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FEEDING SELECTIVITY OF MONTANE AND LONG-TAILED VULES (Microtus montanus and M. longicaudus)

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♦ OBJECTIVES

The purpose of the research begun in 1989 is to ascertain how selectively voles of these species feed, and to assess vegetation as a factor in demographic processes in the two species. Microtus longicaudus exhibits relatively stable numbers while M. montanus has dramatic fluctuations in some habitats. The study sites for M. montanus have been chosen to include primary and secondary habitat, and proximate and isolated habitat patches. Vegetation has heretofore not been quantitatively analyzed.

♦ METHODS

Virtually all previous work on these species conducted by the author during 1971-1977, and 1982-1988) involved live trapping. The work of interest requires specimens obtained in Museum Special traps for stomach content analysis. The trapping begun in 1989 is a preliminary effort, the first purpose of which was to assess the efficacy of Museum Special traps. The number of sites where M. montanus have been chosen to include primary and secondary habitat, and proximate and isolated habitat patches. Vegetation has heretofore not been quantitatively analyzed.

♦ RESULTS

At two sites the populations of M. montanus decreased from October, 1991 to October, 1992 by 69% and 79%, respectively. But in secondary habitat, the number of voles in the sample (4) remained constant.

Breeding continued in one of the three populations of M. montanus in October. Of nine apparently parous females, the two at one site were still lactating. No other was pregnant or lactating. The sex ratios (males:females) of reproductively active and formerly reproductively active individuals in the two higher density populations were 1:2 and 1:1.5, respectively.

One or more Microtus longicaudus were obtained in six of the seven sites surveyed. These sites varied in exposure, gradient, and vegetation, and included a dry south-facing shrub community, cool ravine, north-facing timber stand, pond embankment, willow-sedge-grass community, and talus field. The only site where they were not found was dominated by grass-sage.
**DISCUSSION**

The pattern of early cessation of seasonal breeding in a relatively high density population of *M. montanus* (Jannett 1978) has again been observed. In 1992, the higher of the two substantial populations exhibited no reproductive activity, whereas the less dense population had females still lactating. This was of additional significance in that the latter population had, nonetheless, declined from 1991, whereas continued fall breeding is usually seen in the increase phase of a vole "cycle" (Krebs and Myers 1974; Jannett 1984). Continued monitoring of the three representative *M. montanus* sites is showing the disparity in population size trends within one year. Whether there is concomitant disparity in morphological patterns among specimens awaits processing and analyses.

Eighteen populations of *M. montanus* were previously identified during 1982-1988, but only 15 populations of *M. longicaudus* have been "found" to date. I will identify 18 preliminary to vegetation and gut analyses. Negus and Findley (1959) secured no *Microtus longicaudus* from 17 quadrats in nine community types in and around Jackson Hole. They found it elsewhere and concluded that it was the least common species of *Microtus* in Jackson Hole. However, Clark and Stromberg (1987), in a more popular account, posited it in various habitats, including grassland and streamside. Long-term monitoring of *M. montanus* in this ongoing study indicates *M. longicaudus* is uncommon in open grassland dominated by *M. montanus*, but otherwise does show considerable habitat breadth. Streamside populations have not been included as yet in the search for additional populations and will be the focus of work in 1993.

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**LITERATURE CITED**


