

**Texas AgriLife Extension Service
Texas Water Resources Institute**

Quarterly Progress Report

Water Quality at Caddo Lake
Center for Invasive Species Eradication: Caddo Lake Giant Salvinia Eradication Project
USDA NRCS Agreement #: 68-7442-10-499

Quarter No. 4 From: 4.01.2011 Through: 6.30.2011

Abstract:

The **Center for Invasive Species Eradication** (CISE) has continued operations this quarter with the primary focus being on releasing the first crop of weevils on Caddo Lake. To date, approximately 75,000 adult weevils and 250,000 larvae have been produced and released in five different locations on the lake. Research has been initiated and continues to evaluate the impacts of weevils on giant salvinia.

A meeting of the Inter-Agency Giant Salvinia Control Team was held April 7th to discuss the current state of giant salvinia control efforts in the southern U.S. Approximately 30 representative from 12 entities participated in the meeting and also toured the weevil rearing facility.

Refining the weevil rearing, sampling, disbursement and monitoring process continues to be a significant task this quarter. Supplemental water tanks were installed this quarter to enable excess lake water to be stored onsite for maintaining water in the weevil tanks. Well water is blended with this lake water to minimize the amount of times that lake water must be hauled in. Solar screens were installed on the greenhouses this quarter to prevent UV damage to the plants and overheating in the green houses.

A bid request was developed and let this quarter for the hiring of an aquatic herbicide applicator. The bid opening occurred on June 28th and a bidder will be selected early next quarter to apply chemical controls on Caddo in support of CVND and TPWD efforts. A memorandum of understanding has also been established with a private company to demonstrate an alternative method to control giant salvinia. Plans are underway to begin their demonstration next quarter.

Overall Progress and Results by Task:

Task 1. Project Administration: Texas Water Resources Institute

Subtask 1.1: *Establish a Center for Invasive Species Eradication at Texas A&M University under the administrative leadership of Texas AgriLife Research and Texas AgriLife Extension Service to*

utilize funds provided through USDA Natural Resources Conservation Service to focus research and Extension educational programs on controlling invasive plant species.

This action has been completed and the Center for Invasive Species Eradication is fully operational with personnel at TWRI handling day to day management activities.

Task 100% Complete

Subtask 1.2: *Provide fiscal oversight of funds, make funds allocations to scientists and Extension personnel, establish contracts and subcontracts as necessary, perform accounting functions*

Fiscal management is being carried out by TWRI personnel. Budgets and planned expenditures are continually being monitored to ensure that expenses are within the scope of the project and within the available budget.

As of May 31, 2011 a total of \$165,596 dollars have been spent on the project. Another \$83, 923 are currently encumbered and plans are made to expend approximately \$120,000 additional dollars this year.

Task 35% Complete

Subtask 1.3: *Facilitate project and program discussions between AgriLife Research and Extension administration and NRCS administrative personnel to ensure that programmatic goals and objectives are met in a timely manner through this project*

Work for this task has continued. TWRI coordinated with NRCS to amend the project's budget this quarter to better meet the goals and objectives of the project.

Task 35% Complete

Task 2. Project Coordination: Texas Water Resources Institute and other Agencies

Subtask 2.1: *Coordinate and facilitate meetings among project personnel to ensure research focus, maximum collaboration, educational programs and transfer of information*

Coordination and cooperation with other agencies is ongoing. Several meetings and phone calls were held between project personnel to discuss plans for this growing season. Numerous phone calls have also taken place this quarter to facilitate the initiation of new studies and implementation of established plans.

Task 50% Complete

Subtask 2.2: *Work with groups currently engaged in controlling Giant Salvinia and other invasive species to foster collaboration and information transfer on the state of the science in controlling Giant Salvinia. These groups include those participating in the Interagency Giant Salvinia Control Team, including the Caddo Lake Institute, Cypress Valley Navigation District, East Texas Baptist University, Northeast Texas Municipal Water District, Northwestern State University, Louisiana Dept. of Fish and Wildlife, Louisiana State University, Texas AgriLife Research, Texas AgriLife Extension Service, Texas Parks and Wildlife Dept., USDA Agricultural Research Service, Animal & Plant Health Inspection Service, Natural Resource Conservation Service, US Army Corps of Engineers, Engineer Research & Development Center and Lewisville Aquatic Ecosystem Research Facility, and US Fish and Wildlife Service*

A meeting of the Inter-Agency Giant Salvinia Control Team was held April 7, 2011 in Karnack. The meeting was well attended and great discussion was held during the meeting. Collaboration with other agencies is ongoing and will increase as Caddo Lake CISE efforts accelerate.

Task 50% Complete

Subtask 2.3: *Work with project personnel to meet reporting requirements and to produce effective project publications*

Work continues to coordinate with Russell Castro with NRCS to develop and publish a landowner guide to Giant Salvinia and its control. Several posters were created this quarter to use in public meetings thus informing interested parties of giant salvinia and control efforts.

Task 30% Complete

Task 3. Chemical Treatment and Evaluation: Texas AgriLife Research and Extension

Subtask 3.1: *Researchers and Extension Specialists will work with others to establish chemical treatment research and demonstration sites to the extent possible at Caddo Lake for Giant Salvinia control. (Killing Giant Salvinia at Caddo Lake is the primary focus; as such, demonstrations at private or isolated locations may be required for research demonstrations of chemical treatment combinations)*

The application design for this task has been completed and containers to be treated are being stocked with giant salvinia. Chemical applications will begin early next quarter.

Task 35% Complete

Subtask 3.2: *Test and evaluate chemical treatment practice alternatives for controlling Giant Salvinia at Caddo Lake using a variety of chemicals, surfactants, and combinations at various*

concentrations and timings (This may include contracting with local or private chemical applicators to chemically treat Caddo Lake)

The application design for chemical evaluations at Caddo Lake NWR has been completed and containers to be treated are being stocked with giant salvinia. Chemical applications will begin early next quarter.

A request for bids was released to hire an aquatic herbicide applicator to treat giant salvinia on Caddo Lake. The applicator will be selected next quarter and spraying will commence as the need arises

Task 30% Complete

Subtask 3.3: *Evaluate the efficacy and cost effectiveness information of each treatment scenario*

No activity to report at this time.

Task 0% Complete

Subtask 3.4: *Work with personnel in Task 4 to evaluate the efficacy of utilizing chemical treatments in concert with biological control*

No activity to report at this time.

Task 0% Complete

Task 4. Biological Treatment and Evaluation: Texas AgriLife Research and Extension

Subtask 4.1: *Collaborate with other agencies and groups to setup new studies and cooperate in ongoing research and Extension educational programs dealing with biological strategies for controlling Giant Salvinia at Caddo Lake; practices which can be utilized for public and private lands statewide (If needed, research and demonstration sites away from Caddo Lake will be utilized as quickly killing Giant Salvinia at Caddo Lake is the priority)*

AgriLife Extension is leading the efforts in researching the salvinia weevil. Extension has worked closely with personnel at LAERF, USDA ARS, LSU Ag Center, TPWD and others to glean as much information as possible on salvinia weevils. AgriLife Extension personnel traveled to Louisiana this quarter to confer with LSU staffs engaged in biological control and discussed research ideas and information. Current research efforts are evaluating the specific impacts of salvinia weevils on giant salvinia growth. Research is also being conducted on weevil release sites to clearly document the impacts and expansion of weevil populations in areas where weevils have been released on Caddo Lake.

Task 35% Complete

Subtask 4.2: *Work with TPWD and local Caddo Lake agencies, organizations and individuals to enhance weevil rearing capabilities for use at Caddo Lake (This may include contracting with local or private entities to expedite the delivery of weevils to infected areas)*

The weevil rearing facility is now fully operational and its operations will continue to be refined over the duration of the project.

Task 80% Complete

Subtask 4.3: *Coordinate with USACE's Lewisville Aquatic Ecosystem Research Facility to collaborate in ongoing efforts, transfer knowledge and expand their operations*

AgriLife Extension personnel continue to maintain routine contact with LAERF personnel regarding weevil rearing and release methodologies. Several on-site discussions have been held to-date.

Task 40% Complete

Subtask 4.4: *Evaluate improved methods of rearing weevils, harvesting weevils, delivering weevils to infested areas in Caddo Lake and various timing options of weevil applications in Caddo Lake to determine the most effective biological treatment scenarios to employ to the extent possible; as indicated earlier, killing Giant Salvinia at Caddo Lake may result in the need for research demonstration sites in the vicinity of Caddo Lake.*

Work has continued to refine weevil rearing, harvesting and delivery mechanisms for biological control. Research has been initiated this quarter are focusing on evaluating the expansion of weevil populations on the lake to assess the rate of spread. This will aid in establishing needed weevil inoculation rates for controlling a given amount of giant salvinia. Thus far, an estimated 75,000 adult weevils and roughly 250,000 weevil larvae have been release on Caddo Lake this growing season.

Task 60% Complete

Subtask 4.5: *Assess practice efficacy and cost effectiveness of utilizing weevils in the control of Giant Salvinia*

No activity to report at this time.

Task 0% Complete

Subtask 4.6: *Use information gleaned from demonstration sites to develop biological treatment recommendations and guidelines for use of weevils to treat Giant Salvinia in infested areas*

No activity to report at this time.

Task 0% Complete

Subtask 4.7: *Work with personnel in Task 3 to evaluate the efficacy of utilizing chemical treatments in concert with biological control*

No activity to report at this time.

Task 0% Complete

Task 5. Other Treatment: All involved agencies

Subtask 5.1: *Work with federal, state and local agencies as well as local entities and individuals to evaluate the feasibility, efficacy and cost effectiveness of utilizing other treatment options (hydrological, mechanical, others) for controlling Giant Salvinia*

No further activity to report this quarter as efforts have been shifted toward distributing bio-control agents.

Task 25% Complete

Subtask 5.2: *Convert feasible options into treatment practice descriptions to include in recommended treatment strategies and guidelines*

No activity to report at this time.

Task 0% Complete

Subtask 5.3: *Develop treatment prescriptions suitable for inclusion in NRCS FOTGs, Extension printed materials and other guides for treating Giant Salvinia; these will take the form of job sheets, fact sheets, supplements to conservation practice standards and technical brochures*

Coordinating with Russell Castro with NRCS to develop and publish a landowner guide to Giant Salvinia and its control.

Task 5% Complete

Task 6. Education and Outreach: Texas AgriLife Extension Service and Texas Water Resources Institute

Subtask 6.1: Extension and TWRI will work with TPWD and other agencies to enhance existing outreach and education efforts through the use of news releases, TV spots, demonstrations, and other communications focused on prevention of spread and control methods for Giant Salvinia

The blog, website and facebook page have been updated to deliver additional educational information as it becomes available. Media coverage of giant salvinia issues was excellent this quarter as the US Congressional Committee on Natural Resources, Sub-committee on Oceans, Fisheries and Insular Affairs held a hearing on giant salvinia in Shreveport at the end of the quarter. Additional signage was developed for the Caddo Lake Institute to provide educational information to the general public visiting the Caddo Lake National Wildlife Refuge and co-located with other signage at the salvinia weevil rearing facility. This sign provides information on other invasive species present at Caddo Lake and illustrates the threat that they pose to the lake. Ten educational programs/presentations were provided to a variety of audiences near Caddo Lake and around the state.

Task 40% Complete

Subtask 6.2: Identify and secure partnerships with local, state, regional and national organizations (ex: B.A.S.S., fishing and hunting guides, cities, water sports manufacturers, Ranger Boats, Evinrude, Mercury, others) to expand the dissemination of educational materials on Giant Salvinia

No new activity to report this quarter.

Task 20% Complete

Subtask 6.3: Develop and host CISE website for invasive species eradication information and as an outlet for information dissemination

Website development is now complete and provides links to numerous information outlets. Content is continually being added to the site. In addition, a facebook page and online blog have been created and are updated twice a month. All pages are advertised to the public when the opportunity is available.

CISE Web address: <http://cise.tamu.edu/>

Project Web address: <http://cise.tamu.edu/caddo>

Project blog: <http://caddosalvinia.blogspot.com/>

Facebook page: <http://www.facebook.com/caddo.salvinia>

Task 85% Complete

Subtask 6.4: Facilitate education and outreach efforts and support media relations

Project personnel attended the US Congressional Committee on Natural Resources, Subcommittee on Oceans, Fisheries and Insular Affairs and participated in a boat tour held on Caddo Lake following this hearing. Several Congressional staffers toured the weevil rearing facility following this tour. Media coverage stemming from the hearing and tour was excellent and links to these stories will be posted on the project website, blog and facebook page early next quarter.

Task 40% Complete

Task 7. GIS Support: Texas AgriLife Research

***Subtask 7.1:** Texas AgriLife Research will provide GIS support for all aspects of the project and develop maps illustrating project activities and demonstration locations*

Monitoring of designated lake areas of project interest has begun using GPS. A lake GIS has been developed for this project and is updated with information as it is received. This will allow for rapid tracking of weevil release locations, their expansion and any areas chemically treated on the lake.

Task 25% Complete

Task 8. Include Treatment Scenarios in Agency Guidelines: All Agencies

***Subtask 8.1:** Using information gleaned from this project, develop detailed strategies and practices for control of Giant Salvinia for inclusion in agency guidelines such as NRCS FOTGs, Extension bulletins and factsheets, TPWD outreach information and other agency materials for utilization in both private and public water bodies*

Work on this task has continued this quarter. Project personnel have been coordinating with Russell Castro with NRCS to develop and publish a landowner guide to Giant Salvinia and its control.

Task 25% Complete

***Subtask 8.2:** Work closely with NRCS and other agencies to disseminate the control practices for Giant Salvinia as appropriate*

Work on this task was initiated this quarter. Project personnel have been coordinating with Russell Castro with NRCS to develop and publish a landowner guide to Giant Salvinia and its control.

Task 20% Complete

Projected Work for Next Quarter:

- Host a coordination meeting with the project team to ensure integration of all project tasks
- Host a coordination meeting with the contracted herbicide applicator, TPWD, CVND and their contractors to coordinate spray efforts
- Continue to refine the operation of the weevil rearing facility to produce as many weevils as possible for future on lake releases
- Evaluate chemicals, combinations of chemicals and surfactants and varying chemical concentrations to identify the most effective means to kill giant salvinia in a cost effective manner
- Conduct small-scale chemical treatments on Caddo Lake to verify the performance of the top performers from chemical trials described above in natural settings
- Coordinate with a hired contractor to spray additional giant salvinia acreages above what is treated by local and state entities; the level of giant salvinia sprayed will depend on the aggressiveness of giant salvinia growth this summer
- Begin working with entities participating in the IAGSCT meeting to develop a protocol for large-scale weevil production and weevil release thresholds
- Work with NRCS to develop small scale giant salvinia treatment prescriptions for inclusion in the NRCS Field Office Technical Guide

Attachments:

- photos of weevil release sites and impacts on Caddo Lake
- meeting minutes from US Congressional Committee on Natural Resources, Sub- committee on Oceans, Fisheries and Insular Affairs in Shreveport on June 27th



Weevil Impact on Giant Salvinia Study (late June, 2011): Series of frames on Caddo Lake each containing 1200 grams of fresh weight salvinia. Frames with orange paint contain exactly 75 adult weevils; non-painted frames contain no weevils (control frames). Frames will be monitored through the summer to document weevil population expansion versus salvinia growth.



Sampling Weevil Release Sites: The area where weevils were released as well as nearby areas without weevils are extensively sampled to monitor the weevil's impact on the giant salvinia. Bamboo stakes are placed at consistent intervals to mark areas for future re-sampling.



Weevil Release Site – late June 2011: Dark area in the middle of the mat coincides with area where weevils were released into the site. Preliminary data from recent sampling indicates that the weevils have dispersed through a large area of the salvinia mat (and hopefully are reproducing).



Salvinia weevil damage (brown area) on a giant salvinia mat at Caddo Lake; note the damage to plants extending away from the release area

House Subcommittee on Fisheries, Wildlife, Oceans and Insular Affairs
Field Hearing, June 27, 2011, Shreveport, Louisiana
“Giant Salvinia: How Do We Protect Our Ecosystems?”

Subcommittee members: Rep. John Fleming from Louisiana; Rep. Louie Gohmert from Texas
Subcommittee Staff Director Harry Burroughs

Witnesses testifying:

- Dr. Michael J. Grodowitz, U.S. Army Corps of Engineers research entomologist
- Robert Barham, secretary of the Louisiana Department of Wildlife and Fisheries
- Richard Lowerre, Caddo Lake Institute president
- Louisiana State Rep. Henry Burns
- Ross Melinchuk, Texas Parks and Wildlife Department deputy director
- Michael Massimi, Barataria-Terrebonne National Estuary Program invasive species coordinator
- Ken Ward, Caddo Parish Department of Public Works project manager
- Dr. Randy Westbrook, U.S. Geological Survey National Wetlands Research Center invasive species prevention specialist
- Dr. Dearl Sanders, Louisiana State University Idlewild Research Station resident coordinator;
- Jeffrey Trandahl, National Fish and Wildlife Foundation executive director
- Dr. Damon Waitt, University of Texas Lady Bird Johnson Wildflower Center senior director

Texas AgriLife representatives: Lucas Gregory, Patrick Ireland, Dr. Michael Masser, Kathy Wythe

Comments from Fleming in addition to written statement:

- Giant salvinia found in at least 41 individual waterways in 90 locations spanning 12 states with the bulk of the problem located in the southeastern US
- 41% of all endangered species are threatened by invasives

Opening Comments from Gohmert:

- Echoed the statement of Fleming but did express some concern about salvinia weevils attacking other plant species when they kill off giant salvinia
 - Panelist Ken Ward also expressed this concern
 - Other panelists refuted this concern by explaining APHIS quarantine and insect's physiological dependence on a specific plant
- Requested the written testimony from Texas Representative Brian Hughes and TWRI be included into the official record
- Additional written comments can be submitted up to 10 days post hearing

Giant Salvinia = GS

Acres = ac.

Testimony from 1st Group of Panelists

Panelist Robert Barham: Secretary LDWF

- LA - \$7.9 million budget annually for invasive control
- 13k ac. of giant salvinia in LA as of 2 years ago, 25k ac. now
- Systemic chemical Galleon \$1850/gal.

Panelist Ross Melinchuk: Deputy Director TPWD

- IPM approach to GS control: bio, chemical, education, mechanical
- Annual budget several hundred thousand to 1.5 million depending on year
- State funds to cut in FY 12 & 13
- Needs about \$600k annually on GS alone
- GS coverage on Caddo Lake Sept 09 – 3200 ac.; following 2 hard winters and a good flood GS now at about 300 ac.

Panelist Michael Grodowitz: Biomangement Team Leader USACE Vicksburg

- First introduction in 1990's in Carolinas; now expanded W to Hawaii and N to Virginia
- GS has capability of 100 tons/ha annual biomass production
- GS provides excellent mosquito breeding habitat
- Texas & LA leading the way in weevil releases
 - LA = LSU does releases
 - TX = TPWD, TWRI, USACE LAERF
- Biological control in 2-4 years
- Current Critical Needs in the Fight Against Giant Salvinia
 1. Increase public awareness
 2. Develop common guidelines that dictate what treatment use on an infestation
 3. Need for standardized sampling protocol for monitoring biocontrol releases
 4. Ensure that monitoring for new done continually
 5. Important to understand what underlying factors cause damaging GS infestations
 - i. Water quality (specifically nutrients)
 - ii. What are sources of nutrients
 - iii. Competition from natives
 6. Applied research needed
 - . new chemical/chemical combinations
 - i. improved research on biological rearing, releasing, establishing and monitoring weevils
 - ii. Integration of chemical and biological methods

Panelist Randy Westbrook: Invasive Species Prevention Specialist USGS National Wetlands Research Center

- 1995 first free living population documented in SC; subsequently controlled

- 34 reservoirs have had GS in Texas alone; half of these controlled, now 17 infected
 - Toledo Bend 1st TX lake infected in 1998
- Preventing infestations is by far best control strategy
- Proven strategies for managing GS:
 1. Interagency partnering to address GS
 2. Survey and Detection
 - i. Shoreline watch programs
 - ii. Inspect water garden plant dealers and commercial pond suppliers
 3. Education & Outreach
 - . Inspect and clean boats
 - i. Mass media
 - iii. Near lake awareness: marinas, gas stations, etc.
 4. Regulatory Containment, Control & Eradication
 - . State inspections for GS on boat trailers
 - i. Large infestation control by interagency teams
 - ii. Small infestations controlled by local task forces
 - iv. Micro infestations controlled by impacted homeowners/others
 - v. Private ponds treated by owner with assistance from weed specialist
- Can't be solved by public agencies alone

Questions from Congressmen for 1st Group of Panelists

Fleming Q&A

- If you drain a lake, would GS be eradicated?
 - Be difficult b/c moisture maintained in soil and sediment; GS can root
 - Biomass would be reduced, still have pockets, important approach but not totally effective
- What is the potential for biomass harvesting?
 - Minimal, GS is 95% water so there isn't much biomass, economics is cost prohibitive
 - Not a good choice for biofuel
 - Be careful when promoting the use of invasives; people will want to cultivate them
- What is the possibility of raising a more cold tolerant weevil?
 - Very possible and feasible; but funds are needed over an extended period of time
- Short of developing cold tolerant weevils, what will an earlier release of weevils do?
 - Releasing early can have a great impact and greenhouses such as those used by TWRI, TPWD and USACE LAERF enable early releases
- What are impacts on property values?
 - Tremendous impacts, can't get to water from property; marinas, fisheries, restaurants, etc. are all impacted as well as others
 - A number hasn't been put on it as of yet
- What is impact to waterways?
 - Can colonize slow moving waters and has potential to cause infrastructure damage as well as block boat/barge/ship traffic if infestation bad enough

Gohmert Q&A

- SFA cancer cell research to inhibit growth of cancer tumors, has anyone heard of that?
 - No one had heard of it
- What is single best inhibitor of GS?
 - Cold weather
- Gohmert expressed concerned with introducing an invasive to control an invasive
 - 30 to 40 year record of salvinia weevil and feeding on GS/CS worldwide with no noted adverse impacts
 - Grodowitz indicated that he has absolutely no concerns on developing cold tolerant weevils
- Is saltwater effective in killing the plant?
 - Grodowitz – Yes, but saltwater is not feasible due to killing other desirable species
- What are the statewide economic impacts on GS?
 - LA – no study only anecdotal evidence
 - TX – no studies here either
- What are other chemicals that will work?
 - Host of chemicals, USACE is testing (TWRI testing also)
- What threats exist to other vegetation or drinking water supplies?
 - Foliar sprays kill by contact so only spray target species, otherwise you may kill desirable plants
 - Applicators must follow labels; as long as they do there should be no problems
- Most of dead GS is settling out; causing excessive sedimentation; what other problems does this lead to?
 - Could have adverse impacts on WQ, should be evaluated
- Is anyone spending \$ on dredging to reduce this?
 - No, way too expensive and really not feasible.

Testimony from 2nd Group of Panelists

Panelist Dearl Sanders: LSU Idlewild Research Station Coordinator

- LSU began chemical GS control in 1999 and biological control in 2001
- Weevils do not fly: Man has to move them
- USDA proposal looking for cold tolerant weevil
- LSU has capability of producing millions of weevils annually

Panelist Michael Massimi: Invasive Species Coordinator: Barataria-Terrabone National Estuary Prog.

- Weevils love disturbed habitats; if you have a good functioning system, natives will be able to compete
- More weevils are needed to fight GS; Massimi is a huge proponent of biocontrol
- Major need is to restore the natural balance of a system
- Education & outreach is also critical need to fight GS infestations/reinfestations
- Integrated approach to management is needed; use all available tools

- Pre-import risk screening is needed to be proactive and prevent future invasives from becoming established

Panelist Kenneth Ward: Project Manager Caddo Parrish, LA

- 30,000 people per year use Caddo Lake

Panelist Rick Lowerre: President Caddo Lake Institute

- Public awareness is key to fighting GS, hosting this hearing locally helps this and we thank the Congressmen for this opportunity
- GS is a regional problem that needs regional solutions
- Early detection and rapid response is critical to preventing a situation like on Caddo
- Local support is critical and can do great works; lake shore watch program, volunteers to ID the plant and notify needed people

Panelist Jeff Trandahl: Exec. Dir. National Fish & Wildlife Foundation

- \$100 billion annual lost from invasives
- NFWF funds in 50 states: \$1.3 annually
- Has provided funding to Caddo Lake Institute for fighting GS

Panelist Damon Waitt: Director & Botanist; Lady Bird Johnson Wildflower Center, UT Austin

- Integrate all management together; the needed partners are all in this room
- Recommends establishing Cooperative Weed Management Areas
 - Operate with a defined problem area or across range of a specific plant
 - Involve a diverse group of stakeholders and are governed by a steering committee
 - Have a long-term commitment to cooperation
 - Develop a comprehensive plan to address mgmt of invasive species
 - Facilitate cooperation & coordination across jurisdictional boundaries
 - Share management of a species
 - Provide early ID and rapid response
 - Help to secure funding

Questions from Congressmen for 2nd Group of Panelists

Fleming Q&A

- It was asked earlier, and deferred to 2nd panel: does saltwater kill GS?
 - Saltwater works if saltwater available
 - 6 ppt salinity needed to kill GS
 - Also kills natives making this a bad solution in most cases
 - Only feasible along the coast and where public support
 - Has worked in Cameron LA, which is no longer there thanks to Hurricane Rita
- Public/Private partnership need to make the \$ go farther
 - Indeed; local buy in makes the efforts that much more effective, if they have \$ on the table they will be even more supportive of seeing the efforts through
- Weevil distribution seems to be problematic, is that true?

- Yes, weevils are not known to fly
- The weevils are much more cost effective than
 - LSU operates for 5 yrs. For less than 1 gaellon treatment at Lake Bistenau (\$180k)

Gohmert Q&A

- Do grass carp eat GS and are they affective?
 - 2007 trial: grass carp don't like floating plants; GS contains a thiamin inhibitor that inhibits metabolism and causes the fish to eat other plants
 - Simply put, carp just don't eat it
- What is the cost of producing weevils?
 - LSU 2009: 1.3 million weevils; \$35k for time and supplies
- What can/should be done about nutrient issues?
 - Caddo WPP is looking to address this by limiting excess nutrients from entering into waterways

Congressmen opened the floor for additional comments

Rick Lowerre

- One thing to mention is the need for additional research into method of GS control
 - TWRI, TAMU and their CISE program are filling this need nicely while actually providing weevils (75,000 since March of this year alone) and continued funding is critical for maintaining these efforts; until now we have just been throwing everything we can at GS and not fully evaluating how these efforts really work

Dearl Sanders

- Weevils can typically survive south of a line between Alexandria, LA and Austin, TX
 - Patrick indicated that Seth Johnson w/ LSU found weevils this spring near the upper of Toledo Bend (about 75 mi S of Caddo)

Kenneth Ward

- Are there negative impacts of weevils? Will they start eating something else?
 - Weevils have been used for years on other continents with no documented adverse impacts
 - Weevils can't fly so they swim/walk away and anywhere around here fire ants get them very quickly
 - Patrick indicated that one of Grodowitz's grad students may have found that they do in fact fly

Michael Massimi

- Weevils are a perfect control mechanism that has a very symbiotic host relationship

Fleming: How big are these weevils?

- About 1/8 of an inch and they reproduce through laying eggs in plants rhizomes which are not available on other plant species

Gohmert: Who counts these weevils?

- Counts are made using Berlesse funnels on a known mass of GS, numbers extrapolated from there

Boat Tour on Caddo Lake

About 30 people participated in the boat tour, including the two Congressmen and their staff and several members of the media. TWRI informational packets about the GS project and its accomplishments to date were handed out during the tour.

Tour of Weevil-Rearing Facility

Subcommittee Staff Director Harry Burroughs and members of his staff toured the weevil-rearing facility after the boat tour. Gregory, Ireland, Masser and Dr. Allen Knutson, Texas AgriLife Extension Service entomologist, explained the facility and progress made at the facility and in the lake.

All the testimonies, the webcast and related information are posted at

<http://naturalresources.house.gov/Calendar/EventSingle.aspx?EventID=246536>