GULF & SOUTH ATLANTIC REGIONAL PANEL
ON AQUATIC INVASIVE SPECIES
MINUTES
Tuesday, April 12 & Wednesday, April 13, 2011
Charleston, SC

On Tuesday, April 12, 2011, Chairman **Ron Lukens** called the meeting to order at 1:00 p.m. The meeting began with introductions of the members and guests. **Lukens** introduced new panel member **Peter Kingsley-Smith**. The following were in attendance:

Members & Proxies
Lad Akins, REEF, Key Largo, FL
James Ballard, GSMFC, Ocean Springs, MS
David Britton, USFWS, Arlington, TX
Paul Carangelo, Port of Corpus Christi Authority, Corpus Christi, TX
Earl Chilton, TPWD, Austin, TX
Pam Fuller, USGS, Gainesville, FL
Chris Furqueron, National Park Service, Atlanta, GA
Lisa Gonzalez, HARC, The Woodlands, TX
Scott Hardin, FL Fish and Wildlife Conservation Commission, Tallahassee, FL
Kevin Hart, NCDMF, Washington, NC
Leslie Hartman, TPWD, Palacios, TX
Jeffrey Herod, FWS, Atlanta, GA
Rebecca Hillebrant, LA Dept. of Wildlife & Fisheries, Baton Rouge, LA
Dewayne Hollin, Texas Sea Grant, College Station, TX
Chuck Jacoby, University of Florida/Florida Sea Grant, Gainesville, FL
Peter Kingsley-Smith, SCDNR, Charleston, SC
David Knott, At-Large Member, Charleston, SC
Herb Kumpf, At-Large Member, Panama City, FL
Jon Lane, USACE, Jacksonville, FL
Ron Lukens, At-Large Member, High Springs, FL
James Morris, Jr., NOAA Fisheries, Beaufort, NC
Chris Page, SC Department of Natural Resources, Social Circle, SC
Harriet Perry, GCRL-USM, Ocean Springs, MS
Dennis Riecke, MDWFP, Jackson, FL
Don Schmitz, FDEP, Tallahassee, FL
John Teem, FL Dept. of Agriculture and Consumer Services, Tallahassee, FL
Keith Weaver, GDNR, Social Circle, GA

Staff
Alyce Catchot, GSMFC, Ocean Springs, MS

Others
Don MacLean, U.S. Fish and Wildlife Service, Arlington, VA
Matt Cannister, USGS, Gainesville, FL

George Kenny, NAS Jacksonville, Jacksonville, FL
Pamela Schofield, USGS, Gainesville, FL
C. Anna Toline, National Park Service, Sullivan Island, SC

Public Comment

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

Adoption of Agenda

D. Schmitz's presentation scheduled for 4:30 p.m. on Tuesday, April 12 was rescheduled for Wednesday, April 13, 2011 at 8:40 a.m. **E. Chilton** asked that his presentation for Texas for the Member's Forum on Wednesday, April 13, 2011, be given first. **Lukens** requested that a discussion of the Orange Cup Coral document that was finalized by Tonya Shearer be added to the agenda under Other Business. **J. Herod** asked to have **J. Morris** added as a speaker for the Update on the Lionfish Invasion presentation at 1:30 p.m. **A motion to adopt the modified agenda was made, and passed unanimously.**

Approval of Minutes

The minutes of the meeting of the October 27 - 28, 2010 meeting in St. Petersburg, Florida were presented for approval. **P. Fuller** requested that the statement on page 8 under Update on New Introductions which stated 'the origin of Zebra Mussels was not known', be corrected to read 'the origin of **Tiger Shrimp** was not known'. **Lukens** requested that, in the future, page numbers be added to the pages of the minutes. **There being no further changes to the minutes, a motion was made to approve the minutes, and the motion passed.**

Update on the Lionfish Invasion and Current/Proposed Management Actions – Action Requested

P. Schofield gave a PowerPoint presentation on lionfish distribution. The first record of lionfish in the Western North Atlantic was in 1985 in South Florida. The lionfish invasion of the Western North Atlantic, the Gulf of Mexico, and the Caribbean Sea is due to two species: *Pterois volitans*, which is widely distributed throughout the Indo-West Pacific Ocean, and *Pterois miles*, which is widely distributed throughout the Red Sea and the Indian Ocean. As of April 1, 2011, there have been over 2,500 lionfish records in the USGS-NAS database. Lionfish distribution is tracked by USGS as part of the Non-indigenous Aquatic Species (NAS) database, which is the national repository for non-indigenous aquatic species-sighting data (fish, invertebrates, herps, and plants). There have been 35 species of non-indigenous marine fish documented in coastal waters of the Southeastern United States. Lionfish tracking by USGS is part of a large, joint research program in partnership with NOAA and REEF. The program focuses on lionfish biology and ecology, control techniques and assessment, assessment of impacts, outreach and education, and much more. This information is publicly available online at http:/nas.er.usgs.gov. Also on the website is an alert system, and fact sheets with basic biology information, and current distribution maps for each species.

J. Morris gave a PowerPoint presentation on invasive lionfish. **Morris** explained that two visually identical species of lionfish, *Pterois volitans* and *Pterois miles*, were introduced into the Atlantic through the United States aquarium trade in the 1980's. In 2000, lionfish were documented as being established off the coast of North Carolina, and are now widespread in the Southeast US and the Caribbean. An invasion of the Gulf of Mexico is currently underway with several sightings in the Northern Gulf waters in 2010. They are expected to invade South America as far south as the northern coast of Argentina.

Teem asked if lionfish are expected to pass through the Panama Canal. **J. Morris** explained that the probability was low.

Lionfish Biology:

- Lionfish have long life spans and can live for decades. **Morris** stated that there is a Lionfish in the Seattle Aquarium that has lived there for over 30 years.
- They inhabit all marine habitat types and depths, from the shoreline to over 1000'.
- Venomous spines are capable of deterring predators
- They have a temperature tolerance of approximately ~10 – 35C
- They sexually mature in less than one year and spawn in pairs
- A single female spawns over ~2 million eggs per year
- Eggs are held together in a gelatinous mass and are dispersed by currents
- Larval duration is ~25 days

Lionfish Ecology:

- Lionfish can reach densities higher than 200 adults per acre
- They are generalist carnivores that consume >60 species of fish and many crustaceans
- They feed during the day and at night, with a higher rate during crepuscular periods
- They have a high affinity for structure, but inhabit most marine habitat types
- Their prey are commercially, recreationally, and ecologically important
- Native predators have been observed to exhibit avoidance for lionfish
- Few parasites, compared to other species
- They exhibit site fidelity

Lionfish Impacts – Not just another stressor!

- Lionfish can cause high impacts in less than four years – other stressors have occurred over long time scales
- The scale of lionfish impacts is very large, with extreme impacts to biodiversity
- Potential interactions with other stressors
  - Climate change
  - Ocean acidification
  - Overfishing
  - Coral bleaching
  - Anthropogenic pollution

Lionfish Ecological Impacts:

- Biodiversity and resilience of coral, hard-bottom, and artificial reefs

- Potential reduction of ecologically important species such as cleaners, herbivores, and forage fishes
- Cascading impacts across food webs is possible (e.g., predation on herbivores, increased macroalgae, decreased coral biomass)
- Potential impacts to species of concern (Nassau Grouper, Warsaw Grouper, Speckled Hind, Striped Croaker, Key Silverside)
- The scale of ecological impacts is high in magnitude and geographically broad (North Carolina to the Caribbean and the Gulf of Mexico)
- Potential impacts on nursery areas (mangroves)

Socio-economic Impacts:
- Potential impacts to stock-rebuilding efforts for commercially important species
- Potential reduction of native species catch rates (e.g., lobster trap fisheries)
- Economic losses for commercial fishermen include loss of fishing days when envenomation occurs
- Potential impact to tourism due to lack of diversity, reef health, and diving safety concerns

Human Health Impacts:
- Lionfish sting symptoms include tachycardia, hypertension, hypotension, seizures, chest pain, abdominal pain, swelling, pain, and subdermal necrosis at the sting site, and temporary paralysis to all extremities
- Long-term health impacts of repeated envenomations are unknown
- High densities = high encounter rates
- Envenomation risk to bathers/swimmers increases at locations with structure such as piers, breakwaters, and confined tidal swimming pools

Control and management strategies:
- Control plans that support sustained removals can significantly reduce local Lionfish densities
- Programs for local lionfish control include commercial harvesting as a food fish, sport tournaments, and adopt-a-reef and other citizen-based removal efforts
- Based on current technology, lionfish eradication at the regional scale is not feasible, given the expansive depths and geography of lionfish habitat
- Proven capture methods include spearfishing, netting, and bycatch from traps and hook-and-line

Eat Lionfish Campaigns:
- Objectives: To encourage fishing pressure on lionfish in local areas and stimulate market development
- Benefits: Control in protected areas, locations with accessible reefs (i.e., some Caribbean islands), economic, and ecological
- We do not believe that fishing pressure can reduce the entire lionfish population, but can control in local areas

What's Happening Domestically?

- House Resolution 132
  - Submitted by Delegate to Congress Donna M. Christensen
  - 03/01/2011 - Referred to the House Committee on Natural Resources
  - 03/02/2011 - Referred to the Subcommittee on Fisheries, Wildlife, Oceans, and Insular Affairs
  - Urges development of a comprehensive, scientifically-based, region-wide strategy, including local management plans and international partnerships, to address the lionfish invasion in the Atlantic Ocean. The Resolution supports scientific research and capacity-building to develop and implement responses to the invasion. It encourages raising public awareness about the invasion across the United States and its territories through outreach and education
  - Congresswoman Christensen is identifying potential sources for funding

- NOAA's Lionfish Action Plan
- Puerto Rico
  - Fishing Regulation #7949 of Nov. 24, 2010. Article 22 – Special Dispositions for Lionfish
- US Virgin Islands – Lionfish Management Initiative Bill underway in Senate
- NOAA National Marine Sanctuaries Response Plans

<u>What's Happening Internationally?</u>
- ICRI Regional Lionfish Workshop (Aug. 2010 – Cancun, Mexico
  - Broad attendance (16 countries)
  - Best practices discussion and scoping of a manual

<u>International Coral Reef Initiative (ICRI)</u>:
- Created an Ad Hoc committee to "facilitate a coordinated response to the lionfish invasion in the Caribbean" (Nov. 2010)
  - Committee representation: ICRI, CAR-SPAW, Mexico, U.S., REEF, CABI
    - Build active participation
    - Disseminate best practices manual
    - Develop a regional lionfish strategy
    - Give lessons learned to other regions for ED-RR

<u>Specially Protected Areas and Wildlife – Regional Activity Center (SPAW-RAC)</u>:
- Passed a motion to promote "Participation in the development of a Caribbean regional response to the lionfish invasion". (Oct. 2010)

<u>Center for Agricultural Bioscience International (CABI)</u>:
- MTIASIC project-

  Mitigating the **T**hreats of **I**nvasive **A**lien **S**pecies in the **I**nsular **C**aribbean. Launched in October 2009, the project's goal is to conserve globally important ecosystems, the species and genetic diversity within the insular Caribbean. The project's objective is to mitigate the threat to local biodiversity and economy from IAS in the Insular Caribbean.
- Bahamas lionfish pilot

- Jamaica lionfish pilot
- Marine invasives strategy

Gulf and Caribbean Fisheries Institute:
- Lionfish special sessions during annual meeting
  - 2008: Guadeloupe, FWI
  - 2009: Venezuela
  - 2010: San Juan, Puerto Rico
  - Fall 2011: Mexico

Chilton asked about parasites in lionfish. **Morris** explained that their parasite work is very preliminary at this stage. Recent observations of invasive lionfish collected off North Carolina and in the Bahamas have found low prevalence of endo- and ectoparasites when compared to parasites of native reef fishes. **Chilton** next asked about the effects of lionfish venom on humans. **Morris** explained that if a person is stung, that person will experience intense throbbing, sharp pain, tingling sensations, sweatiness and blistering. In worst case scenarios the symptoms may include headache, nausea, abdominal pain, delirium, seizures, paralysis of limbs, changes in blood pressure, breathing difficulties, heart failure and tremors, pulmonary edema, and loss of consciousness. There is evidence that commercially available stonefish anti-venom has detoxifying effects on lionfish venom.

Schmitz asked what the native range densities of lionfish were. **Morris** stated that the densities are low; approximately 0-3 lionfish per hectare.

Schmitz presented the question that, given the fact that the lionfish native population densities are extremely low, what is controlling them in their native range, and can this mechanism be brought into the Atlantic to try and minimize the damage that the lionfish has caused? **Morris** replied that there has been very little effort to look at and understand lionfish in their native range. **Morris** added that personally, he is not confident that an answer will ever be found, but stated that the National Science Foundation has awarded a 3-year $700,000 grant to scientists at OSU to conduct a study to identify sources of resistance to the lionfish. The study will compare lionfish populations in the Pacific and Atlantic oceans to try to sort out why they are rare at home, but thriving in foreign seas. Scientists will study the ecological mechanisms that explain the lionfish's explosive spread and determine potential sources of natural resistance to the invasion in the heavily invaded Bahamas. Because little is known about lionfish ecology and behavior in its native waters, the research team will also conduct comparative studies in the Pacific. Researchers will perform short-term experiments on small patch reefs and long-term experiments and observations on large reefs. They will study behavioral and ecological interactions between lionfish and other species in both oceans. They will also determine whether any native Bahamian and Caribbean species are effective natural enemies of lionfish, including predators, parasites, and competitors of both juvenile and adult lionfish. The project will assist coral-reef managers as well as fisheries managers, who are concerned about the potential for lionfish to reduce commercially valuable species such as grouper and snapper, as well as ecologically important species such as parrotfishes.

Morris reported that a main issue at the moment is the discovery of Ciguatera in lionfish. Ciguatera is fish poisoning caused by eating certain large reef fish, such as Grouper and Snapper, whose flesh contain toxins produced by dinoflagellates such as *Gambierdiscus toxicus.* These dinoflagellates adhere to coral, algae, and seaweed, where they are eaten by herbivorous fish, who in turn are eaten by larger carnivorous fish. In this way, the toxins move up the foodchain and bioaccumulate. Scientists and researchers from UVI, St. Thomas, have been doing a study on Ciguatera fish poisoning in the territory, and preliminary data has shown that 4 out of 7 lionfish that were captured tested positive for Ciguatera. **Morris** stated that they are trying to develop the capacity to survey lionfish to establish baseline levels, and are confident that results will show that lionfish do not have higher levels of Ciguatera than the native species. It will then be possible to proceed with confidence on initiatives to develop local markets for the consumption of lionfish.

L. Akins gave a PowerPoint presentation on lionfish changing marine systems in the invaded range and how the invasion can best be addressed. **Akins** provided a brief definition of REEF and explained that their mission is to conserve marine ecosystems for their recreational, commercial, and intrinsic value by educating, enlisting and enabling divers and other marine enthusiasts to become active stewards and citizen scientists. REEF links the diving community with scientists, resource managers and conservationists through marine-life data collection and related activities. **Akins** stated that his main focus now is dealing with the exotic species issue. This is the first time that there has ever been a successful marine fish invasion in the Atlantic.

<u>REEF Lionfish Activities</u>

- Reporting
  - Online reporting at www.REEF.org
  - Phone in reports to REEF headquarters
  - E-mail reports via REEF.org
  - Inclusion in regular REEF fish surveys
  - Removal specimens to REEF HQ
  - Lobster by-catch reports
  - Derby data

- Derbies
  - Green Turtle Abaco - Bahamas
    - 2009 – 1,408 lionfish
    - 2010 – 941 lionfish
    - 2011 – Scheduled for June 24
  - Florida Keys
    - 2010 – Key Largo, Marathon, Key West – 664 lionfish
    - 2011 – Long Key, Key Largo, Key West
  - Palm Beach
    - 2011 – August 13
  - Bimini
    - 2011 – July 23

- Outreach and Education

  - "Report Lionfish Sightings" flyers
  - NOAA permit for capture and removal of red lionfish

- Market Development
  - Predation experiments
  - REEF Lionfish Cookbook

- Current field research
  - 2007 REEF Lionfish Projects:
    - Field projects in the Bahamas
    - 600 person days – Feb., Apr., July, Nov., Dec.
    - Collection/documentation:
      - 1,200+ specimens
      - Habitats
      - Stomach analysis
      - Reproductive frequency
      - Aging
      - Tagging for growth and movement
      - Parasites
      - Behavior

<u>Upcoming research</u>
- Emerging control methods
- Habitats
- Proportion time active
- Prey consumption rate
- Impact of lionfish on Bahamian reef fishes
  - Up to 95% reduction in fish biomass between 2007-2010
- MPAs and No-dive Zones: De Facto Lionfish reserves?
- Setting targets for lionfish removal
  - Up to 95% removal needed to prevent further impacts

Chilton asked if there are any ill effects when a shark or grouper eat a lionfish. **Akins** replied that there are reports of groupers consuming hundreds of lionfish without any ill effects. However, the long-term effects are not known. Aquarium staff have reported that every year there are mortalities in their live tanks of sharks and other top predator fish that consume spiny fish, due to the perforation of the esophagus from a spine. **Morris** stated that the incidence of ill effects occurring in a predator fish that consumes a lionfish depends on the size of each one. A large predator fish can consume a small lionfish without any ill effects. However, **Morris** observed a black sea bass consume a large lionfish, and within 10 minutes, the black sea bass experienced stress and respiratory problems as a result of ingesting the lionfish venom.

C. Furqueron provided a brief update on the National Park Service. There are 16 park communities that stretch from Padre Island, Texas around to Cape Hatteras, North Carolina. Of those parks, there are 6 that are considered coral reef parks. Although there are no standard protocols on conducting lionfish surveys, Biscayne National Park, Buck Island, and the Virgin

Islands all have lionfish management plans that outline the protocol for assessing and removing lionfish. In addition, park managers are increasing outreach efforts (e.g. distributing flyers at local marinas and posting information on the park website) to educate the public about the increasing lionfish problem. The South Florida/Caribbean Inventory and Monitoring Network (SFCN) is part of an effort in the National Park Service to develop a stronger scientific basis for stewardship and management of natural resources across the National Park System. There are approximately 150 random coral sites that are being monitored. These sites are available for viewing on Google Earth. In the Virgin Islands, a website is being set up for authorizing divers to be able to purchase diving equipment, and to capture and remove lionfish from the reefs. In the Everglades, spear fishing is not allowed in Dry Tortugas National Park. Also, getting information out to the public is limited, and new rules are needed.

Furqueron reported that since October 2010, they have been holding monthly and bi-monthly calls to the park to get an idea of what is going on. Development of a response plan is being discussed, which involves FWC, NOAA, the Park's eco-management task force, technical experts, and Washington representatives.

J. Herod gave a PowerPoint presentation on lionfish and coordination. He introduced their team, whose members are Pam Schofield with the USGS, James Morris with NOAA, Lad Atkins with REEF, Chris Furqueron with the NPS, and Jeffrey Herod with the USFWS. **Herod** explained that the purpose of the team's presentation was to show the amount of collaboration and cooperation that is focused on the lionfish issue. The first step in the process of seeking a National or Regional species Control Plan is to define the issue as important in the region, i.e., GSAR, and have the Regional Panel express the importance and provide specific recommendations to the ANSTF.

As an Action Item, Herod proposed recommending to the ANSTF that a Lionfish Control Working Group (CWG) be formed.

Herod explained that the purpose of the Lionfish Control Working Group is to scope the issues related to prevention, control, and management of lionfish. If the formation of a Lionfish CWG is approved by the ANSTF, it is further recommended that the CWG provide a final report by the next ANSTF meeting in November 2011. This report would contain supporting information for a recommendation on whether or not a National Lionfish Control Plan is needed. The purpose of a Lionfish National Management Plan (NMP) would be to serve as a guide to the ANSTF and other interested parties involved in managing lionfish and natural resources in U.S. waters.

Kumpf made a motion that the GSARP make a recommendation to the ANSTF that the ANSTF establish a Lionfish Control Working Group. Page seconded the motion and the motion passed.

Update on GSARP-Funded Projects

Trojan Y-Chromosome Eradication of Invasive Fish

J. Teem gave a PowerPoint presentation on Trojan Y-Chromosome Eradication of Invasive Fish and sex-specific DNA Markers for Tilapia. In the XY Sex-determination, the Males/Females ratio is 1:1. Females with two Y chromosomes produce only male progeny, half of which are Myy. Myy males are viable and produce only male offspring, which results in a Males/Females ratio of 1:0. Four different matings are possible, leading to increased male production. The Males/Females ratio is 7:1, and this ratio will increase over time if Fyy is added. The addition of a Trojan Y female (Fyy) to a target population will cause females (Fxx) to go to extinction over time. The carrying capacity of the system becomes occupied by Myy fish (males with two Y chromosomes). The production of YY fish requires selective breeding and the use of hormone-induced sex reversal techniques. YY geneotypes 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 fish, sex-specific DNA markers have been identified by using the RAPD PCR method.

RAPD PCR Method:

- Create a DNA pool from only females and another from only males
- Test each pool with PCR using a collection of short DNA primers that amplify sequences at different locations in the genome
- For each primer, compare female-specific DNA amplified products with male-specific amplified products using gel electrophoresis
- Find a primer that gives a band in one DNA pool, but not the other

Collaborators at Auburn University will provide male-specific and female-specific DNA for Nile tilapia. Screening for sex-specific PCR bands will begin shortly.

The comparison of the time to extinction between the TYC strategy and daughterless carp:

- In using differential equations to model daughterless with 8 gene copies, there are 10 types of mating pairs that can occur in the population, and the genotypes of progeny from each mating can be determined using a binomial distribution
- Each of the 11 fish in the population can be represented by an ordinary differential equation
- Under identical conditions, the initial rate of decline of females is similar
- However, the time to extinction of females is less for TYC (56) as compared to daughterless (102)

Combining the TYC strategy together with the daughterless strategy to cause extinction to occur faster:

- In modeling TYC/Daughterless with 8 gene copies, there are 36 different mating pairs that can occur in the population, and the genotypes of progeny from each mating can be determined using a binomial distribution
- Each of the 20 fish genotypes in the population can be represented by an ordinary differential equation
- Extinction occurs slightly faster with a combined TYC/Daughterless strategy
- The combined TYC/Daughterless strategy also reduces the number of fish required to achieve extinction

TYC Species Requirements:

- 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

Why a Trojan Y Chromosome strategy might be an appropriate technique for controlling invasive species:

- Species specific
- Requires no new technology development
- Involves standard aquaculture techniques, no recombinant DNA
- Trojan Y chromosome fish have already been produced in one species (*Oreochromis niloticus*)
- Reversible

Risks:

- The invasive species is maintained at the carrying capacity of the system until females are eliminated. The harmful affects of the invasive species thus persist until females are eliminated
- If insufficient numbers of Trojan Y Chromosome fish are added to the system, extinction will not occur
- The strategy must be employed for decades to reach extinction

Timeline for the TYC strategy to be used for control or elimination of a non-native species in the wild:

- A test of the system on Nile tilapia (*Oreochromis niloticus*) could be done at the present time if existing YY broodstock were made available
- The identification of sex-specific DNA markers for Nile tilapia will allow YY to greatly facilitate the development of YY broodstock

<u>The AIS Traveling Trunk</u>

H. Kumpf gave a PowerPoint presentation on the traveling "trunk" of invasive species. The AIS Traveling Trunk was created for the Gulf and South Atlantic Regional Panel on Aquatic Invasive Species due to the concern about the alarming numbers and impact of invasive species. There are over 100 plant and animal species that are identified as potential or real problems in the Gulf and South Atlantic. Invasive species can be described as exotic, alien, non-native, introduced, and a nuisance. Intentional pathways and sources of invasives are via stocking, food importation, aquaria/pet stores, personal releases, and property development. Non-intentional pathways and sources of invasives are via shipping, boat movement, ballast water, and aquaculture. Impacts from invasive species include ecological (habitat degradation, food chain alteration, competition with native species), and economic (increased management costs, economic losses, and reduced natural productivity).

Kumpf explained that he chose five plant species and six animal species to include in the "trunk". **Kumpf** informed the panel members that he has three of the plant species for the trunk,

but still needs Salvinia and Hydrilla. He has five of the animal species, but still needs Orange Cup Coral. **Kumpf** explained that his criteria for choosing the 11 species for the traveling trunk was to have species of interest that have a known distribution and could be used as "hands-on".

The traveling trunk is intended to serve as an outreach and educational resource from the panel. The trunk consists of three sections: a 9-section manual of informative talking points, a compact disk (CD) of illustrations and talking points for visual presentation, and actual samples of imbedded and laminated invasive species specimens for "hands-on" use. The presentation would run approximately 20-35 minutes long. It is suggested that the panel members review the checklist of contents, preview the talking points, test the CD for projection, and familiarize themselves with the included examples. The material is appropriate for interested lay people, secondary school students, and gifted programs. Suggestions and ideas are appreciated and comments may be emailed to the Regional Panel at http//nis.gsmfc.org.

The manual contains nine informative talking points:

- Introduction: Using the "Trunk"
- Definitions: What are invasive species
- Pathways/Sources
- Impacts: What is their effect? Ecological and Economic
- Invasive Plants: Species Profiles Talking Points
- Invasive Animals: Species Profiles Talking Points
- What can we do?
- Useful Web Sites for more information
- Acknowledgements

The manual covers the following invasive species:

Invasive Plants:

- Kudzu (*Pueraria montana*)
- Chinese Tallowtree (*Triadica sebifera*)
- Water Hyacinth (*Eichhornia crassipes*)
- Hydrilla (*Hydrilla spp.*)
- Salvinia (*Salvinia molesta*)

Invasive Animals:

- Invasive Invertebrates
  - Orange Cup Coral (*Tubatraea coccinia*)
  - Green Mussel (*Perna viridis*)
  - Zebra Mussel (*Dreissena polymorpha*)
- Invasive Vertebrates
  - Burmese Python (*Python molurus bivittatus*)
  - Pacific Lionfish (*Pterois volitans*)
  - Nutria (*Myocastor coypus*)

Kumpf asked for volunteers from the panel to review the talking points in the manual for the traveling trunk. He also asked if any panel members could supply Salvinia and Hydrilla for the traveling trunk. **Chilton** and **Page** volunteered to supply Salvinia for the trunk.

Reproductive Sterility as a Tool for Prevention/Control of AIS

J. Teem gave a PowerPoint presentation on reproductive sterility as a tool for prevention and control of invasive aquatics. Currently, the USDA allows only *Pomacea brigesii* to be sold and shipped in the United States. These Apple Snails leave aquatic plants intact. They are produced in Florida and there are some established populations recorded in the USGS database. On the other hand, *Asolene spixi* will eat aquatic plants and are no longer in trade. There are no established populations recorded in the USGS database.

Teem raised the question of whether reproductively sterile *P. brigesii* and *A. spixi* can be produced as new ornamental snail products. Sterile *P. brigesii* could be sold without any requirement for USDA approval, whereas sterile *A. spixi* cannot be sold without USDA approval. **Teem** questioned if there was a potential market for sterile *P. brigesii* and *A. spixi.* If *A. spixi* could be made sterile and was no longer a threat, perhaps the USDA would reconsider it and approve it to be reintroduced back into the trade again.

Irradiation of snails is done in a similar way to the irradiation of insects such as fruit flies. Snail irradiations take place at the Florida Department of Agriculture and Consumer Services FAST facility in Gainesville, Florida. The process of determining what dose of radiation will render snails reproductively sterile is to first irradiate the snails, then determine the sex of the snails in order to set up mating pairs, mate an irradiated snail to a wildtype, collect the eggs, and determine if the eggs hatch into snails that survive. **Teem** reported that snail mating chambers have been built. *P. brigesii* will be irradiated shortly and matings will be set up soon afterwards at Rawlins Tropical Fish Farm in Lithia, Florida, where Art Rawlins will oversee the snail mating chambers and monitor snail fertility assessments. Data on sterility/fertility will be produced once snails start mating. *A. spixi* dose determination studies will be set up once *P. brigeseii* matings are underway.

Lukens reminded the panel members that at the last meeting, **D. Schmitz** had volunteered to head an effort to create a twice-yearly newsletter for the panel, and needs two panel members to provide editing and feedback. **P. Fuller** and **D. Knott** volunteered to assist with the newsletter.

Public Comment

R. Lukens provided the opportunity for public comment. No comments were received.

The meeting recessed at 5:15 p.m.

Wednesday, April 13, 2011

The meeting reconvened at 8:30 a.m. The Chairman again provided the opportunity for public comment. No comments were received. The Chairman introduced **Kevin Hart**, the new rep for NCDMF.

NAISN – Overall Structure, By-Laws, and Future Plans

D. Schmitz gave a PowerPoint Presentation on NAISN's 2010 workshops and formal establishment in North America. NAISN is a consortium that uses a coordinated network to advance science-based understanding of, and effective response to, non-native invasive species in North America. The overall goal of the workshops is to link existing invasive species regional efforts (centers/institutes/labs/networks) into an overall coordinated network. Unifying and connecting these existing invasive species efforts into a single network will result in better communications, identification of informational gaps and needs, coordinated surveys targeting resource managers to determine and refine services offered, the use of the proven Cooperative Invasive Species Management Area (CISMA) concept and model and CISMA establishment throughout North America, tracking and disseminating information about current invasive species research at the regional levels, developing and implementing regional "Invasive Species Watch Lists", developing a trilateral forum to identify common invasive species concerns among Canada, Mexico, and the U.S., and addressing a coordinated public awareness campaign about invasive species in natural areas within North America, along with tracking their economic costs.

9 regional centers/institutes/labs/networks in North America

- Northeast Midwest Institute – Washington, D.C.
- Center for Invasive Plant Management – Montana
- National Marine Invasions Center (SERC) – Maryland
- Center for Aquatic and Invasive Plants – Florida
- Institute for Biological Invasions – Tennessee
- National Institute of Invasive Species Science – Colorado
- Center for Invasive Species and Ecosystem Health – Georgia
- Invasive Species Research Institute – Ontario, Canada
- Canadian Aquatic Invasive Species Network – Canada

Two workshops were held in 2010 (March and November) to determine how to integrate these institutes, centers, networks, and labs into a North American Invasive Species Network. Scientists, resource managers, policy makers, educators, NGOs, and information specialists from Canada, Mexico, and the U.S. attended these workshops along with the directors or representatives from invasive species centers, institutes, labs, networks, and others.

March 2010 workshop, West Palm Beach, Florida

- 27 participants – 7 centers/institutes/labs/networks
- Canada, Mexico, & USA
  - Agreed to form NAISN
    - Scope of the network
      - Canada, Mexico, United States, and all of their protectorates

- Desired future conditions or vision statement
  - ♦ A consortium that uses a coordinated network to advance science-based understanding of, and effective response to, non-native invasive species in North America
- Fundamental objectives (goals)
- Enabling objectives (strategies) & action items

November 2010 workshop, Boise, Idaho - Results

- Fundamental Objective 1 – A transparent organizational structure is in place that guides and allows for participation by all members/partners in the North American Invasive Species Network (NAISN)
- Fundamental Objective 2 – Invasive Species Network hubs, consisting of centers/institutes/labs and other organizations/partners, are in place to effectively act in a coordinated manner from local levels up through international levels in North America
- Fundamental Objective 3 – NAISN provides reliable resources and services across North America to stakeholders for the prevention, early detection-rapid response, management, research, policy analysis, and education/outreach on invasive species
- Fundamental Objective 4 – NAISN works across geopolitical boundaries at appropriate geographical scales (airline model)
- Fundamental Objective 5 – NAISN has the resources in place to achieve the DFC

NAISN status as of April 2011

- NAISN is in the process of becoming a 501(c)(3) non-profit organization
- NAISN is in the process of filling its Advisory Boards and Committees
- Developing a 5-year Strategic Plan, along with holding a workshop in Mexico
- Developing a website, protocols, and standards between the hubs and node(s)

Raising Awareness on AN ACTION PLAN TO MINIMIZE ECOLOGICAL IMPACTS OF AQUATIC INVASIVE SPECIES IN THE MISSISSIPPI RIVER BASIN by Mississippi Interstate Cooperative Resource Association

J. Herod gave a PowerPoint Presentation on an action plan to minimize ecological impacts of aquatic invasive species in the Mississippi River Basin. The first ultimate goal for the basin is to prevent all new introductions of aquatic invasive species. A list of priority species (i.e., high risk of introduction, establishment, spread, and impact) will be developed, updated as needed, and used for ranking MICRA's collaborative efforts. GSARP's similar efforts are to develop a master list of species, have state ANS plans identify action items, and to prevent new introductions of invasive species by raising awareness and informing the public and other partners. The second ultimate goal is to stop the spread of aquatic invasive species within the basin, control populations to ensure sustainable aquatic ecosystems and the social, economic, and cultural uses they support, or if possible, extirpate harmful AIS. A collaboration with partners will be put forth to help develop detailed integrated pest management plans for priority species, and for locations infested and impacted by several of those species. GSARP's similar efforts are for GSARP-funded research into control technologies, state ANS plans to identify action items, and the identification of known pathways of high risks.

Future efforts include:

- Develop environmentally-protective standards for ballast water, and implement effective shipboard treatments and best management practices
- Develop and implement measures that ensure canals and waterways do not enable AIS to pass and expand their ranges
- Prevent the introduction and spread of AIS as the result of escapement/release of organisms imported for various uses
- Implement a well-structured and funded Integrated Management Program (IPM) for AIS in the basin
- Conduct and evaluate cost-effective AIS pathway-specific outreach and education program

As an Action Item, Herod requested that a letter be provided to MICRA which would express GSARP's willingness to participate, coordinate, and collaborate on appropriate activities identified in the *An Action Plan to Minimize Ecological Impacts of Aquatic Invasive Species in the Mississippi River Basin*.

R. Lukens asked **D. MacLean** if it was possible for GSARP to write a letter to an external entity supporting something that they do, since GSARP represents the ANS Task Force, who is supporting it. **Lukens** was concerned about the procedure. **MacLean** explained that the Panel is an advisory to the Task Force, which means that they can write any letter to the Task Force expressing support of something, but as a Panel, they cannot represent themselves as the Task Force and write a letter to an external entity and express support for something. Caution must be used when wording the letter.

Lukens asked if there were any objections to the contents of the document. After various suggestions and opinions by the panel members, it was agreed that a letter would be drafted. It was also decided that the Task Force would be consulted to see if they approve of GSARP sending a letter of that nature. **Lukens** asked **Herod** and **Ballard** to prepare a draft of the letter, and then send it to him for review.

AFS Southern Division Resolution on AIS State Plan and Panel Funding – Action Requested

Riecke provided a draft of the *Resolution on the Federal Funding for Programs to Prevent, Control, and Manage Aquatic Invasive Species*. **Riecke** reported that AFS is requesting the Congress of the United States to appropriate 56 million dollars for funding on an annual basis for federal and state programs concerning the prevention, control, and management of nonnative aquatic invasive species.

As an Action Item, Riecke asked the Panel to decide if they approve the resolution.

Knott commented that statistics from out-of-date publications are cited in the resolution and are probably no longer applicable. **Riecke** asked for assistance from the panel in providing up-to-date statistics, and **Knott** volunteered to help.

Riecke explained that the Southern Division of the American Fisheries Society will be meeting on January 19, 2012 in Biloxi, Mississippi and the Resolution must be published in the summer 2011 newsletter prior to the January 2012 meeting to give the members time to look at it. The resolution will then be voted on.

Lukens suggested that **Riecke** initiate a request via email to the GSARP members for specific information or sources, and consider that participation as the panel's conceptual support for AFS to move forward with the Resolution.

Update on the Texas White List – Lessons Learned

Chilton gave a PowerPoint presentation on updates of the development of the Texas AIS White List, key issues that were encountered, and lessons that were learned. During the last legislative session, TPWD was directed to publish a list of exotic aquatic plants that are approved for use in Texas without a permit. TPWD was also directed to develop rules that are as permissive as possible without allowing plants that pose environmental, economic, or human health problems. New rules will be considered by the Texas Parks and Wildlife Commission in January 2011. TPWD compiled a list of exotic (non-native) aquatic plants (including macroalgae) currently imported into Texas (over 3,500 plants names). Many of the plant names were not actual species names, some were native, some were terrestrial, and some were cultivars. Therefore, the plant names were reduced to approximately 500 species names. All plants on the draft list (with the exception of microalgae) were evaluated for potential risk to aquatic environments using a scientific risk analysis based on Pheloung et al. Algae were handled differently, due to difficulties with evaluating thousands of strains.

Significant issues:

- Definition of an aquatic plant. Any member of the Kingdom Plantae, as documented using the most recent posting of the Integrated Taxonomic Information System, that is typically found in either aquatic or riparian habitats. (Mosses, algae, bluegreen algae)
- Definition of an exotic aquatic plant (Included vascular plants, macroalgae, microalgae, genetically modified organisms, and hybrids of exotics)
- Definition of a GMO (GMM?)
- Definition of native species
- Cultivars versus species level regulations
- Proprietary issues with algae
- Use of GMM
- Economic considerations
  - Some businesses said they would go out of business if the laws were implemented
  - Some businesses said they would move out of state if the laws were implemented
- Public input
  - Claims from public that TPWD did not accept input from them. However, public forums and public meetings were held for over a year
- Attacks on TPWD expertise
- Privacy concerns
  - Public rumor of Game Wardens sneaking into people's back yards searching for non-approved species and issuing a ticket or arresting them

- Permitting misunderstanding
  - Public misconception that dealers or others would be required to purchase separate permits for each species, even though they were informed that only one permit would be required and all species could be listed on it.

In January 2011, the Texas Parks and Wildlife Department discontinued development of their White List. This was the result of a letter being sent to the department from Texas State Senator Glenn Hegar that requested the department "forego further work and cease implementation on the proposed aquatic plant species white list and the accompanying rules." Senator Hegar also stated that "it is clear that approval of this measure would severely impact our state's economy and the biofuel, nursery, and gardening industries across the state". Hegar also stated he would sponsor a bill during the current legislative session that would remove the legislation that authorized the department to develop a white list in the first place.

Discussion about Establishing an AIS Risk Assessment Clearing House

D. Riecke discussed an AIS risk assessment screening tool that is being developed to accumulate and assess information describing the identity, characteristics, and impacts of exotic species. Before final release, it will be submitted for internal review, then be posted on the USFWS website. **Ballard** stated that Mike Haus is attempting to develop a website database by later this year and he will provide a link on the website. When a clearing house is developed for the Gulf Coast Region, it will also be linked. **Lukens** stated that if the panel is involved in doing risk assessments on their list, there would be an internal review process.

After suggestions by **Riecke** and **Chilton**, it was decided that Mike Hoff and Gloria Gordon would be invited to conduct an educational workshop on their risk assessment screening processes. **Lukens** stated that the steering committee will structure how to add the workshop to the next meeting. **Ballard** asked if the clearing house issue should be brought up at the workshop. **Lukens** stated that it is a culmination of a process, and the clearing house assumes that there are risk assessments already available on the website. He felt that it should be held in abeyance. **Riecke** suggested having Mike Hoff also discuss his internal review process.

Update on New Introductions

P. Schofield spoke on the Lionfish invasion. She stated that this is the time of year when they begin to reappear in the Gulf of Mexico and asked the panel members to report records of lionfish in the gulf and submit specimens to the USGS as soon a possible. **Schofield** discussed the lionfish posters that **Ballard** created and reiterated that sightings can be reported online on the USGS website or by calling the hotline number.

Akins suggested that it would be beneficial to educate people who work in call centers about lionfish and other invasive species, since they are not scientists or biologists. A better reporting form for call-in center employees could also be useful. For additional questions from callers, agency telephone numbers are provided.

Akins reported that they recently received a report of a panther grouper sighting by a recreational diver at Blue Heron Bridge in Palm Beach. Several attempts to locate and capture the fish have so far been unsuccessful. A sighting of a damsel fish was also reported, and a rapid response resulted in the successful capture and removal of the fish.

Aquatic Nuisance Species Task Force Update

MacLean spoke on funding issues for FWS. When a federal budget is finalized or a continued resolution is passed at the end of the year, decisions can be made on getting state and panel funding. It appears that the budget is intact and that there will not be any cuts made. **MacLean** has funding letters ready to be mailed out, but must wait until the final budget has been released.

MacLean reported that the Task Force met last November in Arlington, VA. Specific discussions included Chinese mitten crabs, the instate management plan that is under development, the Quagga/Zebra Mussel Action Plan, the summary of the International Symposium on Genetic Biocontrol of Invasive Fish, the summary of the Aquatic Invasive Species Vector Management Workshop held in Maryland, the ANSTF support of exploring the potential for a quagga-zebra mussel coordinator position, the approval to establish an ad-hoc committee to develop concrete recommendations leading to vector intercept and management strategy that will work on state and water-shed scales, and the approval of three new state plans for Wyoming, Nebraska, and Alabama, pending some final changes. The next Task Force meeting will be May 4-6, 2011 in Arkansas.

MacLean spoke about the Task Force and explained that it has a charter and is subject to renewal every two years. The administration has made changes this year, and when the charter is renewed there will be new language, including a requirement to have a balance both geographically and functionally for the Task Force members and the panel members. Susan Mangin, the Executive Director of the Task Force, will provide guidance and an explanation of these changes to the members. Also being changed is the process of adding new members to the Task Force. In the past, new members could be added as needed. Now, it will be vetted by the Administration before a member can be added.

MacLean updated the panel on the ANSTF Recreational Guidelines Committee. At the fall ANSTF meeting, the ANSTF agreed to form the ad-hoc committee to update the recreational guidelines, which were finalized in 2000. The committee will include federal, state, and local entities and non-governmental organizations.

The ANSTF is establishing an ad-hoc committee, chaired by Marshall Meyers, Executive Vice President and General Counsel of the Pet Industry Joint Advisory Council (PIJAC), and Mike Hoff, Region 3 Regional Aquatic Nuisance Species Coordinator, to develop voluntary codes of conduct for aquatic plant and animal-related industries.

MacLean briefed the panel on The National Invasive Species Awareness Group (NISAG). Earlier this year, a delegation of representatives from 5 states of the Mississippi River Basin visited NISAG for a week and then traveled to Washington, DC and met with various government representatives. The delegation visited 16 congressional offices in Washington, D.C. to

specifically discuss aquatic invasive issues and funding needs. The three funding mechanisms discussed were the funding implementation for state ANS Management Plan, funding for the MICRA Action Plan, and funding for the National Asian Carp Management Plan. The trip was very informative and worthwhile, and another trip is being planned for 2012.

Invasive Species Advisory Committee Update

Chilton gave a report and PowerPoint Presentation on the Invasive Species Advisory Council (ISAC). The ISAC recommends NISC member agencies such as the Army Corp of Engineers, the Department of Agriculture (ARS and APHIS), and others, to expand biological control efforts for invasive species, and in particular those in aquatic systems, which tend to have limited options that are often very costly. These efforts are justified, based on economic analyses that suggest an average beneficial return of 10-17 fold for each dollar spent on biological control. The ISAC also recommends that NISC member agencies continue to support and encourage participation in National Invasive Species Awareness Week (NISAW).

Action Items

- ISAC recommends the formalization of the commitment to address invasive species by codifying the National Invasive Species Council and the Executive Order 13112 definition of invasive species in legislation

- ISAC recommends that NISC agencies objectively evaluate available technology for inclusive management solutions to meet the National Invasive Species Management Plan objectives such as early detection network, collaboration, information sharing, and performance evaluations

- Global database on risk assessment: Support should be formalized for a global database of risk assessments for intentional introductions of species into countries. The database should include essential information such as the risk assessment model used, the year of the assessment, the individual questions and answers used for the assessment, and the name and contact information for the agency or organization conducting the assessment

- ISAC recommends that the following specific agencies consider the benefits of joining the Invasive Species Compendium: EPA, HHS (CDC), DOI (NPS, BLM. BOR, BOEMRE); DOT (Maritime Org., Coast Guard); State, DOC (NMFS); DOD, and the U.S. Trade Representative

- In an effort to understand the challenges to minimize spread and control of invasive species along transportation corridors and waterways, ISAC would request former federal officer(s), with experience on this issue, to present their perspective and provide advice to ISAC to assist the committee in understanding how a state, region, or county can successfully prioritize invasive species collaborative efforts (*requested by the Subcommittee on Control and Management*)

- Request to full ISAC/NISC: At the spring 2011 ISAC Meeting, request that U.S. Fish and Wildlife Service provide a report on revisions to the Lacey Act

- If there is interest in a White Paper on harvesting, let an officer know. ISAC will convene a task team to provide by the Spring Meeting a draft White Paper on incentives for harvesting invasive species

- NISC staff will revisit the logic/structure of the Prevention Subcommittee and to provide as update at the spring 2011meeting. If necessary, suggest revision to structure on how this is set up (*requested by the Subcommittee on Prevention*)

- Request to full ISAC/NISC: Have a panel discussion of experts on the topic of internet trade at the spring 2011 ISAC meeting (*requested by the Subcommittee on Prevention*)

- Request that NISC explore the possibility of conducting as intercessional ISAC webinar in spring 2011 to review draft of the PCR White Papers (*requested by the Subcommittee on Early Detection and Rapid Response*)

Lukens pointed out that there are new panel members and asked if everyone understood the relationship with the Invasive Species Advisory Committee and the National Invasive Species Council. On February 2, 1999, Executive Order 13112 was issued to prevent the introduction of invasive species, provide for their control, and to minimize the economic, ecological, and human health impacts that invasive species cause. The Executive Order established the National Invasive Species Council (NISC), which consists of 8 federal agencies and is a high-level, interdepartmental organization for current Federal programs that provides leadership, planning, coordination, and response of the complex and accelerating problem of invasive species. The Executive Order also established the Invasive Species Advisory Committee (ISAC), which consists of nonfederal representatives and stakeholders who provide recommendations as well as input and consensus advice to NISC. ISAC includes representatives from State government, private industry, tribes, academia, agriculture, forestry, recreation, and conservation organizations, as well as other stakeholders that have knowledge of the full range of invasive species and other related issues. **Lukens** explained that the relationship between the regional panel, ISAC, NISC, and the Task Force is not a legitimized relationship; it is a "friendly" relationship of understanding.

Discussion of Panel Membership

Ballard reported that he had contacted panel members who had not attended meetings regularly to inquire about their intent on continuing to serve on the panel. Several members will no longer be serving on the panel, and there are open seats available. The new representative from Alabama is **Craig Newton** with the ADCNR/Marine Resources Division. He will be attending the next panel meeting.

Schmitz stated that at a previous meeting, there was a discussion about adding an outreach member. **Lukens** explained that there is not technically an adoptive process for members. CVs and bios of those interested in serving on the panel are submitted informally.

Lukens moved to formally adopt a process for replacing members of non-standing seats only, as state and federal government seats are filled by whoever those agencies feel are appropriate. He suggested that when a seat is open, there should be solicitations for nominations from the panel for those seats, and interested potential members would be asked to submit their CVs or short bios of their knowledge of invasive species and what their interest is in that field. The bios would then be distributed to the panel members for consideration.

Hardin suggested holding considerations for seats until the next meeting. It was decided that in the interim, bios and CVs will be gathered and made available to the panel on the Panel's website before the next meeting. The CVs considered for nomination will be posted 30 days prior to the next panel meeting to enable the panel members ample time to review them. **Lukens** stated that the 3 open seats are the Environmental User Group, University/Research, and National Estuary Program.

Members Forum

Florida

S. Hardin provided a report on ongoing projects. He spoke on the project that was done in which *P. canaliculata* and egg clutches were manually removed from a 5-acre retention pond. The project continues and there have been no snails or clutches since October. However, small numbers (<10) were found in an adjacent marsh that does not drain into the pond. The project will continue through the reproductive season. Unfortunately, *canaliculata* has been found in other nearby (but not hydrologically connected) ponds, and it is no longer considered an eradication effort. Like island applesnails, this species is not particularly choosy about where it lays its eggs. In experimental settings, hybridization between these two species was not observed.

Control continues on sacred ibis. Occasional reports are received about birds in Palm Beach and Miami-Dade counties. The birds are frequently in the company of native white ibis. The last confirmed sighting was at the Palm Beach County landfill and the bird was removed by the USDA Wildlife Service. There are extensive undeveloped wetlands in the county in the vicinity of the landfill that could harbor additional sacred ibis, and brief opportunistic control is anticipated.

A multi-agency effort failed to eradicate purple swamphens (*Porphyrio porphyrio*) from south Florida due to the lack of a sufficient early detection and monitoring network. Since the conclusion of the project in late 2008, reports have been received of increased numbers of swamphens in the marshes of Lake Okeechobee and north. Ideally, a longer term assessment would follow to understand how this introduced species would fit in, and what impacts it might have on native vegetation and native wildlife.

A considerable amount of cold kill occurred this past winter, primarily in central Florida, even though it was not as harsh as the previous year's. Many species were affected, including blue tilapia (our most abundant non-native freshwater fish) despite its tolerance for low temperatures.

Other cichlids were affected along with Loricariid catfish. Cold winters have not eradicated Florida's established species, but they temporarily reduce their abundance and limit the northern edge of the range (generally to the I-4 corridor, which is the approximate boundary of subtropical Florida).

D. Schmitz provided a "Weed Alert – Red Root Floater (*Phyllanthus fluitans*)" flyer. This weed is a freshwater species native to South America and is the sole free-floating aquatic species of the large genus *Phyllanthus*. Common names of *P. fluitans* include red root floater and floating spurge. In 2010, red root floater was found growing in a canal and tributaries in, and near, the Peace River, Desoto County, Florida.

Because red root floater is a popular aquarium plant, it may have been introduced via the aquarium-plant trade. Red root floater can produce a closed canopy over water; and in backwater areas, small isolated populations can be difficult to find. Scientists fear if this species expands its range, it may become as problematic in Florida as have the South American water lettuce and water hyacinth, also canopy-producers.

Schmitz noted that they are facing a $2.5 to $17 million cut in their budget.

Schmitz reported that research during the last several years revealed that several populations of hydrilla, particularly in large Central Florida lakes, have become resistant to low concentrations of fluridone, an herbicide that has been most effective in controlling hydrilla during the past 15 years. During the past several years, research scientists have screened nearly 200 herbicides or herbicide combinations for use to control hydrilla. Bispyribac-sodium will be granted an Aquatic Use Label by the E.P.A. in April. Flumioxazin has received an Aquatic Use Label by the E.P.A. **Schmitz** stated that in research, this herbicide, when used in conjunction with diquat and endothall, proved highly effective in treatments of hydrilla in a lake. They are optimistic that these herbicides will be utilized to control hydrilla in the future.

Schmitz spoke about *Megamelus scutellaris*, a small leafhopper that is being used as a biological control method for water hyacinth. *M. scutellaris* is native to South America, and the nymphs and adults feed on the sap of water hyacinth. Researchers collected adults of *M. scutellaris* from Argentina in April 2006 and brought them to a quarantine facility in Ft. Lauderdale, where extensive host-range studies were conducted. They found that the planthopper is highly host-specific and does not pose a threat to native or economically important species. Unfortunately, after they were released, it was found that they could not tolerate the heat. Recently, scientists involved with the research travelled to South America and collected new species of *M. scutellaris*, which are hoped to be more climate-adaptive.

Georgia

K. Weaver provided a report on the following projects:

Satilla River Flathead Catfish Removal Project

For the 2010 sampling season, the crew removed 6,289 flathead catfish totaling 11,101 pounds. Since the implementation of the full-time flathead management program in 2007, more than 53,671 pounds of flathead catfish (19,761 fish) have been removed from the river in four years.

The size structure of the flathead population has been significantly affected, with the average size fish removed dropping from 5.8 pounds in 2007, to 2.9 pounds in 2008, to 1.4 pounds in 2009, but did slightly increase in 2010 to 1.8 pounds. In addition, the average length fish removed has declined from 512mm TL in 2007, to 352mm TL in 2008, to 281mm TL in 2009, and also slightly increased to 296mm TL in 2010. Biomass per effort has also declined from 57.1 kg/hr in 2007, to 23.6 kg/hr in 2008, to 19.9 kg/hr in 2009, but increased in 2010 to 31.1 kg/hr. In addition to changes in the size structure, the age structure was also truncated by removal efforts. In 2007, 15% of population was made up of age-1 and age-2 fish, and it was dominated by a strong 2003 year-class of age-4 fish (50%), and 5% of the population consisted of fish age-6 or older. In 2008, the strong 2003 year-class of now age-5 fish was still present and made up 13% of the population, and the same amount of older fish (>age-6) still comprised 5% of the population, but the population began to show signs of being heavily exploited, because 50% of the catch was now age-1 or age-2 fish. In 2009, the age-structure data revealed a typical population that has received high exploitation, characterized by large numbers of small fish (<356mm TL), with over 80% of the fish being age-1 or age-2, and only 3% of the population was age-6 or older, including that once-strong 2003 year class. The 2010-age sample is currently being analyzed. There was evidence for higher recruitment and earlier maturation. The electrofishing catch rate continues to climb and was calculated at 38.7 fish per hour in 2010, which was also up from 2009, where it increased dramatically from 32.5 fish per hour in comparison to 22 fish per hour in 2007 and 18 fish per hour in 2008. Gravid, turning age-2 females were found ranging in size from 200 to 251mm TL. There appears to be a shift in sexual maturity, due to a decade of increased exploitation. Maintenance control of flathead catfish in the Satilla River is possible, given our reported changes in biomass, size and age-structure, but higher recruitment and earlier maturation was demonstrated. As a result, this will require intensive harvest to be maintained to prevent the flathead population from rebuilding within 2 to 5 years. In the summer of 2010, WRD personnel discovered the first field observation of flathead catfish predation on a sturgeon of any species, an Atlantic sturgeon *Acipenser oxyrinchus* in the Satilla River, Georgia. The finding demonstrates a potential impact of flathead catfish predation on sturgeon populations, and provides further context for ongoing efforts to control flathead catfish invasions.

ANS Plan

Georgia has submitted its proposal to the ANS Taskforce to receive funding in 2011.

Apple Snail Projects

As reported in October 2010, the first phase to evaluate factors controlling the spread and distribution of apple snails has been completed and WRD should have the results soon. Phase 2 data concerning potential habitats would assist managers in planning surveys to investigate the occurrence of the species in Georgia. In addition, it will synthesize information on existing locations, abiotic factors effecting growth, reproduction, survival and invasiveness, and ultimately use all this vital information to build a predictive model of the spread of the invasive apple snail within Georgia. The study will also initiate baseline monitoring in existing invasive snail locations and adjacent control sites to begin investigating impacts of the snail on aquatic ecosystems. **Weaver** stated that their concern is that the locations may be too closely located to the Okefenokee. They are trying to determine if the water quality in the Okefenokee is keeping

the apple snails out. The ph is so low that it is believed to be a barrier in preventing the apple snails from becoming established. Results of this study will be available this fall.

Asian Swamp Eel
Work will begin soon to determine the status of Asian swamp eels in the Chattahoochee drainage. Funding has been received to determine if this is more wide-spread than originally suspected.

Weaver reported that plans for a proposed new tilapia production facility in Savanna are moving forward. These plans had been halted due to permit budget cuts.

Louisiana

Hillebrandt reported that the harsh winter has reduced invasive aquatic plant populations. While the winter was not as cold as the previous year, prolonged nights of subzero temperatures, especially in Shreveport/Lake Bistineau area, greatly helped in plant control.

Toledo Bend Reservoir underwent a large drawdown. At this time, it is still ~7½ feet below normal levels. The drawdown has isolated much of the Giant Salvinia into small pockets in the northern part of the reservoir. Crews are working to treat the small pockets before water levels return to normal and re-introduce the plant back into the main water body.

Outreach
Hillebrandt reported that a large effort is being made for better public outreach/education:

- Joint booths with LDWF Aquatic Outreach section
  - LSU "Ocean Commotion"
  - Boat shows in Lake Charles, New Orleans and Slidell
  - Bassmaster Classic
  - Bass Elite Series: "Battle on the Bayou"
- Group presentations
  - Louisiana BASS High School Championship
  - LaPlace Rotary Club
- New brochures/handouts
  - Rio Grande Cichlid
  - Common Aquatic Nuisance Plants
  - Northern Snakehead vs Bowfin (Choupique)

Mississippi

Perry reported that DMR is working to eradicate salvinia from the Pascagoula River Basin and elodea in Harrison County. A "Summary of Mississippi Department of Marine Resources AIS Activities – October 2010 through March 2011" was provided.

- 609 miles of waterway were surveyed for early detection of new outbreaks of AIS
- A 183-mile quarterly aerial photo survey was conducted for early detection of new outbreaks of AIS

- New infestations of common salvinia in the Pascagoula River and Brazilian elodea in Harrison County were discovered, immediately treated with herbicide, and reported to the NAS database
- 180 gallons of herbicide were applied in accordance with all state and Federal regulations to combat new and existing infestations of giant salvinia, common salvinia, water hyacinth, cogon grass, Chinese tallow, and Brazilian elodea
- So far, 1,000 "Invasive Lionfish" awareness decals have been produced and approximately 600 distributed to dive shops, charter boat captains, etc
- An article was published in the December 2010 issue of the *Coastal Angler Magazine* about the invasive lionfish threat in Mississippi
- A $27,500 remote-control helicopter camera system for experimental use in detecting harmful AIS in difficult-to-access open marsh areas was purchased with grant funds from USFWS
- The application process for FAA approval to use above R/C helicopter is underway
- Supervised the aerial application of Clearcast herbicide to 340 acres of Coastal Preserve lands for selective control of Chinese tallow trees
- "Stop Aquatic Hitchhikers" signs were produced and installed at 40 boat ramps in the coastal area
- Invasive species reporting form was developed, and report.invasive@dmr.ms.gov email address was created to facilitate public reporting of AIS
- Attended invasive species coordinator training workshop/webinar
- Participated in public comment webinar hosted by EPA regarding proposed changes to the Clean Water Act designed to help stop the spread of AIS

D. Riecke spoke on updates for Mississippi's ANS and new activities since October 2010. **Riecke** reported that MDWFP regulation (Public Notice 1405) was revised to prohibit transport into the state, offer for sale or possession within the state, live form snakeheads (all species in the Family *Channidae*) and swamp eels (all species in the Family *Synbranchidae*). Stocking of any nonnative fish except common carp, goldfish, grass carp, and rainbow trout would also be prohibited in private ponds, except for legally permitted aquaculture facilities. Revision was triggered by discovery of tilapia in a private recreational fishing pond. Previously (since 1969) only live forms of piranhas and walking catfish could not be transported, offered for sale, and possessed within Mississippi, and there were not any restrictions on stocking nonnative species in recreational fishing ponds. MDWFP did not succeed in prohibiting the stocking of only certified triploid grass carp stockings in private ponds due to opposition from Mississippi fish producers and the fact that agency hatcheries do not get the "triploid" grass carp on the prohibited stocking list.

Riecke reported that MDWFP responded to requests from three Mississippi fish farms on Lacey Act regulations regarding shipment of bighead carp. In March 2010, they learned that approximately 750,000 bighead carp are being cultured in Mississippi commercial fish ponds. It was documented that approximately 102,827 black carp were shipped to Mississippi from 2000-2007. Of that number, 52,556 fish shipped in 2000 were untested and of a "mixed ploidy" ranging from 30% to 90% triploid. Of those fish, 3,614 were diploids shipped in 2007.

The "Stop Aquatic Hitchhikers" posters obtained from USFWS in Atlanta were distributed to the MDWFP boat ramp construction crew for posting on boat ramp access signs.
MDWFP worked to guide submission of an AFS resolution on the ecological separation of the Great Lakes and Mississippi River Basin drainage to the AFS Governing Board. The resolution will be published in Fisheries and may be submitted to the AFS membership for a vote.

MDWFP submitted a letter of support and comments to the US Army Corps of Engineers for the Great Lakes and Mississippi River Interbasin Study.

Ongoing activities
The *Mississippi State Management Plan for Aquatic Invasive Species* has undergone state review and public comments were received. It was sent to the National ANS Task Force in January 2010 for their review and extensive comments were received. The Mississippi Department of Environmental Quality (MDEQ) is the designated lead agency for plan development. The MDEQ was heavily involved in response to the Deepwater Horizon oil spill event and this has prevented revision of the State Management Plan for Aquatic Invasive Species. The MDEQ hired a contractor to revise the plan for final submission to the National ANS Task Force in the fall of 2011. The number of fishing licenses and boat registrations sold was updated for inclusion in the revised final document

Represented the MDWFP on the Mississippi Aquatic Invasive Species Task Force, whose last meeting was in November 2007

Reprinted and continued distributing "Stop Aquatic Hitchhikers" cards along with all boat registrations or renewals that are mailed out

Continued printing the "Stop Aquatic Hitchhikers" logo and bullet list in the annual regulation guides–*Mississippi Outdoor Digest* and *Guide to Mississippi Saltwater Fishing*

Links to the Mississippi 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

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

The Mississippi Department of Marine Resources has been monitoring and treating Giant Salvinia (*Salvinia molesta*) in the Pascagoula River system

Future Activities
Implement the activities specified in the Mississippi State Management Plan for Aquatic Invasive Species

Compose freshwater fishing bait regulations to specify what bait can be legally sold, possessed, transported, and used in Mississippi

Pursue licensing of retail bait outlets selling live freshwater fishing bait

Adopt 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

The Mississippi Department of Marine Resource has secured Mississippi Coastal Impact Assistance Program funding authority to hire a Conservation Resource Biologist under a 4-year contract to form an Aquatic Nuisance Species Advisory Council and begin implementation of action items contained in the Mississippi State Management Plan for Aquatic Invasive Species

Establish an EDRR monitoring program comprised of state and federal personnel who sample aquatic species in Mississippi public waterways on a routine basis

Update and expand information for Mississippi contacts listed in the Expert Taxonomic Database

North Carolina

K. Hart reported that 10,000 copies of "Stop Aquatic Hitchhikers" brochures were distributed to the public and were well-received, which stimulated interest in invasive species prevention. The brochures were modified to be North Carolina-specific and 12,000 were ordered and will be distributed in May.

In the Albemarle Sound area, a decrease in Eurasian milfoil was observed. However, an increase in hydrilla was also observed.

The Wildlife Resource Commission is developing new flyers to be placed at boat ramps to raise more awareness of invasive species.

The North Carolina Department of Agriculture is looking into the development of a management plan specifically for hydrilla.

The North Carolina Aquatic Nuisance Control Council met in March. This year's work plan includes over 50 projects, such as hydrilla and milfoil treatment, and the introduction of grass carp for plant control.

South Carolina

C. Page reported that the Aquatic Plant Management Council met and approved the state's aquatic plant management plan.

Page reported that Lake Greenwood was infested by hydrilla, so it was stocked with carp as a control method and this method has proved to be effective. Lake Thurmond, a 71,000 acre lake, has a severe infestation of hydrilla that has grown from approximately 30 acres 2 years ago to approximately 7,000 acres now.

Informational INS flyers are being posted at boat ramps.

Last year, an experimental permit was received for Matrix, a copper-based compound similar to Captain for island apple snail control.

An ANS billboard campaign is underway, paid for with funds provided by the ANS Task Force. There will also be "Stop Aquatic Hitchhikers" flyers, literature, and an additional internet presence available.

P. Kingsley-Smith gave a PowerPoint presentation and discussed updates on the status of invasive and non-indigenous species in South Carolina.

Infection of the invasive swim bladder nematode parasite *Anguillicoloides crassus* in South Carolina populations of the American eel *Anguilla rostrata*

During 2010, Jan-Alexis Barry, a summer intern working with the South Carolina Department of Natural Resources (SCDNR) Inshore Fisheries section investigated infection of the American eel, *Anguilla rostrata*, by the nematode parasite *Anguillicoloides crassus*. Barry concentrated on eels captured in the Cooper River and Winyah Bay by the SCDNR electrofishing survey. Data revealed that overall, 38% of eels (n=139) were infected. Rates of infection were higher in June (62%, n=65) than in July (18%, n=74). In June, the infection rate was size-dependent, with 83% of eels <300mm in length being infected, compared with 43% in eels <500mm. In fall 2010, a Master's project was initiated on *A. crassus* by Jen Hein, College of Charleston. Hein investigated *A. crassus* infection of American eels in the ACE (Ashepoo-Combahee-Edisto) Basin, North Inlet, and Cooper River. Work to date has shown that even the small elver stages have high levels of infection. Laboratory experiments are currently underway to examine the effects of the parasite on eel growth and survival.

Understanding the impacts of the Asian seaweed, *Gracilaria vermiculophylla* on estuarine community dynamics

During the last decade, the Asian seaweed, *Gracilaria vermiculophylla*, has rapidly proliferated along high-salinity mudflats in several Georgia and South Carolina estuaries. The seaweed invasion is particularly noteworthy because the mudflats in these estuaries were historically devoid of macrophyte-based primary production and structure. *Gracilaria* has few native analogues in these mudflat environments, and thus represents an important opportunity to examine the ecosystem consequences of an invasion within a historically-unexploited niche. In theory, *Gracilaria* affects populations of species that are directly dependent on the invader for structure and food, as well as altering community- and ecosystem-level processes such as detrital production and food web structure. An NSF-funded project is currently underway through collaboration between the College of Charleston and the University of Georgia. This project will provide a mechanistic understanding of the multiple cascading impacts of this invasive species within the estuarine community. Through a combination of manipulative field experiments, laboratory assays and stable isotope analysis, these investigators plan to test three mechanisms by which *Gracilaria* influences native community structure. The novel primary production generated by *Gracilaria vermiculophylla* may be increasing rates of secondary production, increasing levels of mudflat microbial production through leeching of dissolved nutrients, and increasing detrital input to microbial and macrobial food webs.

Updated numbers for Asian tiger shrimp, *Penaeus monodon* catches from South Carolina commercial trawling activity

At the previous meeting in October 2010 in St. Petersburg, Florida, 10 *Penaeus monodon* had been reported from commercial shrimp trawls in the Gulf and South Atlantic coastal states (SC n=4; FL n=1; LA n=5). Additional catches after that meeting raised the total number of *P. monodon* captured in the region to 30 shrimp for the 2010 season (SC n=20; GA n=1; FL n=2; LA n=7), the majority of which were collected in South Carolina.

Hart noted that 5 Asian tiger shrimp were captured in North Carolina.

Collection of live adult specimens of Island apple snails, *Pomacea insularum* and hatching of juveniles under laboratory conditions

At the last meeting, a new infestation of apple snails, *Pomacea insularum*, near Charleston was reported (based on empty shells and egg masses). Since then, a live snail and several egg masses have been collected at the same location in Mt. Pleasant. Egg masses were held in an aquarium and several of them proved viable, hatching out as hundreds of juvenile snails that were raised for 3 months. At 6 intervals during those 3 months, several specimens were preserved to generate preliminary growth rate data at an ambient laboratory temperature of ~22°C. This husbandry was an informal exercise, since feeding was not controlled and the snails were held in mass culture. As yet, these snails have not been measured.

Page added that the state DNR budget has been cut by 54% in the last 2 years. However, this year, the cut was only 2.8%. Their invasive program works off water recreation resource funds, so they annually receive $400,000 to 600,000.

Lukens provided the opportunity for other panel members to report on their programs. **Akins** spoke on REEF's continued outreach efforts for lionfish and other non-native species. Seafood festivals have particularly been a good avenue for getting the word out. REEF also had an invasive species exhibit at the Florida Nonnative Pet Amnesty Day that was recently held. Numerous workshops have been held, such as educational training workshops in the Florida Keys. In January, REEF helped organize the Southeast Florida Regional Control Strategy Workshop. Representatives from numerous agencies participated in the workshop to prioritize key issues concerning the lionfish invasion and initiate future management strategies.

Research projects are ongoing, and a new study is being implemented to look at the impact from a lobster fishery in which lion fish are ending up as bycatch. The lobster fishery and some of the fishermen believe that their lobster catches are increasing due to that.

Reports of lionfish sightings are continuing to be submitted, and a new "hit list" tool is in development that can direct people who want to remove lionfish to recent reports that contain information on the location of the reports. Lionfish activities can be planned around the recent reports, and removals can be documented as well.

Recent marketing developments have included the creation of a lionfish cookbook, and the collaboration with restaurants to connect them with lionfish suppliers. There is a new demand for lionfish in the food market, but there is insufficient information on suppliers.

J. Lane gave an update on the USACE. They have provided approximately $800,000 of funding for an Aquatic Nuisance Species Research Program. They are also moving forward with an invasive species management center, and future funding is anticipated.

Funding has been received for a melaleuca biological control project. The objective is to develop safe and effective biological control agents of melaleuca and other invasive weeds.

At the Spring Southern Division of the American Fisheries Society meeting, **Lane** participated in a discussion panel on non-native fish that have invaded the Everglades that was due to the facilitation of certain restoration initiatives. The goal of the panel was to bring forth new ideas regarding the management of non-native fishes in Florida in order to enhance the protection of the Everglades and other natural areas in South Florida from the spread of new non-native fishes. The USACE has been restoring the Everglades National Park; however, non-native fish were introduced into the park because the water that was being diverted into the park contained non-native fish. This will hopefully result in broader implications for policies within the USACE.

Texas

E. Chilton reported that they have completed a final version of their Comprehensive Management Plan and submitted it to the Coastal and Inland Fisheries Grant Division Director. It will then be submitted to the Governor's office for approval.

In November 2010, House Bill 338 was introduced. This bill is now revised in a combined senate/house version and states (in part): A public entity, other than the department, that produces a list of noxious or invasive terrestrial plant species growing in this state shall provide with the list a disclaimer that states: "THIS PLANT LIST IS ONLY A RECOMMENDATION AND HAS NO LEGAL EFFECT IN THE STATE OF TEXAS. THE TEXAS DEPARTMENT OF AGRICULTURE HAS SOLE AUTHORITY TO LABEL TERRESTRIAL PLANTS AS NOXIOUS OR INVASIVE."

Chilton reported that Senate Bill 1480 would return the regulation of exotic aquatic plants to a "black list" or "prohibited list" approach. In addition, the bill would adjust the penalties related to possession of an exotic aquatic plant downward to allow lesser penalties for minor violations. All stakeholders involved in the "white list" and rulemaking process requested that TPWD return to a "black list" approach. This legislation reflects an agreed-upon approach between TPWD and all affected stakeholders. As proposed, S.B. 1480 amends current law relating to the regulation of exotic aquatic species by the Parks and Wildlife Department and provides penalties. **Chilton** stated that the prohibited list will be extended over the next few years.

Chilton reported that the Texas state legislature pared funding for controlling invasive aquatic salvinia, hydrilla and hyacinth, which will mean a loss of approximately $750,000 yearly.

Construction has been completed on two giant salvinia weevil rearing facilities. Giant salvinia and salvinia weevils will be cultivated in a controlled environment from which the weevils can be harvested and released. This initiative is intended to provide supplemental insects to compensate for a decrease in weevil populations common during winter months. It is hoped the facility will provide weevils for distribution to crucial areas at the beginning of the growing season to provide more effective biological control of giant salvinia.

Treatments to eradicate zebra mussels at Sister Grove Creek proved ineffective. Funding for treatments has been exhausted and no further treatments will be conducted.

Chilton reported that the USDA has issued a permit for release of Arundo scale (*Rhizaspidiotus donacis*). The armored scale insect will be used for the biological control of *Arundo donax* (giant reed, carrizo cane) and is expected to be more effective than the Arundo wasp. A. donax is an extremely invasive weed of riparian habitats and irrigation canals of the Rio Grande River Basin and the Southwestern United States. It displaces native plants and animals by forming massive stands that pose a wildfire threat, and consumes excessive amounts of water and competes for water resources in an arid region prone to perennial droughts.

L. Hartman provided a flyer on the Texas Rapid Assessment Team's (TexRAT) monitoring event scheduled for June 19-24, 2011. TexRAT is collecting samples from Galveston Bay and its tributaries. Scientists will use both traditional and non-traditional gear to provide a baseline of species data and determine if any invasive species are in the watershed. From the data collected, the group will be able to map species from multiple life stages and habitats. The combined effort will include members from Texas state agencies, universities, NGOs, and citizen-scientists; it will also incorporate aid from other states, and the Federal government. This group is anticipated to be the backbone of invasive species alert and response for Galveston Bay.

L. Gonzalez reported that they received a $5,000 grant from the panel which is being used towards a project called *The Collaborative Approach to Managing the Invasion Potential of Aquarium Species in Texas*. This project aims to better determine what drives the decision to purchase, and later to release, ornamental fish and to incorporate this understanding into an invasion potential scorecard. The results of this project will provide TPWD with information to develop ways to mitigate the long-term effects of non-native species that become invasive in the Houston-Galveston Region. Also, it will help TPWD to design better management, outreach and communication strategies. **Gonzalez** suggested that since the panel funded the project, they might like to have a presentation of the project at a future meeting. **Hartman** recommended the presentation for next spring's panel meeting.

Work Group Updates

Early Detection/Rapid Response -

Hartman reported that the early detection/rapid response plan is still undergoing revisions.

Other Business

Lukens reported that Tonya Shearer has completed the final version of her Orange Cup Coral invasion report and he requested that **Ballard** make the report available to the panel for review

on the website. **Lukens** also requested that the panel vote whether or not the report should be provided to the South Atlantic Council, since there is an Orange Cup Coral problem in their jurisdiction. **Lukens** suggested that **Ballard** provide Shearer's report to the Aquatic Nuisance Species Task Force in his report and indicate that Orange Cup Coral resides in the south Atlantic and the Gulf of Mexico and is being monitored.

Ballard gave a PowerPoint Presentation entitled "Regional Panel Recommendation for the Aquatic Nuisance Species Task Force Meeting". GSARP recommends to the ANSTF that an Invasive Lionfish Control Working Group be formed. The purpose of an Invasive Lionfish Control Working Group (ILCWG) is to scope the issues related to prevention, control, and management of invasive lionfish (*Pterois volitans*, *Pterois miles*). If the formation of this ILCWG is approved by the ANSTF, then it is further recommended that the ILCWG provide a report by the next ANSTF meeting in November 2011. This report would contain supporting information for a recommendation on whether or not a National Invasive Lionfish Control Plan (NILCP) is needed. The purpose of a NILCP would be to serve as a guide to the ANSTF and other interested parties involved in managing lionfish and natural resources in U.S. waters.

After a brief discussion and several suggestions by the panel members, the document was edited and all members were in agreement of the new version.

Next Meeting Time and Place

It was decided that Austin, Texas would be the location of the next meeting, with San Antonio, Texas being the second choice.

The next meeting will take place sometime during the week of October 3rd.

Public Comment

Lukens 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 3:40 p.m.