GULF & SOUTH ATLANTIC REGIONAL PANEL
ON AQUATIC INVASIVE SPECIES
MINUTES
Thursday, October 11, 2012
New Orleans, LA

On Thursday, October 11, 2012, Chairman **Leslie Hartman** 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
James Ballard, GSMFC, Ocean Springs, MS
Tim Bonvechio, GA DNR, Waycross, GA
David Britton, USFWS, Arlington, TX
Rick Burris, MDMR, Biloxi, MS
Earl Chilton, TPWD, Austin, TX
Pam Fuller, USGS, Gainesville, FL
Chris Furqueron, National Park Service, Atlanta, GA
Lisa Gonzalez, HARC, The Woodlands, TX
Jeffrey Herod, USFWS, Atlanta, GA
Dewayne Hollin, TX Sea Grant, College Station, TX
Leslie Hartman, TPWD, Palacios, TX
Robert Bourgeois, LA Dept. of Wildlife & Fisheries, Baton Rouge, LA
Chuck Jacoby, Indian River Lagoon National Estuary Program, Palatka, FL
Peter Kingsley-Smith, SCDNR, Charleston, SC
David Knott, At-Large Member, Charleston, SC
Susan McCarthy, FDA, Dauphin Island, AL
Robert McMahon, UT Arlington, Arlington, TX
Roberto Mendoza, University of Nuevo Leon, Nuevo Leon, Mexico
Steve Rider, AL DCNR, Montgomery, AL
Dennis Riecke, MS DWFP, Jackson, MS
Don Schmitz, FWC, Tallahassee, FL
Kristen Sommers, FL FWC, Tallahassee, FL
John Teem, FL DOA, Tallahassee, FL
Linda Walters, UCF, Orlando, FL

Staff
Alyce Catchot, GSMFC, Ocean Springs, MS

Others
Julie Anderson, LSU, Baton Rouge, LA
Matt Cannister, USGS, Gainesville, FL
Kevin Leftwich, USFS, Asheville, NC
Tom Lorenz, UNO, New Orleans, LA
Susan Mangin, USFWS, Washington, D.C
Matt Neilson, USGS, Gainesville, FL

Mike Pursley, MS DMR, Biloxi, MS
Manalle Salamah, UNO, New Orleans, LA

Public Comment

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

Adoption of Agenda

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

Approval of Minutes

The minutes of the meeting of the April 2-3, 2012 meeting in Mobile, AL were presented for approval.

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

Year-long Absence of an Invasive Species in LA: Current Status of Introduced Tilapia

T. Lorenz gave a PowerPoint Presentation entitled "Year-long Absence of an Invasive Species in LA: Current Status of Introduced Tilapia". A sampling project of Nile tilapia and Blue tilapia was done in Port Sulphur, LA. In 2009, a Rotenone treatment was done on canals, drain pipes, and other water bodies/waterways. Over a million tilapia were recorded in borrow pits and canals. There were roughly 200,000 Rio Grande cichlids. Only one Lepomis was recorded. On the marsh side of pumps, there were mostly native fish, and several tilapia.

A restocking effort was done in the Port Sulphur canal from July through August, 2009 of native fish that were mostly collected from various areas in the Atchafalaya Basin and the Bonnet Carre spillway. Bowfin, alligator gar, catfishes, spotted gar, sunfishes, and largemouth bass were all stocked into the canal.

Two cold winters with freezing temperatures, in January 2010 and January/February 2011, aided in the control of tilapia. Temperatures between 6-8 degrees Celsius are lethal to tropical fish.

Stocked native fishes did well after the cold winters. After the Rotenone treatment, native small fishes repopulated in the treated zone. Habitats outside of the Rotenone zone also had a variety of fish. No tilapia were observed for approximately 10 months. In October of 2010, tilapia were observed and/or caught in temperatures below 10 degrees C. In Fall/Winter of 2010, Rio Grande cichlids were caught. In 2011, no tilapia were caught since April. There was no funding from January 2011 through October 2011. In 2012, no tilapia were caught. Seasonal sampling was done from October 2011 through August 2012. Rio Grande cichlids were caught consistently in small numbers. After Hurricane Isaac, the numbers have suddenly risen.

There are reasons for optimism in the control of tilapia in Louisiana. There have been no sightings of tilapia for 18 months. In the last 12 months, sampling has been the most intense, efficient, and in the most locations. Some cichlid avoidance of electrofishing has been observed,

but Rio Grande cichlids are being shocked. Many managed and natural factors have worked against tilapia. Rotenone treatments have reduced tilapia numbers to a level that was either difficult to recover from, or susceptible to biotic/abiotic factors. Aggressive and predatory stock fish were purposely chosen. They increased in numbers, and had multiple reproductive events for several species. Cold winters occurred immediately after eradication and Rio Grande cichlid numbers decreased dramatically. In lab studies, it was found that all F1 offspring have gill deformities, either from Rotenone and/or initial stock.

There was one significant change between tilapia before and after eradication efforts. The morphology change (body-height/body-length) of pre-rotenone tilapia was always less than 45%. In 2010 tilapia, it was always greater than 45%. Stocking of predatory fish has been shown to affect body depth, and swimming performance in prey fish. It can also be affected by conditions. The 2009 tilapia were overcrowded and reproducing heavily.

Monitoring is ongoing until funding ends in August 2013. Sites within and outside of the rotenoned areas will continue to be monitored. If populations return, management plans should be considered. More stocking of predatory fish should be considered. Rotenone treatments should be done if necessary.

Riecke asked how it is believed that the tilapia were introduced. Lorenz stated it was most likely from people stocking ponds with them to feed bass.

Previous and Ongoing Behavioral Studies of Invasive Cichlids in Louisiana

Al-Salamah gave a PowerPoint Presentation entitled "Previous and Ongoing Behavioral Studies of Invasive Cichlids in Louisiana". Rio Grande cichlids were introduced about 20-30 years ago in New Orleans. Since 1997, they have spread and increased in numbers. There are dense populations in canal systems, and they are commonly found to be the most abundant a fish species. They are increasingly found beyond canal systems. Studies done on the effects of salinity on the growth of cichlids have shown that it has little effect on their growth up to at least 16ppt. Other invasive cichlids have been shown to tolerate salinities above 35ppt, and Rio Grande cichlids might be able to withstand higher salinities. Ongoing studies include a pit tag array to determine if temperature variations during winter can affect cichlid survival outside of the city. Artificial canals and culverts were created, and the movements of the cichlids in and out of the culverts were measured. This can indicate ideal places to manage populations during colder months. Another ongoing study is the cichlid's diet and its impact on smaller species. Preliminary data shows that diet varies dramatically between sites. There is a potential overlap with diets of native species and consumption of native species. Ongoing studies are being done to determine what other impacts cichlids have on smaller, native Poeciliids. The Poeciliid's weight and fecundity were measured before and after the introduction to cichlids. These studies can determine whether or not cichlids have any effect on stress levels of the Poeciliids, which may be causing the disappearance of the Poeciliids. Future cichlid studies will involve genetics, salinity, and diets.

Louisiana's Aquatic Plant Control Program

Bourgeois gave a PowerPoint Presentation entitled "Louisiana's Aquatic Plant Control Program". **Bourgeois** spoke on Water Hyacinth, Common Salvinia, Giant Salvinia, Alligator

Weed, American Lotus, and Hydrilla. He provided data of total acres of infestation of Water Hyacinth, Hydrilla, Common Salvinia, and Giant Salvinia. He also provided fiscal year data of aquatic plant control budgets and the acreage of aquatic plants treated by LDWF, including the herbicide costs.

The multiple aquatic plant control approaches undertaken were chemical, mechanical, and biological. Chemical control consisted of herbicide applications. Mechanical control approaches consisted of drawdowns and containment booms. Biological control approaches focused on species-specific control. Triploid grass carp, common and giant salvinia weevils, alligator weed flea beetles, and water hyacinth planthoppers were all used as biological control.

Giant salvinia has been especially invasive and is present in numerous lakes, rivers, bayous, and other bodies of water in Louisiana. It can double biomass every 5-7 days, and its surface hairs can make chemical control difficult. The main control methods used on Giant salvinia are foliar applications, whole waterbody treatment, water fluctuation, and giant salvinia weevils. Possible long-term control would involve more weevils and a greater stocking effort. Another salvinia control effort is the removal of beaver dams, which removes backwater ponding areas that harbor giant salvinia.

Chilton asked what other plants are being treated. **Bourgeois** stated that they have also treated Cuban Sedge and Water Lettuce.

Update – Reproductive Sterility as a Tool for Prevention and Control of AIS

Teem gave a PowerPoint Presentation entitled "Reproductive Sterility as a Tool for Prevention and Control of Invasive Aquatics". **Teem** noted that the USDA currently allows only *P. brigesii* to be sold and shipped in the U.S. *Pomacea brigesii* will leave aquatic plants intact and are produced in Florida. There are some established populations recorded in the USGS database. *Asolene spixi* eats aquatic plants and is no longer in trade. There are no established populations recorded in the USGS database. Can reproductively sterile *P. brigesii* and *A. spixi* be produced as new ornamental snail products? Sterile *P. brigesii* could be sold without any requirement for USDA approval. Is there a potential market for sterile *P. brigesii*? Sterile *A. spixi* cannot be sold without USDA approval. Is there a potential market for *A. spixi*?

What dose of radiation (x-rays) will render snails reproductively sterile? The snails are radiated, the radiated snail is mated with a wildtype, the eggs are collected, and a determination is made as to whether or not the eggs hatch into snails that survive. Dave Rawlins of Rawlins Tropical Fish Farm in Lithia, Florida monitors the snail mating chambers for mortality and fertility

Teem reported that the viability of irradiated *P. brigesii* adults decreases at radiation doses above 130 Gy. Fertility in irradiated snails is reduced by a decrease in egg production and a reduction in fertility of eggs. To produce sterile snails, two genetic alternatives to radiation are triploidy and chromosomal translocations. Drug intervention during fertilization is used to produce triploids. However, fertilization is internal in apple snails, complicating the use of drug treatments.

Mating snails provide a source of zygotes for drug intervention to induce triploidy. If triploids are produced following fertilization, they should be detectable in the egg mass. The mating snails were drug treated, the eggs were harvested, and the eggs were analyzed by flow cytometry. No triploids were observed in the egg masses. Can the cells in the gonad be treated with drugs to induce ploidy changes in gametes? Additional work is required to determine whether these changes reflect a change in the ploidy of sperm.

In conclusion, **Teem** noted that mortality is high when snails are irradiated to produce translocation chromosomes. Drug treatment of snail gonads with colchicine has not produced triploids. Directed recombination is being investigated as an alternative to irradiation treatment to produce chromosomal translocations.

Britton asked if hybridization had been considered. **Teem** explained that hybridization was attempted but he was not successful in producing hybrids. Also, the snail hybrids are not considered viable.

Update – Trojan Y Chromosome Eradication of Invasive Fish Project

Teem gave a PowerPoint Presentation entitled "Trojan Y Chromosome Eradication of Invasive Fish: Sex-specific DNA Markers for Tilapia". **Teem** explained that Females with two Y Chromosomes produce only male progeny, half of which are Myy. Myy males are viable and produce only male offspring. Four different matings are possible, leading to increased male production. The addition of a Trojan Y female (Fyy) to a target population will cause females (Fxx) to become extinct over time. The carrying capacity of the system becomes occupied by Myy fish (males with two Y chromosomes).

Teem stated that a Trojan Y chromosome strategy might be an appropriate technique for controlling invasive species. It is species specific; requires no new technology development; involves standard aquaculture techniques with no recombinant DNA; Trojan Y chromosome fish have already been produced in one species (*Oreochromis niloticus*); it is reversible. TYC requirements are that the target fish must have a XY sex-determination system; the target fish must be amenable to hormone-induced sex reversal; a female fish with two Y chromosomes (Fyy) must be viable and mate at the same efficiency as wildtype; the target fish must be amenable to propagation via aquaculture. The production of YY fish requires selective breeding and the use of hormone-induced sex reversal techniques. YY genotypes are verified by test crosses and evaluation of the sex distribution in progeny. Sex-specific DNA markers can greatly reduce the time required to generate YY fish by allowing YY genotypes to be detected by DNA analysis (instead of test crosses). For some time, sex-specific DNA markers have been identified by using the RAPD PCR method. The process for this method is to first create a DNA pool from only females, and another from only males. Each pool is then tested with PCR using a collection of short DNA primers that will amplify sequences at different locations in the genome. For each primer, female-specific DNA is compared with male-specific amplified products using gel electrophoresis. A primer is found that gives a band in one DNA pool, but not the other.

Teem reported that three invasive fish species were screened for sex-specific DNA markers using RAPD PCR: Nile Tilapia, African Jewelfish, and Silver Carp. A male-specific DNA marker for common carp was identified. Could this same DNA marker be used to identify males

in silver carp, tilapia, or African jewelfish? A male-specific carp marker can be used to design 10-mer RAPD PCR primers. No sex-specific markers have been isolated as of yet for African jewelfish, silver carp, or tilapia. Larger numbers of fish will be included in pooled male-specific and female-specific DNA pools. Screening will continue for all three invasive fish, with help from USGS on African jewelfish.

Update on GSARP Rapid Response Plan and Plans for Completing

Hartman reported that the Rapid Response Plan is still being finalized. She explained to the panel that the intention for the Plan is that it will be a functional document, instead of just informative. She also reported that the plan is to develop a web page and put part of the Rapid Response Plan on the web page simply for contact information. The eight GSARP states would be pictured, with the ability to click on a particular state, where links would be provided showing names of appropriate people to contact for particular issues. **Herod** asked how this would be different than the Task Force's contact information on their website. **Hartman** explained that she would like to brand GSARP. She envisions the ability to have all of the appropriate contact people listed for each state on a "one-stop shop" web page that would not only cover major agencies, but secondary agencies as well.

Schmitz suggested that a coordinator be chosen from the panel who would implement the process and cover all of the states.

Hartman asked for volunteers to be on a work group to complete the Plan. **Herod** and **Fuller** volunteered to serve on the group.

Hartman reminded the panel that it was previously decided that a hard copy of the Rapid Response Plan would be created, but the web page could be shelved if the panel did not feel that it was beneficial. She stated that a finished Plan would hopefully be presented at the next meeting.

Update on *Penaeus monodon* Activities

Kingsley-Smith gave a PowerPoint Presentation entitled "An Update on the Invasive Asian Tiger Shrimp (*Penaeus monodon*). The native range of the Asian tiger shrimp is east Africa, Southeast Asia, Japan, China, Korea, Australia, Fiji, and the Philippines. They were first recorded in U.S. coastal waters off of Georgia in 1988 following the accidental release of approximately 3,000 of the shrimp from the SCDNR Waddell Mariculture Center. However, after their release in 1988, they were not seen in U.S. southeastern waters again until 2006.

There are many concerns surrounding recent reports of *P. monodon*. The re-appearance of them in South Atlantic Bight was sudden and currently not well understood which causes fear. Based on the biology of *P. monodon* in its native habitat, the potential for its interactions with native penaeid shrimp in the southeast U.S. seems high. Interactions may be indirect such as competition for space, food, etc., or direct such as *P. monodon*'s diet in native habitat of shrimp and other crustaceans. *P. monodon* are potential hosts of viral diseases, which could possibly lead to transmission to native species. Reported collections of this species increased dramatically between 2010 and 2011. In 2010 there were a total of 32 collected. In 2011 there were 331 collected, with the majority coming from South Carolina and Louisiana.

Ballast water is one of the potential sources of *P. monodon* transport and delivery. The escapement of *P. monodon* in 2007 from a Caribbean aquaculture farm due to Tropical Storm Noel, and the migration from wild Caribbean or African populations are other potential sources. One hypothetical mechanism for transport of *P. monodon* to the U.S. east coast is the entrainment of them from established populations in The Gambia via trans-Atlantic (North Equatorial) currents. This is consistent with reports of *P. monodon* in the southeastern region since 2006. Is there now an established breeding population of *P. monodon* somewhere along the southeastern U.S. coast? The answer will require more specimens and further genetic analyses. The goals of genetic analyses are to determine the number of populations, identify dispersal pathways, and identify founding populations. Results from Phylogenetic studies so far have shown that there are no genetic variations; samples are genetically the same. Individuals are likely highly related or inbred. Founding individuals may have originated from a single culture facility or related populations. Additional samples will be analyzed this fall, and current testing of additional genetic markers is being performed to identify phylogenetically informative loci.

Current efforts and future needs include: recognition flyers distributed to boat docks; more systematic data collection and reporting; size/weight/sex/condition data for specimens; standardized data recording cards to biologists; tissue collection, DNA sequencing, analysis. Microsatellites and single nucleotide polymorphisms provide sufficient markers for assessing phylogeographic and population genetic structuring among *P. monodon* collections from the southeast U.S. When people collect tissue samples, they are being asked to store them in 95% non-denatured ethanol. The samples are then submitted to the genetics lab for testing. When whole samples are collected, the first two pairs of pleopods are desired for testing. **Kingsley-Smith** stated that they have established a key point-person in each state who already works with the USGS database and coordinates the tissue collection and shipping process so that it stays manageable. More tissue samples are also needed. A centralized storage of collection information by USGS can be found at http://nas.er.usgs.gov. New reports of *Penaeus monodon* are continually being added by USGS.

Schmitz asked if there were any marine animals that consume tiger shrimp. **Fuller** stated that there was a report from Florida of a sea trout caught that had a tiger shrimp in its stomach.

McMahon asked if genetic testing was going to be performed on tiger shrimp from the Caribbean and South America. **Kingsley-Smith** stated that they have been attempting to obtain samples from those locations. **Fuller** stated that the USGS has not received any reports of sightings or captures from the Caribbean. However, they do intend to obtain specimens from where the tiger shrimp are established, such as West Africa and the North coast of South America so that they can be compared.

Mendoza asked if tiger shrimp were being screened for viruses. **Knott** replied that they sent a shrimp to a lab in Arizona to be tested that appeared to have white spots on its shell, which was indicative of a possible virus,. The results were negative. There is no routine screening effort being done on tiger shrimp to look for viruses.

National Invasive Lionfish Prevention and Management Plan Update

Ballard reported that the Invasive Lionfish Control Adhoc Committee that was formed last year is drafting the Plan, and it is hoped that the Plan will be finalized by the end of the year so that it can be presented to the Task Force for review at their spring 2013 meeting. The anticipated timeframe for the approved, completed Plan is fall 2013.

Ballard stated that there is a section in the Plan entitled "Leadership, Communication, and Coordination" that will cover each state that is affected by lionfish. He asked that each state member of those affected states provide a short paragraph with what agency is handling the coordination of responsibilities, roles, prevention and control, regulatory effects, research, etc. Also, if there are any regulatory hurdles stopping people from collecting lionfish. **Ballard** will be contacting each state representative to obtain this information.

The Use of AIS for Biofuels in Texas

Chilton gave a PowerPoint Presentation entitled "Use of AIS for Biofuel in Texas". According to the U.S. Energy Information Administration, Texas ranked number one nationally in 2011 with eight biodiesel refineries producing 328 million gallons of annual production capacity. In the first quarter of 2012, the National Institute of Food and Agriculture (NIFA) awarded more than one million dollars in bio-energy grants in Texas to extend separate studies at Texas A&M and Rice Universities. In 2011, the Texas Commission on Environmental Quality (TCEQ) began allowing biodiesel to be blended at any ratio into any compliant fuel. The most common plants used are soybeans, peanuts, rapeseed, corn, palm, canola, sorghum, cottonseed, and sunflower.

Chilton reported that Giant Cane (*Arundo donax*) is being targeted by Texas Agrilife Research as a source for future biofuel production. The waste byproduct can be redirected into a new pathway that will create terpenes. Terpenes are energy-dense fuel molecules that can be converted into jet or diesel fuel. This strategy will first be applied to tobacco. If successful, the approach will be translated into *Arundo donax* for fuel production. Texas A&M University is testing Chinese tallow on several plots as a biofuel.

Chilton next covered the development of the white list regulations. During the 2009 legislative session, TPWD was directed to publish a list of exotic aquatic plants that would be approved for use in Texas without a permit. Exotic and genetically modified algae used in biofuel production would have been regulated. There is escalating interest for algae use in biofuels. There are special concerns related to microalgae, such as its toxicity to humans, animals, and other plants. There is also a concern due to its propensity to bloom, and its competition with native species. In January 2011, TPWD was directed to discontinue the development of the white list regulations. SB 1480 directed TPWD to return to the use of a prohibited plant.

Exxon/Mobile is collaborating with Synthetic Genomics on a $600 million algae project near Houston. The project will utilize open algae ponds. Joule Unlimited just partnered with Audi, with operations in Leander, TX, Hobbs, NM, and the Netherlands. The project utilizes algal reactors.

Chilton spoke about the Renewable Fuel Standard Program that was created under the Energy Policy Act of 2005. It originally required 7.5 billion gallons of renewable fuel to be blended into

gasoline by 2012. The Energy Independence and Security Act (EISA) of 2007 expanded the RFS Program to include diesel. EISA increased the volume of renewable fuel required to be blended into transportation fuel from nine billion gallons in 2008 to 36 billion gallons by 2022. Texas, Arkansas, Nebraska, and South Carolina are considering renewing a petition to waive the RFS mandate.

Ballard asked what bio security standards are in place at the plants that are using algal reactors to ensure that there is no leakage into open water systems of the genetically-altered algae that produces fuel directly. **Chilton** explained that if there are strains of algae that will not be used, they are pumped directly from the reactor into a secure vat that kills the strain, which is then pumped into another vat that breaks down the DNA. Furthermore, to produce fuel the algae are programmed to require certain nutrients, and those nutrients would not be present in open water. Therefore, the algae would die.

Update on AIS Activities in Mexico

Mendoza gave a PowerPoint Presentation entitled "Increase the Capacities of Mexico to Manage Invasive Species through the Implementation of the National Invasive Species Strategy". He reported that the Global Environmental Facility (GEF) has approved the University's 6 million dollar project that will implement their strategies for invasive species. They will be partnering with several agencies, Universities, etc. Mexico contributed 2 million dollars. The objectives of the project are to provide knowledge and information for decision makers; strengthen the legislative and regulatory framework; improve the inter-agency coordination mechanism to prevent, detect, and reduce the risk of introduction, establishment, and spread of invasive species; prevent new introductions through activities of key productive sectors; prevent, control, and eradicate invasive species in biodiversity priority areas through integrated management and development of early detection and rapid response systems.

Mendoza reported that under a new Mexican law for invasive species, there is a mandate requiring lists of invasive species that are or are not being allowed into Mexico. It has not been decided if the lists will be black or white. **Mendoza** was in charge of creating the first list corresponding to fishes. A rapid assessment tool was created for not only invasive fish, but also insects, plants, etc. A risk analysis of the possible impacts of the Australian crayfish was also published. A book was published about the history of the aquarium trade in Mexico, with a special emphasis on invasive species.

A "Weeds across Borders" conference was held in April 2012 in Cancun, Mexico with the theme "Meeting the Challenge of the Future". Ten sessions were held on topics of policy making, regulation, and border control; invasive species and climate control; early detection and rapid response; reports from Canada, Mexico, and the USA; tri-national partnerships; socio-cultural topics; economic impacts; invasive plant diversity; invasion ecology; management and control.

Mendoza reported that lionfish have invaded mangroves in protected areas of Mexico. There is also an invasion of plecos and African jewelfish.

The 40-Year Plan

Hartman gave a PowerPoint Presentation entitled "2052? Dreams? Goals?". **Hartman** reminded the Panel that knowledge of invasive species and their consequences is not enough if there is no intention of making changes. She requested the Panel to engage in a discussion of GSARP's goals over the next 40 years, and to create a plan on reaching those goals.

McMahon stated that he would like to see the whole invasive species issue shift from being reactive to proactive. This would include white lists and regulations. More emphasis should also be put on prevention.

Hartman suggested that the Panel seek the services of a professional marketer. She also suggested adding more seats to the panel.

Schmitz suggested creating a report that describes the state of the Gulf, identifies some of the economic impacts from invasives, and makes moderate predictions of what the future holds.

Riecke suggested holding periodic conferences, and having representatives from GSARP, the pet industry, the aquatic industry, and other work groups, and hold work sessions on issues, ideas, etc.

Sommers suggested that at the next GSARP meeting, a facilitated, structured meeting be held to discuss strategies and goals. She volunteered to be the facilitator for the meeting. **Hartman** will incorporate the facilitated meeting into the next GSARP meeting.

State Reports

Alabama

Newton reported that several invasive species have been documented in Alabama waters. The Bocourt swimming crab (*Callinectes bocourti*), tessellated blenny (*Hypsoblennius invemar*), Australian spotted jellyfish (*Phyllorhiza punctata*), and Asian green mussel (*Perna viridis*), have recently been spotted. 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. Two invasive species of heightened concern are the giant tiger prawn (*Penaeus monodon*) and the lionfish (*Pterois volitans/miles*), and their distribution warrants investigation.

The giant tiger prawn (*Penaeus monodon*) has been a species of concern since 2006 when it was first observed in Alabama's inshore waters of the Mississippi Sound. After the first tiger prawn was documented, captures of *P. monodon* have incrementally increased. From 2006 to 2009, their distribution was primarily restricted to Alabama's southern inshore waters. However, in 2011, distribution extended to northern Mobile Bay and into Perdido and Wolf Bays. The 43 confirmed reports during 2011 indicate the giant tiger prawn has become established in all of Alabama's primary estuary basins. However, the concern for *P. monodon* has decreased within the commercial shrimping community, which has resulted in fewer validated reports. There have been 16 Asian tiger shrimp acquired by AMRD from January 1 through September 20, 2012. AMRD continues to focus on documenting occurrence, characterizing the population structure, and processing samples for genetic investigation.

Obtaining validated reports of lionfish continues to be an issue. The first report (non-validated) of lionfish was in 2009 by a recreational scuba diver 16 miles south-southeast of Orange Beach at an area of natural hard-bottom referred to as the Trysler Grounds. The first confirmed report was documented in June 2011 by a spear fisherman who collected a lionfish from an oil/gas platform approximately 43 miles south of Dauphin Island. Lionfish are now abundant on Trysler Grounds, and inhabiting oil/gas platforms at low densities. SCUBA divers reported observing up to 30 lionfish during single dives in this area during the 2011 dive season, and are now more abundant than previous years. They have also been reported in inshore waters and within Alabama's territorial seas. After a month-long lionfish rodeo in June and July 2012, 26 lionfish were donated to AMRD by a local dive shop.

The DCNR/MRD has increased efforts to enhance public awareness of these two invasives. An invasive species page has been added to their website. A notification that describes the giant tiger prawn and provides information concerning proper reporting has been distributed to the shrimping community. Also, a page in the 2012 Alabama Marine Information Calendar is dedicated to educating the public about the giant tiger prawn and the lionfish. The calendar is distributed to a variety of establishments where it becomes readily available to DCNR/MRD constituents.

Rider reported that the Alabama Aquatic Nuisance Species Management Plan has been conditionally approved by the Aquatic Nuisance Species Task Force. The ANSTF has asked for a revised plan before official approval is granted. The revised plan will be resubmitted in early 2013 for review, and approval at the spring 2013 ANSTF meeting.

Twelve Midas cichlids were discovered in little Schultz Creek in August 2011 by a graduate student from the University of Alabama. Subsequent sampling trips through the end of August 2012 have not yielded any additional cichlids.

Control and eradication efforts continue in Langan Park and Three Mile Creek in Mobile for island apple snails. Two copper treatments were conducted this summer, along with three treatments to reduce emergent vegetation. Over 30 volunteers assisted with egg scraping and adult collection along Three Mile Creek last summer. There were 427 apple snails collected.

Three large bighead carp were collected below Coffeeville Lock & Dam on the Tombigbee River in the spring during paddlefish sampling.

In August, two small tilapia were collected during river IBI sampling below Claiborne Lock & Dam on the Alabama River.

Florida

Schmitz reported that there were no new invasive plant species to report, but some recently arrived non-native aquatic plant species are expanding their ranges in Florida. *Azolla pinnata* is a non-native species that can quickly spread to cover open areas of water, and forms dense surface mats that impede water flow, navigation, and clogs irrigation pumps. The mats reduce oxygen levels and light available to other aquatic organisms. *Luziola subintegra* was first reported in Florida and the U.S. in 2007 in Lake Ocheechobee. It grows in both deep water and

in terrestrial forms, spreads vegetatively and by seed, and aggressively competes with other native and non-native species. The species was included on the Florida Exotic Pest Plant Council's 2009 List of Invasive Plant Species as a Category I species. *Phyllanthus fluitans* (floating spurge) is a fresh-water species that was found growing in a canal and tributaries in and near the Peace River in 2010. It is a popular aquarium plant, and scientists believe it may have been introduced via the aquarium plant trade. There is fear that it may become as problematic in Florida as water lettuce and water hyacinth. *Nymphoides cristata* is a rapidly-spreading species introduced via the ornamental plant trade that shades out underwater plants. It is well-established in South Florida canals, storm water treatment areas, several central Florida canals, and has made its way into South Carolina into the Santee-Cooper reservoir. *Ludwigia grandiflora* is a non-native plant species which has been in Florida for over 20 years, but has recently become problematic in that it is rapidly expanding its range and population sizes. The reasons for this expansion are unknown.

Sommers spoke on Florida FWCC's Annual Standardized Electrofishing Survey for non-native freshwater fish. The program was designed to monitor native and non-native fish populations in southeast Florida urban canals. It is comprised of one-day samples consisting of 3 daytime and 6 nighttime transects. FWC has collected almost 200 samples from 39 canals since 1997. A total of 2,872 fish were collected from 6 core canals. Native fish made up 77% of the total catch, and exotic fish the remainder. Native sportfish comprised 87% of the native fish catch. Mayan cichlid, African jewelfish, spotted tilapia, and butterfly peacock bass were the principal exotic fish species that made up 82% of the non-native fish collected. This year's catch rate of largemouth bass was the highest since sampling began in 1997. Butterfly peacock bass appear to be recovering from the 2010 winterkill. The 2011 composite catch rate of native and exotic bream was 12% higher than in 2010.

Sommers next reported on largemouth bass and bullseye snakehead in the Hillsboro Canal. Preliminary findings indicate fish, crayfish, and insects were the primary prey items found in 173 largemouth bass stomachs. Native fish were found in 46% of stomach contents, while exotic fish were found in 54% of stomach contents. Largemouth bass was the dominant prey fish by frequency and number, and gizzard shad by volume. Spotted tilapia was the primary exotic prey fish by frequency and number, and Mayan cichlid by weight.

Stomach contents from 292 bullseye snakeheads contained fish, crayfish, and insects as the primary prey items. However, they also consumed a variety of other prey, including snakes, lizards, frogs, and turtles. Exotic fish species were more commonly found in the stomachs than native species (59% vs 48%). Mayan cichlid was the most frequently consumed exotic, while spotted tilapia was the primary fish by volume and number. Largemouth bass and sailfin molly were the native fish found in the most bullseye snakehead stomachs. Brown bullhead was the dominant native fish by weight, and eastern mosquitofish by number. Despite the presence of large numbers of non-native fishes in the canal, standardized sampling in May 2011 and 2012 revealed that largemouth bass catch rates averaged 165% greater than in 1986.

Sommers gave an overview on FWC's research group in the Florida Wildlife Research Institute that has been working on exotic apple snail research since 2006. The research was concluded in June 2012, and staff is currently completing a final report detailing their studies on food

preference, feeding rate, depth preference, non-chemical control, snail kite utilization, and impacts on native apple snails.

Sommers spoke on lionfish and the concern of the FWC about potential ecological, social, and economic impacts the species may have in Florida. In an attempt to generate a more coordinated effort within their agency to address lionfish, FWC reconvened the FWC internal Lionfish Team in August. Also in August, an Executive Order was issued that will increase lionfish harvesting opportunities. A recreational fishing license is not required for recreational fishers targeting lionfish while using a pole spear, a Hawaiian Sling, a handheld net, or any spearing device that is specifically designed and marketed exclusively for lionfish. There is no recreational or commercial harvest bag limit for lionfish in Florida.

Next discussed was the Non-native Pet Amnesty Program. A total of 544 animals were surrendered through the program. Five amnesty events were held during 2011-2012. Two events were sponsored by FWC, and 3 were hosted by outside parties with reduced support from FWC. There were 268 animals surrendered via the amnesty events. The playbook for hosting an amnesty day event has been completed and is available upon request. Through the Everglades National Park grant, 2 events were held, and 3 events remain. A phone operator was hired to answer the hotline (1-888-Ive-Got1) and facilitate pet placement. There were 276 animals surrendered via the hotline. Five outreach events were attended to solicit adopters and to promote the pet amnesty program. A total of 282 people signed up at these events to receive more information about the pet amnesty program.

The Non-native Fish Laboratory hosts an Open House during each fiscal year. This year, the staff also participated in the first annual Exotic Fish Roundup hosted by the Everglades Cooperative Invasive Species Management Area.

Georgia

Bonvechio spoke on the Satilla River Flathead Removal Project. The presence of illegally introduced flathead catfish was first observed in 1996. During the mid-2000s, observed declines in the abundance of redbreast sunfish and bullhead catfish coincided with significant increases in the abundance of flathead catfish. In an effort to negate the impacts on native fish populations, existing Wildlife Resources Division (WRD) Waycross Fisheries staff began aggressive removals via electrofishing in 1996. Despite these removal efforts, the number and size of flathead catfish continue to increase. The Georgia legislature appropriated funding for several new personnel positions, who were assigned the task of reducing the flathead population levels through direct removal, while searching for a long-term population control.

For the 2012 sampling season (May – October), crews removed 2,861 flathead catfish. More than 66,500 pounds of flathead catfish have been removed from the Satilla River since the implementation of the full-time flathead management program in 2007. Also, the size structure of the population has declined, with the average-size fish removed dropping from 5.8 pounds in 2007, to 1.2 pounds in 2012. In addition, the average length, biomass, and age structure have all been truncated by the removal efforts. Water levels also appear to affect recruitment. During drought years, catch rates were down, but considerably higher in 2009 during the high water

years of 2009 and 2010. To prevent the flathead population from rebuilding within 2-5 years, intensive harvest must be maintained.

During sampling in 2011, the WRD removal crew documented the non-indigenous range expansion of the blue catfish in the Satilla River. Seven blue catfish were recovered this season. No blue catfish were recovered during sampling in 2012.

The Natural Resources Program Manager for the Chattahoochee River National Recreation Area recently received a grant for developing a control strategy for Asian rice eel, an introduced fish on NPS lands.

Pacu were reported in ponds in Hall and Carrol County, Georgia. Reproducing populations are highly unlikely at this point.

Divers have reported multiple sightings of lionfish off Georgia's coast.

The University of Georgia is working on a channeled apple snail project in St. Marys, GA, funded by the USFWS.

Louisiana

Bourgeois reported that in order to restrict the commercial sale of "Louisiana Wild Caught" apple snails into the pet trade, the existing regulations have been modified to only allow the possession of dead apple snails. This action was the result of a fisherman asking what permits and regulations were in place so that he could legally harvest and sell apple snails to local pet stores.

An existing regulation was amended to allow only the possession of dead Rio Grande cichlids. Under the previous laws, a fisherman could not release the Rio Grande cichlid back into the water, nor could he possess it.

LDWF staff continues to monitor the spread of lionfish in the Gulf of Mexico. Fish assemblages at oil rigs are being monitored through the LDWF research dive program. Distribution and numbers at the rig sites are being documented. Recreational divers and spear fishermen have reported additional sightings.

LDWF has received reports of tiger shrimp harvests. The number of sightings has increased since August. LDWF staff is collecting specimens to be included in a study looking at the genetic structure of the shrimp in the Gulf.

In August, two other exotics were reported to LDWF. A gaint land crab was confirmed on Grand Isle, LA, and a pacific swimming crab was captured in Barataria Bay.

Apple snails have been reported in the upper Barataria Basin and more of the canals around the New Orleans area. This indicates either range expansion, or improved reporting by the public. A new, confirmed site of apple snails has been found in LaPlace, LA near New Orleans. A site inspection is planned for next spring to investigate the effects of the recent floods from

Hurricane Isaac on the distribution of apple snails. A site in Lafayette, LA appears to be apple snail free, without any known treatment. This site and downstream drainages will be monitored to determine if the population has been expatriated.

In Lake Verret, LA a single Rio Grande cichlid was found. No additional cichlids were found after follow-up electro-shocking was done in the area. Following the 2011 flooding of the Mississippi River, Asian carp have been located in a few new water bodies in both northern and southern LA. Biologists continue to track their progression throughout the state.

Next spring, LDWS will utilize their 2012 ANS grant to begin drift net sampling for Asian carp, and to look at ichthyoplankton to determine the status, relative abundance and distribution of Asian carp.

The LDWF treated over 75,000 acres of nuisance aquatic weeds in fiscal year 2011-2012. Much of the estimated 32,237 acres is located in the Barataria-Terrebone marsh and the Atchafalaya Basin in south Louisiana. In past years, the U.S. Army Corps of Engineers (USACE) has provided approximately 30,000 acres of annual aquatic plant control in south Louisiana. However, their Removal of Aquatic Growth Program did not receive funding for 2012, and LDWF has assumed the plant control responsibilities in these areas despite no increased budget.

Giant salvinia has been a major focus of aquatic plant control efforts in Louisiana since 2006. The combination of water level fluctuations, herbicide applications, and biological control is being used to keep giant salvinia coverage at a level that allows for recreational use of the waterbodies. Floating boom material is being used on several lakes to restrict the movement of giant salvinia from shallow nursery areas to main lake areas where much of the boating and recreation takes place. The collected salvinia is then treated repeatedly with herbicides.

The stocking effort of the giant salvinia weevil has increased over the past year. The LDWF has entered into a contract with the USACE experiment station in Lewisville, TX to raise the weevils in greenhouses and to stock them and monitor population levels in area lakes. Weevil transplants will continue in spring 2013. An agreement with the LSU Agricultural Center provides giant salvinia weevils that are stocked in Barataria and Terrebone marshes, and the Atchafalaya Basin.

A large effort is being made for better public outreach and education. Booths have been set up at expos, boat shows, tournaments, rodeos, festivals, and fairs. New brochures and handouts on northern snakehead vs bowfin are being distributed. New brochures and posters are being developed to raise awareness about lionfish and to educate the public on the proper disposal of unwanted aquatic pets. The LDWF has begun a “Fall Rio Grande Rodeo” to try to reduce the number of large overwintering cichlids. The LDWF has responded to media requests for apple snails, tiger shrimp, giant salvinia, and Rio Grande cichlids. The social media network is being utilized by LDWF through their facebook site, where brochures, links and articles about ANS species/concerns are being posted. Information on tiger shrimp, Rio Grande cichlids, and northern snakehead has also been shared there.

Mississippi

Burris reported that 36 field surveys totaling 594 miles were conducted for early detection of AIS. As a result, new infestations of water hyacinth were discovered in Gulfport Lake and Bernard Bayou.

An aerial photo survey of 160 miles was performed to aid in early detection of AIS and to monitor on-going control efforts.

A new, small infestation of common salvinia was discovered in Bluff Creek, but was manually removed and destroyed.

Twenty-two confirmed sighting of invasive Asian tiger shrimp were reported to NAS database from specimens given to DMR by local fishermen. One specimen was a rare red-stripe color variant. A live specimen was observed eating live native white shrimp while in captivity. **Burris** showed a short video of the tiger shrimp consuming the white shrimp. Tissue samples for population genetic analysis have been preserved and sent to NOAA/USGS.

Herbicide was applied to control giant salvinia in the Pascagoula River, Pearl River, and Robinson Bayou. Herbicide was also applied to control water hyacinth in Bernard Bayou and Gulfport Lake.

The AIS Coordinator attended SE-EPPC in Auburn, AL, participated in a USFWS Asian carp management working group, a SARP ANS working group, and is serving as Outreach Director of the newly-formed interstate/interagency Mississippi Bight Lionfish Response Unit (MBLRU).

An experimental UAV (unmanned aerial vehicle) flight was conducted over the Pascagoula River in accordance with FAA regulations to determine the suitability of this technology to detect giant salvinia infestations in difficult to access marsh areas.

A public outreach visit was paid to a group of shrimp fishermen in Pass Christian to learn about the extent of the Asian tiger shrimp infestation in Mississippi waters.

An article was published in MDMR's quarterly newsletter *Coastal Markers* to alert citizens about a possible silver carp infestation in coastal Mississippi waters and to ask boaters to report any sightings.

Ballard mentioned a project being conducted in cooperation with MS DMR, AL DMR, and the National Park Service that is being funded by FWS. Lionfish densities off the coast of Mississippi and in the National Park will be observed. Divers from state and federal agencies will be used. Gear for the dives has recently been obtained. This project will begin shortly. No lionfish have been reported in Mississippi waters. The reasons for the lack of reports are possibly because Mississippi is not a popular diving location, and the state waters are more shallow and cloudy until deeper depths with good clarity are reached by the oil platforms, which are federal waters.

Riecke reported that as the Southern Division AFS Resolutions Chairman, he worked to guide consideration and voting on the SDAFS *Resolution on the Federal Funding for Programs to Prevent, Control, and Manage Aquatic Invasive Species*. In January 2012 the SDAFS membership approved the resolution and voted to send it to the Parent Society for consideration. In July 2012, the AFS Resolutions Committee sent a revised version of the resolution to the AFS Governing Board. The AFS Governing Board approved sending the resolution to the AFS membership for a vote in August 2012. The resolution should be published in a future issue of *Fisheries*, along a 30-day online comment period and a 30-day online voting period. The resolution urges Congress to appropriate $61,000,000 on an annual basis to fund the Regional Panels, the State/Interstate Plans, the Quagga-Zebra Mussel Action Plan, and the USGS Aquatic Nuisance Species Database f or prevention, control, and management of non-native aquatic invasive species.

The SDAFS *Resolution on Federal Funding for Implementation of the Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States* was published in the summer of 2012 SDAFS newsletter, and advertised for comment on the SDAFS website. The next step is submission to the SDAFS membership for a vote. The resolution urges Congress to appropriate $286,000,000 over 20 years to fully implement all the strategies and recommendations contained in the *Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States* as approved by the Aquatic Nuisance Species Task Force in 2007.

Riecke reported that an estimated 20,000 nutria were killed along the Mississippi Gulf Coast in August 2012 due to heavy rainfall from Hurricane Isaac.

In January 2010, the *Mississippi State Management Plan for Aquatic Invasive Species* was sent to the National ANS Task Force for their review. Extensive comments were received, and these comments were addressed in the revised plan document. The plan will again be submitted to the ANS Task Force at their next meeting for approval.

Continued posting of the "Stop Aquatic Hitchhikers" signs is being done at new boat ramp sites.

Reprinting and continual distribution of "Stop Aquatic Hitchhikers" cards with all mailed boat registrations/renewals is being done.

Continued printing of the "Stop Aquatic Hitchhikers" logo and bullet list in the annual regulation guides (*Mississippi Outdoor Digest* and *Guide to Mississippi Saltwater Fishing*) is being done.

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

The Mississippi Museum of Natural Science has a permanent exhibit on exotic species.

The MS Department of Marine Resources has been monitoring and treating giant salvinia and other invasive plants in the Pascagoula River system.

The MS DMR plans to implement the activities specified in the Mississippi State Management Plan for Aquatic Invasive Species.

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

The MS DMR will seek approval of legislation required to initiate licensing of retail bait outlets that sell live freshwater fishing bait.

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 will be established that is comprised of state and federal personnel who sample aquatic species in Mississippi public waterways on a routine basis.

Information for Mississippi contacts listed in the Expert Taxonomic Database will be updated and expended.

Riecke mentioned that in Mississippi, if more than 80 acres of weeds are sprayed with pesticides per year, an NPDES permit must be obtained.

North Carolina

Hart was unable to attend the meeting, but his report was provided in each panel member's folder. Staff from NC Division of Marine Fisheries (NCDMF), NC Wildlife Resources Commission (NCWRC), and the NC Division of Water Resources (NCDWR) have been working together to determine the best route for developing a NC Aquatic Nuisance Species Plan.

Since 2008, North Carolina has seen an increase in the number of tiger shrimp. In 2011, 257 tiger shrimp were reported to NCDMF. The reason for this increase is unclear. It is hoped that the results from a USGS study looking at the potential reasons for an increase in tiger shrimp observations will provide answers.

North Carolina has seen an increase in the presence of hydrilla, specifically in the Albemarle Sound, its associated tributaries, and in water withdrawal impoundments. NC has been treating for hydrilla with pesticides. The NCDMF is working to design and construct containment barriers to minimize the potential impacts to native aquatic vegetation outside of the impoundments. Hydrilla has been spreading in NC. It has been confirmed in Lake Santeetlah, the Cheoah River, Lake James, Lake Santeetah, and the NC shoreline.

One report of a box jellyfish in Bogue Sound was received this summer.

South Carolina

Kingsley-Smith reported on catches of Asian tiger shrimp from South Carolina in 2012. As of September 10th, a total of 28 Asian tiger shrimp have been reported to the USGS. The past two years yielded earlier reports of tiger shrimp and higher numbers of small ones than the previous years of 2009 and 2010. Specimens have been collected statewide, from the Georgetown jetties in the north, to Beaufort and Hilton Head in the south. It is speculated that the milder winters of 2010 and 2011 likely contributed to a greater overwintering capacity of the Asian tiger shrimp in South Carolina and possible reproductive activity within coastal waters of the state. Efforts to coordinate reports from across the southeast and Gulf region are continuing, with the goal being to address some of the many unanswered questions about the dynamics and implications of this invasion. Tissue samples are being sent to USGS geneticists to determine population structure of *P. Monodon* within the region, and to possibly identify the geographic source of *P. Monodon* collected in coastal states in the southeast and Gulf region.

Kingsley-Smith gave an update on the impacts of the invasive swim bladder parasite, *Anguillicoloides crassus* (Nematoda) on the American eel, *Anguilla rostrata*, in South Carolina estuaries. Research projects are being done in the SCDNR Inshore Fisheries laboratory by college grad/intern students on the biology of the American eel, *Anguilla rostrata*. SCDNR's interest in this species stems from its drastic decline since 1980, and a 2011 petition to list the American eel as an endangered species. The data collected from the projects was used in support of a successful application for a 1-year State Wildlife Grant in the amount of $47,612 recently awarded to the SCDNR. Eels collected between January 2011 and January 2012 were used to determine the prevalence and intensity of *A. crassus* infection and how it varies by locality, salinity, and seasonality. Important discoveries were made from the research projects. The overall prevalence of adult A. crassus was 45.1% and larval was 28.5%; 24% of eels examined showed severe swimbladder damage; infections in eels collected from the Little Pee Dee River has increased from 25% to 40% in 12 years; neither seasonality nor salinity affected the prevalence or infection intensity of adult parasites; locality significantly affected both the prevalence and mean intensity of infections by adults and prevalence of larvae; spleen weights were significantly higher in infected eels.

Next discussed were the impacts of the Asian seaweed, *Gracilaria vermiculophylla*, on estuarine community dynamics. NSF-funded research on this invasive seaweed was done, and a manuscript was recently published. The non-native Asian seeweed has proliferated on estuarine mudflats throughout the southeastern U.S., including areas such as South Carolina and Georgia that historically were extremely low in seaweed biomass. *Gracilaria* has the potential to transform southeastern U.S. estuaries.

Kingsley-Smith spoke on lionfish and MARMAP. The Marine Resources Monitoring, Assessment, and Prediction (MARMAP) Program is a fishery-independent collaboration between the South Carolina Department of Natural Resources Marine Resources Research Institute and NOAA Fisheries. Video and still photograph data have been collected for 2011, but not yet analyzed. MARMAP staff hope that an update on lionfish CPUE from the video will be available in the near future.

Master's thesis research is being done by a College of Charleston Graduate Program in Marine Biology student on invasive lionfish. Originally her research centered on investigating the feeding biology of lionfish on SCDNRE artificial reefs, but due to difficulties in obtaining samples from these habitats, her direction shifted. She will now be investigating the effects of lionfish size and habitat on diet composition, with an interest in lionfish consumption of Federally-managed and overfished species. Lionfish samples collected between January 2011 and January 2012 from Biscayne National Park will used for this research.

The Marine Resources Research Institute (MRRI) of the SCDNR successfully acquired State and Interstate Aquatic Nuisance Species Management Plan Program funds in the amount of $25,473. These funds will be used to implement a program to conduct targeted field sampling of fouling communities in the ACE (Ashepoo-Combahee-Edisto) Basin National Estuarine Research Reserve in the spring and summer of 2013.

On June 6, 2012, Titan acorn barnacles were collected off Port Royal Sound from an aluminum quadrapod deployed in March 2012.

A SCDNR officer received a call that possible red-bellied pacu were released into a tributary of the Reedy River. Upon investigation, the fish were not seen. However, many pacu have been collected over the years and none have ever shown signs of reproduction or self-sustaining populations. If the released fish were indeed pacu, they are not expected to survive winter.

Texas

McMahon reported that zebra mussels have now been discovered in Lake Ray Roberts. It is likely that more lakes and reservoirs will become infested. A newspaper reporter from the *Fort Worth Star Telegram* is going to accompany **McMahon** on one of his sampling trips in the next few weeks.

Texas received the final letter of approval from the NAS Task Force for the Texas State Comprehensive Management Plan for Aquatic Nuisance Species.

The Texas budget for aquatic nuisance species has been reduced to approximately $600,000 for FY 2013.

Lionfish and tiger prawn sightings continue to increase.

Hartman mentioned that through a lionfish outreach mechanism to dive shops, she receives reports from commercial divers from Houston when they observe lionfish while diving around oil rigs. They also provide the name of the oil rig. This information has been very helpful for the information database.

Hollin reported on the Texas "Clean Marina" Program. There are 350 marinas in Texas, and 1/3 of them are involved in the program, which is the highest percentage of any other state. Many of these marinas are also monitoring their launching facilities for aquatic invasive species.

Hollin also spoke about Texas water codes, which regulate what can be discharged into coastal and inland waters. Texas formed a partnership with the Marina Association, several boating groups, and the Galveston Bay Foundation. They went before the Texas legislature with a proposed water code revision, which was passed. A clean water certification program was created for Texas. Discharge of sewage from boats within three miles of the coast is now prohibited.

National Park Service

Furqueron reported that the Everglades Cooperative Invasive Species Management Area in South Florida is a good example of getting support and having public involvement. They have pulled together 18 county agencies and various user groups to look at managing invasive species in their area. They have put a lot of effort into outreach and education by holding pet amnesty days, fishing rodeos, and creating smart phone apps. **Furqueron** and another NPS staff member, along with a Florida Fish and Game Commission staff member, presented them with a Department of Interior Partnership Award. **Furqueron** suggested having someone from the program come and speak at a future GSARP meeting.

Discussion of ANSTF Recommendations

Ballard reintroduced the earlier discussion regarding the recommendation that a state funding survey be done. **Ballard** asked the panel if they wanted to table the discussion.

Riecke suggested that the Education and Outreach work group be given the task of developing a data structure of what should be collected for particular state funding categories, and present a draft at the next meeting.

Knott made a motion to table the discussion until a later date. Riecke seconded the motion. The motion passed.

Ballard asked the Panel if they wanted to send a recommendation to the Task Force to incorporate into their new recreational guidelines a pre- and post-evaluation of what impacts the guidelines are having on the public.

Sommers made a motion to send the recommendation to the Task Force. Knott seconded. The motion passed.

Next Meeting Time and Place

It was decided that Atlanta, GA would be the location of the next meeting.

Schmitz suggested a field trip. **Furqueron** volunteered to set up a possible field trip to the Georgia Aquarium or the Chattahoochee River.

The next meeting will take place during the first week in April.

Public Comment

Hartman 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 4:30 p.m.