LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

2019 AQUATIC VEGETATION CONTROL PLAN

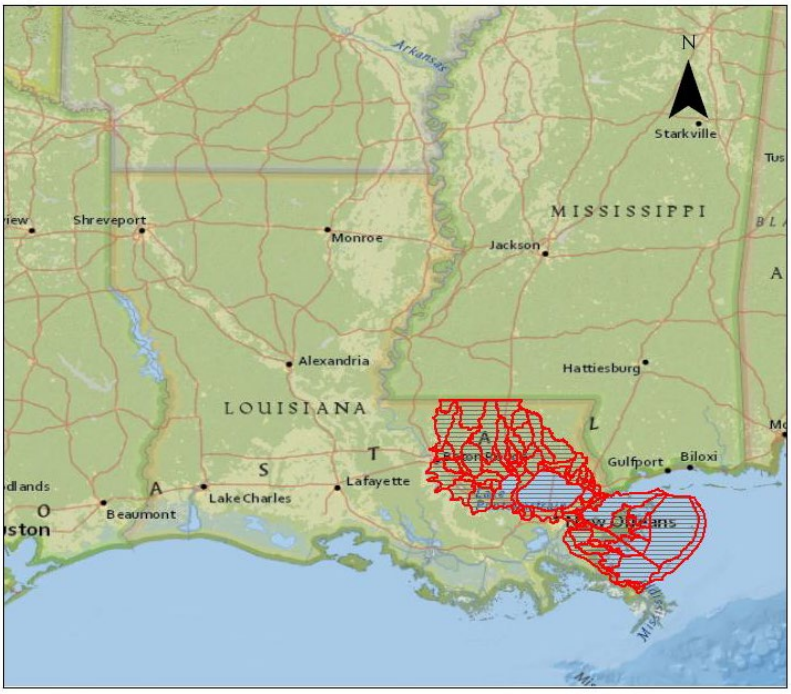
LOWER PONTCHARTRAIN

SUB-BASIN

CAERNARVON - DELACROIX / BAYOU BIENVENUE CENTRAL WETLANDS UNIT / SOUTHERN LAKE PONTCHARTRAIN MARSHES

Pontchartrain Basin

Map 1. The Pontchartrain Basin as it is located in southeast Louisiana.



General Description:

The Lake Pontchartrain Basin is a 4,700 square mile watershed in southeast Louisiana and southwest Mississippi. The basin topography ranges greatly. It can be more than 300 feet above sea level along the Louisiana/Mississippi border, at sea level in the coastal wetlands, and more than ten feet below sea level in areas near New Orleans.

The northern half of the basin is referred to as the Florida Parishes and contains all or portions of seven parishes. It can be divided into the East Florida Parishes and the West Florida Parishes. The west basin contains East Baton Rouge, East Feliciana, Livingston and St. Helena Parishes, and the east basin contains St. Tammany, Tangipahoa, and Washington Parishes. Many rivers drain the Florida Parishes, introducing fresh water into Lakes Maurepas, Pontchartrain and Borgne. Many of these rivers have headwaters in Mississippi. The rivers of this basin have eroded and incised the uplands to form distinct river valleys. Lakes Maurepas, Pontchartrain and Borgne give way to shallow intermediate ponds and marshes, which receive fresh water inputs from the Amite River, Tickfaw River, Blind River, Tangipahoa River, Bedico Creek, Tchefuncte River, Bayou Chinchuba, Bayou Castine, Cane Bayou, Bayou

Lacombe, Bayou Liberty, and Bayou Bonfouca. Land use within this basin varies, ranging from high-density urban areas that drain through metropolitan Baton Rouge and New Orleans drainage canals, to rural pastures and dairies in the Florida Parishes.

South of the Florida Parishes are the coastal lowlands. The lower Pontchartrain Basin management unit is south or adjacent to Lakes Maurepas, Pontchartrain and Borgne, and includes St. John the Baptist, St. Charles, Jefferson, Orleans, St. Bernard and Plaquemines Parishes. Fresh water is introduced into the lower basin through regional drainage and the Mississippi River via spillways, siphons and diversions, while salt water enters these lakes and marshes from the Gulf of Mexico via the Mississippi Sound, Mississippi River Gulf Outlet (MRGO), Chef Pass, Rigolets Pass and Breton Sound.

The Lower Pontchartrain Basin can be divided into three management units: Southern Lake Pontchartrain marshes, Bayou Bienvenue, and Big Mar/Caernarvon (Map 2).

Lower Pontchartrain Basin

Map 2. The Lower Pontchartrain Basin in southeast Louisiana.

Southern Lake Pontchartrain Marshes

Aquatic Vegetation Status:

Pass Manchac and the I-55 canal system presents the biggest aquatic vegetation problem in this area of the sub-basin. Water hyacinth (*Pontederia crassipes*) and giant salvinia (*Salvinia molesta*) are the dominant invasive species. Also, concentrations of giant salvinia were observed in the marshes of lower Lake Pontchartrain.

Limitations:

Recent infestations of giant salvinia were observed in the shallow swamps and marshes of the lower portion of Lake Pontchartrain. Access to these areas is limited to surface drives or air boats.

Past Control Measures:

In the Manchac wetlands, LDWF spray crews have treated 1,442 acres of aquatic vegetation since 2015. This included 15 acres of giant salvinia and 720 acres of water hyacinth (Table 1). In 2015, private contractors treated 180 acres of vegetation. This included 160 acres of giant salvinia and 20 acres of water hyacinth.

Table 1. Acres Sprayed in the Southern Lake Pontchartrain Marshes from 2015 – 2018

Southern Lake Pontchartrain Marshes						
Lacombe 1&2		2015	2016	2017	2018	Total acres sprayed
	Vegetation	acres sprayed	acres sprayed	acres sprayed	acres sprayed	
	Alligator weed (*Alternanthera philoxeroides*)	31.28	89.01	31	171	322.29
	Water pennywort (*Hydrocotyle spp*.)	10.99	6	43	0	59.99
	Water primrose (*Ludwigia spp*.)	50.64	76.99	0	68	195.63
	Salvinia, Common (*Salvinia minima*)	124.73	1.55	0	0	126.28
	Salvinia, Giant	14.33	0	0	0	14.33
	TorpedogGrass (*Panicum repens*)	0	0	0	0	0
	Sedge (*Carex spp*.)	0	3.5	0	0	3.5
	Water Hyacinth	1.7	251.96	226	241	720.66
	Total	233.67	429.01	300	480	1442.68
Private Applicator						
		2015	2016	2017	2018	Total acres sprayed
	Vegetation	acres sprayed	acres sprayed	acres sprayed	acres sprayed	
	Alligator weed	0	0	0	0	0
	Water pennywort	0	0	0	0	0
	Water primrose	0	0	0	0	0
	Salvinia, Common	0	0	0	0	0
	Salvinia, Giant	160	0	0	0	160
	Torpedograss	0	0	0	0	0
	Sedge	0	0	0	0	0
	Water hyacinth	20	0	0	0	20
	Total	180	0	0	0	180

Recommendations:

Chemical Control:

Herbicide applications for the control of giant salvinia will be made in accordance with the approved LDWF Aquatic Herbicide Application Procedures as needed to provide access to public waters:

Plant Species	Herbicide	Surfactant
Common/Giant Salvinia (April 1 to October 31)	Glyphosate (0.75 gal/acre) Diquat (0.25 gal/acre)	Turbulence (0.25 gal/acre)
Common/Giant Salvinia (November 1 to March 31)	Diquat (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Water Hyacinth	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
Water Hyacinth in waiver areas (March 15 to September 15)	Glyphosate (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Alligator Weed (undeveloped areas)	Imazapyr (0.5 gal/acre)	Turbulence (0.25 gal/acre)
Alligator Weed (developed areas)	Imazamox (0.5 gal/acre)	Turbulence (0.25 gal/acre)
American Lotus (*Nelumbo lutea*)	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
American Lotus in waiver areas (March 15 to September 15)	Glyphosate (0.5 gal/acre)	Nonionic surfactant (0.25 gal/acre)
American Lotus in waiver areas with potable water intakes (March 15 to September 15)	Triclopyr (0.5gal/acre)	Turbulence (0.25 gal/acre)
Duckweed (*Lemna spp*.)	Diquat (1.0 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Cuban Bulrush (*Oxycaryum cubense*, sedge)	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
Cuban Bulrush (sedge) in waiver areas (March 15 to September 15)	Glyphosate (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Water Lettuce (*Pistia stratiotes*)	Diquat (1.0 gal/acre)	Nonionic surfactant (0.25 gal/acre)

Much of the LaBranche wetlands are private lands, and the majority of the infested area in the Manchac wetlands is state land. Main public access routes in these areas will be controlled with herbicides if necessary.

Biological Control:

Introduce giant salvinia weevils (*Cyrtobagous salviniae*) into both private and state owned areas that contain concentrations of giant salvinia when necessary.

Bayou Bienvenue Central wetlands

Aquatic Vegetation Status:

Large concentrations of giant salvinia were observed in the marshes adjacent to Bayou Bienvenue. At its peak, the invasive plant pushed into marinas along Paris Road. The vegetation interfered with navigation and commerce along the corridor.

Limitations:

Infestations of giant salvinia are in the shallow marshes of the Bayou Bienvenue Central wetland. Access to these areas is limited to surface drives or air boats. Significant water movement due to strong tides and persistent winds make floating plants difficult to control.

Past Control Measures:

Giant salvinia has been the main focus in the Bayou Bienvenue Central wetlands. Spray crews apply herbicides in accordance with the approved LDWF approved Aquatic Herbicide Application Procedures. Also, giant salvinia weevils have been introduced to both public and private waters in this area. Since 2012, approximately 105,940 adult weevils have been released in the wetlands by LDWF. This area is also influenced by changing salinity regimes. Salinities can vary drastically throughout the year. As salinities increase in late summer, the collections of giant salvinia become stressed, and in some cases begin to diminish. In 2015, no aquatic vegetation was treated because the salinities were high enough to control the vegetation from becoming a nuisance. Since 2015, only 36.66 acres of giant salvinia have been treated, but 244.65 acres of water hyacinth have been treated (Table 2). These wetlands receive freshwater inputs from three pumping stations, runoff, and from the Violet Canal siphon. Saltwater inputs come from Lake Borgne and the MRGO via two locks at Bayou Bienvenue and Bayou Dupre. No aquatic vegetation was treated in 2018.

Table 2. Acres Sprayed in the Bayou Bienvenue Central Wetlands from 2015 – 2017.

Bayou Bienvenue Central Wetlands						
Lacombe 1&2		2015	2016	2017	2018	Total acres sprayed
	Vegetation	acres sprayed	acres sprayed	acres sprayed	acres sprayed	
	Alligatorweed	0	1.33	0	0	1.33
	Water pennywort	0	0	0	0	0
	Water primrose	0	0	0	0	0
	Salvinia, Common	0	0	0	0	0
	Salvinia, Giant	0	30.66	6	0	36.66
	Torpedograss	0	0	4	0	4
	Sedge	0	11.33	0	0	11.33
	Water hyacinth	0	114.65	130	0	244.65
	Total	0	157.97	140	0	297.97
Private Applicator						
		2015	2016	2017	2018	Total acres sprayed
	Vegetation	acres sprayed	acres sprayed	acres sprayed	acres sprayed	
	Alligatorweed	0	0	0	0	0
	Water pennywort	0	0	0	0	0
	Water primrose	0	0	0	0	0
	Salvinia, Common	0	0	0	0	0
	Salvinia, Giant	0	0	0	0	0
	Torpedograss	0	0	0	0	0
	Sedge	0	0	0	0	0
	Water hyacinth	0	0	0	0	0
	Total	0	0	0	0	0

Recommendations:

Chemical Control

The corridor along Paris road will be monitored for giant salvinia and will only be treated if navigation or commerce is impeded. Herbicide applications will be made in accordance with the approved LDWF Aquatic Herbicide Application Procedures.

Biological Control

Giant salvinia weevil stocking should continue to reinforce established, reproducing populations. Salvinia samples should be taken in these areas throughout the growing season, and presence/absence of weevils should be monitored to determine if populations are persisting. Other locations for weevil release will be considered as conditions dictate, and weevils are available.

Natural Control

Salinity will be monitored in the system and control efforts will be altered in response to the changing conditions.

Big Mar – Caernarvon

Past Control Measures:

Since 2015, this area has been sprayed by private contractors. In 2015 and 2016, they treated 198 acres of giant salvinia and 242 acres of water hyacinth in the Caernarvon area (Table 3). No aquatic vegetation treatments were needed in this area in 2017 and 2018.

Aquatic Vegetation Status:

As of October 2018, LDWF estimated that there was approximately 50 acres of water hyacinth present in publicly accessible areas of Caernarvon.

Table 3. Acres Sprayed in the Big Mar - Caernarvon from 2015 – 2018	Big Mar - Caernarvon					
Lacombe 1&2		2015	2016	2017	2018	Total acres sprayed
	Vegetation	acres sprayed	acres sprayed	acres sprayed	acres sprayed	
	Alligator weed	0	0	0	0	0
	Water pennywort	0	0	0	0	0
	Water primrose	0	0	0	0	0
	Salvinia, Common	0	0	0	0	0
	Salvinia, Giant	0	0	0	0	0
	Torpedograss	0	0	0	0	0
	Sedge	0	0	0	0	0
	Water hyacinth	0	0	0	0	0
	Total	0	0	0	0	0
Private Applicator						
		2015	2016	2017	2018	Total acres sprayed
	Vegetation	acres sprayed	acres sprayed	acres sprayed	acres sprayed	
	Alligator weed	0	0	0	0	0
	Water pennywort	0	0	0	0	0
	Water primrose	0	0	0	0	0
	Salvinia, Common	0	0	0	0	0
	Salvinia, Giant	110	88	0	0	198
	Torpedograss	0	0	0	0	0
	Sedge	0	0	0	0	0
	Water hyacinth	110	132	0	0	242
	Total	220	220	0	0	440

Recommendations:

1. Biannual assessments (early spring and late summer) for giant salvinia and water hyacinth infestations will be conducted.

2. If giant salvinia is discovered to be a problem in the area, salvinia weevils should be placed strategically to help control the infestation in locations where they are likely to become established.

3. Herbicide applications for the control of giant salvinia will be made in accordance with the approved LDWF Aquatic Herbicide Application Procedures as needed to provide access to public waters.

3. Water hyacinth should be treated with 2,4-D (0.5 gal/acre) and a non-ionic surfactant (0.125 gal/acre) in those areas that lie within St. Bernard Parish.

4. In those areas that lie within Plaquemines Parish, water hyacinth should be treated with glyphosate (0.75 gal/acre) and a non-ionic surfactant (0.25 gal/acre). The use of 2,4-D is prohibited in Plaquemines Parish.