

LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES



**OFFICE OF FISHERIES
INLAND FISHERIES SECTION**

PART VI -A

WATERBODY MANAGEMENT PLAN SERIES

SALINE LAKE

LAKE HISTORY & MANAGEMENT ISSUES

CHRONOLOGY

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LAKE HISTORY

GENERAL INFORMATION

Date reservoir formed

Saline Lake was impounded in 1933 with the construction of the Allen Dam in Saline Bayou at 98.0 feet MSL. The Allen Dam also created the Black Lake Complex. In 1959, a new dam was built upstream of Allen Dam effectively separating Saline Lake and the Black Lake Complex. The 1959 dam raised the Saline Lake elevation to 103.0 feet MSL. The current dam and spillway for Saline Lake was completed in 1992 and the elevation remains at 103.0 feet MSL (See Appendix I).

Impoundment

Owner – State of Louisiana

Purposes for Creation – The Northwest Louisiana Game and Fish Preserve, including the Black Lake Complex and Saline Lake, was created solely to enhance wildlife, fishing and recreational opportunities for the citizens of the state as per Act 191 of 1926 (See History of the Northwest Louisiana Game and Fish Preserve below).

Size

7,001 acres, a map of Saline Lake along the 103.0 MSL appears in Figure 1.

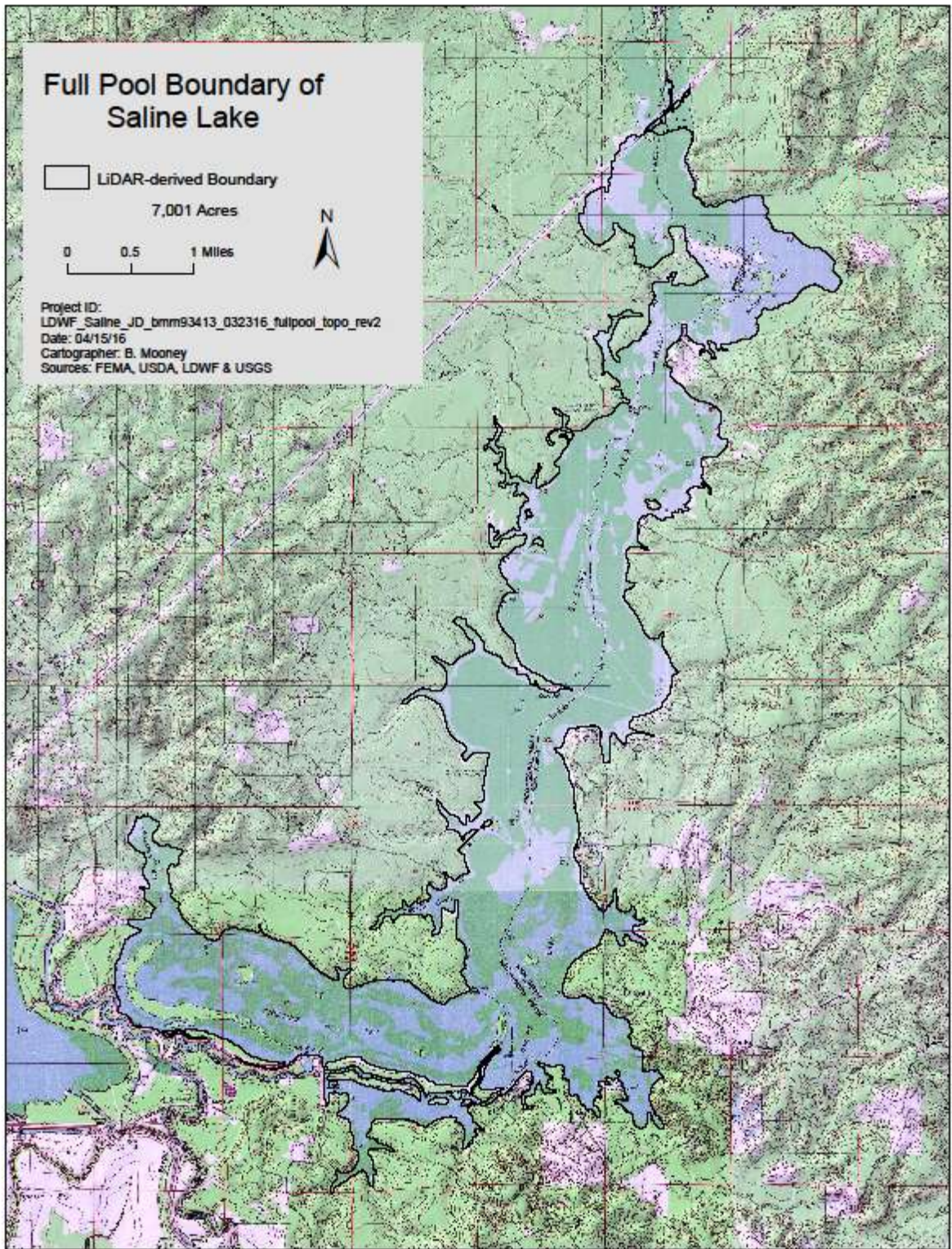


Figure 1. Topographical map of 7,001 acre Saline Lake at 103.0 MSL.

Watershed

420 square miles (ratio 32:1) of hardwood/pinelands in Natchitoches, Winn and Bienville Parishes.

Pool stage

1933 to 1959 – 98.0 feet MSL

1959 to current – 103.0 feet MSL

Parishes

Natchitoches and Winn

Border waters

None

Spillway description

Saline Lake Dam /Spillway

Length – 400' Condition – Fair

Dam/Spillway Coordinates

The Saline Lake Dam is located 8 miles NE of Clarence, LA in Section 12 and 13, T10N-R6W, in Natchitoches Parish at map coordinates: latitude 31.852564 N and longitude -92.931331 W. A map of the Saline Lake Dam location appears in Figure 2.



Figure 2. Map of Saline Lake Dam, located Winn and Natchitoches Parishes, LA.

Drawdown Structure

Location-Incorporated into the Saline Lake Spillway.

Number of gates – 3 (plus two fish gates located on each end of the spillway). The fish gates are designed to open from the top of the spillway downward. These gates are designed to allow fish, primarily shad, to move into the lake during periods of high water in the Red River.

Gate size – 6' x 6' (fish gates 6' x 3')

Condition – Structure is fulfilling its intended purpose per Louisiana Department of Transportation and Development (DOTD) Dam Inspection and Evaluation Report dated April 7, 2017. A copy of this report appears as [APPENDIX 1](#).

Max flow rate – 6,859 cubic feet per second.

Who controls

The Louisiana Department of Transportation and Development (DOTD) are responsible for maintenance and operation of the gates. Primary purpose of the gates is water level manipulation for habitat management. The DOTD operates the gates for lake management as per written requests from the Louisiana Department of Wildlife and Fisheries (LDWF).

Procedure for spillway openings – For lake management objectives, LDWF will initiate recommendations, or consider recommendations from the Saline Lake Game and Fish Preserve Commission (SLGFPC) for a drawdown. If agreed upon, the LDWF Secretary submits a request to the Secretary of DOTD that includes, requested date of opening, water level desired, desired dewater rate, date of gate closure, and purpose for gate operation.

For flood control purposes, operation of the structure gates is directly requested to DOTD by SLGFPC as per statute below.

RS 38:24

§24. Rules and regulations; inspection of dams

A. ***

B. Notwithstanding any other provisions of law or any rules and regulations to the contrary, the legally constituted boards of commissioners of Black Lake, Clear Lake, and Saline Lake in Natchitoches Parish may recommend directly to the Department of Transportation and Development that the dams situated on said lakes should be opened for flood-control purposes only. The chief engineer, or his authorized representative, shall have the final authority for determining the necessity of opening the dams, and no other department of state government shall be involved in these flood-control activities.

Acts 1991, No. 532, §1; Acts 1995, No. 1049, §1.

LAKE AUTHORITY

History of the Saline Lake Game and Fish Preserve Commission

The Northwest Louisiana Game and Fish Preserve (Preserve) was established by the Louisiana Legislature and was initially placed under the control of the Louisiana Conservation Commission through Act 191 of 1926. The Preserve was initially comprised of three artificially created lakes (Black Lake, Clear Lake, and Saline Lake) and the surrounding lands. It was developed for recreation and for the preservation of wildlife and fisheries. After creation of the Preserve, the State constructed a dam, known as the Allen Dam, to keep water in the lakes from draining. In 1928, the Preserve was placed under the control of the Louisiana Department

of Conservation through Act 69 of 1928. In 1946, the Louisiana Legislature created the Northwest Louisiana Game and Fish Preserve Commission (NLG&FC) and granted it authority to administer the Preserve and adopt rules and regulations thereof through Act 120 of 1946. While the NLG&FC was originally placed under the supervision of the Department of Wildlife and Fisheries, the NLG&FC was vested with the “*right, power and authority to sue and be sued as a subdivision of the State*” and to “*purchase, lease or expropriate all property necessary to the erection and maintenance of the Preserve*”. The State of Louisiana retained title to the lakes, as well as the surrounding land and lake bottom. Act 105 of 1976 placed the NLG&FC under control of the Louisiana Wildlife and Fisheries Commission. Additionally, the Act removed Saline Lake from the authority of the NLG&FC and placed it under the authority of the Saline Lake Game & Fish Preserve Commission (SLGFPC).

The SLGFPC was comprised of five members serving individual four year terms. Senate Bill No. 390 of the 2016 Regular Session increased membership from five to seven. Membership consists of four residents of Winn Parish and three residents of Natchitoches Parish. Members are appointed by the respective police juries from each parish. At this time, there are six appointed members with one vacancy in Natchitoches Parish.

Association

Saline Lake Game and Fish Preserve Commission
P O Box 847
Winnfield, La 71483

The names and contact information for current members of the SLGFPC are listed in Table 1.

Table 1. Members of the Saline Lake Game & Fish Preserve Commission as of December , 2019.

<p>President Jimmy Atherton Home phone:318-628-4546 Cell phone: 318-413-0413 Address: 200 Riverside Lane Natchez, La 71456 Expiration: 9/17/2023</p>	<p>Vice President Wayne Smith Cell phone:318-471-2914 Address:177 Camp Allen Road Winnfield, La 71483 Expiration:3/20/2020</p>	<p>Buck Carter Home phone:318-628-7693 Cell phone:318-471-9851 Address: 108 Shady Hills Lane Winnfield, La 71483 Expiration: 5/27/2019</p>
<p>Latnie Brewton III Home phone:318-356-5677 Cell phone:318-471-9817 Address:139 Fox Run Drive Natchitoches, La 71457 Expiration: 11/15/2019</p>	<p>Joe Kelley Cell phone: 318-302-1855 Address: 176 Martin Loop Winnfield, La 71483 Expiration: 10/20/2023</p>	<p>Secretary/Treasurer Bill Butler Cell phone:318-529-8486 Address 257 Blundell Road Winnfield, La 71031 Expiration: 7/31/2020</p>
<p>Unfilled position: Vacancy from Natchitoches Parish</p>		

Authorization

The Saline Lake Game and Fish Preserve Commission is authorized by Louisiana law as appears in Act 105 of 1976; R.S. 56:801.

ACCESS

Boat Ramps

There are 4 boat ramps available for public use on Saline Lake. There is no fee charged to launch at the ramps. No restroom or vendor facilities are available at the ramps. A map showing the locations of boat ramps at Saline Lake appears as [APPENDIX II](#).

Public Piers

No public fishing piers are available at Saline Lake. However, significant shoreline angling activity occurs along the control structure.

State/Federal facilities

Sand Point Boat Launch- is a single lane concrete boat launch. It was built and is maintained by U.S. Forest Service. The ramp is located between Calvin and Goldonna on HWY 156. Turn South on Sand Point Rd.

Saline Bayou north of Saline Lake is dedicated as a National Wild and Scenic River. The U. S. Forest Service Cloud Crossing recreational area is located on Saline Bayou/ Scenic River. Turn North off of HWY 156 onto Parish Road 1233, then turn west on Cloud Crossing Rd.

Artificial Reefs

Due to extensive natural cover, no artificial reefs have been built.

SHORELINE DEVELOPMENT

State/National Parks

None

Shoreline development by landowners

Approximately 30% of the shoreline is developed with camps and residential homes. The remaining land is either U.S. Forest Service lands or wetlands habitat, prone to frequent flooding. There are boat launches at many of the private camps and homes. There are no private facilities on the lake offering the public an opportunity to purchase bait, tackle, lodging, guides or other amenities.

PHYSICAL DESCRIPTION

Shoreline length

47.8 – miles

Timber type

The Saline Lake watershed consists primarily of mixed pine/hardwood upland timber, pine silviculture, and cypress and tupelo in the reservoir.

Average depth

7 feet

Maximum depth

16 feet

Natural seasonal water fluctuation

Annual fluctuations of 2 feet to 3 feet are typical. These fluctuations result from heavy rainfall within the watershed and are short in duration. Water levels below pool elevation rarely occur due to the fact that Saline Bayou, the major tributary stream for Saline Lake, is well supplied by natural springs.

EVENTS/PROBLEMS

Water Level

Saline Lake water level fluctuations can be significant due to the lake's large watershed, coupled with influences by Red River water levels downstream of the lake. Heavy rainfall occasionally causes localized flooding of homes and camps in low lying areas independent of influence from the Red River. In March 2016, the Red River along the entire Black Lake and Saline Lake Complex crested at 110.04 MSL at the Midpoint gauge in Pool 3. At the same time, Saline Bayou at the Saline Lake Dam crested at 118.2 MSL.

Aquatic Vegetation

Historically, Saline Lake has been plagued with nuisance aquatic vegetation of many species. Native submersed vegetation, primarily fanwort (*Cabomba caroliniana*) and bladderwort (*Utricularia* spp.) were problematic to boating and fishing, especially during late summer and early fall seasons. In some years, water hyacinth (*Eichhornia crassipes*) inhibited fishing and boating recreation. Giant salvinia (*Salvinia molesta*) has been problematic during years following mild winters. Hydrilla (*Hydrilla verticillata*) can be found in the lake, but has not caused problems at this time.

The majority of controversies related to Saline Lake have been associated with scheduled drawdowns. In each instance, shoreline property owners, anglers, or waterfowl hunters have been the primary complainants. In most cases, waterfowl hunters have opposed drawdowns based on the fact that lower lake levels prohibit access to, and success of, duck blinds in certain areas of the lake. In some cases, the SLFGPC has voted to abandon planned drawdowns for various reasons. No record is found of any successful legal action preventing a drawdown.

Currently (2019), giant salvinia is problematic at Saline Lake. It was first documented in the lake during the summer of 2007 and by the summer of 2008, it had virtually replaced common salvinia. Coverage by giant salvinia has continued to be problematic to date.

HYDROLOGICAL CHANGES

The Allen dam created Saline Lake in 1933 at a pool elevation of 98.0' MSL. A new dam was built in 1959 which raised the MSL to 103.0'. This raised the water elevation 5 feet and substantially increased the size of the lake. Since that time, hydrological changes have been minimal. There have been no significant water shed changes or land use practices. Little change in land use practice involving the area surrounding the lake is expected due to the fact that much of the watershed is owned by the U.S. Forest Service.

MANAGEMENT ISSUES

AQUATIC VEGETATION

Vegetation problems in Saline Lake are chronic in nature and have been for the last 40 years. In years past, most complaints were related to water hyacinth, lotus and a variety of submersed aquatic vegetation including fanwort (*Cabomba caroliniana*), coontail (*Ceratophyllum demersum*) and bladderwort (*Utricularia spp.*) More recently, giant salvinia (*Salvinia molesta*) has generated the majority of complaints.

Currently, Saline Lake is in poor condition overall with regard to aquatic vegetation. Submersed native vegetation has become less abundant over the last 3-4 years due to shading and reduced sunlight penetration in areas covered by giant salvinia. Triploid grass carp were also restocked in 2014 to thin submersed vegetation, and to possibly help the movement of giant salvinia (Table 2). Extensive aquatic spray efforts limited the regrowth of giant salvinia following an extensive herbicide treatment utilizing Galleon in 2009. Benefits were also realized due to colder than normal winter temperatures in 2009/2010 and 2010/2011. A resurgence of giant salvinia was observed in the summer of 2011. Increased efforts utilizing foliar herbicide applications were made during the spring and summer of 2012. A yearly drawdown regime was initiated in 2012 and has continued through 2019.. During August 2014, a whole waterbody treatment utilizing 175 gallons of liquid fluridone was conducted to target areas that could not normally be treated with foliar herbicide applications. The application occurred during the lowest level of the drawdown and at the time of year when precipitation is normally minimal. However, the whole waterbody treatment was unsuccessful due to a rain event that followed two weeks after application. Areas treated using liquid fluridone are depicted in [APPENDIX III](#).

Penoxsulam was used as a whole waterbody treatment for salvinia on August 7, 2018. The water level on the treatment date was 195.5 MSL. A concentration of 25 ppb was prescribed and the total amount used was 165.6 gallons with 1,319.6 surface acres treated. Amounts were distributed by boat at pre-determined GPS locations from just north of the pipeline area to the Key Hole Boat Ramp until access from the channel could not be obtained by vessel. A “bump treatment” of 33 gallons throughout the same area was conducted September 26, 2018 to maintain herbicide concentrations. Vegetation in less than half of the treatment area had begun to lose buoyancy and fall beneath the water surface by late September. The lake level and inflow increased following closure of the spillway on October 1, 2018. Saline Lake reached pool stage of 103.0 MSL by late October, and treatment results were considered poor due to

inflow during and following the treatments.

As of October 2, 2019, during drawdown conditions, the infestation of major problem species at Saline Lake is estimated below:

Giant salvinia (*Salvinia molesta*) –2,000 acres
Water hyacinth (*Pontederia crassipes*) –20 acres
American lotus (*Nelumbo lutea*) –5 acres
Fragrant Water Lily (*Nymphaea odorata*) – 5 acres
Fanwort (*Cabomba caroliniana*) – 5 acres
Coontail (*Ceratophyllum demersum*) – 0 acres
Bladderwort (*Utricularia sp.*) – 5 acres
Duckweed (*Lemna sp.*) – 10 acres

Total vegetative coverage = 2,050 acres or 29%.

Currently, all aquatic vegetation found at Saline Lake is considered to be in the nuisance category. No efforts are being considered to introduce or reestablish any aquatic vegetation.

Type map

Vegetation sampling has occurred numerous times in Saline Lake since 1980 due to extensive vegetation problems. Vegetative type map sampling on Saline Lake began in 1980 and occurred in six of the next nine years. Vegetative biomass sampling replaced type mapping in 1998, and was conducted for six consecutive years through 2003. Vegetative type map sampling began again in 2006, and has continued as needed to date. A review of the 2012 vegetation typemap is found in [APPENDIX IV](#). Historical typemaps for Saline Lake appear in **Saline Lake MP-C** and the Saline Lake Aquatic Vegetation Management Plan that is updated annually.

Biomass

Biomass sampling was conducted annually from 1998 through 2003 in Saline Lake. This method of aquatic vegetation sampling measured the volume of plant material by species and documented fluctuations of submersed vegetation.

Biomass sampling was discontinued in 2003.

Biological Treatments

Biological controls currently in use at Saline Lake include triploid grass carp (TGC) (*Ctenopharyngodon idella*) and giant salvinia weevils (*Cyrtobagous salviniae*). In 2005, 2007 and 2014, TGC were stocked into Saline Lake to provide a biological control agent for submersed aquatic vegetation. Salvinia weevils have been introduced to provide a biological control agent for giant salvinia. Stocking dates and numbers for TGC appear in Table 2. The status of triploid grass carp in Saline Lake is unclear at this time. No apparent impact by the carp on vegetation was noted through 2013. More recently, there has been a reduction in submersed aquatic vegetation beginning in years 2015 and 2016.

Table 2. Triploid grass carp stockings at Saline Lake, Winn & Natchitoches Parishes, LA.

Year	Size	Number Stocked
2005	Phase II	7,547
2007	1 year old	29
2014	Phase II	2080
2014	12 inch adults	1040

In order to determine if these carp would remain in the lake during periods of high water, a telemetry study was developed by LDWF. On April 6, 2005, 7,547 TGC were stocked into Saline Lake. These carp were 8 to 16 inches in length, and were stocked at two locations in the lake. A subsample of the TGC was implanted with radio transmitters to determine possible escapement from the reservoir.

Two sizes of transmitters were used. The smaller transmitters had a battery life of 103 days and were implanted in fish 12 to 14 inches in length. The larger transmitters were implanted in fish 14 to 16 inches in length and had a battery capacity of 552 days. Saline Lake received 15 small fish and 37 large fish implanted with transmitters.

Saline Lake has a spillway designed to allow excess water to flow from the lake. A receiver was permanently mounted at a location downstream of the lake that would record the passage of any carp carrying a transmitter. The receiver was operated by 12 volt batteries and was monitored periodically; batteries were changed approximately every two weeks. The receiver was checked at the time of battery replacement to determine if any carp had been recorded. Roving surveys were also conducted, utilizing boats and airplanes to monitor dispersal of the TGC in the waterbody

No passage of transmitters was recorded during the life span of the transmitter batteries.

Salvinia weevil stocking data are given in Table 3.

Table 3. Salvinia weevil stockings by species by year at Saline Lake, Winn & Natchitoches Parishes, LA.

Year	Species	Number Stocked
2007	Common salvinia weevils (<i>Cyrtobagous</i> spp.) from FL	Unknown
2008	Giant salvinia weevils (<i>Cyrtobagous salviniae</i>)	89/ft. ³ of host plant
2011	Giant salvinia weevils (<i>Cyrtobagous salviniae</i>)	29,141 individuals
2012	Giant salvinia weevils <i>Cyrtobagous salviniae</i>	71,400

2013	Giant salvinia weevils <i>Cyrtobagous salviniae</i>	46,800 individuals
2014	Giant salvinia weevils <i>Cyrtobagous salviniae</i>	20,100 individuals
2015	Giant salvinia weevils <i>Cyrtobagous salviniae</i>	211,450 individuals
2016	Giant salvinia weevils <i>Cyrtobagous salviniae</i>	65,460 individuals
2017	Giant salvinia weevils <i>Cyrtobagous salviniae</i>	3,699

A correlation between low giant salvinia weevil larval densities and nitrogen deficiencies has been noted within Saline Lake (Nachtrieb 2018). Dry weight of nitrogen in salvinia on Saline Lake was significantly lower than Turkey Creek Lake during this particular study, 1.02-1.05% dry weight compared to 2.28-3.19% dry weights, respectively.

Chemical Treatments

The use of herbicides is an important component of the LDWF integrated pest management program. The proper selection and use of herbicides is essential to achieve cost effective benefits and to avoid damage to non-target species. Each product listed has been approved by the Environmental Protection Agency for aquatic use. Aquatic vegetation is treated according to the standard operating procedures for the application of herbicides as adopted by the LDWF Inland Fisheries Section.

Annual maintenance spraying of water hyacinth, common and giant salvinia, and emergent vegetation is conducted as necessary. These foliar applications have been moderately successful in controlling water hyacinth and other emergent vegetation. Historically, foliar herbicide applications have not been successful in controlling giant salvinia on a lake-wide scale, but have provided localized control through efforts near boat ramps and residential areas. In 2013, foliar applications made by contract sprayers provided better control of giant salvinia and emergent vegetation than had been noted prior to the use of such wide-scale and intensive treatments.

A water volume treatment utilizing galleon herbicide was conducted in 2009 to help control giant salvinia. This treatment was made in the upper end of the lake and was successful in significantly reducing the presence of all vegetative types within the treatment area. Table 4 depicts herbicide treatments made at Saline Lake from 2005 to 2018.

Table 4. Herbicide applications conducted at Saline Lake, LA during the years 2005 to 2018.

Year	Gallons	Pounds	Acres	Vegetation
2005	635.00		1,127.50	Water Hyacinth, Common Salvinia, Water Lily
2006	1,093.00		1,809.58	Water Hyacinth, Common Salvinia, American Lotus
2007	997.50		1,737.20	Water Hyacinth, Common Salvinia, American Lotus, Giant Salvinia
2008	1,621.50		2,308.17	Common Salvinia, Water Hyacinth, Giant Salvinia, Water Lily, American Lotus
2009	1,362.00		6,136.87	Giant Salvinia, Water Hyacinth, Common Salvinia
2010	1,898.50		2,996.61	Giant Salvinia, American Lotus, Water Hyacinth, Alligator Weed
2011	3,043.3	101.5	4,039.11	Giant Salvinia, Water Hyacinth, American Lotus
2012	2,513		5,612	Giant Salvinia, American Lotus, Water Hyacinth, Water Lily, Sedge, Pennywort
2013	2,940.38		3,902.92	Giant Salvinia, American Lotus, Sedge, Pennywort
2014	1,626.00		2,133.00	Giant Salvinia, Sedge, Water Hyacinth, Pennywort
2015	2,315.25		3,069.00	Giant Salvinia, Sedge, Water Hyacinth
2016	723.75		965.00	Giant Salvinia, Cuban Bulrush, Water Hyacinth
2017	1,194.75		1,588.00	Giant Salvinia, Cuban Bulrush, Water Hyacinth
2018	1,515.22 (includes galleon)		3,396.00	Giant Salvinia, Cuban Bulrush, Water Hyacinth
TOTAL	23,479.15	101.5	40,820.96	

Physical Treatments

Drawdowns and the placement of boom are the two physical vegetation control methods used in the lake. Annual drawdowns with duration periods of no less than 4 months for maximum exposure have been used from 2012 through 2019. Drawdowns are also used to contain all giant salvinia and other vegetation from constantly moving from areas with dense cypress and tupelo cover that would otherwise need continuous treatment with chemicals. In

February 2019, 4,000 feet of boom was placed across the lake along the pipeline above Mulligan Inn Landing (Figure 3). It is being used to contain salvinia from moving into more open areas of the mid to lower-lake where boating access is greatest. The result of the boom placement has been greater access and decreased treatments in the southern areas of Saline Lake, and increased chemical treatments above the boom placement.



Figure 3. Four thousand-foot vegetation containment boom placed along North side of pipeline above Mulligan Inn Landing.

HISTORY OF REGULATIONS

Recreational Fishing Regulations

Statewide regulations. <http://www.wlf.louisiana.gov/fishing/regulations>

Commercial Fishing Regulations

Statewide regulations. <http://www.wlf.louisiana.gov/fishing/regulations>

DRAWDOWN HISTORY

Since the 1960's, numerous drawdown strategies have been employed at Saline Lake ranging from a minimal drawdown of 3' to a maximum drawdown of 11'. Drawdowns at various times of the year have also been tried. Drawdowns prior to 2012 for aquatic vegetation control typically occurred every three to five years (Table 5). These drawdowns have proven effective at providing short-term reductions of submersed vegetation. More recent annual drawdowns have occurred to control large mats of giant salvinia by stranding approximately 2/3 of the vegetation, and containing remaining salvinia from constant movement north of the pipeline area. Saline Lake drawdowns have been controversial and have resulted in opposition from some users in each case. To date, such opposition has been unsuccessful in stopping drawdowns. Fall/winter drawdowns have proven to be unpopular because approximately 80 duck blinds are permitted annually on the lake. Dewatering the lake restricts access to many of the blinds.

Table 5. Description of Saline Lake, LA, drawdowns from 1973 - 2016.

DATE	PURPOSE	LOWEST LEVEL	GATES OPENED	BACK TO POOL STAGE	NOTES
1973	Weed Control	100 MSL	Fall		
1974	Weed Control	97 MSL	Fall		
1975 (Recommended)	Weed Control	100 MSL	10-01-75		No record of occurrence
1978	Weed Control	100 MSL	Fall		
1979	Weed Control	94 MSL	Unknown		
1982 (Recommended)	Weed Control	96 MSL	06-15-82	12-30-82	No record of occurrence
1987	Shoreline Clearing	96.5 MSL	Spring	Fall	USACE Permit See Attachment "A"
1992	Dam Construction	Unknown	Winter	Winter	
1997	Weed Control	95 MSL	06-16-97	11-01-97	Successful
2001	Weed Control	99 MSL	07-01-01	10-15-01	Cancelled by SLGFPC
2004	Weed Control	97.0 MSL	06-14-04	10-24-04	Successful
2008	Fish Gate Operation	99.5 MSL	04-14-08	04-29-08	Unsatisfactory results
2008	Fish Gate Operation	98 MSL	Unknown	07-19-08	Unauthorized gate operation
2012	Weed Control	95 MSL	09-06-12	01-19-13	Successful
2013	Weed Control	95 MSL	07-01-13	01-06-14	Successful
2014	Weed Control	95 MSL	07-01-14	10-09-14	Successful
2015-16	Weed Control	100 MSL	11-19-14	01-28-16	Unsuccessful due to high Red River level
2016	Weed Control	95 MSL	06-13-16	11-01-16	Satisfactory
2017	Weed Control	96 MSL	06-01-17	10-02-17	Satisfactory
2018	Weed Control	95 MSL	06-04-18	10-01-18	Satisfactory
2019	Weed Control	95 MSL	06-03-19	10-01-19	Satisfactory

Success

Drawdown success has varied throughout the lake's history. The drawdowns in 1997 and 2004 were deemed successful in reducing problematic vegetation. As typically occurs, benefits in plant reduction were lost in post drawdown year three. The drawdown of 2012 was successful in reducing the coverage of giant salvinia by approximately 50%. Spillway gates were opened on November 19, 2015 and closed January 28, 2016 for a winter drawdown. It was deemed unsuccessful due to high water levels on the Red River. Drawdowns from 2016 through 2019 met their target levels with satisfactory success.

Fishing closure

Historically Saline Lake has remained open to fishing during the drawdowns. However, the lake was closed to fishing during the 6-foot drawdown of 2004. This was done at the request of the Saline Lake Commission.

Depth below pool

1973 – 3 feet
 1974 – 6 feet
 1978 – 3 feet

1979 – 9 feet
1987 – 6.5 feet
1992 – Unknown
1997 – 8 feet
2004 – 6 feet
2008 – 5 feet
2012 – 8 feet
2013 - 8 feet
2014 - 8 feet
2015 - 3 feet
2016 - 8 feet
2017 – 8 feet
2018 – 8 feet
2019 – 8 feet

Estimated % of bottom exposed

Six foot drawdown – 50% exposed

Eight foot drawdown – 70% exposed

Fish kills Associated with Drawdowns

No fish kills have been documented in Saline Lake during drawdowns. Anecdotal reports of dead fish were heard following the opening of the control structure in September of 2012 and August of 2013. All reports were of dead fish sighted below the structure and limited to that area of Saline Bayou immediately downstream of the structure. No investigation of this event was made due to the excessive time lapse between the occurrence and knowledge of it by department staff. It is likely that this event was caused by the release of anoxic water through the sluice gates of the dam. The event was noted and adjustments made to future discharge rates to reduce/control the release of anoxic water from the control structure sluice gates.

FISH KILLS/DISEASE HISTORY, LMBV

No disease history documented.

Largemouth bass were tested for LMBV in 2003. All test results were negative.

CONTAMINANTS / POLLUTION

Fish Consumption Advisory Due to Mercury

Issued: 02/11/09

<http://www.deq.louisiana.gov/portal/Portals/0/planning/Fish%20Consumption%20Advisory%20Table%20-%20203-8-96.pdf>

“Women of childbearing age and children less than seven years of age should consume no more than **SIX MEALS PER YEAR** of largemouth bass, or no more than **three meals per month** of carp, freshwater drum, longear sunfish, or warmouth combined, or no more than **two meals per month** of black crappie, or no more than **one meal per month** of bowfin (choupique, grinnel) or spotted bass combined, from the advisory area.

Other adults and children seven years of age and older should consume no more than **THREE MEALS PER MONTH** of bowfin (Choupique, Grinnel) or spotted bass combined, or no more than **TWO MEALS PER MONTH** of largemouth bass from the advisory area.”

Water quality

Saline Lake is currently listed as impaired by the EPA because of mercury concentrations. Water quality concerns noted for the watershed and the related US Environmental Protection Data are provided in the attached LADEQ link: <http://www.deq.louisiana.gov/portal/tabid/2201/Default.aspx>

BIOLOGICAL

Fish samples

Historical, present and future fish samples taken from Saline Lake are listed in Table 6.

Table 6. Historical, present and scheduled sampling by year at Saline Lake, LA.

YEAR	SAMPLE TYPE AND (NUMBER OF SAMPLES)
1970	Rotenone, (4) samples, one acre, two day pickup
1973	Rotenone, (4) samples, one acre, two day pickup
1974	Rotenone, (2) samples, one acre, two day pickup
1975	Rotenone, (3) samples, one acre, two day pickup
1979	Rotenone, (4) samples, one acre, two day pickup
1981	Rotenone, (3) samples, one acre, two day pickup
1983	Rotenone, (3) samples, one acre, two day pickup
1988	Rotenone, (2) samples, one acre, two day pickup
1990	Electrofishing, Age and Growth, Genetics
1991	Electrofishing, Gill Net
1994	Electrofishing
1995	Electrofishing
1997	Seine
1999	Seine
2000	Electrofishing, Seine
2001	Seine
2003	Electrofishing, Genetics

2005	Electrofishing, Age and Growth, Genetics
2007	Electrofishing, Genetics
2009	Electrofishing, Seine, Lead nets
2010	Electrofishing
2011	Electrofishing
2012	Electrofishing
2017	Electrofishing , forage samples
2018	No samples taken
2019	No samples taken
2020	No samples planned
2019	Electrofishing, Genetics

Lake records

No official fish records are maintained.

Stocking History

Table 5. Historical and current LDWF fish stockings by species by year at Saline Lake, LA.

Year	Florida bass (FLMB)	Channel Catfish	Blue Catfish	Triploid Grass Carp
1987	0	14,000		0
1988	57,000	32,000		0
1989	37,000	0		0
1990	0	88,100		0
1995	0	57,316	17056	0
1998	0	26,838		0
1999	132,808	11,109		0
2000	86,460	0		0
2001	72,180	0		0
2005	83,464	0		7,547
2006	84,032	30,097		0
2007	84,026	75,519		29
2009	84,306	29,115		0
2010	74,630	0		0
2011	86,730	84,659		0
2014				3,120
2018	340,200 fry			
2019	70,400			
TOTAL	1,293,236	448,753		10,696

Species profile

A family and species list of fishes collected by LDWF or known to occur in the Saline Bayou watershed is found in Table 6, below.

Table 6. List of fish species collected by LDWF or are known to occur in the Saline Lake watershed.

Lamprey Family, PETROMYZONTIDAE

Southern brook lamprey, *Ichthyomyzon gagei* Hubbs and Trautman
Chestnut lamprey, *Ichthyomyzon castaneus* Girard

Gar Family, LEPISOSTEIDAE

Spotted gar, *Lepisosteus oculatus* (Winchell)
Longnose gar, *Lepisosteus osseus* (Linnaeus)
Shortnose gar, *Lepisosteus platostomus* Rafinesque
Alligator gar, *Atractosteus spatula* (Lacépède)

Bowfin Family, AMIIDAE

Bowfin, *Amia calva* Linnaeus

Freshwater Eel Family, ANGUILLIDAE

American eel, *Anguilla rostrata* (Lesueur)

Herring Family, CLUPEIDAE

Gizzard shad, *Dorosoma cepedianum* (Lesueur)
Threadfin shad, *Dorosoma petenense* (Günther)

Carp Family, XENOCYPRIDIDAE

Triploid Grass Carp, *Ctenopharyngodon idella*

Carp Family, CYPRINIDAE

Common Carp, *Cyprinus carpio* Linnaeus

Minnow Family, LEUCISCIDAE

Blacktail shiner, *Cyprinella venusta* (Girard)
Cypress minnow, *Hybognathus hayi* Jordan
Striped shiner, *Luxilus chrysocephalus* Rafinesque
Golden shiner, *Notemigonus crysoleucas* (Mitchill)
Emerald shiner, *Notropis atherinoides* Rafinesque
Taillight shiner, *Notropis maculatus* (Hay)
Weed shiner, *Notropis texanus* (Girard)
Mimic shiner, *Notropis volucellus* (Cope)
Bullhead minnow, *Pimephales vigilax* (Baird and Girard)
Creek chub, *Semotilus atromaculatus* (Mitchill)

Sucker Family, CATOSTOMIDAE

Lake chubsucker, *Erimyzon sucetta* (Lacépède)

Smallmouth buffalo, *Ictiobus bubalus* (Rafinesque)
Bigmouth buffalo, *Ictiobus cyprinellus* (Valenciennes)
Black buffalo, *Ictiobus niger* (Rafinesque)
Spotted sucker, *Minytrema melanops* (Rafinesque)

Freshwater Catfish Family, ICTALURIDAE

Black bullhead, *Ameiurus melas* (Rafinesque)
Yellow bullhead, *Ameiurus natalis* (Lesueur)
Tadpole madtom, *Noturus gyrinus* (Mitchill)
Channel Catfish, *Ictalurus punctatus* (Rafinesque)
Flathead Catfish, *Pylodictis olivaris* (Rafinesque)

Pike Family, ESOCIDAE

Grass pickerel, *Esox americanus vermiculatus* (Lesueur)
Chain pickerel, *Esox niger* (Lesueur)

Pirate Perch Family, APHREDODERIDAE

Pirate perch, *Aphredoderus sayanus* (Gilliams)

Killifish Family, CYPRINODONTIDAE

Golden topminnow, *Fundulus chrysotus* (Günther)
Starhead topminnow, *Fundulus dispar* (Agassiz)
Blackstripe topminnow, *Fundulus notatus* (Rafinesque)
Bayou topminnow, *Fundulus nottii* (Agassiz)
Blackspotted topminnow, *Fundulus olivaceus* (Storer)

Livebearer Family, POECILIIDAE

Western mosquitofish, *Gambusia affinis* (Baird and Girard)

Silverside Family, ATHERINIDAE

Brook silverside, *Labidesthes sicculus* (Cope)
Mississippi silverside, *Menidia audens* (Hay)

Temperate Bass Family, PERCICHTHYIDAE

White bass, *Morone chrysops* (Rafinesque)
Yellow bass, *Morone mississippiensis* Jordan and Eigenmann

Sunfish Family, CENTRARCHIDAE

Green sunfish, *Lepomis cyanellus* (Rafinesque)
Warmouth, *Lepomis gulosus* (Cuvier)
Orangespotted sunfish, *Lepomis humilis* (Girard)
Bluegill, *Lepomis macrochirus* (Rafinesque)
Dollar sunfish, *Lepomis marginatus* (Holbrook)
Longear sunfish, *Lepomis megalotis* (Rafinesque)
Redear sunfish, *Lepomis microlophus* (Günther)
Spotted sunfish, *Lepomis punctatus* (Valenciennes)
Bantam sunfish, *Lepomis symmetricus* (Forbes)

Florida largemouth bass, *Micropterus floridanus* Kassler et al.
 Northern largemouth bass, *Micropterus salmoides* (Lacépède)
 Spotted bass, *Micropterus punctulatus* (Rafinesque)
 White crappie, *Pomoxis annularis* (Rafinesque)
 Black crappie, *Pomoxis nigromaculatus* (Lesueur)

Perch Family, PERCIDAE

Swamp darter, *Etheostoma fusiforme* (Girard)
 Slough darter, *Etheostoma gracile* (Girard)
 Cypress darter, *Etheostoma proeliare* (Hay)
 Logperch, *Percina caprodes* (Rafinesque)

Drum Family, SCIAENIDAE

Freshwater drum, *Aplodinotus grunniens* (Rafinesque)

Pygmy Sunfish Family, ELASSOMATIDAE

Banded pygmy sunfish, *Elassoma zonatum* (Jordan)

Nomenclature and phylogenetic order follows Nelson, *et al.* 2004. Common and Scientific Names of Fishes from the United States, Canada, and Mexico, 6th Edition. American Fisheries Society Special Publication 29. 386 pp. Exceptions are noted.

Genetics

Largemouth bass have been collected during fall electrofishing samples and tested for the Florida genome. Total length and weight were recorded for each specimen. Otoliths and livers were removed for age/growth and genetic analysis. Five bass per inch group were analyzed by the LSU genetics laboratory. Samples have been tested for the Florida genome from 1990 – 2007 (Table 6).

Table 6. Largemouth bass genetic results for Saline Lake, LA, 1990 – 2007.

Year	Number	Northern	Florida	Hybrid	Total Florida Influence
1990	25	100%	0%	0%	0%
2003	33	91%	0%	9%	9%
2005	48	94%	2%	4%	6%
2007	60	87%	0%	13%	13%

Threatened/endangered/exotic species

No threatened or endangered species have been documented at this time. Grass and common carp are found in the reservoir, and Asian carps, including silver, bighead, and black carp, have been documented in the Red River. During high water events, access into Saline Lake is unrestricted from the Red River.

WATER USE

Hunting

Yes – Approximately 80 duck blinds are permitted annually

Skiing

None

Scuba Diving

None

Swimming

The majority of the lake is not conducive to swimming due to shallow water, trees and excessive aquatic vegetation. However, there is evidence of swimming at several locations in Saline Bayou, between Cedar Bluff and the spillway.

Irrigation

Yes- Camp and home-owners utilize lake water to irrigate lawns and gardens.

APPENDIX I

[\(return to drawdown\)](#)

LA DOTD SALINE LAKE DAM INSPECTION REPORT OF APRIL 7, 2017

ECM Consultants, Inc.

Engineers • Architects • Construction Managers

4409 Utica Street, Suite 200
Metairie, LA 70006
Phone (504) 885-4080
Fax: (504) 885-1439

Email: mail@ecmconsultants.com
Web: www.ecmconsultants.com

5420 Corporate Blvd., Suite 306
Baton Rouge, LA 70808
Phone (225) 615-7885
Fax: (225) 615-8548

April 7, 2017

Mr. Edward M. Knight
P.O. Box 94245
Baton Rouge, LA 70804-9245
Tel.: (225) 379-3007

Re: **Saline Lake Dam Inspection Report**
State ID No. 35-00026
Natchitoches Parish

Owner: Mr. Bradley A. Sticker, P.E.
Water Resources Engineer
LADOTD District 08
3205 Horseshoe Drive
Alexandria, LA 71301
Tel.: (318) 561-5280
Fax: (318) 561-5288

Dear Mr. Knight:

The above-referenced dam was inspected on February 21, 2017, by members of ECM Consultants, Inc. engineering staff, on behalf of the Louisiana Department of Transportation and Development Dam Safety and Water Resources Section. This periodic inspection was performed under the provisions of the Louisiana Dam Safety Program.

A copy of the inspection report is enclosed. We recommend the following items be addressed (**Bold items were also mentioned in the 2016 Report**):

- 1. Trees and brush are growing on the embankment where property fences cross the embankment (See Photo Nos. 10 through 13). Trees and brush are encroaching on the downstream slope in several locations (See Photo Nos. 3, 7, and 8). Trees and brush smaller than six inches in diameter are to be cut from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. Trees six inches and larger in diameter are to be extracted from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. After removal of the trees, the root ball voids are to be backfilled with properly placed and compacted soil per attached pamphlet, and a protective grass cover is to be established on the embankment slopes.**
- 2. There are numerous animal burrows in the embankment slopes (See Photo No. 5). Animal burrows are to be filled and compacted.**

Mr. Knight
April 7, 2017
Page 2 of 2

3. **There is hog damage occurring on the embankment slopes (See Photo No. 4). The damage is to be repaired.**
4. The upstream spillway buoys have been dislodged (See Photo No. 16). The buoys are to be reattached. LADOTD indicated during the inspection that the buoys were scheduled to be reattached shortly after the inspection.
5. The concrete around the handrail posts on the spillway retaining walls and walkway have spalls and cracks in several locations (See Photo No. 14). In some places, the posts are beginning to separate from the concrete. The spalls and cracks are to be repaired, and the posts are to be reattached.
6. Five of the spillway underdrain caps have been damaged and are broken (See Photo No. 17). The damaged underdrain caps are to be repaired.

Also, please refer to the enclosed inspection report for additional items to be monitored.

Please call me at (504) 885-4080, if you have any questions, or if you require additional information.

Sincerely,

Sunina Shrestha

Sunina Shrestha, P.E.
Project Engineer

SS

Enclosures

Cc: Mr. Villis Dowden, LDW&F

Mr. Jimmy Atherton, Saline Lake Game and Fish Preserve Commission

LADOTD DAM INSPECTION AND EVALUATION REPORT
Inspection Date: February 21, 2017

Reviewed and Approved by:

Name (Signature): Sunina Shrestha
Name (Typed or Printed): Sunina Shrestha, P.E.
Firm Name: ECM Consultants, Inc.
Address: 4409 Utica Street, Suite 200
City, State, Zip Code: Metairie, LA, 70006
Phone: (504) 885-4080



Name of Dam:	<u>Saline Lake Dam</u>
Downstream Hazard:	High
State ID No.:	35-00026
Parish:	Natchitoches and Winn
DOTD District:	08
District Contact:	Jonathan Lachney, P.E., ADA of Engineering
Report Prepared by:	John A. Rasi, P.E.

■ OWNER INFORMATION

Name of Owner:	State of Louisiana
Primary Contact:	Mr. Bradley A. Sticker, P.E., Water Resources Engineer, LADOTD District 08 3205 Horseshoe Drive Alexandria, LA 71301 Tel.: (318) 561-5280; Fax: (318) 561-5288
Additional Contact:	Mr. Villis Dowden, Biologist Manager Louisiana Department of Wildlife & Fisheries 615 South Drive Natchitoches, LA 71457 Tel.: (318) 357-3214 Cell: (318) 471-4496 Mr. Jimmy Atherton Saline Lake Game and Fish Preserve Commission 317 KVCL Road Winnfield, LA 71483 Tel.: (318) 626-4546 Email: jimmyatherton@bellsouth.net

■ DAM INFORMATION

Location of Dam

The Saline Lake Dam is located in Sections 10, 11, and 12 of Township 10 North, Range 6 West, in Natchitoches Parish, about 7 miles east-northeast of Clarence, Louisiana. The dam can be found on USGS Quadrangle Map 76C. The spillway is located at latitude 31° 51' 09" N and longitude 92° 55' 53" W. A small portion of the embankment and the entire spillway are in Section 13 of Township 10 North, Range 6 West, in Winn Parish.

Directions to the dam from Clarence, Louisiana are as follows:

1. From the intersection of US 71 and US 84, head east 6.1 miles on US 84 toward Chee Chee Dam Road.
2. Turn left onto Chee Chee Dam Road; head north 2.2 miles on Chee Chee Dam Road.
3. The dam is at the end of Chee Chee Dam Road.

Description of Dam

The Saline Lake Dam consists of about 850 feet of earthen embankment on the south side of the spillway in Winn Parish, a 400 foot wide concrete spillway entirely in Winn Parish, and about 15,050 feet of earthen embankment to the north and west of the spillway, of which about 400 feet is in Winn Parish and 14,650 feet is in Natchitoches Parish. Other dam characteristics are listed below:

Dam height is 23 feet.
Structural height is 23 feet.
Hydraulic height is 20 feet.
Maximum discharge is 62,860 cubic feet per second.
Maximum storage is 122,000 acre-feet.
Normal storage is 60,000 acre-feet.
Surface area is 8,450 acres.
Drainage area is 420 square miles.

History of Dam

The Saline Lake Dam was designed by the Louisiana Department of Public Works, constructed by H & H Construction Company and completed in 1992. The Chee Chee Dam was demolished after completion of the Saline Lake Dam. DOTD inspection members stated that the embankment was overtopped on March 13, 2016, with a crest high water mark of 118.2 MSL.

■ INSPECTION TEAM

Name	Title	Agency
John Rasi, P.E.	Senior Civil Engineer	ECM Consultants, Inc.
Benjamin J. Dow	Dam Safety Inspector	ECM Consultants, Inc.

Others Present:

Brad Sticker, P.E.	Water Resources Engineer	LADOTD District 08
Chad Whitstire	Engineer Technician 5	LADOTD District 08
Grady Cross	Engineer Technician 5	LADOTD District 08
Villis Dowden	Biologist Manager	LDW&F

INSPECTION RESULTS

Brief Description of Condition of Dam and Summary of Items Requiring Attention

The Saline Lake Dam is in fair condition. The inspection was made on an overcast day with good visibility. We recommend the following items be addressed (**Bold items were also mentioned in the 2016 Report**):

- 1. Trees and brush are growing on the embankment where property fences cross the embankment (See Photo Nos. 10 through 13). Trees and brush are encroaching on the downstream slope in several locations (See Photo Nos. 3, 7, and 8). Trees and brush smaller than six inches in diameter are to be cut from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. Trees six inches and larger in diameter are to be extracted from the embankment and for a minimum distance of 10 feet beyond the toe of the embankment. After removal of the trees, the root ball voids are to be backfilled with properly placed and compacted soil per attached pamphlet, and a protective grass cover is to be established on the embankment slopes.**
- 2. There are numerous animal burrows in the embankment slopes (See Photo No. 5). Animal burrows are to be filled and compacted.**
- 3. There is hog damage occurring on the embankment slopes (See Photo No. 4). The damage is to be repaired.**
4. The upstream spillway buoys have been dislodged (See Photo No. 16). The buoys are to be reattached. LADOTD indicated during the inspection that the buoys were scheduled to be reattached shortly after the inspection.
5. The concrete around the handrail posts on the spillway retaining walls and walkway have spalls and cracks in several locations (See Photo No. 14). In some places, the posts are beginning to separate from the concrete. The spalls and cracks are to be repaired, and the posts are to be reattached.
6. Five of the spillway underdrain caps have been damaged and are broken (See Photo No. 17). The damaged underdrain caps are to be repaired.

Corrected Items from Last Inspection

None

Monitor (Watch) List

The following items should be monitored and corrected as necessary:

- There are numerous cavities of trees that were cut down, but their root systems were not removed (See Photo No. 6). These rather large cavities remaining after the decay of these roots will need to be filled with suitable embankment material in the near future; the fill material must then be protected with a grass cover.
- There are some vehicular ruts in the north embankment crown. These ruts are to be filled (See Photo No. 12).
- Several of the spillway's retaining walls and wing walls are misaligned. The following measurements are for monitoring purposes:
 - Misalignment of the spillway's southern retaining wall measured 1- ¼" (See Photo Nos. 21 and 25), which is the same since the 2014 Inspection.
 - Misalignment of the spillway's northern retaining wall measured ¾" (See Photo Nos. 21 and 24), which is the same since the 2014 Inspection.
 - Misalignment of the spillway's northern downstream wing wall measured 1- ¼" (See Photo Nos. 21 and 22). All prior reports showed an 1- ½" misalignment, which was in error.
 - Separation of the spillway's northern retaining wall and downstream wing wall measured 1" (See Photo Nos. 21 and 23), which is the same since the 2014 Inspection.
- There is an embankment slide of about 1,200 feet along the embankment north of the spillway in a widened section of the embankment where the Chee Chee Dam was demolished; it is to be monitored for movement (See Photo No. 9).

Present Pool Elevation (ft.)

The pool elevation at the time of inspection was 103.6 feet MSL.

Present Tailwater Elevation (ft.)

The tailwater elevation at the time of the inspection was approximately 95.5 feet MSL.

Operation and Maintenance Procedures

Operation and maintenance procedures are the responsibility of the owner. The owner periodically mows the embankment. The drawdown gates were greased during the dam inspection; the drawdown gate valves are to be lubricated and exercised annually to ensure operability.

■ EARTH EMBANKMENTS

Dimensions/Shape/Describe Overall Condition

The Saline Lake Dam consists of an approximate 15,900 foot long earthen embankment. Approximately 850 feet of earthen embankment is on the south side of the spillway in Winn Parish.

North of the spillway, the earthen embankment meanders northwesterly for about 15,050 feet; most of the embankment is located in Natchitoches Parish.

Upstream Shore Protection

None

Upstream Slope

The upstream slope of the north embankment descends from the crown at a 3H: 1V rate. There is an embankment slide about 1,200 feet along the embankment north of the spillway in a widened section of the embankment where the Chee Chee Dam was demolished that is to be monitored. The upstream slope of the south embankment descends from the crown at a rate of about 4H: 1V.

Crown

North of the spillway the crown width is 15 feet and there is grass covering the surface. South of the spillway the crown is about 20 feet wide and there is a gravel road on top.

Downstream Slope

The downstream slope of the north embankment descends from the crown at a 3H: 1V rate. The downstream slope of the south embankment descends from the crown at a rate of about 4H: 1V.

Downstream Berm

None

Downstream Slope (Below Berm)

None

Area at Embankment Toe and Beyond

The area at the embankment toe and beyond is grassland followed by trees. The embankment toe appears to be in adequate condition.

Drains

None

Abutments

The south abutment ties into Chee Chee Dam Road and appears adequate. There are some trees growing on the northwestern abutment.

Embankment at Junction of Concrete Structures

The embankment at the junctions with the concrete spillway appears adequate.

Fence

These are the remnants of three fences running transversely to the north embankment, apparently on property lines that have trees and brush growing in and along the fence.

■ SPILLWAY

Type (Ungated)

There is a 400 foot wide concrete sharp-crested weir with a dam crest elevation 103.0 feet MSL.

Concrete Weir

The 400 foot wide concrete sharp-crested weir crest appears to be functioning as intended. Condition of the crest was obscured by water spilling over it.

Stilling Basin

The stilling basin was submerged at the time of the inspection. The stilling basin appears to be adequate. The Red River Waterway pool upstream from Lock and Dam No. 3 keeps the stilling basin flooded year round.

Concrete Sill

The concrete sill was submerged and could not be inspected from above the water surface.

Approach Channel

The approach channel appears adequate. There are warning buoys upstream of the spillway. Several of the buoy cables are broken or disconnected.

Discharge Channel

The discharge channel is Saline Bayou. The discharge channel appears adequate.

Gates and Operations

See Outlet Works Section below.

Drains

None

■ OUTLET WORKS (Drawdown)

Type and Description

There are three six foot by six foot drawdown sluice gates in the face of the spillway wall at an invert elevation of 78.5 feet MSL. There are two six foot by three foot fish gates near the top of spillway wall at an invert elevation of 100 feet MSL. The drawdown gates and the fish gates are controlled by gate lifts on the spillway walkway.

Intake Structure

The intake structure has five controlled gate openings in the upstream face of the spillway wall. The upstream openings have debris guards.

Outlet Structure

The outlet structure is the opening in the downstream face of the spillway wall.

Outlet Channel

The outlet channel is the primary spillway discharge channel.

Gates and Related Devices

The three six foot by six foot drawdown sluice gates and the two six foot by three foot fish gates are operational.

All gates were opened on June 21, 2016; all gates were closed on November 1, 2016.

■ IRRIGATION STRUCTURE**Type and Description**

None

Intake Structure

None

Outlet Structure

None

Outlet Channel

None

Gates and Related Devices

None

■ INSTRUMENTATION**Monumentation/Surveys**

None

Observation Wells

There are observation wells on each side of the spillway.

Weirs

None

Piezometers

There are two piezometers on each side of the spillway. One has been damaged.

Stream Gage Recorder

None

■ RESERVOIR

Slope

The reservoir slopes near the dam appear to be in satisfactory condition and fulfilling their intended purpose.

Bank

The reservoir banks near the dam appear to be in satisfactory condition and fulfilling their intended purpose. There were no obvious areas of bank erosion, displacement, or misalignment.

Sedimentation

There were no visible areas of sedimentation occurring within the reservoir at the time of the inspection.

■ OTHER

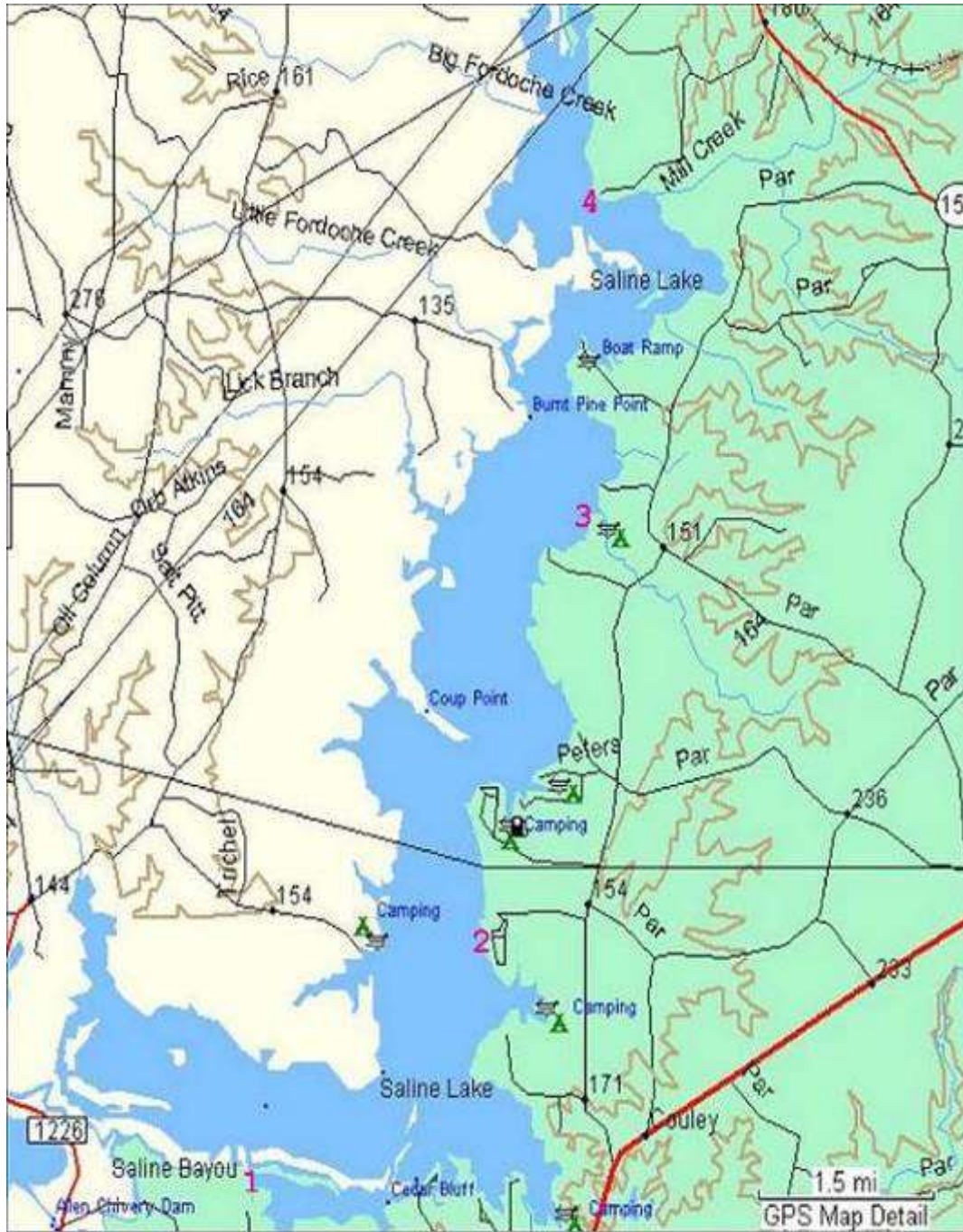
Supplemental Photo Documentation Attached.

Form No. DOTD-DS3
July 1, 2000

APPENDIX II

[\(return to boat ramps\)](#)

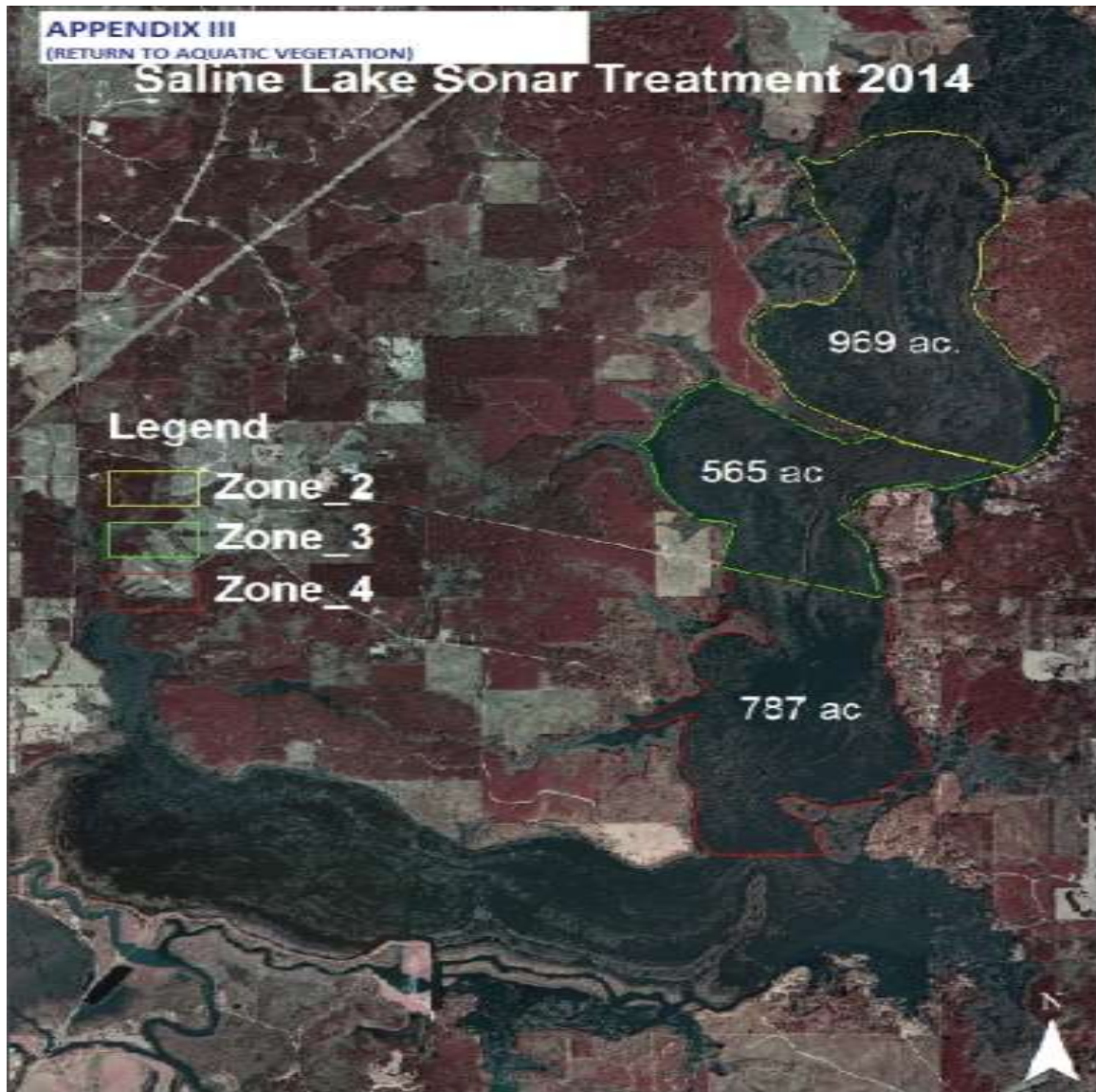
SALINE LAKE BOAT RAMP LOCATIONS



#1 Spillway Ramp
#2 Mulligan Inn

#3 Keyhole
#4 Sandpoint

APPENDIX III
(Return to Aquatic Vegetation)



APPENDIX IV

[\(return to typemap\)](#)

Aquatic Vegetation Surveys

Saline Lake Type Map 2012

April 18, 2012

Conducted by: Ricky Yeldell, Biologist Manager; Sean Kinney, Biologist Supervisor; Villis Dowden, Biologist III; Technicians – Jarrett Thaxton, Jason Corbitt and Wesley Maddox

The lake was surveyed to assess coverage of both submerged and aquatic vegetation. Three crews were deployed with each crew surveying one-third of the waterbody. Skies were clear to partly cloudy with light wind. The lake was above pool stage with water flowing over the spillway.

Giant salvinia (*Salvinia molesta*) was found across the entire waterbody with total coverage noted as 50% for this species. Isolated areas of open water were noted where giant salvinia had been blown away by wind. All areas with dense standing timber held solid coverage of giant salvinia.

Scattered pockets of American lotus (*Nelumbo lutea*), 200 total acres, Fragrant Water Lily (*Nymphaea odorata*), 225 total acres, Water hyacinth (*Eichhornia crassipes*), 150 total acres and Duckweed (*Lemna sp.*), 250 total acres were also noted.

The predominant submerged aquatic species was fanwort (*Cabomba caroliniana*). Bladderwort (*Utricularia sp.*) and Coontail (*Ceratophyllum demersum*) were found in lesser amounts along with fanwort. The submerged aquatic vegetation coverage found during the survey totaled 6,000 acres or approximately 75% of the lake bottom. Submerged aquatic vegetation was found in all but the deepest depths with those being the main channel of Saline Bayou.

Saline Lake USACE Permit for Brush Clearing - 1987



**US Army Corps
of Engineers**
Vicksburg District
P. O. Box 60
Vicksburg, Ms.
39180-0060

Public Notice

APPLICATION NO.
LMKOD-FE 1522-14-6E25-2
EVALUATOR PHONE NO.
Harold Lee (601) 634-7104
DATE 20 March 1987
EXPIRATION DATE 6 April 1987

Interested parties are hereby notified that the Vicksburg District is considering an application for a Department of the Army Permit for the work described herein. Comments should be forwarded to the attention of LMKOD-F at the above address and must reach this office by the cited expiration date.

Law Requiring a Permit: Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344)

Name of Applicant:

Saline Lake Fish and Game Commission
Mr. James Barron, Chairman
Route 3, Box 398
Winnfield, Louisiana 71483

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Location of Work: The proposed work is located in and adjacent to Saline Lake, Winn Parish, Louisiana.

Description of Work: The shallow shoreline around Saline Lake has become overgrown with shrub-type vegetation. The growth is having a detrimental effect on fish spawning in the waterbody. The Saline Fish and Game Commission, working with the Louisiana Department of Wildlife and Fisheries, has developed a plan to remove a portion of the vegetation in order to enhance fish spawning in the lake.

The proposed plan calls for lowering the lake level approximately 8 feet. Once the site has sufficiently dried, heavy equipment including bulldozers and a dragline would be used to clear vegetation in a strip approximately 12 feet wide on the bank and 20-50 feet wide in the lake along the southern and eastern shorelines. Materials resulting from the work would be placed in isolated piles in the lake near the shore. The proposed work would begin in the south at the existing water control structure and end at a point known as Sand Dump on the northeastern shore.

In addition to the removal of vegetation for fish spawning enhancement, existing boat roads would be reestablished using chainsaws to clear the vegetation. No channel excavations are proposed as a part of this work and only shrub and herbaceous type vegetation would be affected by the operation.

The lake draw-down does not require prior authorization and is scheduled to begin immediately. If a permit for the proposal is issued, actual work is scheduled to begin on or about May 30, 1987, and continue for approximately 44 days.

Saline Lake USACE Permit for Brush Clearing - 1987

State Water Quality Permit: Before the Corps of Engineers determines whether or not issuance of the permit is in the public interest, the applicant must obtain certification from the appropriate State pollution control agency that the proposed work will comply with applicable water quality standards and effluent limitations.

Preliminary Review: An Environmental Assessment will be prepared to assess the impacts of the proposed action and to determine the need for an Environmental Impact Statement. An Environmental Impact Statement will be prepared by this office if later developments warrant it. The decision whether or not to issue a permit will be based upon an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits which may be expected to accrue from the proposal must be balanced against its expected adverse effects. All factors which may be relevant to the proposal will be considered; among these are conservation, economics, aesthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use classification, navigation, recreation, water supply, water quality, energy needs, safety, food requirements and, in general, the needs and welfare of the people. Evaluation of the proposed activity will include application of the guidelines published by the Environmental Protection Agency under authority of Section 404(b) of the Clean Water Act.

Cultural Resources: The National Register of Historic Places has been consulted and it has been determined that there are no properties currently listed in the Register, or eligible for inclusion therein, which would be affected by the proposed work. The consultation of the National Register will constitute the full extent of cultural resources investigation by this office unless we are made aware, as a result of comments received in response to this notice, or by other means, of the existence of specific structures or sites which might be affected by the proposed work.

Endangered Species: Our initial finding is that the proposed work would not affect any endangered species or their critical habitat. This proposal is being coordinated with the U. S. Fish and Wildlife Service, and any comments regarding endangered species or their critical habitat will be addressed in our evaluation of the described work.

Opportunity for a Public Hearing: Any person may make a written request for a public hearing to consider this permit application. This request must be submitted by the specified deadline and must clearly state why a hearing is necessary. Failure of any agency or individual to comment on this notice will be interpreted to mean that there is no objection to the proposed work. Please bring this announcement to the attention of anyone you know who might be interested in this matter.

Enclosure

Elizabeth S. Guynes
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Chief, Evaluation Section

