

Visko-Rhap Clears Aquatics From

Adams Bayou

THE "Greater Orange Area" of Southeast Texas, a community of some 40,000 lies near the Gulf Coast. The Sabine River divides its three adjoining cities, Orange, West Orange, and Pinehurst, from neighboring Louisiana. Until recently, these cities had a problem similar to that of many other southern communities. Local waterways were choked with alligatorweed.

Adams Bayou winds for several miles through the three cities. It is a picturesque body of water with great recreational and scenic potential. Marring its beauty, however, has been the prolific growth of alligatorweed. Alligatorweed (so named because growth becomes so dense it "can support the weight of an alligator") had also invaded the many lateral ditches dug years ago to drain this bayou.

Alligatorweed (*Alternanthera philoxeroides*) is a coarse, many branched plant that forms dense mats in shallow water and on mud flats. Broken-off branches root easily and spread rapidly. It has become a pest aquatic weed in coastal areas from Texas to North Carolina, and has been reported as far as 150 miles inland. Alligatorweed is widely distributed in Central America and South America. It is most difficult to control where it is

growing in water, or in floating mats.

Numerous methods of control in Adams Bayou had been attempted for many years, and abandoned. No known herbicide had been effective. During periods of heavy rainfall, draglines were used as a desperation measure at bridges and other key points. Masses of weeds were hauled out of the Bayou and loaded into dump trucks. Though this usually averted serious flooding of the city, it was an expensive and temporary measure. Masses of weeds from upstream often broke loose and drifted down to the bridges and vigorous growth of the weed caused it to be reestablished quickly in other cleared areas.

Test Spraying

Early in 1967, Harold P. Snow, a technical agricultural chemicals representative working out of the Dallas office of Hercules Incorporated, called on Edward L. Shannon, Manager of the Orange County Drainage District. This district is a county wide agency with jurisdiction over an extensive in-county flood protection system including natural water courses within the boundaries of incorporated areas. Snow proposed that Hercules do test



The Alligator weed which is "choking" the stream in the top illustration also covered Adams Bayou, near Orange, Texas. Now, as shown in the center and bottom illustrations, thanks to the use of a new herbicide formulation called "Visko-Rhap" made by Hercules Incorporated, residents near Orange are enjoying boating and fishing on the bayou for the first time in years.

spraying of alligatorweed with his company's Visko-Rhap herbicide formulations. Visko-Rhap is so constituted that it can deliver a carefully regulated dosage of herbicide of a thick consistency that resists washoff or evaporation. Visko-Rhap herbicides also have an advantage over conventional weedkillers as the oily droplets stick and penetrate leaf surfaces more effectively.

Shannon agreed to a trial demonstration using Visko-Rhap. He was impressed with the freedom from drift the formulations possessed. Snow agreed that drift could not be tolerated on a target area which bordered on residential lots and other sites where valuable ornamental trees and shrubs could be damaged. He secured the services of a custom applicator who had a reputation for careful, responsible work. In March and April test plots were sprayed with a variety of Visko-Rhap herbicides.

Results of the treatment were quickly apparent. Shannon convinced city and county authorities that Hercules should be given an opportunity to show what its product could do on a larger scale.

Large Scale Treatment

In June and July of 1967, Snow, working with custom applicator Carl H. Flippin of Flippin Helicopter Service, Beaumont, Texas, sprayed a great expanse of Adams Bayou with the Visko-Rhap formulations that had showed most promise on the test plots. Flippin, a former Army helicopter pilot with service in Korea and Vietnam, and a skilled custom applicator, made the first treatment by helicopter. Six weeks later the center of Adams Bayou was open wide enough for use of a boat, and spraying of vegetation along the banks was accomplished with this type equipment. The results were better than either Flippin or Snow had hoped for. "Growth at that time was about two and a

half feet high, and the weed was in bloom," Snow said. "For best results we recommend application before growth is so far advanced."

To the citizens of Orange the results of the project were spectacular. Arthur La Bleu, a longtime resident on the Bayou said, "I can't remember when the Bayou wasn't covered with 'gatorweed . . . summer or winter. It got so thick I've seen nutria rats walking across from bank to bank . . . and they grow mighty big!"

In early 1968 Shannon and his colleagues were ready with a battle plan. Snow and Flippin were on the job in May, spraying Adams Bayou and some of the lateral drainage ditches with Visko-Rhap by boat. Banks were given careful attention, for alligatorweed will grow outward from the bank, or will root in shallows less than four feet in depth, preferring the brackish water that is so prevalent throughout the Gulf region.

With the cooperation of the local press, residents were advised in advance when spraying would be done. J. Cullen Browning, editor of *The Orange Leader* pointed out that the improvement in Adams Bayou was of substantial economic benefit to Orange and Orange County because flooding that very well could have occurred during the wet spring of 1968 would have probably caused serious financial loss, and even have presented a health hazard to the area.

Economic Benefits

Aside from such speculation, the Visko-Rhap project has been of more immediate economic benefit. Drainage District Manager Shannon stated that the entire herbicide spraying bill for 1968 was \$1400 for treating 30 acres of Adams Bayou (actual cost of the herbicide alone was only \$14.32 per acre). "In previous years it would cost us at least \$500 a day to clean out only

the most strategic flooding spots, employing a dragline, crew, and dump trucks. To use such emergency measures would take from a week to 10 days each time."

Adams Bayou is now becoming a scenic asset to Orange. And many of the citizens are realizing some unexpected benefits. For example, there is a lot less scratching going on. Each spring the broods of a particularly annoying species of spring mosquito, *Mansonia perturbans*, would hatch in Adams Bayou. Unlike most mosquitoes, *Mansonia* larvae do not have to be under water to survive. Larvae of the *Mansonia* attach themselves to roots and stems of aquatic plants where they can develop into welt-producing adults.

J. G. Foyle, Director of the Orange County Mosquito Control District, greeted the alligatorweed control program enthusiastically, "With *Mansonia* sheltered by alligatorweed, larvicides were ineffective," he said. "Furthermore, larvae were protected by the weed, and almost immune to feeding by fish."

With alligatorweed out of the way at last, Foyle could wage war against *Mansonia*. "Since alligatorweed has been cleared out, we have not observed a single flight of *Mansonia*," he reported.

"And very few specimens have been collected in light traps in the area of treatment."

Things are looking up elsewhere in this port city. Mrs. Charlie J. Hall, who with her husband, operates Hall's Marina, pointed across the water to stalls filled with boats. "Before they sprayed with the weedkillers, that was grown solid with alligatorweed, and stalls were empty. Our store traffic is a lot better too, now that boats can come in closer."

Down the road from Hall's Marina is the Orange Boating Club. A year ago the docks were festooned with alligatorweed. Now the visitor can look across a clear expanse of water.