

# SALVINIA IN THE SEPIK RIVER

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## INTRODUCTION

A floating water weed which has caused problems for people in places as far apart as Africa, Sri Lanka, India and Australia is now changing the lives of East Sepik villagers living along the lower and middle regions of the Sepik River.

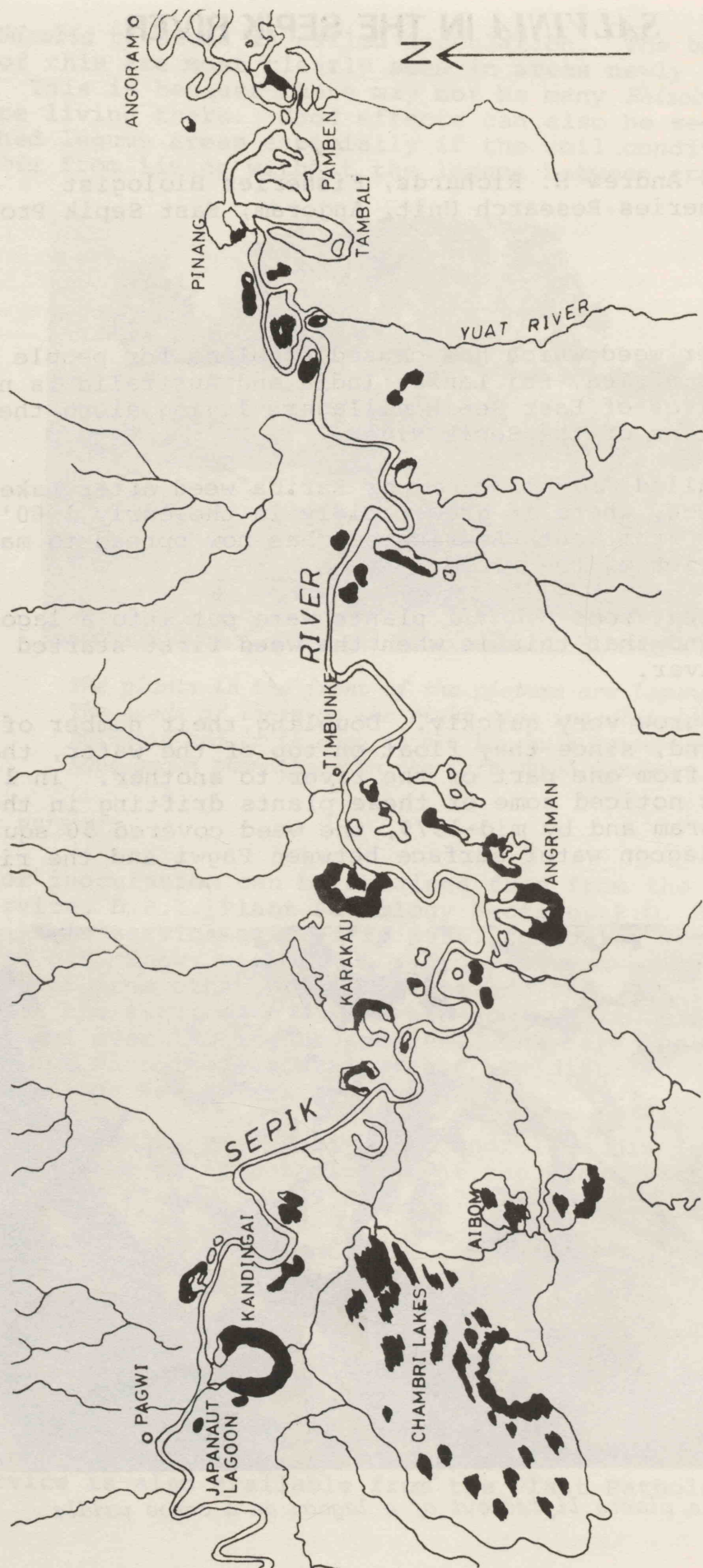
This weed is called *Salvinia molesta* or Kariba weed after Lake Kariba in central Africa, where it grew rapidly in the early 1960's. It originally came from South America but has now spread to many of the tropical countries of the world.

It is thought that some *Salvinia* plants were put into a lagoon near Pagwi in 1972 and that this is when the weed first started to grow in the Sepik River.

*Salvinia* plants grow very quickly. Doubling their number of leaves every 10 days and, since they float on top of the water, they also spread quickly from one part of the river to another. In 1974 and 1975, villagers noticed some of these plants drifting in the Sepik River near Angoram and by mid-1979, the weed covered 50 square kilometres of lagoon water surface between Pagwi and the river mouth.



*Salvinia plants lifted out of a lagoon on a canoe paddle*



*Map showing Salvinia distribution in May 1979*



When *Salvinia* plants are growing in a restricted area of relatively still water, such as a lake or lagoon, their rapid growth causes them to become crowded together. When this happens, they form thick mats of weed up to 15 cm deep. These mats may then become bound together by the roots of other plants which start to grow on top of them. The mats are either attached to the bank or float freely in mid-water. Eventually, they may all join together and cover the whole surface of a lagoon or lake. It is because it forms these mats that *Salvinia* causes so many problems in tropical rivers and lakes.

#### EFFECT ON VILLAGE LIFE

Since 1976, thick, floating mats of *Salvinia* have made it hard for fishermen to set their nets in the lagoons along the Sepik River. Even when nets have been successfully set, they have soon become tangled up in the weeds. This means that the fishermen have not been able to catch enough fish to eat and have had no fish to sell. As a result, villagers have been unable to make money to buy food or to pay school fees and council taxes.

The floating mats of *Salvinia* also prevent the people from using their canoes so that they cannot gather sago, go to their food gardens, hunt for crocodiles or send their children to school.

A large mat of *Salvinia* covers the whole surface of this lagoon making it very hard for people to use their boats.





Many people living on the lagoons have had to move out of their villages and build new houses on the banks of the Sepik River itself so that they can move around more easily. Even this can be difficult, however, as the floating *Salvinia* hides logs and other objects which can damage the propellers of the outboard motors used on many Sepik canoes.

#### KEEPING A CHECK

Officers at the D.P.I. Fisheries Research Station at Angoram on the Sepik River have been studying *Salvinia*, since June 1977. Once every three months, they fly from Angoram to Ambunti along the river. During these flights they look at each lagoon or lake and record the amount of *Salvinia* on each.

River patrols are also carried out to see what problems the weed is causing for the river people. As well as the surveys carried out by D.P.I. fisheries officers, the *Salvinia* problem has been studied by people from the Office of Environment and Conservation and the University of Papua New Guinea and, most recently, by an F.A.O. sponsored expert in aquatic weed control, Dr. D.S. Mitchell.

#### CONTROL MEASURES

After studying the weed in the Sepik, Dr. Mitchell said that there was no easy way of completely removing it from the lagoons. He said, however, that there are three ways in which *Salvinia* can be controlled so that it doesn't cause hardship for the people living along the Sepik.

- 1). The weed can be sprayed with chemicals which kill it. Before being used in the Sepik the chemicals would be tested to make sure that no harm would come to fish or to people using the lagoon water.
- 2). Insects which eat *Salvinia* but not other plants could be brought from South America and released in the Sepik. Once again, the insects would be tested to make sure that they would not harm the villagers or their food gardens before being released.
- 3). Floating fences called booms could be built to keep *Salvinia* from spreading from place to place along the river.

Dr. Mitchell went on to say that once the amount of *Salvinia* had been reduced by the use of chemicals or insects, the villagers would have to be responsible for the removal of any small plants they saw floating in their lagoons. This would have to be done carefully so that there was no chance of the weed increasing to a level where it would be impossible to clear by hand.

#### STOPPING THE SPREAD

It is most important to stop *Salvinia* from spreading to other parts of Papua New Guinea.



Fortunately, the thousands of plants which are carried down to the sea by the Sepik River every day, are killed by the salt water. This means that although they are washed up on Wewak beaches, there is no danger that they will grow again.

However, the large scale spread of this weed is more likely to be caused by people than by natural agents such as wind and sea. Often, people take a weed from one place where it is growing and start growing it in a new place. In this way the weed soon spreads over great distances.

*Salvinia* can grow very quickly and easily adapts to new places. This means that any small plant or even part of a plant which falls into a river or lake can start to grow and could soon cause problems there like those in the Sepik. This means that it is very dangerous for people to take the weed from the Sepik into any other area.

Until May 1979, *Salvinia* was being sold in Port Moresby as decoration for fish tanks. This is an example of the sort of thing which could help the weed to become established in new areas of Papua New Guinea. One way to try and prevent this is to include *Salvinia* on our list of noxious weeds. It would then be an offence for anyone to grow or sell *Salvinia* and people who had the plant growing on their land would be legally bound to report it.



The thick mat of *Salvinia* makes it hard to see where the land ends and the water begins. Other plants have begun to grow on top of the *Salvinia* at the front of the photograph.