GULF & SOUTH ATLANTIC REGIONAL PANEL
ON AQUATIC INVASIVE SPECIES
MINUTES
Tuesday, May 5, 2015
Ft. Lauderdale, FL

On Tuesday, May 5, 2015 Chairman **Fuller** called the meeting to order at 8:00 a.m. The meeting began with introductions of the members and guests. The following were in attendance:

Members & Proxies
Lad Akins, REEF, Key Largo, FL
James Ballard, GSMFC, Ocean Springs, MS
Tim Bonvechio, GA DNR, Waycross, GA
David Britton, USFWS, Arlington, TX
Rick Burris, MS DMR, Biloxi, MS
Paul Carangelo, Port Authority, Corpus Christi, TX
Pam Fuller, USGS, Gainesville, FL
Lisa Gonzalez, HARC, The Woodlands, TX
Leslie Hartman, TPWD, Palacios, TX
Tom Jackson, NOAA-NMFS-SEFSC, Miami, FL
Chuck Jacoby, Indian River Lagoon National Estuary Program, Palatka, FL
Peter Kingsley-Smith, SCDNR, Charleston, SC
David Knott, At-Large Member, Charleston, SC
Herb Kumpf, At-Large Member, Banner Elk, NC
Craig Newton, AL DCNR, Dauphin Island, AL
Steven Rider, AL DCNR, Montgomery, AL
Dennis Riecke, MS DWFP, Jackson, MS
Don Schmitz, FL FWC, Tallahassee, FL
Kristen Sommers, FL FWC, Tallahassee, FL
Lindsey Staszak, NCDENR, Elizabeth City, NC
John Teem, FDACS, Tallahassee, FL
Linda Walters, UCF, Orlando, FL

Staff
Ali Ryan, GSMFC, Ocean Springs, MS
Joe Ferrer, GSMFC, Ocean Springs, MS

Others
Brian Bohnsack, USFWS, Arlington, VA
Margaret Brady, NOAA, Silver Spring, MD
Matt Cannister, USGS, Gainesville, FL
John Galvez, USFWS, Vero Beach, FL
Jackson Gross, Smith-Root, Inc., Vancouver, WA
Liana Lerma, TPWD, Brownsville, TX
Don MacLean, USFWS, Arlington, VA
Susan Pasko, NOAA, Silver Spring, MD
Jennifer Possley, Fairchild Tropical Botanic Garden, Miami, FL

Jeffrey Schardt, Tallahassee, FL
Shailesh Sharma, NOAA, Silver Spring, MD
Erin Spencer, Don't Release Me, Washington, D.C.
Dan Thayer, South Florida Water Management District, Palm Beach, FL

Public Comment

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

Adoption of Agenda

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

Approval of Minutes

The minutes of the September 18, 2014 meeting in Houston, TX were presented for approval.

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

Overview of SERC's Benthic Monitoring Program

Ian Davidson presented a PowerPoint presentation entitled "Benthic Monitoring for Marine Invasions – SERC's Approach". In 2016, the Panama Canal expansion will be completed, and there will be more traffic and larger ships. Other Gulf and Atlantic Coast ports will also expand. This will lead to more invasion opportunities. The challenge will be to measure marine invasions by sampling the communities, detecting species, determining biogeography, determining establishment statuses, timing of detection, and vectors responsible for bringing them in.

The National Exotic Marine & Estuarine Species Information System (NEMESIS) is a public database that shows all of the invasive invertebrates in marine and estuarine waters in the U.S. Inputs are from literature, museum collection records, and reporting systems. Outputs are both scientific and applied, and deal with patterns, biogeography, predictions, management/policy, and early detection/rapid response.

Invertebrate and algae invasions in the U.S. have significantly increased in the last 30 years. Shipping has played a major role in this invasion.

Standardized repeated measures that can be used are port surveys. There are three main components of this: Sessile benthic (fouling panels); infauna (benthic grabs); and plankton (net tows and pumps). Fouling plates are used to sample hard-bottom organisms. Ten sites with ten plates per bay are sampled. Morphological and genetic analyses are done to detect what organisms are present and to test taxonomic skills in order to find a more standardized and better approach to quantifying the organisms. Specimens are kept in a voucher library at the SERC facility. A genetics and eDNA component is also being done, and the benefit to this genetic

approach is that it is quality control for the taxonomies, a DNA barcode library is being created, cryptic diversity is being discovered, and efficiency of eDNA becomes better.

The surveys have been done throughout North America and into Panama. Seasons affect the abundance of species. Summer species abundances vary as a function of the previous winter's outflow.

The benefits are that management options to disrupt pattern/rate are identified; completeness of invasion inventories are improved, there is comparison among sites, and comparison over time; management efficacy is evaluated.

Fuller asked the Panel members if members would be interested in working with SERC and assist them in collecting samples, etc. **Ballard** stated that the Panel has raised this question before, and to possibly expand the effort into their regions. He asked the state members if they were still interested and if there were specific ports that they would want sampled. **Ballard** will send Ian's contact information to the state members to see if they would like to follow up with this partnership. Ian will provide the Panel with the expectations of the partnership, such as what would be needed from the states and how often the ports should be sampled. This subject will continue to move forward.

Overview of the Everglades CISMA Program

Tony Pernas gave a PowerPoint presentation entitled "CISMA – Everglades Cooperative Invasive Species Management Area". The Everglades CISMA is a formal partnership of federal, state, and local government agencies, tribes, individuals, and various interested groups that manage invasive species in the Everglades are, based on the CWMA model. The Mission is to improve the effectiveness of invasive species control by sharing information, innovation, and technology across borders. CISMA is comprised of a steering committee, various subcommittees, and teams. The goals are to integrate outreach efforts; integrate coordination, control, and management strategies; provide for information and technology transfer; early detection and rapid response of new invasive species.

To integrate coordination, control, and management strategies, annual Invasive Species Summits are held, and a digital aerial sketch mapping (DASM) region-wide invasive plant assessment tool was developed. Systematic reconnaissance flights were done in 1995, 2005, and 2015. Laurel Wilt has been found in Big Cypress National Preserve. The epidemic is clearly moving from east to west across the ECISMA, and about half of Big Cypress is now infected.

Outreach efforts are being done that include public events (Pet Amnesty Days, etc.); "Don't Let It Loose" billboard campaign; social media (Facebook, Twitter); newspapers; radio; email messaging; kiosks; non-native fish round-ups; and a website (www.evergladescisma.org). CISMA also publishes an online newsletter.

The 1st Annual Nonnative Fish Catch-Click-Submit Contest was held February 21-March 1, 2015. The objectives are to document the distribution of non-native fish in Florida using angler-caught fish that are photographed and reported to the FWC through the www.EDDMaps.org reporting system; increase public awareness of the potential negative impacts of releasing non-

native fish into Florida's waters; and to encourage anglers to target these non-native species for consumption. The most unusual species was a Red Tailed Catfish.

The Annual Everglades Non-native Fish Roundup is held to raise public awareness about the potential negative impacts of releasing non-native fish into Florida's waters; to encourage anglers to target these non-native species for consumption; and to gather data into non-native fish distribution and abundance that can assist in their management. Prizes are awarded for various categories, and all participants receive shirts. At the 2014 event, 55 people registered, and 580 pounds of invasive fish were caught. A new exotic fish was documented: Marbled-Pin Catfish.

Pernas spoke on the development of the REDDy (Introduced Reptile Early Detection & Documentation) Program. It is an online training class to educate people about the difference between native and invasive reptiles, and how to report them. Class participants receive a certificate upon completion.

CISMA produces several types of fliers, bumper stickers, bookmarks, etc. Fliers are distributed to agriculture areas where invasive reptiles might be encountered in farms or groves. Other fliers are distributed about lionfish. These are all available in English, Spanish, and Creole.

Reporting can be done via a hotline, website, and an iPhone app called "I'veGot1".

An Early Detection/Rapid Response Plan was developed for 2009-2011. The second edition of the Rapid Response Plan is being developed. Their website is currently being updated.

At the National Tropical Botanical Garden, 85 non-native red-flowered mangrove trees, saplings, and seedlings thriving in the mangrove preserve were destroyed in May by uprooting, cutting, and/or herbiciding by a seven-member interagency team.

In 2006, numerous sightings of Sacred Ibis were observed. In 2008, the ECISMA EDRR Sacred Ibis Eradication Plan was developed and implemented. There have been no sightings since 2011.

There is mounting evidence of a North African Rock Python population at the Bird Drive Basin. Surveys were initiated in 2010. Over 29 NAR pythons have been captured since 2009. No reports have been received since August 2014.

Argentine Black and White Tegu were first identified in September 2008. Since 2009, surveys, trapping, necropsy, radio telemetry, camera traps, and burrow traps have all been implemented. From 2009-2014, 920 tegus have been observed.

On February 28, 2015, the 2015 5K "Race Against Invasives" was held in the Everglades National Park.

The DOI Invasive Species Strategic Action Framework enhances collective efforts to combat invasive exotic species. It helps decision-makers understand the connection between goals, strategies, and tactics, and to make wise and timely investment decisions in the battle against invasive exotic species.

Exotic Mangrove Control

Jennifer Possley gave a PowerPoint presentation entitled "*Lumnitzera racemosa*, a Non-native Mangrove at Fairchild Tropical Botanic Garden & Matheson Hammock Park". *Lumnitzera racemosa* is native to Asia and Australia, and thrives in dwarf red mangrove stands and on slightly higher ground than the native mangroves. It looks similar to white mangrove.

In 1964, 150 *Lumnitzera racemosa* seeds were collected from a botanic garden in Taiwan. In 1966, two trees from this seed collection survived and were planted at the Fairchild Tropical Garden, near native mangroves. In 1969, 100 seeds were collected from the two trees for propagation. In 1970 and 1971, seeds and seedlings were sold and planted. In 2008, the infestation was discovered.

The first step in eradication was Fairchild and Miami-Dade Parks joining forces with Everglades CISMA in 2009. Step 2 was holding volunteer removal workdays. Step 3 was surveying with GPS/GIS to determine distribution. Step 4 was conducting herbicide trials in 2009/2010. The herbicide treatments resulted in a decrease in *Lumnitzera* stems. Step 5 was FWC contracted removal from 2010-2015. Research interest in *Lumnitzera racemosa* has increased.

It is not known if *Lumnitzera racemosa* has spread beyond the known infestation area. Surveys in and near the known infestation area will continue. Research will be done on seed propagation and viability, and genetics. Workshops for the general public will be held. FWC funds will be requested again if needed.

Update on Lionfish Activities in Florida

Sommers gave a PowerPoint presentation entitled "Lionfish in Florida". Lionfish were first reported in Florida near Dania Beach in 1985. There were additional reports from Florida and Bermuda in the 1990s. After 2000, the lionfish population rapidly spread, and they are currently distributed throughout the Bahamas, Caribbean, U.S. Southeast, Gulf of Mexico, and South America. Native species, habitats, and economy are all negatively impacted.

Complete eradication of lionfish is unlikely. Deepwater lionfish repopulate shallow reefs, and are difficult to harvest. Harvest by divers is currently the primary means of lionfish removal. Localized removal efforts can significantly reduce densities.

The FWC has a Lionfish Team made up of staff from across the agency. The 2014-15 *Florida Lionfish Control and Action Plan* is currently in progress. Stakeholder engagement goals are to encourage statewide public involvement and support in long-term lionfish control; and to cooperate with other Gulf Coast states, REEF, Sea Grant, and other organizations. The Lionfish Summit was held in 2013.

Recently, FWC made regulatory changes by reducing barriers to enhance removal efforts. Fishing license requirements for harvest by specific gears were waived; the bag limit for recreational and commercial fishermen was removed; rebreathers are allowed when harvesting lionfish; a permit was created for tournaments/events allowing spearing in prohibited areas; the importation of all species of *Pterois* was prohibited; and breeding of lionfish or aquaculture of larvae was prohibited.

To encourage public involvement in a long-term control initiative, localized removal efforts and derbies are supported and sponsored; lionfish workshops are developed; Reef Rangers was created, which is similar to the "Adopt-A-Highway" program. Divers pledge to conduct lionfish removals at local reefs of their choice, and are recognized for their efforts.

To educate public awareness of the threat of nonnative species, over $250,000 was appropriated for Lionfish Awareness for FY2014/15. Online and print publications are being developed; workshops and presentations are being held; social media (Facebook, Twitter) is being utilized; the first Saturday after Mother's Day was declared as "Lionfish Removal and Awareness Day"; a human dimension study to evaluate public perception and knowledge of lionfish is being done.

On May 28, the "Report Florida Lionfish" app was unveiled during a live Twitter chat. It was downloaded by over 2,500 people. Data was submitted by over 500 people. An interactive map, the ability to post on social media, additional data fields, and data sharing with USGS have all been implemented since the release of the app.

Lionfish Removal and Awareness Day was held in May 2015 in Pensacola. It was hosted by FWC and their partners, and events were held around the state. It was held in conjunction with a local lionfish derby.

FWC research is being done such as studying recolonization rates and species abundance and diversity after removal; tagging and acoustic tracking/video monitoring; research on mercury content of lionfish. Recreational lobster harvest surveys were done to gather information on lionfish encounters. The number of lobster fishermen who killed/removed lionfish increased from 2010-2013. Fishery independent trawl and camera surveys were conducted in the Gulf of Mexico. Lionfish were identified in deepwater habitats.

The next steps are to continue to implement an integrated approach for the control of lionfish by identifying additional outreach and education opportunities, continuing to coordinate and support control efforts, identifying innovative gear research and developments, and developing and implementing a FWC Lionfish Control and Action Plan.

Overview of NOAA's Habitat Program

Peg Brady gave a PowerPoint presentation entitled "Overview: Aquatic Invasive Species Task Force & National Invasive Species Council". Peg spoke on the National AIS Strategy. She stated that the key to solving AIS problems is to prevent them from becoming established. Many arrive on our coasts via ballast water and/or biofouling from ships. Early detection, assessment, and rapid response strategies may act as a critical second defense. Control and management, restoration of high-value habitats, research, and collaboration and education/outreach are all needed.

The mission of the Aquatic Nuisance Species Task Force (ANSTF) is to develop and implement a program for waters of the U.S that prevents the introduction and dispersal of ANS; monitors and controls them; conducts research on methods to monitor/manage/control/eradicate; coordinates ANS programs and activities of ANSTF members and state agencies; educates and informs the general public and stakeholders. The Members work in conjunction with Regional

Panels and issue-specific committees to coordinate efforts among the agencies, as well as the private sector and North American interests. Membership includes 13 Federal agency representatives and 13 representatives from *ex officio* member organizations. ANSTF-approved Plans receive approximately $1million annually for implementation. As more plans are approved, funds divided between the states to implement the plans are reduced.

The National Invasive Species Council has as its mission to provide national leadership and oversight on both terrestrial and aquatic invasive species, and to ensure that federal programs and activities to prevent and control invasive species are coordinated, effective, and efficient. Membership includes 13 member departments and their constituent agencies and small Council staff. The Invasive Species Advisory Committee is a FACA group consisting of ~30 non-federal experts and stakeholders who provide advice and recommendations on invasive species-related issues.

The U.S. Government Accountability Office (GAO) was directed to review the federal costs of, and spending on, AIS as mandated by Congress in the Water Resources Reform and Development Act of 2014 (WRRDA). A GAO study is under way.

The mission for NOAA Aquatic Invasive Species is to prevent new invasions and eliminate, mitigate, or control existing invasive species in U.S. coastal, Great Lakes, and ocean ecosystems. These are done by engaging in research and restoration activities to understand AIS threats, mitigate impacts, and prevent invasions; work at state, national, and international levels to address AIS problems and to reduce effects on marine ecosystems, commerce, and trade; provide leadership in the coordination of federal AIS programs; promote collaboration among NOAA line offices and programs.

NOAA's restoration center consists of programs and initiatives that restore, provide damage assessment, remediation, support and guidance. The Habitat Blueprint is NOAA's strategy to integrate habitat conservation throughout the agency, focus efforts in priority areas, and leverage internal and external collaborations to achieve measurable benefits within key habitats. While developing Habitat Blueprint Focus Area Implementation Plans, NOAA identified state and federal invasive species experts, and plans to consider invasive species prevention and management. As of January 2015, there are 10 focus areas.

The Hazard Analysis & Critical Control Point (HACCP) is the international standard for reducing or eliminating the spread of unwanted species during natural resource management activities. Teams from NOAA and the USFWS have revised manuals, forms, and teaching materials to better align with natural resource management work, and developed a "Train the Trainer" course. A new website is under development.

The "Regional Preparedness and Response Workshop to Address Biofouling and Aquatic Invasive Species on Japan Tsunami Marine Debris" was held July 31-August 1, 2012 in Portland, Oregon. The goal is to provide effective and consistent response to potential AIS associated with this marine debris.

Peg gave an overview of NOAA Regional highlights. The Gulf and South Atlantic: A Lionfish Web Portal is being developed. The Great Lakes Environmental Research Lab: Work is continuing on the GLANSIS database and factsheets; links between quagga/zebra mussels and harmful algal blooms are being investigated. Hawaii/Pacific Islands: Invasive algae removal on Hawaiian reefs is being done; AIS monitoring and vessel inspection is being done on the Papahānaumokuākea Marine National Monument. The Northeast/Mid-Atlantic coordinates the Chesapeake Bay Invasive Catfish Taskforce. In the West, an AIS management plan has been created for the Sacramento-San Joaquin River Delta; control and removal of invasive algae is being done; impacts of nonnative species on ESA-listed salmon is being investigated.

Recommendations were made at the June 2012 NOAA AIS Workshop. These recommendations are: To adopt a NOAA "Invasive Species-Conscious Policy" to encourage accountability and communication across NOAA and outside stakeholders; raise awareness of NOAA actions that respond to AIS threats and solutions; develop a NOAA invasive species portal to capture and communicate information; improve coordination and collaboration between NOAA and the ANSTF; develop and distribute a NOAA list of taxonomic and AIS experts.

The 2015 NOAA AIS Workshop was held March 31-April 1, 2015 in Santa Cruz, CA. The objectives were to identify ways to use existing NOAA processes, programs, and priorities to advance AIS prevention and control; examine AIS issues and explore mitigation strategies; examine AIS case studies and issues where NOAA is making progress, and those that need greater attention; establish a prioritized list of objectives for the NOAA AIS team, and a framework for moving forward. Draft recommendations were made: To create a list of potential funding sources; draft a model for the NOAA regional AIS team that is focused on coordination and efficiencies; review the draft National Invasive Species Council NEPA guidance and identify information that may be relevant to NOAA projects; identify environmental economists to inquire about opportunities for including AIS in economic studies; identify AIs training needs; promote use and enhancement of AIS risk assessment tools and compile information on models and training opportunities; construct a webinar series at NOAA.

Deep Water Trapping of Invasive Lionfish in the Caribbean

Jackson Gross reported that a group of Costa Rican fishermen called the Association of South Caribbean Artisanal Fishermen have established a program to reduce the population of lionfish using capture techniques and local knowledge of fishermen, maintaining the integrity of coral reef ecosystems. Also, to encourage local lionfish intake both within the population and tourist shops for it to be sold as an exotic food dish, to sensitize the local community (people and businesses) about the threat of lionfish, and that increased intake contributes to controlling their population.

At issue is how trap fishing for lionfish will affect native fisheries when constant lionfish trapping and harvesting is being done, since there would be obvious bycatch. This group functions mostly in waters from Puerto Viejo to the Panama border. Other than commercial fishermen, no one there is targeting lionfish with traps. Spear fishing is the method being used.

Funding was provided to build 600 traps. The traps are fished every 3-7 days. There are approximately 30 families participating. Each family has 25 traps. More traps are being built.

The traps have been successful. The importance is to establish a public demand for lionfish for food, etc. Jackson and Smith-Root are helping to generate needed resources.

Akins asked if landings data was available yet on lionfish or bycatch from the trapping program. Gross stated that they are currently working on that information.

Population Dynamics of Introduced Flathead Catfish

Bonvechio gave a PowerPoint Presentation entitled "Population Dynamics of Introduced Flathead Catfish Occurring in 2 Coastal Plain Blackwater Rivers". In the Pee Dee River system, 51 flathead catfish were first stocked in Lake Marion in 1964. They were introduced in the late 70s-early 80s. On May 11, 2001, an 18-year-old resident caught a 79-pound flathead catfish in the Santee Diversion Canal, which was the new state all-tackle record for South Carolina.

Little flathead removal has been done in the Pee Dee River system. The flathead catfish have a "Do Not Consume Any" mercury advisory. Several batches of redbreast sunfish have been stocked since the flathead introduction. The river is known for its bream – most notably redbreast sunfish. Nearly all native Ictalurids have been decimated.

The first confirmed flathead catfish from the Satilla River was caught in June 1996. There has been active flathead removal since 1996, and increased removal efforts since 2007. Over 59,000 flatheads have been removed from 1996-2014. No native fish stocking has been done yet, but hopefully native fish populations such as the redbreast sunfish and native bullhead catfish will be restored back to historical levels.

Low amp pulsed DC electrofishing was done in the Satilla River and Little Pee Dee River. For age analysis, five fish per cm group less than 700 mm TL, and all fish >700 mm TL were sacrificed. The objectives were to describe the population dynamics of introduced flathead catfish that occur in two coastal plain blackwater rivers, and the relative abundance, size structure, age structure, mortality, and growth.

In the Satilla, the CPE was 75.1 fish/hr (18pps). There were less older fish, and truncated towards smaller fish. The maximum age obtained was 12. It took approximately 4.5 years to reach the preferred size of 710 mm TL, and just over 10 years to reach trophy size of 1020 mm TL.

In the Pee Dee, the CPE for 18pps was 144.5 fish/hr. The CPE for 15pps was 75.9 fish/hr. It was more evenly distributed with older, larger fish. The mean of young fish and stock size fish was significantly more on the Little Pee Dee than the Satilla River. The maximum age obtained was 26. It took just over nine years to reach the preferred size of 710 mm TL, and over 23 years to reach trophy size of 1020 mm TL.

Florida Pet Amnesty Program-Discussion on Possible Expansion

Sommers gave a PowerPoint Presentation entitled "Exotic Pet Amnesty Program". There are over 600 nonnative wildlife species in Florida, and over 150 that probably have reproducing populations. One of the pathways of introduction is through the pet trade. State regulations require that these animals be classified. Class I – Very dangerous; Class II - Not as dangerous.

Class III – Everything else. Prohibited species - Piranhas, sea snakes, and gambian rats. Conditional species – Burmese pythons, six other large constrictors, Nile monitors, red-eared sliders, and lots of fish.

The Exotic Pet Amnesty Program was developed in 2006 as a method for prevention. Its mission is to prevent and reduce unlawful releases of nonnative pets by providing an alternative to "Letting it Loose", and to foster responsible pet ownership through outreach and education at amnesty events. Amnesty is given to people to encourage those possessing unwanted nonnative fish or wildlife to relinquish pets to qualified adopters as an alternative to releasing them into Florida's environment. One-day events are held throughout the state where individuals can surrender exotic animals, with no questions asked. Surrendered animals are adopted the same day by pre-registered qualified adopters. Year-round adoptions through a toll-free number (1-888-Ive-Got1) can also be done. News releases and press meet-and-greets are given before each event. Educating the public on the threats of releasing exotic animals into the wild, and encouraging people to research care requirements for an animal before buying a pet, are done at the events. The program partners with numerous government and private agencies in co-hosting events. Since 2006, 32 events have been held, and 1,629 animals rehomed. Since 2011, 687 animals have been rehomed through the hotline.

There are several challenges for the program, such as the ability to accept exotic fish, keep them alive for the duration of the event, and have adopters willing to accept them; unanticipated species and volume; less-common animals surrendered on occasion; the time required to facilitate adoptions outside of events; and the need for adopters.

In the future, an online adoption database will be developed to help with day-to-day adoptions. Options with aquarists and hobbyists to better address aquatic species will be explored. Out-of-state inquiries will be addressed.

Discussion of the 2015-2019 GSARP Guidance Document

Ballard stated that at the spring meeting, the work groups got together and went through the strategic plan to update the content. From that discussion, **Ballard** developed the Guidance Document. Prior to this meeting, **Ballard** sent out the revised version of the 5-year Strategic Plan. **Riecke** stated that on page 7, Goal 2 should be listed as an action statement. (Develop partnerships and coordination for multi-agency invasive species prevention and management). He also suggested that Goals should be listed in a bullet format. **Knott** pointed out that in the Introduction on page 2, in the third paragraph, GSARP should not be used as an acronym for the Gulf of Mexico Regional Panel on Aquatic Invasive Species. **Kumpf** questioned whether the Panel was in a position to undertake Strategy D of Task 4 on page 11. The Panel agreed, and it will be removed. **Fuller** asked for a motion to approve the Guidance Document, with the amendments just discussed. **A Motion was made to approve the amended Guidance Document. The Motion was seconded, and the Motion passed.**

Update on the USFWS Region 4 AIS Small Grants Program

Ballard gave a PowerPoint presentation entitled "Update on the USFWS Region 4 AIS Small Grants Program". The Panel took over the review of the USFWS Region 4 ANS Small Grants Program. Last fall, the Panel updated USFWS's RFP. USFWS sent it out for proposals. When

the proposals had been submitted, they were sent to **Ballard**, who in turn sent them to the Review Committee for ranking. Forty-one proposals were received, totaling almost $1 million. The estimated budget for the total Program is approximately $200,000. The Committee ranked the proposals, and **Ballard** submitted the final list to USFWS. The top eight will be funded, with the possibility of additional funding being received for more proposals. **Ballard** stated that the details of the selected proposals would not be discussed at this time. **Ballard** will be sending emails to the PIs next week, but could not pinpoint when the funding will become available. He will send out the sub-awards to the selected PIs when they become available.

Akins asked about the review process. **Ballard** explained that the Panel decided to use the Research Work Group as the Review Committee, but the Chairmen of the other Work Groups would also be involved so that there would be input from all of the work groups.

Discussion of the Invasive Species Experts Database

Fuller explained that the database was created many years ago with the idea that if someone found a possible invasive species, they could contact the appropriate state person who is familiar with what species are native to their state, and if the species is not native, the state person has access to a second tier of experts who are taxonomists and experts in distinct fields.

This database is being revived, after being dormant for some time. The state contacts need to be updated, so the Panel members will provide their contact information to **Ballard**, which will then be provided to the Task Force to be entered into the experts database. The next step will be to update contact information of the Tier 2 experts.

"Don't Release Me" Program Overview

Akins and Erin Spencer gave a PowerPoint Presentation entitled "Don't Release Me". There are approximately 150 million exotic fishes comprising 2,000 different species that are imported into the U.S. annually for the aquarium trade. At least 185 different species of exotic fish have currently been caught in U.S. waters, with 75 known to have breeding populations. Over half of the introductions are from people releasing aquarium fish into the wild.

The idea for the "Don't Release Me" campaign comes from a preventative side, but also to work with aquarium vendors and pet owners. The Mission of the "Don't Release Me" Program is to prevent the release of nonnative pets and subsequent ecological and economic damages by promoting responsible pet ownership. The goals are to enable owners to make wise choices in dealing with pets they are no longer able or willing to care for; to educate the general public in the severity of seemingly innocuous pet release behavior; to join together with other like-minded organizations to promote invasive species issues and pet release problems and solutions.

Aquatic pets are primarily the main focus now. Clear plastic bags (20,000) in two sizes were printed with the "Don't Release Me" logo/information and sold to aquarium vendors for pet stores and pet trade events. Several partnerships have sponsored the printing of the bags.

Another goal of the program is an online education/outreach campaign. A user-friendly website has been developed with information and resources available to the public. A Facebook page and Twitter page have also been created.

At the Reef-a-Palooza event in Orlando, Florida, over 5,000 bags were distributed. The response was very positive. Vendors used the bags when they sold aquarium fish. This event is the largest saltwater aquarium event in the nation.

The bags will continue to be distributed, and a pledge program to not release aquarium pets will hopefully be created with pet stores. The social media presence will be strengthened. Partnerships will be consulted with and confirmed. The official launch of the program will be done at MACNA in September. Other types of messaging will be created in the future, such as fliers, stickers, etc.

State Reports/ Members Forum

Alabama

Rider reported that a draft report on efforts to control apple snails in Threemile Creek is now available. In January 2015, a Threemile Creek Invasive Species Working Group was formed to develop a grant proposal for comprehensive control of aquatic and terrestrial invasive nuisance species in the Threemile Creek watershed.

During the 2015 commercial paddlefish season, large bighead carp continued to be caught by commercial paddlefish harvesters in the Alabama River (Mobile River basin).

Additional requests have been received to allow the importation and aquaculture of Barramundi in Alabama. Risk assessments were reviewed on several species, and one indicated a moderate to high probability of invasion – the other was uncertain. Therefore, a recommendation was made to blacklist this species, and develop a policy statement that the species remain blacklisted unless an acceptable risk assessment can be provided.

During April 27-May 1, USFWS biologists from Region 3 will be collecting eDNA samples from the Tennessee River of Alabama in an attempt to identify the invasion front of Silver Carp.

Newton reported that the Asian tiger shrimp has been a species of concern since 2006, when it was first observed in Alabama's inshore waters. Captures of tiger shrimp have incrementally increased, and indications are that they occur within all of Alabama's primary estuary basins. However, the concern for tiger shrimp has decreased within the commercial shrimping community, which has resulted in fewer validated reports. AMRD received fewer validated reports in 2013 and 2014 than in previous years. Despite the reduction in validated reports, communications between AMRD and commercial shrimpers indicate a significant abundance of tiger shrimp within Alabama waters. Commercial shrimpers indicate encounters with tiger shrimp throughout 2013, although they no longer record collection information, preserve the specimen, or report encounters to AMRD in a timely manner. There have been no official reports of tiger shrimp in 2014 and 2015. AMRD continues to focus on documenting occurrence, characterizing the population structure, and processing samples for genetic investigation. To address the lack of reporting, and the need to collect distribution/abundance data, AMRD included tiger shrimp on commercial trip tickets to document landings. Efforts are also being

made by local academic institutions to acquire live specimens, and conduct research regarding behavior and interactions of tiger shrimp with native fauna.

Several other invasive species have been documented in Alabama coastal waters. The Bocourt swimming crab, tessellated blenny, Australian spotted jellyfish, Asian green mussel, Asian tiger shrimp, and red lionfish have all been documented, although non-validated/undocumented reports of additional invasive species likely exist. Prey of Australian spotted jellyfish include early life history stages of many commercially and recreationally-important finfish. The Bocourt swimming crab could compete for resources of the native blue crab. However, the current status of the Australian spotted jellyfish and the Bocourt swimming crab does not indicate that these two invasive species pose an imminent concern. The tessellated blenny and Asian green mussel also do not appear to pose an immediate threat, but their distribution and abundance should be monitored. However, the Asian tiger shrimp and red lionfish continue to be invasive species of heightened concern, and their broadened distribution and increased abundance warrants investigation.

The first confirmed report of lionfish was documented in June 2011 by a spear fisherman who collected one from an oil/gas platform approximately 43 miles south of Dauphin Island. Numerous unconfirmed reports of lionfish to various government agencies indicate lionfish were abundant on the Trysler Grounds in 2011. Up to 30 lionfish were observed by SCUBA divers during single dives in this area during the 2011 dive season. During 2012-2013, unconfirmed reports from SCUBA divers indicate lionfish abundance had increased from previous levels. A recreational diver reported observing up to 60 lionfish during a dive at Trysler during the 2012 diving season. Another diver reported observing up to 100 lionfish during a dive at an artificial pyramid reef in June 2012. After a lionfish rodeo in June and July 2012, 26 lionfish were donated to AMRD by a local dive shop.

In December 2012, AMRD received a grant from Gulf States Marine Fisheries Commission (GSMFC) to monitor reef communities in the Gulf of Mexico, dispatch red lionfish when encountered during SCUBA surveys, increase public awareness of the lionfish invasion, and streamline the general coordination between state agencies. AMRD personnel completed eighteen dive surveys during 2013. T-shirts were distributed to the members of the SCUBA community who were active in submitting reports, samples, and increasing public awareness. Additional funding was secured from GSMFC to continue the monitoring in 2014 and continue increasing public awareness. SCUBA surveys were conducted by AMRD personnel at 18 reef sites in 2014. AMRD is also developing an Adopt-a-Reef Program that emphasizes the reporting and capturing of lionfish. In addition to conducting surveys, AMRD is coordinating with a software-development company to create a web-based application that will allow for the submission and viewing of reports submitted by Adopt-a-Reef participants.

Educating the public is paramount to obtaining quality information on invasive species. The DCNR/MRD continues their efforts to enhance public awareness. Participation in additional lionfish derbies and the promotion of the Adopt-a-Reef Program is expected to result in routine eradication efforts at important reefs. A page within the Alabama Marine Information Calendar dedicated to educating the public about the lionfish and the Adopt-a-Reef Program has been

distributed to a variety of establishments, where it becomes readily available to DCNR/MRD constituents.

Florida

Schmitz reported that invasive non-native plants were found in 96% of Florida's 457 public lakes and rivers that comprise 1.25 million acres of fresh water. Eradicating established invasive aquatic plant populations has proved to be nearly impossible. Routine maintenance is needed to suppress invasive plants at low levels to sustain flood control, navigation, and recreation, while conserving native plant habitat. Floating water hyacinth and water lettuce, two of the world's fastest growing and most invasive plants, covered approximately 125,000 acres of Florida public waters, and are the FWC's highest aquatic plant management priorities. Floating plants were present in 249 public lakes and rivers in 2014, and are under maintenance control in 99% of Florida's public waters. Approximately $5 million was spent on controlling over 43,000 acres of floating plants in Florida public lakes and rivers during FY 2013-2014.

In 2014, hydrilla was reported in 185 public waters. It is considered to be under maintenance control in 98% of Florida's public lakes and rivers. However, subterranean tubers still infest approximately 60,000 acres, and represent the potential for immediate regrowth. During FWC inventories of public lakes and rivers in 2014, 61% of the hydrilla acreage reported occurred in the four lakes of the Kissimmee Chain of Lakes. The FWC spent over $5 million treating 9,000 acres of hydrilla in public waters during FY2013-2014 to conserve the multiple uses of these resources.

Fourteen of the 28 non-native aquatic plants found in Florida public waters are considered to be invasive, and capable of disrupting aquatic ecosystems, and causing economic or environmental harm. In addition to hydrilla, water hyacinth, and water lettuce, nine invasive species were found in 94% of Florida's public waters. During FY2013-2014, over $3 million was spent controlling approximately 8,000 acres of aquatic plants other than hydrilla and floating plants.

Sommers reported that the FWC is continuing the statewide outreach campaign in 2015, with the goals of raising awareness and influencing behaviors toward lionfish. The FWC approved a resolution declaring the first Saturday after Mother's Day each year to be “Lionfish Removal and Awareness Day”. The agency encourages divers and saltwater anglers to remove as many lionfish as they can on this day. The inaugural year will be celebrated by events held on this day throughout the state, and a festival and lionfish tournament will be held May 16-17, 2015 in Pensacola, Florida to serve as the main FWC event. This event will be co-sponsored by Guy Harvey's Ocean Foundation, and will include lionfish tastings and filleting demonstrations.

FWC has developed the Reef Rangers Lionfish Control Program. This program will be advertised throughout the upcoming year, and will be an incorporated requirement associated with funding provided by FWC for lionfish tournaments. A Reef Rangers website has been developed that will incorporate information from the lionfish reporting application “Report Florida Lionfish”, which was developed by FWC's Lionfish Control Team for use on smart devices. For more information see: www.ReefRangers.com.

The FL FWCC revised rule language regarding lionfish aquaculture in an effort to address potential future introductions of lionfish. Breeding of lionfish and aquaculture of larvae are no longer allowed. To further address potential future risks of other genera of lionfish, the FWC will be working with the University of Florida to calibrate a marine FISK tool to ultimately test other genera to determine if they are a risk in Florida waters. Work on this project will hopefully begin within the next year.

The University of Florida was contracted to conduct pre- and post-outreach campaign surveys to help FWC develop and evaluate the 2015 lionfish outreach campaign. The pre-campaign survey has been completed, and the results will be summarized and shared with partners to inform other outreach campaigns. Post-campaign data will be collected in fall 2015, and will be presented within a Final Report to FWC describing effects of the outreach campaign on public awareness, attitudes, and behaviors.

Asian swamp eels were reported from locations outside their known range. A small number of juvenile swamp eels were discovered inside Sarasota city limits, after a ditch flooded, then receded, stranding the eels. A second population was found in Payne Creek (Hardee County), a tributary of the upper Peace River. It is unknown if these populations represent separate introductions, or are the result of range expansion after high water events. Genetic analysis will be done on swamp eels from the Hardee County population to determine if they are one of the three species that are known to occur in Florida, or a new species.

The nonnative swimbladder nematode *Anguillicoides crassus* was discovered in American eels in the St. Johns River in 2004. A nematode infection affects the condition and function of the eel's swim bladder. An infected eel can be more prone to disease, have a reduced growth rate, experience swim bladder collapse, and potentially die. American eel populations in Florida are considered to be in “depleted status”. This nematode is a cause for concern. Based on preliminary findings, *Anguillicoides crassus* has only been found in the St. Johns River population. Additional funding is being sought to expand upon this work.

In August 2014, 15 members of everglades Cooperative Invasive Species Management Area conducted a first-ever removal effort of a nonnative fish identified as red bay snook. Bay snook are a large, piscivorous cichlid native to the Atlantic slope of Central America. Bay snook were found in a property entrance “koi” pond, and throughout the interconnected streams, sinkholes, and small ponds on the property. The pond was drained and all unwanted nonnative fish (including bay snook) were removed. No specimens of bay snook were collected in extensive electrofishing in the fresh and brackish water sections of the main canal.

FWC partnered with U.S. Fish and Wildlife Service (USFWS), U.S. Geological Service (USGS) and National Park Service to host the First Annual Nonnative Fish Catch, Click and Submit Contest. The contest was held February 21-March 1, 2015 as part of National Invasive Species Awareness Week. The objectives of the contest were to use anglers to document the presence of nonnative fish species across the state, using the Early Detection and Distribution Mapping System (EDDMapS) reporting system, increase public awareness on nonnative fish issues, and to encourage anglers to consume nonnative fish. Participation was low, but outreach through Facebook was very good. The contest news release was delivered to over 200,000 subscribers,

with 23,000 of the messages opened. No new nonnative fish were reported, but a redtail catfish and a sailfin catfish were caught.

A dedicated group of bass anglers have hosted bullseye snakehead specific tournaments called "Snakehead Roundups" since 2010. FWC has not officially sponsored these tournaments, but a biologist has acted as the official weighmaster, and provides information and outreach to the anglers. To date, there have been 23 tournaments, and 728 anglers have caught 3,030 bullseye snakehead. One of the concerns of the anglers is the potential impact on largemouth bass populations within the range of bullseye snakehead. The number of bass caught by anglers during these tournaments is also recorded. The catch-rates of largemouth bass in these tournaments is similar to creel survey results of area canals, despite them being held during the summer months when bass fishing is generally less productive. These data support standardized electrofishing results that strongly suggest largemouth bass are not being negatively impacted by bullseye snakehead.

MyRightFish is a digital interactive buyer's guide funded by the USFWS and is designed to help aquarium hobbyists make wise decisions when purchasing marine fish and invertebrates, to decrease chances of illegal releases of unwanted pets. The MyRightFish webpage was launched in January 2015 and contains information of compatible fish species, tank size selection, technical tips, and fun facts. MyRightFish is part of a continuing effort to educate the public on the potentially serious ecological consequences of releasing non-native pets.

In April 2015, FWC is partnering with the Recreational Boating and Fishing Association and the Fish and Wildlife Foundation of Florida in hosting the first Vamos a Pescar Miami Family Fish Festival. The primary objectives of this one-day event are to provide Miami families, many of whom are Hispanic, opportunities to participate in fishing and boating activities, and to promote conservation education. Hopefully, adults and children will take an interest in these activities and sign up for outdoor sports-related camps to continue their education.

Nutria have been reported from 22 central and north Florida counties. Nutria were introduced into Florida in the 1950s for fur farming. They subsequently escaped, and there are reproducing populations in several parts of the state.

In March 2015, an unconfirmed report of a capybara in southwest Everglades National Park in southern Collier County was received through EDDMapS. This sighting is over 250 miles south of the known range of a small population of capybara that is located in the Santa Fe River drainage area in north central Florida.

Akins reported that there have been recent reports of lionfish in Sarasota Bay and Charlotte Harbor. These two bodies of water are on the west coast of Florida.

Hook-and-line catches of lionfish are increasing, including from the shoreline along a jetty on the Gulf Coast.

There will be lionfish derbies in Florida throughout the summer. Also, as part of the FWS funding through GSARP, a lionfish workshop tour has been created, with 14 coastal cities

around the southeast that will host lionfish collection and handling workshops for the public. Fliers will be distributed, and more information is available on the FWS website for these events.

The Gulf and Caribbean Fisheries Institute now has a lionfish web portal active, which is funded through the NOAA program. Current events and lionfish research papers are available to the public.

For the 7th year, a special lionfish session at GCFI will be held. This year, it will be held in Panama. There will also be a series on marine ecology progress.

IGFA now has an all-tackle class for world-record lionfish catch. **Akins** requested that if the members are keeping track of the data, it would be helpful to get the total length in metric, grams, and millimeters. A lot of the data being collected, as far as research projects, are all metric.

A report was received of a chocolate surgeon fish sighting at the Blue Heron Bridge in Palm Beach. The sighting was confirmed via diver photograph. The fish was captured live, and was shipped to the Toronto Aquarium.

Walters reported that she has been working for 15 years on oyster reefs on the Indian River Lagoon. She has documented three invasive species on the oyster reef, but none have been seen for the last three years. However, the charru mussel and green mussel have reappeared this year. It has been documented that both of these mussels have a negative impact on intertidal oysters.

Georgia

Bonvechio reported that a shoal bass was caught and released live on the Altamaha River by DNR personnel conducting routine electrofishing samples. The shoal bass is a very popular riverine sportfish in Georgia and Florida, and is native to the Flint and Appalachicola river basins. It most likely expanded from a well-established non-native Ocmulgee River population upstream.

Four small patches of water hyacinth were removed from the canal leading to Stephen C. Foster State Park to Billy's Lake, in the Okefenokee Swamp in December 2014.

After draining a pond in January 2015 at the Georgia DNR Bowens Mill Fish Hatchery, a large 6” crayfish and two smaller ones were obtained. It was believed to be a White River crayfish. The crayfish was most likely brought in from Arkansas last spring on a truck with a load of fathead minnows.

Giant salvinia was discovered in a pond in Evans County in January 2015. Contamination of the 3-acre pond originated from an upstream pond via a drainage ditch for its overflow water. At last inspection, the upstream pond had 100% coverage of giant salvinia. The downstream pond had approximately 50-60% coverage. Control of the salvinia will be done with herbicides, and complete control should be achieved within 30-90 days. The infested areas will be monitored and retreated as necessary throughout the season. Next spring, onsite visits will be done to ensure that the salvinia has not returned.

The Georgia DNR is instituting a protocol to collect and test grass carp ploidy, in a proactive effort to monitor grass carp ploidy, and to minimize the potential establishment of wild grass carp populations in state-managed waters. The protocol was put into action by October 2014. From November 2014 until April 2015, ten wild grass carp were captured and submitted for triploid testing in Warm Springs, GA. Eight of the ten fish tested positive as triploids, and test results of two other fish are expected soon.

In an effort to reverse the impacts of flathead catfish on native fish populations, the GA Wildlife Resources Division (WRD) Fisheries Management Section (FM) began removing flathead catfish from the Satilla River as time permitted. Sampling and creel surveys revealed declines in abundances of redbreast sunfish and bullhead catfishes, which coincided with significant increases in the abundance of flathead catfish. Despite these efforts, the number and size of flathead catfish continue to increase. In 2006, FM instituted the Flathead Catfish Removal Project Georgia, using legislatively-appropriated funding. The project funds two positions which are focused on long-term population control through direct removal of flathead catfish. Over 16,000 flathead catfish were removed during the 2014 sampling season. Since 2007, over 47,000 flathead catfish have been removed. Numbers from this year's sampling effort show an increase in several population indices. The size structure, average length, and biomass per effort of the population have declined. Catch per effort has fluctuated between 18 and 40 fish per hour since 2004, but steadily increased to 75.1 fish per hour in 2014. It appears that successive high water periods from the fall of 2012 until spring 2014 has helped the flathead population rebound.

Anglers in the Satilla River reported impressive stringers of large redbreast sunfish, including 10" "Roosters", which were caught in the heart of the flathead catfish removal area in 2014. The river was in the floodplain most of the fall and winter, so redbreast sunfish have had ample foraging opportunities, which resulted in increased survival and accelerated growth rates.

Louisiana

Bourgeois did not attend, but provided a written report. LDWF treated over 57,000 acres of nuisance aquatic weeds in 2014. Areas previously controlled by the U.S. Army Corps of Engineers (USACE) remained a priority in 2014, especially large ares of the Terrebonne marsh and Henderson Lake. Over 11,000 acres in these areas were treated. The majority of this effort was directed toward water hyacinth control. The USACE Removal of Aquatic Growth Program has resumed on a limited basis, and a water hyacinth infestation in Bayou Petit Caillou was treated in 2014.

Since 2006, giant salvinia has been a major focus of aquatic plant control efforts in Louisiana. Regular herbicide applications and drawdowns are currently being used to keep salvinia infestations at manageable levels. During the recent winter, much of north Louisiana experienced sub-freezing temperatures and ice for extended periods of time. As of March 2015, giant salvinia coverage in waterbodies in this area was greatly reduced from estimates taken in fall 2014. However, salvinia coverage in most waterbodies is expected to return to near normal levels by mid-July.

Throughout 2014, giant salvinia weevil stocking and monitoring efforts continued. Weevils were released throughout the state, including onto relatively new infestations in Henderson Lake and

the St. Bernard marsh. The weevils have continued to increase their level of control on giant salvinia infestations in south Louisiana. In 2015, giant salvinia weevils from the nursery ponds in Houma have been distributed throughout the state, and stocking will continue throughout 2015.

The LDWF and LSU Agricultural Center have entered into an agreement to research and potentially develop a population of cold-tolerant weevils for use in north Louisiana. As the population builds, it will continually be exposed to low temperatures in growth chambers to select those weevils that can survive a cooler winter climate. After many generations and several cold exposures, it is expected that a cold-tolerant weevil population can be accessed that can be mass-produced for stocking across north Louisiana. As of April 2015, necessary equipment has been purchased, and experiments to determine the supercooling points of the weevil have begun.

In Toledo Bend Reservoir, yellow floating heart has become established. As of April 2015, approximately 50 acres are covered. In spring 2015, herbicide trials will be conducted to evaluate the efficacy of existing aquatic herbicides on yellow floating heart.

Apple snail interest has increased, which has resulted in an apple snail conference. Attending the conference were researchers who are studying some aspects of apple snails. Also in attendance were state, parish, and federal agencies. The group will meet again in early 2015.

No reports of tiger shrimp were received from November 2013 to August 2014. From August to November, approximately 70 tiger shrimp were reported.

Several reports of lionfish have been received from the commercial diving industry. One of the companies has made contacting LDWF and recording lionfish as a company policy. Periodic spreadsheets of sightings are sent to LDWF.

A LDWF 2013 ANS grant to survey selected public urban ponds in Baton Rouge and Lafayette for the presence of ANS is complete, with the exception of some analysis. Plants, invertebrates, and fish were sampled. The only exotic species found so far in the samples were plants. The 2014 ANS grant will be used to look at the trophic effects of Asian carp on some Louisiana oxbows.

LDWF received a USFWS grant to extend and expand their 2012 ANS grant for drift net sampling for Asian carp. The first summer of sampling ichthyoplankton is finished, and the samples are currently being analyzed to determine the presence, relative abundance, and distribution of Asian carp. The 2013-2014 grant will be used to expand sample site coverage and to help further understand these species.

ANS information and education has been distributed at festivals, fishing tournaments, boat shows, expos, and outreach events. LDWF is also posting brochures, links, and articles about ANS species and concern on their Facebook page.

The revision of the state wildlife action plan is under way, and the Introduced and Exotic Species section will be expanded in this version. Hopefully, this will result in an increase in state wildlife

grants to provide needed research on ANS species. One ANS-related grant has been submitted for funding.

Mississippi

Burris reported that a Certified Official Mississippi State Record lionfish (*Pterois volitans*) weighing 1 lb. 11.20 oz. (pending IGFA World Record) was caught by an angler. It was caught approximately 70 miles south of Biloxi in 205 feet of water. The fish was 15.2" total length, with an approximate 13" girth.

Herbicide spray activities were conducted on small infestations of alligator weed.

In Robinson Bayou in the Pascagoula River, 45 giant apple snail egg masses were found and destroyed.

Thirty-nine field surveys, and one aerial survey were conducted for early detection of AIS.

Common salvinia weevils from the Pascagoula River were collected and provided to MDWF for use on an infestation near Hattiesburg, MS.

Giant apple snail awareness posters were created and distributed.

At an invasive species seminar in Gautier, MS, an "Invasive Species of South Mississippi" presentation was given.

Riecke reported that giant salvinia was found in two lakes near Hattiesburg, MS in September 2014, and also in a pond near Picayune, MS in November 2014. Water hyacinth was found in Belzoni Cutoff in October 2014. Nile tilapia young-of-the-year was collected in the Big Sunflower River in October 2014. In January 2015, armored catfish (species identification pending) washed up on the shoreline of St. Louis Bay, MS. In March 2015, a black carp was brought to the Moons River Foods Plant. Plant officials will save all future black carp they receive for MDWF.

Reprinting and distribution of the "Stop Aquatic Hitchhikers" cards continues. The cards are included with all boat registrations or renewals that are mailed out.

The "Stop Hitchhikers" logo and bullet list continues to be printed in the annual *Mississippi Outdoor Digest* and *Guide to Mississippi Saltwater Fishing*.

Links to the MS River Basin Panel on Aquatic Nuisance Species and the Gulf and South Atlantic Regional Panel on Aquatic Invasive Species, "Stop Aquatic Hitchhikers", and Habitattitude websites are on the department website.

Formation of the Mississippi Aquatic Invasive Species Council will be done to guide implementation of the activities specified in the *Mississippi State Management Plan for Aquatic Invasive Species*.

Freshwater fishing bait regulations will be composed to specify what bait can be legally sold, possessed, transported, and used in Mississippi.

A list of approved, restricted, and prohibited species under the authority specified in MS Code 49-7-80, and as specified in the *Mississippi State Management Plan for Aquatic Invasive Species* Amend list of approved, restricted, and prohibited species as specified in the public notice that regulates aquaculture activities in Mississippi will be adopted.

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

Pursley did not attend, but provided a written report. Common salivinia weevils released in the previous reporting period were provided to MDWFP for use on an infestation near Hattiesburg, MS.

Three reports of Asian tiger shrimp were received during this period, and reported to the NAS database.

Two aerial surveys and 39 field surveys for early detection of AIS were conducted. Herbicide spray activities were conducted on small infestations of alligator weed.

Several citizen reports of AIS were received and investigated. One report proved to be accurate for alligator weed.

Invasive species educational materials were displayed and distributed at the "Celebrate the Gulf Nature Festival" in Pass Christian, MS. Items from the GSARP "Traveling Trunk" of invasive species were exhibited as part of these educational outreach activities.

At the October 2014 Science Cafe at the Gulf Coast Research Laboratory, a presentation entitled "Invasive Species of South Mississippi" was given.

North Carolina

Staszak reported that 21 tiger shrimp were reported from July-September, 2014, but only 12 were confirmed. One red striped variant was reported from a cast net. Landings data were less than 10 lbs.

Chinese mystery snails continue to be found in new locations. The WRC Aquatic Wildlife Diversity staff continues to monitor for them. They have been identified in several reservoirs and tailraces within river basins.

White perch, blueback herring, and alewife have been introduced into inland reservoirs, resulting in a negative impact on existing fisheries. In Lake James and Hiwassee Reservoir, walleye recruitment failure has been linked to these introductions. To maintain those fisheries, WRC is currently stocking fingerling walleye annually. In conjunction with the introductions, white bass has also shown similar declines.

Gill lice were observed on brook trout within several headwater streams of Cullasaja River in Macon County in September 2014. This discovery marked the first time that gill lice have been documented on brook trout within NC waters. Samples of the copepod were provided to the USFWS's Wildlife Service's Warm Springs Health Center for identification. It was identified as *Salmincola edwardsii*, an ectoparasite that only affects salmonids of the genus *Salvelinus*. Specimens have been provided by biologists to geneticists with USGS to determine if the strain of *S. edwardsii* observed on NC brook trout is the same that has been observed in northern states and Canada. The NC Wildlife Resources Commission will continue to sample brook trout populations across the mountains of NC to document the distribution and status of gill lice. Anglers have been asked to report observations of gill lice during recreational outings.

Reports for lionfish go directly to NOAA Fisheries Laboratory in Beaufort, NC.

For the first time, state funds have been allocated to invasive aquatic plant management on a recurring basis in NC. Up to $500K can be used from the Shallow Draft Navigation Channel Dredging and Lake Maintenance Fund for aquatic weed control. Money comes from 1/6 of 1% of the motor fuel tax, plus a portion of the money collected from boat titles and registrations.

Lake Waccamaw Hydrilla Project: An aquatic plant survey of the entire lake was done in 2012. Hydrilla was found scattered throughout a 950-acre portion of the 9,000 acre lake. Herbicide treatments were done in 2013 and 2014. Treatments will also be done in 2015.

Lake Gaston Hydrilla Project: The cost of hydrilla management at Lake Gaston over the last five years has averaged $850,730 per year. Annual vegetation surveys in 2013 and 2014 have shown a significant reduction in hydrilla across the lake. Approximately 3,500 acres of the 20,000 acre lake have been infested with hydrilla since 2000. Management has consisted of large-scale fluridone treatments and grass carp stockings.

South Carolina

Kingsley-Smith reported that collections of island apple snail shells were reported from a location in Mount Pleasant, SC in 2010 and 2011. It was believed that this population had been eradicated following chemical treatment and cold winters. However, a site visit in August 2014 revealed the presence of empty shells and egg masses deposited during the previous season. In April 2015, a site visit revealed no apple snails or egg clutches.

Researchers revisited a site in March 2015 in West Ashley, SC where apple snails had previously been observed. Remnants of egg clutches, one dead snail, and one live snail were observed. The live snail was sacrificed for future parasite studies. In April 2015, researchers revisited the site. Sixty-five live apple snails were collected from the pond.

Storm-water ponds will be surveyed in 2015, using a stratified randomized sampling design to determine the abundance and distribution of apple snails throughout the state. Their abundance and distribution will be compared to those of native snail species. Various eradication methods will be tested in an effort to assist in the control of apple snail populations. Examinations will be done on the snails for the presence of the parasite *Angiostrongylus cantonesis*, which can cause a form of meningitis in humans.

FY2014 funding was secured under the State and Interstate ANS Management Plan Program to improve understanding of the recent invasion of the South Atlantic Bight and Gulf of Mexico by the Asian tiger shrimp. The funding has enabled hiring of a temporary grant Wildlife Biologist I position at the Institute, who is working on both Asian tiger shrimp and island apple snail.

Preservation and archiving of pleopod tissue samples for genetic analyses that began in 2008 continues as specimens become available. The samples are being held in a tissue repository in Beaufort, NC, which is maintained by the NOAA National Centers for Coastal Ocean Science Laboratory. Two such invaded regions of particular interest are Columbia and Belize. In addition, a publication currently in review for *Biological Invasions Records* reports the first collection of tiger shrimp from the Caribbean Sea of Costa Rica.

In 2014, reports of tiger shrimp collected in U.S. waters was considerably lower compared to previous years. This is likely due to reporting apathy, rather than a reflection of a change in abundance. The majority of 2014 reports were from recreational fishermen, rather than commercial sources. There was a noteworthy collection of the smallest tiger shrimp ever collected in U.S. waters since the reappearance of tiger shrimp in 2006. It was 61mm total length, and weighed 1.46g. Previously, the smallest tiger shrimp reported was 102mm. This new finding supports the premise that tiger shrimp is now established and reproducing in U.S. waters.

The invasive parasitic nematode *Anguillicoloides crassus* that infects the swimbladder of the American eel, *Anguilla rostrata*, was first detected in wild American eels in 1995 in eels collected from Winyah Bay, South Carolina. The parasite is believed to originate from Asia, where it infects the Japanese eel, *Anguilla japonica*. However, it has been unintentionally spread throughout the world, and now infects numerous other anguillid eel host species. The parasite has spread to other areas along the North American coastline. Infections can cause damage to the swim bladder which impares the ability of eels to migrate to their oceanic spawning grounds, and can also induce mortality. This is of concern because the American eel has declined in recent decades. Research conducted by the SCDNR Estuarine Finfish Research Section found that at least 45% of American eels in the estuaries of South Carolina are infected by *A. crassus*. The U.S. Stock of *A. rostrata* is considered to be depleted, and a proposal to have the species listed under the Endangered Species Act is currently under review.

Through a 2014-2015 USFWS grant, researchers at the SCDNR Marine Resources Research Institute are conducting species identification tests, targeting the mitochondrial cytochrome oxidase (COI) gene. Tests were also done with *A. crassus* L_2 larval stages. Over the last year, the team has successfully developed and optimized a species-specific qPCR assay for *A. crassus*, with the ability to differentiate this invasive species from closely-related parasitic nematode species found in local ecosystems. The application of the molecular tool to a field setting is the next priority. It will be useful for rapidly identifying infected versus non-infected habitats for conservation purposes, and for screening harvested eels before transport. The researchers recently submitted a follow-up proposal for consideration by GSARP for USFWS funding in order to continue this work.

Knott reported on the results of a rapid assessment of the Indian Ocean that he made off the coast of Zanzibar. **Knott** saw a lionfish while snorkeling, and a giant African land snail in the butterfly center.

Texas

Chilton did not attend, but provided a written report. There were no new confirmed zebra mussel lakes. There are seven confirmed water bodies.

Legislature is considering a $3.6 – 5.0 million increase in aquatic invasive species funding.

TPWD staff are working on significant revisions to the aquatic invasive species regulations and permitting, including a new permit for use of biological controls.

In an effort to hold down giant salvinia population, and to take advantage of the winter die back, herbicide treatments began several weeks ago.

At several locations in the state, crested floating heart has now been found.

Hartman reported that legislature is no longer considering a $3.6-5.0 million increase in aquatic invasive species funding. The amount has reportedly been dropped significantly.

In Lake Austin, an extreme number of triploid grass carp have been used to control hydrilla.

USFWS – Region 2

Britton reported that USFWS Region 2 has a request out for proposals for quagga zebra mussel actions in the West, targeting prevention actions on trailered boats. It closes June 1. That RFP is available at grants.gov.

John Galvez reported that there is a job opening for a Fish Biologist for the Regional Aquatic Nuisance Species Coordinator, which is Jeff Herrod's former position. The position will be based in Atlanta, GA.

Discussion of ANSTF Recommendations

Ballard stated that he has been working with the regional office on attempting to provide information to them for proposals they are putting together under RESTORE. The regional office wants to address invasive species in some of their proposals. **Ballard** sent an email to the five Gulf state coordinators requesting information on their state plans on three key criteria for the proposal. Proposals are being put together by people for invasive species in the Gulf; however, a large number of these people, along with some of the reviewers of the proposals, are aware of the structure in place with the Task Force and the Regional Panel that could provide their expertise and input in preparing proposals. He suggested that a recommendation be made to the ANSTF that they send a letter that provides information on the structure of the ANSTF to the Gulf Coast Ecosystem Restoration Council, which is the body that oversees the restoration funding. **Ballard** contacted the ANSTF to inquire if this would be acceptable, and he was informed that legislation allows that they could provide the information.

Kumpf made a Motion to have the ANSTF send a letter to the Gulf Coast Ecosystem Council that provides information on the structure of the ANSTF. Walters seconded, and the Motion passed.

Fuller reported that the recommendation made to the ANSTF to have lionfish designated as Lionfish on import forms, instead of being categorized as marine/tropical fish, has been approved.

The recommendation made to the ANSTF to provide funding to **Fuller**'s aquatic plant program has been approved. **Fuller** has hired one employee, and will hire an additional employee soon.

Riecke made a Motion to recommend that ANSTF engage the National Boating Association and other related industries to explore ways that those industries can help fund ANS prevention/control/management/research activities on a National level. Knott seconded, and the Motion passed.

Brian Bohnsack, Council Coordinator with the USFWS Sport Fishing and Boating Partnership Council, offered to speak about the recommendation idea with Tom Dammrich, the head of the National Marine Manufacturers Association, which is the organization that the boating industries report up to, including ABYC. He is also a member and former Chairman of the USFWS Sport Fishing and Boating Partnership Council. The Panel members accepted Brian's offer.

Other Business

The Panel would like to learn more about CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats), which could potentially modify the genomes of invasive or harmful species such as disease-carrying mosquitos. These modifications could possibly spread throughout an ecosystem and selectively eliminate "pests". The Research Committee will create a list of potential expert speakers on the subject for the GSARP fall meeting, and send it to James for review. Selected speakers will be invited to the meeting.

Next Meeting Time and Place

The next meeting location will be Charleston, SC.

The next meeting will take place during the week of October 5-7, 2015.

Public Comment

Fuller 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.