

TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE

WYOMING

SOIL CONSERVATION SERVICE

Biology No. 111

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Subject: MUSKRAT*

General

The muskrat (*Ondatra zibethicus*) inhabits streams, lakes, ponds and marshes. They may occur at elevations up to 11,000 ft (3,300 m).

Food Requirements

Cattails (*Typha* spp.) are the most important muskrat food in both Minnesota and Iowa. Bulrushes (*Scirpus* spp.) are important in some regions. Other attractive food plants are bur reed (*Sparganium* spp.), duck potato (*Sagittaria* spp.), sago pondweed (*Potamogeton* spp.), wild rice (*Zizania* spp.), willow (*Salix* spp.), sedge (*Carex* spp.), smartweed (*Polygonum* spp.) corn and come of the legumes and composites. Transient muskrats or muskrats living in areas with little vegetation eat crustaceans, mollusks, fishes, and frogs.

Water Requirements

No specific drinking water requirements were found in the literature. Water as used for cover is discussed in the following section.



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*Information taken from Ecoregion M3113 Handbook and Habitat Suitability Index Models, Wildlife Species Narratives (literature searches), U.S. Fish and Wildlife Service, various dates between 1978-1984.

Cover Requirements

Water furnishes cover for the muskrat's activities. Excessive water level fluctuations are detrimental to muskrats. The water on wave-swept open lakes may be too rough and prevent the growth of suitable shoreline vegetation, and some water is too swift for suitable habitat. One study found that a 5- to 7-foot (1.5 to 2.1 m) rise of water disrupted muskrats and reduced populations. Water 12 to 18 inches (30.5 to 45.7 cm) deep is optimal for the construction of muskrat lodges. Few lodges were found in water less than 6 inches (15.2 cm) deep or more than 24 inches (61.0 cm) deep in Illinois. Most of the lodges observed in Nebraska were in water 17 to 40 inches (43.2 to 101.6 cm) deep. Water deeper than 4 feet (1.2 m) apparently kills the broadleaved cattails used as food.

Emergent and shoreline vegetation also supply cover. Muskrats of the northern United States show the greatest dependency on cattails. Bulrushes are also preferred plants.

Muskrats construct lodges or burrows for shelter. The lodges are built of mud and vegetation, usually cattails. Stream-dwelling muskrats use burrows for cover. Clay soils are best for burrow construction. Rocky or pebbly shores offer few burrow sites and sandy soils or friable shales may be too loose to hold the shape of a burrow.

Reproductive Requirements

Young muskrats are sheltered within the lodge or burrow.

Special Habitat Requirements

Specific requirements were not found in the literature.

Interspersion Requirements

Willow thickets that border streams and marshes provide escape cover and loafing sites for muskrats when their burrows and lodges become inundated by high water. Drainage irrigation ditches which intersect intensively farmed land may provide excellent muskrat habitat. Home range of adult muskrats may be up to 0.5 mi (0.8 km) in diameter.

Special Considerations

There may be a spring dispersal in some populations due to environmental or social conditions. The drying up of shallow ponds in the fall can cause overland movements.

Heavy grazing by cattle along the water's edge damages muskrat habitat. Muskrats may be found quite close to human habitations.