LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES DIVISION

PART VI -A

WATERBODY MANAGEMENT PLAN SERIES

CANEY CREEK RESERVOIR

LAKE HISTORY & MANAGEMENT ISSUES

CHRONOLOGY

DOCUMENT SCHEDULED TO BE UPDATED ANNUALLY

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LAKE HISTORY

GENERAL INFORMATION

Parish
Jackson

Date Lake formed
February 26, 1986

Impoundment
Caney Creek, Smith Branch, Clear Creek, Cypress Branch, Hancock Creek, and Boggy Branch

Size (surface area)
5,000 acres

Watershed
41.5 square miles of area (26,560 acres) drain into Caney Creek Reservoir. The ratio of watershed to lake surface is small at 5.3:1.
Watershed characteristics: Commercial pineland forest, upland hardwood, pasture. Soil is acidic, sandy, and infertile. Soil alkalinity and pH are low.

Pool Stage
Surface elevation of Caney Creek Reservoir is set at the spillway weir elevation of 200 MSL.

Spillway width
Box type structure – total weir length – 125 feet

Drawdown description
Gate Size - 4 foot x 8 foot
Number of gates - 3
Condition – good

Who controls
Louisiana Department of Transportation and Development is responsible for the maintenance and operation of 19 reservoir embankments, including Caney Creek Reservoir, to maintain their integrity and to prevent any breach or damage to the existing facilities as per Act 270 of 1984. DOTD is not responsible for lake management. Any request for opening a lake must be directed to the Secretary of DOTD in writing from the Secretary of the Department of Wildlife and Fisheries. Verbal request are not to be accepted. The letter from Wildlife and Fisheries is to indicate the date for gate opening and the rate of drawdown desired for wildlife or lake management purposes.

LAKE AUTHORITY

Association

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. Any vacancy in the office of commissioner, due to death, resignation or any other cause shall be filled by an appointment of the Jackson Parish Police Jury. See Attachment – Official Policy, Rules and Regulations Adopted by the Jackson Parish Watershed District.

Jackson Parish Watershed District Members:

MEMBER NAME	WARD	TERM EXPIRES	DATE APPOINTED	CONTACT #
Crawford Reed	2	06/27/12 (?)	06/27/05	
Richard Sneed	7	4/28/07	1/12/05	
Kenny Cobb	2	4/48/07	7/12/04	259-9210
John McCarty	2	4/28/07	4/28/03	cell – 243-4725
Jackie Potts		3/22/08	3/22/04	
Travis G. Caskey, Jr.	5	4/03/08	4/03/04	
Inez Mason		4/03/08	10/12/05	249-4605 / 680-0721
JPWD office telephone number - 318-259-2732				

Authorization

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 conductive to the public health, safety, convenience or welfare or of public utility or benefit of the citizens of the State of Louisiana.

Ownership of Lake Bottom retained by private individuals. Servitudes, rights of way, and flowage rights acquired by Jackson Parish Watershed District prior to impoundment.

ACCESS – MAPS WITH LOCATIONS

Boat Docks

SEE CANEY PUBLIC BOAT RAMPS – APPENDIX I

Piers

Privately owned piers are associated with many lakeside properties. Public piers are located in the Jimmie Davis State Park.

State/Federal facilities

Jimmie Davis State Park http://www.lastateparks.com/jimmiedavis/jimmiedavis.htm

Located on a peninsula of Caney Creek Reservoir, the State Park offers two boat launches and a fishing pier. Eighty picnic sites, including picnic tables and charcoal grills are provided. The park's three picnic pavilions can accommodate larger gatherings. Seventy three camping sites can accommodate camper trailers or tents. Each site is equipped with a table, tent pad, and a fire ring. Two comfort stations and laundry facilities are the camping area. Overnight accommodations include 17 two-bedroom cabins, two four-bedroom lodges and a group camp that can house 120 guests. A swimming beach is located on the lake with adjacent restrooms and a bathhouse. The park also has a playground.

Opened in the fall of 1996, Jimmie Davis State Park was originally named Caney Creek Lake State Park. The 2003 Louisiana State Legislature approved renaming the park in honor of two-term Governor Jimmie H. Davis.

Artificial Reefs

Artificial reefs were constructed during the winter of 1998-99 to provide complex cover in the absence of submerged aquatic vegetation. The project was not expected to increase the productivity of Caney Creek Reservoir. The amount required to accomplish that goal (15%-30% of 5,000 acres = 750-1500 acres) is not feasible. The project was designed to provide cover in known locations to attract fish and increase angler success. Each material is ranked in the following list by four categories:

Deployment Rating

1) Brush – Cheap, fast, and easy if collection site is near water. Woody species primarily used were negatively buoyant. Species including sweet gum, hickory, and deciduous holly will sink without additional weight in early spring before leaf out.

   Christmas trees were also used in an effort to incorporate volunteer assistance. Christmas trees require considerable weight to sink, have short longevity, and were found to be a poor substitute for native woody species

2) Tires - Require considerable effort drilling holes and tying tire arrangements.

3) Wooden Pallets - Require considerable effort tying arrangement and even more effort to construct, and transport concrete anchors.

Public Acceptance

1) Brush - Widely accepted primarily because of its status as a natural material.
2) Pallets - Accepted well.
3) Tires - Not well accepted.

Durability

1) Tires
2) Pallets
3) Brush

Fish Attraction

1) Brush
2) Pallets
3) Tires

Three groups of reefs were constructed in the lower, middle and upper end of the lake. Reef sites were selected with the assistance of the JPWD. Potential sites upstream of the pipeline were eliminated to ensure adequate water depth for boat clearance. Reef structures deeper than 14' feet were limited due to considerations of summertime stratification. Reef sites were marked with buoys to enable angler utilization. Maintenance of buoys was found to be a continuous challenge. Problems include detachment of buoys from anchors due to corrosion and inadvertent movement of buoys from boat mooring and wind drift.

Maps indicating reef location were distributed at local marinas and tackle dealers.

Note - Tires were used, after approval was secured by LA Dept. of Environmental Quality (DEQ) and the Environmental Protection Agency (EPA).
SEE APPENDIX II FOR MAP AND COORDINATES

In addition to the reef materials listed above, additional work was conducted using polyethylene pallets. Fifteen prototype reef structures were deployed in the immediate proximity of four existing reef buoys to facilitate underwater observation. Preliminary work with the polyethylene pallets resulted in the development of a durable structure that attracts fish very well.

SHORELINE DEVELOPMENT

The majority of the Caney Creek Reservoir shoreline is residential with significant new development occurring from 1995 through 2005. Associated boat houses and piers are very numerous.

Two commercial marinas are in operation, with one near the spillway at the lower end of the lake and one adjacent to LA Hwy 4 on the upper end of the lake. Both offer bait, concessions, and fuel. Both have overnight accommodations.

PHYSICAL DESCRIPTION OF LAKE

Shoreline length
72 miles

Timber type
Discussed below.

Average depth
16 feet

Maximum depth
43 feet

Natural seasonal water fluctuation
1 to 2 feet

EVENTS / PROBLEMS
Included below.

MANAGEMENT ISSUES

AQUATIC VEGETATION

Aquatic habitat is a primary influencing factor in the management of any water body. LDWF recognizes the importance of complex cover and has designated an aerial coverage range of 15% - 30% as desirable for sport fish species. LDWF recommendations include the desirable range as a fisheries management goal.

In Caney Creek Reservoir, complex cover is currently limited to aquatic vegetation. Timber in the lake bottom was cut prior to impoundment. Terrestrial re-growth that occurred before flooding was primarily in the form of pine, willow, and woody vines. Newly flooded terrestrial woody plant species were available as cover for the extended period of impoundment. Once flooded, however, the young trees and vines decomposed after short period of time.

Aquatic Type map

(**SEE APPENDIX III – TYPE MAP HISTORY**)

Aquatic Vegetation Treatment History

Hydrilla was first discovered in Caney Creek Reservoir in 1989. At that time, hydrilla was not widespread in Louisiana and LDWF was attempting to chemically eradicate all new occurrences. In Caney Creek Reservoir, a hydrilla eradication program was initiated, with designated goal of completely removing hydrilla from the reservoir before the species became well established.

Three separate herbicide applications were made. Fifty six acres were treated in 1989 with 5 gallons of Diquat (diquat dibromide) and 2.5 gallons of Cutrine Plus (copper)/ha of infestation. Subsequent inspections in 1989 indicated good control (95%) in all treated areas. The lake was surveyed in early June 1990. Re-growth of hydrilla was noted in all areas treated in 1989. Sixteen additional isolated infestations were documented and 8 km of shoreline infestations were found around the lake.

It was decided the herbicide Sonar (Fluridone) would be used. Application rates were 31.25 lbs/acre in water 4 foot deep or less and 62.5 lbs/acre in water deeper than 4 feet. Subsequent cleanup applications were expected to be necessary.

A total of 352 acres of hydrilla were treated with Sonar during 1990. Ninety-five percent of the infestation was controlled within 60-90 days. A re-evaluation of the applications was made on 29 May 1991. Thirty seven to 53 acres of hydrilla were

found during the inspection. In July of 1991, a total of 47 acres of hydrilla were treated with Sonar and Hydrothol 191 (endothall). Evaluations of the 1991 applications were made on 11 May, 15 June, and 25 June 1992. Approximately 440 acres of hydrilla were found throughout the reservoir. Based on the poor results - an eight-fold increase in hydrilla even with the expenditure of approximately $250,000, the eradication program using herbicides was terminated.

In September 1993, an Aquatic Management Plan for Caney Creek Reservoir was developed by LDWF. In the plan, hydrilla was recognized as the species with greatest potential to negatively impact the multiple-use reservoir. However, because eradication efforts had failed, control efforts would address hydrilla as a part of total macrophyte coverage. Also in the Aquatic Management Plan was LDWF recognition of the beneficial aspects of aquatic macrophytes to fisheries at certain levels of coverage. LDWF recommendations included a macrophyte coverage range of 15-30% as a goal. Options for control of hydrilla were considered:

1. No Action: The unchecked growth of hydrilla would cause unacceptable damage to the aquatic ecosystem and severely restrict the intended utilization of the reservoir.

2. Water Level Manipulation: This method is used in many Louisiana reservoirs to manage aquatic habitat. Unfortunately, due to the small watershed of Caney, water level manipulation is not a viable tool to manage aquatic habitat. It could take up to three years to re-fill the lake after a drawdown.

3. Mechanical Control: Harvesters cost an average of $500-$1250 per acre (Thayer and Ramey, 1986) to operate and typically harvest only 0.5– 1.0 acre/day. Additionally, the harvesters can spread the infestation.

4. Biological Control: Potential agents include pathogens, insects, and fish that have evolved with and naturally suppress hydrilla in its native range. Several insect species have been tested and released in the U.S. Their effectiveness is still under study. The most effective biocontrol agent for control of hydrilla has been the grass carp (*Ctenopharyngodon idella*). Hydrilla is one of the preferred foods for grass carp. Stocking rates are 5-30 fish/acre (Sutton and Vandiver, 1986).

The LDWF decided to institute a biological control program utilizing triploid grass carp. A serial stocking strategy for triploid grass carp was developed. This was based on information from prior LDWF research with stocking rates, actual stocking regimes of numerous large reservoirs, the U.S. Army Waterways Experiment Station (WES) AMUR/STOCK simulation model (Boyd and Stewart 1995), and Colorado GRASCARP stocking model (Swanson and Bergersen 1988). An abbreviated version of the Caney Creek Reservoir triploid grass carp study is provided below. The complete document is published in the 2000 Proceedings of the Annual Conference of the Southeastern Association of Fish

and Wildlife Agencies 54: pp 18-27. Reprints are available from the LDWF District II office in Monroe.

EFFECTS OF AQUATIC VEGETATION REMOVAL ON THE TROPHY BASS FISHERY OF CANEY CREEK RESERVOIR

DISCUSSION

In February 1994, 11,968 triploid grass carp were stocked into Caney Creek Reservoir at a rate of 8.0 fish/vegetated acre or about 2.5 fish/surface acre. By July 1995, virtually all the submersed vegetation had disappeared. This stocking rate is relatively low when compared to other large Southeastern U.S. reservoirs. Lake Conroe, Texas was stocked with 270,000 grass carp for a rate of 30-fish/vegetated acre in September 1981 (Klussman et al. 1987). This resulted in the elimination of virtually all the submersed aquatic vegetation by the summer of 1983. Lake Marion, South Carolina was stocked with 300,000 triploid grass carp over a four year period, for a final stocking rate of about 25 fish/vegetated acre. After the first two years the hydrilla coverage increased, but by the forth year hydrilla coverage had been reduced by 58%. Based on these reports, the stocking rate in Caney Creek Reservoir was relatively conservative and should not have been solely responsible for the elimination of submerged vegetation in a year and a half. Before July 1995, dead hydrilla stems were observed floating in the lake, indicating that additional environmental control factors might have been involved. Additionally, the water level surged to 3 feet above normal in spring 1995. Sudden changes in the two plant growth parameters could have contributed to the reduction in submersed plant biomass. With the eventual reduction of submersed aquatic macrophyte coverage, the number of triploid grass carp in the lake was certainly sufficient to suppress plant regeneration.

Eight years after impoundment, Caney Creek Reservoir had achieved national recognition for producing trophy size largemouth bass. Three successive Louisiana State Record bass and many others weighing in excess of 12 pounds were attributed to a successful management program. One component to the success at Caney Creek Reservoir was aquatic macrophyte coverage within a range of coverage considered to be beneficial to fisheries.

Levels of aquatic vegetation coverage considered to be beneficial to game fish in Hinkle (1986) and Wiley et al. (1987) range from 10-40%. Durocher et al. (1984) concluded that a reduction in submerged vegetation below 20% would result in a reduction in largemouth bass recruitment and standing crop. Because the status of fisheries in Caney Creek Reservoir was considered to be excellent with the 33% areal macrophyte coverage that existed in 1993, there was angler concern that the introduction of grass carp and any associated reduction in macrophyte coverage would have negative consequences to angling success. Much of that concern originated from widely publicized accounts of the Lake Conroe case history. With the absence of other forms of complex cover in Caney Creek Reservoir, the reduction of aquatic macrophyte coverage also produced a reduction in largemouth bass abundance. Largemouth bass CPUE 8”-12” was reduced by 45%. Protection afforded by the 15”-19” protective length range likely delayed subsequent reductions to larger bass.

Largemouth bass angler success increased slightly throughout the study period. Unfortunately, those values are more a function of reduced angler usage than increased catch

rate. With the removal of available cover, largemouth bass became more difficult for most anglers to locate in the reservoir. Largemouth bass angler efforts decreased during the study period by 44%. Many of the anglers who continued to fish Caney Creek Reservoir after macrophyte removal were locals who were familiar with the topography of the area before impoundment. Knowledge of underwater topographic irregularities provided an advantage for some anglers since the features attract largemouth bass and are unknown to other anglers. An increase in average size of harvested bass was concurrent with macrophyte removal, but is attributed to an increased protective length range.

Temperature, pH, and stratification pattern followed seasonal influence and were not influenced by the reduction in macrophyte coverage. However, there were changes in nutrient values during the study period that were influenced by the shift from a macrophyte-based system to a plankton-based system. Water clarity varied seasonally with some exceptions. Reduced water clarity from April through June 1994 served as a limiting factor to macrophyte growth.

The issue of invasive nonindigineous aquatic plants is not a new problem in Louisiana. However, the challenge of hydrilla control in Caney Creek Reservoir was particularly difficult because of pre-existing conditions. The potential for hydrilla to spread rapidly throughout the impoundment was high. Consequences that could include interference with various water uses and displacement of native aquatic plant communities seemed imminent. After herbicide treatments failed, control measures were effectively limited to a biological option. Triploid grass carp were introduced at a rate compiled from the best available information to control macrophyte coverage to within a desirable range. The 8 carp/vegetated acre rate was selected with the expectation that more carp would be likely required. Unfortunately, there are influences to the equation of hydrilla and grass carp that are beyond the control of resource managers. The experience at Caney Creek Reservoir will serve as evidence to that fact, as one set of problems was exchanged for another.

Grass Carp Removal Efforts

With the objective of a aquatic vegetation coverage 15-30% as provided in the Aquatic Management Plan, efforts to remove grass carp from Caney Creek Reservoir were initiated in 1996. Removal efforts included the following:

1. Feeders were placed at 3 locations in the lake in an effort to concentrate carp for removal.

2. Fisheries Management Bait (rotenone treated feed) – was fed to the carp, but was not unsuccessful.

3. Gill netting – Thousand of LDWF man-hours were spent gill netting over a three year period. Personnel from throughout the State were used in a combined effort on two different occasions running a combined 11,000 yards of webbing. Catch per effort was relatively low. High water clarity required night time netting. Throughout the gill netting effort, largemouth bass by-catch in this Trophy Bass Lake was of special concern to LDWF personnel and was a limiting factor. Hourly attendance of nets was

required to prevent the loss of trophy size largemouth bass.

4. Commercial Fishermen – Used under permit with LDWF supervision – limited success (Range: 17-35 carp per trip). The commercial angler eventually quit because he wasn't making enough money through the sale of carp plus the bounty to justify efforts.

5. Bowfishing: Initially was restricted to LDWF personnel due to amendment to Title 56 Sec. 320 (Methods of Taking Freshwater and Saltwater Fish) that was included to provide for bowfishing harvest of sport fish. Public bowfishing tournaments were encouraged, but were inhibited by permit requirements as per the existing State Law. LDWF efforts to encourage Legislative action allowing public bowfishing and eliminate permit requirements were eventually successful.

6. Strike netting efforts largely unsuccessful - carp jumped nets or just went through.

7. Electrofishing was also unsuccessful. Grass carp are large, fast fish that are especially sensitive to noise. Electrofishing requires close order contact with the target fish. Our electrofishing rigs generate considerable noise and vibration with an outboard motor and a 16 HP generator.

8. Miscellaneous: Other methods were utilized, but were unsuccessful. They included: Buckshot, Hook & Line, Lead nets, and Pound Nets.

December, 1999: Total documented grass carp removed from Caney – 2,252.
With public bowfishing underway and LDWF catch per effort declining by all methods, LDWF removal efforts were discontinued.

March 10, 1996 – PLANT PATHOGEN INVESTIGATION

Received report from Louie Richardson, LDWF Aquatic Plant Research Program Supervisor. Hydrilla samples from Caney were sent to the U.S. Army Corps of Engineers Waterways Experiment Station in Vicksburg, Mississippi. Analysis indicated that the hydrilla found in Caney Creek Reservoir was dioecious, not monoecious. Hydrilla can be either monoecious (both male and female flowers on the same plant) or dioecious (male and female flowers on different plants). Reproductive potential of the plant is influenced by the classification, especially if only one sex of dioecious plants is present

The samples sent to Vicksburg for analysis were found to have 31 fungi - 11 weakly pathogenetic. Pathogens were ruled out as a cause for disappearance of Caney hydrilla.

March 24, 1997 – HERBICIDE APPLICATION INVESTIGATION

In a March 24th conversation with Jimmy Vines (JPWD Chairman), I was apprized of a suspected aerial herbicide application in the Caney Lake drainage in spring of 1995. Because of the, as yet, unexplained disappearance of submerged aquatic vegetation, I considered the

report to be worth investigation.

I called Dean Hart in the Monroe office of the LA Dept. Of Agriculture & Forestry to request that he make appropriate inquiries. I received correspondence that included the application report. From it, I found that there was indeed an application made on May 25, 1995. Glyphosate was applied at label rates over 262 acres well up in the watershed. The application was contracted by Willamette Industries for broadleaf control in a stand of pine. I consider the report to be important in that it defines a "pre-disappearance" herbicide application, but I consider this herbicide application as unlikely to be a significant factor. Report on file.

May 18, 2004: GRASS CARP REMOVAL

Representatives of JPWD (Henry Kimp, Robert Greer, and Dwight Cooper) met with LDWF (Dwight Landreneau, Bennie Fontenot, and Mike Wood) to discuss concerns related to Caney Lake. The meeting was held at LDWF Headquarters in Baton Rouge. Subjects discussed included carp removal, bass regulations, and coordination of various enforcement agencies.

It was agreed that if carp removal efforts were to be re-initiated, public bowfishing would be the best removal method. Public bowfishing for carp in Caney Lake was initially prohibited by Louisiana Law. Legislation passed in 1999 provided for public bowfishing, thereby increasing potential manpower for carp removal many times over. Bowfishing is also preferred over methods such as gill netting because of its lack of bass by-catch. Inadvertent mortality to trophy bass during carp removal efforts is considered to be unacceptable. Various methods of attracting bow anglers were discussed. One method included a carp bounty involving LA State Parks personnel to certify catch. A bow fishing tournament with prizes to the most successful anglers was also discussed.

July 25, 2004: CANEY CARP RODEO

The Caney Lake Carp Rodeo was held on the weekend of July 23rd - 25th. Twenty four teams competed in the 2 night tournament. Tournament hours were 9 pm – 9am. The first place team killed 10. Total kill for both nights was 58.

With few exceptions, the tournament participants were all well equipped and very experienced. The problem expressed from all anglers was that they didn't see many carp. Most reported that they saw very few more than they were able to kill. Those reports closely match our recent observations.

January 4, 2005: CANEY CARP LIFESPAN ESTIMATES

In response to the pending question regarding the lifespan of triploid grass carp in Caney Creek Reservoir, mortality estimates were developed by Joey Shepard, LDWF. The calculations are based on known information (number of grass carp stocked, number documented as removed, and respective dates of both) and assumes a 25% annual mortality rate. Certainly, the product of the calculations is only an estimation, but the exercise and our observations indicate grass carp in Caney are nearing the end of their life span and soon will

not be a significant control factor for submerged aquatic vegetation. Accordingly, continued efforts to remove grass carp are not necessary for the re-establishment of aquatic vegetation. In the event that removal efforts are strongly supported and requested by the JPWD, the following methods are recommended:

1. Commercial fishermen utilized through special permit to target grass carp
2. Bow fishing tournaments with associated bounties

YEAR	LONGEVITY	REMAINING NUMBER	REMOVALS
1994	0	12,000	
1995	1	9,000	
1996	2	6,750	1,252
1997	3	3,811	129
1998	4	2,729	412
1999	5	1,635	469
2000	6	757	
2001	7	568	
2002	8	426	
2003	9	319	
2004	10	240	58

August 1, 2005: A SUMMARY OF RESEARCH ON GRASS CARP LIFE SPANS

Also in response to the pending question regarding the lifespan of triploid grass carp in Caney Creek Reservoir, additional research was conducted through available resources. Results of the search showed considerable variability, with reported life spans ranged from 5 yrs to 30 yrs. Research showed that ages may be affected by the genetic phenotype type of fish (diploid or triploid) and also environmental influences. The manner in which data was reported was also variable, with most listing a range for average lifespan and some listing presenting maximum recorded age. As to the question of triploid grass carp in Caney Creek, the data indicate an expected lifespan 10-15 years. Grass carp were stocked into Caney Creek Reservoir in February, 1994.

SOURCE	AGE
South Florida Aquatic Plant Management Society. The use of triploid grass carp in waterway management.	10 +
Texas Parks and Wildlife Dept. Internet publication: Grass carp in Texas. Prepared by E. Chilton.	6 – 10
Univ. of Georgia College of Agriculture and Environmental Sciences Cooperative Extension Service. 1999. Leaflet 418: Use of sterile grass carp to control aquatic weeds. Prepared by G. Lewis.	10 – 15
Langston University Research and Extension. Controlling aquatic vegetation with grass carp. Prepared by K. Williams and G. Gebhart.	12 – 15
Minnesota D.N.R. 2001. Briefing paper on triploid grass carp.	12 – 15
Western Aquatic Plant Management Society. 2003. Internet publication.	10 +
Greene Co. New York Soil and Water Conservation District. Internet publication	10 avg.
Virginia D.G.I.F.	5 – 11
Virginia D.G.I.F	20 +
Southern Regional Aquaculture Center. 2002. Publication no. 3600: Using grass carp in aquaculture and private impoundments. Prepared by M. Masser.	10-15 ave 20 max
Florida Fish and Wildlife Conservation Commission. Internet publication. Prepared by B. Wattendorf	15 max.
www.aquaticmanagement.com/grasscarp.htm	8 – 12
www.advertisergleam.com/carp.html	9 – 15
Schoharic Co. N.Y. Soil and Water Conservation District. Internet publication.	10 avg.
Ohio State University. Extension fact sheet HYG-7001-88: Triploid white amur for Ohio. Prepared by J. Long.	15 max.

HISTORY OF REGULATIONS

Recreational

Statewide regulations for all fish species in place at impoundment.

- Black Bass (Largemouth, spotted): 10 daily of any size
- Buffalo Fish or their hybrids: 16 inch min. total length limit, 25 per day under 16”
- Freshwater Drum (Gaspergou): 12 inch min. total length limit, 25 per day under 12”
- Bowfin (Choupique, Grinnel): 16 inch min. total length limit
- Channel Catfish: 11 inch min. total length limit (see Catfish below for possession limit)
- Blue Catfish: 12 inch min. total length limit (see Catfish below for limit)
- Flathead Catfish: 14 inch min. total length limit (see Catfish below for limit)
- Catfish (Blue, Channel and Flathead): the possession limit for catfish caught on a recreational license shall be 100. The 100 fish may be a single species, or a combination of blue, channel or flathead catfish. In addition, an angler may possess a maximum of 25 undersize catfish or a single or combination of all 3

species.
Crappie: 50 daily
White Bass: 50 daily
Yellow Bass: 50 daily

April 1, 1991 - Largemouth bass slot implemented as corrective measure to direct harvest to overabundant small fish (14-17", 8 fish creel, 4 fish over slot allowed)

July 20, 1994 – With success of corrective management, including the addition of additional forage base (threadfin shad) bass slot changed as an enhancement measure for trophy size bass. (15"-19" slot limit, 8 fish creel with 2 fish allowed over slot). Described in Development of a Trophy Largemouth Bass Fishery in Louisiana (Hughes & Wood – 1995)

July, 2001 – Slot size increase to 16"-21" proposed by JPWC. LDWF recommendation was to solicit angler opinion before initiation of process. Proposal advertised in Jonesboro, Ruston, and Monroe newspapers – angler response unfavorable to proposal. Slot size increase is a current proposal of the JPWC.

Commercial

The use of gill nets, trammel nets, and hoop nets prohibited

DRAWDOWN HISTORY

No drawdowns conducted since impoundment. Small watershed (5:1) makes re-fill in a particular calendar year questionable. Chart below describes lake water levels from the point of impoundment (when the gates were closed) and provides reference of re-fill time. Data of note is the time required to fill the remaining 5 feet of elevation – 373 days.

Elevation (MSL)	Date	Approximate Lake Surface Area (acres)
162	26 February 1986	200
165	14 March 1986	450
170	21 April 1986	900
175	24 October 1986	1,450
180	27 November 1986	2,050
185	2 February 1987	2,750
190	28 February 1987	3,500

191	Average 1987	3,650
195	6 January 1988	4,250
198	Average 1988	4,700
200	15 January 1989	5,000
Data supplied by John Eason, Engineer, DOTD		

Drawdown Dates

No lake drawdowns attempted.

FISH KILLS / DISEASE HISTORY, LMBV

No kills due to poor water quality or toxins. Unusual events described in (**APPENDIX IV – FISH HEALTH EVENTS**)

CONTAMINATS / POLLUTION

Water quality

http://www.deq.state.la.us/ Routine DEQ sampling discontinued in 1999. LDWF water sampling done in conjunction with triploid grass carp Federal Aid Project. The following text from Use of Triploid Grass Carp in Caney Creek Reservoir Final Report.

Measured water parameters included pH, conductivity, dissolved oxygen, temperature, and water clarity. Mean water temperatures for the three stations (at a depth of 1m) varied seasonally, but were similar among years. The reservoir stratified thermally in April of each year. Stratification generally continued into October. A distinct oxycline was also formed each year. No change in timing and depth of stratification were observed associated with the reduction in aquatic vegetation. Water clarity decreased temporarily following vegetation removal. Chlorophyll-A levels showed seasonal variation with highs in the warmer months and lows in the cooler months. Some changes did occur in the chemical limnology of Caney Creek Reservoir as aquatic vegetation levels were reduced. As a phosphate form readily available to aquatic plants, orthophosphate displayed an inverse relationship with increases in aquatic plant growth. Orthophosphate was found to be in widely variable levels before macrophyte removal. Post event levels were more stable with small reductions occurring only during summertime periods. Orthophosphate level reductions did not correlate well with chlorophyll-A levels. Total phosphate levels showed seasonal oscillation and did not appear to be significantly affected by the reduction in macrophytes. Nitrate nitrogen was relatively constant throughout most of the study period, with variation ranging less than 0.1 mg/l. Wider variation occurred late in the study period but did not correlate well to chlorophyll-A abundance. A reversal in the upward trend of ammonia nitrogen was correlated with the removal of macrophytes. Another upward trend began 18 months after macrophyte removal and continued through the study period.

Biochemical oxygen demand increased as a function of decreasing Secchi readings. BOD was also found to have had an unexpected inverse relationship to chlorophyll-A abundance. Values after macrophyte removal were increased.

Some aspects of the limnology of Caney Lake Reservoir did not appear to be influenced by the introduction of triploid grass carp or the subsequent loss of macrophyte vegetation. Temperature, stratification pattern, and dissolved oxygen followed seasonal influence. Some changes appeared in nutrient values during the study period. Those changes were primarily influenced by the shift from a macrophyte-based system to a plankton-based system. Chlorophyll-A values did not indicate a long-term increase in plankton. A resulting loss in primary productivity did occur.

Water level

Water levels are currently being monitored to determine the relationship between local rainfall and lake level fluctuations. The following table lists water level measurements. A simple staff gage was installed on one of the wooden pilings at the spillway on 11/08/2005.

A recording water level gauge is installed to the Caney Creek Reservoir spillway, but has not been operational for a considerable time, according to DOTD engineer, Paul Colquette. Please consider this correspondence as a request for your consideration of this matter.

CANEY CREEK RESERVOIR WATER LEVELS		
DATE	ELEVATION	FROM SPILLWAY CREST
11/08/05	198.5’ MSL	1.5 FEET
11/14/05	198.5’ MSL	1.5 FEET
11/28/05	198.5’ MSL	1.5 FEET
12/06/05	198.3’ MSL	1.7 FEET
12/13/05	198.4’ MSL	1.6 FEET
12/20/05	198.4’ MSL	1.6 FEET
12/27/05	198.5’ MSL	1.5 FEET
01/03/06	198.4’ MSL	1.6 FEET
01-11-06	198.5’ MSL	- 1.5 FEET
01-17-06	198.7’ MSL	- 1.3 FEET
01-18-06	198.9’ MSL	-1.1 FEET
01-24-06	199.0’ MSL	-1.0 FEET
01-30-06	199.2’ MSL	-0.8 FEET

NOTE: Margin of Error directly proportional to wind induced wave action – average 0.1 – 0.2 feet
Data supplied by Mr. Terry Gilmore – owner Caney Lake Marina

BIOLOGICAL

Fish Samples

History

Rotenone sampling conducted 1986 – 1995. Discontinued primarily due to negative public sentiment. Electrofishing continues as primary bass sampling tool - conducted since impoundment. Lead netting as a crappie sampling tool developed in Caney. Lead nets of various mesh sizes (0.5”, 1.0”, 1.5”, 2.0”) were set with 0.5” mesh frame nets for comparison of catch. Final results pending and to be published.

CANEY CREEK RESERVOIR SAMPLING	
1989	Electrofishing 3-15 minute samples
1990	Electrofishing 5-15 minute samples Shoreline seining Water quality sampling
1991	Electrofishing 6-15 minute samples (spring and fall) Shoreline seining Rotenone 3–one acre sets
1992	Electrofishing 6-15 minute samples (spring and fall) Shoreline seining Rotenone 3–one acre sets Water quality sampling
1993	Electrofishing 6-15 minute samples (spring and fall) Recreational Angler Survey (6 surveys / month – 12 months) Rotenone 3–one acre sets Water quality sampling
1994	Electrofishing 6-15 minute samples (spring and fall) Recreational Angler Survey (6 surveys / month – 12 months) Rotenone 3–one acre sets Water quality sampling

1995	Electrofishing 6-15 minute samples (spring and fall) Gill Netting – 6 samples each including: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar Rotenone 3–one acre sets Water quality sampling
1996	Electrofishing 6-15 minute samples (spring and fall) forage sampling Recreational Angler Survey (6 surveys / month – 12 months) Water quality sampling
1997	Electrofishing 6-15 minute samples (spring and fall) forage sampling Water quality sampling
1998	Electrofishing 6-15 minute samples (spring and fall) forage sampling Recreational Angler Survey (6 surveys / month – 12 months) Water quality sampling Frame Nets - 9 stations
1999	Electrofishing 6-15 minute samples (spring and fall) Gill Netting – 6 samples each including: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar
2000	Electrofishing 6-15 minute samples (spring and fall) Gill Netting – 6 samples each including: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar Frame / Lead Nets - 6 stations
2001	Electrofishing 6-15 minute samples (spring and fall) Frame / Lead Nets - 6 stations

2002	Electrofishing 6-15 minute samples (spring and fall) Gill Netting – 6 samples each including: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar Shoreline seining
2003	Electrofishing 6-15 minute samples (spring and fall)
2004	Aquatic Type Map Electrofishing 6-15 minute samples (spring and fall) Gill Netting – 6 samples each including: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar Frame / Lead Nets - 6 stations
2005	Aquatic Type Map Electrofishing 6-15 minute samples (spring and fall) Shoreline seining
2006	Aquatic Type Map Electrofishing 6-15 minute samples (spring and fall) Lead Nets - 6 stations Shoreline seining
2007	Aquatic Type Map Electrofishing 6-15 minute samples (spring and fall) Gill Netting – 6 samples each including: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar Lead Nets - 6 stations Recreational Angler Survey (6 surveys / month – 12 months) Shoreline seining

2008	Aquatic Type Map Electrofishing 6-15 minute samples (spring and fall) Lead Nets - 6 stations Shoreline seining
2009	Aquatic Type Map Electrofishing 6-15 minute samples (spring and fall) Shoreline seining
2010	Aquatic Type Map Electrofishing 6-15 minute samples (spring and fall) Gill Netting – 6 samples each including: • 300' 2.5 in. bar. • 300' 3.0 in. bar. • 300' 3.5 in. bar • 300’ 4.0 in. bar Lead Nets - 6 stations Recreational Angler Survey (6 surveys / month – 12 months) Shoreline seining

Lake records

See LOWA State Records http://www.laoutdoorwriters.com/index.asp?pg=fr_choose

Species	Weight (pounds)	Date	State Rank
Largemouth bass	15.97	February 1994	1
Black Crappie	3.55	February 2003	1
Redear Sunfish	2.87	August 1998	1
Bluegill	1.53	July 2001	2

Stocking History

Existing fish population (listed below) not removed before impoundment

Date	Number / Species Stocked
1986	514,261 FLMB, 72,042 bluegill, 81,120 redear sunfish
1987	222,690 FLMB

1988	135,856 FLMB, 7,976 channel catfish, 6,918 blue catfish
1989	80,988 FLMB
1990	30,000 threadfin shad - to address forage problem
1991	Note – no bass stocked in 1990 or 1991 due to forage problem
1992	427,248 FLMB
1993	376,086 FLMB
1994	11,968 triploid grass carp, 148,044 FLMB
1995	626,689 FLMB
1996	86,849 FLMB
1997	111,238 FLMB
1998	215,000 FLMB
1999	84,000 FLMB
2000	260,500 FLMB
2001	269,624 FLMB
2002	252,120 FLMB
2003	250,124 FLMB
2004	No bass stocked.
2005	250,806 FLMB
2006	No FLMB recommended
2007	250,000 FLMB
2008	No FLMB recommended
2009	250,000 FLMB
2010	No FLMB recommended
2011	250,000 FLMB

Species profile

(**SEE APPENDIX V – PRE-IMPOUNDMENT FISH SPECIES**)

Largemouth bass Genetics

GENETICS					
Year	Number	Northern	Florida	Hybrid	Florida Influence
1987	346	70%	16%	14%	30%
1988	287	73%	16%	11%	27%
1989	300	82%	5%	13%	18%
1990	300	64%	11%	25%	36%
1991	35	63%	11%	26%	37%
1994	39	49%	23%	28%	51%
2000	66	35%	21%	44%	65%
2004	100	39%	28%	33%	61%

Threatened/endangered/exotic species

Bald Eagles. Nest adjacent to lake.

CREEL

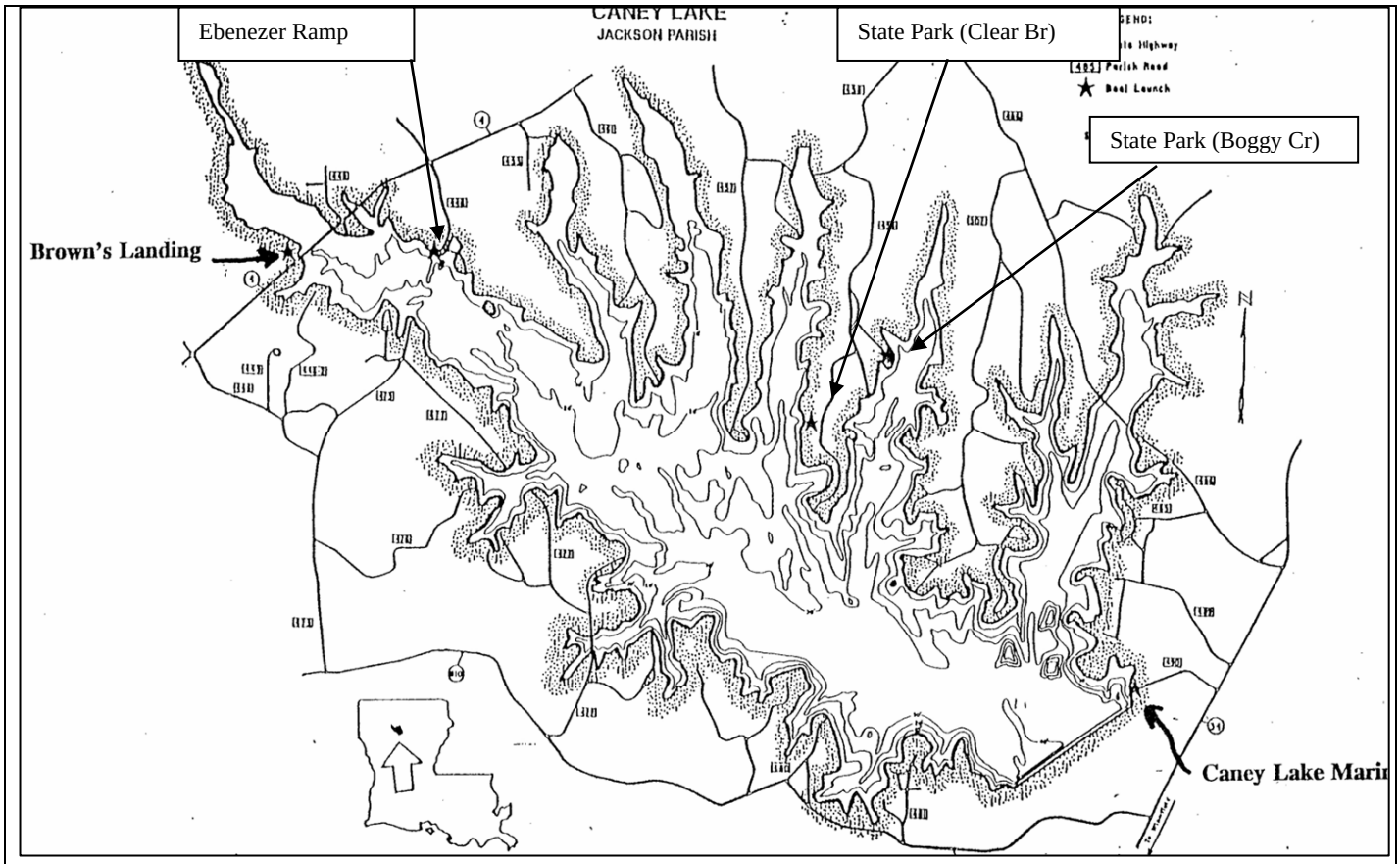
Historic Information/Type

Recreational angler surveys were conducted for 12-month periods during 1993, 1994, 1996, and 1998 to determine angler effort and catch rates. Creel sampling is scheduled for 2007. Roving surveys to count anglers were made at random during each scheduled interview period to allow expansion of data to estimate total angler attributes. Results of historic recreational angler surveys discussed above.

WATER USE

Hunting (Permanent duck blinds by permitted of JPWD), Skiing, Swimming, Fishing, Residential irrigation.

APPENDIX I – CANEY PUBLIC BOAT RAMPS

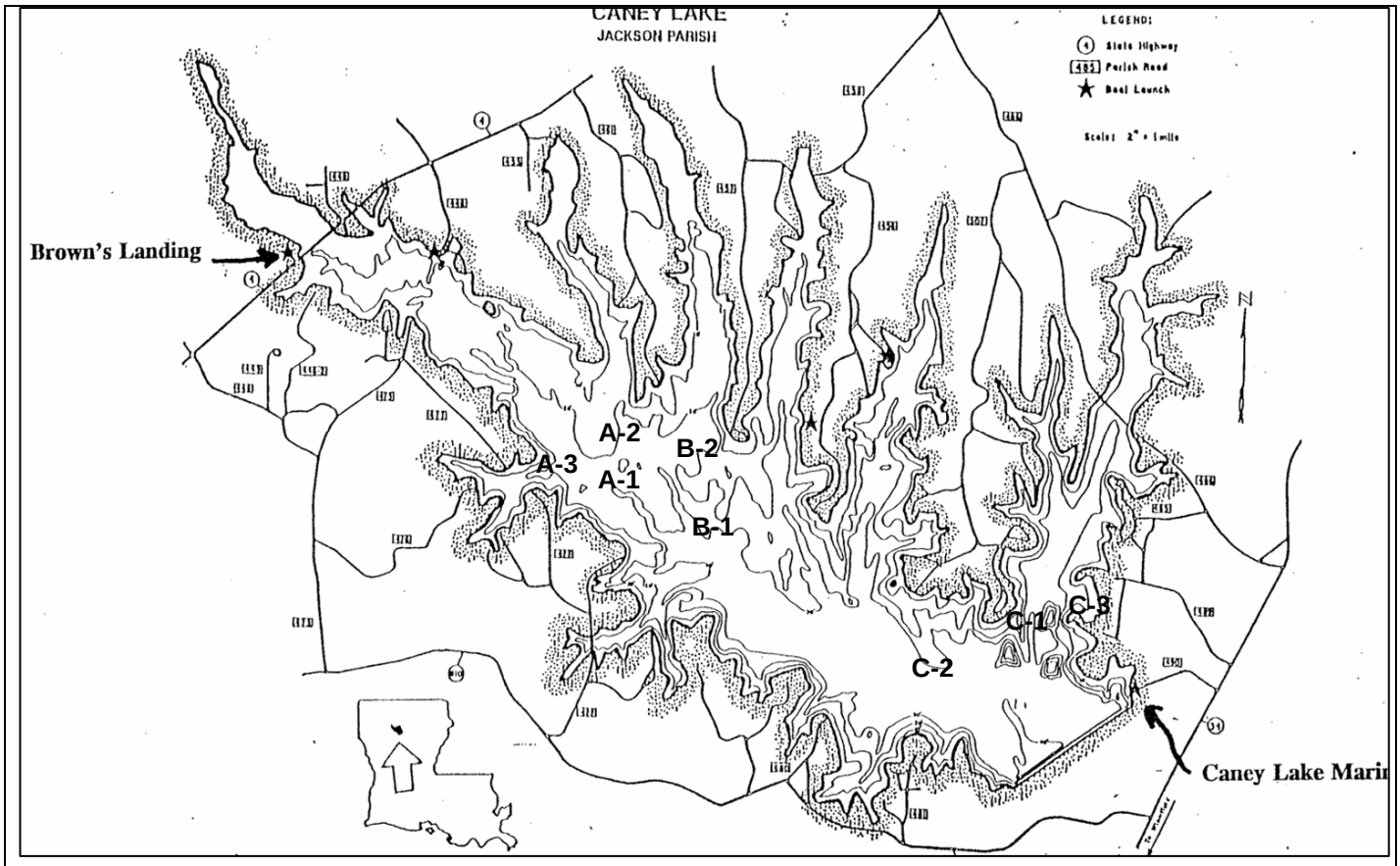


RAMP	COORDINATES	CONDITION
Spillway	32^0 13' 35.18N 92^0 29' 15.94"W	Good
State Park (Boggy Cr)	32^0 15' 10.79N 92^0 30' 48.81"W	Good
State Park (Clear Br)	32^0 14' 53.65N 92^0 31' 19.68"W	Good
Ebenezer *	32^0 15' 44.78N 92^0 33' 39.99"W	See note
Brown's Landing	32^0 15' 47.51N 92^0 34' 30.07"W	Good

Ebenezer* - Short ramp – 20' total. Ramp intact and in good condition. Has 6" curb at deep end. Outboard motor thrust has washed a depression below the deep end of the ramp creating an 18" drop at the end of the ramp.

Free launching and parking at all ramps.

APPENDIX II – ARTIFICIAL REEFS



	REEF	COORDINATES	MATERIAL
A-1	The Barb Wire Hole	32^0 14' 43.65" N 92^0 32' 32.66" W	300 wooden pallets grouped in units of 5. Units deployed over an approximate area of 0.5 acre at depths ranging from 9' to 18'.
A-2	Dortch's Brush Pile	$32^0$14' 41.17" N 92^0 32'56.82" W	12 large boat loads of brush and trees. Primarily sweet gum and hickory. Maple and oak included. Trees deployed over an approximate area of 0.5 acre at depths ranging from 11' to 17'.
A-3	Pipeline Tire Reef	32^0 14' 54.07" N 92^0 32' 34.11" W	300 tires grouped in units of 5. Units deployed over an approximate area of 0.5 acre at depths ranging from 9' to 17'.
B-1	Sunbelt Pallet Pile	32^0 14' 534.97" N 92^0 31' 50.75" W	300 pallets grouped in units of 3. Units deployed over an approximate area of 0.5 acre at depths ranging from 9' to 16'.
B-2	Freddy's Brush Pile	32^0 14' 47.37" N 92^0 31' 53.07" W	12 large boat loads of trees. Species primarily sweet gum and hickory. Maple and oak included. Trees deployed over an approximate area of 0.5 acre. Depths range from 8' to 18'.
C-1	Tommy's Pallet Pile	32^0 13' 54.0" N 92^0 29' 57.82" W	600 pallets grouped in units of 3. Units deployed over an approximate area of 1.0 acre at depths ranging from 12' to 20'.
C-2	January Hole	32^0 13' 49.53" N	12 large boat loads of trees. Species primarily sweet gum and hickory.

		92^0 30’ 26.63” W	Maple and oak included. Trees deployed over an approximate area of 0.5 acre at depths ranging from 12' to 19'.
C-3	Firestone Ridge Reef	32^0 14’ 1.2” N 92^0 29’ 37.73”W	300 tires grouped in units of 3. Units deployed over an approximate area of 0.5 acre at depths ranging from 11' to 19'.

APPENDIX III – TYPE MAP HISTORY

CANEY LAKE, JACKSON PARISH

JULY 1989

Caney Lake, Jackson Parish, was surveyed for the presence of aquatic vegetation on July 13 and 14, 1989. See check list below for observed species

Southern Naiad, Najas guadelupensis
Fanwort, Cabomba caroliniana
Bladderwort, Utricularia gibba and Utricularia inflata
Chara, Chara spp.
Filamentous algae Pithophora sp.
Southern water grass, Hydrochloa caroliniensis
Parrots feather, Myriophyllum brasiliense
Duckweed, Lemna minor Wolffia spp.
Hydrilla, Hydrilla verticillata
Small leaf Pondweed, Potamogeton sp.
Large leaf Pondweed, Potamogeton sp.
Water Primrose, Ludwigia repens
White water lily, Nymphaea odorata
Button bush willow, Cephalanthus occidentalis
Salix willow, Salix niger
Frogs-bit, Limnobium spongia
Water shield, Brasenia schreberi
Cattail, Typha spp.
Water pennywort, Hydrocotyle umbellata

The lake was slightly turbid due to recent massive rain and was less than a foot above pool (200msl.). The Secchi disc reading was a 4 ½ feet (54 inches).

Hydrilla verticillata was found near the public boat launch at the dam (see map). Hydrilla's potential adverse impacts on Caney Lake by far exceed all other plant life noted. It will grow in two foot candles of light and continually improves its environment for optimum growth. Hydrilla's area of infestation in Caney will extend to all waters where the necessary light for photosynthesis occurs. It has been found in Toledo Bend growing in waters to an 18 foot depth. Necessary light for Hydrilla growth in Toledo Bend extends much deeper than 18 feet. The thermocline appears to be the factor which determines the depth of growth. Assuming Caney Lake stratifies and forms a thermocline similar to Toledo Bend, then Hydrilla will infest to the top side of the thermocline. If no similar definable thermocline develops in Caney Lake, I would expect all waters 20 to 30 feet to have a severe infestation of Hydrilla in the future. Hydrilla has been found in 60 foot waters in Florida. Once established in a lake or reservoir it becomes the dominate plant and out competes all native and exotic plants found in Louisiana waters.

Control options for Hydrilla should be thoroughly evaluated and immediate action initiated to try and eradicate it from Caney Lake. The only control or eradication option is the use of Herbicides. At this time the Hydrilla is confined to the vicinity of the boat launch and is a minor infestation. Control and probably eradication is possible now due to the limited extend of the infestation.

The dominate vegetation in the south and mid-area of the lake is Southern Naiad, Najas

guadalupensis, Muskgrass, Chara app, and Bladderworts Utricularia gibba and U. inflata. In the Northern end of the lake from the Tennessee pipeline crossing North, the dominate vegetation is fanwort, Cabomba Caroliniana, Southern naiad, Bladderwort and Chara. White water lily, Nymphaea odorata and watershield, Brasenia schreberi is prevalent in the north end and will create access problems in the near future.

Southern naiad, bladderwort and fanwort are the native problematic plants in Caney Lake. Bladderwort is a free floating submerged aquatic plant. Dominate concentrations of bladderwort may render a water body useless for boating and severely restrict fishing activities during early spring to mid summer. Southern naiad is a rooted submersed aquatic plant. Dominant concentrations of naiad will render all water to a ten foot depth useless for boating and fishing. Fringe fishing of mats at the outside edge of the infestation will still exist. Naiad tends to become a nuisance in June and a problem in July which will remain until the end of the growing season. Naiad is an annual plant which reproduces by seeds and fragmentation. It has been noted to take on perennial characteristics in several Louisiana lakes. Fanwort is also a rooted submersed aquatic plant. It had been noted to eleven foot depths in Louisiana waters. Fanwort reproduces by seeds and fragmentation and can create fishing and access problems from late May to the early fall. It is expected that Southern naiad and Fanwort will be replaced by Hydrilla.

The causes of increased weed infestations in reservoirs such as Caney Lake are due to several factors. Probably the two most important are introduction of exotic plants (such as Hydrilla) in an environment ideally suited for their growth and free of natural predators. Second and most important is water level stabilization.

The introduction of Hydrilla into Caney Lake constitutes an important intrinsic change. Natural success ional patterns have been interrupted by the introduction of this exotic plant and it will become the dominate plant.

Interest in the management of aquatic weeds has led to development of a range of control techniques including: Preventive, mechanical, biological and chemical. The techniques should be used in combinations for restoration and maintenance of a desired aquatic balance, not simply to kill weeds.

The most important type of control is preventive. Careful planning in the construction of reservoirs as well as thoughtful considerations of future management practices can be used in preventing aquatic weeds or facilitating in their control.

Large scale mechanical control has not proven feasible. Cost on a per acre basis (up to $1500 per acre) as well as the increase of the infestation due to cut stems re-sprouting overrides any temporary benefits.

Biological control is a selective form of control and has to be considered a calculated risk. There is no biological organism approved for release in Louisiana waters which will control the plant populations. Further complicating the management of Caney Lake is that the watershed is insufficient to fill the reservoir during annual spring rains. This practically precludes the use of drawdowns for management purposes. Drawdowns on Caney Lake probably would be counter productive to lake management goals.

Chemical control of most aquatic vegetation can be accomplished by using selective herbicides. Depending on species of plants, bio mass and water use, one or more annual treatments may be required. A broad band herbicide treatment will cost $134.00 per acre for chemicals. A more specific or selected herbicide treatment will cost up to $285.00 per acre for chemicals. Due to extreme cost, total control of aquatic weeds using herbicides would not be feasible on a cost/benefit ratio. Complete control using herbicides is not the answer to aquatic weed control.

CANEY LAKE, JACKSON PARISH

JUNE 1996

To: BENNIE FONTENOT, Administrator, Inland Fisheries Division
FROM: LOUIE V. RICHARDSON, Aquatic Research and Control Section
RE: JUNE 1996 SURVEY OF AQUATIC PLANTS: CANEY LAKE; JACKSON PARISH

Bennie, per your request, a late June survey was recently made of aquatic plants in Caney Lake. Previous surveys were conducted in August of each year during the peak time of plant coverage and biomass. Plant coverage and biomass presently in Caney does not necessarily reflect what coverage and biomass will be in August. It would be commonly accepted to assume greater coverage and biomass in August; However, with grass carp present in the system, it could be less.

Charlie Dugas and I utilized GPS and the GIS to determine acreage of plant coverage. Four hundred and seventy three acres of emersed plant coverage was mapped in Caney Lake the last 2 weeks of June1996 (map attached). These acres comprise 9.2 percent of the surface acreage of Caney Lake- The mapped vegetation was water shield and white water lily.

A total of 21 species of floating, emersed and submersed plants were found in the lake. Bladderwort was by far the most abundant submersed plant. Chara and Southern Naiad would be third in abundance. Mappable floating, emersed and submersed species were associated with, an a part of, the 9.2% coverage.

There were numerous un-mappable sprigs, clumps and narrow light fringes of plants in waters less than one foot in depth. Notable to me was the presence of hydrilla in many of these areas. Interesting and disturbing was that many of these areas had no hydrilla or other vegetation in August 1995.

As per the Caney Aquatic Management Plan, vegetative coverage goal of 15% (750 acre) states If coverage drops below 15%, and j grass carp should be removed or reduced in made to capture or kill some of the fish. Coverage (9.2%) is now below the established a staff meeting to determine what measures are appropriate. If additional vegetative cover is desired grass carp population will need to be removed.

Caney Creek Reservoir
September 27, 2004

Caney Creek Reservoir, Jackson Parish, was surveyed for the presence of aquatic vegetation on September 21 and 22, 2004. The reservoir was approximately six inches below pool at the time of the survey.

During this year's survey submergent aquatic vegetation (SAV) was observed in small amounts intermittently around the shoreline. The predominant species of SAV found in the lake was bladderwort (Utricularia spp). Other submergent species identified in lesser amounts were fanwort (Cabomba caroliniana), coontail (Ceratophyllum demersum), muskgrass (Chara spp.) and slender pondweed (Potamogeton pusillus). The majority of the aquatic vegetation observed on the day of the survey was comprised of floating and emergent species. The predominant species being water shield (Brasenia schreberi) and to a lesser extent fragrant water lily (Nymphaea odorata) and creeping water primrose (Ludwigia repens). Water shield and creeping water primrose were found in an intermittent fringe out to approximately three feet in depth. The largest stands of water shield and fragrant water lily were observed in the shallow ends of the five Northern coves of Caney Lake. Southern water-grass (Luziola fluitans) was also observed in small patches throughout the lake. Fringes of water hyacinths (Eichhornia crassipes) were observed primarily along the Northwestern shoreline. This infestation was reported to the divisions spray crews so that herbicide applications could be scheduled. Illinois pondweed was found in two small patches in the coves of Hancock Creek and Boggy Branch. Fringes of emergent vegetation such as smartweed (Polygonum spp.), sagittaria (Sagittaria spp.), torpedo grass (Panicum repens), wild taro (Colocasia esculenta) and lizard's tail (Saururus cernuus) were found in a five to twenty foot fringe from the shoreline intermittently throughout the water body. Other aquatic vegetation observed in trace amounts were duckweed (Lemna spp.), Mosquito Fern (Azolla caroliniana), Pickerelweed (Pontederia cordata), spike rush (Eleocharis baldwinii), American lotus (Nelumbo lutea) and Cattail (Typha spp.).

Caney Creek Reservoir
Aquatic Type Map
July 15, 2005

Caney Creek Reservoir, Jackson Parish, was surveyed for the presence of aquatic vegetation on July 13, 2005. Inland fisheries biologists, Scott Longman, Ryan Daniel, and Mike Wood conducted the survey. Observations were made throughout the entire reservoir. The team traveled by boat along the entire 70 mile shoreline. The reservoir was approximately two inches below pool at the time of the survey.

During this year's survey, submergent aquatic vegetation (SAV) was observed in small amounts intermittently around the shoreline and in the backs of coves. The predominant species of SAV found in the lake was bladderwort (*Utricularia spp*). Other submergent species identified in lesser amounts were:

- fanwort (*Cabomba caroliniana*)
- muskgrass (*Chara spp*.)
- slender pondweed (*Potamogeton pusillus*)
- variable leaf milfoil (*Myriophyllum heterophyllum*)

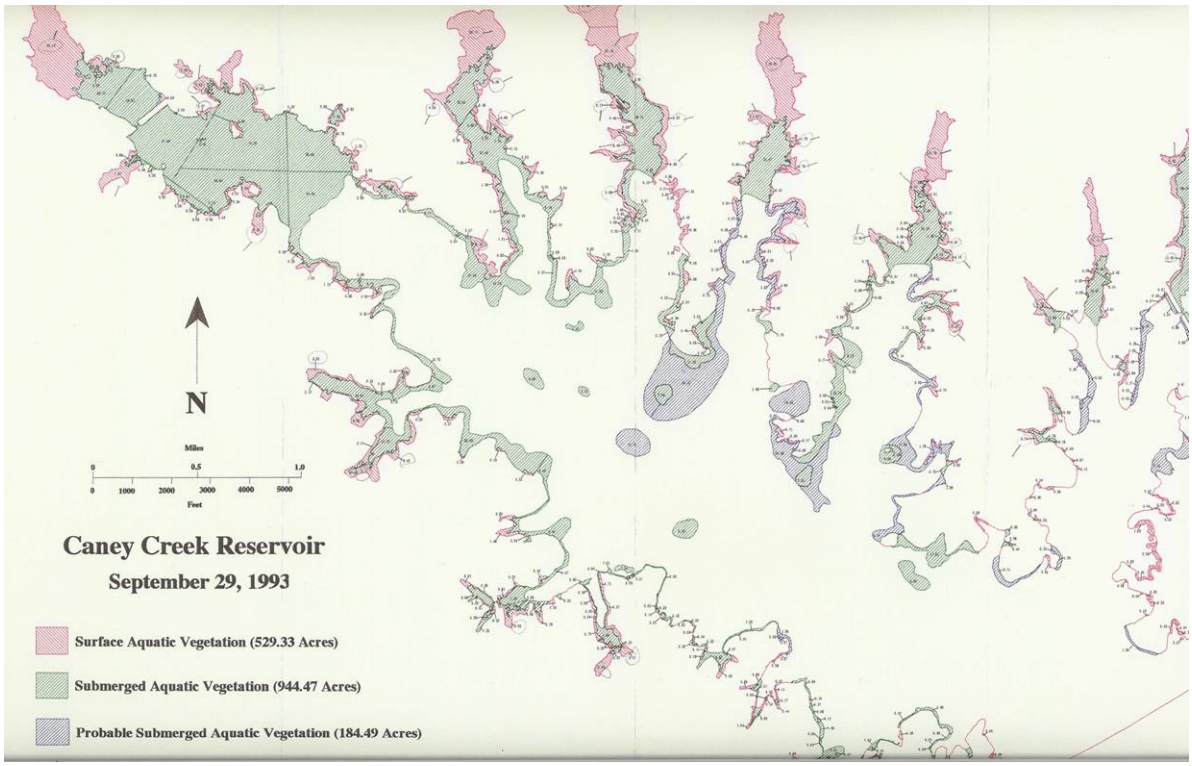
Notably absent species were *Hydrilla verticillata* and coontail (*Ceratophyllum demersum*).

The majority of observed aquatic vegetation was comprised of floating and emergent species. The predominant species being:

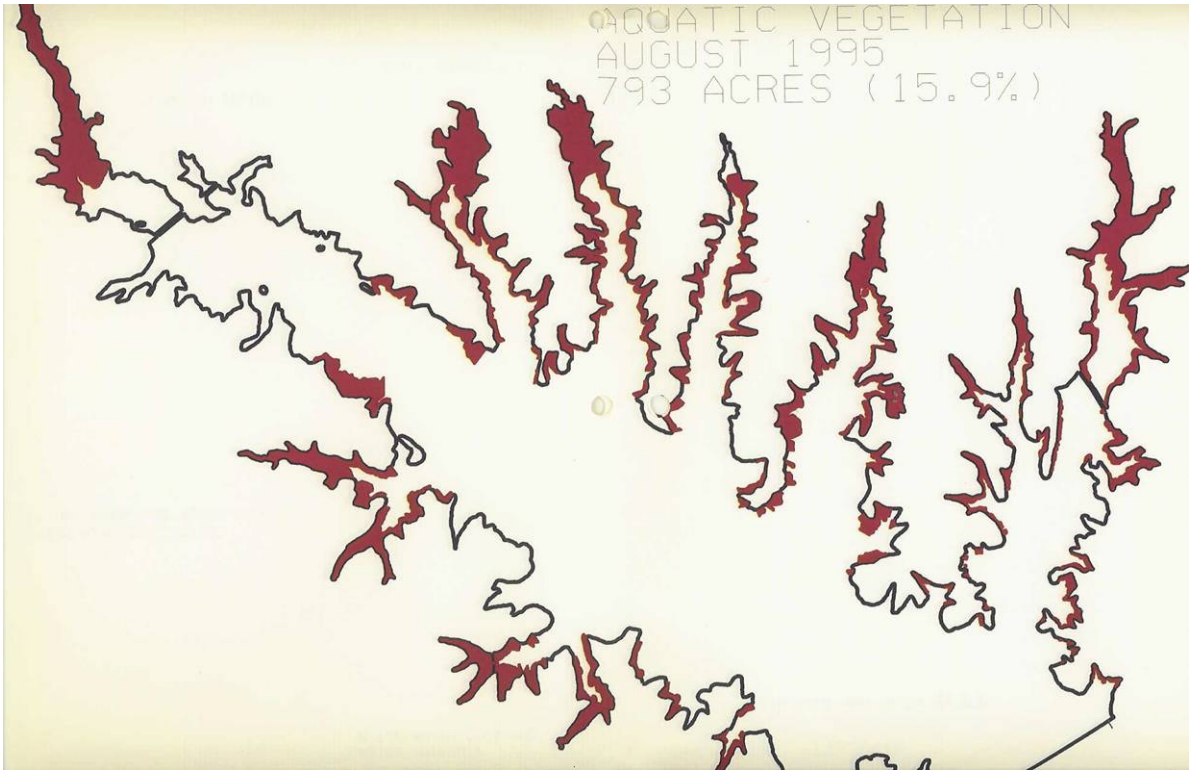
- water shield (*Brasenia schreberi*)
- fragrant water lily (*Nymphaea odorata*)
- creeping water primrose (*Ludwigia repens*)

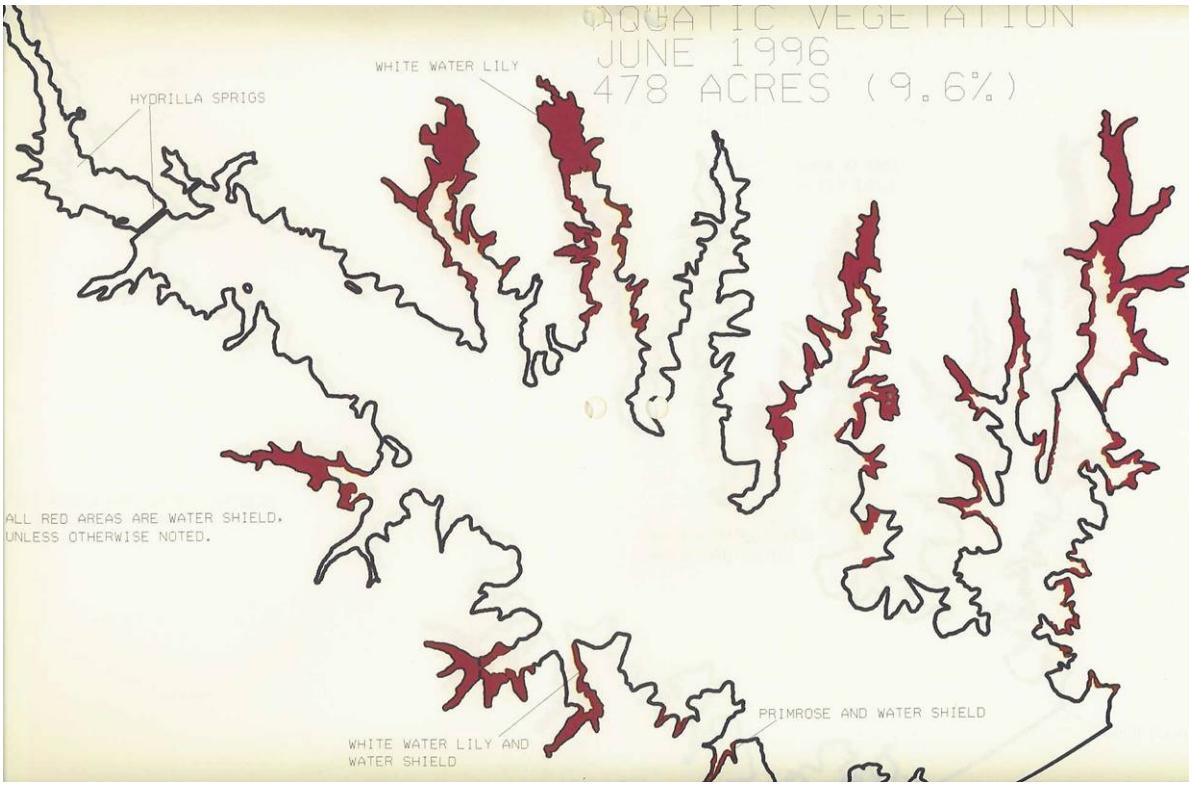
Water shield and creeping water primrose were found in a fringe to approximately three feet in depth. The largest stands of water shield and fragrant water lily were observed in the shallow ends of the five Northern coves. Southern water-grass (*Luziola fluitans*) was also observed in small patches throughout the lake. Fringes of water hyacinths (*Eichhornia crassipes*) were observed primarily along the Northwestern shoreline. As in the 2004 survey, Illinois pondweed was found in two small patches in the coves of Hancock Creek and Boggy Branch. Fringes of emergent vegetation such as smartweed (*Polygonum spp*.), sagittaria (*Sagittaria spp*.), torpedo grass (*Panicum repens*), wild taro (*Colocasia esculenta*) and lizard's tail (*Saururus cernuus*) were found in a five to twenty foot fringe from the shoreline intermittently throughout the water body. Emergent species were observed to have extended coverage from last year's type map, but not significantly. Total aquatic vegetation coverage is estimated to be 5%. Other aquatic vegetation observed in trace amounts were duckweed (*Lemna spp*.), mosquito fern (*Azolla caroliniana*), pickerelweed (*Pontederia cordata*), spike rush (*Eleocharis baldwinii*), American lotus (*Nelumbo lutea*) and cattail (*Typha spp*.), and aquatic liverwort (*Ricciocarpus natans*).

TYPEMAPS 1993 and 1994

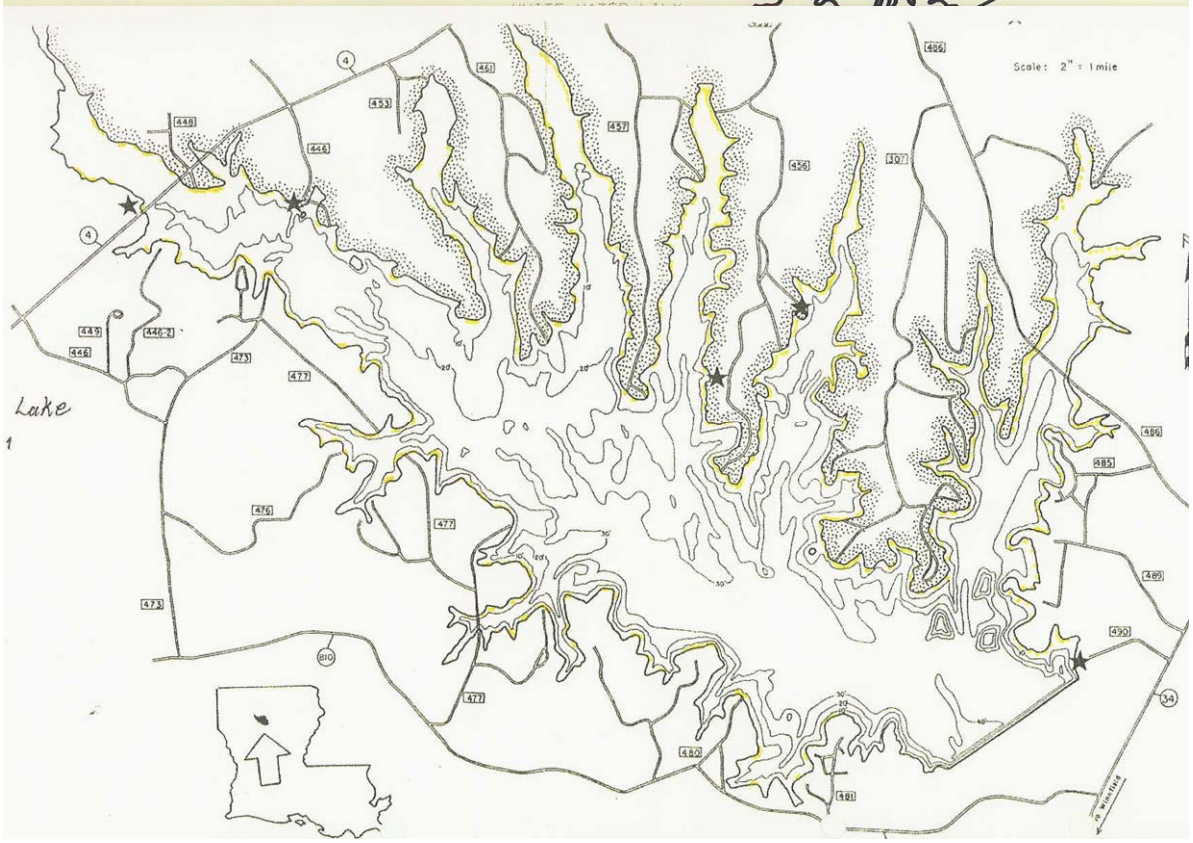


TYPEMAPS 1995 and 1996

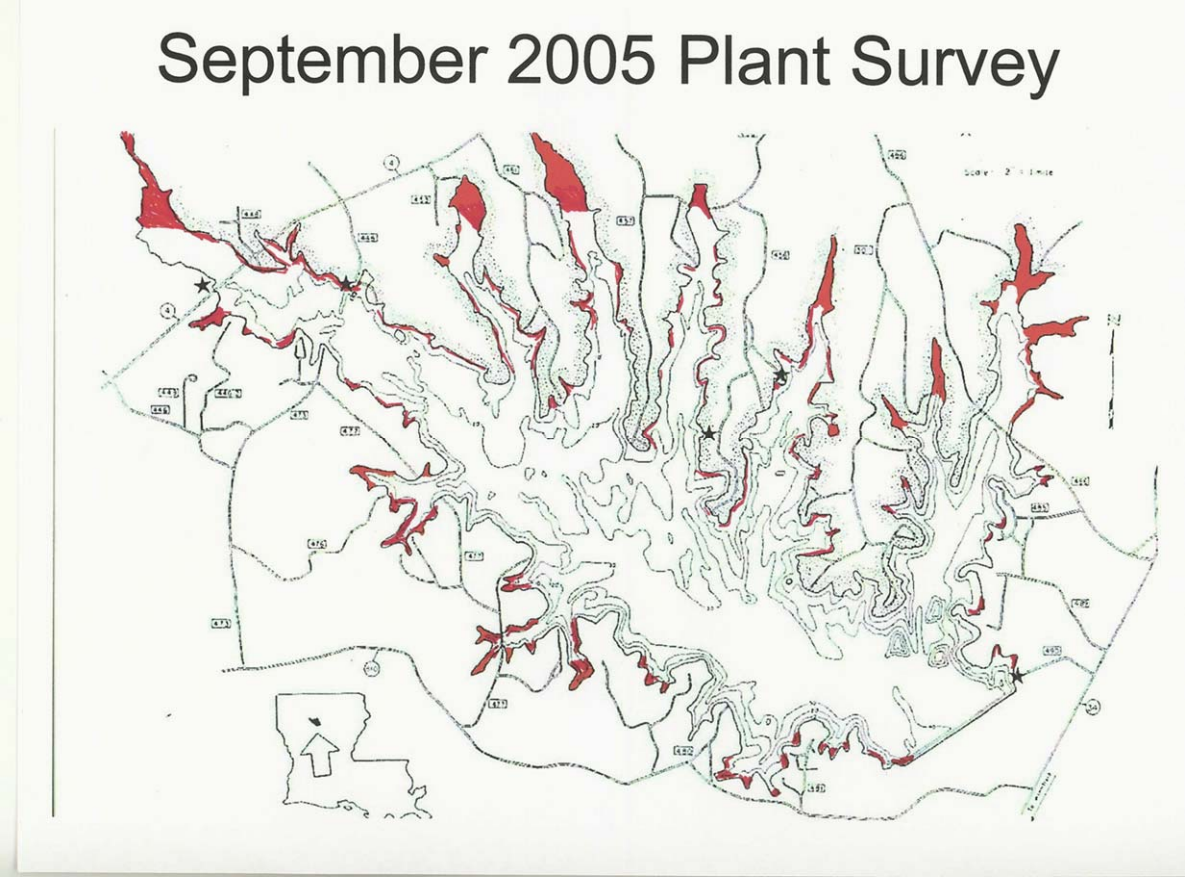




TYPEMAPS 1997 and 2001



TYPEMAP 2005



APPENDIX IV – PRE-IMPOUNDMENT FISH TAXONOMY

Gar Family, LEPISOSTEIDAE
- Spotted gar, *Lepisosteus oculatus* (Winchell)
- Longnose gar, *Lepisosteus osseus* (Linnaeus)

Bowfin Family, AMIIDAE
- Bowfin, *Amia calv*a Linnaeus

Herring Family, CLUPEIDAE
- Gizzard shad, *Dorosoma cepedianum* (Lesueur)
- Threadfin shad, *Dorosoma petenense* (Günther)

Minnow Family, CYPRINIDAE
- Blacktail shiner, *Cyprinella venustus* (Girard)
- Striped shiner, *Luxilus chrysocephalus* Rafinesque
- Ribbon shiner, *Lythrurus fumeus* Evermann
- 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)
- Pugnose minnow, *Notropis emiliae* Hay
- Bullhead minnow, *Pimephales vigilax* (Baird and Girard)

Sucker Family, CATOSTOMIDAE
- Creek chubsucker, *Erimyzon oblongus* (Mitchill)
- Lake chubsucker, *Erimyzon sucetta* (Lacépède)
- Spotted sucker, *Minytrema melanops* (Rafinesque)

Freshwater Catfish Family, ICTALURIDAE
- Black bullhead, *Ameiurus melas* (Rafinesque)
- Yellow bullhead, *Ameiurus natalis* (Lesueur)
- Blue catfish, *Ictalurus furcatus* (Lesueur)
- Channel catfish, *Ictalurus punctatus* (Rafinesque)
- Tadpole madtom, *Noturus gyrinus* (Mitchill)
- 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 notti* (Agassiz)
- Broadstripe topminnow, *Fundulus euryzonus* Suttkus and Cashner Blackstripe topminnow, *Fundulus notatus* (Rafinesque)
- Bayou topminnow, *Fundulus notti* (Agassiz)
- Blackspotted topminnow, *Fundulus olivaceus* (Storer)

Livebearer Family, POECILIIDAE

Western mosquitofish, *Gambusia affinis* (Baird and Girard)
Silverside Family, ATHERINIDAE
Brook silverside, *Labidesthes sicculus* (Cope)
Temperate Bass Family, PERCICHTHYIDAE
Yellow bass, *Morone mississippiensis* Jordan and Eigenmann
Sunfish Family, CENTRARCHIDAE
Flier, *Centrarchus macropterus* (Lacépède)
Banded pygmy sunfish, *Elassoma zonatum* Jordan
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 salmoides floridanus* (Lacépède)
Northern largemouth bass, *Micropterus salmoides salmoides* (Lacépède)
Black crappie, *Pomoxis nigromaculatus* (Lesueur)
Perch Family, PERCIDAE
Bluntnose darter, *Etheostoma chlorosomum* (Hay)
Cypress darter, *Etheostoma proeliare* (Hay)
Logperch, *Percina caprodes* (Rafinesque)

Fishes collected in watershed prior to impoundment of Caney Creek Reservoir. Results in partial fulfillment of requirements for Masters of Science Degree, Ms. Eileen Stevens, NLU, 1986.

APPENDIX V – FISH HEALTH EVENTS

2-17-04 – CORMORANT RELATED FISH KILLS

LDWF Sgt. Duane Taylor reported that he had observed several hundred cormorants feeding and had moved into the area for a closer look. While in the feeding area, he observed that fish were on top of the water in stress. He collected approximately 40 redear sunfish, crappie, and largemouth bass by hand. He reported that the fish would struggle to dive, but soon floated to the top. Sgt. Taylor traveled by boat to other areas of the lake, but saw fish only in the area of cormorant feeding activity.

District II fisheries personnel (M. Wood, R. Daniel, R. Lively) arrived at the site at 10:00am 2-18-04. The weather was sunny and the wind was calm, as it had been the day before. A large number of cormorants were observed at the same site, but were not diving or feeding. No dead fish were found. Stressed fish were found later in the day (while cormorants were actively feeding. Samples were shipped by bus to Dr. John Hawke at LSU in Baton Rouge. Dr. Hawke reported that all of the fish samples had:

- a light parasite load - not significant
- inverted intestines
- distended air bladders
- injury marks caused by birds

Dr. Hawke agreed that the condition of the fish was likely linked to the feeding activity of the cormorants. I suspect that all of the symptoms listed above may be caused as fish flee into the upper reaches of the water column to escape the flock of cormorants. Due to reduced water pressure, gas in their bladder would expand faster that it could be released by the fish in cold water conditions. The resulting condition would essentially render the fish helpless on the surface where it is subject to attack by birds. Gulls were observed taking advantage of the situation. This kill is very similar to a kills reported since February 2001.

LARGEMOUTH BASS VIRUS

Largemouth Bass Virus is one of more than 100 naturally occurring viruses that affect fish but not warm-blooded animals. Although the virus is carried by other fish species, to date, it has produced disease only in largemouth bass. There is no known cure or preventative, as is commonly the case with viruses.

LMBV has been found in bass that show no signs of disease, which suggests that some fish, might be infected but not ever become ill. However, bass kills have been linked to LMBV. Since all documented die-offs occurred from June through September, warm water temperatures are suspected to be a factor. No other common variables seem to exist among lakes where kills occurred.

Most bass infected with LMBV will appear completely normal. In those cases where the virus has triggered disease, dying fish will be near the surface and have trouble swimming and remaining upright. LMBV appears to attack the swim bladder, causing

bass to lose their balance. Diseased fish might also appear bloated. The occurrence of lesions or black spots is not necessarily a symptom of LMBV. Adult bass of two pounds and more seem to be the most susceptible to disease.

Long term effects of LMBV on bass populations are unknown. Indications are, however, that it will not harm fisheries long-term. Surveys on lakes following a kill suggest that fish populations remain within the normal range of sampling variability.

LMBV is not known to infect any warm-blooded animals, including humans.

Caney Creek Reservoir LMBV Sampling
Fall 2000 – Largemouth bass virus sampling conducted. 11% of 64 fish positive.
Fall 2003 - LMBV sampling conducted - 46 bass sample – all negative.
No LMBV related kills have been documented in Caney.

CANEY LAKE CRAPPIE SYMPTOMS

July 2004: Received call from Caney angler concerning fish that looked healthy externally but had an unpleasant visual appearance when cleaned. Symptoms include yellowish coloration in the flesh with concentrations of yellow lipid material at the base of the fins and below the abdominal cavity. Bruise-like lesions were located randomly in the filets on some of the fish. See attached photo. Samples were collected for subsequent transport to Dr. John Hawke with the LA Aquatic Lab @ LSU.

August 3, 2004 - Received preliminary diagnosis from Dr. Hawke. "Symptoms were suspected to be diet related."

Fall – Winter 2004 - No symptoms observed.

May, 2005: received calls from anglers concerning symptoms in Caney crappie. Collected crappie and shipped to Dr. Hawke for another look.

June 5, 2005: received preliminary findings from Dr. Lomax from the Department of Veterinary Pathology, LSU Baton Rouge listing several possibilities:
a) Vitamin E deficiency, b) Diet, c) Pesticide or natural toxin.

June 6, 2005: Conference call with representatives from DHH, LSU, DEQ, and LDWF to review the Lomax Pathology Report. Conference call included: Mike Wood, Joseph Shepard, Tim Morrison (LDWF), Dianne Dugas (DHH), Chris Piehler (DEQ), Dr. Lomax, Dr. John Hawke, Dr. Baumgartner, (LSU, Veterinary Pathology).

Some of the comments provided in the report prompted our concern and the need to involve DHH and DEQ in a discussion of a possible public fish advisory on crappie consumption in Caney Lake. The discussion was centered on possible causes of tissue discoloration and lesions found on some of the fish examined. Mike Wood explained the process he went through to harvest fish samples and send them to LSU for analysis. He also provided a history perspective and his observations on crappie in Caney Lake. Mike noted that crappie seemed to be the only species affected and the symptoms weren't present during the winter. Dr. Hawke observed that the smaller fish seemed to have the greatest possibility of having the symptoms. Dr. Lomax reviewed his findings and answered any questions about his results.

After much discussion it appeared that a dietary deficiency of vitamin E was thought to be the most likely cause of the yellow tissue pigmentation and possibly the cause of the lesions found in the crappie samples from Caney Lake. Dr. Lomax suggested that test should be conducted on crappie liver samples to show whether vitamin E is in fact at low levels. Mike Wood will acquire crappie samples this week to send to LSU for vitamin E testing. Mike is also collecting additional fish to send to Auburn University for a second opinion on the cause of the yellow pigmentation in the tissue of crappie from Caney Lake.

The possibility of pesticides causing the yellow tissue discoloration was also discussed. It was noted that there wasn't much agriculture in the area of the lake and if pesticides were the cause, other species should also be affected.

It was agreed upon by LDWF, DHH and DEQ representatives to wait until the vitamin E deficiency test was completed before any decisions would be made on whether or not a public fish consumption notice would be necessary. Dr. Lomax also stated that we should gather more information before considering a public fish advisory. It was also taken into consideration that crappie from Caney Lake showed the sample symptoms last year at this time.

June 8, 2005 - Additional samples collected including other fish species (crappie, yellow bass, redear sunfish, and largemouth bass) and fish from Lake D'Arbonne for comparison.

June 10, 2005 – Samples submitted to LSU, who in turn sent livers from those fish to Texas A&M for Vitamin E analysis. Whole crappie samples also sent to Auburn.

June 22, 2005 – Results received. No symptoms found in fish other than crappie from Caney.

The cause of the symptoms was not conclusively determined by LSU, Auburn, or Texas A&M. However, items in the fish's diet are strongly suspected. Symptoms were most prevalent in smaller crappie. Items found in the stomachs of the smaller crappie were rich in orange, yellow, and red pigments. Larger crappie had stomach contents predominated by small fish. The seasonal nature of the symptoms (spring-summer) also suggest the influence of food items available at that time of the year. Pesticide toxicity was ruled as improbable. No significant pathogens were identified, including LMBV. No human pathogens were detected in the samples. No human health risk is indicated.