

The Governor



The Secretary



The Senator

**PASSING THE JAR** — Town Administrator W.B. Gardner passed a Mason jar of algae-filled water from the Chowan River around at a regional meeting Monday night in Williamston in an effort to get the attention of state officials from Gov. James B. Hunt, Jr., on down. In the photos from left he shows the specimen to the governor, Sec. Howard N. Lee of the Department of Natural Resources & Com-

munity Development, and State Sen. J.J. (Monk) Harrington of Lewiston. Environmental management representatives and a scientist from N.C. State University spent Tuesday afternoon in the area talking to officials of Edenton Chamber of Commerce and viewing the "green tide" which has turned the river into a cesspool.

## Algae Chokes Beauty

# Chowan River: Going, Going, Gone?

By L.F. Amburn, Jr.

The "green tide" is choking the Chowan River in equal proportion to the 1972 algal bloom which caused local officials to declare that the area's greatest natural resource was dying.

This year's catastrophe, which developed two weeks ago, infuriates fishermen and sportsmen while it puzzles scientist. As late as May 31 the river was said to be in the best condition since 1972. This was due to heavy rainfall in the spring which flushed the river.

"We expected a normal bloom," Dr. Gus Witherspoon of N.C. State University said here Tuesday af-

ternoon. "But this just plain out puzzles us."

Dr. Witherspoon, a botany professor at N.C. State University who has headed a four-year independent study of water quality in the Chowan, was with Dr. Dave Adams, assistant secretary, State Department of Natural Resources & Community Development, and Page Benton of the Water Quality Section, Division of Environmental Management, who toured the area and met with officials of Edenton Chamber of Commerce.

As in 1972, the culprit is believed to be CF Industries at Tunis, according to Bill Norvell, chamber president. His logic is based on the fact that the river is clean north of the Hertford County plant and algae is present only south of the site.

Dr. Adams promised to use every tool at his disposal to determine if there continues to be seepage from holding ponds at the fertilizer complex. When questioned about closing down the plant, he said it "might be the worst thing we could do" because in the manufacturing process the nitrogen-high water being held is recycled.

Dr. Adams said he would not soon forget the "graphic display" he witnessed Tuesday but Murray Nixon said it wasn't nearly as bad as the day before.

Dr. Witherspoon said CF Industries is not without blame for the condition of the river but there is no scientific evidence to support claims that any polluted water is

now coming from the plant.

Benton added that at this time the state has no scientific proof that the industry is discharging more than the permit allows.

W.B. Gardner, town administrator, said at this point if the source is known it should be controlled to a greater degree. "We don't want to be unfair but we want you to get at the problem," he added.

"The people here are not convinced that CF Industries is not dumping overboard," he continued. "We heard that they weren't six years ago and it was proven wrong. This in itself cost the state a lot of credibility."

Norvell said: "Regardless of what your scientific data shows

the bloom is very, very real to us."

Dr. Witherspoon commented that the "real way to solve the problem is to stop putting anything into the river."

When Benton repeated that the state has nothing to show CF Industries has done anything to contribute to the current bloom, W.P. (Spec) Jones said: "We think they did and will continue to think so until someone proves us wrong."

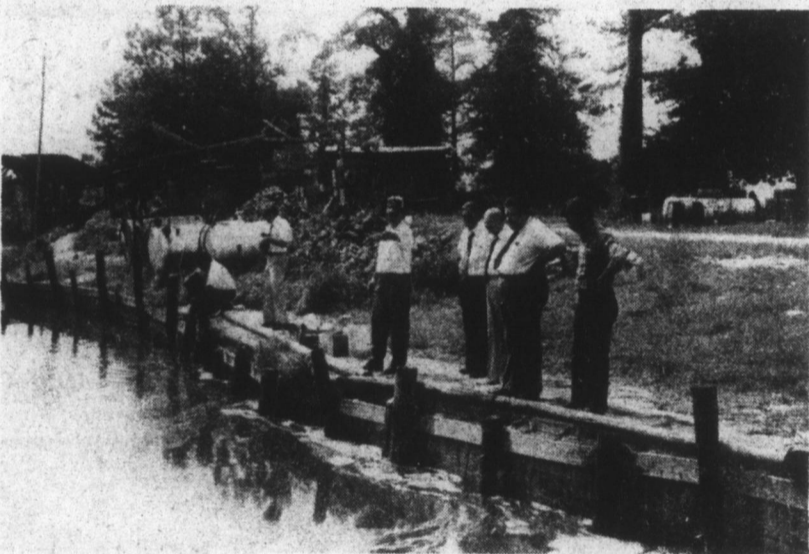
Dr. Adams said no one can prove a negative.

However, he said there is a possibility of some leakage and the state will attempt to find out if it is true.

Eddie Dick, county manager, asked if the daily withdrawal by



**DEAD FINGERLINGS** — Wallace Peele shows thousands of dead fingerlings at Peele Fishery. "They just can't survive in this stuff," he told state officials.



**REAL EVIDENCE** — Murray Nixon points to the mint green slime in a boat basin at his fishery on the Chowan River. Looking on are state and local officials who toured the area Tuesday afternoon.



**SORRY SIGHT** — Dr. Dave Adams, assistant secretary, Department of Natural Resources and Community Development, views the sorry sight with Dr. Gus Witherspoon of NCSU, foreground.

the industry is contributing factor to the flow. Dr. Witherspoon said it did and "could have some effect on the bloom."

Later Dick asked: "Why are we back to this point?" "That is a good question. I don't have the answer to that one," stated Dr. Witherspoon.

Charles Creighton asked Dr. Adams if it is possible that the area residents will have to live with the river like it is today. The answer was in the affirmative, which caused heads around the

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## River Flow Effects Growth

A reliable mathematical model has been developed by the U.S. Geological Survey for the estimation of flows in the Chowan River.

River flow exerts a very strong influence on the growth of algae, which declines with rising flows and intensifies with low flows.

Concentrations of nutrients and algae vary greatly with location and time.

During the summer, temperature, light, and flow are more favorable to algal growth than at any other time of the year. Because of the intensity of growth at this time, levels of nutrients dissolved in the water are sharply reduced.

Nitrogen concentration is the limiting factor for algal growth in the summer. Most nitrogen assimilated by algae during this period comes from recycling processes such as regeneration of dissolved inorganic nitrogen from dead organic matter in the water and sediments. Little can be done to slow this process except to reduce the total amount entering

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## Progress Of 'Green Tide' Is Noted

(From Chowan River Project Summary Report)

Instances of eutrophication of surface waters in North Carolina leading to a severe bloom like the one in 1972 are relatively rare and infrequent. The factors necessary to produce nuisance blooms of algae seldom coincide. Nutrient levels have been near the level for nuisance blooms since 1956. And in 1972, the extra nutrients — nitrogen and phosphorus — were added to the Chowan through industrial and municipal waste discharges and, to an unknown degree, from agricultural runoff.

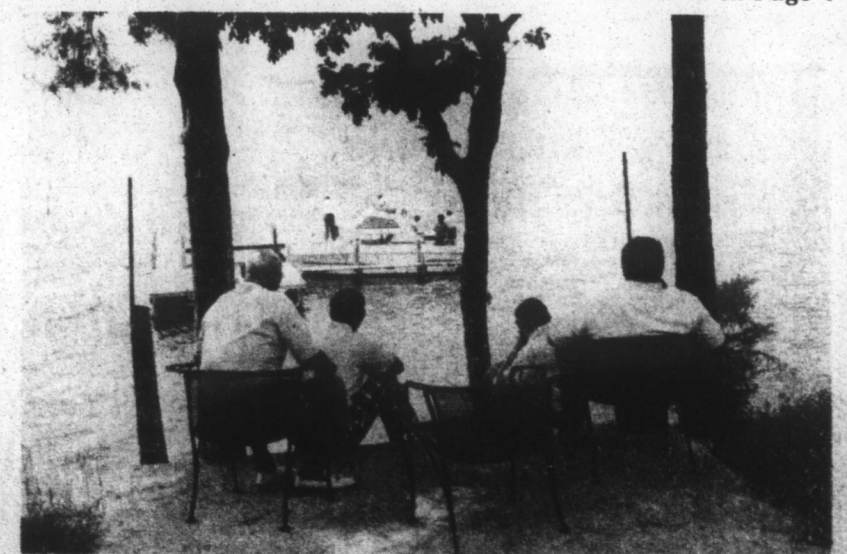
The sluggish nature of the Chowan, particularly in the lower half, aids the conditions necessary for algal growth. Flushing times for the lower Chowan are typically 50 days or more in the summer compared to 10 days or less in the winter. The upper portion of the river is not affected to the same degree since the water flow is much faster there and algae do not have as much of a chance to develop in nuisance quantities.

Seasonal algal blooms are a

natural phenomenon in the Chowan River. Area residents expect blooms of short duration in late spring and then again at the end of the summer. Normally, these blooms do not last long enough or reach such proportions as to restrict use of the river.

But in 1972, when the seasonal bloom arrived in May, it stayed until fall. The Chowan looked like "pea soup" from bank to bank in the lower half. In some spots the algae were in such massive tufts it appeared sturdy enough to walk

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**RETURN FROM TOUR** — Capt. Al Howard docks his boat after taking state environmental officials and a N.C. State University scientist on a tour of the algae-filled Chowan River. In the foreground are local officials who patiently await word of what can be done to solve the problem.

