

## Interagency Giant Salvinia Control

This outline proposes an interagency pilot study supporting the National Giant Salvinia Control Plan. The partnership described will function as a control team of the Gulf & South Atlantic Regional Panel of the Aquatic Nuisance Species (ANS) Task Force. Your comments and recommendations to improve the scope and viability of the control strategy are welcomed. Please share the outlined concept to develop understanding within your organization for the control described and suggest changes and additions for inclusion in the next revision. The Core Team members receiving this proposal were selected due to their management and professional connections to collaborative aquatic invasive species controls and for their scientific expertise and understanding of giant salvinia bio-control.

Giant salvinia, *Salvinia molesta*, continues to spread in Texas and Louisiana impacting resources, agencies and people. Spread will continue until combinations of multiple control methods are established and implemented consistently across states and jurisdictions. Giant salvinia has been a destructive aquatic invasive plant in several locations worldwide. Releases of the weevil *Cryptobagous salviniae* have provided successful bio-control in Africa, Australia and New Guinea. Weevil releases have been included as an important part of the integrated pest management approaches presently underway to control giant salvinia in the lower Colorado River (AZ-CA), Texas and Louisiana. Widespread weevil establishment in combination with herbicide and mechanical controls, boater education and transfer prevention strategies will lead to long-term control throughout the vulnerable waters of North America.

Weevil releases into the invaded waters of Texas and Louisiana have not yet provided sufficient control to reduce giant salvinia coverage and its impacts to resources and water users. Giant salvinia's explosive growth rate and rapid spread to locations devoid of weevils contributes to the control "lag" as propagules spread by wind or boats arrive at new locations and flourish unchecked. It is also possible that early plant growth out-distances reduced weevil reproduction following winter temperature setbacks. The partnership control being proposed seeks to bypass the typical bio-control lag through large-scale weevil rearing and stocking combined with increased relocations from established populations. Tactical releases of reared and relocated weevils will be integrated into ongoing herbicide and mechanical controls. If successful, this model could easily be expanded and/or relocated to stay on the leading edges of continued giant salvinia spread into other southeastern states.

### **Significantly Increase Weevil Numbers and Bio-control Pressure**

Expanded rearing capacity will be developed at facilities and used in combination with transfers from established field insectary sites to significantly increase the numbers of weevils available for early release and throughout the growing season. Strategic and timely releases to maximize weevil densities as early in the season as possible may allow weevil reproduction to match giant salvinia's growth and help seed floating propagules. The objective is to significantly increase the numbers and range of hearty populations of bio-control weevils across the wide range of giant salvinia invasion in Texas and Louisiana. Helicopter usage has been suggested as a cost effective method to distribute bio-control agents in many locations.

Bio-control researchers at universities or USDA-AHIS-PPQ may suggest improved weevil concentration methods for improved mass transfers from rearing facilities and field insectaries. The strain of *Cryptobagous salviniae* being transferred may also need to be evaluated to insure that the weevils used have the highest potential to provide effective control. Increased weevil

releases strategically combined with herbicide and mechanical controls could slow giant salvinia spread and reduce its impacts to resources and water users.

### **Satellite Imagery for Monitoring and Interagency Management Decisions**

Advanced technologies such as high resolution, multispectral satellite imagery should be used as a primary monitoring tool where possible to improve management decisions and maximize control effectiveness. Satellite photo analysis using the latest software could help quantify and digitally track giant salvinia coverage into a GIS database for use by managers and researchers. Universities in Texas may already have access to high resolution satellite photos in addition to having the latest software and technical skills necessary to interpret photos for this type of comprehensive giant salvinia monitoring.

### **Funding Strategies**

Partner agencies are requested to contribute resources as dollars, equipment, scientific and technical expertise, personnel, project coordination and other commodities necessary to accomplish the collaborative control. Texas and Louisiana are already committing agency resources to control giant salvinia. It is hoped that increased weevil release zones strategically integrated with reduced spraying zones may reduce herbicide control costs and help offset bio-control expenses. Limited federal dollars were available in 2009 to support Louisiana's State Aquatic Invasive Species (AIS) Management. Texas's Plan is scheduled to be approved for funding in 2010. Although direct federal funding for State Plans is limited, the Nonindigenous Aquatic Nuisance Prevention & Control Act of 1990 forms an important framework for interagency collaboration to control aquatic invasive species across large geographical areas.

The U.S. Army Corps of Engineers may already have some funds targeted for giant salvinia control which could be used to support the proposed interagency bio-control. Funding to control this invasive plant has been limited and reduced in the Plant Protection & Quarantine section of the U.S. Department of Agriculture's Animal and Plant Health Inspection Service in the last several years. These funds may be increased to support refreshed efforts to aggressively expand bio-control and minimize giant salvinia impacts. The Fish & Wildlife Service's AIS Programs in Regions 2 & 4 may be able to contribute some resources in 2010 to support the partnership in addition to funds and resources from the Service's Partner's Program and the National Wildlife Refuge System. While none of these options provide enough funds to mount a large control push, in combination there is considerable horsepower available to initiate expanded interagency control efforts for 2010 in conjunction with submissions of grant proposals to support future agency funds. Stakeholder groups which may contribute some of the necessary resources will be included and engaged as the partnership develops.

### **A Timeline for Control Team Development & Increased Weevil Delivery in 2010**

2009 June – Control Team reviews DRAFT proposal

- edits, comments, corrections, to Pitman for DRAFT 2

2009 July – Collaboration via emails, conference calls

- identify strengths/weaknesses and improvements
- decide if and how to proceed
- review universities for capability to provide aerial monitoring, digital tracking and control efficiency

2009 late July, August or early September – Control Team meeting in TX-LA border area

- develop actions & assign responsibilities
- identify agency/office commitments for 2010 fiscal year
- identify funding opportunities within agencies

- identify sources for external funding and grant submission strategies
- identify weevil rearing locations, translocation sites and specify a rearing team
- submit permits, obtain compliance documents and specify regulatory compliance team
- advice from APHIS-PPQ on weevil strains, viability and locations of field insectaries

2009 Fall – report control status to the Gulf & South Atlantic Regional Panel

2009 Fall – begin setup for mass weevil rearing

2009 Fall – weevil rearing team continues preparation

2010 January

- conference call
- weevil rearing team estimates numbers, locations and logistical plans for early transfers
- management team reviews proposed release sites and establishes a draft schedule
- equipment, materials, manpower, permits & permissions reviewed/ready for spring 2010
- target release area temperatures are monitored
- releases are scheduled accordingly
- tracking, monitoring, recording, satellite imagery analysis at the selected university

### **Control Team members:**

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