

# **LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES**



**OFFICE OF FISHERIES  
INLAND FISHERIES SECTION**

**2020 AQUATIC VEGETATION CONTROL PLAN**

**SALINE LARTO COMPLEX**

Located in Rapides, LaSalle, Avoyelles, and Catahoula Parishes  
Map in Appendix 1

1. Waterbody type – Impounded natural backwater system
2. Age and condition of control structure – The original Larto structure was built in 1958. The current structure was completed in 1997. As per the August 10, 2010 Louisiana Department of Transportation and Development (DOTD) Dam Inspection and Evaluation Report, the Larto Lake Dam appears to be in fair maintenance condition fulfilling its intended purpose.
3. Type of control structure - The concrete structure consists of a 257- foot wide spillway with a drawdown gate and 4 flapper gates. The drawdown gate is a vertical slide gate with an opening that is 9 feet wide and 11 feet tall. The 4 one-way flapper gates are 4 feet high by 7 feet wide. The flapper gates are designed to restrict the inflow of turbid Red River water up to 42' MSL, while allowing Larto Lake water above 37' MSL to drain out of the lake. (See Appendix II)
4. Water level (MSL) – Pool Stage – 37'
5. Surface area – 8,000 acres at pool stage
6. Average depth – 8' at pool stage
7. Watershed ratio – 12.5:1
8. Drawdown potential of structure – 5.5' maximum drawdown at an approximate rate of 1 inch per day.
9. Waterbody Board or Lake Commission – The Catahoula Parish Police Jury (CPPJ) is the lake authority. The Larto Lake Game and Fish Preserve was abolished by Act 1262 of 1995. Personal communication with the CPPJ indicated that no current lake commission has been appointed.
  - a. Creation / Nomination – N/A
  - b. Primary contact information – Catahoula Parish Police Jury  
P.O. Box 258  
Harrisonburg, LA. 71340  
318-744-5435
  - c. Procedure for spillway openings – Drawdowns recommended by the Louisiana Department of Wildlife and Fisheries (LDWF) for lake management purposes will be presented to the CPPJ prior to being enacted. As outlined in Louisiana Legislative Act 270 of 1984, gate opening will be coordinated between the Louisiana Department of Transportation and Development (DOTD) and the LDWF.

DRAWDOWN HISTORY				
Gates Opened	Gates Closed	Purpose	Results	Issues
1982		Turbidity	Temporary	Water clear till Red River water returned
1983		Turbidity	Temporary	Water clear till Red River water returned
1984		Turbidity	Temporary	Water clear till Red River water returned
1985		Turbidity	Temporary	Water clear till Red River water returned
July 10, 2014	Sept. 24, 2014 Returned to pool 1-4-15	Repair CBW	Good	Very slow rate of fall
Note: Unintentional dewaterings occurred in 1985, 2008, and 2013 due to weir blowouts.				

What significant stakeholders use the lake?

The lake is used for agriculture irrigation, fishing, duck hunting, and water recreation. There are many homes and camps located along the shoreline.

10. What is the history of aquatic vegetation complaints?

The amount of vegetation varies substantially from year to year depending on water level fluctuations. Minimal complaints about hydrilla (*Hydrilla verticillata*), American lotus (*Nelumbo lutea*), alligator weed (*Alternanthera philoxeroides*), water primrose (*Ludwigia spp.*), and common salvinia (*Salvinia minima*) arise following several years without a high water event. The recent discovery and spread of giant salvinia (*Salvinia molesta*) has increased vegetation complaints considerably.

11. Have there been any controversial issues on the lake?

Cross Bayou weir, Denny's Drain weir, and Open Mouth Bayou weir have been susceptible to structure failure (blow outs) during high rainfall periods.

The Cross Bayou weir water control structure had a significant washout following a high water period. Department personnel confirmed the washout on January 28, 2013. The washout was 75 feet wide and 6 feet deep. The temporary repair was completed on February 10, 2013. The lake water level returned to normal pool elevation on February 12, 2013. Permanent repairs to the Cross Bayou weir were completed in 2014.

### **Aquatic Vegetation Status:**

A survey was conducted on December 2013. No serious vegetation problems were observed. A number of emergent species were present including alligator weed, American lotus, water pennywort (*Hydrocotyle spp.*), water primrose, and water hyacinth (*Pontederia crassipes*). This vegetation was sporadic and scattered throughout the complex. Total acreage for all species combined was less than 500 acres. Submersed vegetation was minimal. Common

salvinia was scattered throughout Shad Lake, but no mats were observed, totaling less than 100 acres. On October 30, 2012, giant salvinia was discovered at the Open Bayou boat ramp. An intense survey of the immediate vicinity was conducted, and no additional giant salvinia was located. The giant salvinia found covered less than an acre, and it appeared to be confined to Open Bayou. Department spray crews treated the area repeatedly over the next few months to prevent giant salvinia from spreading. All floating and emergent vegetation in the vicinity that could have harbored salvinia was treated.

A vegetation survey was conducted on the Saline-Larto Lake complex on March 18, 2014. There were no vegetation problems at that time. Total coverage for emergent and submersed vegetation combined was less than 100 acres. No late summer or fall vegetation survey was conducted. The lake water level was lowered for the construction of the Cross Bayou Weir. As of December 16, 2014, the Saline-Larto Lake complex water level remained approximately 3.5 feet low. The lake returned to pool elevation on January 4, 2015. Water hyacinth had been observed in several areas, but was not expected to exceed 300 acres of coverage in 2015.

A vegetation survey was conducted in June 2016. There was very little submersed vegetation. The submersed vegetation observed was hydrilla, coontail (*Ceratophyllum demersum*), and fanwort (*Cabomba caroliniana*). There were approximately 50 acres total. The emergent vegetation present was American lotus, alligator weed and water primrose. The most prevalent emergent plant was American lotus, mainly in Shad Lake. There were approximately 400 acres of emergent vegetation total. Floating vegetation observed was common salvinia, water hyacinth and duckweed (*Lemna minor*). There were approximately 400 acres of floating vegetation present. In October of 2016, Giant Salvinia was discovered again in Open Bayou/ Little Saline area. Since the discovery, a high water event flushed the salvinia out and spread the vegetation into the coves of Saline Lake.

A vegetation survey was conducted on July 19<sup>th</sup>, 25<sup>th</sup> and August 1<sup>st</sup> of 2017. There was very little submersed vegetation observed. The submersed vegetation present was hydrilla, coontail, fanwort and bladderwort (*Utricularia spp.*). There was approximately 150 acres of submersed vegetation. Emergent vegetation present was American lotus, primrose, and alligator weed. The majority of the lotus was located on the fringes of various bayous and in the Saline Lake area. Shad lake, which typically has large amounts of lotus, had very little at that time. There were approximately 800 acres of American lotus present. Primrose and alligator weed were present on the fringes of various bayous and lakes. There were approximately 100 acres of primrose and alligator weed combined. The major floating plants observed were common salvinia and giant salvinia. Common salvinia was observed sporadically throughout the complex. The majority of the common salvinia was observed in the Shad Lake area, and covered a total of approximately 400 acres. Giant salvinia was observed in Big Creek, Little Saline, Saline Lake and all connecting bayous of Little Saline and Saline Lake. No giant salvinia was observed east of Saline Lake. There were approximately 800 acres of giant salvinia present.

A vegetation survey was conducted on July 26 and July 30, 2018. There was less than an acre of submersed vegetation observed. This consisted of coontail and hydrilla. Emergent vegetation observed was approximately 140 acres of alligator weed, 30 acres of water primrose, and 140 acres of American lotus. Floating plants observed was around 100 acres of giant and common salvinia, and less than an acre of water hyacinth and duckweed. The majority of the giant salvinia was around the Big Creek/ Little Saline/ Saline Lake area. The lake was about six inches below pool stage due to low rain conditions. The low amount of vegetation observed was due to several days of freezing temperatures during the 2017 winter and a prolonged high water during the spring and summer of 2018.

A vegetation survey was conducted on August 5<sup>th</sup> and 6<sup>th</sup>, 2019. Due to the prolonged high water, there was very little submersed or emergent vegetation. Floating vegetation consisted of giant and common salvinia. There was approximately 300 acres of common salvinia and 400 acres of giant salvinia. Common salvinia was found from Indigo Bayou east to Larto Lake, observed mainly in the backs of bayous and in the Shad Lake area. Giant salvinia was found from Duck Bayou west to Big Creek and Little Saline Bayou. Vegetation coverage is expected to increase during the summer months, especially giant salvinia. The prolonged high water in 2019 has moved the salvinia to areas of the lake that the plant had not been observed in the past. Some of these areas, due to large amounts of buttonbush (*Cephalanthus occidentalis*) and American lotus, have the potential to become severely infested in the summer months. With a mild winter, giant salvinia may cover approximately 1,000 acres or more in 2020. Other vegetation is expected to return as in normal years.

### **Limitations:**

- The system is prone to extreme water level fluctuations
- Agriculture irrigation may limit timing and use of certain herbicides
- Slow drawdown rate when dewatering approximately one inch per day maximum

Factors that may limit the ability of LDWF to control aquatic plant problems in the water body:

- 2,4-D waiver area from March 15 to September 15

### **Past Control Measures:**

#### **Biological:**

2017: 62,670 giant salvinia weevils (*Cyrtobagous salviniae*) were stocked in various locations around Saline Lake, Big Creek, and Little Saline Bayou.

2018: 6,750 weevils were stocked. Low numbers stocked due to high water.

2019: 61,233 weevils were stocked in Muddy Bayou.

#### **Chemical:**

Foliar applications of contact herbicides have been used to maintain boating access. Types of vegetation and acres sprayed are listed below.

Herbicides have been applied at the following rates:

2,4-D: Used at a rate of 0.50 gallons per acre to treat water hyacinth and American lotus.

Glyphosate: Used at a rate of 0.75 gallons per acre to treat alligator weed, water hyacinth, American lotus, giant salvinia and common salvinia during the active growing period.

Diquat: Used at a rate of 0.75 gallons per acre to treat water hyacinth, and salvinia during the slower growing period or winter months.

Surfactant is added at a rate of 1:4 (surfactant: herbicide) for all herbicides.

Since 2012, herbicide applications for the treatment of giant and common salvinia have included the following:

**April 1-October 31**: glyphosate (0.75 gal/acre)/diquat (0.25 gal/acre)/Turbulence (0.25 gal/acre)

**November 1 – March 31**: diquat (0.75 gal/acre)/non-ionic surfactant (0.25 gal/acre)

## Vegetation Spraying History

Spraying is conducted annually in the lake complex, primarily to maintain shorelines near homes and camps. Boating access in the numerous bayous is also maintained as necessary. Since 2008, spray efforts to control common salvinia have increased. Spray efforts in 2010 were minimal, and no spraying was conducted in 2011. However, in 2012, over 1,500 acres were sprayed. The majority of this was to control common salvinia and water hyacinth.

Following the discovery of giant salvinia in October 2012 near the Open Bayou boat ramp, the area was surveyed and sprayed every couple of weeks until giant salvinia was no longer observed.

Giant salvinia was discovered again in 2016 around the Open Bayou/ Little Saline Bayou area. During that year, several high water events occurred. These events spread the giant salvinia throughout the west side of the complex. After the flooding, giant salvinia could be found from Big Creek to the east side of Saline Lake. LDWF spray crews and private applicators conducted multiple foliar applications by boat. In 2017, an aerial treatment was conducted to treat American lotus and giant salvinia mixed around the west and south end of Saline Lake and connecting bayous.

High water events occurred in both 2018 and 2019. These high waters have increased the area that giant salvinia is present throughout the complex and in sloughs and ponds not

normally connected to the lake during normal pool stage. Some of these areas contain a mixture of common and giant salvinia. Due to the prolonged high water event in 2019, much of the salvinia was inaccessible to spraying during the year.

<b>Aquatic Vegetation Spray Efforts Year</b>	<b>Acres</b>	<b>Vegetation</b>
2005	70	Water hyacinth
	88	Giant cutgrass ( <i>Zizaniopsis miliacea</i> )
2006	75	Water hyacinth
2008	94	American lotus
	65	Water hyacinth
	29	Common salvinia
2009	90	Common salvinia
	31	Alligator weed
	61	Water hyacinth
2010	63	Alligator weed
	9	American lotus
	49	Common salvinia
	6	Hydrilla
2012	110	Alligator weed
	158	American lotus
	33	Water pennywort
	57	Water primrose
	523	Common salvinia
	31	Giant salvinia
	750	Water hyacinth
2013	51	Alligator weed
	47	American lotus
	177	Common salvinia
	38	Giant salvinia
	249	Water hyacinth
2014	268	Water hyacinth
2015	34	Alligator weed
	11	American lotus
	56	Common salvinia
	81	Water hyacinth
2016	57	Alligator weed
	277	Common salvinia
	370	Giant salvinia
	17	Water hyacinth
2017	509.2	American L lotus
	5	Common salvinia
	1528.6	Giant salvinia
	194.7	Water hyacinth
2018	16.6	Alligator weed

	10	Buttonbush
	4	Common salvinia
	620.8	Giant salvinia
	13.1	Water hyacinth
2019	564	Giant salvinia
	8	Common salvinia

### **Recommendations:**

A drawdown is recommended in 2020 for the purpose of aquatic vegetation reduction. The many coves, bayous and areas of dense buttonbush and cypress trees limits access for foliar spraying. The drawdown should be initiated the week of June 1, 2020.

The target level for the 2020 drawdown will be 3-4 feet below normal pool elevation. The timing and depth of the drawdown was selected to create the longest drying period, and still allow access to the lake for foliar spraying.

The drawdown gates will be closed no later than November 1, 2019. The LDWF staff will work with DOTD personnel to operate the control gate to fluctuate the water level in an effort to maintain the 3-4' below pool drawdown goal.

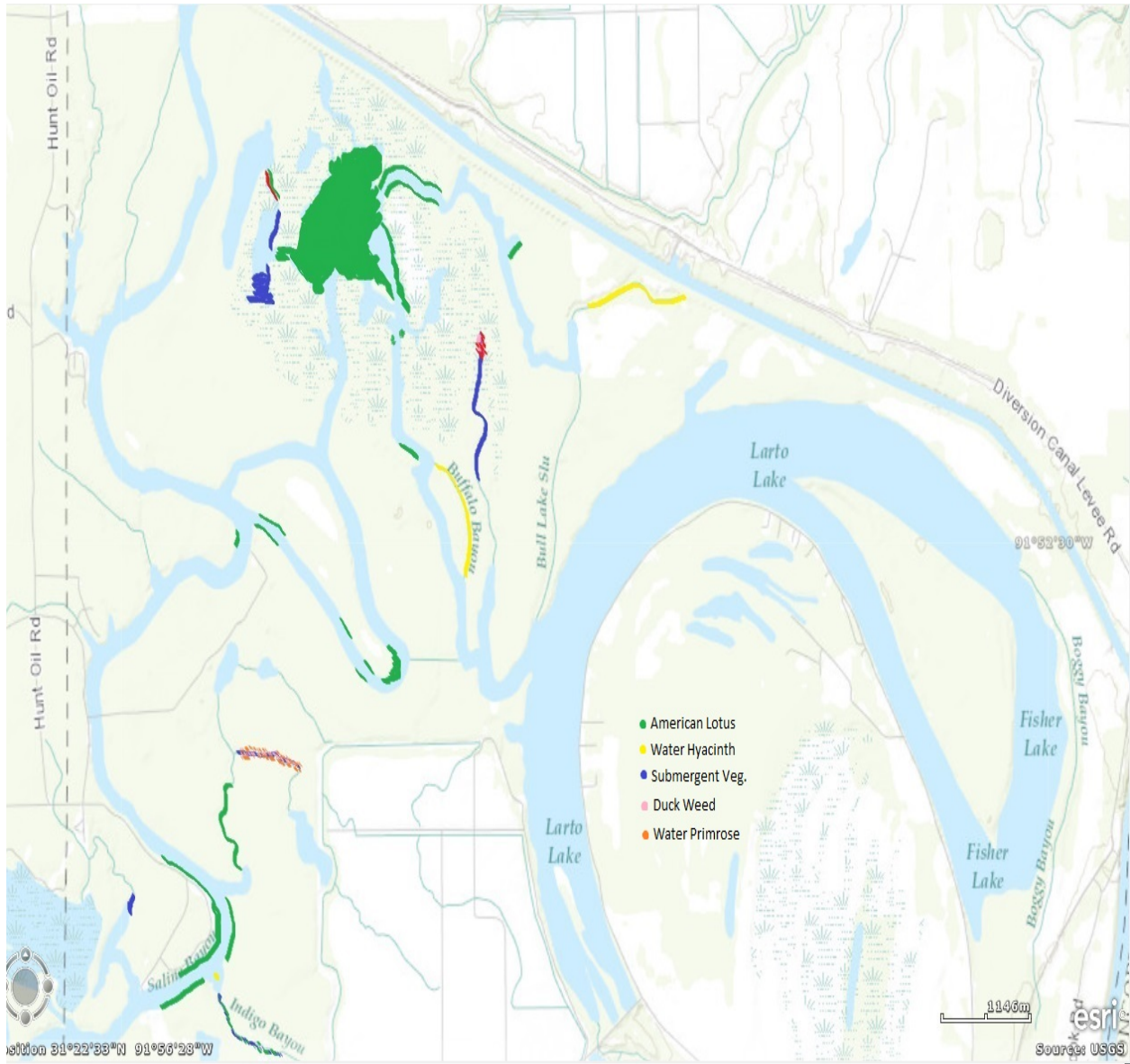
LDWF spray crews will continue foliar spraying of floating and emergent vegetation in accordance with the approved LDWF Aquatic Herbicide Application Procedure:

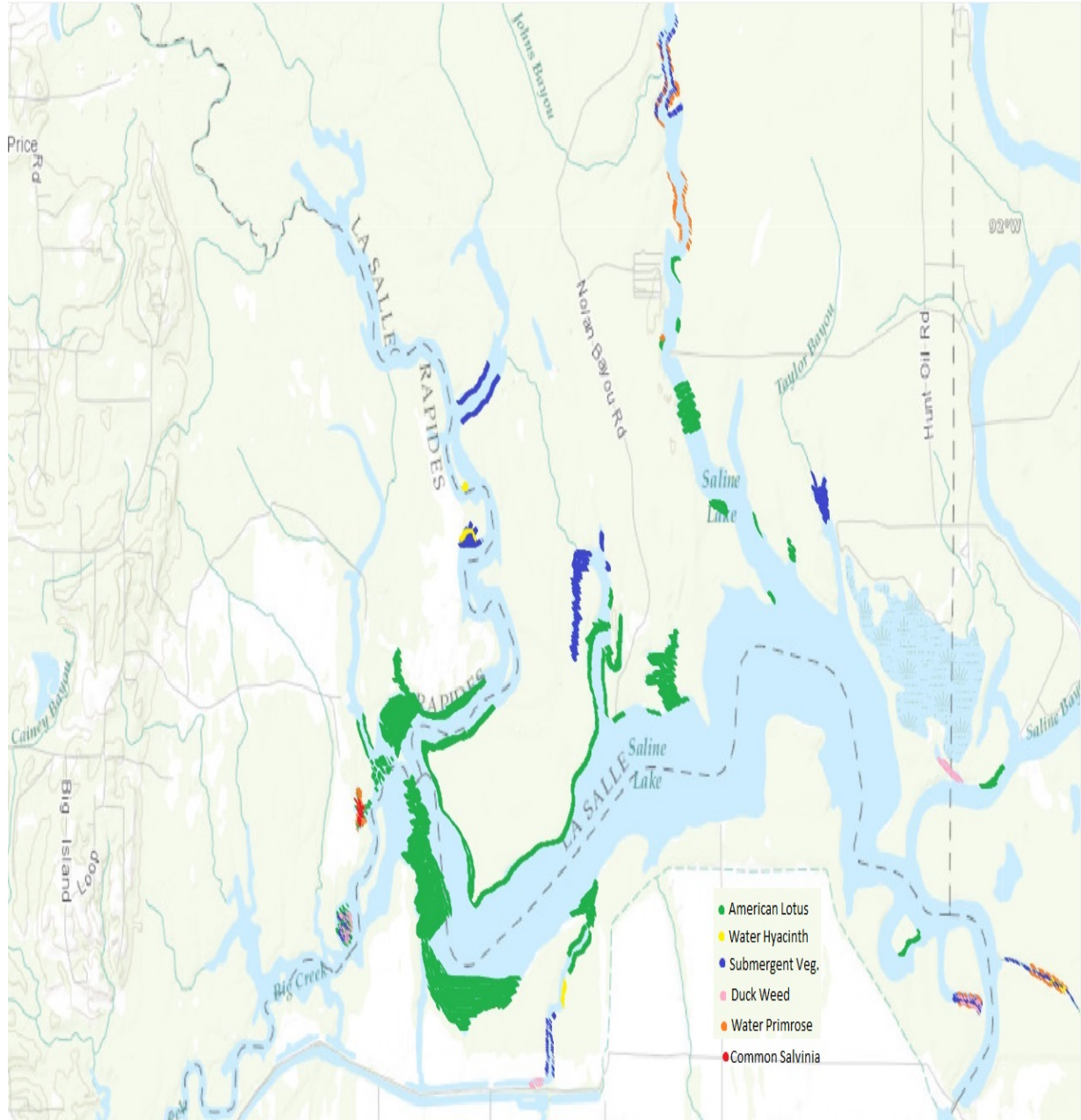
<b>Plant Species</b>	<b>Herbicide</b>	<b>Surfactant</b>
Common/Giant Salvinia ( <i>Salvinia spp.</i> ) (April 1 to October 31)	Glyphosate (0.75 gal/acre) + Diquat (0.25 gal/acre) or Clipper SC (2 oz./acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Common/Giant Salvinia (November 1 to March 31)	Diquat (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Water Hyacinth ( <i>Pontederia crassipes</i> )	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 ( <i>Alternanthera philoxeroides</i> ) (undeveloped areas)	Imazapyr (0.5 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Alligator Weed (developed areas)	Imazamox (0.5 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
American Lotus ( <i>Nelumbo lutea</i> )	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 (or approved equivalent, 0.25 gal/acre)
Duckweed ( <i>Lemna spp.</i> )	Diquat (1.0 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Cuban Bulrush ( <i>Oxycaryum cubense</i> , 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 ( <i>Pistia stratiotes</i> )	Diquat (1.0 gal/acre)	Nonionic surfactant (0.25 gal/acre)

Giant salvinia weevils will continue to be stocked into areas of the complex that are conducive to their establishment as they are available.

# Typemap

Larto-Saline vegetation survey conducted on July 24-25, 2013.





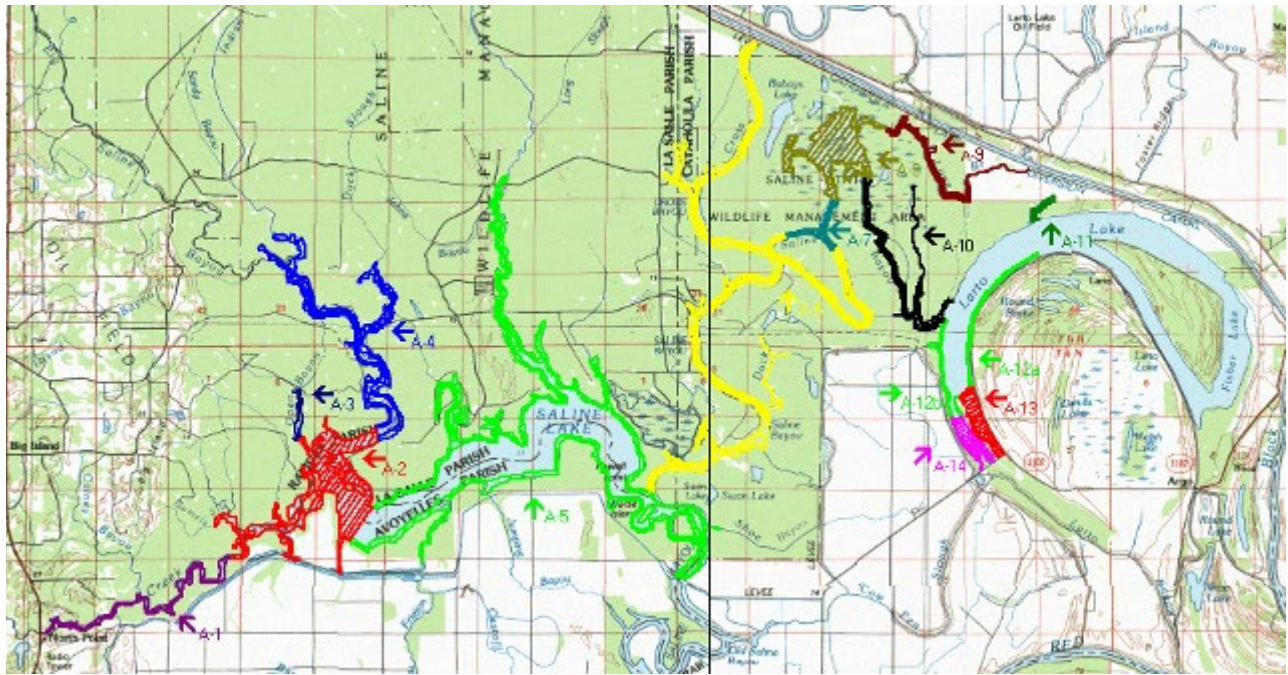


Figure 1. Type map of aquatic vegetation in Larto-Saline Complex (see key below).

- A-1:** American lotus (moderate to severe to 8 ft. deep), water primrose (moderate to severe)
- A-2:** American lotus (severe to 8 ft.), hydrilla (moderate to 3 ft.), water hyacinth (light)
- A-3:** duckweed (moderate), Brazilian elodea (moderate to 6 ft.), fanwort (severe to 6 ft.)
- A-4:** alligator weed (moderate), arrowhead (moderate), coontail (moderate to severe to 7 ft.), fanwort (moderate to 5 ft.), filamentous algae (light to 5 ft.), fragrant water lily (light), hydrilla (moderate to severe 7 ft.), southern naiad (light to 5 ft.), water primrose (moderate)
- A-5:** American lotus (light to severe to 8 ft.), hydrilla (moderate to 3 ft.)  
water hyacinth (light)
- A-6:** American frog's-bit (light), American lotus (light to severe to 5 ft.), arrowhead (light), duckweed (light), hydrilla (light to moderate to 4 ft.), water hyacinth (light)
- A-7:** American frog's-bit (light), American lotus (light to severe to 5 ft.), arrowhead (light), common salvinia (moderate), duckweed (light), hydrilla (light to moderate to 4 ft.), water hyacinth (light)
- A-8:** American frog's-bit (light), American lotus (severe to 12 ft.), arrowhead (light), common salvinia (moderate), duckweed (light), hydrilla (light to moderate to 4 ft.), water hyacinth (light)
- A-9:** alligator weed (moderate), American frog's-bit (light), bulrush (light), common salvinia (moderate), filamentous algae (light),
- A-10:** alligator weed (moderate), American frog's-bit (light), American lotus (moderate to 8 ft.), common salvinia (moderate), filamentous algae (light)
- A-11:** filamentous algae (moderate to 4 ft.)
- A-12a, A-12b:** American lotus (light to 4 ft.), arrowhead (light), common salvinia (light), hydrilla (moderate to 3 ft.), water hyacinth (light)

**A-13:** common salvinia (light), duckweed (moderate), hydrilla (moderate to 3 ft.), water hyacinth (severe), water primrose (light)

**A-14:** American lotus (severe to 3 ft.), hydrilla (severe to 3 ft.), water hyacinth (light)

### **SALINE-LARTO COMPLEX VEGETATIVE TYPEMAP – 2007 by M. Ewing**

The Saline-Larto Complex is a large natural backwater complex located in east central Louisiana (Catahoula, LaSalle, Avoyelles and Rapides parishes) composed of Larto Lake, Saline Lake, Shad Lake and numerous interconnecting smaller lakes and bayous. The complex receives regular backwater flooding from Red River, Black River and Little River. In any given year, the dominant source of flooding as well as the extent and duration of flooding can influence fisheries production and aquatic weed growth.

#### Water Body Information:

Water body type – natural backwater lake

Date Impounded – N/A - natural lake not an impoundment; spillway built in 1958

Surface Area – approximately 8,000 acres at pool stage elevation of 37.0 ft. MSL.

Watershed Ratio – around 100,000 acres; variable depending on flooding

Average Depth – around 7 feet; max depth at pool is around 15 feet.

Drawdown Capacity – 5.5 feet but drawdown rate is extremely slow, less than ½ inch per day.

Backwater flooding – regularly receives backwater flooding

#### Nuisance Aquatic Problem:

Submersed – Hydrilla, Egeria, fanwort, coontail

Surface – American lotus, water hyacinth, frog bit, alligator weed, primrose, southern water grass, common salvinia

In recent years, stable water level conditions resulting from the lack of normal spring rainfall and backwater flooding, along with mild winter temperatures have favored the spread of aquatic weeds. Overall vegetative coverage is about 30% of the 8,000-acre complex's total surface area but coverage is much higher in some localities and is restrictive to boating and fishing access.

#### Limitations:

Cotton growing area – restrictions on use of 2, 4-D

#### Proposed Control Measures:

*Biological* – Not recommended

*Chemical* –

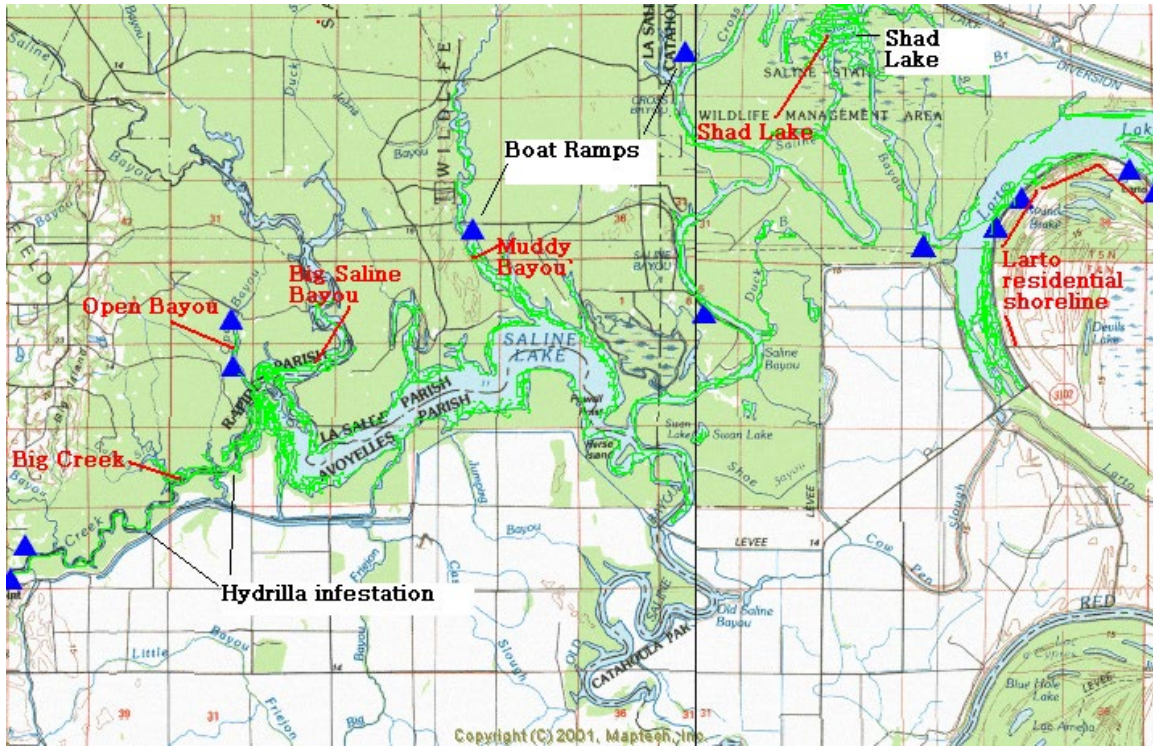
Water Hyacinth and Other Surface Vegetation – Surface spray with 2, 4-D and glyphosate for maintenance control of water hyacinth, lotus, primrose, etc. and Reward for common salvinia.

Hydrilla and Other Submersed Vegetation - Sonar recommended in Shad Lake and major

boat lanes; spot treat with Aquathol in Larto Lake (see map and description of treatment areas below).

At this time, the main problem areas are in the major boat lanes going into Saline Lake (includes Big Creek, Open Bayou, Big Saline Bayou and Muddy Bayou) and the shallows of the Shad Lake area, a popular fishing spot. In addition to these areas, we also receive a lot of complaints concerning the Larto Lake shoreline. While there is only a narrow shoreline fringe of vegetation in this area, it happens to be the region of highest residential development with numerous private residences, camps, piers, etc. The total surface area for all areas considered for treatment for submerged weed control in the Larto-Saline Complex is around 1,200 acres with an average depth of around 3 feet (total volume of 3,600 acre/feet). Below is a map of the area followed by descriptions of treatment zones in order of priority, with plant species listed in order of dominance:

## Saline-Larto Complex



Appendix I – Map of the Larto/Saline Lake Complex



## APPENDIX II

Saline/Larto Complex Water Control Structure located on Larto Bayou on the South end of Larto Lake during a high water event. This picture was taken on May 17, 2011. The water level was at 45.76 MSL at the Larto Lake gauge.

