

# TYPE OF AQUATIC VEGETATION PROBLEMS IN LOUISIANA AND STEPS TAKEN TO CORRECT THEM

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Practically every lake, impoundment, and back water area in the State of Louisiana has some sort of aquatic vegetation problem of one or another. I shall endeavor to take them according to water types and discuss their individual problems and what steps we have taken in each case. I feel that I should mention here that obnoxious aquatic vegetation control program in Louisiana is still in its initial state, with exception to our Water Hyacinth Control Program.

The first general area that I would like to discuss is the coastal regions. In this section of the state, the primary problem is one which is caused by the Water Hyacinth (*Eichornia crassipes*) with Alligator Grass (*Alternanthera philoxeroides*) running a close second.

With regards to the water hyacinth, this plant has been estimated to cost the State of Louisiana up into the millions of dollars a year by making logging operations more costly, making both sport and commercial fishing impossible in waters where its growth goes uninhibited, by making trapping areas inaccessible, and by blocking water transportation in general.

In 1948, Louisiana started a Hyacinth Control Program utilizing the plant herbicide Amine of 2,4-Dichlorophenoxyacetic Acid commonly referred to as 2,4-D. This program was initially started with the intention of controlling this plant in waters which were used primarily for sport. However, we soon discovered that it was most impractical to merely clear a lake of hyacinth and leave the surrounding waters to reinfest the area. This program has more recently been expanded, and it is hoped that we will, in the not too far future, have this plant, if not exterminated, at least under control which may be maintained by an annual patrol spraying system.

The solution presently used by our crews consists of one quart of 40% Amine 2,4-D per 50 gallons of water with 2.5 oz. by weight of detergent with the trade name of ALL. This solution will cover from  $\frac{1}{4}$  to  $\frac{1}{2}$  acre depending upon the individual sprayer. We have found that from two to four applications are necessary for an area depending upon how well the hyacinth mat is established.

The other coastal problem which I have mentioned, Alligator Grass, presents a problem which we have not as yet solved. This plant may take over a bayou either by growing out over an established mat or by anchoring on the bank and merely growing out onto the surface of the water. This plant is not restricted to growth on water but does quite well on moist land. This latter characteristic makes any type of control of this plant even more difficult.

To date, the only control of this plant has been of a temporary and expensive nature, and that is either by grinding or by physically removing it. As the chemical 2,4-D has merely a set back effect in that it kills all of the plant above the water line, but in several weeks, the submerged portion has again established itself. Some success has been attained in limited experiments with a combination spraying of 2,4-D and Dupont's CMU. In this experiments, the alligator weed was

sprayed with solution of 2,4-D consisting of 2.5 gallons of 40% Amine of 2,4-D per 50 gallons of water. One week after this spraying operation, CMU at the rate of 0.25 lb./gal. of water was applied to the bank where the alligator grass was anchored. Two weeks after the CMU was applied a second application of 2,4-D was made. Very encouraging results were noted from these experiments, but I feel that the experiments were too few and too small to be conclusive and that other causes such as water levels may have had some effect on the results. Extensive work is planned along these lines next spring. It should be mentioned here that this type of operation, if successful, would be limited in the locality where it may be used since CMU is a soil sterilizer and as such will kill trees and any other plants along the bank.

The second general water type I would like to discuss is the ox bow lake type. This type affords us our least trouble. The primary problem here being the water hyacinth again. Fortunately, the hyacinth may be controlled rather easily in this type of lake due to geographical nature of the lake. The only other plant which affords a problem of any scope is Coontail, *Ceratophyllum* sp., and this plant is more or less restricted to the shallow regions at each end of the lakes.

The control of the hyacinth in this type of lake is the same as was described for the coastal region.

The third general water type is the impoundment. Perhaps this type affords the greatest variety of problems. Most of the impounded areas in Louisiana are or were wooded or swamp sections. Within several years after flooding, we have almost invariably found ourselves faced with a plant problem. The plants usually forming this problem are *Castalia* sp., *Nelumbo lotus*, *Nuphar* sp., *Cabomba caroliniana*, *Ceratophyllum* sp., *Myriophyllum* sp., *Najas* sp., and *Chara* sp. Along with these, in some cases water hyacinth may be included.

This summer considerable work was done with spraying of *Castalia flava* with Isoctyl ester of 2,4-D in a 50% diesel fuel and 50% water emulsion. This solution was found to be most successful in the control of this plant.

With regards to the submerged plants mentioned above, we have in some cases inaugurated a system of winter or summer draw downs. While such draw downs are by no means permanent, they do afford some relief without too much expense. The summer draw down is by far more desirable in that it affords access to the lake for the fall fishing and duck hunting without the nuisance of submerged aquatics. And, it also slows the spring growth some in that the regrowth must start from the ground and not just from dormant plants.

However, in some impoundments such as Chicot Lake where the lake is used primarily in the summer time, it is prohibitive to use a summer draw down. In this particular lake, a winter draw down is used. This affords some relief in that the spring regrowth must start anew and not just from dormant plants.

This summer some work was done on the chemical control of these submerged aquatics. These experiments were few and too elementary to afford any practical program or hope of one. In Chicot Lake, a test area 25 feet by 25 feet was treated with 70% Delrad (Rosin Amine D Acetate) a product of Hercules Powder Corporation. The area treated was covered with a growth of 90% *Cabomba* sp. and appr. 17% *Ceratophyllum* sp. Four months after the date of application, the entire section surrounding the test area was covered with a growth of *Cabomba* sp. and *Ceratophyllum* sp., while the test area remained clear. Work was also done in the Lacombe Fish Hatchery on *Najas* sp., and while these areas were small, the *Najas*

was eliminated from the areas treated. The quantities used in the above experiments would be prohibitive on a program basis due to the expense. However, additional work is planned to determine minimum dose and how long the effect of Delrad lasts. While it is understood that this method of control could never be applied to entire lakes, it may be possible that it be used to clear small areas and boat roads.

The floor was opened to discussion, and as no recording was made of this session, this discussion is not available.