

gill and largemouth bass, good food and cover; Cattails — supports insects; Bladderwort — good food and cover; Eel grass — good shade and shelter, supports insects, and is valuable fish food.

H. S. Swingle and E. V. Smith (1943) reported that they planted Chara in Lake Auburn and allowed cattails to grow around the edge. Lake Auburn is located 5 miles from Auburn, Alabama, and was the subject of a 10 year study to determine the effects of fish management practices. The study was reported in two periods and Swingle states that during the second period, no pond weeds were allowed to grow in the pond and all cattails were removed from the edge because experiments had shown that the growth of plankton, instead of weeds, would result in greater fish production and better fishing at the start of the second period. Swingle decided to flood a luxurious growth of jungle-rice which had grown on the pond bottom while the dam was being repaired. These decaying weeds furnished an abundance of food in the pond from August to December, 1938. Their use for this purpose was found to be a mistake since the lignified stems were resistant to decomposition and wherever present interfered greatly with fishing during the next two years.

As you can see from the literature that I have cited above, there are two sides to the problem of aquatic vegetation in fishing waters.

I would like to point out that in the case of pond management (water areas under 5 acres) most authors agree that the presence of algae as a source of fish food is desirable. The Florida Game and Fresh Water Fish Commission recommends land owner to add fertilizer to ponds to increase algae and plankton growth for two reasons.

1. To provide a source of food for young fish.

2. To help prevent sunlight from reaching the pond bottom in order to stop the growth of the higher aquatic plants.

The question of the higher aquatic plants is more complex. Large concentrations of water hyacinth and water lettuce can interfere with lake and river navigation. On the other hand the root systems of both hyacinth and water lettuce are filled with aquatic insects on which largemouth bass and sunfish feed. In closing I would like to point out the fact that very little work has been done on the relationship of aquatic vegetation to fish life in the State of Florida.

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The Value Of Water Hyacinth In The Propagation Of Fish

By Captain Noah J. Tilghman

A life long resident of Putnam County, reared on the St. Johns River and Palatka, I feel qualified to explain the value of water hyacinth and its importance with nature in the development of our natural resources "FISHING".

For the love of boating and sports fishing, I started making

this my career about 1912, with the purchase of a 43 ft. Cruiser, and several fishing boats. We would entertain out-of-state visitors black bass fishing, for periods of three days to a week. The interest and pleasure of our clients justified the building of Noah's Ark in 1930, which has been a successful operation.

Florida's first water hyacinth was placed in the St. Johns River by a winter visitor, Mrs. W. F. Fuller at San Mateo, five miles south of Palatka. This beautiful flower attracted much attention, and has a rightful place in this land of flowers. We have entertained many parties that would make reservations so as to be here when hyacinth are blooming. To catch a big bass along this green shore line of blooming hyacinth, results in return reservations.

Stationary hyacinth along a shore line where the water is about two to four feet deep is a haven for all kinds of bug life, especially along a wooded area where spiders and frogs inhabit for their food like midges, candleflies. In hyacinth roots are found hardback shrimp, crawfish, and other water bugs, the kind of food required for small fish of all kinds. From the time a fish is hatched from an egg it starts seeking cover, or be devoured by larger fish. There is no better cover than hyacinth roots and between the leaves.

Hyacinth roots extend about 12 to 15 inches in the water, making it possible for fish to feed under and between the roots. It is an old custom for fishermen to make a hole in a hyacinth bank, drop a hook and bait just below the hyacinth roots and you are most certain to catch your fish.

Hyacinth are a floating plant, feed entirely on substance in the water, therefore, this growing plant aids water purification and life, needed for fish propagation. Dead or rotten hyacinth on the water surface or the river bottom are a menace for Nature's act of producing life and beauty for man, fish, or beast.

Growing hyacinth along a shore line prevent bank erosion, by quieting the waves, and water around the tree roots, from washing sand and soil, that does in time fall the trees. Fish definitely require shade and avoid high temperature of water during summer months. Hyacinth provide shade and cools the water from a direct sun-ray, reducing the water temperature.

We now know from experience green growing water hyacinth are an asset to the propagation of fish in the St. Johns River. Fishing records and harvesting of commercial fish produced the greatest catches during the time when water hyacinth were most plentiful.

Hyacinth spread around the roots of orange trees have proven beneficial to the growth of the trees and growth of the fruit. The problem of the farmer is to harvest hyacinth from the water. When hyacinth are made available in a package, so they can be handled profitably, farmers will learn their value used as a mulch in Florida's sandy soil.

Drifting acreage of hyacinth in navigable streams are a menace to boat navigation, which is necessary to control. Hyacinth acreage can easily be removed by the use of a power harvesting machine placed on the bow of a boat. The harvester designed with an elevated conveyor moving hyacinth into the boat hull. A hay-baler conveniently placed in the boat, where hyacinth can easily be dumped, will pack and bundle them in packages the size that can easily be handled. A boat loaded with bales of hyacinth moved to the river bank, where they are unloaded, provides the farmer with a good mulch around tree roots that will hold moisture and fertilizer in sandy soil.

The use of 2,4-D has no good results, and should be used only in extreme necessity for clearing water-ways and boat navigation. It not only kills hyacinth but other plant life, growing flowers, and farm produce. It should be the objective of every Floridian to want to keep Florida green and productive for nature's beauty, and the joy of living in a live and productive outdoors.

Herbicide Operations In Relation To Water Supplies

Florida State Board of Health Bureau of Sanitary Engineering
Division of Water Supply

S. N. Finney, Jr.

The use of weed killers, herbicides and related chemicals on