

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

Frederick J. Jannett, Jr.
Department of Biology
The Science Museum of Minnesota
St. Paul

Objectives

Monitoring populations of these species of voles (1982-1988) has shown that *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. The purpose of the research begun in 1989 is to ascertain how selectively these species feed, and to assess vegetation as a factor in demographic processes in the two species.

Methods

Virtually all previous work on these species (1971-1977, 1982-1988) involved live trapping. The work now of interest requires specimens obtained in Museum Special traps for stomach content analysis. The trapping in 1989 was a preliminary effort, the first purpose of which was to get a feel for the number of montane voles obtainable with Museum Specials. Of the 18 sites at which *M. montanus* has been monitored in recent years, eight were sampled in 1989 with Museum Special traps, and two were sampled with both live traps and Museum Specials. Lastly, at three sites only live traps were deployed to secure voles; it is hoped that, by replicating previous efforts at these three sites, all work on food habits can be related to possible changes in vole numbers. For this end the three sites chosen for continued monitoring with live traps were one field exhibiting definite population fluctuations, one site peripheral to primary habitat, and one site of secondary habitat.

The second purpose of the field session was to increase the number of sites where *M. longicaudus* can be obtained, preferably across a spectrum of vegetation types. Only three populations of this species have previously been monitored.

Most trapping periods lasted only two days so that impact on the respective populations would be minimized. From fresh material, eyes were removed for age determination upon lens weight (Gourley and Jannett, 1975).

Lastly, for another researcher's DNA-DNA recombination research, an effort was made to secure live specimens of heather voles (Phenacomys intermedius) and water voles (Microtus richardsoni) in the Bridger-Teton National Forest. This material was fixed in ethanol.

Results

There were relatively small numbers of montane voles at the three sites trapped in previous years with live traps only. Numbers trapped dropped from 33, 1, and 19 in 1988, to 23, 0, and 4, respectively.

Although it had been expected that Museum Special traps would secure relatively more montane voles than would live traps, few specimens were obtained.

Time and weather permitted finding only one additional M. longicaudus site.

Tissues for DNA-DNA recombination were secured from thirteen water voles and three heather voles.

Discussion

If Museum Special traps are more efficacious than live traps, they are not sufficiently so in years of low population numbers to secure sufficient numbers for analyses of stomach contents.

Literature Cited

Gourley, R. S. and F. J. Jannett, Jr. 1975. Pine and montane vole age estimates from eye lens weights. J. Wildl. Manage. 39:550-556.

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