

The observations on all five categories of communications shall shed some light on the differences in "carrying power" of signals and in understanding between species within an ecological web.

The species of wild ungulates selected for our proposed research are the Wapiti elk (Cervus canadensis), the Wyoming moose (Alces alces) and the bison (Bison bison). The animals will be observed in normal undisturbed condition and also in periods of stress and social change. Stress situations are used by us as an experimental device to reveal group structure and behaviors not readily revealed under other conditions. As a by-product of this project we expect to secure some longitudinal case histories of typical and deviate wild ungulates under observation.

Extension of the field research into the fall months will provide a definite advantage over the limited usual summer research periods by permitting the observation of the most crucial period of interaction, the ungulate mating season.

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Some Aspects of Plant and Animal Distribution
as Affected by Geologic Formations
Kenneth L. Diem and Garth S. Kennington
University of Wyoming
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Research conducted in the summer of 1963 was a continuation of a three year study initiated in 1961. The study areas have been described in the 1962 Biological Research Station report.

From the last of July until the end of August a total of 67 northern pocket gophers (Thomomys talpoides) were collected and frozen for analytical work. The flowers, leaves, stems and roots of Agoseris, Lupinus, Achillea, and Erigeron were collected and frozen for laboratory analysis. Five quarts of soil were collected on each area for soil analysis and plant growth experiments. Four rock samples were taken from each area to determine elemental composition of the parent rock strata. The comparative results of pocket gopher mound census for 1962-63 are given in the following table.

Northern Pocket Gopher, Thomomys talpoides, Population Densities
in Soils of Five Geological Formations, 1962-63

Area and Formation	Gophers per Acre	
	1962 27 Aug.-2 Sept.	1963 22 Aug.-30 Aug.
Huckleberry Ridge	149	85
Huckleberry Exclosure (Cloverly-Morrison)	150	67
Big Game Ridge	102	101
Big Game Exclosure (Harebell)	56	90
Two Ocean Plateau (Wiggins)	104	96
Pitchstone Plateau (Rhyolite)	20	22
Moran (Glacial-Alluvial)	131	119

Research will be continued at the University of Wyoming concerning radiation and isotope accumulation, fat analysis, true element analysis, and chromatography analysis of various plant and animal tissues.

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