DEPARTMENT OF THE INTERIOR

INFORMATION SERVICE

FISH AND WILDLIFE SERVICE

For Release SUNDAY, JANUARY 5, 1941.

PISCATORIAL SERENADES

Contrary to the widespread belief that fishes possess no voices and therefore must lead a life of perpetual silence, many fish are quite noisy creatures, says the Fish and Wildlife Service, United States Department of the Interior. Many, in fact, are capable of producing loud sounds--and even musical notes--despite the fact that they have no real vocal organs.

These piscine sound oddities have been revealed through scientific investigations concerned with the production of sound by various species of fishes. For example--

Grunts, or roncos, are so called because of a loud grunting noise which they make at times. It has even been said that a school of grunts playing around the bottom of an anchored boat on a still tropical night will make enough noise to awaken the sleeping crew.

Porkfishes and pigfishes, belonging to the grunt family, have acquired their names because they grunt like a pig.

The midshipman or singingfish--a species of toadfish found in the Pacific Ocean and the Gulf of Mexico--makes a peculiar humming noise with its air bladder, closely resembling musical notes.

The horse mackerel (Trachurus), the sunfish (Mola), and certain species of triggerfishes (Balistes), produce harsh noises by grating together the upper and

lower phargyngeal teeth (molar teeth in the throat of the fish used to grind its food).

Puffers, or swellfish, make a noise resembling a harsh grunt by rubbing together the teeth of the upper and lower jaw.

The Conger eel "barks."

The schoolmaster makes a hoarse, rumbling noise which sounds very much as if he were delivering a lecture, while the oldwife chirps and chatters like a gossipy "old wife," according to A. H. Verrill, in Strange Fish and Their Stories.

Drumfish, or drummers, produce deep resonant notes, by means of the air bladder. The croaker, or hardhead, belonging to the same family as the drums, is reputed to make the loudest noise of any of our native fishes. This croaking sound may be heard for a considerable distance, and it may be emitted underneath the surface of the water and after the fish is removed from the water.

Another fish listed in the sound-producing category is the spot. According to Hildebrand and Schroeder, in Fishes of Chesapeake Bay, "The male of this species makes a croaking or drumming sound, but it is not a loud one, owing probably to the thinness of the walls of the air bladder and the feeble development of the drumming muscles."

The weakfish, and its allies, also use the air bladder with which to make noises--they have a peculiar muscle by which they can set the air bladder into vibration and produce sound. Apparently only the male possesses this muscle and can make the sound, from which it is thought that it has something to do with mating. Investigators report that when the weakfish sends out his mating call, it is so loud that it has been heard six feet above water when the fish was fifty feet under water.

Some specimens of black drum, kept in the New York Aquarium for a number of years, could be heard all over the building.

While noises made by most sound-producing fishes are accomplished in several different ways, the purring or drumming produced by drums is the result of muscles attached or drawn over the air bladder. The rapid contraction and expansion of the muscles--about 24 times a second--causes the walls of the air bladder to vibrate and to act as a sort of resonator intensifying the sound.

Sea-robins, and the common toadfish, which make a grunting noise, have muscles which are intrinsically connected with the swim-bladder and are known as intrinsic muscles. The grunting noise is caused by the contraction of these intrinsic muscles to produce a vibration in the walls of the air-bladder.

Other fish that emit sounds do so by grating their teeth together, their mouths and gill-covers acting like sounding-boards to increase the strength of the vibrations produced; while still others produce a click quite similar to that of an elaterid, or "snapping" beetle, by repeatedly snapping the head very sharply up.

Going to authorities on the subject, we find that Sorenson (1894) makes the statement that it is probable that nearly all fishes are able to make a noise by "gnashing their teeth."

An interesting account of a noise-producing fish is contained in Ichthyologia Ohiensis by C. S. Rafinesque (1899) when he describes the sheephead, or fresh-water drum (Aplodinotus grunniens). "A remarkable peculiarity of this fish," he writes, "consists in the strange grunting noise, which it produces, and from which I have derived its specific name. It is intermediate between the dumb grunt of a hog and the single croaking noise of the bull frog: that grunt is only repeated at intervals and not in quick succession. Every navigator of the Ohio River is well acquainted with it, as they often come under the boats to enjoy their shade in summer and frequently make their noise."

In the chapter by John T. Nichols in The Book of Fishes (1939) he relates, "Lying anchored in a small boat at night in Florida waters, one may sometimes hear a school of sea-drum go swimming by below. 'Wop, wop, wop,' they seem to say. Then there is the little trumpetfish....that will at times lurk under the boat and intrigue you with its elfin tooting."

In The Song of Fishes (John C. Calton, 1874) it is recorded that sounds had been heard in the harbor of Bombay, described as "like the protracted booming of a distant bell, the dying cadence of an Aeolian harp, the note of a pitch-pipe or pitch-fork, or any other long-drawn-out musical note." The fish which was alleged to make these sounds closely resembled in size and shape the fresh-water perch of the north of Europe.

Maigres (sciaenoid fishes particularly noted for their peculiar noises) emit sounds most notable for their length, having a mean of 25 seconds, and for their uniformity," according to Calton. "The timbre varies very much, the most common being that of a common reed-organ or the reed of a flageolet. Some sounds are, however, less sweet, and may have some likeness to the tone of a hurdy-gurdy or rattle."

In his book, "A History of Fishes, J. R. Norman of the British Museum states, "Actual noises produced by the different fishes present great diversity, ranging from a more or less melodious vocal effort to a mere grunt. A South American catfish is said to produce a sound described as a 'deep, growling tone', distinctly audible at a distance of one hundred feet when the fish is out of water....The elastic spring apparatus of the electric catfish causes a hissing sound, the trunkfishes and globefishes are credited with 'growling like dogs,' and the little seahorses are said to utter a 'monotonous sound analogous to that of a tambour, which is characteristic of both sexes, but is more intense and frequent in the breeding season.'

"An Indian species of horse mackerel (Caranx hippos) has been described as grunting like a young pig and a related species from Egypt (C. rhonchus) is known to the Arabs as 'Snorter'....The sounds made by the drum fishes have been variously described as creaking, drumming, humming, purring, whistling, and are quite loud enough to be audible to a person standing on the deck of a ship....In the Malay Peninsula and other tropical countries, the native fishermen make use of these sounds to locate shoals of fish, one of the number 'listening in' and instructing his companions where to cast their nets.

"The vocal powers of the meagre, or weakfish--abundant in the Mediterranean--have been subject of comment and discussion in all ages. It is not improbable that the Greek myth of the song of the Sirens which occurs in the Homeric fable arose from the sounds made by shoals of these fishes."