LOUISIANA DEPARTMENT OF WILDLIFE AND FISHERIES

OFFICE OF FISHERIES
INLAND FISHERIES SECTION

2021 AQUATIC VEGETATION CONTROL PLAN

BAYOU BONNE IDEE

Waterbody Information

Location: Morehouse Parish

1. Waterbody type – impounded bayou with four sections created by weirs (Map in Appendix)

2. Age and condition of control structure – unknown

3. Type of control structure – There are control gates at each of the four weirs and these gates can be used to completely dewater each pool. Water can be drawn down at one-foot intervals.

4. Pool stage and maximum depth (Pools numbered north to south)

Pool	Pool Stage (ft., MSL)	Maximum Depth (ft.)
1	78	12
2	83	10
3	86	8
4	88	6

5. Surface area

Pool	Acres
1	370
2	670
3	470
4	390
	Total - 1,900

6. Average depth

Pool	Average Depth (ft.)
1	6
2	5
3	4
4	3

7. Watershed ratio – 24:1 (71 sq. miles)

8. Drawdown potential of structures – near complete drawdowns of each pool

9. Waterbody Board or Lake Commission – Bayou Bonne Idee Gravity Drainage Board
   - Creation / Nomination – 1975; Five members appointed by the Morehouse Parish Police Jury

- Primary contact information – Lynn Winnon Jr., Oak Ridge, LA
- Procedure for spillway openings – requests made to Drainage Board with approval by Morehouse Parish Police Jury and LDWF

10. Drawdown History –
    1993 – Complete drawdown of southernmost pool (Pool 4) for replacement of weirs

11. Significant stakeholders and needs/concerns:
    - Farmers –agricultural irrigation
    - Homeowners – stable water levels, vegetation control, aesthetics

12. History of aquatic vegetation complaints - Multiple species have prompted complaints over the years. Water hyacinth (*Pontederia crassipes*) has formed large surface mats and impeded boat traffic, though coverage has not been severe in recent years. Duckweed (*Lemna spp.*) has also periodically formed large mats in areas, with complaints arising when mats form near homes or camps. Emergent vegetation (typically, alligator weed (*Alternanthera philoxeroides*)) will prompt complaints when shoreline growth becomes excessive near homes and camps.

13. Controversial issues on the lake – Water levels may become critically low in the upper pools in the summertime during drought conditions coupled with heavy agricultural irrigation.

Aquatic Vegetation Status:

General: During the warmer months, aquatic vegetation has historically been prevalent in the shallow waters of Bayou Bonne Idee. Water Hyacinth has been extremely prolific at times, though not recently. In 1998, water hyacinth was so severe that boat spray crews (seven) from other districts were deployed for spraying operations to reduce vegetation to a more controllable level. Duckweed has also been a species of concern, with large surface mats forming in various areas and affecting shoreline property owners, boaters, and contributing to anoxic conditions in the water during the summer. The most problematic areas in recent years have been in the upper pools north of Hwy. 2. These pools become very shallow during summer months and receive little wind action. Alligator weed is common throughout the bayou, but becomes a nuisance in the upper pools.

2020: Coverage and Status of Problem Plant Species

Emergent Species: Alligator weed, water pennywort (*Hydrocotyle spp.*), and water primrose (*Ludwigia spp*.) are the most common emergent species. There was a combined total of 143 acres treated in 2020.

Duckweed: minimal, growing amongst other emergent species

2020: Coverage and Status of Beneficial Plant Species

Coontail (*Ceratophyllum demersum*): widely scattered, coverage limited by turbidity

2021: Predicted Vegetation Coverage

No significant changes to current coverage is expected for 2021.

Limitations:

Agricultural and residential irrigation is common throughout Bayou Bonne Idee.

Bayou Bonne Idee lies within a 2,4-D restricted area and has various row crops in the immediate vicinity. Therefore, 2,4-D cannot be used from March 15 – September 15.

Past Control Measures:

Control of nuisance aquatic vegetation on Bayou Bonne Idee has been necessary since the construction of the numerous weirs and dams began in the 1950's. Herbicide treatments are routinely made to control the floating species duckweed and water hyacinth. Alligator weed, water primrose, and water pennywort are the most abundant emergent species, and require frequent control. Duckweed has been controlled primarily with diquat dibromide (1.0 gal/acre). Water hyacinth was treated with either glyphosate (0.75 gal/acre), imazapyr (0.5 gal/acre), 2,4-D (0.5 gal/acre), or diquat dibromide (0.75 gal/acre). Other emergent plant species were treated primarily with glyphosate (0.75 gal/acre), imazapyr (0.5 gal/acre), or 2,4-D (0.5 gal/acre). Table 1 lists the acres of nuisance vegetation in Bayou Bonne Idee treated with herbicides during 2013-2020. A list showing acreage sprayed since 2005 can be seen in the Bayou Bonne Idee Management Plan Part A (updated February 2019).

Table 1. Total acres of nuisance aquatic vegetation treated with herbicide on Bayou Bonne Idee from 2013-2020.

	Species				
Year	Alligator weed	Duckweed	Water hyacinth	Water pennywort	Water primrose
2013	449	32	120	16	28
2014	147	-	5	-	55
2015	186	-	-	-	38
2016	88	-	80	7	-
2017	91	-	36	-	25
2018	118	-	30	8	-
2019	125	-	45	9	60
2020	129	-	9	6	8

A containment boom was placed north of Hwy. 2 in the spring of 2013 in an effort to reduce the spread of duckweed downstream. Much of the duckweed in Bonne Idee originates in the

forested upper reaches. The boom was somewhat successful in containing floating vegetation, where LDWF spray crews can efficiently treat it. The boom was removed later that year, as it was more urgently needed at Turkey Creek Lake.

Recommendations:

Chemical Control:

Areas where aquatic vegetation has historically caused problems should be surveyed at least monthly during the growing season and treated as needed. Complaints should be investigated as soon as possible. Treatments of alligator weed and other nuisance emergent species should be prioritized by applying herbicides around residential areas first, and then any areas where significant surface mats have formed. The following herbicides and rates are recommended:

Plant Species	Herbicide	Surfactant
***Salvinia spp*. Alternative 1** Common/Giant Salvinia (April 1 to October 31)	Glyphosate (0.75 gal/acre) Diquat (0.25 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
***Salvinia spp*. Alternative 2** Common/Giant Salvinia (April 1 to October 31)	Glyphosate (0.75 gal/acre) Flumioxazin (2 oz./acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
***Salvinia spp*. Alternative 3** Common/Giant Salvinia (April 1 to October 31)	MSM (1 oz./acre) Flumioxazin (1 oz./acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
***Salvinia spp*. Alternative 4** Common/Giant Salvinia (November 1 to March 31)	Diquat (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
***Salvinia spp*. Alternative 5** Common/Giant Salvinia (November 1 to March 31)	Flumioxazin (12 oz./acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Water Hyacinth	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
Water Hyacinth in waiver areas (March 15 to September 15)	Glyphosate (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Alligator weed/Giant Cut Grass (undeveloped areas)	Imazapyr (0.5 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Alligator weed/Giant Cut Grass (developed areas)	Imazamox (0.5 gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
American Lotus	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
American Lotus in waiver areas (March 15 to September 15)	Glyphosate (0.5 gal/acre)	Nonionic surfactant (0.25 gal/acre)
American Lotus in waiver areas with potable water intakes (March 15 to September 15)	Triclopyr (0.5gal/acre)	Turbulence (or approved equivalent, 0.25 gal/acre)
Duckweed	Diquat (1.0 gal/acre) or Flumioxazin (8 oz./acre)	Nonionic surfactant (0.25 gal/acre) or Turbulence (or approved equivalent, 0.25 gal/acre)
Cuban Bulrush (sedge)	2, 4-D (0.5 gal/acre)	Nonionic surfactant (1 pint/acre)
Cuban Bulrush (sedge) in waiver areas (March 15 to September 15)	Glyphosate (0.75 gal/acre)	Nonionic surfactant (0.25 gal/acre)
Water Lettuce	Diquat (1.0 gal/acre) or Flumioxazin (6 oz./acre)	Nonionic surfactant (0.25 gal/acre) or Turbulence (or approved equivalent, 0.25 gal/acre)

Biological Control:

None at this time.

Physical Control:

None at this time.

Typemap:

No typemap conducted to date.

Appendix:

Map of Bayou Bonne Idee showing weir locations