

## **Evaluation of The WaterMower for Giant Salvinia Control**

### **Background**

Following the establishment of the invasive aquatic weed giant salvinia in several waterbodies in Louisiana, Mr. John Bourque of Elm Grove, LA created The WaterMower. The WaterMower is a pontoon boat-based aquatic weed mulcher. It uses a conveyor belt to transport floating plant material from the water's surface into a patented grinding machine that is mounted on the boat. After the plant material is shredded by the machine, it is deposited from a chute on the side of the boat and back into the water. Mr. Bourque has sought an opportunity to demonstrate the capabilities of The WaterMower to the Louisiana Department of Wildlife and Fisheries (LDWF). His intention was to show that this machine was a viable alternative to herbicide applications for giant salvinia control in Louisiana.

### **Demonstration Agreement**

During a conversation on April 2, 2013 between LDWF Secretary Robert Barham and Mr. Bourque, an agreement was made to perform a fair assessment of The WaterMower's capabilities during field trials. The agreement included demonstrations to be conducted on two separate sites – one of Mr. Bourque's choosing and one chosen by LDWF staff. Results of both demonstrations would be evaluated by LDWF staff and documented in a written assessment. The purpose of the evaluation was to determine the following:

1. If the equipment could effectively navigate and operate in typical giant salvinia habitat
2. If the equipment could operate as effectively as one LDWF spray crew (i.e., control 25 acres of giant salvinia daily)
3. If the equipment could operate at a cost equal to, or less than materials and manpower costs for one LDWF spray crew (i.e., \$73.00/acre)

### **Demonstration Site**

At the request of Mr. Bourque, a demonstration was scheduled to take place at the Lake Bistineau State Park boat ramp on April 26, 2013. This site had a suitable coverage of giant salvinia for the field trial and offered a quality boat launch that could accommodate the large craft. A section of float boom had previously been placed near the boat ramp to aid in giant salvinia control efforts in the state park area. No plant material flowed into, or out of the site during the demonstration. The area inside the boom containment was 4.5 acres and was covered by approximately 99% giant salvinia. The salvinia coverage in this site was a single layer of primary growth, the early growth stage of the plant. The state park test site was free of navigational obstructions. Very few trees, logs, or stumps are present in the site.

### **Results**

The results of the demonstration are detailed as follows: Mr. Bourque began operating the WaterMower in the test site at 9:00 AM and stopped working at 2:00 PM. LDWF Aquatic Plant Control Biologists measured the amount of open water inside of the boom containment to determine production of the WaterMower. After five hours of work, the WaterMower cleared 2.05 acres of 4.5 acre test site.

### Conclusion

At the rate of production demonstrated by the WaterMower (0.41 acres of giant salvinia / hour), over 60 hours would be required to produce results comparable to one 2-man spray crew work-day. A demonstration that equipment could effectively navigate and operate in typical giant salvinia habitat was not conducted. Mr. Bourque elected not to conduct a demonstration at a second site as per his agreement with Secretary Barham. LDWF staff had selected a site that more closely represents habitat where giant salvinia occurs in Lake Bistineau. A comparison of costs was also not possible. No costs for operation were provided by Mr. Bourque.

The WaterMower did not meet minimum qualifications for LDWF consideration. The attached letter was mailed to Mr. Bourque respectfully declining his offer to contract his services. Notice was provided that LDWF staff would be available for another demonstration under the same agreement.



Figure 1. The WaterMower uses a conveyor belt on the front of the boat to transport the plant material from the water surface into a grinding machine. After the plants pass through the grinder, they are deposited from a chute on the side of the boat and back into the water. April 26, 2013.