



DEPARTMENT OF THE INTERIOR

INFORMATION SERVICE

FISH AND WILDLIFE SERVICE

For Release to PMs OF WEDNESDAY, AUGUST 18, 1943.

Submarine technicians who man the sensitive listening devices of United States underseas craft hereafter should be able to distinguish at once between the voices and sounds of fish and the hum of enemy propellers as a result of a unique recording effort of the Navy and the Fish and Wildlife Service of the Department of the Interior.

Fish actually grunt, purr, drum, grind their teeth and make a medley of other sounds that create strong underwater vibrations even when inaudible on the surface, it is indicated in a report to Secretary of the Interior Harold L. Ickes. The sound recordings of this fish "talk" is expected to aid in the efficiency of our submarines, and hereafter sailors assigned this service will hear the records as part of their training.

The report states that in order to make the recordings the Navy sent a physicist and a sound engineer to the Fish and Wildlife Service's seacoast laboratory at Beaufort, N.C., where facilities were made available for collecting and studying the fish.

The Beaufort Laboratory was chosen for the experiments because practically all groups of sound-producing fishes found in American waters are represented in this area, located inside Beaufort Inlet at the junction of Core and Bogue Sounds.

The Navy experts obtained their most surprising results with the toadfish, a common species of the Atlantic coast known for its ugliness, and bad temper. Although advised by Fish and Wildlife Service Biologists that the toadfish is an important sound-producer, the investigators were unprepared for the volume of its voice, which they said compared in intensity with a steamboat whistle.

Other species studied were the various members of the croaker family, which includes, besides the croaker, the weakfishes or sea trouts, the black drum, and the channel bass or red drum. All are important food fishes of the east coast, and some of them are found on the Pacific coast as well. Most of the members of this family are well known to the fishermen for their vocal ability.

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The croaker, most abundant commercial fish of the Chesapeake Bay, is also taken by sport fishermen and makes such a loud noise when caught on a hook that it can be heard through at least 20 feet of water. When taken in quantity in commercial trawls or pound nets, croakers drum vigorously while the net is being fished. The drumming is accomplished by the vibration of a bandlike muscle against the air bladder, an inflated sac that lies just back of the head region.

Although both male and female croakers are equipped with sound organs, in the related sea trouts only the male has a drumming muscle; the female does not "talk," the report states.

Black drums migrating to the open ocean from the bays of the Gulf coast drum so loudly that fishermen compare the sound to a heavy thumping on the bottom of their boats. This species may also make a second kind of noise, for they have extremely heavy teeth which they use to crush the shells of oysters and clams, and it is said that a school of drums feeding on oyster beds makes a grinding sound clearly audible at the surface.

Fishes capable of making drumming, grating, or grunting noises are found both in fresh and salt water in all parts of the world, according to the report. Whether fishes use their voices to attract the opposite sex, as a feeding call, or to express general contentment like a cat's purr is not known.