Lake Bistineau

A Review of Lake Management and Evaluation of Lake Projects

May 2017

***Purpose*:** This document outlines and summarizes the efforts LDWF has made to ensure continued access, and reviews potential activities that could benefit users of the lake.

1. Utilize and Follow the Existing Water Body Management Plan
   - The water body management plan for Lake Bistineau was originally prepared in 2009 and has been updated regularly, including in January 2017.
   - The plan provides an overview of the lake, and includes a description of techniques LDWF utilizes to maintain as much public access as possible.
   - The plan describes efforts to combat giant salvinia, including the targeted use of chemical (herbicides), biological (weevils), and mechanical (drawdowns) controls. This approach is designed to minimize plant coverage and maximize recreational use of the lake.
   - This plan has proven to be the most effective combination of available techniques at reducing salvinia coverage in Lake Bistineau.
   - It is important to follow the established plan each year, as deviations minimize its effectiveness for salvinia control.

2. Continue Weevil Introductions on Lake Bistineau (2,495,893 stocked to date)
   - Increase efforts to stock weevils into Lake Bistineau via the following:
     - Stock weevils from Iatt Lake that have survived two successive winters in central Louisiana and may be more cold-tolerant than weevils stocked in past years.
     - Dedicate LDWF resources (personnel, time, funding) to provide weevils to the public for placement in the lake.
     - Promote public involvement by having dedicated weevil stocking days.
   - Continue to fund ongoing research to develop more cold-tolerant weevil populations from Uruguay and Australia.
     - The goal of current cold tolerant weevil research is to establish a population that can survive average winter temperatures in north Louisiana, and to mass produce them in a rearing facility in that region for continual stocking.

3. Timber Thinning, Cutting Paths, and Stump Removal to Improve Access for Herbicide Application
   - Significant hurdles exist with this technique, including:
     - Obtaining a licensed survey of the lake bed to determine exact boundaries of public and private water bottoms.
     - Obtaining written approval from landowners in areas where water bottoms are privately owned.
     - Obtaining an existing timber survey to fully evaluate what areas could effectively be thinned and which could not.
     - Overcoming negative public perception of cutting cypress trees from state-owned water bottoms.
     - Would likely be a long-term project (10+ years) due to the size of Lake Bistineau and the expansive areas of thick timber.

        - Would negatively impact the fisheries in Lake Bistineau and would significantly reduce the lake use and boating access during this time.
    - This technique, in theory, would provide access to hard-to-reach areas where herbicide application is currently impossible due to the thick coverage of cypress/tupelo timber. These areas currently serve as nursery areas for salvinia.
        - Cutting paths alone will not provide much benefit, timber thinning would likely be required to allow herbicide application.
    - Results of large-scale timber thinning are unknown and could potentially lead to other vegetation problems.
    - Timber thinning is currently being tested on Iatt Lake and is being carried out by private landowners who own the water bottoms of that lake. LDWF will monitor results of this work.

4. Pumps to Increase Drawdown Capacity (Decrease Lake Level)
    - This technique has been considered, and found not to be feasible due to the large amount of continuous water inflow from Bayou Dorcheat.
    - The ability to lower the water level beyond the current maximum drawdown level would theoretically strand additional salvinia on dry lake bed, and allow more plant material to be killed due to desiccation.
    - The drawbacks to further decreasing the lake level include:
        - Reduced access to the lake due to limited boat ramp availability.
        - Increased potential for fish kills due to low dissolved oxygen caused by large numbers of fish concentrated into less water volume as the lake level is reduced.
        - Pumping would be a slow process, with one pump a maximum of 72,000,000 gallons /day, it would take 45 days to draw the lake down one foot if no additional water was added to the lake. One rainfall could negate all progress. The cost of operating enough pumps to adequately offset water input from Bayou Dorcheat is unknown, but likely to be high.

5. Additional Use of Booms
    - Placing such at public boat launches can improve boating access to the lake without having to load/unload boats in a mat of salvinia.
        - Helps reduce the spread of the plant to other waterbodies.
        - Allows boat launches to remain useable.
    - Evaluate the use of contract companies to deploy boom
        - This may temporarily contain salvinia so that it can be more effectively treated with herbicide.

6. Treating Adjacent Water Bodies for Source Populations of Salvinia
    - This continues to be a technique utilized when necessary.
    - Some water bodies are located on private property and backwater areas that are inaccessible. LDWF policy is not to treat private water bodies unless conditions pose a direct threat to public waters.
    - Source populations are regularly investigated and evaluated during aerial surveys of the lake and surrounding areas.

7. Marking Existing Boat Lanes and Channels

- This project would benefit all users of the lake, has been evaluated, and has a cost estimate of approximately $1.5 million.
- Beneficial to users when the lake water level is full and during drawdowns.
- Attract new boaters to the lake, it is presently difficult to navigate the lake if unfamiliar with the area.
- Maps could be published showing the lanes, markers, and coordinates for each marker.

8. Improvements to existing boat launch facilities for access during drawdowns
    - Continue to work with local police juries and other groups to improve boating access during drawdowns.
    - Identify a source of funding for marinas to improve their access during drawdowns. Port O'Bistineau recently extended its boat ramp with partial funding from the Sportfish Restoration Program.
    - Investigate potential sites for deep water boat ramps that would be useable during drawdowns.

9. Continue to investigate other available methods of control
    - LDWF currently funds research by the LSU Ag Center for improved herbicide applications for giant salvinia. This includes combinations of old herbicides, new chemistries as they become available, and screening non-aquatic herbicides for activity on the plant.
    - USDA is currently researching a fungicide that may prove useful in killing salvinia.
    - Delivery methods for herbicide/fungicides, especially in areas of thick timber, needs further research in order to attack the salvinia without harming cypress/tupelo timber.
    - Many different types of mechanical harvesters and mulchers have been evaluated for efficiency and effectiveness in field conditions.
        - It has been determined that the machines evaluated to this point are not efficient in the habitats where giant salvinia typically becomes problematic.

10. Improved Public Information Exchange
    - Utilize a new website and/or social media dedicated to Lake Bistineau to disseminate information quickly and accurately to the public. This may include presentations given at the public meetings or videos of the meetings themselves.
    - Provide a web portal where the public can provide comments and suggestions to LDWF, and provide salvinia reports. The reports could help LDWF better direct contracted herbicide applicators to areas where problems occur.

11. Enlist Assistance from Additional Public/Private Partners
    - Other groups, both public and private, have provided valuable assistance in the battle against salvinia to date.
    - Groups may be able to assist with obtaining landowner approvals for projects such as timber thinning and boat lane marking projects, when possible.
    - Local governments can help identify, hire, and manage additional herbicide application crews.