In the summer of 1968 a preliminary survey of areas inhabited by the Uinta ground squirrel (Spermophilus armatus) was conducted in order to indicate the nature of variation among the local environments inhabited by ground squirrels in Jackson Hole.

In order to investigate some aspects of the relationship of squirrel populations to different combinations of environmental factors thought to be of primary significance, two areas were chosen for intensive study in the summer of 1969. Area #1, located adjacent to the Jackson Hole Research Station, represents a mesic bluegrass meadow with a relatively fine soil, and supports a comparatively dense squirrel population. Area #2 is located on a coarse textured glacial outwash plain near Cow Lake amidst a xeric Big sage-grass-forb community and supports a relatively sparse squirrel population.

The live-trapping operation conducted in the summer of 1969 was again carried out in 1970, beginning in April when the squirrels first emerged and continuing on daily until the squirrels went into hibernation in mid August. Each captured squirrel was classified as to sex and age, examined as to condition (of pregnancy, etc.), toe-clipped for individual identification and weighed; and the capture location noted in each case. A total of 181 squirrels was captured in area #1 (in a trapping area of approx. 4.6 acres) and a total of 38 squirrels in area #2 (in a trapping area of approx. 11.5 acres). In area #1, 93% of the adult animals captured had been previously marked in 1969. In area #2, only 33% of the 1969 captures were retaken. In both areas many animals were captured several times (one as many as 60 times in area #1). It was thus possible to obtain information on the degree of ranging over the area and weight increase throughout the summer for individuals, as well as data on population density and structure.

Sixty-eight reproductive tracts and 68 stomachs were collected from squirrels trapped adjacent to both areas between mid April and mid August. Reproductive tracts are being analyzed to indicate the timing of reproductive activity in each area and, combined with data on weight gain, to provide a rough indication of net production of the populations in each area. Stomach contents are being analyzed (plant species being identified) and compared to information on available vegetation in each area to reveal food habits throughout the season. This information will be combined with similar data from the summer of 1969.
In sum: the study is attempting to compare squirrel populations in the two areas with regard to (1) population density and structure, (2) net production (weight increase + reproduction), (3) food habits in relation to available vegetation, (4) timing of activity (daily and seasonally), (5) general behavior, and (6) distribution, home range and dispersal movements of individuals.

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