

# LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

OFFICE OF FISHERIES  
INLAND FISHERIES SECTION

2018 AQUATIC VEGETATION MANAGEMENT  
PLAN

## CHATHAM LAKE



Prepared by:  
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LDWF Inland Fisheries  
District 1  
December 2017

Date Lake Formed – 1952

Waterbody Type – upland reservoir created by earthen dam across Edwards Branch (tributary of Castor Creek)

Age and condition of control structure – approximately 66 years, good condition. Control structure gate was replaced in 2007.

Type of control structure – 150 feet, concrete spillway with one 18-inch slide drawdown

Water level (MSL) – 165 MSL at normal pool stage. Normal seasonal water level fluctuations from approximately 163 MSL to 167 MSL

Surface area – 158 acres at normal pool stage

Average depth – 5 feet at normal pool stage

Watershed ratio – 64.7:1

Drawdown Capability – capable of complete dewatering

Lake Commission – Jackson Parish Watershed District (JPWD)

Creation / Nomination – The Jackson Parish Watershed District shall consist of seven commissioners, each of whom shall be a qualified elector of the State of Louisiana who resides within the limits of Jackson Parish. The commissioners shall be appointed by the Jackson Parish Police Jury and serve terms of 4 years and until their successors have been appointed and have been qualified.

JPWD created in 1972 by LA R.S. 38:2900 as political subdivision and budgetary unit. LA R.S. 38:2900 creates the Jackson Parish Watershed District, out of the watershed of all streams located in Jackson Parish, and more particularly defined as all of Jackson Parish, Louisiana. The Jackson Parish Watershed District shall be an agency of the State of Louisiana and a budgetary unit thereof, which shall have as its purpose the conservation of soil and water, developing the natural resources and wealth of the district for sanitary, agricultural and recreational purposes, as the same may be conducive to the public health, safety, convenience or welfare or of public utility or benefit of the citizens of the State of Louisiana.

The Jackson Parish Game and Fish Preserve purchased property and acquired servitudes for the creation of Chatham Lake for a recreational fishery.

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Jackson Parish Watershed District

WARD/MEMBER NAME	TERM EXPIRES	DATE APPOINTED	ADDRESS
1 – Joe Carpenter			
2-Benson Bagwell	12/31/20	8/8/16	149 Hogan Rd. Jonesboro, LA 71251
3-Lavelle Smith	4/11/19	8/8/16	154 Easy St. Chatham, LA 71226
4-Vacant			
5-Vacant			
6-Vacant			
7-Danial Ponder			

Procedure for spillway openings – Operation and maintenance of the dam and control structure is the responsibility of the Louisiana Department of Transportation and Development (LDOTD). Operation of the structure for lake management purposes requires a written request from the Secretary of the Louisiana Department of Wildlife and Fisheries to the Secretary of LDOTD. The request must include details including rate of dewatering, target level, and dates for initiation and completion of the drawdown

Drawdown history of Chatham Lake from 1967 to 2017.

YEAR	PURPOSE	SUCCESS	DEPTH	% EXPOSED	FISH KILL
1967	Vegetation Control	Unknown	6 ft.	100%	Yes
1975	Vegetation Control	Unknown	5 ft.	80%	Unknown
2004	Habitat Improvement	Moderate	3 ft.	50%	No
2007	Renovation of lake, repairs to control structure	Yes	6 ft.	100%	Yes

What significant stakeholders use the lake?

Recreational use of Chatham Lake is primarily by anglers.

What are their needs and concerns?

The primary needs of anglers are providing bank-fishing access along the dam and preventing salvinia (*Salvinia* spp.) and submerged aquatic vegetation from impeding boating access for fishing. Access to shoreline properties is a concern on the upper portion of the lake.

What is the history of aquatic vegetation complaints?

Very few complaints are received.

Have there been any controversial issues on the lake?

Giant salvinia (*Salvinia molesta*) was first documented on Chatham Lake in January, 2016. Foliar herbicide applications began almost immediately.

### **Aquatic Vegetation Status:**

An assessment of the aquatic vegetation on Chatham Lake (158 acres) was performed on 7-19-17 by LDWF Inland Fisheries Biologist, James Seales. The lake was approximately 1” below pool stage at the time of the survey. The water color was stained with a moderate algae bloom.

The upper one third of the lake is heavily forested with dense stands of bald cypress (*Taxodium distichum*). Most of this area is very difficult to access with a boat. Giant salvinia has become the predominant aquatic plant on the lake, and is found in dense mats in the heavily forested areas and along the shoreline in the mid-lake area. Occasional patches of water primrose (*Ludwigia* spp.) and alligatorweed (*Alternanthera philoxeroides*) are also found in this area of the lake.

In the remainder of the lake, primary and secondary stage giant salvinia was found floating through the open water areas in loose mats or individual plants. These plants formed a fringe in some of the shoreline areas. It is likely that common salvinia (*Salvinia minima*) was interspersed

amongst the giant salvinia, but it was difficult to ascertain due to the large numbers of primary stage giant salvinia plants observed. Emergent and marginal vegetation found in a light fringe along some of the shoreline areas on the lower end of the lake included water primrose, alligatorweed, duck potato (*Sagittaria lancifolia*), wild taro (*Colocasia esculenta*), water pennywort (*Hydrocotyle umbellata*) and southern water grass (*Luziola fluitans*).

Submerged vegetation was very difficult to find in the lake. Only a couple of strands of decaying submerged vegetation were observed during the survey.

Although Chatham Lake spans as much as 158 acres, the heavily forested west end is too shallow for vessels and is not suitable for traditional forms of recreation regardless of vegetation present. Therefore, the lake has approximately 103 acres of recreationally viable habitat. While salvinia is covering an estimated 70 acres of the total lake, impacts to the recreational area of the lake are presently minimal to moderate (approximately 15% coverage). At times, small drifting mats of salvinia may impact recreational use in the main lake area.

### **Limitations:**

Chatham Lake had undergone a complete drawdown for renovation purposes in 2007, which was preceded by a partial dewatering of the lake in 2004 for habitat improvement. It is apparent that drawdowns will provide short term control of the submerged aquatic vegetation in the shallow areas of the lake. Approximately 50% of Chatham Lake has water depths less than 4 feet deep. This area of the lake usually contains some submerged aquatic vegetation.

There is approximately 55 acres on the upper portion of the lake that is prime habitat for giant salvinia, but access for conventional herbicide treatments is limited by shallow water and stands of cypress trees.

### **Past Control Measures:**

Foliar herbicide applications for control of nuisance aquatic vegetation are made periodically by LDWF spray crews. Herbicide applications made from 2006 through 2017 are listed below.

Herbicide applications by LDWF spray crews in Chatham Lake, LA 2006 – 2017.

Treatment Year	Primary Plant Species	Herbicides Used	Acres Treated
2006	Alligator weed, primrose	Aqua Neat – 13 gals. (0.75 gal/acre)	17
2008	Alligator weed, primrose	2,4-D - 3 gals. (1 gal/acre) Reward – 24 gals. (1 gal/acre)	27
2009	Alligator weed, primrose, common salvinia	Aqua Master – 26 gals. (0.75 gal/acre) Diquat E Pro 2 L – 16 gals. (1 gal/acre) Knockout – 13 gals. (1 gal/acre) Reward – 20 gals. (1 gal/acre)	83
2010	Alligator weed, duckweed, parrot feather, pennywort	Aqua Master – 8 gals. (0.75 gal/acre) Knockout – 32 gals. (1 gal/acre) Platoon – 12 gals. (0.5 gal/acre)	67
2011	Alligator weed, primrose, common salvinia,	Aqua Master – 2 gals (0.75 gal/acre) Clearcast – 1 gal (0.33 gal/acre) Knockout – 13 gals. (1 gal/acre) Tribune – 5 gals. (1 gal/acre)	24
2013	common salvinia	Tribune – 10 gals. (1 gal/acre)	10
2015	Primrose, common salvinia	Clearcast-3 gals. (0.5 gal/acre)	6
2016	Giant salvinia, alligator weed	Tribune – 21.75 gals (0.75 & 0.25 gal/acre) Round Up Custom – 1.5 gals (0.75 gal/acre) Aquaneat – 8.25 gals (0.75 gal/acre)	42
2017	Giant salvinia, alligator weed	Tribune – 28.5 gals (0.75 & 0.25 gal/acre) Aquaneat – 60 gals (0.75 gal/acre)	118

Giant salvinia weevils (*Cyrtobagous salviniae*) were first introduced into Chatham Lake in 2017 to aid in the control of giant salvinia. The weevils were brought in from Iatt Lake in central LA where the population of weevils overwintered two successive years in high numbers. This population may be exhibiting signs of cold-tolerance, or may be a product of circumstance as the two previous winters were mild.

Giant salvinia weevil stockings by LDWF in Chatham Lake, LA 2017

Year	# Weevils	Source
2017	6000	LDWF (Iatt Lake)

## **Recommendations:**

Conduct foliar herbicide applications to floating and emergent aquatic weeds as needed in accordance with the approved LDWF Aquatic Herbicide Application Procedure. Monitor, document, and treat the regrowth of giant salvinia after the major freeze event that occurred during the winter of 2017-18.

Monitor the submerged aquatic vegetation levels present on Chatham Lake. Historically, submerged plant coverage often exceeded 40%, especially prior to the lake renovation in 2007. Since the renovation, vegetation levels have not approached this level, and generally have remained below 15%.