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MUSKRAT STUDY OF VALUE TO FUR FARMERS

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How muskrats build their houses and elaborate systems of canals and tunnels in marshes and obtain their food are explained in a circular just published by the U. S. Department of Agriculture for the use of fur farmers, conservationists, and others interested in the management of these animals.

Each year thousands of muskrats are trapped for their fur, but information on their life history and habits has been limited. Investigations to obtain more facts useful to fur farmers and others were conducted in Dorchester County, Md., by the State Conservation Commission, the Agricultural Experiment Station of the University of Maryland, and the U. S. Bureau of Biological Survey. The circular gives results. Further studies are being made by the Survey at a newly established fur animal field station at the Blackwater Migratory Bird Refuge, near Cambridge, Md.

The cooperative study of the muskrat, made by Frank R. Smith, then an agent for the Biological Survey, shows that on the Eastern Shore Peninsula of Maryland, one of the nation's most productive muskrat areas, the animal's food consists chiefly of three-square sedge and cattails. The breeding season extends throughout most of the year, but is more intensive from mid-March to about the first week in September. The gestation period appears to be about 29 to 30 days, and the litters on the open marsh average between 4 and 5 young.

The best muskrat marshes, says the circular, are those that have an abundance of suitable vegetation, plenty of fresh or brackish water, and a bottom with

at least 6 inches of peaty plant remains. No other type of bottom lends itself so readily to the animal's habit of digging canals and tunnels.

Muskrat houses built of stalks, roots, and peaty plant remains may be as much as 7 or 8 feet in diameter and more than 4 feet high. The plant material is deposited in small, roughly crescent-shaped masses that are formed as the material drags back from the animal's mouth in being carried to the house. Each house has one or more nests, rarely more than three. From each nest a passage leads to one or more plunge holes in the floor, which in turn lead to underground tunnels that connect with the surface several feet from the house.

As muskrats prefer swimming to walking they dig canals near their houses. These may vary from mere muddy surface trails to ditches a foot or more deep and 6 inches to a foot wide. Excavated material is carried back along the canal a considerable distance and deposited to form small platforms or heaps, often used as resting places or lookout stations.

Suspended breathing is necessary for the muskrat as it spends much time under water. The owner of the marsh on which the investigations were made reported that a muskrat caught in a fish trap remained under water 17 minutes. Upon returning to the surface and seeing the intruder again it plunged a second time and stayed under 10 minutes more. The animal refused to dive again.

In the winter large bubbles of air exhaled under the ice usually indicate the muskrat canals in use. It is possible that the air in these bubbles is to some extent reoxygenated, as the animals apparently stop to refill their lungs when they come to the bubbles in swimming under ice.

Heavy floods, the circular points out, may seriously affect muskrats. During 1933, a high wind accompanied by heavy rain, drove waters of the Chesapeake Bay up over the lower marshes 3 to 4 feet higher than ever before recorded. All muskrat houses were either swept away or submerged. The animals were left without shelter or places to rest. Great numbers were drowned, but many more succumbed to disease, starvation, and a lack of fresh water.

Copies of the new publication, Circular 474, "Muskrat Investigations in Dorchester County, Md.", may be obtained at 10 cents each from the Superintendent of Documents, Washington, D. C.