Alldredge - Int. 2417

ADVANCE RELEASE

Office distribution
5-18-45

DEPARTMENT OF THE INTERIOR

INFORMATION SERVICE

FISH AND WILDLIFE SERVICE

For Advance Release to AM's WEDNESDAY, MAY 16, 1945

The shad, one of the chief food fishes of the Atlantic coast, returns to spawn in the rivers in which it was hatched with a homing instinct as accurate as that of the Pacific salmon, according to evidence collected by biologists of the United States Fish and Wildlife Service.

A tag, which had been attached to a young shad four years ago at Edenton, N. C., was recovered this season in the same area from the fish as a mature adult, Service biologists have reported to Dr. Ira N. Gabrielson, Director of the Service. This is the first instance of the return of a tag from a shad tagged as an immature fish, Dr. Gabrielson said.

The recovery provides fresh evidence in support of the theory, held by biologists for several years, that the shad of any stream are a native population, returning to it year after year from their oceanic feeding grounds. Scientific studies of the racial characteristics of shad, including the microscopic markings on the scales, also support this view.

Practical importance of the knowledge that shad return to their parent streams to spawn is its application to the conservation of the resource, which has become severely depleted during the past half century, Dr. Gabrielson said. Because of the accurate homing of shad, measures taken in any locality to restore depleted runs may be expected to benefit that locality.

The shad is a migratory fish that enters coastal streams in the spring to spawn in fresh water. After spawning, the adults return to the ocean. They are followed in the fall by the young fish, which by that time are about as long as a man's finger. Adult shad return from the oceanic feeding grounds year after year to spawn, unlike the Pacific salmon, which dies after a single spawning.

Although the adults have been tagged without difficulty, biologists had not previously succeeded in tagging the young shad, which are extremely sensitive to handling. The first successful tagging was accomplished by Edgar Hollis, Fish and Wildlife Service biologist who tagged about two thousand young shad at Edenton in 1941.

The return of the tag was made by an Edenton housewife, who discovered the red plastic tag--bearing a serial number and instructions for its return to the Fish and Wildlife Service--while preparing a shad for the table. The tag was embedded in the roe of the fish.

Shad catches on the Atlantic coast as a whole have declined from about 50 million pounds in the 1890's to some 9 million pounds in recent years, according to Dr. Gabrielson. In the Chesapeake Bay, the catch has declined from 16 million

to 4 million pounds annually, due principally to excessive fishing, which has not left enough shad to spawn.

In the Delaware Bay, commercial fisheries once yielded 14 million pounds of shad annually, have now declined to an annual yield of 270,000 pounds. Monetary loss to the industry is estimated at more than a million dollars a year. Gross pollution of the water, which has rendered many spawning areas unproductive, is believed to be the chief cause of the decline in the Delaware.

In contrast, the Hudson River shad fishery has recovered from its low yield of 40,000 pounds in 1916 to 5 million pounds in 1944. This rebuilding of the Hudson River runs has been accomplished by careful regulation to allow enough spawners to escape the fishery. Individual Hudson River shad fishermen now catch many more pounds of shad than during the previous period of unregulated fishing.

Studies of the shad resource have been carried on by the Fish and Wildlife Service for several years in cooperation with several of the Atlantic Coast states as a basis for conservation recommendations. Recently the shad investigations have been extended at the request of the Atlantic States Marine Fisheries Commission. Present studies are concentrated in the Chesapeake and Delaware Bay area.

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