

GULF & SOUTH ATLANTIC REGIONAL PANEL ON AQUATIC INVASIVE SPECIES

Report for the fall 2015 ANSTF Meeting

- The Panel held its fall meeting on October 6-7th in Myrtle Beach, South Carolina.
- Jackson Gross provided an overview of the numerous ANS research and management efforts that Smith-Root Inc. is currently undertaking. These efforts include work on lake trout, Asian carp, round goby, sea lamprey, dreissenid mussels, American bullfrog, African frogs, rusty crayfish, New Zealand mud snail, lionfish, etc. using a number of different technologies.
- Katie Walters gave an overview of the University of Florida's Invasive Plant Education Initiative. The goal of this program is to provide Florida's students with an awareness and understanding of the economic and ecological problems caused by invasive plants on local freshwater and upland ecosystems, with the hope of bringing about acceptance of invasive plant management methods, and to foster environmental stewardship in Florida's youth. To achieve this goal, the program has developed lesson plans, worksheets, activity booklets, and educational games that are provided to educators for use in their classrooms. They also host an annual 5-day workshop called Plant Camp to provide educators with field and laboratory experiences.
- Jianghong (John) Min provided a presentation on the potential use of CRISPR-Cas9 (clustered regularly interspaced short palindromic repeats) in the control and management of ANS. CRISPR-Cas9 is a bacteria-derived endonuclease system that can cut a target DNA sequence wherever it matches the introduced engineered 20-bp guide RNA. When this is paired with gene-drive technology, the CRISPR-Cas9-generated mutation can copy itself throughout the target genome sequence. This provides the ability to disperse engineered genes throughout the target population much more quickly than simple genetic inheritance, and has the potential to eliminate a target species across its entire range. There is currently work underway to use this technology to combat the malaria epidemic, wherein, researchers are genetically modifying the primary host (*Anopheles* mosquitos) to halt the development of malaria. If the wild-type mosquitos can be replaced with the genetically modified ones, theoretically, malaria could be eradicate.
- Don Schmitz updated the Panel on the activities of the North American Invasive Species Network (NAISN). The overall goal of NAISN is to link existing invasive species regional efforts into an overall coordinated network in order to advance science-based understanding and enhance management on invasive species.
- Peter Jenkins provided the group with an overview of the Lacey Act lawsuit concerning the large constrictor snakes that was brought by the United States Association of Reptile Keepers

Inc., and discussed the possible ramifications that it may have on the USFWS's ability to regulate injurious species in the 49 continental states. He also updated the Panel on the threat to native salamanders posed by the possible introduction of Bsal Chytrid and the steps that should be taken to mitigate that threat. Lastly, he discussed the results of his FOIA request for USFWS risk assessments, stating that there were 714 risk assessments written up, 179 finalized, but only 18 posted on the FWS webpage.

- Stas Burgiel provided an update on National Invasive Species Council activities including NISAW, the National Early Detection and Rapid Response Framework, and the Options Paper for the Movement of Aquatic Invasive Species onto and off of Federal Lands.
- Anna Toline provided a presentation on a non-native seagrass (*Halophila stipulacea*) that is invading Virgin Islands National Park. *H. stipulacea* has a rapid growth rate of >6cm/day in lateral growth and can increase its biomass by 50% in seven days. It invades native seagrass beds, bare sand, and can even grow on reef habitat. Preliminary results show that it supports lower species abundance and diversity than native seagrass, and native fish and invertebrates preferentially grazed on native seagrasses.
- Chef Philippe Parola gave a presentation on his proposed invasive species control program “Can't Beat 'Em, Eat 'Em” in which he proposed using Asian carp to produce a value-added fish product that can be sold for \$6.00/lb. in U.S. wholesale markets. The startup cost for his eco-friendly food processing plant and satellite raw fish processing plants would be \$10 million and would be able to harvest carp from the entire Mississippi River Basin. The Chef also prepared some of his Silverfin™ croquettes for the Panel to sample.
- The Panel had several presentations highlighting the research/projects that were funded by the USFWS Region 4 ANS Small Grants Program. In 2014, the GSARP partnered with the regional office to review and rank all of the proposals that were submitted under this funding opportunity, and this partnership continued in 2015. In order to disseminate the findings from this funded work back to the entire region, the GSARP will invite some of the principal investigators to present at all of its subsequent meetings.
 - Aaron Watson provided an overview of South Carolina DNR's work with a qPCR tool for detection of the invasive parasite of American eels that they have developed and will be running field tests with this year.
 - Lad Akins updated the group on the results of Reef Environmental Education Foundation's (REEF) lionfish collecting and handling workshops in the southeast. In 2015, they were able to host 14 workshops that had a total attendance of 377 people.
 - Susan Wilde provided an update on her ongoing work with avian vacuolar myelinopathy (AVM) where she is investigating the risk to other species groups (amphibians) and developing an integrated, adaptive *Hydrilla* management plan to reduce risk of AVM in J. Strom Thurmond Reservoir.

- Matthew Waters gave a presentation on the impacts and interactions of dominant invasive species (*Hydrilla verticillata*, *Corbicula fluminea*, *Pomacea maculate*, and *P. paludosa*) in Lake Seminole, Georgia.
- Invasive Species Traveling Trunk: Since the trunks were made available in July of 2012, they have been utilized for a total of 720 days by over 30 different organizations that have presented the enclosed material to thousands of people across the U.S. The Education and Outreach Work Group of the GSARP has plans to expand the content of the trunks, adding new species and educational tools, including lesson plans and educational games.
- Pam Fuller provided an overview of new ANS introductions. In the past six months, there have been 84 new introductions, including 3 new introductions to the U.S., 8 new introductions to a state, 52 new introductions to a drainage, and 21 new introductions to a county.
- The Panel elected Kristen Penney Sommers as Chairman and Lisa Gonzalez as Vice Chairman
- The next Panel meeting is tentatively scheduled for the week of April 4th in Alabama.

GSARP Recommendations to the ANSTF

1. Provide increased financial support to the Panels and identify alternative funding sources that the Panels can utilize to support annual meetings, coordination, and panel activities.
2. Encourage the Federal Lands Committee to explore options for federal agencies to: 1) clarify situational authorities; 2) support full implementation of agency authorities; and 3) harmonize policies across federal agencies for the movement of aquatic nuisance species onto and off of federal lands and waters.
3. Establish an ANSTF Ad-hoc committee specific to the Boat Industry.
4. Have a presentation on the potential use of CRISPR (clustered regularly interspaced short palindromic repeats) in the control and management of ANS at the next ANSTF meeting.
5. Encourage ANSTF member agencies to continue to explore new barrier technologies that will address the problem of bidirectional interbasin movement of ANS.