR 61 Gulf of Mexico Red Grouper. FWRI also provided fisheries dependent data and analyses directly to analysts for one stock assessments in the South Atlantic, SEDAR 59 South Atlantic Greater Amberjack.

Fisheries-Independent Monitoring

Long-term estuarine monitoring:

FWRI continued long-term monitoring efforts within five Gulf of Mexico estuaries: Apalachicola Bay, Cedar Key, Tampa Bay, Sarasota Bay and Charlotte Harbor. Monthly (Apalachicola Bay, Cedar Key, Tampa Bay, and Charlotte Harbor) or bimonthly (Sarasota Bay) sampling was conducted using three sampling gear types: 21.3-m seines, 183-m haul seines, and 6.1-m otter trawls. During 2017, annual sampling effort within these five estuarine systems included 2,726 21.3-m seines, 888 183-m haul seines, and 1,164 6.1-m otter trawls.

Supplemental polyhaline seagrass monitoring:

FWRI continued supplemental monitoring of polyhaline seagrass habitats to collect data on the recruitment of juvenile reef fishes. In 2017, supplemental monitoring of polyhaline seagrass habitats was conducted within five Gulf of Mexico estuaries: St. Andrew Bay, Apalachicola Bay, the Big Bend, Tampa Bay, and Charlotte Harbor. Monitoring was conducted monthly from June – November using 183-m haul seines and 6.1-m otter trawls comparable to gears used in long-term estuarine monitoring. In total, annual sampling effort within these five estuarine systems included 372 6.1-m otter trawls and 120 183-m haul seines.

SEAMAP groundfish trawl survey:

Through funding from SEAMAP and supplementary funding from NFWF, FWRI continued to participate in the summer SEAMAP groundfish trawl survey, conducting sampling effort in the eastern Gulf of Mexico. In total, FWRI sampled 1,034 stations in the summer survey.

SEAMAP reef fish video and trap survey:

Through funding from SEAMAP and supplementary funding from NFWF and SFR, FWRI continued to participate in the SEAMAP reef fish video survey. In total, 521 habitat mapping surveys were conducted using side scan sonar to identify and delineate artificial and natural reef habitats in the eastern Gulf of Mexico. Based on results from these and other surveys, 1,049 sites were sampled with stationary stereo video camera arrays and an additional 48 sites were sampled with fish traps to provide life history data.

SEAMAP reef fish hooked-gear survey:

Through funding from NFWF, FWRI continued to participate in the SEAMAP vertical longline survey targeting both artificial and natural reef habitats. In total, 220 stations were sampled using vertical longlines, while an additional 277 stations were sampled using experimental hooked gear.

Characterization of gag spawning in Madison Swanson and surrounding areas:

FWRI completed sampling in association with a 3-year MARFIN project to assess reproduction and sex ratios of gag in Madison Swanson and surrounding areas. In association with this project, monthly sampling was conducted using hooked gear and underwater cameras throughout the spawning season (November – April).

Collection and processing of life history data:

Samples for various life-history studies, including age and growth, reproduction, and trophodynamics, are collected and processed in association with all FWRI monitoring activities. Emphasis is on managed species (e.g., sheepshead, red drum, common snook, spotted seatrout, gag, red grouper, red snapper, scamp, gray triggerfish, vermilion snapper, greater amberjack, gray snapper), although trophodynamics studies include all fishes encountered.

Stock Assessments for State and Federally Managed Fisheries

A SEDAR 37 stock assessment update of West Florida Shelf (WFL) Hogfish was completed by FWRI in May 2018. The assessment used the same life history and conversion factors as the SEDAR 37 assessment, and the Stock Synthesis 3 model configuration was the same except for changes made to correct for model warnings and parameter bounding issues. The update assessment results indicated a higher total biomass estimate over time than the original benchmark assessment. The retrospective patterns within the assessment indicated that the results were highly influenced by the terminal years used, thus suggesting increased uncertainty about the results.

Stock status estimates were presented using both the assessment calculated MSY and an MSY proxy of the yield at $F_{30\% \text{ SPR}}$. The GMFMC SSC felt that, due to uncertainty about the spawner-recruit relationship, the calculated MSY should not be used. The Committee decided to base findings on the 30% SPR proxy. Using an MSY proxy based on the yield at 30% SPR, the fishing mortality ratio of $F_{\text{CURRENT}}/F_{30\% \text{ SPR}}$ was 0.51 indicating that overfishing was not occurring. With MSST set to 50% of the biomass at $F_{30\% \text{ SPR}}$, the ratio of current (2016) spawning stock biomass to MSST ($\text{SSB}_{\text{CURRENT}}/\text{MSST}$) was 4.71, indicating that the stock was not overfished.

The GMFMC SSC recommended that the SEDAR 37 Hogfish update assessment is considered the best scientific information available and is suitable for management advice. Committee members felt that, due to the uncertainties in the update assessment, as exemplified by the retrospective analysis, plus the fact that since the last benchmark assessment hogfish in the southeast have been divided into three stocks, the next Gulf hogfish assessment should be a benchmark assessment, recommended to be completed by 2021.

FWRI will be the lead assessment agency for SEDAR 64, US Yellowtail Snapper. The Data Workshop will be held February 25-28, 2019 in Saint Petersburg, FL; the Assessment Process will be a series of webinars; and the Review Workshop will be October 8- 10, 2019 in Saint Petersburg, FL.

FWRI staff provided fishery-independent and fishery-dependent data and analyses (primarily index development and size and age compositions) to four federal stock assessments through the SEDAR process: Hogfish (Update Assessment), South Atlantic Greater Amberjack (SEDAR 59), Gulf of Mexico Red Grouper (SEDAR 61), and Gulf of Mexico Gray Triggerfish (SEDAR 62).

Invertebrate Fisheries

Blue Crab (Calinectes sapidus)

Ongoing studies into the seasonality of blue crab spawning, fecundity and larval dispersal models are being completed on the Gulf and Atlantic coasts as part of research associated with Interjurisdictional Fisheries Grant funding.

Oysters (Crassostrea virginica)

Statewide oyster landings declined sharply in 2013 and have remained substantially lower than those recorded from 2000 – 2012. Most of that decline can be attributed to the collapse of the oyster fishery in Apalachicola Bay. From 2007 through 2011, the Apalachicola Bay fishery accounted for over 90 percent of the annual oyster harvest in Florida with average landings of approximately 2.5 million pounds; however, in 2017, oyster landings from Apalachicola Bay only reached 0.27 million pounds. Oyster landings for entire state of Florida in 2017 were 0.82 million pounds at an estimated value of \$5.38 million. Division of Marine Fisheries Management (DMFM) reduced daily bag limits, designated areas closed to harvest, and prohibited harvest during certain days of the week for commercial and recreational oyster harvest in Apalachicola Bay in 2017 and 2018. The Fish and Wildlife Research Institute (FWRI) conducted pre- and post-season oyster stock assessments for the summer and winter commercial harvest seasons in Apalachicola Bay. At those surveyed stations that had harvest-sized oysters, an average of 14 to 48 bags per acre were estimated for the summer fishing area while 15 to 48 bags per acre were estimated for the winter fishing areas.

In 2018, FWRI continued work associated with an ongoing 5-year collaborative study funded by the National Fish and Wildlife Foundation (NFWF). The objective of this study is to determine the most efficient methods for increasing potential oyster habitat and resilience of the commercial oyster fishery. Oyster density and size frequency, oyster health, predator density, and water quality were monitored quarterly in Apalachicola Bay at fifteen 2-acre parcels that were randomly cultched with differing fossil shell densities.

The state continued work associated with federal disaster relief funds following the 2013 Apalachicola Bay commercial oyster fishery disaster declaration. The FWRI component of the project includes measurement of monthly oyster spat settlement rates and fishery stock assessments. In addition, a large-scale fisheries-independent assessment of benthic habitat and oyster abundance and distribution was conducted throughout Apalachicola Bay in 2016.

Bay Scallops (Argopecten irradians)

A state funded monitoring program assesses bay scallop populations from St. Andrew Bay through Pine Island Sound. Commercial harvest was eliminated in 1994 and the fishery remains closed. Bay scallops are harvested recreationally along Florida's Gulf coast during a limited summer fishery. Recreational harvest occurs in four main areas: St. Joseph Bay, Apalachee Bay, Steinhatchee Bight, and Citrus County. In 2015, a harmful algal bloom (*Karenia brevis*) resulted in serious stock declines in St. Joseph Bay, resulting in a greatly reduced harvest season and reduced bag limits. A second harmful algal bloom (*Pseudonitzschia* spp.) in 2017 resulted in a delayed harvest season, and scallop stocks remain low in that bay. Restoration efforts funded from Phase III DWH funds are being used to attempt to stabilize St. Joseph Bay stocks and also to attempt to restore Florida panhandle bays to a level sufficient for recreational harvest including a

focus on St. Andrew Bay in 2018. This effort involves a large volunteer effort in being conducted in coordination with Florida Sea Grant and local communities in both bays. Additional restoration efforts are being conducted in Charlotte County (FL Sea Grant), Sarasota Bay (Sarasota Bay watch) and an effort is planned for Tampa Bay (FL Sea Grant). Numerous changes to the recreational fishing season were considered by the Commission. The adopted changes created four opening and closing dates within the 9-county region currently open to harvest, and opened one new county (Pasco) to a 10-day harvest season during summer 2018.

Calico Scallops (Argopecten gibbus)

Calico scallops were once harvested in huge quantities from federal waters off the both coasts of Florida, though landings were more frequent and larger from the Atlantic Ocean. There have been no significant landings in Florida since 2012.

Hard clams (Mercenaria mercenaria)

Hard clams were once harvested in great quantities from wild stocks in Florida, but currently most clam harvest is produced in aquaculture. Wild harvest statewide has been below 20,000 pounds per year since 2014, and was below 10,000 pounds per year in 2015, 2016 and 2017 about half of which is harvested in Gulf waters.

Fish Biology

Age and Growth

FWRI continued to work with partners at federal, state and educational institutions to ensure the most accurate and precise ages as possible. As such, the age and growth lab has continued to lead annual ageing QA/QC meetings for the Gulf States Marine Fisheries Commission and Atlantic States Marine Fisheries Commission. These meetings incorporate staff from all states along the jurisdiction of the respective commission, and are a chance to discuss processing and ageing techniques, reference set distribution and ageing error on priority species. Furthermore, we have been principal contributors toward the creation of a joint Gulf and Atlantic otolith processing manual. Staff hosted an ageing workshop at the National Meeting of the American Fisheries Society, at which scientists and contractors were trained to process and age otoliths. A similar workshop will be hosted at the Southern Division Meeting of the American Fisheries Society at Galveston, TX in January 2019.

From July 1, 2017 through June 30, 2018, the Marine Fisheries Age and Growth Laboratory processed 23,805 and aged 21,661 otoliths and spines from a total of 71 species. Ages were provided for federal and state stock assessments on several priority species: Red Snapper, Red Grouper, Gray Triggerfish, King Mackerel, Southern Flounder, Hogfish, White Mullet and Cobia. A breakdown of species and numbers of ages provided for assessment are below:

| Species | Number of Samples Aged |
|-------------------------|-------------------------------|
| Red Snapper | 7,750 |
| Red Grouper | 2,800 |
| Gray Triggerfish | 2,032 |

| | |
|--------------------------|-------|
| King Mackerel | 1,189 |
| Southern Flounder | 481 |
| Hogfish | 459 |
| White Mullet | 263 |
| Cobia | 94 |

Fish Habitat

Fish habitat was investigated in Tampa Bay and Florida Bay. To supplement these efforts, staff were able to secure grants from the Tampa Bay National Estuary Program entitled “*Fish communities associated with hard bottom habitats in Tampa Bay; what lives in these recently mapped areas? (through 2019)*” and “*Evaluation of sportfish habitat utilization, growth, and condition at large-scale restorations in Tampa Bay to inform and prioritize past, future, and ongoing restoration activities (through 2019)*”, and the National Park Service entitled “*Effects of the 30-yr Crocodile Sanctuary closure & opening of Joe Bay on fish communities: Spatial and temporal comparisons using fisheries-independent monitoring seine data (through 2019)*”

Species-specific accomplishments

Species-specific research conducted during this reporting period concentrated on developing information on common snook (*Centropomus undecimalis*), goliath grouper (*Epinephelus itajara*), and cobia (*Rachycentron canadum*). Work on common snook includes analysis of reproductive hormones to estimate rates of skip-spawning, differences in growth between nursery habitats (rivers, coastal wetlands, and restored sites) using daily growth rings, and work related to the expansion of snook populations into the northern Gulf including use of newly colonized river systems and implications of differences in lower lethal temperature along a latitudinal gradient. Work on goliath grouper includes managing an angler-based fin-clip collection program or genetics work and acoustic tagging of juveniles using inshore habitats within established telemetry arrays. Opportunistic collections of goliath grouper fin spines/rays and otoliths are ongoing; during recent red tide events in Southwest Florida, over 40 samples were collected. Grant-funded projects related to cobia include “*Determining the stock boundary between South Atlantic and Gulf of Mexico managed stocks of Coastal Migratory Pelagic Cobia, Rachycentron canadum, through the use of acoustic telemetry and population genetics* (CRP; final report submitted early 2018)”, “*Understanding stock boundary and migration phenology of Atlantic cobia under a changing climate to inform management* (S-K; through 2020)”, and “*Combining acoustic telemetry and pop-up satellite archival tagging to improve data on cobia (Rachycentron canadum) migratory behavior and stock structure* (CRP; through 2020)”.

DERELICT TRAP RETRIEVAL AND DEBRIS REMOVAL PROGRAM

This program is operated by the FWC to target and remove spiny lobster, stone crab and blue crab traps that remain in the water during the closed season for each fishery. Fishery participant organizations are contracted to implement this program and are selected through a competitive-

bid process. The vendor with the lowest bid is selected, and payment is made based on the number of traps retrieved. An FWC observer is onboard for each retrieval trip and is responsible for verifying the number of traps retrieved, and to record license and location data from each trap retrieved. Traps that are recovered as part of this program are recycled or destroyed and disposed of. A retrieval fee of \$10 per trap is assessed to the trap owner for each trap retrieved. These fees are dedicated to the operation of the trap retrieval program. The trap retrieval program is also funded by commercial saltwater license revenue. For each spiny lobster, stone crab and blue crab endorsement (commercial license) issued, \$25 of the endorsement fee is dedicated to funding trap retrieval efforts.

3,730 derelict spiny lobster and stone crab traps were retrieved in June 2018 in the Florida Keys. In July 2018, an additional 612 derelict stone crab traps were retrieved along the west coast from Monroe through Taylor Counties. In August 2018, 52 derelict blue crab traps were retrieved along the east coast from Brevard through Palm Beach Counties.

In March 2018, FWC conducted a special marine debris cleanup to address the threat of derelict fishing gear in areas impacted by Hurricane Irma, to protect sensitive habitats like mangrove shorelines and coral reefs from being crushed or entangled by lost traps, to conserve threatened and endangered species like sea turtles from trap entanglement, and to reduce navigational hazards caused by lost traps in high-traffic channels. Traps can move significantly during storms (up to 20 miles reported as the result of Hurricane Irma), making them difficult to locate for trap owners. The primary objective of this project was the underwater disentanglement and recovery of derelict gear in the Florida Keys. To assist with the completion of this project, FWC collaborated with the lobster fishing industry, including commercial fishermen and professional divers. This project resulted in the retrieval of 1,789 derelict traps, approximately 900 of which were returned to trap owners, and the removal of 76,280 combined pounds (over 38 tons) of derelict traps and trap debris. Approximately 15 tons were recycled through the Fishing For Energy Program, which converts unwanted fishing gear into energy. This project was completed with financial assistance provided by the National Fish and Wildlife Foundation and supported elements of FWC's existing trap retrieval program.

Lost and abandoned spiny lobster, stone crab and blue crab traps are a concern because they may spark user conflicts, "ghost fish" (continue to trap marine organisms), visually pollute, damage sensitive habitats, and become hazards to navigation. Traps may remain in the water during a closed season for many reasons. They can move during storms, making them difficult to locate; they may be snagged by passing vessels and dragged to another area; or they may be illegally abandoned by their owners.

Artificial Reefs

The primary program objectives are to provide financial and technical assistance to coastal local governments, nonprofit corporations, and state universities to construct and monitor artificial reefs.

From March 2018 to October 2018, a total of eleven artificial reef construction projects and nine artificial reef monitoring and research projects were completed or going utilizing funds from the Florida State's Marine Resource Conservation Trust Fund, the U.S. Fish and Wildlife Service's

Federal Sport Fish Restoration Program, and the Natural Resource Damage Assessment (NRDA) Early Restoration Phase III, Florida Artificial Reef Creation and Restoration Project. All projects were managed by the Florida Fish and Wildlife Conservation Commission (FWC) Artificial Reef Program within the Division of Marine Fisheries Management.

Artificial Reef Construction Projects

Four artificial reef construction projects took place off the Gulf Coast and five off the Atlantic Coast. Summarized below are the regions and counties where the eleven new artificial reefs were deployed.

- 5 - Northwest Florida – Gulf (Bay, Escambia, Santa Rosa, Walton Counties)
- 1 - Central Florida - Gulf (Manatee County)
- 2 - Central Florida - Atlantic (Brevard and St. Lucie Counties)
- 3 - Southeast Florida - Atlantic (Martin, Palm Beach, Miami-Dade Counties)

Bay County - City of Mexico Beach Artificial Reef Construction (Northwest Florida – Gulf)

The City of Mexico Beach, deployed 18 pre-fabricated concrete reef modules as one 700 ft. linear patch reef within the Sherman permitted area. Four different module designs were alternated during the deployment. The first and largest structure was a prefabricated module called a “Super Reef with 2 discs.” This is a concrete isosceles trapezoid measuring 15.5 ft. tall and 19 ft. wide at the base with a one-foot tall ecosystem disc constructed from stacking two 4.5 diameter concrete discs on a pedestal. The second prefabricated module design used was the same “Super Reef with 2 discs” but incorporated a four-layer Ecosystem inside the tetrahedron. The third structure was a “Florida Limestone Artificial Reef” which is a shorter version of the “Super Reef” measuring 8 ft. tall and 10 ft. wide at the base. The fourth type deployed was a “Grouper box/ Ecosystem” hybrid module measuring 5 ft. tall, 7 ft. wide, and 9 ft. long, with a single large opening on one side of the rectangular box and a three-layer ecosystem disc is attached to the top. The new patch reef is located on the eastern side of the permitted area due west of the Mexico Beach Canal and southeast of St. Andrews Inlet and approximately 9.0 nm offshore in 80 ft. of water.

Bay County – BCARA Artificial Reef Construction (Northwest Florida – Gulf)

Bay County Artificial Reef Association will be deploying 17 concrete pre-fabricated artificial reef modules as a single patch reef within LAARS-A permitted artificial reef site in October 2018. Two different designs are to be deployed, dome and tetrahedron. The dome shaped module measure 5 ft. tall with a 6 ft. wide base and has multiple circular openings. The tetrahedron measures 16 ft. tall with 10 ft. base and 36-inch top opening for turtle egress. The new patch reef is planned at the center of the permitted area approximately 11.5 nm offshore at a bearing of 231 degrees from St. Andrews Inlet at a depth of 100 feet

Escambia County Artificial Reef Construction (Northwest Florida – Gulf)

Escambia County deployed 12 pre-fabricated concrete reef modules in the Escambia Southeast permitted area. The deployed modules are known as “Super Reefs.” Each module is a large tetrahedron module that measured 18 ft. in width, 15 ft. in height, and weighed approximately 18 tons. The modules were deployed at various locations within the permitted area, with the closest module from shore being approximately 8.2 nm SSE from Pensacola Pass. Depths also varied within the permitted area; modules were placed at a minimum depth of 79 ft. and a maximum

depth of 98 ft. Deployments will continue within this permitted zone throughout the coming months, with a total of 117 “Super Reefs” scheduled to be deployed.

Santa Rosa County Artificial Reef Construction (Northwest Florida – Gulf)

Santa Rosa County deployed a total of 72 pre-fabricated concrete modules within the SR-27 permitted area. Twelve of the deployed modules are known as “Super Reefs,” measuring 16 ft. in height with a 16-ft. base. Forty deployed modules are smaller versions of the “Super Reefs,” measuring 8 ft. in height with a 10-ft. base. Twenty deployed modules are known as “Ledge and Disk Reefs.” These modules have a concrete hollow base structure, measuring 9 ft. by 6.8 ft., with pile-supported discs on top. The total height of these modules is approximately 6 ft. All modules were deployed at a depth ranging from 60-70 ft. The SR-27 permitted area is located approximately 19 nm. offshore at a bearing of 266 degrees from East Pass.

Walton County Artificial Reef Construction (Northwest Florida – Gulf)

Walton County, deployed 48 pre-fabricated concrete reef modules in the Topsail Hill permitted area. Three different module designs were used during the deployment to create 12 patch reefs. Each patch reef contained at least two different module designs. The first and largest structure used was a “Florida Limestone Artificial Reef.” The second module type deployed was the “Ecosystem Reef” supported by a concrete pedestal with three or four 52 in. concrete discs equally spaced. The third and last module type deployed was a pre-fabricated module called a “Lindberg Cube” measuring 3 ft. by 3ft, with a single 24 in. circular opening. There are three patch reefs in each of the four corners of the permitted area and the site is located approximately 0.82 nautical miles SSW of Topsail Hill Preserve State Park.

Manatee County Artificial Reef Construction (Central Florida – Gulf)

Manatee County deployed 575 tons of limestone boulders within the Borden Reef permitted area. The 3-4 ft. limestone boulders were deployed off both sides of the loaded barge creating one patch reef consisting of two 100 ft. linear piles 50 ft apart with a maximum relief of 9 ft. The new patch reef is located center of the permitted area approximately 7 nm southwest of Longboat Pass at a depth of 40 ft.

Brevard County Artificial Reef Construction (Central Florida – Atlantic)

Brevard County deployed 24 pre-fabricated concrete artificial reef modules within the Brevard County Artificial Reef Site #2 permitted area. The “Super Balls,” a dome shape module with a variety of different circular size openings, measured 4.5 ft. tall by 6 ft. wide. They were deployed as a single patch reef with all 24 reef modules placed in a rectangular cluster: 4 modules wide by 6 modules in length and spaced 20 ft. apart. The new patch reef is located in the northwest end of the permitted area approximately 15.5 nautical miles on a bearing of 96 degrees from Port Canaveral at a depth of 79 ft.

St. Lucie County Artificial Reef Construction (Central Florida – Atlantic)

St. Lucie County deployed a 195 ft. by 35 ft. barge and 1,000 tons of concrete culverts, railroad ties, light poles, storm water basins and other concrete construction materials as two separate patch reefs within the Fort Pierce Sportfishing Club permitted area. The barge rests at a depth of 170 ft with a vertical relief of 10 ft. The secondary-use concrete material was deployed in 120 ft. depth

and has a maximum vertical relief of 12 ft. The new artificial reefs are located at the center of the permitted area at 11 nautical miles on a bearing of 112 degrees from Ft. Pierce Inlet, Florida.

Martin County Artificial Reef Construction (Southeast Florida – Atlantic)

Martin County deployed 1,500 tons of concrete culverts, riprap, road barriers, or other suitable concrete construction materials as three patch reefs within the Sirotkin Reef Artificial Reef permitted area. Each of the patch reefs consisted of 500 tons of concrete materials placed as a single pile. The new patch reefs are located at the center of the permitted area approximately 6.1 nm on a bearing of 27 degrees from the St. Lucie Inlet at a depth of 90 ft.

Palm Beach County Artificial Reef Construction (Southeast Florida – Atlantic)

Palm Beach County deployed 530 tons of limestone boulders to create one patch reef within the Boca Inlet Artificial Reef Site. The 3-4 ft. limestone boulders were deployed off both each sides of the loaded barge creating two equal piles 50 ft. apart with a maximum relief of 15 ft. The patch reef is located within the center of the permitted area approximately located 0.34 nautical miles at a bearing of 40 degrees from Boca Inlet, at a depth of 30 feet.

Miami-Dade County Artificial Reef Construction (Southeast Florida – Atlantic)

Miami-Dade County deployed 310 tons of clean limestone boulders to create one patch reef within the Key Biscayne SMZ Artificial Reef permitted area. The 3-4 ft. diameter limestone boulders were deployed between two existing artificial reefs, Schurger's Barge and Belzona II to create a corridor for fish moving between sites. The patch reef measures 97 ft. in length by 54 ft. in width with a maximum relief of 7 ft. This new reef is located within the northeast corner of the permitted area approximately 4 nm southeast of Government Cut at a depth of 65 ft.

Florida Artificial Reef Monitoring Projects

Four artificial reef construction projects took place off the Gulf Coast and five off the Atlantic Coast. Summarized below are the regions and counties where the nine artificial reef monitoring and research projects occurred.

- 2 - Northwest Florida – Gulf (Escambia and Okaloosa Counties)
- 2 - Central Florida - Gulf (Pinellas and Taylor Counties)
- 1 – Northeast Florida – Atlantic (St. Johns County)
- 1 - Central Florida - Atlantic (St. Lucie County)
- 3 - Southeast Florida - Atlantic (Martin, Palm Beach, Monroe Counties)

Oriskany Reef Fish PCB Monitoring Project (Northwest Florida – Gulf)

The FWC and Escambia County continue annual sampling of legal-sized recreationally targeted reef fish (red snapper, gray triggerfish, red and whitebone porgy, vermilion snapper, grouper species) for PCB analysis (using skin-on lateral muscle tissue fillets) in compliance with requirements of the EPA risk-based PCB disposal permit for the ex-U.S.S. Oriskany (CVA-34), sunk as an artificial reef in 212 feet of water 22.5 nautical miles off Pensacola Pass on May 17, 2006. Between Dec. 14, 2006, and April 10, 2018, 16 reef fish sample collection events were completed. The 534 retained reef fish from the Oriskany Reef through sampling round sixteen included fifteen reef fish species: 245 red snapper, 132 vermilion snapper, 42 red porgy, 28 whitebone porgy, 22 scamp grouper, 21 gag grouper, 17 bank sea bass, 17 bank sea bass, nine

lionfish, five gray snapper, five slipper lobster, three gray triggerfish, two yellowmouth grouper, two creolefish, one red grouper.

Of the nine species retained for analysis, Red Snapper and Vermilion Snapper were the only species with at least 11 or more legal-sized fish caught per sample event (even though at least 15 were targeted). For Red Snapper, the mean total PCB level within the first three years had values exceeding 20 ppb, but after year 3.5, the mean total PCB level decreased to below the EPA screening value and remained low through year 6 and increased to 28 ppb at year 7. Despite increased fishing effort during years 8-12, including spearfishing, no more than four Red Snapper were caught per sample and mean total PCB levels ranged from 7 to 96 ppb (no Red Snapper caught during year 11, one Red Snapper caught during year 12). For Vermilion Snapper, mean total PCB levels were consistently below 20 ppb, and following year 8 sampling effort was redirected to other species, until years 11 and 12 when 15 Vermilion were retained for analysis each year. For the other seven species, mean total PCB levels exceeded 20 ppb for some samples, but the number of fish caught were below the minimum 15 fish required for human health risk assessment.

The downward trends of Red Snapper mean total PCB levels to below screening levels and the consistently low Vermilion Snapper mean PCB levels did not result in fish consumption advisory actions for Red Snapper or Vermilion Snapper. While the remaining analyzed species (porgy, triggerfish, groupers) represented too few specimens sampled with too high PCB variability to initially take any species specific fish consumption 'advisory' action, on June 27, 2016, based on the Year 9 results (as a precautionary measure) FDOH issued 'guideline recommendations' specific to the Oriskany Reef for Bank Seabass (2 meals per week) and Scamp Grouper (1 meal per week) with women of child bearing age and young children recommended to avoid consumption. The Year 11 and 12 samples are currently pending lab analysis and FWC and Escambia County are coordinating with the EPA and FDOH to determine the terms of future monitoring efforts.

Additionally, 11 underwater visual assessments were conducted on the Oriskany Reef by FWC divers since 2006, confirming that the observed recreationally targeted species found on the Oriskany are well represented among the fish retained for PCB analysis. Visual observations by FWC divers also documented that the Oriskany Reef subsided into the sediment about 10 feet in 2007 and sustained minor structural change to the exterior covering of the smoke stack in 2009 following the tropical storm events of 2008 and 2009.

Lionfish Acoustic Tracking Project, UWF (Northwest Florida – Gulf)

The FWC Artificial Reef program funded the University of West Florida to conduct acoustic tracking of selected reef fish species associated with modular concrete and concrete and steel units deployed at a depth of 100-130 feet of water in federal waters within the Okaloosa Large Area Artificial Reef Site C, 15 nautical miles south of Destin Pass. This project deployed an acoustic array of 25 Vemco VR2 receivers in a grid pattern covering a 6 km² that were used to the ecological function of small artificial reef patch reefs deployed by the FWC in 2003. Twenty-five lionfish were tagged and tracked over a three-month period. The collected detection information will be used to produce three-dimensional tracks, estimate home ranges and examine the movement patterns for each tagged fish. Results of this study will add to our knowledge of lionfish movement

and reef fish ecology on small-scale artificial reefs off the Florida Panhandle. All tagging has been completed and the final report from this three-year monitoring effort is expected by February 15, 2019.

Taylor County Volunteer Artificial Reef Monitoring Project (Central Florida – Gulf)

The FWC Artificial Reef Program funded Taylor County to re-establish the County's volunteer artificial reef monitoring program and evaluate the stability and function of the existing artificial reef materials previously deployed in the Buckeye Artificial Reef permitted site. This project will develop a standardized fish survey to be used for future monitoring efforts, increase the County and local volunteers' knowledge on existing reef locations and document material locations and conditions. This study will monitor eighteen (18) of the 33 patch reefs within the Buckeye Artificial Reef permitted area deployed between the years of 1998 and 2015. This study will evaluate the difference between three commonly used artificial reef materials (scrap metal, concrete modules, and secondary-use concrete) over time which will better inform future artificial reef planning. Currently, eight (8) surveys have been completed since July 2018. The final report is expected by September 30, 2019.

Artificial Reef Fish Community Dynamics Research, USF (Central Florida – Gulf)

The FWC Artificial Reef program funded the University of South Florida to assess fish community dynamics by analyzing fish production, age, and abundance at four pairs of natural and artificial reef complexes off Pinellas County. This study is the first in Florida to use a comparative approach to assess the production differences between natural and artificial reef habitats. In addition, this study will estimate the site fidelity of focal species in difference habitats using the chronological information encapsulated by the eye lenses, a cutting-edge advancement in stable isotope analysis that was developed at the USF College of Marine Science (Wallace et al. 2015). Collectively, the efforts of this study will further our understanding of how artificial reefs function relative to natural reefs and will be a necessary first step in addressing the critical "production vs attraction" debate. Two years of sampling has been completed for this three-year project and the final report is expected by July 31, 2019.

St. Johns River Artificial Reef Monitoring Project (Northeast Florida – Atlantic)

The FWC Artificial Reef Program funded the City of Jacksonville to evaluate the performance of and inshore river reef deployment, specifically their impact on fishing in the Jacksonville area. The City has partnered with Jacksonville University to assess the benthic community and angler utilization of two artificial reefs in the St. Johns River. Half of the data for this three-year project has been collected and the final report is expected October 31, 2020. Overall, the monitoring efforts of this study will develop baseline information for comparing future monitoring efforts and improve future artificial reef planning.

St. Lucie County Mesophotic Artificial Reefs Monitoring (Central Florida – Atlantic)

The FWC Artificial Reef Program funded St. Lucie County to evaluate fish assemblages on artificial reefs in 100 to 200-foot depth. The County has partnered with Florida Atlantic University (FAU) to develop a standardized method for fish community assessment and evaluation of fish assemblages (based on species, size, and spawning activity) at this depth. FAU is using a combination of video and vertical line survey data to compare seasonal fish assemblages on six artificial reefs at different depths and composed of different material.

Results collected from this project will indicate whether monitoring data from artificial reefs are a suitable component of fisheries independent monitoring on the Treasure Coast of Florida. There are few coordinated fishery-independent monitoring programs around the St. Lucie county region, as NOAA Fisheries surveys generally cease at Cape Canaveral. Additionally, most of the state-wide monitoring efforts have focused on nearshore artificial structures even though mesophotic reefs are known to provide important Essential Fish Habitat. The data collected from this study will provide a better understanding of Snapper-Grouper assemblages in deep water artificial reef habitats. All 24 samples have been collected and the final report is expected January 31, 2019.

Economic Impact and Valuation of Southeast Florida Artificial Reefs (SE Florida – Atlantic)

The FWC Artificial Reef Program funded Martin County to manage an economic impact and valuation study for Southeast Florida, extending from the St. Lucie Inlet in Martin County to Biscayne Bay in Miami-Dade County. Economic valuation studies of natural and artificial reefs in Martin, Palm Beach, Broward and Miami Dade were previously completed in 2001 and 2004, which established use and non-use values of natural and artificial reefs in southeast Florida. These seminal studies provided information on the economic contribution of our reef systems to the economy of southeast Florida that local, state and federal coral reef managers rely on. After 15 years, these numbers are outdated, and managers are less able to use them to justify much needed investments in coral and artificial reef programs and efforts. The current project will be an update to the 2001 study but will not be a replicate of the original studies. This study is being administered by National Oceanographic and Atmospheric Administration and will work closely with county and state partners during the development of the socio-economic model to ensure that the information generated aligns closely with partner needs. By providing a tangible measurement of the economic impacts of coral and artificial reefs in Southeast Florida, the study will assist agency decision makers and lawmakers – local, state and national – when deciding on budget allocations, environmental mitigation and research support priorities. The final report is expected by December 31, 2019.

Palm Beach County Volunteer Artificial Reef Monitoring Project (Southeast Florida – Atlantic)

The FWC Artificial Reef Program funded Palm Beach Reef Research Team (PBRRT) to assess and compare fish and benthic assemblages on artificial reefs of differing material. Palm Beach County has one of the most active artificial reef programs in Florida, so artificial reef monitoring is a key component in the County's Artificial Reef Monitoring Plan. Palm Beach County partners with the PBRRT, a non-profit, to monitor and evaluate the colonization and fish communities on the County's reefs. This project will conduct fish surveys and collected macroinvertebrate video for 22 different reef sites varying in depth, material and age. By conducting systematic surveys of artificial reefs deployed for varying amounts of time managers will be able to better address long-term questions regarding colonization rates, ecological succession of benthic assemblages, and changes in physical characteristics of the habitats. Currently, ten (10) surveys have been completed since May 2018, and the final report is expected by May 31, 2019.

Aquarius Reef Base Barracuda and Snapper Acoustic Monitoring Project (Southeast Florida – Atlantic)

The FWC Artificial Reef Program funded Florida International University to evaluate how predatory sportfish on an artificial reef, Aquarius Reef Base, interact and affect the behavior and fish populations on 15 adjacent natural reefs located offshore of Key Largo, Florida. This study will conduct fish census to develop a food web for all sites, use acoustic array to track movement

of 34 tagged barracuda and schoolmaster snapper between sites and observe grazing rates of herbivorous fish during presence of predators. Analyzing food web models and predatory aggregation movement between artificial and natural reefs, will provide a better understand of how artificial reefs can influence the behavior of fish species located at adjacent natural reef habitat. Work began in May 2018. All fish census and tagging has been completed. The final report from this year monitoring effort is expected by August 31, 2019.

FWC Lionfish Program Update

Lionfish management requires a cooperative effort between government and stakeholders. This collaboration requires that the public understand the potential threats that can result from invasive species and what they can do to help prevent or mitigate these impacts. The FWC Lionfish Program was established to accomplish this goal as well as encourage diver involvement in localized control efforts, support research and the development of innovative harvest methods, and promote the commercial lionfish market. The program has several components including a traveling outreach booth, “Become the Predator” workshops, school programs, incentive-based removal programs, assistance for tournaments and research projects, and an active diving team.

The effects of the lionfish invasion are a priority topic for resource managers throughout the invaded range. As a threat to native marine wildlife and habitat, FWC recognizes this as a concern and will continue to identify, support and develop innovative control mechanisms. Adaptive outreach, education and control strategies are necessary to keep up with the progression of the invasion. Outreach and education are key components to obtain and maintain control of invasive species because it is the mechanisms by which the public is inspired to take action. FWC continually updates messaging based on new research results and the agency will continue to explore opportunities for regulatory changes and incentive programs to increase participation in lionfish harvest.

I. Outreach Efforts

a. Lionfish Removal and Awareness Day

FWC staff proposed the creation of an annual event to encourage statewide lionfish removal and increased awareness. Lionfish Removal and Awareness Day (LRAD) was created through a resolution at the February 2015 FWC Commission meeting and is celebrated the first Saturday after Mother’s Day each year. The event includes a two-day festival and spearfishing tournament. The festival includes a celebrity chef cooking competition, fillet demonstrations, family-friendly activities, marine conservation booths, diving, fishing and art vendors, and raffle drawings. Lionfish Removal and Awareness Day is considered an immense success by FWC. The volume of participants at the festival and throughout the state of Florida every year indicate a strong public interest in gaining awareness about this invasive species, as well as a desire to engage in lionfish control efforts.

Table 1a. Lionfish Removal and Awareness Day Results – Headquarters Event in Pensacola

| Year | Number of Attendees | Lionfish Removed |
|------|---------------------|------------------|
|------|---------------------|------------------|

| | | |
|------|--------|--------|
| 2017 | ~4,000 | 6,043 |
| 2018 | ~1,500 | 13,675 |

Table 1b. Results from the statewide Lionfish Removal and Awareness Day events. Results include the number of lionfish removed from FWC event in Pensacola

| Year | Number of Satellite Events | Lionfish Removed |
|------|----------------------------|------------------|
| 2017 | 8 | > 12,000 |
| 2018 | 5 | >15,000 |

b. **FWC Lionfish Outreach events in 2018 to date**

| Event Type | Total Events attended by FWC staff | Event Attendees | Lionfish Removed |
|-----------------------|------------------------------------|-----------------|------------------|
| Festival | 14 | 3,996 | N/A |
| Presentation | 12 | 812 | N/A |
| Workshop | 1 | 50 | N/A |
| Tournament | 8 | 585 | 11,417 |
| Convention/Conference | 1 | 617 | N/A |
| School Dissection | 3 | 600 | N/A |
| FWC Staff Dives | 4 | N/A | 500 |

Components

- i. **Outreach booth:** The traveling “Be the Predator” lionfish education booth is brought to various events with the goal of reaching a large volume of people with the agency’s lionfish messaging. The booth is an exciting platform used to provide information to the public about lionfish, the potential threats of the invasion, and how to participate in lionfish control.
- ii. **Presentations and workshops:** Scheduled on a per-request basis with local clubs and organizations who are interested in learning more about lionfish and ways to get involved in lionfish control efforts. In addition to a presentation, staff demonstrates how to safely handle and fillet lionfish to reduce public hesitancy about participation in lionfish removal activities.
- iii. **“Become the Predator” Lionfish Workshops:** The “Become the Predator” program includes a presentation and a lionfish excursion. The presentation educates divers on lionfish, the invasion, statewide control programs, harvest equipment, collection techniques and includes a fillet demonstration. The lionfish excursion provides an opportunity for divers to receive a hands-on, field experience harvesting lionfish.
- iv. **Lionfish: Classroom Invasion:** Scheduled on a per-request basis, staff travels to schools located statewide to educate students about the lionfish invasion, biology and their potential impacts on native ecosystems. To

complement the presentation, students may dissect a lionfish as well as collect various scientific data and gain an understanding of the value of lionfish research.

- c. **Lionfish Tournament Assistance:** Localized removal efforts, such as lionfish tournaments, have been shown to be effective in reducing lionfish populations. FWC seeks to increase participation in lionfish removals through outreach efforts and support of lionfish tournaments. To supplement these efforts as well as cater to the increased requests from stakeholders, FWC has allocated assistance funds to encourage lionfish harvest through organized tournaments

Table 2. Summary of statewide and FWC-sponsored lionfish tournaments in 2017 and 2018.

| Year | Number of Tournaments Sponsored by FWC | Number of Tournaments | Total Number of Lionfish Removed |
|------|--|-----------------------|----------------------------------|
| 2017 | 20 | 23 | 24,029 |
| 2018 | 18 | 21 | 18,963 |

II. Incentive & Control Programs

a. **Reef Rangers**

FWC initiated the Reef Rangers “Adopt-A-Reef” Program in 2014 to encourage targeted lionfish removals on Florida’s reefs. As a participant in the Reef Rangers program, individuals or teams pledge to conduct regular lionfish removals on local reefs of their choice and report these removals on ReefRangers.com. With this localized control effort applied to Florida’s reefs, the Reef Rangers program aims to improve the efficiency of statewide control efforts and mitigate the effects of the invasion on a statewide scale. **As of August 2018, 587 people had registered to become a Reef Ranger.**

b. **Lionfish Harvest Reimbursement Program**

Despite the increase in recreational and commercial harvest of lionfish, existing lionfish populations and recruitment to Florida’s reefs remain high. FWC is asking for assistance from Florida’s divers and dive organizations to increase lionfish harvesting efforts. The program aims to incentivize dive charters to conduct lionfish harvesting trips in an effort to increase the number of lionfish removed from Florida waters. Vendors will conduct a lionfish-specific harvest charter trip and be eligible for reimbursement if the total lionfish harvest is equal to 8 lionfish x the total number of divers.

| Year | Number of Vendors Participating in Program | Number of Harvest Trips Conducted | Total Number of Lionfish Removed |
|------|--|-----------------------------------|----------------------------------|
| 2018 | 18 | 136 | 8,805 |

- c. **Lionfish Challenge and Tagged-Lionfish Component:** To participate in the Lionfish Challenge, recreational and commercial participants remove lionfish from Florida waters and submit them via photo or to checkpoints located statewide.

Qualified participants receive a t-shirt and commemorative coin, which is valid for an additional spiny lobster per day during the two-day sport season in July. Additional submissions allow participants to win prizes such as lionfish hunting gear and more. The winner of the Lionfish Challenge Recreational and Commercial Category will be named the Lionfish King/Queen and Commercial Champion, respectively.

- i. **Table 5.** Results of the Lionfish Challenge incentive program 2016-2018.

| Year | Number of Participants | Number of Lionfish Harvested |
|------|------------------------|------------------------------|
| 2016 | 95 | 16,609 |
| 2017 | 120 | 26,454 |
| 2018 | 166 | 28,260 |

- d. **Tagged-Lionfish Component:** To encourage divers to continue removing lionfish from Florida waters, FWC hosted a novel program that tagged lionfish on public artificial reef sites and rewarded participants with cash or higher product-based prizes for harvesting those tagged fish. This unique program aims to increase statewide removal efforts as it gives divers a greater incentive to harvest lionfish more often while in search of the valuable tagged fish. Additionally, the program can provide valuable data on the movement of lionfish based on the location of the fish when tagged and when harvested. The program coincides with the existing Lionfish Challenge program and runs from May 19, 2018 through September 3, 2018. Lionfish will be tagged at 50 randomly selected public artificial reef sites statewide between the depths of 80' – 120'.

| Total Number of Tagged Lionfish Submitted | Gulf of Mexico | Atlantic |
|---|----------------|----------|
| 56 | 48 | 8 |

III. Research

- a. **Deep-Water Lionfish Control Research Program:** Technologies for efficiently removing lionfish in depths beyond recreational dive limits (130') are underdeveloped. FWC is providing financial support to five applied research projects that are designed to develop and test lionfish-specific traps, remote operated vehicles and other innovative technologies that have the potential to efficiently remove lionfish from deeper waters. The contracts were awarded Spring 2018 and the projects will be closely monitored to ensure progress is being made through June 2019.
- b. **Additional Lionfish Research Funding:** FWC is also providing financial support to two additional research projects that will investigate the use of different trap types and trap modifications for lionfish harvest from deep-water reefs throughout the Florida Keys and northern Gulf of Mexico. FWC is partnering with Biscayne

National Park to support an ongoing research and monitoring project of lionfish populations within the Park.

IV. Commercial Market

- a. **Market development:** With increasing interest in lionfish throughout the invaded range, there has been a rise in demand for lionfish in the seafood market. Harvest via SCUBA diving is primarily the most effective method to remove lionfish, but the method is costly and inefficient compared to conventional commercial fishing methods, leading to a sporadic rather than consistent supply. FWC encourages the public to get involved in the development of the commercial lionfish market by including a discussion on licensing requirements, safe handling practices and maintaining a database of Florida lionfish wholesale dealers' purchasing requirements. Increased communication between commercial lionfish harvesters and those Saltwater Wholesale Dealers interested in purchasing lionfish will facilitate increased removals. Lastly, FWC encourages commercial harvesters and wholesale dealers to follow all reporting requirements to ensure commercial lionfish landings data are current and accurate.

| Year | Diving | Hook and Line | Traps | Trawl | TOTAL LANDINGS (LBS) |
|-------------------------------|---------------|---------------|--------------|------------|----------------------------|
| 2017 | 99,145.7 | 8,598.77 | 13,741.69 | 281.6 | 121,768 |
| 2018** (data not complete) | 21,197.9 lbs. | 1,449.9 lbs. | 2,047.4 lbs. | 125.9 lbs. | 24,821.1 |

Alabama State Report to the Gulf States Marine Fisheries Commission Fall 2018

Fisheries Section

The Alabama Marine Resources Division (AMRD) will continue with fisheries monitoring projects funded by the National Fish and Wildlife Foundation's Gulf Environmental Benefit Fund (NFWF). Projects are proceeding as planned; the offshore projects are providing management for recreationally and commercially important finfish species. Funding has been approved for the continuation of fisheries monitoring projects through 2019 and habitat creation for adult and juvenile reef fish through 2021.

AMRD biologists continue to monitor oyster density on Alabama's public oyster reefs. Beginning July through September 10th, a total of 250 SCUBA quadrat samples were collected and processed. Samples were collected from reefs that were planted with cultch between 2009 through 2016 and from non-planted reefs for comparison. Very low oyster densities were observed on all reefs surveyed. These results are likely due to a prolonged freshet (<5 ppt) and hypoxic conditions (<4 mg/L).

AMRD biologists participated in four observer trips on two commercial blue crab vessels working Portersville Bay and the Wolf Bay/Perdido System between July 11 and August 29, 2018. A total of 240 crab traps of 240 traps fished were sampled from which 1,023 individual blue crabs were sexed and measured. External parasites and observed abnormalities on sampled crabs were documented and all bycatch was recorded. A total of 81 crabs were randomly selected and retained during the four trips. These crabs were kept on ice after each trip until they were measured, weighed, and examined to verify sexual maturity.

AMRD continued to create reef fish habitats within the nearshore area of Alabama (Gulf of Mexico beach to 9 miles offshore). A \$1,200,000 contract using NFWF funds was executed to construct new reef habitat in the nearshore waters of the Gulf of Mexico. To date, 400 reef modules have been deployed and an additional 200 reef modules are scheduled to be deployed by October 2018. Additionally, 166 anchored reef modules are currently being deployed in the circalittoral zone immediately offshore of 3 sites in Baldwin County, Alabama. This \$590,345.83 project is funded by NFWF and is scheduled to be completed by October 2018.

AMRD continues to develop its Rigs-to-Reefs program. During the summer, the platform of MP 261 "JP" was removed and the jacket was cut approximately 110 feet below sea level. The base of the jacket remained in place and the top section of the jacket was reefed approximately 500 feet from the base. The reef site is located 51nm south of Sand Island Lighthouse in approximately 300 feet of water.

A total of 120 tetrahedron-shaped concrete/limestone reef modules have been deployed in the offshore reef permitting zones as part of a \$1,209,000 contract funded by the NFWF. Each reef module is 25' in height and features supplemental concrete/limestone structures inside the main reef's tetrahedron base. The project resulted in 39 new reef sites containing two modules per

site, three new reef sites containing four modules each, and enhancement of 30 existing reef sites with one module each.

The 250' M/V New Venture was scuttled to create a shipwreck reef approximately 25 nm south of Orange Beach, AL. Additionally, the 102' tug boat Gladys B was converted into a shipwreck approximately 20 nm south of Ft. Morgan. Contracts to clean and scuttle the two vessels totaled \$1,000,000 and funding was provided by the NFWF.

Approximately 250 pieces of repurposed concrete pipe, culverts and junction boxes were deployed at 4 reef sites south of Dauphin Island, AL. The \$179,000 contract funded by the NFWF resulted in the enhancement of 3 existing reef sites and a new reef site was created.

A total of 18,500 tons of 3" x 6" limestone aggregate was deployed at 4 existing inshore reef sites to provide reef substrate within Alabama's inshore waters. The \$980,000 contract to conduct the enhancement activities was funded by the NFWF. These reefs have been added to the database of reefs deployed by AMRD which can be found on the Alabama Department of Conservation and Natural Resources' website (www.outdooralabama.com).

The AMRD continued mapping historical oyster reef locations in Mobile Bay using side scan sonar to determine possible locations of live oyster reefs. Several areas of potentially hard substrate have been identified and ground-truthing has been conducted to verify if live oysters exist in these areas or if the area is just a remnant of a past reef.

AMRD's Claude Peteet Mariculture Center continued stock enhancement efforts of red drum, Florida pompano, and southern flounder. Over 333,000 1-2-inch red drum fingerlings were released at 11 different sites throughout coastal Alabama. These releases occurred over two spawning periods. More than 32,000 1-2-inch Florida pompano fingerlings were released at locations along Baldwin County beaches over three spawning periods. Southern flounder broodstock collection efforts have been successful in recent months. With assistance from local fishing groups such as the Alabama Coastal Fishing Association, Coastal Conservation Association-Alabama Chapter, and Saltwater Finaddicts, the AMRD received 37 southern flounder. These fish will be used for spawning in early 2020.

Spring and Summer 2018 SEAMAP activities were completed at 29 vertical and 7 bottom longline stations. Vertical line sampling activities resulted in the collection of four species. Red snapper, followed by gray triggerfish, were the most frequently encountered finfish. Blacktip and Atlantic sharpnose sharks were the most abundant species encountered on the bottom longline during the spring sampling events. Summer bottom long line sets produced no catches.

A joint three-year research project with Auburn University and Clemson University began January 2018. This study focuses on southern flounder growth rate and sex ratio based on specific estuarine habitats. This project aims to inform fishery managers to improve management of southern flounder in Alabama's coastal and estuarine waters.

Auburn University and AMRD are working together to better understand the fish pathogens responsible for local fish health problems. This is relevant for marine species that have been

traditionally understudied. A better understanding of the transmission and pathogenesis of disease agents, especially in wild fish populations, is important for the management of fish diseases.

The AMRD continued the collection of dockside Access Point Angler Intercept Survey interviews and validation of charter. From January through August, AMRD APAIS samplers completed a total of 373 assignments and interviewed 2,316 anglers. Training and fish tests were provided to APAIS staff in August and will be held again in February.

The AMRD and Gulf States Marine Fisheries Commission have collaborated to re-instate the Biological Sampling Program for the collection of otoliths from targeted marine finfish. The program was re-implemented on September 1, 2018 and will continue for 18 months. During this period, collected data will be entered into a database provided by the Gulf States Marine Fisheries Commission.

The AMRD is currently participating in an at-sea sampling program funded by NFWF. The program consists of one sampler riding on a volunteer federally permitted for-hire vessel operating out of Mobile or Baldwin counties, to monitor fishing activities and collect biological data on targeted reef fish. From January through August, 4 trips have been completed. The number of trips is lower than expected due to staffing issues and decreased participation from for-hire vessels during snapper season.

The reporting requirement for captains of recreational vessels landing red snapper in Alabama continued for the fifth year. During the 2018 red snapper season, 8,935 landings reports were submitted by representatives from charter boats, headboats and private fishing vessels through the Snapper Check Program. Approximately, 1.80 million pounds of red snapper were estimated to have been landed in Alabama during 2018. In 2018, the Snapper Check Program was certified by NOAA Fisheries as a statistically valid method to estimate Alabama red snapper landings. Alabama is using Snapper Check to monitor red snapper landings in near real-time to stay within a state quota issued through a NOAA Fisheries' Exempted Fishing Permit. AMRD has submitted landings data from Snapper Check to NOAA Fisheries to satisfy reporting requirements related to the exempted fishing permit.

AMRD continues to register anglers through Alabama's Angler Registry Program. Anglers who are not required to purchase a license must register annually with AMRD if they intend to fish in Alabama's waters or transit through Alabama's waters in possession of fish. Exempted individuals such as lifetime license holders and residents over the age of 64 receive the angler registry at no cost. These data are provided to NOAA Fisheries monthly.

The 1st Annual Alabama Lionfish Challenge, an extended lionfish tournament, was initiated to promote the harvest of the invasive lionfish throughout the summer months. The tournament began on May 26th and ended on September 3rd. The tournament was separated into two divisions; commercial and recreational. The Alabama Gulf Coast Reef Restoration Foundation provided \$6,750 for prizes in the commercial division and the Coastal Conservation Association of Alabama provided \$7,000 for prizes in the recreational division. To date, 507 lionfish have been harvested by recreational participants and 93.95 pounds of lionfish have been harvested by

commercial participants during the 1st Annual Alabama Lionfish Challenge.

New members were enrolled in AMRD's Adopt-a-Reef program. Currently, 50 scuba divers have registered to become Adopt-a-Reef members and 57 reports have been submitted to the online database. Reports include information about offshore artificial reefs such as the subsidence of the reef, the structural integrity of the reef, lionfish abundance and removals, and the degree of anthropogenic fouling.

The renovation of the public boat launch at Ft. Morgan was completed June 2018. The previous launch, consisting of 2 single-lane ramps and a 60 ft long finger pier, was removed. The new launch is comprised of 2 double-lane ramps and three 75 ft long finger piers. The expanded launching facilities are needed to accommodate high volume traffic at this popular location during the peak summer season.

The Alabama Seafood Marketing Program continued under the direction of the Alabama Seafood Marketing Commission. The Alabama Seafood Marketing Program consists of public relations, television commercials, print ads and articles, radio ads, billboards, speaking appearances, distribution of marketing materials, sponsorships of events and participation at community festivals and chef events to promote the benefits of seafood consumption. The marketing program's website is www.eatalabamaseafood.com. The program to date has been very successful.

Enforcement Section

From January through August 2018, AMRD enforcement officers conducted 1,695 commercial fishermen intercepts, 18,814 recreational fishermen intercepts, 1,233 seafood dealer and processor inspections, 10,845 hours of patrol (combined vessel patrol and shore patrol), and 5,760 vessel boardings.

In 2018, the Enforcement Section participated in many events including multiple boat shows and National Night Out programs, as well as, visiting area schools and fishing tournaments to provide education and outreach opportunities.

AMRD officers continued to partner with Bryant High School in Bayou La Batre and Baker High School in Mobile to support their Career Academy programs. This summer intern opportunity provides up to four students the ability to gain valuable, paid, part-time work experience in the diverse career fields that are conducted by the AMRD.

In August 2018, the Enforcement Section was awarded a Port Security Grant totaling more than \$313,000 to be used towards updating and expanding the capabilities of the current Coastal Remote Monitoring system, a network of video cameras throughout Coastal Alabama.

Mississippi Department of Marine Resources (MDMR)

Activity Report: January 1, 2018 – June 30, 2018

Gulf States Marine Fisheries Commission (GSMFC)

69th Annual Fall Meeting – South Padre, TX

October 15 – October 18, 2018

Artificial Reef Bureau

The Artificial Reef Bureau (ARB) continued monthly monitoring of fish assemblages and physiochemical parameters at selected inshore reef sites. Personnel inspected 54 and replaced 20 inshore reef marker signs to assist boaters in locating the low-profile reefs. Juvenile reef fish sampling was performed during the months of March, May, and June. A total of 108 juvenile reef fish were captured, tagged, and released. ARB staff collaborated with the Mississippi Gulf Fishing Banks to monitor artificial reefs via roving SCUBA diver surveys. In April and June, a total of eight dives were performed by the club's members and data was collected regarding species assemblages and physiochemical parameters. ARB staff also assisted the Shellfish bureau in square meter sampling.

In addition to monitoring artificial reefs, the ARB worked on securing more structure to be deployed off the coast of Mississippi. The ARB secured approximately 22 deliveries, totaling 465 concrete culverts. This material is stockpiled at the Gulfport staging site for future offshore deployments. ARB staff revisited all the deployment sites created in 2017 to inspect for settling and subsidence of materials and as established a baseline clearance to monitor for subsidence in the future.

The ARB staff represented the MDMR by contributing to outreach events and educational meetings. In February, staff represented the agency at the Biloxi Boat show, Capitol Day in Jackson, The Joint Artificial Reef Subcommittee meeting in New Orleans, and Participated as a safety inspector and judge at the Mississippi Region VI Science and Engineering Fair in Biloxi. In May, staff attended the Lionfish Awareness and Removal Day in Perdido Key, FL to promote the Jimmy Sanders Memorial Lionfish Challenge. In June, a staff member spoke as an invitational guest lecturer to the Marine Conservation class at the Gulf Coast Research Lab in Ocean Springs, MS.

ARB staff worked on renewing permits for all nearshore artificial reefs, keys, and the Cat Island artificial reef zone. This process includes: permit application, Section 7 Endangered Species checklist, and environmental assessments. Likewise, staff initiated the process of obtaining permits for two new artificial reef zones in the vicinity of three other existing reef zones. These new zones will be known as Mississippi Reef Zone 1 and Mississippi Reef Zone 2 (MRZ 1 and MRZ 2).

Lastly, the ARB is currently preparing for and working on ongoing projects. MDMR continues to work with several companies as they contribute to artificial reef development by donating clean concrete material. The material is being stockpiled at a five-acre staging site in Gulfport, MS. This material will be deployed at a later date.

Finfish Bureau

The Finfish Bureau (FB) continued to oversee the Marine Recreational Information Program (MRIP) in Mississippi. Assignments from January to June were obtained, reviewed, and processed before being sent to the GSMFC office. A total of 232 assignments and 1,248 surveys were completed January 1, 2018 through June 30, 2018 in Jackson, Harrison, and Hancock Counties. Survey site validations were conducted at all active sites to update the site registry for 2017 as state-wide site effort estimates continue to be refined to improve the accuracy of the survey design. The for-hire vessel frame was evaluated and edited to better reflect our most recent and updated state license file. This will allow FB staff to develop a more comprehensive and accurate active vessel frame to estimate for-hire effort more precisely.

Long term fishery independent sampling continued in conjunction with the NOAA Project "Monitoring and Assessment of Mississippi's Interjurisdictional Marine Resources." With cooperation from the Gulf Coast Research Lab (GCRL) a total of 270 otoliths were collected January 1, 2018 through June 30, 2018. Samples were collected from eight different species: Atlantic Croaker, Black Drum, Red Drum, Sheepshead, Southern Flounder, Spanish Mackerel, Spotted Seatrout and Striped Mullet. Additionally, 261 samples were collected and processed as part of the MDMR biological sampling program from 14 species: Black Drum, Sheepshead, Florida Pompano, Gulf Flounder, Southern Flounder, Red Snapper, Spotted Seatrout, Southern Kingfish, Striped Mullet, Sand Seatrout, Gray Snapper, Tripletail, Lane Snapper, Atlantic Croaker. The data collected through these programs will aid in management decisions for our state and are submitted to the Gulf States Marine Fisheries Commission (GSMFC).

Otolith reference sets includes Sheepshead and Gray triggerfish that are currently in review.

Commercial landings data were collected from dealers utilizing Mississippi Trip Ticket program to monitor the quota on Red Drum, Southern Flounder, and Spotted Seatrout. FB staff continued working with commercial fishermen and dealers on trip ticket issues including lack of reporting and recording errors. 961 trip tickets were scanned from January 1, 2018 through June 30, 2018 and 2,112 tickets were submitted electronically. All commercial landings data collected from 2016 and most of the 2017 landings data has been verified and sent to GSMFC. We currently have 357 active commercial fishermen and 106 dealers participating in our trip ticket program.

FB staff continued to target Red Drum in Mississippi coastal waters as part of an ongoing research project aimed at filling in age and size information gaps of Red Drum in Mississippi waters. The Red Drum project began in February 2014 and targeted fish of sizes of 20-30 inches, however Red Drum collected from past and current monitoring projects have not captured this size range. In addition, fishery dependent samples have been collected on a voluntary basis from recreational fishermen and for-hire captains who relinquish the carcasses to MDMR staff. These

samples will be used to enhance existing data sets to complete a Red Drum stock assessment currently underway. With all Red Drum processed, additional samples are collected in relation to stomach contents (Trophic analyses), gonad samples (histology), and otoliths (ages). A total of 67 Red Drum otoliths have been collected from January 1 through June 30, 2018.

FB added a new component to capturing information from Red Drum last year by tracking their movements through acoustic telemetry. The study is focused on the Biloxi Bay area and tagging began in May of 2017. The acoustic array consists of 33 acoustic receivers placed at strategic locations throughout the project area. Staff successfully tagged 40 Red Drum from July 1, 2017 through June 30, 2018. Five additional Red Drum were recaptured between January 1 and June 30, 2018 and reported by anglers for a total of 10 fish recaptured since the project began in May of 2017.

Mississippi's recreational Red Snapper electronic reporting system, Tails n' Scales, completed another successful landings program for the 2018 season. This year, the National Marine Fisheries Service (NMFS) encouraged each of the five Gulf States to submit Exempted Fishing Permit (EFP) applications to test state-based recreational red snapper management programs, and in response, each Gulf state developed a proposal for a pilot study. On April 16th, NMFS issued the permits, allowing Mississippi and the other four Gulf states to set their own seasons for private recreational anglers and state charter for-hire vessels. Mississippi's private recreational season lasted for 76 days with a few closures and openings during that period. The season length for state charter for-hire vessels was 17 days and the federal for-hire season was 51 days, although vessels with federal reef fish permits were not included in the EFP. Mississippi's quota was 137,949 lbs., which was split proportionally between the private recreational and state for-hire sectors. The state for-hire quota was 2,800 lbs. Along with Mississippi's EFP being accepted for the 2018 and 2019 seasons, Tails n' Scales completed the certification process and became the second program to have its survey design accepted by NOAA Fisheries in June, after Louisiana. The Red Snapper reporting system "Tails n' Scales" was certified by NOAA in June of 2018.

MDMR in conjunction with GCRL began Year 3 sampling for the offshore reef fish National Fish and Wildlife Foundation project. From January 1 through June 30, 2018, a total of 69 sites (DMR 27, GCRL 42) were sampled with fish and water quality samples currently being processed.

MDMR in conjunction with GCRL started discussing a Southern Flounder stock assessment and sampling protocol in February of 2018. Sampling by fyke nets began in May of 2018 and is still ongoing. A total of nine net sets over three stations (Deer Island, Belle Fontaine Beach, and Davis Bayou) were performed in June. Seven Southern Flounder have been collected during this time.

Five recreational fishing records were approved by the CMR as state records between January 1, 2018 through June 30, 2018.

| <u>Angler</u> | <u>Catch Date</u> | <u>Common Name</u> | <u>Scientific Name</u> | <u>Weight</u> |
|---------------------|-------------------|--------------------|-------------------------------|---------------|
| (Y) Miles Follo | 3-4-18 | Slippery Dick | <i>Halichoeres bivittatus</i> | 6.88 oz |
| Chris Barlow | 3-9-18 | Gulf Flounder | <i>Paralichthys albigutta</i> | 1lb 2.4oz |
| (Y) Margo Schindler | 4-2-18 | Silver Perch | <i>Bairdiella chrysoura</i> | 2.8oz |
| Lonnie Carroll | 4-12-18 | Almaco Jack | <i>Seriola rivoliana</i> | 35lb 2.4oz |
| (Y) Greyson Borries | 5-30-18 | Hardhead Catfish | <i>Ariopsis felis</i> | 1lb 12.97oz |

(Y)= Youth Record

Seafood Technology Bureau

The Seafood Technology Bureau (STB) conducted 234 inspections including pre-operational, follow-up, certification, standardization, and routine inspections. One (1) new seafood dealer was certified. The required bi-annual water quality sampling for seafood processing facilities for March was completed with a total of 58 samples taken.

In June, the Federal Drug Administration (FDA) conducted a Program Element Evaluation of the Plant and Shipping Element of the Mississippi Shellfish Sanitation Program. In preparation, the STB conducted file reviews and technical assistance visits for the 11 chosen processors. During the evaluation, one of the STBs Seafood Officers completed the in-field criteria for renewal of her Certificate of Shellfish Standardization.

In compliance with the Interstate Shellfish Sanitation Conference National Shellfish Sanitation Program the STB conducted several illness investigations. None of the illnesses were epidemiologically linked to consumption of Mississippi harvested oysters.

In February, staff from the STB participated in Capitol Day in Jackson, Mississippi to promote the activities of the MDMR to the Legislatures and other attendees. Staff assist in judging for a Marine Science award at the annual Regional Science Fair on February 28, 2018 at the Mississippi Gulf Coast Coliseum. In April, the STB participated in the annual Celebrate the Gulf Marine Education Festival bringing a seafood safety message to the attendees. The festival saw an attendance of close to 5,000 people.

In February, staff attended the Mississippi State University, Coastal Research and Extension Center, Producer Advisory Council meeting representing the seafood industry research and laboratory needs. In April, STB staff attended the Gulf and South Atlantic States Shellfish Conference in Mobile, Alabama. On the final day of the conference a STB staff member presented a report for the Mississippi seafood industry.

STB in collaboration with the FDA, conducted one (1) Basic Seafood Hazard Analysis Critical Control Point (HACCP) workshop. The workshop was held free of charge for Mississippi residents. The workshop was made possible through a grant from the Mississippi Tidelands Trust Fund Program FY 2016 which is administered by the Mississippi Secretary of State's Office and the MDMR. A total of 14 students attended the workshop.

In June, the STB released the second edition of the Mississippi Seafood Safety Newsletter. The newsletter serves as an educational resource for the seafood industry; with information about safety issues and statistics related to seafood industry compliance history. In March, STB staff attended Cardiopulmonary resuscitation training. A staff member is currently pursuing the Certification of Supervisory Management with the Mississippi State Personnel board. In March, she completed the third level and will begin a project to obtain the certificate completing the requirements before the end of 2018.

Shellfish Bureau

On Tuesday, September 19, 2017 the Commission on Marine Resources (CMR) voted to approve the MDMR Shellfish Staff recommendation to open the 2017-2018 Oyster Season in Biloxi Bay (Area V) October 2, 2017 with a 30% quota; close Area V once 30% quota is reached; then opening the "Conditionally Approved" Areas in the Western MS Sound on November 1, 2017 for harvest with a 30% quota by Area; close "Conditionally Approved" Areas in the Western Sound once the 30% quota is reach; and keep "Approved" Areas closed due to lack of resource. Oyster sack limit was set at 20 sacks for Dredge boats and 15 sacks for Tonging boats.

Biloxi Bay (Area V) opened October 2, 2017 and closed on October 5, 2017 at 2:30pm due to meeting quota. A total of 657 sacks were harvested by tonging boats. On December 19, 2017 the CMR voted to increase the Biloxi Bay quota to allow for the harvest of an additional 1,000 sacks. Area V was opened for harvest on February 23, 2018.

On November 6, 2017 "Conditionally Approved" Areas IB, IIA, IIB, IIE, IIF, IIG & IID in the Western Sound opened for oyster harvest; on November 14, 2017 Area IB closed due to meeting quota (opened for 8 days); on November 20, 2017 Areas IIE and IID closed due to meeting quota (opened for 13 days); on December 6, Area IIB closed at 12pm due to meeting quota (opened for 26 days); on December 7, 2017 Area IIA closed at 4pm due to meeting quota and on April 18, 2018 CMR closed the Oyster Season (Areas IIG and IIF did not reach quota).

2017-2018 Oyster license sales: 215 commercial dredge, 46 commercial tong, 18 recreational tong, 22 non-resident dredge and 28 non-resident tong.

Totals for the 2017-2018 Oyster Season are 464 trips and 7,331 sacks by Dredge boats and 304 trips and 2,823 sacks by Tonging boats for a total of 768 trips and 10,154 sacks for the season. A total of 47 out of 171 days were open for harvest.

Reclassification of Area 6 Shellfish Growing to upwardly classify waters from prohibited to restricted in the waters near the Singing River Causeway bridge and establish a conditionally approved area in the vicinity of Round Island. NOI filed June 19, 2018, final adoption filed July 18, 2018, takes effect August 20, 2018.

A total of three new cultch planting projects took place in the timeline between January 1 and June 30, 2018.

MDMR Biloxi Bay Spring 2018 (in progress). 1.5 acres.

MDMR Western MS Sound Spring 2018 (completed). 144 acres (Pass Tong, Pass Dredge, Henderson Point, Pass Marianne, St. Joe Reefs).

Spat Tech Western MS Sound 2017-2018 (in progress). 100 acres (Pass Tong & Pass Dredge Reefs).

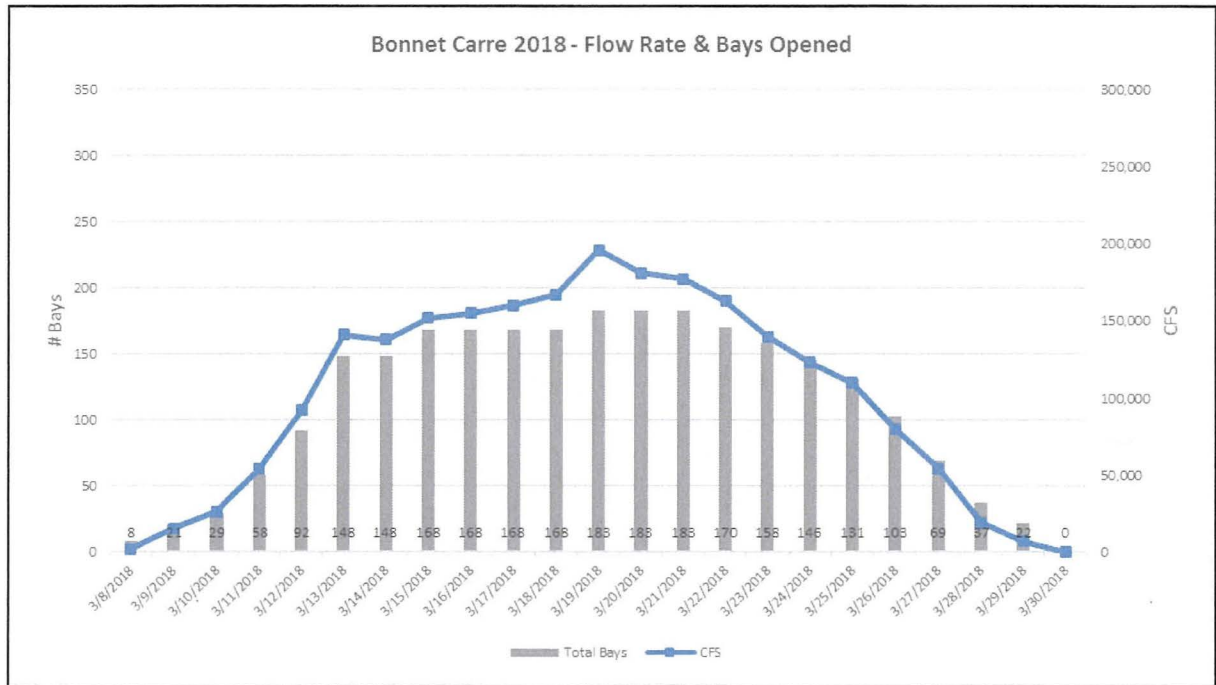
On February 23, 2018, the MDMR received word from the US Army Corps of Engineers that the Bonnet Carré Spillway would be opening, and the projected date of opening was March 14, 2018. The actual day that the spillway began opening was March 8. The spillway stayed open for a total of 23 days, closing on March 30. The US Army Corps of Engineers' intended purpose of opening the Bonnet Carré Spillways is to "keep the volume of the Mississippi River flows at New Orleans from exceeding 1.25 million cubic feet per second (cfs)." The area surrounding the Mississippi River near the Bonnet Carré is set at or below sea level which has the potential to cause flooding of residential regions.

All sample location GPS coordinates can be found in the appendix of this document. WS refers to 'water sample station'. The number following WS is the area of the sample defined by the Mississippi Department of Marine Resources (MDMR) Fisheries Shellfish Bureau water sampling program. Locations listed as Shrimp Stations are used by the MDMR Shrimp and Crab Bureau as routine shrimp sampling sites.

Fecal Coliform Sampling: Water samples are collected in sterile bottles one-half meter below the surface on the windward side of the boat. The samples are placed on ice and transported to the University of Southern Mississippi, Gulf Coast Research Lab (GCRL) which is an FDA Certified Microbiology Laboratory. The samples are analyzed using the 5-tube 3 dilution Modified A-1 method. This takes a minimum of 24 hours for sample results to be completed. The sample results are faxed and/or emailed to MDMR Shellfish Bureau by GCRL Staff.

Phytoplankton Sampling: A surface grab collection type is gathered by dipping a 1-liter jar 1 foot below the surface of the sample location and then preserving the sample with 7 ml of Lugol, an iodine preservative. This allows for a fixed sample that can be enumerated at any time. Phytoplankton samples were analyzed at the MDMR Marine Fisheries Laboratory.

Bonnet Carré Spillway was opened on March 8, 2018 and then closed March 30, 2018.



Shellfish Bureau collected 71 routine phytoplankton samples during the 2017-18 oyster season. This includes 8 samples per month within Area 2 and Area 5 at 2 locations within each area. There were no harmful algal blooms detected in any of the collected samples.

Hypoxic conditions were also observed throughout the MS Sound sometime in early August 2017, especially in the waters between Cat Island and Pass Christian Harbor. This area supports a large portion of the public oyster resources, which experienced a large mortality event as a result of the sustained hypoxia. Low oxygen levels, below 2.0 milligrams per liter, were measured for a period of around 4 days in the benthic water samples in and around the public oyster resources. This event also had a major effect on the cultch plants that were completed in the Spring and Fall of 2017, as most, if not all, of the oyster recruited to the cultch material could not survive this extended period of extreme environmental conditions.

Shrimp and Crab Bureau Mississippi Department of Marine Resources (MDMR)

Mississippi territorial waters opened to shrimping at 6:00 a.m. on June 6, 2017. An aerial survey counted 254 boats trawling in the Mississippi Sound on opening day as fishermen reported catching moderate numbers of 40/50 count brown shrimp. Preliminary landings for January through August 2018 show 5.45 million pounds of shrimp (all species head-on) landed in Mississippi with a dockside value of \$7.9 million. Shrimp landings decreased from the same period (Jan-Aug) of the 2017 season (7.34 million lbs.).

Preliminary Blue Crab landings for 2018 were 573,804 pounds, a decrease for the same period of the 2017 season (835,143 lbs.) with a dockside value of \$1.3 million. Mississippi does not

anticipate an organized derelict crab trap clean-up in 2018, however MDMR staff continues to remove derelict traps as needed. Staff has been implementing the use of side-scan sonar and aerial drone surveys to locate and remove traps which may not be visible or accessible during normal trap removal operations. Utilizing NOAA Disaster Recovery funds from the 2011 opening of the Bonnet Carré spillway, the MDMR has been able to provide 58,952 crab trap escape rings and 6,480 terrapin excluder devices to resident crab fishermen at no cost.

The second annual Mississippi Crab Newsletter, *The Blue Crab Beacon*, was distributed to resident commercial crab fishermen. The newsletter contained information Mississippi Blue Crab landings, the Mississippi Derelict Crab Trap Removal Program, Mississippi's Trip Ticket Program, Gulf Coast Research Laboratory's (GCRL) Crab Tagging Program, TEDs/Escape Rings, Crab Processing and other informative topics. The 10th annual edition of *Shrimping the Sound* was also distributed to resident commercial shrimpers. The newsletter included information on TED Enforcement, Audubon's G.U.L.F. Initiative, USGS Hydrological Monitoring Program, Marine Mammal Authorization, American Shrimp Processors Annual meeting, Mississippi Shrimp Landings, as well as environmental conditions influencing shrimp abundance this year. Both newsletters are available on the MDMR website at www.dmr.ms.gov.

Long term fishery independent trawl sampling continued in conjunction with the NOAA Project "Monitoring and Assessment of Mississippi's Interjurisdictional Marine Resources."

Cooperation with GCRL on the commercial and recreational Blue Crab Catch per Unit Effort projects is also ongoing. Bureau personnel coordinated and administered six U.S. Fish and Wildlife Service Sport Fish Restoration Projects, issued 32 Scientific Research Permits per Title 22 Part 18, and inspected and licensed 16 Live Bait Camps and ten vessels per Title 22 Part 6.

**Gulf States Marine Fisheries Commission
69th Annual Spring Meeting
Technical Coordinating Committee
October 17, 2018**

LOUISIANA STATE REPORT

Resource Management:

LA Creel

Through the La Creel program 7,752 recreational fishing trips, comprising 22,102 individual anglers, were surveyed during 2018 Sample Weeks 9 - 35 (February 26, 2018 through September 2, 2018)(the sample period). Fifty-one different interviewers completed 863 assignments during the sample period.

Fish kept by anglers and allowed to be viewed and counted by interviewers are referred to as observation Type 1 fish. Fish in possession of the angler at the time of survey, but not seen by the interviewer are classified as observation Type 2 fish. For the reporting period, there were 56,149 Type 1's and 14,338 Type 2's, which means that 80 percent of all fish in possession of the angler at the time of survey were counted by staff.

In May 2016, La Creel began capturing discard data for black drum, gray snapper, gray triggerfish, greater amberjack, king mackerel, red drum, red snapper, sheepshead, southern flounder, Spanish mackerel, and spotted seatrout during all dockside surveys. This was done at the request of NMFS to assist in their estimates. Discarded finfish are grouped into three additional observation types: 3) undersize, 4) used as bait, and 5) all other reasons. For the sample period, surveyed anglers reported 47,577 Type 3's, 5 Type 4's, and 8,989 Type 5's.

On January 1, 2018, La Creel began capturing the time of survey commencement for the purpose of comparing dockside time of survey to reported time of trip completion, which should be the same except for incomplete trips, as reported during the effort survey. A third sample time block may be created if the data indicates it might be beneficial to do so.

Stock Assessments:

An update stock assessment of striped mullet was completed in November 2017 and presented to the LWFC for transmittal to the Louisiana Legislature in February 2018. This assessment uses a statistical catch-at-age model to estimate annual time-series of spawning stock biomass and fishing mortality rates. Time-series of fishery catches-at-age along with a fishery-independent relative abundance index are the primary model inputs. Current status of the stock is determined with estimates of reproductive potential. Based on results of this assessment update, the stock is currently not overfished and not experiencing overfishing.

An update stock assessment of blue crab was completed in April 2018 and presented to the LWFC in September of 2018. This assessment uses a catch-survey assessment model to estimate time-series of spawning stock biomass and fishing mortality rates. Time-series of commercial landings along with fishery-independent adult and juvenile blue crab indices of abundance are the primary model inputs. Current status of the stock is determined from management reference point based on the history of the Louisiana blue crab fishery/population. Based on results of this assessment update, the stock is currently not overfished and not experiencing overfishing.

Age and Growth:

BIOFIN funding ended March 31, 2017. LDWF has continued to collect otoliths for age and growth during this period. This otolith collection and ageing data has also been transferred to GSMFC over this period.

From the beginning of March to the end of August 2018, the Age and Growth laboratory in Baton Rouge has received 7,368 otoliths and two Gray Triggerfish spines. From that otolith total, 2,859 have been aged. During this time, 1,395 Inland Fisheries otoliths have been collected and transferred to the lab. All of these Inland otoliths are Largemouth Bass, Channel Catfish and American eel. Black and White Crappie sampling usually takes place during the fall. Striped Mullet season also takes place during the fall. The Fisheries Research Lab processes Blackfin Tuna, Tripletail, Wahoo, and Yellowfin Tuna. The numbers for those species are not included in the Age & Growth lab's total for this time period. However, their individual totals are listed. The totals for each species are: Black Crappie-0; Black Drum-838; Channel Catfish-290; Cobia-12; Gray Snapper-203; Greater Amberjack-97; Gray Triggerfish-2; King Mackerel-1; Largemouth Bass-1,099; Red Drum-1,753; Red Snapper-1,634; Sheepshead-346; Southern Flounder-163; Spotted Seatrout-2,382; Striped Mullet-0; Tripletail-5; Vermilion Snapper-48; Wahoo- 4; White Crappie-0; Blackfin Tuna-25; Yellowfin Tuna-201.

Fisheries Research Lab:

The Grand Isle Fisheries Research Lab (GI-FRL) is the base for offshore fisheries independent monitoring and research projects conducted by the Fisheries Research and Assessment Section. GI-FRL also performs a significant outreach capacity, as the Lab serves as a point of contact for the public, visiting researchers, and educational programs.

Inshore Species

LDWF is currently using SFR funds to conduct three research projects on estuarine-dependent species: spotted seatrout, red drum, and southern flounder. As part of a multi-year effort to assess age-class fecundity in spotted seatrout, biologists sampled 1,334 female spotted seatrout (*Cynoscion nebulosus*) statewide from March 2018 through June 2018, retaining otoliths and ovaries for analysis. To date 704 have been aged. Additionally, biologists collected 771 seatrout ovaries, with 106 ovaries already embedded and ready for sectioning. Collections will continue through September 2018 with results expected in early 2019.

Due to the paucity of fisheries independent data on offshore red drum, biologists have begun collecting otolith and gonad samples from red drum caught during Louisiana's component of the SEAMAP bottom longline survey. In 2018, LDWF sampled 91 BLL sites statewide during three discrete sample seasons (spring, summer, fall), collecting 160 red drum (*Sciaenops ocellatus*), of which 103 have been aged to date. Gonads were not collected in the spring sampling season, but 29 ovaries were taken from the red drum during the summer and fall sampling seasons.

LDWF began pilot work this year to assess the feasibility of a state-wide southern flounder tagging program with the hope that if such a program were successful, it would supply meaningful data to assessors of this stock, which has demonstrated declines Gulf-wide in recent years. LDWF initiated a tag comparison study in 2018, comparing tag retention between T-bar and dart tags. Following a quarantine protocol, forty-four flounder were double tagged and stocked in a research tank system at the Grand Isle Fisheries Research Lab. Results are expected during the next reporting period and will advise further southern flounder tagging efforts.

Offshore Species

Otoliths were collected from 355 yellowfin tuna (*Thunnus albacares*) at the docks of Venice Marina between July 2017 and June 2018. Biologists have aged 302 of the 355 otoliths collected. Three otoliths and ovaries were collected from wahoo (*Acanthocybium solandri*) between July 2017 and June 2018. All have been aged but ovaries have only been recently processed and embedded.

Artificial Reef (AR) Monitoring

The AR Monitoring Grant Proposal has three main goals: 1) analysis of GoPro video from previous (2015-17) and current vertical line (2018; VL) surveys, 2) conduct VL surveys on LDWF AR structures to enhance SEAMAP survey coverage of these structure, and 3) develop and conduct roving diver surveys on LDWF AR reef structures. While these surveys are all ongoing, progress can be reported toward the objectives of each.

During the reporting period, 430 unique GoPro videos were compiled from previous SEAMAP VL surveys (2015-2017). These videos were filtered for visibility and pre-read to define video read time bounds, with 43 of 247 videos readable from 2015, 37 of 97 videos readable from 2016, and 18 of 86 videos readable from 2017. Of the total collected, 98 videos were determined to be readable and these were read by two independent readers for finfish species identification on a 'min count' basis. Concurrently, GoPro videos were collected (SEAMAP funding for field work) from 2018 VL survey sites. While the 2018 survey is still in progress, over 300 videos have been collected to date. Following the completion of the current field season, the same readability criteria will be applied to videos that will then be read, after which video catch will be compared to VL survey catch with final results expected in 2019.

LDWF also sought to enhance the monitoring of LDWF AR sites using the established SEAMAP VLL survey protocol. Ten percent of the AR structures in the LDWF Offshore AR Program were randomly selected and added to the 2018 survey. While the survey is still in progress, VL surveys have been conducted at 37 of the 46 AR sites following the SEAMAP VL protocol.

Additionally, LDWF sought to include a roving diver survey component to the LDWF AR Monitoring effort. While LDWF has previously conducted dive surveys at standing platforms, no dive surveys had been conducted at AR sites until this year when a roving diver survey was successfully completed at the AR site VR-66 (base). Biologists surveyed finfish species at the AR site and the nearest standing platform. AR survey divers are planned for the remaining three zones of the survey and should be conducted before the end of the calendar year.

LDWF SEAMAP

Louisiana SEAMAP is conducted by LDWF in coordination with NOAA and GSMFC from the FRL. LDWF staff conduct Vertical Line (VL), Bottom Longline (BLL), Ichthyoplankton, and Shrimp/Groundfish Trawl Surveys following SEAMAP protocols. The Fall Shrimp/Groundfish Trawl Survey was completed on October 15-16, 2017 and 10 stations were sampled aboard LUMCON's *R/V Point Sur*. SEAMAP 2018 began in early April with the Bottom Longline survey and Vertical Line began in July. LDWF is assigned 100 VL sites for the year and 90 BLL sites in three seasons (spring, summer, and fall) statewide and the sampling for these projects is currently ongoing. The summer Shrimp/Groundfish cruise was completed in June 2018 and 21 stations were sampled aboard LUMCON's *R/V Pelican*. The CTD files for each of these stations were submitted to the Hypoxia Watch Program coordinated by NOAA. The remaining Shrimp/Groundfish and Plankton surveys will be completed in fall on LUMCON's *R/V Pelican* and LDWF's *R/V Defender*, respectively.

Michael C. Voisin Oyster Hatchery, Grand Isle, LA

The 2017 hatchery larval season continued through the beginning of November with raising diploid larvae for the purposes of industry sales and testing the efficacy of LDWF's remote setting facility located in Buras, LA. For the Buras proof-of-concept test, approximately 4.2 million diploid pediveligers were set onto whole, aged oyster shell in concrete setting tanks. The larvae were allowed one week to set and grow, then were loaded onto LDWF's research vessel, the *Defender*, and deployed at Lake Machias on November 15, 2017. Two replicate spat-on-shell samples were retrieved from Lake Machias at approximately Months 1, 2, and 6 post-deployment. The Month 6 results for the two replicate samples are as follows. The average spat size was 20.5 mm and 30.75 mm, with an average growth rate of 3.58 mm/Month and 6.14 mm/Month (respectively). The estimated percent spat survival was 2.6% and 0.8%. Final results will be determined after Month 12 and 18 sampling are completed.

The 2017 hatchery season total production for seed and larvae are as follows. Approximate total production of larvae and seed for 2017 was 215.9 million diploid larvae, 3.5 million diploid seed,

21.5 million triploid larvae, 1.1 million triploid seed, 527,600 tetraploid larvae, and 40,829 tetraploid seed. The total number of diploid larvae includes larvae from all larval stages (d-stage, veliger, and pediveliger). Larvae were produced for restoration, industry sales, or research.

The 2018 hatchery larval season began on March 19, when hatchery staff began spawning oysters. This is the earliest spawn ever conducted at the Michael C. Voisin Oyster Hatchery. The March 19 spawning oysters were conditioned in a warm broodstock holding systems in early March, to ripen before oysters left in the farm were ripe. The hatchery has systems in place to expand larval production into the early spring and late fall. These systems include two broodstock holding systems and a boiler system. Spawn attempts continued weekly until the end of June when broodstock were no longer spawning. Spawning resumed mid-August when broodstock were ripe again.

LDWF began managing larval and seed sales January 1, 2018. LDWF launched an online order form for hatchery-produced larvae and seed in February 2018 (<http://www.wlf.louisiana.gov/fishing/oyster-larvae-order-form>). Customers have the option of purchasing diploid or triploid hatchery seed or pediveliger larvae. The majority of orders received were for triploid larvae. The focus for spring larval production was to produce larvae for sales. By July 2018, all spring sales were completed.

There were periods during the spring 2018 season when there was a surplus of diploid or triploid pediveliger larvae and/or seed. The Department set the extra pediveligers onto macro-cultch (ground up pieces of oyster shell) to produce spat-on-macro-cultch for restoration purposes. CSA1 deployed the spring spat-on-macro-cultch, as well as surplus seed along The Nature Conservancy's living shoreline site near Lake Fortuna. CSA1 distributed several gallon buckets and sacks of hatchery product along approximately 650 meters of shoreline stabilization structure. Approximate numbers of diploid and triploid products deployed were 56,775 diploid spat-on-macro-cultch, 128,059 triploid spat-on-macro-cultch, and 527,351 triploid seed.

The 2018 algal season began in January, to produce both supplemental feed for conditioning broodstock and feed for larvae. Algae is grown in a Stock Room and Algal Production Room (APR). Hatchery staff work on maintaining optimal and consistent pH and temperature for the algal cultures. The APR has 144 hanging algal bags, that can produce approximately 2,000 L of algae feed per day. A couple improvements were made to the APR for enhancing the quality of algae produced. Improvements included the addition of adjustable window shades and a ceiling fan to maintain cooler and constant temperatures during the hot summer months. Based on our daily temperature data collection, the temperature in the APR during July and August 2018 is more constant than in the past 3 years. High quality algae is important for growing healthy oyster larvae.

Algal and larval production will continue throughout the fall 2018 when oysters ripen again. There will be a focus on producing diploid larvae for spat-on-shell production, as well as continuing to fill larval/seed sales.

GI-FRL Facility Report

LDWF Fisheries Research Lab is responsible for promoting the duties of the lab to the public. To accomplish this goal, we give both lab and oyster hatchery tours where biologists describe the work being done by both FRL staff and work being done throughout the agency. Lab staff gave approximately 28 tours of the facility that included 479 people in total. LDWF FRL also works with visiting researchers from other universities throughout the state as well as other state and federal agencies that may be looking for a place to use as a field station. Students and staff from Louisiana State University, University of Louisiana at Lafayette and Nicholls State University all used the facility to conduct research in Barataria Bay. Visiting researchers used the dorm facilities a total of 365 times this year. An additional 31 people used the facility for day trips for their research. The Education Room/Conference Room was used for 23 days as host to various groups, including LDWF outreach and education events, Gulf Council Public Meetings, Training for LDWF Enforcement, Sea Grant, the Louisiana Master Naturalist Group, and other state department meetings. The biggest group we had this year was from Zachary Elementary. Their visit stretched over three days and included giving tours to 300 students. The Fisheries Research lab also hosted the NOAA Dolphin Capture Event. There were up to 10 boats and 60 people involved with the event per day for 2 weeks. Their primary purpose this year was to assess cardiac and immune health of dolphins in Barataria Bay.

There are several ongoing construction projects at the FRL. Some of these are to address issues with the facility, but some are for additional functionality. The design of the boat shed was finalized and is currently being routed for approval to be sent out for bid. The primary aquariums in the lobby of the Main Building were also updated this year to run more efficiently and to provide an example of the types of habitat the Artificial Reef Program is involved with creating. This allows staff to use the aquariums to present information about the Artificial Reef Projects to the public.

The Fisheries Research Lab donates fish that were captured and sampled for various research projects. The majority of the fish were donated to Second Hand Harvest over the past year. One hundred sixteen fish were donated over the past year, estimated to provide 348 meals to people in need.

Marine Mammal and Sea Turtle Monitoring:

LDWF serves as the primary marine mammal and sea turtle stranding and rescue response entity in the state. LDWF continues to receive and investigate all reports of marine mammals and sea turtles. These reports are received from members of the public, various law enforcement agencies, local government officials, property managers, and other entities including barrier

island restoration construction crews working on remote islands and beaches along the Louisiana coast. Where logistically possible and appropriate, depending on state of decomposition, marine mammal and sea turtle carcasses are field-sampled if very decomposed, necropsied in the field on-site, or are recovered for necropsy to be performed by a veterinarian and trained staff in a laboratory based setting.

LDWF continues to monitor beaches, where appropriate and as schedules allow, conducting active surveillance for any stranded marine mammals or sea turtles. Beach surveys are conducted where staff can access beaches with state equipment (4x4 trucks or UTVs), and in remote locations where reports may go undetected by the public. During this reporting period, LDWF conducted 60 beach surveys.

Marine Mammals

LDWF conducted 16 external marine mammal exams and collected minimal samples, due to decomposition level of the carcasses. Additionally, LDWF performed five field necropsies on marine mammals. LDWF responded to three live strandings including a Pygmy Sperm Whale (*Kogia breviceps*) on Holly Beach, a neonate Common Bottlenose Dolphin (*Tursiops truncatus*) on Elmer's Island, and a Rough-toothed Dolphin (*Steno bredanensis*) on Grand Isle Beach. As part of the dolphin health assessments and tagging performed in the summer 2017 in Barataria Bay, LDWF continues to lead and perform follow-up surveys to monitor the dolphins' skin condition (freshwater lesions), behaviors, and tag migrations.

In July, LDWF and partners completed 10 days of bottlenose dolphin sampling in Barataria Bay as part of research being conducted by the GoMRI Consortium for Advanced Research on Marine Mammal Health Assessment (CARMMHA). Field efforts originated from the GI-FRL and focused on the assessment of cardiac and immune health. The principal objectives were to capture, conduct health evaluations, and tag Barataria Bay Estuarine System Stock dolphins, to further the understanding of potential on-going effects from the DWH oil spill.

Sea Turtles

LDWF responded to stranding reports and documented 33 stranded sea turtles. Of those, 20 sea turtle carcasses were frozen for future necropsy.

| Species | Number of Strandings | Number Frozen for Future Necropsies |
|---------------|----------------------|-------------------------------------|
| Kemp's ridley | 20 | 16 |
| Green | 5 | 2 |
| Loggerhead | 3 | 2 |
| Unidentified | 5 | 0 |
| TOTAL | 33 | 20 |

One of the stranded Loggerhead sea turtles was a live rescue from Grand Isle Beach on May 24, 2018. This animal was taken to Audubon Nature Institute where care was provided until the animal died on June 3, 2018. One of the stranded Green sea turtles was a live rescue that a member of the public encountered on June 20, 2018. It is likely that this turtle was struck by a vessel, as evidenced by injury to the head/skull. This animal was taken to Audubon Nature Institute for rehabilitation and died on June 21, 2018. LDWF also coordinated response to a live Green sea turtle that a member of the public took from his neighbor who possessed it. The turtle was handed over to Audubon Nature Institute on June 14, 2018. The turtle did not have any injuries or illness and was released on June 27, 2018.

As part of a Sea Turtle Early Restoration Gear Management Team/Turtle Exclusion Device (TED) Coordination Project, LDWF's TED outreach coordinator met with the NOAA Gear Monitoring Team (GMT) at outreach events and along the coast for TED checks. LDWF's TED outreach coordinator attended the Louisiana Fisheries Forward (LFF) Summit in New Orleans on March 6, 2018 and the LFF presentation on commercial fishing issues in Abbeville on March 20, 2018. The TED outreach coordinator also met with NOAA GMT for dockside inspections on several dates.

| Type of event | Location | Date |
|----------------------|-------------------|---------|
| LFF Summit | New Orleans | 3/6/18 |
| LFF outreach event | Abbeville | 3/20/18 |
| Dockside Inspections | Intracoastal City | 3/20/18 |
| | Intracoastal City | 3/21/18 |
| | Chauvin | 4/05/18 |
| | Dulac | 4/20/18 |
| | Hopedale | 4/25/18 |
| | Buras | 4/27/18 |

LDWF's TED outreach coordinator is providing background information on the reasons for TED requirements at outreach events, including interpretation of technical reports from NOAA.

In May, LDWF assisted Federal partners with live sea turtle capture/mark/recapture efforts near Fourchon, Louisiana. These efforts take place annually in May and December and are part of a long-term study to document juvenile sea turtle presence and habitat utilization in the northern Gulf of Mexico. In particular, these surveys document juvenile sea turtle recruitment to nearshore habitats in southeast Louisiana and allow comparisons between the Louisiana site and other northern Gulf of Mexico study sites. Biologists also collect growth data and other life history parameters of sea turtles captured in Louisiana to compare to those from other Gulf of Mexico study sites.

Shrimp Program:

Portions of Louisiana territorial seas opened on April 2, 2018, as follows: state outside waters extending from the inside/outside shrimp line as described in R.S. 56:495 seaward to the three-

mile line, from the northwest shore of Caillou Boca westward to the Atchafalaya River Ship Channel at Eugene Island as delineated by the red buoy. The remaining closed portion of state territorial seas from the Atchafalaya River Ship Channel at Eugene Island as delineated by the red buoy westward to the western shore of Freshwater Bayou was opened April 24, 2018.

The 2018 spring inshore shrimp season opened in portions of Louisiana from the eastern shore of South Pass of the Mississippi (MS) River westward to the western shore of Freshwater Bayou Canal at 6:00 a.m. on April 30, 2018. The southern portion of shrimp management Zone 1, the southern shore of the Mississippi River Gulf Outlet (MRGO) to the eastern shore of South Pass of the MS River, was opened at 6:00 a.m. on May 9, 2018. The portions of Louisiana from the MS/LA state line westward to the southern shore of the MRGO (northern Zone 1) and the portions of Louisiana from the western shore of Freshwater Bayou westward to the LA/TX state line were set to open at 6:00 a.m. May 21, 2018. Due to technical reasons, the Secretary of LDWF issued a Declaration of Emergency delaying the opening in the northern Zone 1 portion until 6:00 a.m. May 29, 2018. This delay was necessary in order to assist wholesalers and processors to regain capacity to accept shrimp.

Shrimp Landings

Preliminary statewide shrimp landings (all species combined/heads on weight) from January through June 2018 totaled approximately 42.3 million pounds with a dockside value of \$40 million (Source: LDWF Trip Ticket Data). Landings throughout the first six months of 2018 were lower compared to 2017 (42.9 million), but higher than the five-year average (40.4 million).

Total brown shrimp landings during this reporting period were 31.9 million pounds; those landings are nearly 68% higher than 2017 and 37% higher than the five-year average. Dockside value during for this period increased by over 50% compared to 2017, but decreased by 13%, or \$3.3 million, when compared to the five-year average. Although brown shrimp landings and dockside value indicate higher values than 2017, average price per pound for brown shrimp during this period averaged \$0.92, while 2017 and the five-year average indicated average price per pound values of \$1.42 and \$1.68, respectively. Water temperatures during February reached a near long-term high over 80 degrees Fahrenheit. These extremely warm temperatures were the driving factor for the increased landings and the earliest spring inshore season opening in decades, with the exception of 2010. While brown shrimp data indicates higher than average landings during this period, white shrimp landings decreased from the five-year average (16.3 million) by nearly 40%, or 6.5 million pounds. White shrimp landings in 2017 were 58% higher than 2018. Dockside value of white shrimp in 2018 suffered due to lower landings, but the average price per pound during this period was \$1.82 which is four percent, or \$0.07, higher than 2017. Price per pound in 2018 only varied from the five-year average by \$0.01. Exact reasons for lower statewide white shrimp landings is not known. The extreme weather patterns in January and February may have played a role in the decreased white shrimp landings. Hard

freezing temperatures and snow affected most of south Louisiana in January, followed by some of the highest recorded temperatures in February.

As previously stated, statewide landings in 2018 during this reporting period were slightly lower than 2017 landings, but higher than the five-year average. Statewide dockside value in 2018 was approximately 28% lower than 2017 and the five-year average. The lower dockside value in 2018 can be attributed in part to the large decline in larger white shrimp landed and the lower price per pound of brown shrimp.

Crab Program:

In 2016, the LWFC approved a rule that imposed a three-year ban on the commercial harvest of immature female blue crab and a 30 day closure for the commercial harvest of blue crab. This rule would be in effect for the 2017, 2018, and 2019 harvest seasons. After the 30-day closure and subsequent negative feedback received from the industry, an alternative harvest restriction was approved by the LWFC. This new harvest regulation would prohibit the commercial harvest of female blue crab for the months of March and April during the 2018 and 2019 harvest seasons. The 60-day female restriction was estimated to reduce commercial crab landings by approximately 1.6 million pounds. The actual data shows that the 60-day female restriction reduced commercial landings by approximately 1.9 million pounds.

After the 60-day female restriction, negative input from the crab industry was again received by LDWF. The majority of feedback received was that the female restriction took place during the months that blue crab prices are at their highest. This loss in income greatly affected the full time commercial crab fishermen. LDWF presented the LCTF and crab industry with three alternative regulations at the March task force meeting. After a two month public comment period, the LCTF voted in favor (8-1) on a 35-day female restriction that would take place beginning the second Monday of September for the 2019 harvest season. The LWFC promulgated the Notice of Intent for the rule change at their September 2018 meeting.

Louisiana Blue Crab Landings

Preliminary statewide crab landings from January through June 2018 totaled 12.7 million pounds with a dockside value of \$23.6 million (Source: LDWF Trip Ticket Data). Landings in 2018 declined compared to 2017 and the five-year average by approximately 34% and 23%, respectively. Overall dockside value in 2018 was lower than in 2017 and the five-year average, but the average price per pound in 2018 (\$1.86) was \$0.60 higher than in 2017 and \$0.30 higher than the five-year average. Two factors that likely affected blue crab landings in 2018 was the freezing early year temperatures and the 60-day mature female prohibition that took place in March and April. Reports from the industry state that many commercial crab fishermen were unable to, or chose not to, fish during these two events.

Blue crab landings in January 2018 (1.3 million pounds) declined by approximately 53% and 31% compared to 2017 and the five-year average, respectively. Landings in March and April

2018 were directly affected by the ban on the commercial harvest of mature female blue crab. While March landings indicate similar landing values in 2017 and the five-year average, it needs to be considered that two years out of the five had a regulation in place during all or most of the March harvest month. April 2018 landings data show the decline in landings more clearly; April 2018 landings decreased by nearly 1 million pounds compared to the five-year average and nearly 2 million pounds compared to 2017.

Average dockside value during this period in 2018 (\$1.89) was higher than those in 2017 and the five-year average. While landings in January 2018 were lower than those in previous years, the average price per pound (\$2.04) was higher than values recorded in 2017 and the five-year average. Price per pound during March and April 2018 (months containing commercial harvest restriction) increased by \$0.59 and \$0.16 compared to 2017 and the five-year average, respectively. It is likely that the decline in landings during January-April 2018 increased the markets demand for blue crab driving the price per pound up.

Derelict Crab Trap Removal Program

Since 2004, the LDWF, together with individual volunteers and organizations, has successfully removed and disposed of over 37,000 abandoned and derelict crabs. The 2018 derelict crab trap program was another success, having removed the fourth highest numbers of derelict traps since 2004 (4,061 traps) (see table below). The removal of these crab traps is especially important to boating safety and crab harvesting efforts. The LWFC and LDWF are tasked with the goal of developing crab trap removal closure areas, dates and times, and disposal locations.

At the October 2017 Commission meeting, the LWFC adopted a Notice of Intent (NOI) allowing the removal of derelict crab traps from seven different areas along Louisiana's coast in 2018. These seven defined derelict crab trap closure areas were in the following basins: Barataria Basin, 3 in Pontchartrain Basin, Sabine Basin, Terrebonne Basin, and Vermilion-Teche Basin. These closure areas ranged from 10-16 days and were rotated throughout February and March. A volunteer day was planned to take place during the Terrebonne closure. These events host multiple volunteer organizations and members of the public.

A Declaration of Emergency (DE) was signed amending the 2018 derelict crab trap closure areas in order to address the welfare of the people in Louisiana due to the loss of time and economic value within the commercial crab industry during the harsh December and January extreme weather conditions. This DE repealed one of the Pontchartrain closure areas and the Barataria closure area.

In spring of 2018, legislative action was taken to amend R.S. 56:332. This amendment added language to the statute allowing the LWFC to determine the disposition of derelict traps removed during cleanup efforts. This, in turn, will allow LDWF and the blue crab industry to develop a program to utilize abandoned and derelict crab traps. Potential programs and options are under

consideration.

| Year | Area(s) | Traps | Boat-days |
|-------|---------|--------|-----------|
| 2004 | 2 | 6,894 | 90+ |
| 2005 | 4 | 4,623 | 50+ |
| 2006 | 1 | 2,935 | 31+ |
| 2007 | 2 | 1,495 | 15 |
| 2008 | 1 | 1,234 | 3 |
| 2009 | 1 | 788 | NA |
| 2010 | 1 | 477 | NA |
| 2011 | 1 | 1,100 | NA |
| 2012 | 2 | 2,798 | 66 |
| 2013 | 2 | 969 | 32 |
| 2014 | 1 | 1,051 | 24 |
| 2015 | 1 | 422 | 9 |
| 2016 | 3 | 2,580 | 50+ |
| 2017 | 6 | 5,674 | 68 |
| 2018 | 5 | 4,061 | 68 |
| Total | 33 | 37,101 | 506+ |

Oyster Program:

Oyster Stock Assessment

Sampling for the 2018 oyster stock assessment for the Public Oyster Seed Ground (POSG) areas in Louisiana was completed in July 2018. Sampling consisted of 106 sample sites, totaling 530 meter-squared samples collected in the POSG areas. The LDWF 2018 oyster stock assessment indicated that Louisiana is experiencing the lowest stock size ever recorded on the POSG areas. This stock assessment of approximately 283,431 barrels of oysters represents a 6% decrease from already depleted 2017 levels and an overall decrease of 91% from the long-term average (compared to prior stock assessments without Sabine Lake public oyster area). This resulted primarily from a combination of degradation of habitat in POSG areas, extreme weather events, harvest pressure, and hydrologic and environmental changes. No stock assessment was conducted in Sabine Lake public oyster area for 2018 season due to Act 159 (2018) that instituted a moratorium on oyster fishing in Sabine Lake: meter-square sampling will only occur every other year, skipping July 2018 and starting with July 2019. Additional sampling may

occur as needed to monitor for possible mortality events associated with significant freshwater input events.

Additional stock assessment (meter-square) sampling was conducted in the Lake Pontchartrain and Barataria basins in April 2018 as part of an agreement with the Coastal Protection and Restoration Authority (CPRA). In the Barataria basin, additional sampling was also conducted on private lease areas per the CPRA agreement to further characterize oyster resources in that basin.

LDWF also conducts year round dredge sampling on oyster seed grounds state wide—15 sampling events conducted on 80 sampling stations (2 replicates per station) to monitor size frequency, presence and/or absence and mortality. Between January and July of 2018, a total of 1280 dredge samples were taken.

Oyster Season

The table below contains a summary of the 2017-2018 oyster seasons for the major public oyster areas of Louisiana. This year, the goal was to delay the season to maximize potential oyster reproduction, avoid concentration of the fleet through uniform opening/closure dates, and close areas as recommended by the shell budget model thresholds; all of which should help minimize reef degradation.

| Area | Season Opening | Season Closure | Season Type |
|--------------------------------|----------------|----------------|---|
| CSA-1N | Nov. 13, 2017 | Nov. 14, 2017 | 1-day Seed harvest |
| | Nov. 13, 2017 | April 30, 2018 | Market Oyster Harvest (50 sack daily limit, lowered to 25 daily sack limit Nov. 28, 2017) |
| Lake Borgne | Mar. 12, 2018 | Mar. 17, 2018 | Emergency opening (Bonne Carré Spillway) |
| CSA-1S | Nov. 13, 2017 | Apr. 30, 2018 | American Bay Sacking Only Area (50 sack daily limit. Lowered to 25 daily sack limit Nov. 28, 2017) |
| | | | Remainder of area closed |
| LDH Relay Area 1 and 2 | Mar. 24, 2018 | Apr. 7, 2018 | Special LDH permit relay—transplant bedding only Lake Borgne/MS Sound |
| Hackberry Bay | CLOSED | | N/A |
| Sister Lake | Nov. 13, 2017 | Nov. 14, 2017 | 1-day Seed harvest |
| | Nov. 13, 2017 | Dec. 22, 2017 | Market Oyster Harvest (35 sack daily limit, lowered to 25 daily sack limit Nov. 28, 2017) |
| Lake Mechant | CLOSED | | N/A |
| Bay Junop | CLOSED | | N/A |
| CSA-6 | Nov. 13, 2017 | Mar. 12, 2018 | Seed Oyster Harvest |
| | Nov. 13, 2017 | Apr 30, 2018 | Market Oyster harvest |
| Calcasieu Lake | Nov. 1, 2017 | Apr 30, 2018 | West Cove Only: 7 sack daily limit |
| Calcasieu Lake Extended season | May 1, 2018 | May 15, 2018 | West Cove Only: 7 sack daily limit |

Cultch Plants

Cultch plant construction can assist with stabilizing oyster populations that have been in decline over the last few years. The planting of oyster cultch material to boost oyster populations has been used successfully in Louisiana for more than 100 years. It is costly, but efficient, and typically attracts oyster larvae within a few weeks of material planting. One cultch plant has been under construction since April of 2018: a 100-acre fossil shell cultch plant in Lake Fortuna that will be supplemented with spat-on-shell (SoS) sourced from a private hatchery. The completion of this project (Lake Fortuna SoS) has been delayed because of a lack of available fossilized shell material, but has to date been partially completed-- 16,000 cubic yds. of dry shell deposited in April with the remaining fossilized shell to be deposited at a yet to be determined date. The spat on shell is currently being grown out at a private hatchery awaiting project completion to deploy. Future potential cultch planting sites being considered include Grand Banks (CSA-1N) and Sister Lake (CSA-5), which would use NRDA oyster restoration funds.

In addition, the department acquired one side-scan sonar unit per coastal study area to allow rapid assessment of reef areas. Protocols are being refined and in addition to surveying unmapped reef areas, the primary goal is to establish routine surveys of cultch plant areas each season pre- and post-harvest to improve monitoring and subsequent management of these investments. For example, the Lake Fortuna SoS project was scanned in March 2018 and will be scanned again upon completion. A continuous water quality recorder is also installed on the Lake Fortuna site to record dissolved oxygen, water temperature, and salinity.

Remote setting

The Oyster Remote Setting Facility in Buras became operational in November 2017. Using the last available larvae of the Grand Isle hatchery season, a limited trial run was conducted using one half of one of the three tanks in Buras. Four cages (approximately 4 cubic yds) of washed shell were placed in tanks, soaked, and set with approximately 4 million frozen/thawed spat. The trial run proved successful, with an estimated 8.4 spat/shell calculated. The spat on shell were transported to and deployed in Lake Fortuna (Lake Machias) in late 2017. The status of future operations has yet to be determined, and no further runs in Buras have been conducted. LDWF is in the process of transporting shell from Buras to the Grand Isle hatchery in order to continue smaller spat on shell trial runs that are more manageable, less remote, and able to be completed with staff on hand.

Transplants

In 2017, as mentioned in previous reports, in an effort to restore the oyster population in CSA-1S, 108 sacks of oysters transplanted from low salinity waters were deployed in the Black Bay area at three 10 meter-square sites along a salinity gradient, including spat plates in each area. By September 2017, two of the three stations had experienced near complete mortality, with one station (Horseshoe Reef), experiencing minimal mortality. Spat had been observed at two of three stations, but most recent site checks to recover and replace spat plates have turned up empty in 2018. Spat plates had gone missing most likely due to heavier than normal boat traffic during shrimp season. Plates have been redeployed and spat set sampling results should be produced in September 2018. Plates continue to have heavy fouling from encrusting bryozoans, bay barnacles and mud tubes. Preliminary results still indicate that Horseshoe Reef area would be considered more suitable for restoration efforts than the other sites tested.

As mentioned in Remote Setting section, on November 15, 2017, a 3.65-acre area was planted with remotely-set hatchery-produced oyster spat on what was determined to be water bottom suitable for oyster production in Lake Fortuna (Lake Machias). During the May 2018 evaluation of the spat plant site, survival of spat was calculated at just around 1.7%. Growth rates for surviving spat were estimated at near 102 mm/week.

Spawning Stock Reef Network

In another effort to restore the oyster population in lower Pontchartrain basin and in conjunction with the LDWF Artificial Reef Program, planning has begun to establish four broodstock reef sites in the Lake Fortuna and Mississippi Sound areas to create a spawning stock reef network. These reef sites would be typical 10-acre artificial reefs constructed out of large, un-harvestable material and located along a salinity gradient in waters conducive to oyster growth and reproduction. The goal is to improve oyster productivity and resilience in the area, and to provide a deployment location for hatchery products to further supplement production. Four permitted locations were visited, and mapped as future reef sites with details on depth and sediment type data from a preliminary bottom-type survey.

Finfish Program:

LDWF conducts biological monitoring statewide in the coastal, nearshore, and offshore areas of Louisiana for finfish. During FY 2017-2018, the fishery-independent finfish sampling program collected 933 (100 percent) gill net samples, 1,234 (100 percent) seine samples, and 269 (100 percent) trammel net samples for a 100 percent overall completion rate statewide. Electro-fishing samples are being conducted within some Louisiana estuarine environments to provide fisheries data to Louisiana Coastal Protection and Restoration Authority (CPRA).

Louisiana opened the season for the recreational harvest of gray triggerfish in state waters, concurrent with an opening in federal waters, on March 1, 2018.

At its regular April meeting, the LWFC adopted a Notice of Intent to modify rules and regulations for the harvest of reef fish. Changes proposed included reductions in the bag limits of gray triggerfish to no more than 1 per person, of red grouper to no more than 2 in aggregate, and mutton snapper to no more than 5 in aggregate. Proposed recreational size limit changes include increasing the minimum size limit of hogfish, gray triggerfish, and mutton snapper to 14 inches fork length, 15 inches fork length, and 18 inches total length, respectively. Commercial proposed changes included an increase in gray triggerfish trip limits to 16 and an increase in gray triggerfish minimum size to 15 inches fork length. Further commercial size limit proposed changes include an increase in mutton snapper and gag minimum size limits to 18 inches and 24 inches total length, respectively. Proposed recreational season changes include adding a greater amberjack closed season from January 1-April 30 and November 1 through December 31 of each year and adding a closed season for gray triggerfish from January 1 through the end of February of each year. Public comments on the proposed rule were accepted through June 7 and the proposed changes published as final on August 20.

Louisiana waters closed to all harvest of all sharks on April 1 in conjunction with a seasonal closure in state waters to protect pups and pupping female sharks.

Louisiana waters remained closed for the commercial harvest of greater amberjack after the seasonal closure, concurrent with a closure in federal waters.

Louisiana waters opened to the recreational harvest of greater amberjack on May 1, 2018, concurrent with an opening in federal waters.

Louisiana waters opened, 7 days a week, to the recreational harvest of red snapper on May 25, in conjunction with an Exempted Fishing Permit issued by NOAA Fisheries that allowed recreational fishing in the EEZ during times and seasons set by the Louisiana Wildlife and Fisheries Commission.

Louisiana waters closed to the recreational harvest of greater amberjack on May 31, concurrent with a closure in federal waters.

Louisiana waters closed to the recreational harvest of gray triggerfish on June 1, concurrent with a seasonal closure in federal waters.

Louisiana waters opened to the recreational harvest of sharks on July 1 after a seasonal closure to protect pups and pupping female sharks.

The recreational season for the harvest of red snapper in Louisiana closed on July 8 and was modified to be weekends only (Friday, Saturday, and Sunday) beginning on July 13, in conjunction with the Exempted Fishing Permit .

Louisiana waters closed to the recreational harvest of red snapper on August 12 after reaching an allocation specified in conjunction with the Exempted Fishing Permit.

Louisiana waters closed to the recreational harvest of gray triggerfish on August 16, concurrent with a closure in federal waters.

Finfish Task Force

The Louisiana Finfish Task Force continues to meet quarterly and has had meetings discussing the potential for additional black drum commercial and recreational harvest based upon stock status, the creation of a finfish trawling license and associated regulations, and the structure of the commercial striped mullet season. The task force has also been updated on the 2018 recreational red snapper season as well as the stocking of Florida bass in Louisiana waters. The task force has not put forth any recommendations to the LWFC during this report period. Finfish task force meeting minutes, agendas, and membership can viewed at <http://www.wlf.louisiana.gov/fishing/finfish-task-force>.

Fishing Access and Opportunity:

Artificial Reef Program

The Artificial Reef Program continues to assess and permit reef deployments related to offshore oil and gas structures. The program has accepted five new structures. There are 35 structures permitted for deployment as permanent artificial reefs, and two new reef sites have been recently proposed. Permitting of an additional 33 structures is currently underway. Multi-beam surveying of the program's offshore reefs is ongoing (annually) and is made available on the program's website. The program has completed two pilot projects using remotely-operated vehicle (ROV) surveys to sample offshore reefs and is developing plans to create a comprehensive biological monitoring program for these reefs.

The Program holds four permits to enhance existing nearshore reefs. The Pickets and Grand Isle 9 are nearshore reefs that have been approved for Recreational Use Restoration funding. The Ship Shoal 94 and Ship Shoal 108 reefs are being funded by the Artificial Reef Fund. The work to deploy SS-94 & SS-108 has been awarded and should be completed by end of calendar year.

There are 29 established inshore artificial reef sites. The program has enhanced one existing reef, the Sweetlake reef in Calcasieu Lake, with 1700 tons of crushed limestone.

The program advertised a Request for industry input and quotes (RFIQ) and received a total of seven reef proposals from two local nonprofit organizations. The program continues to hold nine permits to enhance existing inshore artificial reefs: East Calcasieu, Cypremort Point II, Rabbit Island, Point Mast, Independence Island, California Point, Lake Front, and West End. All sites have been approved for Recreational Use Restoration Funding. Multi-beaming of all inshore reefs will commence in August.

In December 2017, the Louisiana Trustee Implementation Group released a Draft Restoration Plan and Environmental Assessment to restore for lost recreational use opportunities resulting from the Deepwater Horizon oil spill. The Draft plan would allocate \$22 million toward four proposed recreational use projects, including \$6 million to enhance 11 existing artificial reef sites. The other projects include Elmer's Island access enhancement on the State Wildlife Refuge (\$6 million), Island Road roadside pull-over parking areas and adjoining fishing piers on the Pointe-aux-Chenes Wildlife Management Area (\$3 million), as well as the Lake Charles Science Center and Educational Complex (\$7 million).

Boating and Non-Boating Access Projects

- Port Sulphur Civic Drive Fishing Pier – grant compliance phase
- Burns Point Recreational Area Fishing Pier – construction phase
- St. Tammany Fishing Pier – design phase
- West End – Breakwater Drive Boat Launch – construction phase

- Slidell Municipal Marina Boating Infrastructure Grant Program – recently completed; project included reconstruction of bulkhead and development of boat slips to accommodate large boats (i.e., 26 feet and longer); electrical outlets and water sources were added for use by transient boaters.
- New Iberia Boat Slips Boating Infrastructure Grant Program - grant compliance phase
- Slidell Municipal Marina CVA Pump Out System – pump out system recently installed

Additional boating and fishing access projects were recently approved by the Louisiana Trustee Implementation Group for funding from the Deepwater Horizon oil spill.

Commercial Seafood Programs:

Professionalism

LDWF's intention is to give our seafood industry access and training to the latest trends, requirements, and technology in their profession. The seafood industry should have as much opportunity for training as any other industry in our state. LDWF believes expert training will yield higher quality products and give our seafood community a competitive advantage in the marketplace. Since the launch of *Louisiana Fisheries Forward: Advancing Our Seafood Industry*, this one-of-a-kind professionalism program for Louisiana's commercial fishing industry has received inquiry, acknowledgement, and recognition throughout many facets of local, regional, national and world fishing industries.

Year 2 of the current Louisiana Fisheries Forward contract is currently underway. Within phase II, two mini videos will be produced with corresponding flyers, several hands-on workshops will be offered to include new and trending topics, and the Louisiana Fisheries Forward Refrigeration Demo Unit will travel the state - a 6,500 lb. unit that consists of a brine freezer, plate freezer and chilled water system. Additionally, within phase II, leadership training workshops have been developed and are being launched for three of the four LDWF taskforces.

Additionally, work continues on the production of educational materials (referred to as fast fact sheets), the offering of in-person training sessions (referred to as dock days), a refrigeration demonstration project, and the Louisiana Fisheries Forward Summit.

(<https://www.lafisheriesforward.org/summit/>).

Aside from the voluntary component of Louisiana Fisheries Forward, the Commercial Crab Trap Gear Requirement (www.wlf.la.gov/crabtraining) continues to help commercial fishermen get started in the commercial crab fishing industry. The Oyster Harvester Training Requirement developed and launched in October of 2016 (<http://www.wlf.louisiana.gov/mandatory-oyster-harvester-training>) also continues to help educate our commercial fishing industry. As a sidebar initiative, materials informing the crab industry of new regulations were developed and executed as public outreach.

Sustainability

LDWF has explored mainstream sustainability certifications for major fisheries, such as those offered by the Marine Stewardship Council. In March 2012, Louisiana's blue crab fishery became the first blue crab fishery in the world to receive Marine Stewardship Council sustainability certification. This certification ended March 2017, but LDWF participated in a new pilot project for re-certification that extended this certification until March 2018 while the re-certification process was in motion. The Louisiana blue crab was re-certified in July 2018 for another five-year period. In addition to Marine Stewardship Council certification, the Office of Fisheries has been developing a Gulf-centric sustainability certification system in partnership with the Audubon Nature Institute. The Audubon Gulf United for Lasting Fisheries (GULF) program is leading the development of this "Responsible Fisheries Management" (RFM) certification system based on the United Nations FAO and International Standards Organizations (ISO) protocols. In December 2016, the GULF RFM program was recognized by an ISO-affiliated body and the Louisiana blue crab fishery was certified to the GULF RFM program. The blue crab fishery successfully underwent a surveillance audit in November 2017 and will undergo its second surveillance audit in November 2018. The Global Sustainable Seafood Initiative has almost completed its review of the Gulf RFM program to recognize it as a credible seafood certification program adhering to UN FAO protocols. The review is currently in the final stages of public consultation. Full recognition is expected to be awarded in September 2018. Recognition by GSSI will ensure that seafood certified to the Gulf RFM standard will receive broad acceptance in domestic and international markets.

We are continually vetting our program with seafood buyers to ensure Louisiana seafood will have market acceptance. LDWF has engaged national retail organizations and suppliers in intense dialogue concerning sustainable seafood market needs and desires. An LDWF representative participated in the North American Seafood Expo in Boston in March 2018. LDWF continues active conversations with private-sector actors about "fishery improvement projects" for those Louisiana fisheries that have not taken up formal certification, but wish to demonstrate their commitment to sustainability. A Fishery Improvement Project Working Group has been created for the shrimp fishery under the leadership of the Audubon GULF group. FIP activities are on-going.

Aquatic Plant Control:

Invasive aquatic weeds continue to threaten access and recreational activities throughout Louisiana. Spring surveys conducted from March - May 2018 revealed an estimated 159,913 acres of nuisance aquatic plant coverage. That total was mostly composed of water hyacinth (43,498 acres) and giant salvinia (29,440 acres). The spring surveys are conducted at the beginning of the growing season, and usually yield lower acreage of coverage than the fall estimates conducted at the end of the growing season. From March 1st 2018 through September 1st 2018, LDWF applied EPA-approved herbicides to 18,827 acres of nuisance vegetation across

the state. The majority of plant control efforts focused on giant salvinia and water hyacinth, with 7,513 and 5,251 acres being treated, respectively. A major area of focus was Saline Lake, which suffers from a chronic giant salvinia infestation. A total of 3,364 acres of giant salvinia were treated on Saline Lake. Approximately 1,634 acres of hyacinth in the Atchafalaya Basin were treated by LDWF.

Winter temperatures and isolated flood events continue to be major factors in determining the severity of aquatic vegetation impacts, especially giant salvinia, in Louisiana. Occurrences of below freezing temperatures, for the duration of several hours, provide excellent control of aquatic vegetation. These long durations of below freezing temperatures reduced the biomass going into the growing season. Drawdowns are currently being conducted on several waterbodies throughout Louisiana. Vegetation assessments will be made in the fall, and herbicide applications will be made accordingly.

**Gulf States Marine Fisheries Commission
69th Annual Fall Meeting
Technical Coordinating Committee
Wednesday, 16th October, 2018
South Padre Island, Texas**

TEXAS REPORT

REGULATORY CHANGES

At a recent Texas Parks and Wildlife Commission meeting, a Coastal Fisheries proposal to create a new replacement license (Commercial Gulf Shrimp Boat Offloading Replacement License – type 434), authorizing non-resident vessels to offload shrimp in Texas, was passed by the Commission. The new shrimp offload license, established by the 85th Texas Legislature (2017), went on sale this license year (LY2019). The price of the Commercial Gulf Shrimp Boat Offloading License is \$1,485, the same price as a Non-Resident Gulf Shrimp Boat License. The Offload License does not allow vessels to fish in state waters but allows the vessel to transit Texas waters, with gear stowed, in order to off-load shrimp in Texas. The captain of the vessel will still need a Texas commercial shrimp boat captain license, and a Federal Gulf Shrimp Permit is required prior to obtaining the offload license.

COASTAL FISHERIES PROGRAMS & PROJECTS

Oyster Updates

House Bill 51

HB51 (85th Legislative Session, 2017) included a requirement that dealers purchasing oysters harvested from Texas bay systems return 30%, by volume, of the total quantity of oysters harvested during the previous license year. In lieu of returning this cultch back to public oyster reefs, dealers can pay the department a sack fee that will allow the department to return an equivalent amount to public reefs. The current amount of this fee per sack is \$1.32, which can be adjusted by the Parks and Wildlife Commission depending on the most current cultch planting costs. Based on 2017-18 landings reported to the Texas Commercial Landings Program, 9,682 cubic yards of oyster shell is due to be returned to public oyster beds. To date, approximately 22% of the cultch material has been returned to public reefs or the fee paid in lieu of returning the material. Of this, approximately 95% has been the fee in lieu of actual cultch planting. However, a large cultch plant of ~3,500 cubic yards has been planned for September than should put us around 60% of the owed material (or \$) paid back.

Oyster Aquaculture

Texas Parks and Wildlife Department is working with Texas A&M University – Corpus Christi to develop legislation that would allow the Parks and Wildlife Commission to establish an oyster aquaculture program.

Oyster Enforcement

TPWD will be working with legislators during the 2018 legislative session to address some enforcement issues related to the commercial oyster fishery. As the department implements management closures for some areas to allow the abundance of legal-sized oysters to improve, a few commercial fishermen have begun illegally harvesting from these areas. With the ex-vessel sack price for oysters exceeding \$30 per sack, some fishermen say a Class C violation (\$25 to \$500) for getting caught fishing in these closed

areas has become a cost of doing business. As such, these violations have increased significantly. An enhanced penalty structure, similar to what was implemented for undersize oysters by HB 51, is being discussed.

Fisheries Enhancement Program (Hatcheries)

2018 Fish Stocking Totals (Through Aug.)

| | |
|---------------|-------------------------------|
| 9,820,078 | Red Drum fingerlings |
| 2,166,251 | Spotted Seatrout fingerlings |
| <u>90,325</u> | Southern Flounder fingerlings |
| 12,076,654 | Total fingerlings stocked |

Artificial Reef Program

Rigs-to-Reefs

The Reef Program received the following donations to the program:

| Date | Rig | Removal type | Donation | Jacket |
|------------|------------|--------------|----------------|---------------|
| 06/08/2018 | MI-A-686 | Towed | \$72,011.88 | 8-pile jacket |
| 07/04/2018 | MU-A-121 | Towed | \$250,000.00 | 8-pile jacket |
| 07/13/2018 | HI-A-309 | Towed | \$230,000.00 | 8-pile jacket |
| 07/27/2018 | HI-A-389 | Partial | \$1,400,000.00 | 8-pile jacket |
| 08/10/2018 | HI-A-385 C | Partial | \$250,000.00 | 3-pile jacket |
| 08/10/2018 | HI-A-385 D | Towed | \$375,000.00 | 4-pile jacket |
| 08/14/2018 | PN-A-42 | Partial | \$675,000.00 | 8-pile jacket |

Ships-to-Reefs

Dale Shively attended the annual US Maritime Administration (MARAD) Ship Scrapping meeting in Brownsville, Texas between 26-27 April 2018. MARAD will have over 200 ships available for scrapping (i.e. possible reefing) in the next several years.

Dale conferred with several members of the New York Governor's staff about details pertaining to reefing a ship. Dale informed them about the ship reefing process and directed them to the NY artificial reef coordinator that they could work through for any upcoming projects.

The program continues to celebrate the 10-year anniversary of the deployment of the Texas Clipper, which was reefed on 17 November 2007. A challenge coin contest is being held to promote diving on the Clipper. Bronze medallions are awarded for those divers that complete two dives on the Clipper, silver medallions are given to those that complete four dives, and all silver winners will be entered into a drawing for a gold medallion. The contest will run through 18 November 2018. As of August 30, the program is out of silver medallions due to the level of interest.

Nearshore Reefs

Callan Marine completed production on 250 low-relief structures and 250 pyramids, and they were deployed at the Rio Grande Valley Nearshore Reef Site. Deployment of these materials began 30 July 2018 and was finished 23 August 2018.

Callan Marine also completed production on 180 pyramids that were deployed at the Big Man's Nearshore Reef Site. Deployment of these materials began May 2018 and was finished in less than 2 weeks.

Dale worked with BNSF and the Friends of the Rio Grande Valley Nearshore Reef to arrange for 3 rail cars of concrete rail ties to be transported to Brownsville. Each tie is 8ft x 12in and weight 650lbs and roughly 200 ties can fit into a rail car. There has been active deployment of these materials, including these rail ties, for the Friends of the RGV Reef throughout this summer.

Another 37 rail cars are planned to be used at Big Man's and Kate's Nearshore Reef Sites, south of Galveston Island.

We have received letters of financial support from Coastal Conservation Association and Building Conservation Trust for 2 nearshore reef projects. They are funding an additional \$150,000 (making a total of \$250,000) for big Man's. In addition, they are providing a total of \$200,000 for the Sabine Nearshore Reef. They have entered into a contract with Eldridge Construction for reefing over 100 quarry blocks and a barge at the Sabine site.

Perry R. Bass Marine Fisheries Research Station

Otolith collection

Routine monitoring otolith collections from gill net samples were continued, as was processing and ageing of otoliths collected in previous years. These collections will be used to examine spatial and temporal elements of change in age/length relationships in Red Drum and Spotted Seatrout. All otolith age files have now been compiled into a single database to promote efficient use of the data.

Black Drum (*Pogonias cromis*) coastwide population structure

The genetic survey of inshore Black Drum populations is being finalized. All samples and genetic data have been processed, and data analysis is ongoing.

Black Drum high-resolution population genomics

A second project examining the genomics of Black Drum in the Upper Laguna Madre is in the data collection phase. This project is using previously collected tissue samples from our larger Black Drum study and determine whether the demographically unique population of Black Drum in Baffin Bay can be genetically distinguished from those in the Upper Laguna Madre proper and elsewhere. To date DNA has been extracted from all samples and the QC of DNA preps has been initiated.

Atlantic Croaker (*Micropogonias undulatus*) life history and genetics

Atlantic Croaker life history data (age/growth, migration, and abundance data) has been analyzed, and the paper detailing this analysis is in press at Gulf of Mexico Science. Additionally, a high-resolution single-nucleotide-polymorphism (SNP) genetic data set has been analyzed and is in review at the journal Marine and Coastal Fisheries.

Gulf-wide Blue Crab (*Callinectes sapidus*) population genomics study

Gulf-wide sampling of Blue Crabs has been continued in an effort to assess population structure of this species using population genomic techniques. Sampling in Florida has been completed with assistance of the Florida Fish and Wildlife Conservation Commission. Sampling in other northern Gulf areas has been coordinated with Dr. Zachary Darnell. Sample acquisition from Texas was initiated during the spring gill net season of 2018, and numerous samples have been received.

Sheepshead (*Archosargus probatocephalus*)

We continue to coordinate Texas sample acquisition of Sheepshead in cooperation with Pearce Cooper (Ph.D. candidate, Dauphin Island Sea Lab, Dr. Sean Powers, advisor) for his range-wide genomics study on the species. To date all requested samples have been received and transported to Pearce.

License Buyback Program

| Dollars | License Types | Original licenses | Purchased | Retired | # of rounds |
|------------------|----------------------|--------------------------|------------------|----------------|--------------------|
| 13.6 mill | Shrimp | 3231 | 2176 | 67% | 36 |
| 1.4 mill | Finfish | 549 | 248 | 45% | 24 |
| 0.4 mill | Crabs | 287 | 65 | 23% | 21 |
| 15.3 mill | | 4067 | 2,489 | 61% | |

Shrimp

Buyback Round 36

- Application period closed January 31, 2018 (open approximately 60 days)
- 16 individual bids were received
- 12 (6 bay and 6 bait) would be accepted (> or equal to \$10,000)
- Proposed total cost would be \$107,980 at an average price \$8,998 (if all accepted)
- Accepted range would be \$6,000 to \$12,500
- Purchased a total of 12 (6 bay and 6 bait)
- Total purchase price of \$107,980
- Avg. purchase price was \$8,998 (actual range \$6,000 to \$10,000)

Finfish

Buyback Round 24

- Application period closed January 31, 2018 (open approximately 60 days)
- 2 applications received
- 1 license accepted for purchase
- Total cost \$8,000
- Two bids received were \$8,000 and \$40,000

Crab

Buyback Round 21

- Application period closed January 31, 2018 (open approximately 60 days)
- 0 applications received

Oyster

Buyback Round 1

- Application period closed September 14, 2018 (open approximately 60 days)
- 4 applications received

SPECIAL EFFORTS, STUDIES, AND TOPICS

iSnapper Project

Work continues on the *iSnapper* project, a joint effort between Texas A&M University–Corpus Christi (TAMU-CC) and TPWD that provides anglers with the opportunity to self-report their landings data. Both TPWD and TAMU-CC creel locations were randomly chosen based on angling pressure of launch ramps that had Red Snapper landings reported in previous years. Creel data was also used to validate self-reported data collected through *iSnapper*. Basic comparisons between the 2017 42-day season and 2018 82-day season, as well as a comparison of methods are shown in Table 1 and 2 below.

Table 1. Summary survey results from the 2017 federal private recreational Red Snapper season including both the initial and extended seasons (42 days).

| 2017 Method | Number of Creels | Number of Trips | Total Anglers | Total Red Snapper Recorded | Total Red Snapper / trip | Total Red Snapper/Angler |
|-----------------|------------------|-----------------|---------------|----------------------------|--------------------------|--------------------------|
| TAMU-CC creel | 63 | 306 | 1290 | 2409 | 7.9 | 1.9 |
| TPWD creel | 84 | 206 | 834 | 1661 | 8.1 | 2.0 |
| <i>iSnapper</i> | | 113 | 501 | 903 | 8.0 | 1.8 |

Table 2. Preliminary survey results from the 2018 federal private recreational Red Snapper season (82 days).

| 2018 Method | Number of Creels | Number of Trips | Total Anglers | Total Red Snapper Recorded | Total Red Snapper / trip | Total Red Snapper/Angler |
|-----------------|------------------|-----------------|---------------|----------------------------|--------------------------|--------------------------|
| TAMU-CC creel | 60 | 354 | 1429 | 2504 | 7.1 | 1.8 |
| TPWD creel | 74 | 278 | 1110 | 2116 | 7.6 | 1.9 |
| <i>iSnapper</i> | | 328 | 1438 | 2754 | 8.4 | 1.9 |

Funding Updates

TPWD will be receiving \$13.9M in fishery disaster funds because of Hurricane Harvey. The proposed spending plan includes repairs to fishery-related infrastructure (\$2.8M), habitat restoration (\$9.2M), research/outreach and education (\$0.8M) and state-run license buybacks (\$1.0M).

SEAMAP

Vertical line (VL) SEAMAP sampling for 2018 is ongoing, with Texas vessels completing 34 stations through August. We continue to only sample off central and south Texas coastlines, in order to collect samples within all three depth strata (10-20, 20-4, 40+). We have had very few sample sites selected from the 10-20' depth strata due to the selection process (weighted by % of habitat in that depth strata). We continue to put a large number of artificial reefs in state waters within the 10-20' depth

zone, so hopefully we will get more samples within that strata to better assess our state water Red Snapper population.

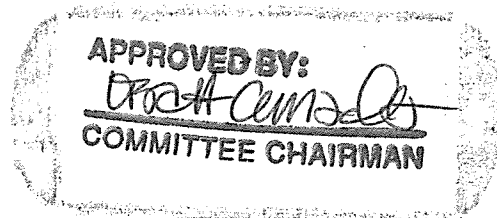
Table 1. Summary of Red Snapper catches from SEAMAP Vertical Line sampling over the last 4 years from each of the depth strata. We did not sample depth strata >40' in 2015 or 2016.

| Year | Depth Strata | # of Stations Completed | # of Hooks Fished | # of Red Snapper | Mean TL (mm) | Mean Weight (kg) | # of Stations with Red Snapper | % Stations with Red Snapper |
|------|--------------|-------------------------|-------------------|------------------|--------------|------------------|--------------------------------|-----------------------------|
| 2015 | 10-20 | 27 | 750 | 93 | 291 | 0.44 | 20 | 74.1 |
| | 20-40 | 12 | 380 | 57 | 433 | 1.65 | 12 | 100.0 |
| 2016 | 10-20 | 18 | 380 | 65 | 362 | 0.75 | 11 | 61.1 |
| | 20-40 | 30 | 680 | 255 | 457 | 1.58 | 24 | 80.0 |
| 2017 | 10-20 | 9 | 260 | 17 | 273 | 0.39 | 7 | 77.8 |
| | 20-40 | 18 | 420 | 140 | 484 | 1.71 | 16 | 88.9 |
| | 40-150 | 32 | 960 | 198 | 504 | 1.78 | 29 | 90.6 |
| 2018 | 20-40 | *5 | 150 | 35 | 517 | 2.04 | 3 | 60.0 |
| | 40-150 | *29 | 870 | 146 | 498 | 1.83 | 25 | 86.2 |

* 2018: 34 stations out of 60 completed as of September

**GULF & SOUTH ATLANTIC REGIONAL PANEL
ON AQUATIC INVASIVE SPECIES
MINUTES**

**Tuesday, October 30, 2018 – Wednesday, October 31, 2018
San Antonio, TX**



On Tuesday, October 30, 2018, Chairman **Lisa Gonzalez** called the meeting to order at 8:30 a.m. The meeting began with introductions of the members and guests. The following were in attendance:

Members & Proxies

James Ballard, GSMFC, Ocean Springs, MS
Paul Carangelo, Port of Corpus Christi Authority, Corpus Christi, TX
Corrin Flora, NC DEQ, Raleigh, NC
Pam Fuller, USGS, Gainesville, FL
Lisa Gonzalez, HARC, The Woodlands, TX
Leslie Hartman, TPWD, Palacios, TX
Tom Jackson, NOAA, Miami, FL (via conference call)
Chuck Jacoby, Indian River Lagoon NEP, Palatka, FL (via conference call)
Peter Kingsley-Smith, SC DNR, Charleston, SC
David Knott, At-Large Member, Charleston, SC
Monica McGarrity, TPWD, Austin, TX
Robert McMahon, UT Arlington, Arlington, TX
Matt Neilson, USGS, Gainesville, FL
Jim Page, GA DNR, Waycross, GA
Michael Pursley, MS DMR, Biloxi, MS
Matt Phillips, FWC, Tallahassee, FL
Dennis Riecke, MDWFP, Jackson, MS
Cindy Williams, USFWS, Atlanta, GA

Staff

Ali Wilhelm, GSMFC, Ocean Springs, MS
Joe Ferrer, GSMFC, Ocean Springs, MS

Others

Chuck Barger, UGA, Athens, GA
Kelly Gestring, FWCC, Boynton Beach, FL
Michael Kendrick, SCDNR, Charleston, SC (via conference call)
Hans Landel, Lady Bird Johnson Wildflower Center, Austin, TX (via conference call)
Susan Pasko, USFWS, Falls Church, VA (via conference call)
Astrid Schwalb, TX State University, San Marcos, TX
Elizabeth Underwood, SCDNR, Charleston, SC (via conference call)

Public Comment

Chairman **Gonzalez** provided the opportunity for public comment. No public comments were received.

zebra mussel population dynamics studied were: Mussel seasonal cohorts, growth rates, and spawning periods; temperature impacts on spawning and juvenile settlement and adult mussel life spans; mussel settlement periods and density; impacts of low pH and low oxygen concentrations on mussel reproduction and density; size distributions of veliger larvae in relation to juvenile settlement; impact of lake water variation on mussel densities.

Mussels were settled on earlier deployed house bricks held at a constant depth of 1.5 – 2.0 m from floating marina docks. Mussels were randomly sampled monthly, and shell lengths determined. Plankton net tows taken on each site visit were combined into a single sample, and preserved in alcohol. Microscopic examinations for veliger larvae were done, and surface water temperatures were measured hourly. Shell lengths of over 100 randomly chosen veligers from each sample were measured. Surface water pH and oxygen concentrations were measured at each sampling visit. Maximum mussel densities were compared to degree of annual lake level fluctuation from 2012 – 2017.

The studies revealed that zebra mussels had distinct spring and fall periods of spawning and juvenile settlement. Spring spawning was initiated at $>16^{\circ}\text{C}$ and suppressed by summer water temperatures ($>30^{\circ}\text{C}$). Fall spawning was initiated at $<25^{\circ}\text{C}$ and suppressed by low winter water temperatures ($<16^{\circ}\text{C}$). Their shell growth rates were rapid with spring and fall cohorts reaching shell lengths of 20-30 mm within 12-14 months. Texas mussel cohort life spans were 1-1.5 years. Veligers reached settlement-competent sizes for abbreviated times during a spawning period. Settlement occurred 2-4 weeks or more after spawning. Applying molluscicides only when settlement-competent pediveligers occur in the plankton to prevent mussel fouling could reduce molluscicide costs and the molluscicide release into source waters. Mussel cohort densities varied between the studied lakes, and over the years. There was a general trend for decline in settlement and adult densities, with increasing length of lake infestation. Extensive water level variation during spring-summer in 2015 resulted in major reductions in mussel densities in all three lakes through 2016. Variation in physical parameters such as pH and O_2 concentration and in lake levels are likely to cause Texas zebra mussel populations to experience “boom-bust” population dynamics.

Dispersal of Zebra Mussels

Astrid Schwalb gave a PowerPoint presentation entitled “Dispersal of Zebra Mussels”. The Schwalb Stream Ecology Lab studies dispersal, ecology of zebra mussels, unionid mussel distribution, and reproductive ecology and behavior. Collaborative projects include genetics to assess the status of unionid mussels, and environmental contaminants.

Since 1988, there has been a rapid spread of dreissenid (zebra and quagga) mussels throughout North America. Dispersal has been via boats and water current. Through a collaboration with USACE, a study was done to predict zebra mussel invasion via boats, and habitat suitability. Invasions since 2012 have been mostly close to urban centers.

The model: 1.) The number of infested boats travelling from invaded reservoir to another lake, which depends on the number of boats per lake (based on registered boats per county), the distance between lakes, and lake attractiveness (most attractive are large lakes near urban centers). 2.) Whether a lake becomes invaded depends on the number of infested boats arriving,

Establishing CWMAs and CISMAs in Texas

Hans Landel gave a PowerPoint presentation entitled “Citizen Scientists, CISMAs and Invasives, Oh My!” The Invaders of Texas Program was established in 2005, and covers all of Texas. It is managed by the Lady Bird Johnson Wildflower Center. The goals of the program are: To train a cadre of citizen scientists to find and report locations of selected invasive plant species in Texas; validate and use the data to develop maps of invasive species to improve understanding of invasive plant distributions in Texas; partner and provide information to regional resource managers and agencies, and provide opportunities for volunteers to help in the efforts; bring volunteers to a level at which they can train the next generation of citizen scientists. The Invaders of Texas Data Detection Database tracks species observations submitted by volunteers, provides the public with full access to citizen science data, and has links to species observation detail page, plant detail page, and validation information. There is also a mobile app. The Invaders of Texas Data summary from 2005-2018 showed 139 workshops done, 77 satellites, 3,185 trained citizens, 22,099 observations, and 9,000+ hours.

Texasinvasives.org contains integrated components: Early detection and rapid response (EDRR) system, citizen science program, website, mobile app, Facebook page, monthly e-newsletter, and outreach. It is a partnership between the TX Forest Service, USDA-APHIS, TX Parks and Wildlife Department, and others. It is designed to present a coordinated approach to address invasive species throughout Texas. The website contains illustrated descriptions, ecological information, distribution and habitat, biology and spread, history of introduction, ecological threats, control and management, native look-a-likes, and references.

The Texas Invasive Plant & Pest Council (TIPPC) is comprised of stakeholders from government agencies, conservation organizations, academia, green industry, and the public to form one unified body in addressing the threat of invasive species.

The Sentinel Pest Network trains citizens to identify and report specific “high consequence” pests that threaten the natural biodiversity of the state. Reporting a species does not require login. The Early Detection and Rapid Response System findings for 2018 showed over 50 pest reports submitted, 21,057 website views, 28 participants completed the EAB online training, 66 completed the SPN online training, and 143 participants trained in workshops.

The Cooperative Weed Management Area (CWMA) is a non-regulatory long-term partnership of federal, state, and local governments, NGOs, institutions, and individuals. It is focused on invasive species management, and facilitates cooperation and coordination across jurisdictional boundaries. The organization forms and governs themselves using a steering committee. They create and implement a comprehensive and strategic plan to manage their invasive species issue within their area, and create a formal agreement. Creating a formal agreement shares the workload and existing resources, produces usable data and tracks distribution, raises future resources, and creates a community effort that lasts long after the initial project is completed.

The Texas Gulf Region Cooperative Weed Management Area (TGR-CWMA) was officially established in 2014, with the mission to address the problem of the invasive Brazilian peppertree from Port O'Connor to Packery Channel on the Texas Gulf Coast. Activities include mapping,

considers important species occurring in biodiversity-poor areas. It is used when biodiversity data layers represent a species. It is a mechanism for comparing different solutions, and facilitates investigation of tradeoffs between conservation and economic losses in the most informative and flexible way. Biodiversity features and habitat conditions are also assessed.

County Planning Units facilitate interpretation with respect to potential regulatory approaches, and biodiversity value and opportunity cost are aggregated. Landscape identification is an objective evaluation of priority areas for conservation. Each conservation priority zone must include at least one county among the top 10% of conservation priority valued counties across the state. Final output requires interpretation, review, and revision.

Draft recommendations include: Private pond stocking of tilapia – proposed Conservation Zone – pond “approval”, and Proposed Economic Zone – allow without restriction.

In summary, many things are needed: A science-based regulatory approach that balances conservation value and economic interests; conservation that provides added protections for imperiled fishes and their habitats in the southern Great Plains, Edwards Plateau, and Chihuahuan Desert ecoregions; minimize impacts of conservation actions on stakeholders and reduce regulatory burden; bridge gaps between identification of conservation priority areas and translation to implementation of conservation actions; support success of current and future conservation initiatives.

Overview of Cuban Tree Frog Introductions in the Southeast Region

Hardin Waddle gave a PowerPoint presentation entitled “USGS Response to the Recent Invasion of Cuban Treefrogs in Louisiana”. The Cuban treefrog was first introduced to the U.S. in the 1920s in the Florida Keys. By the 1970s, they were established throughout southern Florida. By the 2010s, they were established in north-central Florida. They are fast growing, have a generalized diet, have high fecundity, thrive in human dominated habitats, and have the ability to dominate the native treefrog community. USGS research in Florida found that the presence of Cuban treefrogs could explain the absence of native species. When Cuban treefrogs were removed from experimental plots, populations of native frogs recovered almost immediately. It was also found that the presence of Cuban treefrogs at a site reduced the probability of occurrence of native Green and Squirrel treefrogs. Cuban treefrogs eat a broad diet, including native vertebrates (mostly frogs). There is evidence that native treefrogs do not avoid Cuban treefrogs, and seemed to be unaware of the threat.

From April 2013 to November 2016, there were several occurrences of single Cuban treefrogs in Louisiana that almost all could be associated with recent plant acquisitions from retail nurseries. In December 2016, USGS was contacted by Audubon Zoo in New Orleans that they were finding what they believed to be Cuban treefrogs on their property. From September 2017 to present, monthly trips have been conducted at Audubon Zoo and the surrounding park property to search for and remove Cuban treefrogs. Dissections for diet study will be done. Disease research and possible genetics study will be developed. Student-led research will be done. Over 500 Cuban treefrogs have been removed. Captures declined when it got cold. The source of the frogs is believed to be palms planted in the Elephant enclosure.

state. **Ballard** asked Waddle if, besides the monitoring they are doing in the Gulf Islands National Seashore in Florida, there were also plans to expand efforts into the Gulf Islands National Seashore in Ocean Springs, Mississippi. Waddle stated that they have a collaborator at the University of West Florida who is already working at the Davis Bayou site, so he could assist. **Ballard** said that staff at the Gulf Islands National Seashore might also be able to assist. **Pursley** stated that the Mississippi DMR has set out PVC traps at Buccaneer State Park and an RV park in Jackson County. Traps have been checked for several months, but have only contained native frogs so far.

Kingsley-Smith asked if enough is known about the species to make a reasonable prediction about what their potential invasive range is in the southeast? Waddle stated that they do not have a good thermal tolerance study, and the frogs have behavioral strategies for dealing with the cold, so what would limit them would be cold temperatures, since they are from a tropical environment. However, no studies have been done to see how far inland they can thrive. They can also survive more salinity than normal tree frogs.

Gonzalez asked **Fuller** to be the point of contact for this issue between now and the next meeting so that members can contact her for ideas, etc. on this species.

Effects of Non-native *Procambarus clarkii* on Native Crayfish Populations

Michael Kendrick provided a PowerPoint presentation entitled “Effects of Non-native *Procambarus clarkii* on Native Crayfish Populations in the Carolinas”. *Procambarus clarkii* is native to the Gulf Coast and Mississippi River drainage. They are aggressive omnivores that are the cause of “crayfish plague”, a fungal disease that has decimated native crayfish in Europe. They are introduced via the pet trade, culinary discards, and as live study specimens for classrooms. They become quickly established, and it only takes one fertilized female to establish a population. They cause direct and indirect effects on food web structure, and can shift macrophyte-dominated ecosystems to open-water ecosystems. Burrowing can be problematic to levees, dykes, etc. which results in water loss and damage to fields.

There are 60 native crayfish species in the Carolinas – 38 species native to South Carolina, and 45 native to North Carolina. The Waccamaw crayfish is found in the Waccamaw, Lumber-Little Pee Dee, and Pee Dee rivers in flowing blackwater streams and is a conservation priority in both NC and SC. State Wildlife Grant funds were received to assess the current range of the Waccamaw crayfish. Crayfish were sampled from 44 locations throughout the region and retained for identification. Three records of the Waccamaw crayfish, one record of the sandhills crayfish (*Procambarus pearsei*), and 2 records of the coastal plain crayfish (*Procambarus ancylus*) were documented.

There were at least 20 new records for the red swamp crayfish, *P. clarkii*. The next steps for understanding red swamp crayfish in the Carolinas are to continue documenting location and abundance information for native and non-native crayfish in the Pee Dee drainage, improve understanding of introduction and dispersal events leading to the recent expansion of *P. clarkii*, and comparing genetic structure of populations within sub-watersheds of the Pee Dee to help distinguish human-mediated from natural dispersal in crayfish. A three-year USFWS State Wildlife Grant was recently awarded to the SCDNR (PI: Kendrick) to conduct such research.

redtail catfish, and an iridescent shark that posed no escapement problem. This made it difficult to eradicate the targeted species without harming other native and exotic species.

On August 19, 2014, 15 members of ECISMA met at the gardens to conduct the removal effort. The koi pond was drained, and fish were removed by seining and dip-netting. Four species of non-native fish were removed, mostly bay snook and Jack Dempsey. An “upside down catfish” was also removed. The interconnected waterbodies were more challenging. The water level had risen, all the channels connected, and the pond was deeper. The fish had access to many more hiding places. A variety of methods to collect fish were tried such as seining and cast netting, with little success. Separating the koi, pacu, tarpon, and other large fish from the areas was attempted, but was not very successful. Cast netters had some success when the seiners pushed the fish into shallow, snag-free areas. Minnow traps and small fyke nets were deployed and fished overnight. Bay snook were collected, along with a variety of small native fish species. Spotted tilapia were also removed. Overall, 302 pounds of non-native fish comprised of eight species were removed, along with 242 pounds of spotted tilapia and 39 pounds of bay snook. An electrofishing crew sampled the freshwater section of Snapper Creek Canal to look for bay snook and other non-native fish species. No bay snook were found. The overall fish abundance was low. The removal effort eradicated bay snook from the koi pond, and reduced their numbers in other streams and pond. Spotted tilapia numbers were substantially reduced as well. The potential risk for bay snook to escape into the Snapper Creek Canal remained. Draining the koi pond by Pinecrest Gardens staff periodically removes all unwanted exotic fish.

From May 2016 to March 2017, monitoring was limited to seining, minnow traps, backpack electrofisher, and hook-and-line due to the presence of a high value of non-native fish such as koi, pacu, redtail catfish, etc.

On September 10, 2017, Hurricane Irma hit. There was lots of vegetation in the water bodies, loss of power, and flooding. Koi, pacu, and catfish swam out of the ponds and died when the water dropped and stranded them on land. The bay snook moved into the waterfall pond, and the blue mbuna stayed put. It was decided to renovate the waterways containing the bay snook using rotenone, a plant-based, biodegradable compound commonly used to remove unwanted fish. The renovation was conducted in November 2017 by staff from FWC and the USGS. Fish were collected for three days. A total of 158 bay snook, and 1,019 other non-native fish were recovered after the treatment. These other species included spotted tilapia, black acara, and blue mbuna. Several walking catfish survived.

In follow-up sampling, no bay snook were observed. The renovation was considered successful. Native fish have now been restocked. Prevention messaging has been done, and the connection to Snake Creek has been restored. The site will be checked again in November 2018.

Wild Spotter: Mapping Invasives in America's Wild Places

Chuck Bargerone gave a PowerPoint presentation entitled “Wild Spotter – Mapping Invasives in America's Wild Places”. The Wild Spotter Mission aims to protect America's wild places from invasive plants, pathogens, and animals which outcompete native species, and threaten the biodiversity and health of every aquatic and terrestrial ecosystem. Wild Spotter engages and empowers the public to help find, map, and prevent invasive species in America's wilderness

managers to inform NAS survey efforts. Nonindigenous Aquatic Species Flood and Storm Tracker (NAS FaST) Maps were created to help assess the transportation of nonindigenous aquatic species between drainages due to storm surge and inland flooding. As part of the EDRR system, the NAS program alerts managers of these possible new introductions.

Flooding from Hurricane Michael in 2018 helped spread giant apple snail in the Florida panhandle. Flooding from Hurricane Michael in 2017 helped spread silver carp in coastal Texas.

Discussion of ANSTF Recommendations

Recommendation: Ask that other federal agency members of the Task Force participate in the monitoring effort for Cuban tree frogs in the southeast region, and assess if it is an isolated issue or if there are other established populations besides the two isolated locations in Louisiana. **Knott made a Motion to approve the recommendation. McMahon seconded. The Motion was approved.**

Discussion – Instituting Panel Conference Calls between Meetings and Panel Membership

Ballard stated that some other panels have instituted in-between meeting conference calls, and he would like to institute them for the GSARP. The conference calls would be around January and July, and focus on action items from previous meetings. Several members stated that they have found them useful for other committees, etc. that they are/were members of. **Gonzalez** asked how the topics would be chosen for the calls. **Ballard** stated that following up on action items from the previous meeting would be a standing item, and he would call the members if there were any new issues that needed to be addressed to the full membership.

Kingsley-Smith asked if this could be an opportunity to reinvigorate some of the working groups, and address action items that could be worked on between the conference calls and next meeting. **Ballard** agreed, and stated that the work groups floundered probably because their goals were very large and out of reach. It would be better if specific action items could be targeted, and one issue at a time addressed, and then move on. **Knott** asked if the conference calls would be restricted to panel members only. **Ballard** stated that if the membership wanted to invite a speaker to participate, it would be allowed. **Gonzalez** asked the panel if they wanted to institute the conference calls beginning in January 2019. The panel agreed. **Kingsley-Smith made a Motion to institute panel conference calls beginning in January 2019 to strategize and prioritize action items to address priorities ahead of the next panel meeting. Hartman seconded. The Motion passed.**

Ballard spoke on panel membership status. Several members have stated that they will be stepping down from the panel. The panel membership list was provided to everyone in their meeting folders, and the members discussed the status of membership. The USDA, FDA, and Navy memberships are still vacant. **Leigh McDougal** is retiring from the USDA Forest Service at the end of October 2018. **Ballard** has contacted the Task Force about getting a replacement for the Forest Service seat. **Ballard** will contact **Bobby Reed** from Louisiana DWF about his possible retirement. **Mike Pursley** is the new permanent member for Mississippi DMR, and replaces Rick Burris, who stepped down. **Ballard** spoke to **Steven Rider**, who said that his other job activities have kept him from attending meetings, but he will soon be able to participate again. **Jim Page** is the new member for Georgia DNR, and replaces Tim Bonvechio. **Ballard**

Pasko stated that it would be helpful to the Task Force if the management plans were on the website so that the Task Force could link to the database. There was also a suggestion to provide links to various state's websites for their invasive species lists. **Ballard** asked that those lists be provided to him. Another suggestion was a top 10 priority list of the highest invasive species of each state, and compiling them into ranks from highest to lowest. **Ballard** needs a prioritized list from each state. **Ballard** asked **Williams** if final FWS reports for the small grants program research could be put onto the website. **Williams** stated that since GSMFC administers the grants, there would not be a problem with putting the reports on the website. She is administering the grants that are for federal agencies. Those reports could be put on the website as well. One of the things that FWS has asked **Williams** to do is that if there is reporting that is not going to contribute to some sort of literature-reviewed publication, then they want to see those. Their science committee is trying to get a grip on everything that is not published that may contain very good information that their managers could use for a variety of different reasons, depending on what the issue is. If it is peer-reviewed literature, then they can find it, but if not, they want to see those. **Fuller** agreed that it would be a good idea, due to the fact that when FWS gives USGS a grant to deliver a product, USGS is not allowed to post it. **Williams** will send the reports to **Ballard** and he will post them.

The panel's website redesign will be a topic of discussion on the January conference call.

Region 4 USFWS/Small Grants Program

Williams reported that \$154,235 has been awarded in 2018 for the small grants program. Requests for 2019 funding will be submitted in January or February 2019, assuming there is a budget by then. In the past, grants were modified. They have up to five years to continue to add funding. With the new approval, it was assumed that the time for state grants would be increased, so they issued all new state grants in 2018, with the exception of Mississippi. What poses a challenge is that at the end of the five-year period, a new grant must be done. FY18 was the last year that FWS could fund the existing grant with GSMFC for the small grants program. A new grant must now be done for FY19.

Ballard reported that from 2014 to 2016, 26 projects have been funded, for a total of \$556,000. In 2018, seven projects are being funded – one with the USGS, which **Williams** will be administering. The other six projects are with universities, which **Ballard** will be administering through GSMFC. Most will end in 2020.

Aquatic Nuisance Species Task Force Update

Susan Pasko reported that there are 43 approved state ANS management plans – 40 state, and three interstate. The Task Force is chartered under the Federal Advisory Committee Act (FACA), which provides the ANSTF with its core structure, and ensures an open and public forum for its activities. FACA requirements are: FACA database on the internet is maintained from which advisory committee information may be obtained; quarterly membership updates are provided; all ex-officio members are cleared through the Department of the Interior vetting process; public notice of all ANS Task Force meetings and applicable documents are provided; the ANS Task Force charter is renewed every two years.

from May 26, 2018 – September 3, 2018. The recreational division harvested 540 lionfish, and the commercial division harvested 278 lbs. of lionfish.

Florida

Gestrung reported that the 4th Annual Lionfish Removal and Awareness Day was held May 19-20, 2018 in Pensacola, FL. Over 2,000 people attended the event. Visitors got to taste lionfish, watch fillet demonstrations, participate in family-friendly games, and much more. Over 15,000 lionfish were removed from Florida waters. In 2018, participating divers in 19 derbies held around the state removed over 18,000 lionfish during these events. From 2014 – 2018, 95,000 lionfish have been removed from Florida waters.

The Lionfish Challenge began May 19, 2018 and ran through September 3, 2018. Recreational and commercial divers compete for prizes for removing the most lionfish. Participants qualify for prizes based on the number and weight of lionfish removed. The title of “Lionfish King” or “Lionfish Queen” is given to the recreational and commercial diver removing the most weight of lionfish. Over 28,000 lionfish were removed by 132 recreational divers, and 23 commercial divers.

In 2018, the FWC launched a new contest featuring tagged lionfish. FWC staff tagged and released these lionfish on 50 randomly selected public artificial reefs in depths of 80-120 feet. Divers who remove a tagged lionfish can win valuable prizes, including GoPro cameras and Engle coolers, or cash awards ranging from \$500 to \$5,000. As of September 1st, 27 divers have submitted 56 tagged lionfish.

Two new state records for heaviest lionfish collected by pole spear were set as of September 4, 2018. The new Atlantic record weighed in at 3.10 pounds, and the new Gulf record weighed in at 3.38 pounds.

A Lionfish Risk Screening study has been completed. The primary goal of the study was to evaluate the risk of invasion of lionfish in the genera *Dendrochirus*, *Parapterois*, and *Pterois* (excluding red and common lionfish) using the Aquatic Species Invasiveness Screening Kit (AS-ISK). University of Florida researchers completed bio-profiles for 19 lionfish species, and the AS-ISK risk screening tool was applied to 14 species of ornamental lionfish. The risks of lionfish in the ornamental trade are low, with the exceptions of *P. russellii*, *P. lunulata*, and *D. brachypterus*. Elevated invasion risk was identified for these three species. The FWC will use results from these risk screens to determine the most appropriate management strategies to mitigate potential impacts from this group of fish.

A Marine Fish Risk Screening has been completed for Pomacentrids (damselfish). Damselfish are one of the most important marine ornamental fish groups. Over four million of these fish are imported annually into the U.S., representing approximately 40% of all marine ornamental fish imports. In July 2018, the FWC’s NFWP executed a 1-year contract with UF to produce bioprofiles for the top nine species based on trade volume, plus Spiny Chromis and Regal Demoiselle. Regal Demoiselle is established in the western Gulf of Mexico, and is spreading east towards waters off the Florida Panhandle. The Regal Demoiselle represents the only other established marine fish in the tropical western Atlantic besides lionfish.

The 2018 Lionfish Summit was held in October 2018. Three main themes were discussed: Policy & Regulations; Control Efforts/Research & Monitoring; Education & Outreach. A discussion on the findings will be provided in the April GSARP report.

The next Nonnative Fish Slam is scheduled for November 2018, and will focus on the L-67A/L-29 canals to sample for bullseye snakehead, based on a positive eDNA finding in urban canal systems in Miami-Dade and Broward Counties.

The FWC is hosting a series of five workshops to gather public input on proposed changes to rules relating to nonnative species.

Phillips reported that they are continuing to deal with water hyacinth and water lettuce in South Florida with rising waters in Lake Okeechobee, and increases in the hydrilla population on the Harris Chain in central Florida. These have been the two largest expenditures this past year. Small populations of *Salvinia molesta* and *Azolla pinnata* in several locations around the state continue to be treated. Exotic *Sceleria* and *luziola* are being treated wherever they are found.

A population of *Egeria najas* in central Florida was successfully treated, and no live plants have been seen following the treatment. Follow-up monitoring will be done to ensure complete eradication has occurred.

A management exercise with in-house staff and cooperators was recently completed to provide an educational and working document to partners as a “base of knowledge” on some of the more common plants that are treated in the aquatics program. **Matt** provided copies of the working draft from the effort for review, and asked for feedback from the members.

Georgia

Page reported on the Satilla River Flathead Catfish Removal Project. During the current 2018 sampling season (May-October), 4,124 flathead catfish have thus far been removed. Since 2007, more than 71,862 flathead catfish have been removed. It appears that a high-water period from 2012 until 2014 helped the flathead population rebound, but continued removal efforts have since resulted in reduced catch per effort (CPE), TL, and biomass caught. In 2018, the river has remained flooded, and now CPE has increased.

An angler in Charlton County caught a Brown Haplo in the St. Mary’s River on 9/24/18. Unfortunately, the fish was released back into the river.

In 2011, seven Blue Catfish were caught during sampling in the Satilla River. In 2014, two were caught in creel. There was an explosion in recruitment in 2016, with 225 harvested. In 2017, 379 fish were caught. Continued monitoring and removal of this species will occur, along with flathead catfish removal efforts.

In February, an occurrence of Giant Salvinia was positively identified after a concerned citizen brought in a plant to the Richmond Hill hatchery. It came from a Tattanal County pond, but the citizen refused to reveal the location out of fear of retaliation by the property owner. A total of 32 ponds were checked in Tattanal and Toombs County, but the pond has not been located.

river. The snails were first discovered in 2014. After two river flooding events, giant apple snails have recently been detected in a previously un-infested area upstream of the current location. Control efforts have been initiated.

Two monitoring stations for early detection of Cuban treefrog were established. Areas at or near campgrounds were chosen for monitoring, as the Cuban treefrog has been observed to hitchhike on recreational vehicles. No frogs have been detected to date.

Invasive species seminars were presented at two USM-sponsored teacher-education workshops and at a conference hosted by the MS Urban Forest Council.

The Mississippi Department of Marine Resources, along with the Gulf States Marine Fisheries Commission and US Fish & Wildlife Service, hosted the first Jimmy Sanders Memorial Lionfish Challenge from May 26 – September 3, 2018. Twenty-nine fish were reported by six anglers. Sponsors provided monthly prizes for Overall First, Second and Third Place for most lionfish entered. Entry was free.

North Carolina

Flora reported that there have been at least five new infestations of yellow floating heart. Several infestations are already being managed across the state. One small infestation in Cumberland County was treated with herbicides in September. The source of the infestation is believed to be from a large koi pond in a yard uphill from the lake. That pond was also treated with herbicide. Three farm ponds in Moore and Lee County have been reported to NCDA as being infested with yellow floating heart. A fall 2018 herbicide treatment is planned. Another site was discovered in Lake James in Burke and McDowell County. Hand removal was attempted by volunteers on the lake. The result was minimally successful, and NCDA will be monitoring progress. In Macon County, an infestation was found at a commercial nursery specializing in aquatic plants. The owner was made aware that it is illegal to possess the plants. Even if they are not selling them to the public. An eradication plan was made, and progress will be monitored.

The 2018 work plan for the Aquatic Weed Control Program includes 60 projects across the state. Total available funding is \$500,000 for FY 2017-2018.

In Lake Waccamaw, 2018 marked the sixth consecutive year of a large-scale herbicide treatment with fluridone. Hydrilla growth has been completely suppressed by the treatments, and there is no evidence of new tuber production.

A large section of the Eno River was treated with fluridone in 2015-2016 to control hydrilla. The treatment was expanded to 22 miles in 2017, and a repeat of that treatment occurred in 2018. Four consecutive years of treatment has resulted with significant control of hydrilla growth, with minimal to no impact to non-target plant and animal species.

Lake Norman is once again infested with hydrilla. The first infestation was in 2002. An aggressive grass carp release quickly reversed hydrilla, and by 2004 it was completely suppressed. In 2017, hydrilla was seen in a different part of the lake. A survey was done in the fall of 2017, and it was estimated that there was ~500 acres of hydrilla isolated to one are of the

South Carolina

Kingsley-Smith reported that the South Carolina DNR Crustacean Research and Monitoring Section recently received funding from the USFWS State and Interstate Aquatic Nuisance Species Management Plan Program (SIANSMP), in part to conduct a research project entitled “Assessment of the current distribution of the island apple snail *Pomacea maculata*, in West Ashley and its potential to invade the estuarine habitats of the Ashley River, South Carolina”. Biologists will re-survey a system of stormwater ponds in a suburban neighborhood in West Ashley, SC, which was previously surveyed by SC DNR biologists in 2015. Since then multiple hurricanes, tropical storms, and an extreme cold weather event in January 2018 have occurred in the area that could have impacted the distribution and abundance of the *P. maculata* populations at the location. This neighborhood is located less than two miles from the Ashley River, so assessing the potential risk of the island apple snails to invade this river is very important.

In October 2018, four stormwater ponds in the West Ashley area were surveyed. All ponds surveyed contained established populations of island apple snails. A total of 360 adults and 1,939 egg clutches were counted across the four ponds. This indicates increases in abundance estimates in all four ponds, compared to the surveys conducted in 2015. Field surveys for the project will continue through fall 2018 and spring/summer 2019.

Manuscripts on the island apple snail, derived from the College of Charleston M.S. research conducted by Elizabeth Underwood, have been submitted for publication: Salinity tolerance of invasive island apple snail, *Pomacea maculata*, hatchlings in South Carolina, USA. *Journal of Shellfish Research* (in review); Population genetic structure and diversity of the invasive island apple snail, *Pomacea maculata*, in South Carolina and Georgia, USA. *Journal of Shellfish Research* (in review).

The SC DNR Crustacean Research and Monitoring Section recently received funding from the USFWS SIANSMP, as well as a 3-year award from the USFWS State Wildlife Grant Program, to address questions related to the recent spread of *Procambarus clarkii* in the state, impacts of *P. clarkii* on native crayfish species, and dispersal patterns of *P. clarkii* in the northeastern part of the state in the Waccamaw and Pee Dee River drainages. Surveys in the coastal plain of South Carolina and North Carolina by South Carolina DNR biologists show multiple new records of *P. clarkia* in areas where native crayfish species and priority conservation species such as the Waccamaw crayfish were previously observed. Researchers are concerned that *P. clarkii* is displacing native crayfish species throughout this region. As part of the USFWS State Wildlife Grant-funded project, SC DNR researchers will seek to better understand the potential dispersal pathways leading to the recent expansion of *P. clarkii*. Population genetic structure, both within and among watersheds that have been invaded by *P. clarkii*, will be investigated using microsatellite genotyping techniques. Genetic Microsatellite markers have been shown to be highly effective at distinguishing human transport from post-introduction dispersal events in *P. clarkii*.

Two nonnative species of crayfish, *Faxonius virilis* and *Faxonius rusticus* are currently established in North Carolina only a few miles from the North Carolina-South Carolina border in the Broad River and Catawba River watersheds, but have not previously been reported in South

typical size range (250-280 mm TL) of these offshore-derived specimens collected by commercial shrimp trawlers.

A manuscript entitled ‘Development of a qPCR tool for the environmental detection of *Anguillicoloides crassus*, an invasive pathogenic parasite in the American eel, *Anguilla rostrata*’ was submitted to the journal *Management of Biological Invasions* for hopeful publication. This will be a very useful early detection field tool.

Texas

McGarrity reported that at the January 2019 TPW Commission Meeting, staff will request permission to publish proposed rule changes in the Texas Register for review as a full repeal and replace. Full repeal is required due to reorganization of sections and substantive changes related to tilapia. Other changes to be proposed include addition of injurious Lacey-listed fish/shellfish to the prohibited list. Current regulations regarding tilapia aquaculture allow possession, transport, and pond stocking of Mozambique tilapia without a permit. Sale of any tilapia and culture of blue, Nile, or hybrids requires a permit. A spatial conservation assessment was conducted to help inform potential directions for regulatory review and revision. The assessment considered potential impacts and habitat degradation, historical records of tilapia distribution, tilapia climate match, and potential economic losses of conservation actions and tradeoffs between priorities. A ‘conservation zone’ was identified, and implementation of regulations to minimize potential for impacts will be proposed.

Monitoring for early detection of zebra mussels continues. Currently, approximately 30 lakes and five rivers are being monitored for early detection and others for population dynamics.

Several projects, made possible by increased funding, are being expanded to support conservation of imperiled fishes. These projects manage and control arundo in the Texas Hill Country, saltcedar control in the Upper Brazos River Basin, and Elephant Ear in the North and South Llano River.

Continuing efforts are being made to reach out to marinas, and develop partnerships to encourage marinas to act as gatekeepers to prevent movement and introduction of zebra/quagga mussels. New outreach materials are being developed. These efforts are being included in the overarching outreach campaign.

University/Research

McMahon reported that they have stopped doing actual research for a while, and are preparing papers. Three papers will come out on zebra mussels. Other papers will come out over the next few years.

Port Authority

Carangelo stated that the favorable news is that large compliance in the fleet, particularly the tank ship fleet, have installed ballast water treatment systems. The systems are complex, and require substantial training and on-board expertise to ensure the systems operate correctly. There have been a series of non-compliance issues associated with operations. The industry realizes