

## 2013 Grand Lake System Aquatic Vegetation Control Plan LDWF, Inland Fisheries

Grand Lake is a large natural lake within the Mermentau River basin that includes several smaller lakes with interconnecting bayous totaling over 60,000 acres of coastal marsh waterbodies. In combination with White Lake, Grand Lake comprises the lake sub-basin of the Mermentau river basin. The waters of the Grand Lake System are generally turbid year round due to rice cultivation and to large, windswept expanses of shallow water. Submersed vegetation is seldom problematic. However, floating vegetation such as water hyacinth, water lettuce, and common salvinia often choke smaller lakes and interconnecting bayous. There are miles of public and private interconnecting canals associated with this waterbody. LDWF District 5 crews spend a significant amount of time spraying these canals to facilitate access to public areas as well as popular hunting/fishing areas.

### **Water body Information**

***Waterbody Type:***

Natural lake in the coastal marshes of Cameron parish

***Parish/Location:***

Cameron Parish, LA

***Date Created:***

N/A, natural waterbody

***Size (surface acres):***

Grand Lake: 44,000 acres    Associated lakes: 11,800 acres  
Canals and Bayous: ~5,000acres

***Watershed:***

Watershed Ratio: Approximately 50:1

***Water Control Structures:***

Description:

Catfish Point Locks

This lock-gate structure was constructed in the 1950's by the U.S. Army Corps of Engineers (USACE) as a key component to creating the Mermentau Basin Project. The objectives of the Mermentau Basin Project program were to: 1) conserve fresh water in the lake sub-basin by maintaining normal to above normal lake stages in Grand and White Lakes for agricultural purposes; 2) prevent uncontrolled tidal inflow during the agriculture irrigation season (April through August); and 3) maintain minimum water levels for navigation.

Age and Condition:

Originally constructed in the 1950's

Condition – Good

Operation Procedures:

U.S. Army Corps of Engineers owned and operated for navigation and irrigation.

**Lockmaster, CATFISH POINT CONTROL STRUCTURE**

Office: (337) 538-2266 - Mon-Fri, 0700 to 1530 except Calcasieu Saltwater 0600-1530 and Catfish Point 0600-1800

Lock Wall: (337) 538-2266 - After Hours & Weekends

FAX Number: (337) 538-2288

***Ownership:***

State of Louisiana owns the water bottoms and the Louisiana Department of Wildlife & Fisheries manages the fish and wildlife resources.

***Pool stage:***

Approximately 1.2ft. NAVD 88

Average Depth – 5ft.

***Stakeholders:***

While the lake itself is primarily used for commercial fishing, the Mermentau River upstream of the lake and associated canals are used for rice field irrigation and drainage. The connected canals and bayous are utilized for recreational fishing, frogging, and hunting as well as access to private hunting/fishing areas.

**Past Control Measures:**

***Biological:***

At this time no Department attempts have been made to control salvinia species with biological measures in this area.

***Chemical:***

Typically, invasive aquatic vegetation is only problematic in the smaller “bays” on the lake, and in the canals and connected bayous. Spray herbicides are primarily used to control infested areas as needed.

Table 1. Historical treatment measures in Grand Lake system

Target Plants	Herbicide	Rate (gal/acre)	Treatments per year*
Water Hyacinth Alligator Weed Primrose Pennywort Parrot's Feather	2-4D	0.5	60
Common Salvinia	Imazapyr	0.5	30
Creeping River Grass	Diquat	0.5	
Sedge	Glyphosate	0.75	
Cut Grass	Imazamox	0.5	

Table 2. 2012 Application details for Grand Lake system

<b>Total # of Treatments*</b>	<b>Herbicide</b>	<b>Rate (gal/acre)</b>
21	Glyphosate	0.9
	Imazamox/Glyphosate	0.75
	Imazapyr	0.5
	Imazapyr/Glyphosate	0.75

Table 3. 2012 Acres treated by vegetation for Grand Lake system

<b>Vegetation</b>	<b>Acres Treated</b>
Water Hyacinth	218.5
Salvinia, Common	118.2
Alligator Weed	88.8
Salvinia, Giant	45.2
Peruvian Water Grass	29.8
Knotweed	27.6
Primrose	27.2
Parrots Feather	12.4
Duckweed	10
Sedge	9.5
Maidencane	3.4
Cut grass	3.4
<b>Grand Total</b>	<b>594</b>

\*For reporting purposes, a treatment is defined as one crew for one day.

### **Aquatic Vegetation Status:**

#### **Biomass:**

Fall 2012

Common Salvinia (400 acres)

Alligator Weed (500 acres)

Water Hyacinth (600 acres)

Giant Salvinia (300 acres)

2013 Estimates

Common Salvinia (300 acres)

Alligator Weed (500 acres)

Water Hyacinth (600 acres)

Giant Salvinia (500 acres)

## **Limitations:**

- Draw-downs not an option
- Vast expanses of open water
- March through May, LDWF is limited to using 2,4-D and glyphosate to avoid off target crop damage in canal systems when rice farmers are irrigating their fields with surface water.

## **Recommendations:**

### ***Biological Control***

While our spraying operations keep main canals open, there are thousands of acres of private canals that we do not treat, or are inaccessible. These areas provide continuous sources of infestation and release plants into our maintained areas through rainfall or irrigation practices (pump-off). Salvinia weevil (common and giant) releases into these areas may provide great benefit to the public and landowners, as well as supplementing our spraying operations. District personnel have been advising landowners in the area of the current weevil stocking program (LSU AgCenter) and recommending they utilize it to help control giant salvinia on their properties. Additionally, LDWF crews will stock giant salvinia weevils in appropriate sites in public waters in 2013.

### ***Chemical Control***

We will continue to control emergent and floating vegetation with spray herbicides as needed. Problem areas will be treated at least twice per year. For infestations consisting primarily of water hyacinth (> 75%), 2,4-D will be used at 0.5 gallons per acre outside of the waiver period. Glyphosate (0.75 gal/acre) or diquat (0.75 gal/acre) will be used for water hyacinth control during the 2,4-D waiver period from March 15 – September 15. For infestations consisting primarily of salvinia spp. (> 75%), glyphosate (0.75 gal/acre) and diquat (0.25 gal/acre) will be used with Aqua King Plus (0.25 gal/acre) and Thoroughbred (8 oz/acre) surfactants. Infestations consisting of even mixtures of plants will be treated with imazapyr at 0.5 gallons per acre with Inergy (0.25 gal/acre) surfactants. Because of the long, straight nature of many of the canals in this system, helicopter treatments should be highly efficient. Candidate sites, herbicides, and timing of applications will be identified and submitted for contract applications.

### ***Physical Control***

Not available due to rice irrigation.



Figure 1. Map of Grand Lake

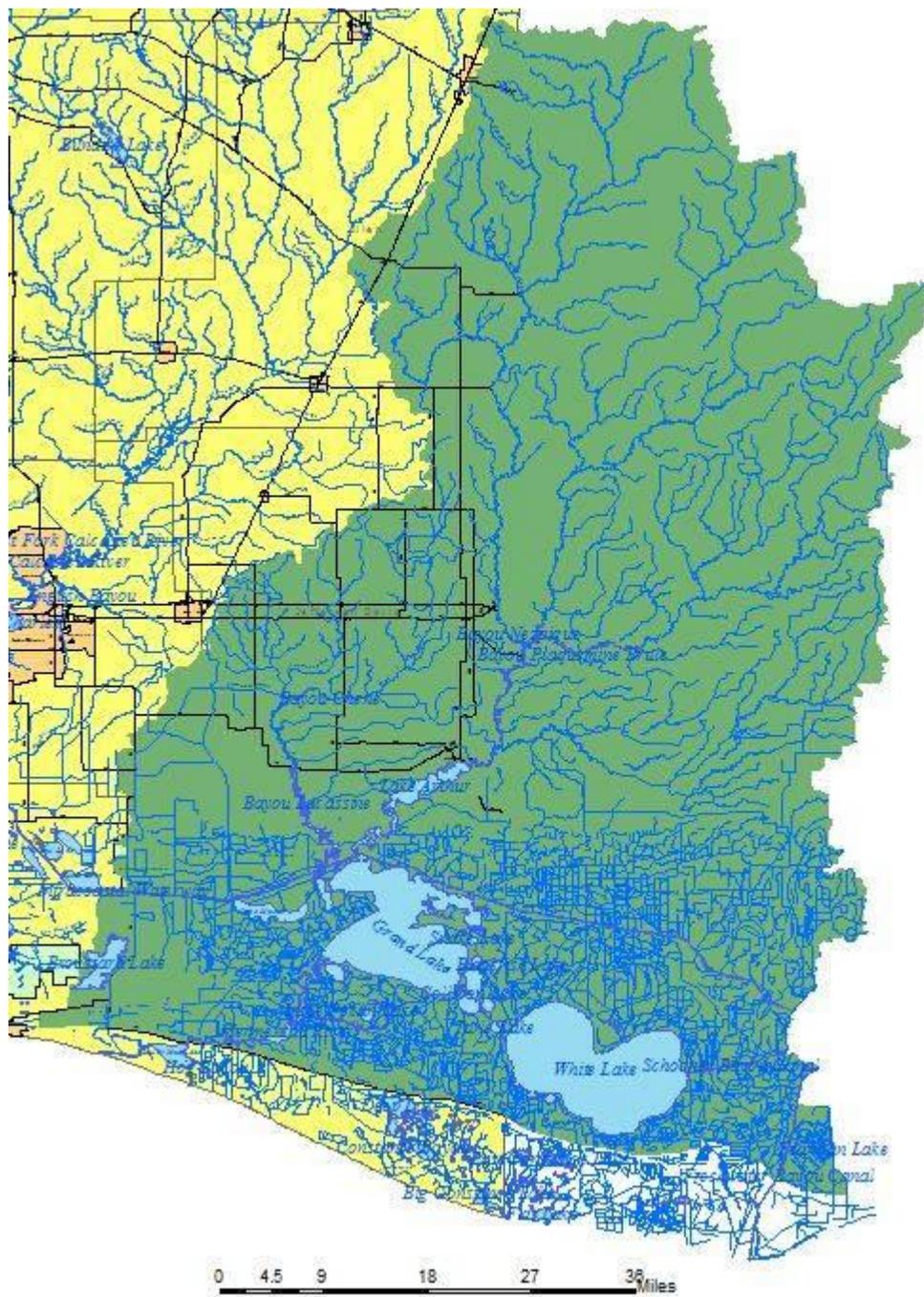


Figure 2. Map of Grand Lake/White Lake watershed