

LOUISIANA DEPARTMENT OF WILDLIFE & FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

AQUATIC VEGETATION CONTROL PLAN

LAKE ARTHUR AND LOWER MERMENEAU RIVER



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Lake Arthur is a natural lake created by the Mermentau River. It is shallow and generally turbid due to wind action and agricultural runoff (rice). It has little tidal influence. The town of Lake Arthur is located on the western shore of the lake. Shorelines consist primarily of cypress swamps and residences. The Mermentau River from Lake Arthur to Grand Lake is also included in this plan.

Water body Information

Waterbody Type:

Natural lake

Parish/Location:

Jefferson Davis and Vermillion parishes

Date Created:

N/A, natural waterbody

Size (surface acres):

4,131 acres

Watershed Ratio:

292: 1

Water Control Structures:

N/A

Ownership:

State of Louisiana owns the water bottoms and the Louisiana Department of Wildlife & Fisheries (LDWF) manages the fish and wildlife resources.

Bank Elevation:

Approximately 1.5 ft. MSL

Average Depth – 5ft.

Stakeholders:

The city of Lake Arthur is the largest stakeholder, and is primarily concerned with drainage and flooding issues. The lake is utilized for recreational and commercial fishing, waterfowl hunting, recreational boating, and commercial navigation. Most aquatic weed complaints are generated by shoreline residents. Alligator weed and water hyacinth are also treated regularly to promote access to camps and residences (Table 1).

Past Control Measures:

Biological:

In fall 2012, approximately 4,000 adult giant salvinia weevils were stocked at three locations, with another 11,000 stocked at nine locations in spring 2013. Damage to giant salvinia from the weevils has been documented, and the 2014 assessment indicated a reduction in total giant salvinia biomass.

Chemical:

Historically, water hyacinth, alligator weed, and pennywort were treated with 2,4-D (0.5 gal/acre), and common salvinia was treated with glyphosate (0.75 gal/acre) or diquat (0.75 gal/acre). Currently, water hyacinth is still treated with 2,4-D (0.5 gal/acre), while *Salvinia spp.* are treated with a mixture of glyphosate (0.75 gal/acre) and diquat (0.25 gal/acre) with Turbulence surfactant (or approved equivalent, 0.25 gal/acre) during the period from April 1 to October 31 each year. Alligator weed is treated with imazapyr at 0.5 gal/acre with Turbulence surfactant (or approved equivalent, 0.25 gal/acre).

Table 1. Lake Arthur and lower Mermentau River herbicide treatment history 2005-2017.

Year	Number of Treatments*	Acres Treated	Primary Vegetation Treated
2005	8	132	Alligator weed, Water Hyacinth
2006	15	212.4	Water Hyacinth, Alligator weed, Common Salvinia
2007	21	288.5	Water Hyacinth, Alligator weed, Pennywort, Parrot's Feather, Common Salvinia
2008	15	320.17	Water Hyacinth, Alligator weed, Common Salvinia, Pennywort
2009	45	1047.6	Water Hyacinth, Alligator weed, Common Salvinia, Pennywort, Parrot's Feather, Creeping River Grass, Cutgrass
2010	12	268.7	Alligator weed, Common Salvinia, Water Hyacinth, Pennywort
2011	2	40	Common Salvinia, Water Hyacinth, Alligator weed
2012	8	192	Water Hyacinth, Common Salvinia, Alligator weed, Giant Salvinia
2013	9	264	Alligator weed, Common Salvinia, Water Hyacinth
2014	10	339	Alligator weed, Giant Salvinia, Common Salvinia, Water Hyacinth
2015	9	249	Alligator weed, Common Salvinia, Giant Salvinia, Water Hyacinth, Water Lettuce
2016	9	328.6	Alligator weed, Cut grass, Pennywort, Primrose, Common salvinia, Giant salvinia, Water Hyacinth
2017	12	383.3	Alligator weed, Cut grass, Pennywort, Primrose, Common salvinia, Giant salvinia, Water Hyacinth**

*For reporting purposes, a treatment is defined as one crew for one day.

**2017 data as of October 24, 2017

Physical:

None

Aquatic Vegetation Estimates:

Fall 2017:

common salvinia (50 acres)
alligator weed (60 acres)
water hyacinth (225 acres)
spatterdock (75 acres)
giant salvinia (60 acres)

Predicted for 2018

common salvinia (200 acres)
alligator weed (125 acres)
water hyacinth (500 acres)
spatterdock (150 acres)
giant salvinia (275 acres)

Limitations:

No drawdown capabilities.

Cypress/Tupelo swamps along margins of the lake limit access to some areas and provide refuge to both common and giant salvinia species.

Recommendations:

Biological Control:

Continue to monitor giant salvinia weevil stockings for successful control and weevil winter survival. Relocate existing weevil infested material to other areas where control is not being achieved. Stock additional weevils as needed.

Chemical Control:

Herbicide selection and application rates will be in accordance with the approved LDWF Aquatic Herbicide Application Procedures. Conduct four treatments with imazapyr (0.5 gal/acre) and Turbulence surfactant (or approved equivalent, 0.25 gal/acre) for alligator weed and water primrose control. Infestations of primarily water hyacinth and/or pennywort (>75%) will be treated with 2,4-D at 0.5 gal/acre. If treatments are primarily for common or giant salvinia, a mixture of glyphosate (0.75 gal/acre) and diquat (0.25 gal/acre) with Turbulence surfactant (or approved equivalent, 0.25 gal/acre) will be used.

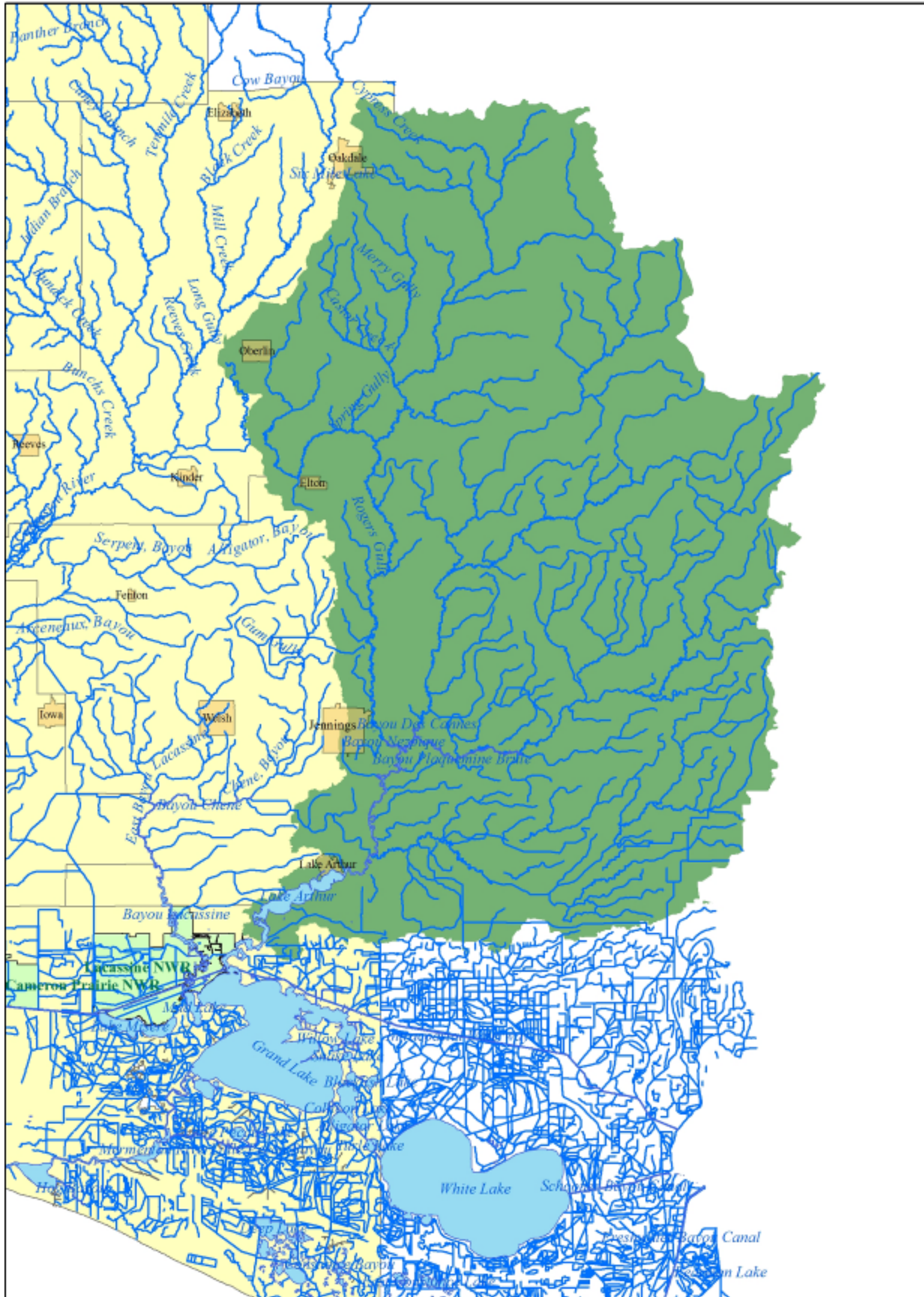


Figure 1. Map of Lake Arthur with watershed in green