

TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE

WYOMING

SOIL CONSERVATION SERVICE

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Subject: RED SQUIRREL*

General

The diet of the red squirrel consists primarily of the seeds of pines, spruces, and firs. The squirrels store cones for winter use in middens, which are large, usually damp accumulations of cone debris, litter, and other organic material. A large percentage of lodgepole pine (Pinus contorta) cones persist on the branches unopened all year and therefore do not have to be stored in a damp place to prevent their opening as do cones from other tree species. A closed canopy is important in lodgepole stands since direct sunlight can cause the cones to open and lose their seeds.

The red squirrel is uncommon in the Transition Zone where ponderosa pine (P. ponderosa) trees predominate, except near blue spruce (Picea pungens) trees which often line streams. Ponderosa pine stands are often too open to provide the cool, shady, damp areas needed for cone caches. Spruce trees (Picea spp.) are ideal for cone caches since they usually retain their lower branches which reach almost to the ground and provide shade for the caches during most of the day. The lower branches may be lost in very dense stands, but the closed canopy provides the necessary shade.

The cones of lodgepole pine and Engelmann spruce (Picea engelmanni) are the most important because these trees are widely distributed and have relatively dependable seed crops throughout the Rocky Mountains. The availability of sufficient food was the primary habitat requirement in New York. In Alaska, shortages of spruce seed resulted in a reduction of red squirrel abundance.



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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.

Water Requirements

Drinking water requirements are fulfilled from open water and snow or ice, although succulent foods or tree sap may partially substitute for the lack of free water. Cones may be cached in springs, bogs, or on creek bottoms.

Cover Requirements

In Colorado, red squirrels were absent from open and young forest. They were most abundant in a mature stand of lodgepole pine 50 feet (15.2 m) tall.

Leaf nests, tree cavities, rock piles, stumps, and ground burrows serve as refuges for the red squirrel. In Alberta, Canada, much of the winter activity was beneath the snow. Dense vegetation gave protection from wind and permitted the accumulation of highly insulative, low density snow through which the squirrels could tunnel.

Nests, which provide yearlong cover, are constructed in natural tree cavities, hollow stumps, or, most often, on tree limbs. The mean height of nests in Colorado was 20 feet (6.1 m) with few nests lower than 15 feet (4.6 m) or over 30 feet (9.1 m). Nests were usually not located in the tops or outermost parts of trees.

Reproductive Requirements

Young squirrels are born and raised in the nests described under Cover Requirements. Several nests are often built within a short distance of each other. In Colorado, six nests were found within a radius of 7 feet (2.1 m) with another only 25 feet (7.6 m) away.

Special Habitat Requirements

No special habitat requirements were found in the literature.

Interspersion Requirements

The coniferous forest vegetative type supplies all habitat needs for the red squirrel. Suitable midden sites and nesting sites must both be present within its home range. One study found five squirrels living on 10 acres (4.0 ha), or one squirrel per 2 acres (0.8 ha), and estimated that the summer foraging range was greater than 100 yards (91.4 m). In Canada, the mean home range was estimated to be 0.2 acres (0.08 ha) in January and 2.9 acres (1.2 ha) in April and May.