GULF OF MEXICO REGIONAL PANEL ON AQUATIC INVASIVE SPECIES
MINUTES
Tuesday and Wednesday, October 1-2, 2002
Tampa, Florida

Call to Order

Ron Lukens called the meeting to order at 9:00 am and began the meeting with introductions of the Gulf of Mexico Regional Panel (Panel) members. Since this was the first meeting of the Panel, it was agreed that Lukens would serve as moderator. Lukens noted that election of a Chairman and Vice Chairman would take place during the meeting. The following were in attendance:

Attendees

Pat Carter, USFWS, Atlanta, GA
Earl Chilton, TPWD, Austin, TX
Walter R. Courtenay, Jr., USGS, Gainesville, FL
Dale Diaz, MDMR, Biloxi, MS
Pam Fuller, USGS, Gainesville, FL
Bryon Griffith, EPA/GOMP, Stennis Space Center, MS
Sharon K. Gross, USFWS, Arlington, VA
Scott Hardin, FFWCC, Tallahassee, FL
Thomas L. Herrington, FDA/GOMP, Stennis Space Center, MS
Dewayne Hollin, Texas Sea Grant Program, College Station, TX
Chuck Jacoby, University of Florida, Gainesville, FL
Jim Kruse, Texas Sea Grant Program, Houston, TX
Herb Kumpf, At-Large Member, Panama City, FL
Wendell Lorio, BTNEP, Thibodaux, LA
Mark McElroy, LDWF, Baton Rouge, LA
Tom McIlwain, NOAA Fisheries, Pascagoula, MS
Marilyn O'Leary, Louisiana Sea Grant Program, Baton Rouge, LA
Harriet Perry, CFRD/GCRL/USM, Ocean Springs, MS
Bob Pitman, USFWS, Albuquerque, NM
George Ramseur, TNC, Ocean Springs, MS
Daniel Roberts, FFWCC/FMRI, St. Petersburg, FL
Ramon Ruiz-Carus, FFWCC/FMRI, St. Petersburg, FL
Cynthia Sarthou, Gulf Restoration Network, New Orleans, LA
Don C. Schmitz, FDEP, Tallahassee, FL
John Teem, Florida Department of Agriculture/Division of Aquaculture, Tallahassee, FL
Bruce A. Thompson, Coastal Fisheries Institute/LSU, Baton Rouge, LA
W. Jay Troxel, USFWS, Atlanta, GA
David W. Yeager, Mobile Bay National Estuary Program, Mobile, AL

Staff

Ronald R. Lukens, Assistant Director, GSMFC, Ocean Springs, MS
Nancy K. Marcellus, Administrative Assistant, GSMFC, Ocean Springs, MS

Overview of Panel Status

Lukens reported that this was the first meeting of the newly reformed Panel. The Panel was previously administered by the EPA Gulf of Mexico Program, and the Panel was comprised of the Management Committee of the Gulf of Mexico Program. Lukens acknowledged the Gulf of Mexico Program for taking the initiative to start the Panel. Administrative funding comes from the U.S. Fish and Wildlife Service (USFWS) to support the Panel. Due to the development of new state plans and more regional panels being established, the funding available to support these administrative structures is becoming inadequate. It is hoped that the reauthorization process of the National Invasive Species Act will result in additional funds being appropriated by the Congress.

Overview of ANS Task Force and Regional Panel Responsibilities

Sharon Gross, Executive Secretary of the Aquatic Nuisance Species Task Force (ANSTF) and an employee of the U.S. Fish and Wildlife Service (USFWS), provided and overview of the ANSTF and Panel responsibilities. Gross formally thanked the EPA Gulf of Mexico Program for initiating the Panel, adding that the Panel and its activities would not be as far along as they are had it not been for their efforts to get things moving.

What is the focus of the ANSTF and the regional panels? The focus is to coordinate a response to aquatic invasive species at the federal, regional, state, and local level. Their function is to provide coordination, not trying to make people do things they do not want to do, but to understand what different states, regions, and federal agencies responsibilities are and how they can work together to try to address aquatic invasive species. The Nonindigenous Aquatic Prevention and Control Act (NANPCA)of 1990 was the first legislative attempt to address this coordination issue for aquatic invasive species. The NANPCA was reauthorized in 1996, renamed the National Invasive Species Act (NISA), and is up for reauthorization again this year (2002). The NANPCA set up the establishment of an inter-agency task force. It identified what is called the Aquatic Nuisance Species Program, which has become the strategic focus for all aquatic invasive species activities. It focuses on two primary areas: either prevent invasive species from getting here, or control them once they do. Another important component of the NANPCA is regional coordination, recognized as critical to any program to address aquatic invasive species.

The ANSTF was established in 1991 and focuses as a forum and coordinating entity. It serves to coordinate a group of federal agencies with responsibility, both regulatory and management, for aquatic invasive species in an effort to make themselves more effective in addressing aquatic invasive species issues. Two years ago, the Gulf States Marine Fisheries Commission and the Mississippi Interstate Cooperative Resources Association were added to the ANSTF as ex-officio members.

The ANSTF has been operating according to the Aquatic Nuisance Species Program, which focused on prevention, control, detection, and monitoring, including a number of supporting elements. About a year ago the ANSTF developed a strategic plan, which focuses on prevention, reducing the threat of invasive species, control, and minimizing the harmful affects of invasive species.

Gross explained the ANSTF committee structure. Before reorganization in 2001, the ANSTF had a number of committees under its control. It was a flat structure which created a bottleneck at the ANSTF level, making it difficult to address all committee needs. The reorganization focused on the strategic plan and the ANS program together. Now, there are primary committees for communication, education and outreach, research, prevention, control, detection and monitoring. Each of the regional panels serves as a committee of the ANSTF as well. It is hoped that this new structure will allow better communication between issue specific and species specific committees to make sure that the resources are directed toward high priority items.

Activities are implemented depending on the commitment and funding available from the individual agencies. The ANSTF itself does not get funding to conduct specific monitoring or control activities. The individual agencies request and get funding to implement those types of activities. The ANSTF is dependent on the individual federal agencies to request the funding and then make sure it gets directed to the appropriate work.

Regional panels are set up as official committees under the ANSTF. The ANSTF, even though it is primarily federal, is chartered under the Federal Advisory Committee Act, because whenever non-federal and non-state people meet with federal agencies, a standard set of rules must be followed. Participation in the panels includes federal, state and local agencies, but also private, commercial, academic, and other affected entities dealing with aquatic invasive species.

What does the ANSTF see as the role of the regional panel? The ANSTF is a group of federal agencies, so it relies on the regional panels to make sure that their state and regional priorities are communicated to the federal agencies. It is important that the regional panels have state input as well as input from the federal agencies, tribes, and other interstate organizations because they all play a role in regional management of aquatic invasive species. Another important role of regional panels is to develop action plans. Action plans help the regional panels develop their priorities and lay out activities that are high priority, so all of the state agencies, federal agencies, and interstate organizations can focus their efforts on those highest priorities.

One of the strategic goals of the ANSTF is to maximize organizational effectiveness. One of the strategies is to establish regional panels anywhere it is believed that they are needed. Coupled with that strategy, the ANSTF strives to encourage and facilitate the development and implementation of state and interstate management plans.

There are currently nine state and interstate plans that are approved by the ANSTF. Massachusetts has submitted theirs to the ANSTF, and Alaska, Montana, and Wisconsin are expected to submit their plans by early November. The momentum to develop and implement state plans is increasing; however, that momentum creates a funding problem as more and more states submit for implementation funding from a level funded program. There has not been an increase in funding for state plan implementation for the last three years. Even so, she encouraged states to continue to develop state plans, as it is in their own best interest to be prepared to adequately address the ever growing invasive species problem.

Overview of National Invasive Species Council and the Invasive Species Advisory Committee

Ron Lukens gave an overview of the National Invasive Species Council (Council) and the national management plan. Lori Williams, Executive Director of the Council, provided a PowerPoint presentation to assist with the overview. The Council was established under Executive Order 13112 during President Clinton's term. The Bush Administration reaffirmed the Executive Order in early 2002. The Council was established to ensure that there is federal agency coordination in addressing invasive species issues, both aquatic and terrestrial. Sharon Gross added that the ANSTF operates as the aquatic arm of the Council. The Council operates at the Departmental level, whereas the ANSTF is represented by agency personnel..

Lukens continued with the membership of the Council indicating that the members are the Secretariat, in other words the Secretary of Commerce, the Secretary of Agriculture, and so on. It is assumed that most of the activities take place at a lower level. The Co-chairs are Departments of Interior, Agriculture, and Commerce. Most of the recommendations go to the co-chairs with the expectation, because they are co-chairs, that they are going to be leaders in trying to make the Council understand the importance of actions. Other members include Department of Transportation, Department of Defense, Department of Treasury, Department of State, and the Environmental Protection Agency. There is a proposal to add a state agency person to the Council, if not as a Council member, as ex-officio member to attend Council meetings.

Part of the Executive Order required the establishment of the Invasive Species Advisory Committee (ISAC). As Sharon pointed out with regards to the ANSTF , the ISAC is also FACA authorized, so it must follow the guidelines for operating as a FACA authorized entity. The ISAC represents a balance of non-federal expertise, localities, and stakeholder interest. There is not a federal seat on the ISAC. The federal agencies and Council staff attend all ISAC meetings to provide resource support and assistance.

The Executive Order was set up to provide direction to the federal agencies that have jurisdiction with regards to any actions for invasive species:

- Not authorize or fund or carry out any activity that is likely to promote the introduction or the spread of invasive spread of invasive species.
- Promote action at the state, a local-state-tribal ecosystem level.
- Recommend measures to enhance international cooperation. Primary action with international issues is at the federal level. States rarely interact individually with an international issue.
- Develop web based information network on invasive species.
- Develop NEPA guidance related to invasive species.
- Draft and update a National Invasive species management plan every two years.

Regarding spending, most of the money is spent on issues associated with agriculture. The Council and the ISAC are attempting to bring a focus to the need for funding and resources for all species and their associated issues, not just agriculture. Herb Kumpf pointed out that the Department of Agriculture spends a tremendous amount of money developing bio-control activities or measures. Spending is disproportionate at first sight, but the need is great and the work is costly. It is also important to consider the economic importance of the agriculture industry to the US.

Lukens reported that a lot of spending has taken place with regards to plants, plant and animal diseases, and plant pests in terms of agriculture. The job on the aquatic side is to raise the level of awareness of the problems with invasive species in water.

The following are sections in the national invasive species plan.

- **Coordination and leadership** - There are more than 20 federal agencies that share responsibility over some aspect of invasive species management. All of the states in the nation have some authority to deal with invasive species.

    - Adopt formal dispute resolution procedures - Disputes will arise over who has the authority to do what. In addition, funding may be insufficient, and arguments may arise over who should be funding what activities.

    - Work with state, local, and regional organizations - This demonstrates the need for regional coordination to bring the states and their authorities together to work as a unit.

- **Prevention -** Prevention is the most efficient and effective measure. Successful prevention eliminates or reduces the long-term expenditures typically required by control of established invaders.

    - Enhance interdiction efforts, develop and test risk assessment systems for evaluating internationally introduced species and reducing the risk of

establishment. Risk assessments can be done on species that have not yet gotten here to determine the risk associated with the possibility that it will get here and by which pathways it will most likely get here.

- Identify and rank key pathways by which invasive species move. The risk assessments will help do that. Risk assessments are also involved in the intentional importation of organisms. If something is brought into the country for some "legitimate" reason, risk assessments can be done on that organism to determine the risk of its invasiveness if it were to escape into the wild.

- **Early detection and rapid response** - If there is an invasion and prevention has not been successful, this is the next best step. It requires a process to monitor activities that allow early detection, because the best time to eradicate a non-native species is in the early stages before it is able to reproduce and spread.

  - Rapid response is important within a state, but also in a regional context. Knowing who has the authority and resources to do things in response to an incipient invasion is extremely important because contingency plans can be developed. The problem with rapid response is flexible funding sources.

- **Control and management** - Control and management is difficult, but it is also necessary to try and keep incipient invasions from spreading.

- **Restoration** - Restoration is important since most successful invasions are in disturbed areas, it is extremely important to have restoration activities. If a non-native species can be controlled or eradicated, typically they would have had some kind of impact in that area. It is important to go back and try to mitigate that impact that they may have had. Restoration turns out to be an extremely important component of control and management.

- **International cooperation** - International cooperation is complicated and frustrating. There are a lot of international groups that are already formed to deal with this issue. However, international cooperation is vital, because invasive species is a global issue that can only effectively be address by cooperation at all levels.

- **Research -** Species that come into this country may have research information available from the country of their origin or they may not. The research that might be useful to the US may never have been done, particularly in terms of what is it about this area that makes that animal successful. Life history issues need to be addressed. Basic things, like taxonomic expertise, are needed to identify non-native species or to understand life history requirements. The reauthorization bill targets funding to support educating students in taxonomic study. The need for this has been recognized for years.

- **Information management -** In the context of the national plan, good information and data management are needed at the national level for all taxa. It is being worked on now, and the infrastructures are in place. It combines the details of collecting and inputting data and turning the data into information that people can use.

- **Public awareness and education** - It is known that individuals have introduced non-native species to create a fishery or to create a market for certain organisms. Additionally, the public often introduces organisms accidentally, through aquarium or aquaculture escapes or unintentional transport. If there are education and public awareness programs that tell people what the potential outcome of their actions are, it may help to keep people from doing this kind of thing. Such a program could also warn against activities with a high likelihood of accidentally transporting organisms.

Press coverage of all kinds - television, print media, magazines - on invasive species has increased. That trend is elevating the awareness of the nation, and hopefully elevating the awareness of the Congressional appropriators. State activities are on the rise. Even given constricting state budgets, state activities to deal with these issues continue to be on the rise.

Private sector engagement has increased over the past several years. Codes of conduct are being developed by such industries as aquaculture, agriculture, and the pet trade to develop guidelines for how they should conduct their business or an industry and be responsible, recognizing that they can have an impact on the environment. Tom McIlwain commented that the *Federal Register* currently has a notice of a NOAA Fisheries Code of Conduct for Responsible Aquaculture in the EEZ.

Database and Web Page

Lukens introduced Pam Fuller, the Invasive Species Coordinator for the U.S. Geological Survey (USGS) stationed at the Florida Caribbean Science Center in Gainesville, Florida. He stated that Fuller has developed a national aquatic invasive species data base and web page.

Tracking Nonindigenous Aquatic Species - Pam Fuller gave a presentation providing an overview of the database and web site, the data sources, and the types of queries that can be executed with the data. She keeps track of anything that has been introduced outside of its native range, whether from a foreign country or native to the US but has moved outside of its native range. She also includes all introductions whether or not they have become established. No judgements are made about invasiveness or whether something is good or bad.

The database is growing with more than 60 fields. It contains the what, where, when, how (if she knows), and what the sources are for the information. Everything is related to the USGS system of hydrologic unit codes, which is more relevant for aquatic species than using something

artificial like county or state jurisdictional lines. Sources of data are varied, with about 95% of the information from published literature for the fish portion. However, she gets reports from state and federal biologists, universities, museum searches, and private individuals. Field studies are also conducted from the USGS lab, and those reports go into the database as well. The data base can be accessed at the following website: *http://nas.er.usgs.gov*.

USGS NAS database capabilities include:

-source analysis	*determine where things came from*
-pathway analysis	*how they got in*
-spatial analysis	*where are they coming to, are there certain hot spots in the country that should be targeted for prevention*
-patterns over time	
-populations status	*how many introductions were successful and resulted in established populations*
-distribution maps	*pictures of the actual distribution of the species*.

She recently conducted a major revision of the database, correcting some problems and standardizing some aspects of the data to allow better analysis.

Emphasizing the power of partnerships, Fuller mentioned that she is now working with NatureServe, formally ABI, formerly National Heritage Program, formerly The Nature Conservancy. In the process of creating fish maps, Fuller discovered that NatureServe was doing similar work, making distribution maps for native species by an 8 digit HUCs for all of the United States. She contacted NatureServe and explored the possibility of working together. They are trying to set up Arc IMS so it will query the NatureServe database for the native range and the USGS database for the introduced range, and put those two together on a map.

They have also established a partnership with the Smithsonian Environmental Research Center (SERC). SERC was focused on marine invasions, while the USGS was mainly focusing on freshwater data. They agreed that they should coordinated their efforts. The next step to be undertaken would enable a user on the Internet to query both of the databases simultaneously, using XML technology, and return records from both of the databases, merging them and returning them to the user.

Future plans are to link to ITIS, which is the Integrated Taxonomic Information System run by NBII. That is an effort to try to ascertain the correct taxonomic names for everything and assign them a number. The next step, once that system is worked out, is to work with Lukens to try to incorporate the GSMFC database and website for the Panel.

Lukens added that an Information Management Workgroup of the Panel is scheduled to be proposed later in the meeting. One of the things that the work group should focus on is how to

make it easy to integrate state information into the database. In addition to that, some preliminary work has been done identifying existing monitoring activities that could be employed to help with not only early detection, but general records of invasive species that are collected in these monitoring activities. The Information Management Work Group, assuming one is formed, would be very important from the regional perspective to feed into the national program.

At the last meeting of the Invasive Species Focus Team, Lukens gave a presentation of the GSMFC webpage. It was inherited from the University of Southern Mississippi, College of Marine Sciences, Gulf Coast Research Laboratory. GSMFC requested and received control of the webpage from the Lab and put it up in an "as is" form. They are now in the process of revising and updating the site. Lukens indicated that he is working with Fuller so that when the revisions and changes are made, it will be consistent with her work and what she is doing with SERC and NatureServe.

Lukens also reported on plans to provide a List Serve for the Regional Panel on the GSMFC webpage. The List Serve would allow the opportunity to post and send messages to the entire group. At some time there will be an advertisement for the List Serve for the Gulf of Mexico Regional Panel which will encourage individuals to subscribe to it. The capacity would be up to 500 for this particular list. Information will be forwarded as it becomes available.

Lukens would like to put up a page that provides images of as many invasive species as are available and will be free to the public for use. A lot of institutions and organizations have policy that will not allow them to take images off the Internet and use them. An effort will be made to make sure that every image that is on this page is free to the public, and it will be clear that when they access that page that they do not have pay for use of the images or risk being sued for using them. Lukens asked that all members of the Panel, when the webpage is available, review the page and provide images that are missing or better pictures of existing images. This can serve as a resource for educational materials or to enhance a presentations. Over the next year Lukens will be meeting with Fuller and her database programmer, along with the GSMFC Systems Administrator, to make these improvements and adjustments.

Species Updates

Brown Tree Snake - Bob Pitman reported that he first worked with the brown tree snake issue a few years ago in Oklahoma as Regional Coordinator, addressing the potential for accidental spread of brown tree snakes in the continental US. There have been some sightings in Texas that are thought to have been brown tree snakes. Whenever there is a CNN story about brown tree snakes, many people call in and report sightings.

Pitman clarified that the brown tree snake activities are included in the ANSTF activities, and therefore Regional Panel activities, because of Congressional interest in addressing the issue. The NANPCA of 1990 would not have been passed unless brown tree snakes were included.

On June 13-14, 2000, a conference was held in Houston, Texas to talk about the issue and bring together stakeholders to build a collaborative team. The conference was held knowing how difficult it is to develop proactive responses. Attendance at the conference was low; no stakeholders attended, and there were no state representatives from Texas. Progress was attempted anyway. Proceedings of that workshop were distributed in conjunction with establishment of the North American Brown Tree Snake Control Team (NABTSCT). A webpage is being developed to coordinate team development, actions, and educational information. The webpage (NABTSCT.org) is not used for information exchange as much as it is to coordinate team activities. A Team meeting is planned for October 22-23, 2002 in San Antonio, Texas to prioritize and identify specific actions and assign responsibilities to different team members to accomplish certain tasks with their respective agency funding. Pitman indicated that the Gulf Coast area is at risk if brown tree snakes become established in continental North America. The Panel will have a key role if this becomes a reality.

Giant Salvinia - Bob Pitman reported that Giant Salvinia, *Salvinia molesta*, is another aquatic invasive species that is of particular concern and interest to the Panel. Giant Salvinia has been listed as noxious weed for over 20 years and is a prohibited species in the US. It cannot not be imported into the US or sold or transported across state lines. However, it ended up in aquariums, aquarium supply places, and home aqua gardens. It is still being distributed in some of those areas now.

In 1995 it was found in a South Carolina pond, in 1998 it was identified in Texas in the wild, and in 1999 it was discovered in the Lower Colorado River, spurring Pitman's involvement. The source population of the plant was in a 26 mile long irrigation drainage ditch in the Lower Colorado River drainage area. A collaborative control team was established by the ANSTF. The team meets 4 times a year, and information is distributed through a webpage. A National Conference for Control was held March 13-15, 2001 in Houston, Texas to engage stakeholders, update and implement the national control plan, raise awareness, and discuss funding strategies.

The Panel could play a role in helping to implement the national control plan and help connect stakeholder groups. Pitman also mentioned that the Panel could effectively form its own Salvinia group to deal with the issues of *Salvinia minima*, as well as Giant Salvinia. He feels that this group has the most waters at risk, given the predictive range established by USGS and the ecological requirements of the plant.

Asian Swamp eel - Pat Carter discussed the Asian swamp eel issue in the southeast. The Asian swamp eels are eel-like fish that are native to most of the Asian countries and have done a very good job of expanding their range They can now be found in Africa, Central and South America,

Mexico, Australia, and the southeastern portion of the United States. Currently there are four known populations in the southeast. The earliest was discovered at the Chattahoochee Nature Center ponds in the early 1990s. Then in 1997 two populations were discovered in Florida, one in Miami, and one in Tampa. The last one was discovered in 1999 in Homestead, Florida. How they got there is not known. Currently they are confined to the southern water management canal systems in Florida and to the ponds in Georgia. They have not yet escaped into the natural ecosystem.

Researchers identify them as being highly predatory which could be potentially significant. Diet studies have shown that they prey heavily on fish, somewhat on frogs, heavily on crayfish, and somewhat on aquatic insects. Should they escape into the natural environment they could upset the ecological balance within the Everglades ecosystem and possibly affect or impact wading bird populations, because they prey heavily on crayfish.

In 1999, shortly after the Homestead population was discovered, an informal working group was established, comprised primarily of representatives from USGS, USFWS, National Park Service, Florida Water Management District, and some of the universities to investigate alternatives for action. They agreed to gather information on the biology of the eel and begin a risk assessment. They also decided to look at some possible control measures. At first they had discussions about employing electronic barriers, because that was beginning to happen in the Great Lakes region to control dispersement of non-native fish there. The team realized that it would be very expensive, and it was not known if that approach would give the wanted results. Last year, beginning in June, USFWS funded a study to evaluate the effectiveness of electrofishing as a potential control measure. For six months they undertook an intensive electrofishing study process, resulting in capturing close to 1,500 eels. The results were inconclusive as to what impact the effort had, if any, on the overall population. There are no plans at the present time to continue that study.

Carter reviewed some key points of the current draft of the Asian Swamp Eel Management Plan. The goal identified for the Florida population is to minimize the environmental impacts to the Florida Everglades ecosystem and to prevent its possible spread to inland lakes and watersheds. Not enough is known about the species, including vulnerabilities within the life history that may be used to develop control measures. The level of ecological risk associated with swamp eel introductions needs to be determined. Risk assessments are now underway, and monitor the status of the population should continue to track the status and potential spread of the eel.

Lionfish - Walt Courtenay reported that lionfish are now established off the east coast of North America in the Atlantic Ocean. A paper was published earlier this year by senior author Paula Whitfield, NOAA Beaufort Laboratory, that first reported that lionfish are apparently established on the Atlantic Coast of the United States from Florida all the way to North Carolina. Juveniles were discovered last summer off the southern coast of Long Island and they have evidence of at least two individuals, one of which has been collected and another one photographed, off the south shore of Bermuda. They believe there is a reproducing population in the Atlantic Ocean.

The latest information from Paula Whitfield is that she has had recent reports of young lionfish about 2 to 2 ½ inches long being captured inshore North Carolina. He reported that Ken Sulak, USGS laboratory in Gainesville, FL, was recently involved in a shallow submersible dive off the coast of South Carolina, reporting that at a depth of 280 feet, they observed a lot of holes in the bottom, each one harboring least one 2 foot long lionfish. Several of the holes had as many as ten to fourteen of the same size or slightly smaller. Courtenay believes, based on those observations, that those fish have been there for a long time and were only recently discovered. It is not known where they came from. Courtenay relayed a story that Hurricane Andrew destroyed a waterfront home aquarium on Biscayne Bay, Miami and released at least 8 lionfish into the bay. He does not believe that was the parent population of Atlantic coast. The environmental or economic impacts of the non-native lionfish are not known yet.

Snakeheads -Walt Courtenay reported that the USGS began a project with USFWS a year ago to evaluate the risk of snakeheads to aquatic resources in the United States. He stated that a snakehead is a fish that has enlarged scales on the head, with eyes located forward like a snake. All species are air breathers, and all give parental care to their young. Several of them have elongated bodies, while others are heavy-bodied. There are approximately 28 species, 3 in one genus in Africa, and 25 or more in Asia. The whole Asian group is in taxonomic flux. Out of the 25 currently recognized species, Courtenay had found at least five species complexes in the US, and most of the foreign authorities on snakeheads agree with that assessment.

The species known as the bulls-eye snakehead has been established in Broward County, Florida for several years. It is not known if this was an aquarium escape or released from the live food fish industry. The species known as the giant snakehead has been known to attack people in its native southeast Asia, Thailand in particular. There is at least one report that this fish has killed people who got too close to their young or to the nest containing eggs. The young of this species has been in the pet trade in the US for a number of years because the young are very colorful. This same species has been found in the open waters of Maine, Massachusetts, Maryland and Rhode Island, possibly released pets. Fortunately this happens to be a tropical and subtropical species and could not survive the winter there.

On July 26 the *Federal Register* published a proposal to declare all snakeheads as injurious wildlife under the Lacey Act.

NISA Reauthorization

Lukens introduced Allegra Cangelosi, Senior Policy Analyst for the Northeast Midwest Institute. Lukens indicated that Ms. Cangelosi was in London and agreed to provide an update of the reauthorization process for the National Invasive Species Act via conference call. She has been the primary motivator behind the language, working with a large coalition of people and

organizations to accommodate what should go into the bill that was introduced. Lukens distributed a copy of that bill to the Panel members.

National Invasive Species Act Reauthorization - A Major Opportunity

Cangelosi discussed the National Aquatic Invasive Species Act that was introduced into the House and Senate in September. The bill was introduced with strong bipartisan support, which is very important. There is the possibility that committee action will be taken on the bill and it could see floor action during the current Congress. It is equally likely that no action will occur, and the bill will lapse and have to be reintroduced in the next Congress.

About a year ago, the Invasive Species Council staff and the ANSTF staff met with Cangelosi. They conceded that while a reauthorization of NISA would be great, they were not in a position to lead the construction of the reauthorization because at that time there was a new Administration in place and they were busy trying to get the Executive Order reaffirmed by that new Administration. They offered to work cooperatively with Cangelosi, so she pulled together interest groups to consult with her on an informal basis in hopes that when it went formal the federal agencies would be more inclined to support it.

The bill approaches the shipping vector as a leading pathway. The bill sets up a superstructure that will allow the ANSTF and the Council to identify the next most important pathways and begin to design management strategies for those that follow. Relative to ships there are some baseline requirements that would apply to all ships, whether they are coastal, domestic, or international.

1. Keep records of their ballasting operations.
2. Exercise best management practices. These have been already issued as guidelines by the IMO.
3. Also recommended by IMO, they will have to have an invasive species management plan.
4. If a new ship is purchased, or built, that comes into service after January 1, 2006, that ship will need to include ballast water management technology that meets whatever standard is in place at that time.

Regarding vectors, the ANSTF will be required to do a pathway analysis. All high risk pathways must be identified and should be managed intensively, not just the ship pathways.

Early detection is identified as an important need. How does one know whether a particular management practice or structure is changing the rate of invasion if they can not detect differences between a baseline and what is there a year later? There is little optimism about eradicating an invasion once it is already established, but there is a need to try or at least analyze the situation to see if it is possible because the stakes are so high if something should become established. There are two kinds of monitoring addressed in the bill. One is in the research

section and is a disciplined approach to look at what is in a system today, a year from now, and three years from now. The monitoring would be standardized and comparable across systems. They would then measure the input and make a decision as to whether the rate of invasion is decreasing and, therefore, pathway interdiction is working. The other one is a more public and cooperative process, utilizing volunteers to report what they are seeing in the environment to appropriate agencies and professionals.

Containment, control and mitigation is addressed in the bill. Included is the electric barrier to prevent movement of non-native organisms from the Mississippi River into the Great Lakes and *visa versa*. There are questions regarding the potential effectiveness of the barrier. There is also a research program outlined to support other control mechanisms. The research program will help solve the problem of using rapid response or control when there is a lot of opposition. Implementation of controls can sometime have downsides, either environmental, economic, or aesthetic. The bill includes in the research section a program for research and development on more environmentally sound and improved treatment methods for control. The EPA has the lead for that research.

The bill outlines three ways for a state to get rapid response resources implemented in their jurisdiction. The lowest energy option is for a Governor to invite a federal rapid response team to implement rapid response. If they go that route, the federal agencies get the money from the rapid response fund and attempt to control the organism. The second way is for a state to develop a contingency plan. If that plan is approved, the money can flow to the state and they can implement their strategy when and if they need to. The third way is for a region to put together an interstate plan. Such a plan would result in coordination and efficiencies among the states and the cost share for each state would be lower.

Currently, regarding planned importations, the federal government has no authority to pre-screen something that is new to the continent. They can come in through the food trade, the pet industry, through the bait industry, or aquaculture. The consequences can take a toll on all of those industries. This bill puts screening requirement in place such that organisms not yet in trade would be subjected to a consistent screening process for invasiveness. The screening process is consistent regardless of which agency has jurisdiction over that particular importation. Cangelosi asked that the Panel become involved in the process of getting the bill passed, especially if it has to be reintroduced in the next Congress.

Overview of Regional Panel Activities

Initial Survey - In the early 1990s, the impact of non-native species was recognized by the Gulf of Mexico Program as having an impact on living aquatic resources. However, it was not until the shrimp virus issue came up after tremendous mortalities in Texas shrimp farms in 1996 that the first real effort was undertaken by the Gulf of Mexico Program to address an invasive species

issue. A US/Mexico joint workshop was held in New Orleans, Lousiana, under the sponsorship of various agencies and the Joint Subcommittee on Aquaculture. Shortly thereafter a workshop was held in June of 1997, where a group of experts as well as the GSMFC were invited to put together a panel of state representatives to identify the problems in the Gulf of Mexico. That resulted in an overview of nonindigenous species paper that was presented at one of the zebra mussel conferences. At the end of the zebra mussel conference, the ANSTF met and invited the Gulf of Mexico Program to again make that presentation to the ANSTF. That resulted in an invitation by the ANSTF for the Invasive Species Focus Team to serve as a regional panel. That was done in 1999 and 2000. Shortly thereafter they put together a CD Rom of an initial characterization of nonindigenous species in the Gulf region. That initial characterization was done in September 2000. The primary purpose of the document was to provide a database that the states could utilize and also to realize the commonality across the five states.

The Gulf of Mexico Regional Panel produced two reports, an Annual Report for 2000 and 2001. The 2001 report contains a copy of the initial survey in the back. Kumpf mentioned that there is a need compare the survey results with the database that Fuller has put together at USGS along with other sources. The survey should be updated on a regular basis to provide a snapshot of species that are being addressed by the states over time. The survey also provides a foundation for the states to develop their management plans.

Ballast Water Workshops - Marilyn Barrett-O'Leary discussed the three ballast water workshops sponsored by the Panel. They were held in New Orleans, Tampa, and Houston. They were informational events designed to raise the consciousness of different groups – government agencies, the shipping industry, other industries, and the general public – about the importance of shipping as a vector. The workshop participants discussed technologies for ballast water treatment being studied and developed, because ballast water exchange is not a very effective way to control invasive species. Several scientists described their technologies that they had been developing mostly in the laboratory and mostly by theory.

The ballast water workshops were important because ballast water is the only thing that has really been tackled internationally. The IMO is working on this from a treaty standpoint. The federal government ordered the U.S. Coast Guard to develop a ballast water exchange program, which has been voluntary to date. Each of the Gulf States will need to pay attention to ballast water management as far as ports in the individual state jurisdictions. Ballast water is a research opportunity. These ballast water workshops were an attempt to get things started and to focus on the fact that the Gulf of Mexico region is unique. There is a need to focus on the Gulf of Mexico region, on its species, its transportation, and on its assets through the states.

Shrimp Virus Initiative - Tom McIlwain reported that the shrimp virus issue arose in Taiwan in 1984. Prior to that time a shrimp aquaculture industry using Japanese tiger prawns was in place, and there was an outbreak of yellowhead virus in 1984 that basically decimated that industry. Production was reduced about 75%. A lot of the investors in Taiwan moved to Thailand, and

there was some interest in mainland China. That industry exploded in Thailand and mainland China soon thereafter. By about 1989 mainland China was producing almost a half a billion pounds of shrimp, most of which went into the export market. Late in 1989 they had an outbreak of whitespot virus that totally destroyed the industry. In the interim, Thailand was increasing its production, and it became the major grower of pond raised fish. Like their two predecessors, they had a viral outbreak that devastated the industry. The virus had been spreading, particularly in southeast Asian countries. It then moved into Central America and the United States. The west coast of Equador and Mexico were affected to a lesser degree. The solution at that point in time was to abandon whatever area the virus had destroyed.

In 1995 there was an outbreak of whitespot virus and the appearance of yellowhead virus in some shrimp farms in Texas. Shrimp aquaculture in the US at that time was not very big, but was growing. The shrimp virus issue has had a major impact on the direction and development of this industry throughout the world. There have been billions of dollars of research funds expended on ways to raise shrimp and how to keep them alive in the face of diseases and other problems that have been associated with them. In 1995 when there was a viral outbreak in Texas, there was a sudden awareness that this could impact the US. There were two major considerations. One, the aquaculture industry that was growing, would be decreased significantly at that point in time. Two, there was a great fear among the industry that the shrimp viruses would be released to the wild and infect wild stocks in the Gulf and decimate that industry. The Joint Subcommittee on Aquaculture, which operates out of the President's Office of Science and Technology, formed a working group on shrimp virus issues and McIlwain was chosen to Chair that group. They began to look at ways to work on this particular problem. They teamed up with EPA, Department of Agriculture, Department of Commerce and Department of Interior and held the first shrimp virus information workshop in New Orleans, Louisiana in 1996. That resulted in a publication, which was a state of the states on shrimp viruses. The shrimp industry in the Gulf of Mexico is economically the largest fishery. It was a major concern as to the economic impact to that fishery and what the escapement of this virus would do.

In the interim, Mexico was developing their industry and joined the team. As a result, over the next couple of years a number of stakeholder meetings were held throughout the Gulf States and South Atlantic on this issue. A risk assessment was done, and a management workshop was conducted. Finally in November of last year another information workshop was held in New Orleans, Louisiana. The idea was to gather all the information available, see what advances had been made in this interim 5-6 year period, and determine the current status and future direction. The proceedings provide recommendations for research and subsequent management actions. In 1995 when the issue first arose, there was a great fear that the escapement and introduction of this virus in the aquaculture industry would devastate the shrimp industry in the Gulf of Mexico. They worked diligently over the last 7 years to control that situation, resulting in no known escapes or survival of the virus in the wild stocks. No new regulations were passed or implemented; all actions were implemented voluntarily by the industry. Lukens added that this issue represents good example of government working with industry to resolve a problem. The

shrimp aquaculture industry is a pathway, a vector for the viruses, and it was in large part resolved through the industry implementing those management practices.

Past Recommendations - Herb Kumpf reported that the Annual Report submitted by the Panel to the ANSTF contained a number of items, one of which deals with recommendations from the Panel to the ANSTF. The two Annual Reports submitted by the previous Panel under the EPA Management Committee involved nine recommendations. Of the nine recommendations, four of them dealt with funding authorizations. Some had to do with reducing the state share for receiving funding, greater Panel support, research grants, and money for Gulf of Mexico invasive species research. The Panel is not named in the previous version of the NANPCA/NISA, and a recommendation was made to formally name the Panel. Lukens added that the Panel is not required to transmit specific recommendations in the context of the Annual Report to the ANSTF, but it is a good venue to do so. The Panel can transmit recommendations to the ANSTF at any time.

Working Groups

Lukens reviewed the proposed work groups for the Regional Panel. Kumpf noted that the work groups tie very closely to the Invasive Species Management Plan. The closer the Panel mirrors activities going on at the national level, the easier it is going to be to evaluate the Panel's progress in the context of national activities. It will also be easier for other people to assimilate Panel information, because it will be in a familiar format. The list of work groups below does not exclude the possibility of other work groups should the Panel identify a need. In addition, there is always the opportunity to establish *ad hoc*, issue specific work groups.

The work groups suggested were:

1. Pathways/Prevention

2. Eradication/Control/Restoration

3. Vessel Mediated Transport

4. Research/Development

5. Education/Outreach

6. Early Detection/Rapid Response

7. Information/Management/Coordination

Herb Kumpf mentioned that there is a lot of information that has already been developed. The other regional panels are willing to share their experiences and their products. He recommended that it would be wise for the Panel to utilize the products that are available and modify them for the Gulf of Mexico region.

Lukens indicated that individuals should be able to hold membership on more than one work group. In addition, persons other than Panel members can be on a work group. If there is expertise that the Panel thinks needs to be included, the Panel can identify individuals to include.

Lukens recommended that the Panel populate these work groups at a later date. The primary objective of the current agenda item was to agree on the organizational structure for work groups. All of the work groups will not necessarily be actively pursuing projects at the same time, because the financial and personnel resources would not be available to do that.

Harriet Perry made a motion to accept the work groups discussed above. Earl Chilton seconded the motion, and the motion was unanimously approved.

The Panel agreed to work on a set of operating procedures in the near future.

Election of Officers

Due to time constraints, officers were not elected at this meeting. Harriet Perry recommended that Lukens preside over the next meeting and the issue of officers will be readdressed then.

Public Comment

Lukens asked if there were any members of the public that wished to address the Panel. There were no requests by the public to speak.

The meeting recessed at 5:00 pm.

DUE TO THE IMPENDING LANDFALL OF HURRICANE LILI ALONG THE LOUISIANA/MISSISSIPPI COASTLINES, A NUMBER OF PANEL MEMBERS HAD TO LEAVE AFTER THE FIRST DAY OF THE MEETING. THE MEETING RECONVENED THE MORNING OF THE SECOND DAY AND COMPLETED THE ADOPTED AGENDA.

State Reports

Don Schmitz, Florida DEP, and Earl Chilton, TPWD, provided presentations to the Panel on their respective activities within their states to address aquatic invasive plants.

New Panel Member

Lukens pointed out that there are three At-Large seats on the Panel, but only two were filled. He introduced Jim Kruse, who has been hired by Sea Grant to provide the program with expertise in the area of port and harbor management. Kruse had expressed an interest in working with the Panel, and Lukens recommended that the Panel invite Kruse to accept the third At-Large seat. Without objection, the Panel agreed to add Kruse as an At-Large member.

Public Comment

Lukens asked if there were any members of the public that wished to address the Panel. There were no requests by the public to speak.

There being no further business, the Panel meeting adjourned at 10:30 am.