LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

PART VI -A

WATERBODY MANAGEMENT PLAN SERIES

LAKE FIELDS, LAKE LONG COMPLEX

HISTORY & MANAGEMENT ISSUES

CHRONOLOGY

November 2013- Prepared by
Manuel Ruiz, Biologist, District 7

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GENERAL INFORMATION

Description

The Lake Fields/Lake Long complex are two shallow natural coastal lakes interconnected by a series of made-made canals located in the Terrebonne Basin and situated between the Bayou Lafourche ridge and the Bayou Grand Coteau ridge. The complex is connected to Bayou Lafourche via Company Canal in Lockport to the east and north of the Gulf Intracoastal Waterway (GIWW). The complex is tidally influenced via the GIWW and Bayou Terrebonne. The surrounding area is classified as "floatant" fresh marsh (thick/floating mats of vegetation with open water beneath) consisting of shallow ponds, open marsh grass areas, and extensive wax myrtle thickets with few stands of bottomland hardwoods along canal spoil banks within the complex.

Size

Lake Long: 2,313 acres
Lake Fields: 900 acres
Company Canal: approximately 15 miles long and 250 feet wide.

Water shed

The drainage basin is 52,214 acres originating just south of Thibodaux and consists of agriculture/cropland/grassland, fresh marsh and wetland forests. The area is sparsely populated except the Bayou Lafourche corridor.

Parish located

Lafourche Parish (APPENDIX I Map and parishes).

Border waters

Upper and lower Bayou Folse (Camp Canal)
Bayou Blue
Hollywood Canal
Commercial Canal
Bayou Dumar
Little Lake
Company Canal
Gulf Intracoastal Waterway

Lake Authority

Fish and wildlife resources in Lake Fields and Company Canal are managed by the Louisiana Department of Wildlife and Fisheries (R.S. 36.610). Rachel Walley, District 7 - Inland Fisheries Biologist Manager (225-765-2336) is the contact for LDWF.

Title 36
RS 36:610
§610. Transfer of agencies to Department of Wildlife and Fisheries
C. Notwithstanding any provisions of R.S. 56:801 to the contrary, the game and fish

commissions created by the following Acts, as amended, are hereby abolished, and their powers, duties, functions, and responsibilities are transferred to the secretary of the Department of Wildlife and Fisheries and hereafter shall be exercised and performed as provided in Part IV of Chapter 22 of this Title, and the game and fish preserves created by the following Acts, as amended, are hereby placed within the Department of Wildlife and Fisheries and shall exercise and perform their powers, duties, functions, and responsibilities as provided for agencies transferred in accordance with the provisions of Part II of Chapter 22 of this Title. Any parish or parishes, by formal resolution of the governing authority of each parish affected, pursuant to R.S. 56:721 et seq. may appoint a game and fish commission which may exercise those powers, duties, and functions provided in R.S. 56:721 et seq. in relation to the game and fish preserves for which commissions are hereby abolished.

(7) Lake Fields Game and Fish Management Commission (Act No. 379 of 1966 Regular Session, as amended)

Lafourche Parish Game and Fish Commission

The Lafourche Parish Game and Fish Commission (LPGFC) has been granted the authority (R.S. 56:722.1) to manage and govern the Lake Fields/Lake Long Game Preserve. The LPGFC can be contacted at:

Mail:	LPGFC	Phone:	985-532-3131
	P.O. Box 215	Email:	commission@lafourchegfc.org
	Lockport, LA 70374	Web:	www.lafourchegfc.org

Title 56
RS 56:722.1
§722.1. Game and fish commissions, Lafourche Parish

A. The governing authority of Lafourche Parish may appoint one or more game and fish commissions, each of which may be composed of seven citizens and taxpayers of the parish, whose terms shall be at the pleasure of the governing authority of Lafourche Parish, and who shall serve without compensation. The commission may make rules and regulations as provided in R.S. 56:722, including provisions for leasing of land within Lafourche Parish which is necessary to carry out the provisions of this Section.

B. The Lafourche Parish Game and Fish Commission may govern, regulate, and control Lake Long in Lafourche Parish in the manner provided in this Subpart.

Added by Acts 1982, No. 717, §1; Acts 2010, No. 384, §1.

ACCESS

Table 1. Boat launching facilities Lake Fields/Lake Long, LA complex.

Name	Coordinates	Public
Texas Gulf Road Launch (Company Canal)	29.56669° -90.59782°	Yes
Lockport Launch (Canal Street)	29.64548° -90.54304°	Yes
Butch Hill Launch on Bayou Cut Off (Hwy 652)	29.68086° -90.58815°	Yes

(APPENDIX II – MAP OF LANDINGS)

Piers
None

State/Federal facilities
Lake Field/Lake Long Game and Fish Preserve (Preserve):
The Preserve includes approximately 3,060 acres around Lake Fields and 3,627 acres around Lake Long.

PHYSICAL DESCRIPTION

Shoreline length
Approximately 28 miles

Timber type
Wax myrtle thickets and bottomland hardwoods

Average depth
3 feet

Water fluctuation
The Lake Fields/Lake Long complex is a freshwater system with tidal influence from Company Canal via the GIWW. The complex receives its freshwater from the GIWW, Bayou Lafourche via Company Canal, Bayou Folse, Hollywood Canal, and several oil exploration canals. During periods of drought or low Atchafalaya River discharge, saltwater intrusion may occur from the south through Company Canal.

There are two gauges located within the complex:

USGS07381350 Company Canal at Hwy 1 at Lockport, LA
http://waterdata.usgs.gov/la/nwis/uv/?site_no=07381350&PARAmeter_cd=00065,72020,63160,00060

USGS 07381355 Company Canal at Salt Barrier near Lockport, LA
http://waterdata.usgs.gov/la/nwis/uv/?site_no=07381355&PARAmeter_cd=00065,72020,63160,00060

Shoreline development
Less than 1% of the shoreline is developed by landowners. The majority occurs on the spoil bank of lower Bayou Folse and consists of camps that are only accessible by boat.

EVENTS / PROBLEMS

- Early dredging of drainage canals within and outside of the complex have caused Lake Fields and Lake Long to reduce in size leading to the expansion of "floatant" marsh around their respective shorelines.
- The construction of Mississippi River levees and a dam across Bayou Lafourche at the Mississippi River has led to poor water quality and habitat loss in the complex.
- Dredging of the Gulf Intracoastal Waterway (GIWW) and the Houma Navigation Canal (HNC) has provided a conduit for saltwater intrusion into the complex from the lower basin.
- Early reclamation projects to extend farm land have also affected hydrology within the complex.
- Restoration projects beginning in the 1970's attempted to restore the hydrology and improve water quality and habitat within the complex.

MANAGEMENT ISSUES

AQUATIC VEGETATION

Nuisance species
History – Lake Long has historically been treated for aquatic vegetation by the United States Army Corps of Engineers (USACE). Aquatic vegetative complaints in the Lake Fields/Lake Long complex are primarily associated with water hyacinth. This vegetation enters the complex through Company Canal via Bayou Lafourche. Control efforts in Bayou Lafourche are limited due to the resolution prohibiting the use of 2,4-D between Raceland and Valentine, preventing aquatic vegetation control at the source of the infestation (**APPENDIX III**).

Estimates of vegetation coverage (as of September 30, 2013) are provided below:

Lake Fields-

Problematic Species-

Giant Salvinia (*Salvinia molesta*) – 30 acres
Water Hyacinth (*Eichhornia crassipes*) – 300 acres
Alligator weed (*Alternanthera philoxeroides*) – 100 acres
Pennywort (*Hydrocotyle ranunculoides*) – 20 acres
Sedge (*Cyperaceous spp*.) – 20 acres
Common Salvinia (*Salvinia minima*) – 30 acres
Hydrilla (*Hydrilla verticillata*) – 50 acres

Beneficial Species-

Coontail (*Ceratophyllum demersum*) – 100 acres
Fanwort (*Cabomba caroliniana*) – 75 acres

Lake Long-

Problematic Species-

Giant Salvinia (*Salvinia molesta*) – 50 acres
Water Hyacinth (*Eichhornia crassipes*) – 200 acres
Alligator weed (*Alternanthera philoxeroides*) – 80 acres
Pennywort (*Hydrocotyle ranunculoides*) – 75 acres
Sedge (*Cyperaceous spp*.) – 50 acres
Common Salvinia (*Salvinia minima*) – 50 acres
Hydrilla (*Hydrilla verticillata*) – 50 acres
Eurasian Water Milfoil (*Myriophyllum spicatum*) – 50 acres

Beneficial Species-

Coontail (*Ceratophyllum demersum*) – 200 acres
Fanwort (*Cabomba caroliniana*) – 100 acres

Company Canal-

Problematic Species-

Giant Salvinia (*Salvinia molesta*) – 20 acres
Water Hyacinth (*Eichhornia crassipes*) – 250 acres
Alligator weed (*Alternanthera philoxeroides*) – 20 acres
Pennywort (Hydrocotyle ranunculoides) – 20 acres
Sedge (*Cyperaceous spp.)* – 20 acres
Common Salvinia (*Salvinia minima*) – 20 acres
Hydrilla (*Hydrilla verticillata*) – 30 acres

Beneficial Species-

Coontail (*Ceratophyllum demersum*) – 50 acres
Fanwort (*Cabomba caroliniana*) – 30 acres

Control Measures

Biological Control
Giant salvinia weevils were stocked throughout this area in 2011, March 2012, and in September 2012. An estimated 160,000 weevils were released. Weevil damage to plants was evident during field observations.

Chemical Control
Lake Fields is sprayed about 1-2 times per week during the growing season. Water hyacinth is the majority of the problem with an average of 1,400 acres treated annually. Alligatorweed, pennywort, giant salvinia, common salvinia, and sedge combine for about 200 acres annually (Table 2).

Lake Long is shallow and has a submerged vegetation problem each year. However, floating vegetation is the primary problem. It accumulates on the fringe of the main lake and is problematic in the canal system on the southeast side of the lake.

Company Canal is sprayed 1-2 times per week during the growing season. Water hyacinth is the major problem here, with an average of approximately 600 acres treated annually. Alligator weed, pennywort, giant salvinia, common salvinia, and sedge combine for about 300 acres of herbicide application annually.

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 (Table 3).

Table 2. Foliar herbicide treatments conducted on Lake Fields and Lake Long, LA for the time period 2005 - 2012.

LAKE FIELDS AND LAKE LONG ACRES AQUATIC VEGETATION TREATED BY YEAR								
SPECIES	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**
Giant Salvinia						210		
Water Hyacinth	757	1,079	764	762	2,077	1,742	1,378	2,903
Alligator weed			157	65	20	89	195	96
Pennywort	32	36	172	35	61	44	163	39
Sedge	4	33	5	20	41	25	129	596
Common Salvinia		57	13	18	46	120	3	16
TOTAL	793	1,205	902	900	2,245	2,230	1,868	3,650

Table 3. Herbicide treatments in the Lake Fields and Lake Long area, Louisiana 2012.

LAKE FIELDS/LAKE LONG COMPLEX ACRES OF AQUATIC VEGETATION TREATED IN 2012			
SPECIES	**ACRES**	**HERBICIDES**	**APPLICATION RATES**
Water hyacinth	2,903	2,4-D	0.5 gal/acre
Alligator weed	96	2, 4-D	0.5 gal/acre
Pennywort	39	2, 4-D	0.5 gal/acre
Sedge	596	Diquat	0.75 gal/acre
		Non-ionic surfactant	0.25 gal/acre
Common Salvinia	16	Diquat	0.75 gal/acre
		Non-ionic surfactant	0.25 gal/acre
TOTAL	3,650		

Limitations

Lakes Fields and Lake Long are shallow, natural coastal lakes that can be difficult to spray. Tidal influence can move floating plants around and interfere with herbicide treatments. Floating vegetation (primarily water hyacinth) enters Company Canal via Bayou Lafourche. In 2009, the Lafourche Parish Council passed a resolution requesting the control of water hyacinth in Bayou Lafourche between Raceland and Valentine by other methods than spraying 2,4-D. Due to the resolution prohibiting the use of 2,4-D in Bayou Lafourche between Raceland and Valentine, aquatic vegetation is controlled with glyphosate at the source (**APPENDIX III**).

HISTORY OF REGULATIONS

Standardized Regulations
Statewide standard commercial and recreational regulations apply.
http://www.wlf.la.gov/regulations

FISH KILLS / DISEASE HISTORY

Hurricanes and tropical storms are known to cause fish kills in the area. However, no official reports or investigations are on record.

CONTAMINANTS / POLLUTION

Water quality
No advisories are in effect for the area.

Fish consumption advisory
No advisories are in effect for the area.

BIOLOGICAL

Fish sampling
To monitor the sport fishery of Lake Fields and Lake Long, LDWF initiated standardized sampling in 1996 (Table 3). In the spring of 2013, the Lafourche Parish Game and Fish Commission (LPGFC) initiated a restoration project to restore the Lake Fields ecosystem. With the implementation of the project, sampling efforts for the next three years have been revised to spring and fall electrofishing annually to monitor resulting effects to the sports fishery.

Table 4. Historical, current and proposed sampling efforts on the Lake Fields and Lake Long Complex, LA from 1996 – 2017.

LAKE FIELDS AND LAKE LONG SAMPLING	
1996	Lake Long – Electrofishing – 3 stations (2 spring and 1 fall) Lake Fields – Electrofishing – 3 stations (spring and fall)
2005	Lake Fields – Electrofishing – 1 station (spring)
2008	Lake Long – Electrofishing – 2 stations (spring) Lake Fields – Electrofishing – 3 stations (spring)
2009	Lake Long – Electrofishing – 3 stations (spring and fall) Hoop Nets – 2 stations (spring) Lead Nets – 2 stations (spring) Lake Fields – Electrofishing – 5 stations (spring)
2010	Lake Long – Electrofishing – 3 stations (spring and fall)
2011	Lake Fields – Electrofishing – 4 stations (spring and fall)
2013	Lake Long – Electrofishing – 4 stations (spring and fall) Lake Fields – Electrofishing – 4 stations (spring and fall)
2014	Lake Long – Electrofishing – 4 stations (spring and fall) Lake Fields – Electrofishing – 4 stations (spring and fall)
2015	Lake Long – Electrofishing – 4 stations (spring and fall) Lake Fields – Electrofishing – 4 stations (spring and fall)
2016	Lake Long – Electrofishing – 4 stations (spring and fall)
2017	Lake Fields – Electrofishing – 4 stations (spring and fall)

Stocking History

There has been no stocking of fish in the Lake Fields/Lake Long Complex.

Species profile

A list of species collected or known from Lake Fields and Lake Long is found in Table 5 below:

Table 5. Family, Scientific and Common Names of fish species collected or known from the Lake Fields, Lake Long complex.

Amiidae – bowfin
Amia calva – bowfin
Centrarchidae - sunfishes
Lepomis miniatus - redspotted sunfish
Lepomis megalotis - longear sunfish
Lepomis gulosus – warmouth
Lepomis macrochirus – bluegill
Lepomis microlophus - redear sunfish
Micropterus salmoides –northern largemouth bass
Pomoxis nigromaculatus – black crappie
Clupeidae - herrings
Brevoortia patronus – Gulf menhaden
Dorosoma cepedianum - gizzard shad
Dorosoma petenense – threadfin shad
Cyprinidae - carps and minnows
Notemigonus crysoleucas – golden shiner
Eleotridae – sleepers
Dormitator maculatus – fat sleeper
Engraulidae – anchovies
Anchoa mitchilli – bay anchovy
Ictaluridae - North American catfishes
Ameiurus natalis – yellow bullhead
Ictalurus furcatus - blue catfish
Ictalurus punctatus - channel catfish
Pylodictis olivaris - flathead catfish
Lepisosteidae - gars
Lepisosteus oculatus – spotted gar
Mugilidae – mullets
Mugil cephalus – striped mullet
Sciaenidae – drums
Micropogonias undulates – Atlantic croaker
Sciaenops ocellatus – red drum

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.

Largemouth bass genetics

No largemouth bass from the complex have been tested for the Florida genome to date.

Threatened/endangered/exotic species

Asian Carp (*Hypophthalmichthys molitrix* and *H. nobilis*) may have entered the complex via the GIWW/Atchafalaya River connection. No confirmation at this time.

ANGLER SURVEYS

No angler surveys have been conducted in the Lake Fields/Lake Long Complex

HYDROLOGICAL CHANGES

- Dredging of Company Canal in 1823 and re-dredged again in 1905.
- Drainage canals were dug in the early 1900's to improve drainage from the Lafourche ridge.
- Reclamation projects in the early 1900's extended farm lands on the Lafourche Ridge into the freshwater marshes.
- The U.S. Corps of Engineers dredged the existing GIWW route from Larose to Bayou Terrebonne near Bourg around 1949. Terrebonne Parish dredged the Houma Navigation Canal (HNC) in 1962. Both waterways have provided a conduit for saltwater intrusion from the lower basin.
- Upper Bayou Folse watershed project took place between 1960 and early 1970 by the U.S. Department of Agriculture Soil Conservation Service. The project deepened Bayou Folse and Cut-Off Canal for additional flow capacity, added levees and pump stations, and diverted water from the 40-arpent canal to Bayou Folse as well as other drainage improvements. The project had an adverse impact to water quality and habitat in Lake Fields and surrounding habitat as a result of the increased nutrient-laden, poor quality water entering the complex.
- Restoration projects began in the 1970's to repair cuts in the lower Bayou Folse shoreline. Additional shoreline repairs were made to west shoreline of Bayou Folse.
- Lower Bayou Folse was dredged in 1985 and the western shoreline reconstructed. The project resulted in improved water quality in Lake Fields and increased the presence of submerged aquatic vegetation (SAV) within the lake.
- Lower Bayou Folse was dredged a second time in 1992, but did not have the same positive results due to the fact that less material was dredged from the bayou as had been removed in 1985.
- The Company Canal Weir was constructed in 2003 as a means to protect drinking water from Bayou Lafourche. It is located below Lake Fields on Company Canal and is designed to prevent saltwater intrusion into Bayou Lafourche. The structure may be closed during periods of high salinity.
- The LPGFC began a restoration plan in the spring of 2013 for Lake Fields. Completion of the project will allow watershed runoff to flow around Lake Fields via Bayou Dumar and Bayou Folse and flow into Company Canal. The goal of the project is to reduce inflow of nutrient laden waters into Lake Field and improve the water quality and reduce submerged aquatic vegetation growth.

WATER USE

Hunting
Yes

Skiing
Yes in Company Canal

Scuba Diving
No

Swimming
Yes

Irrigation
No

Fishing
Yes

Boating
Yes

APPENDIX I

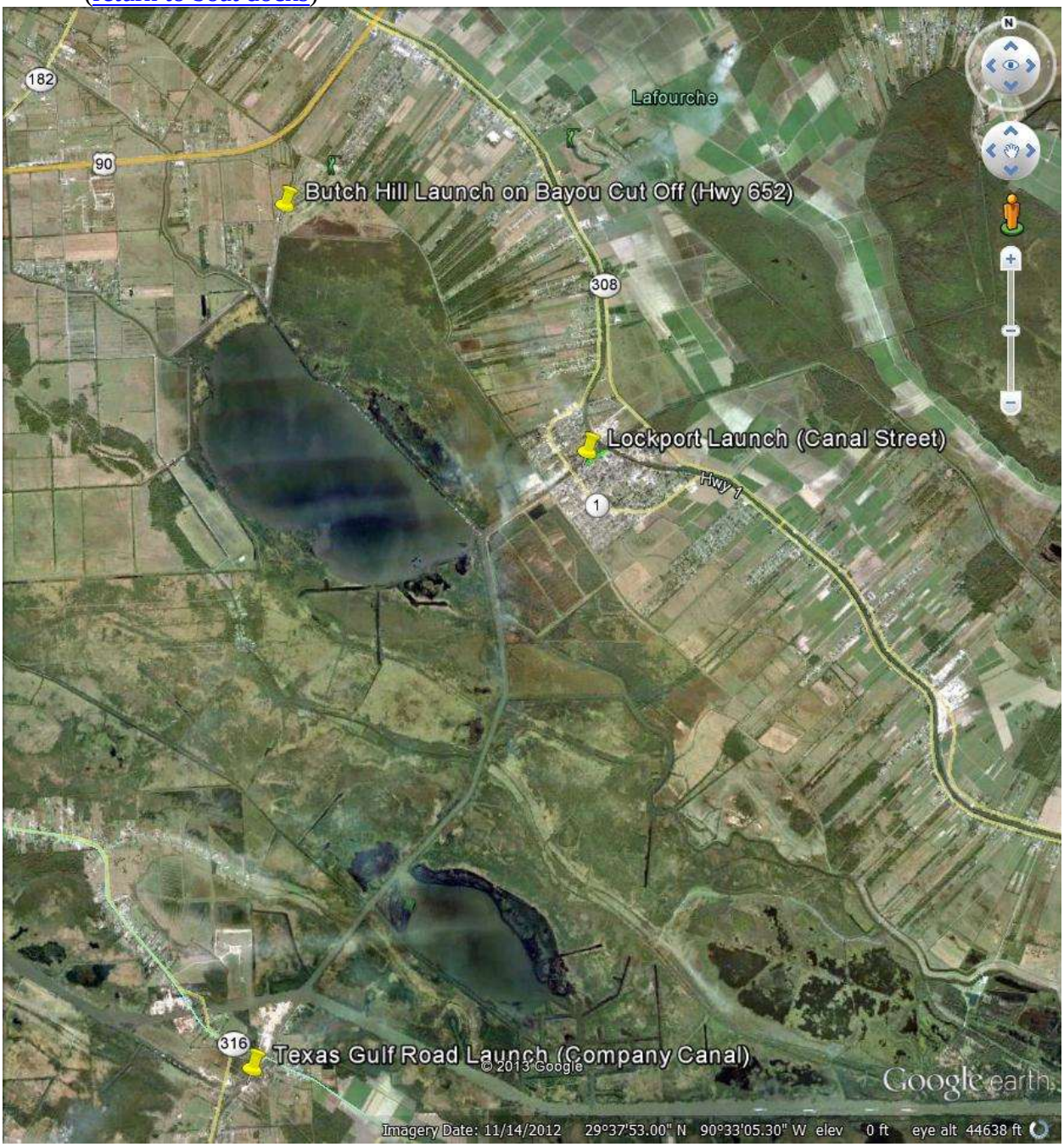
MAP AND PARISHES

(Return to parish)

APPENDIX II

MAP AND LANDING

(return to boat docks)



APPENDIX III

(return to aquatic vegetation)

On motion by Phillip Gouaux, and seconded by Joe Fertitta, the following resolution was introduced and adopted:

RESOLUTION NO. 09-202

RESOLUTION REQUESTING THAT THE CONTROL OF WATER HYACINTH IN BAYOU LAFOURCHE BETWEEN RACELAND AND VALENTINE BE CONTROLLED BY METHODS OTHER THAN THE SPRAYING OF 2-4-D.

WHEREAS, it is the duty upon oath that the Governing Authority and State Officials address concerns dealing with the general health, safety and welfare of the citizens and said resolution satisfies this criteria; and

WHEREAS, the chemical 2-4-D has been proven to be a cancer causing carcinogen; and

WHEREAS, the drinking water for Lafourche Parish and a sizeable portion of Terrebonne Parish comes from Bayou Lafourche in the area stated above; and

WHEREAS, we the Lafourche Parish Council feel that in the interest of the safety of the people of our great Parish request that other methods should be used to control any and all water type vegetation.

BE IT RESOLVED, by the Lafourche Parish Council convened in regular session on June 9, 2009, that it does hereby request that the control of water hyacinth in Bayou Lafourche between Raceland and Valentine be controlled by methods other than the spraying of 2-4-D.

BE IT FURTHER RESOLVED, that a certified copy of this resolution be forwarded to the Louisiana Department of Wildlife and Fisheries; and the Office of the Parish Administrator.

This resolution having been submitted to a vote, the vote thereon was as follows:

YEAS: Mr. Jerry Jones
Mr. Michael Delatte
Mr. Louis Richard
Mr. Joseph "Joe" Fertitta
Mr. Matt Matherne
Mr. Lindel Toups
Mr. Phillip Gouaux
Mr. Rodney Doucet
Mr. Daniel Lorraine

NAYS: None

ABSENT: None

And the resolution was declared adopted this 9th day of June, 2009.

JERRY JONES, CHAIRMAN
LAFOURCHE PARISH COUNCIL

CARLEEN B. BABIN, COUNCIL CLERK
LAFOURCHE PARISH COUNCIL

* * * * * * * * * * *

I, CARLEEN B. BABIN, Council Clerk for the Lafourche Parish Council, do hereby certify that the foregoing is a true and correct copy of Resolution No. 09-202, adopted by the Assembled Council in Regular Session on June 9, 2009, at which meeting a quorum was present.

GIVEN UNDER MY OFFICIAL SIGNATURE AND SEAL OF OFFICE THIS 29TH DAY OF JUNE, 2009.

CARLEEN B. BABIN, COUNCIL CLERK
LAFOURCHE PARISH COUNCIL