

Dynamics of Peripheral Populations of Great Basin Pocket Mice, *Perognathus parvus*, and Western Harvest Mice, *Reithrodontomys megalotis*, in Southern British Columbia

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The Great Basin Pocket Mouse (*Perognathus parvus*) and Western Harvest Mouse (*Reithrodontomys megalotis*) are two peripheral species occurring in the southern Okanagan Valley of British Columbia, Canada. Both species are listed as vulnerable to extirpation because of habitat loss, primarily due to conversion of natural habitat to agricultural uses and suburban expansion. Population dynamics of these two species were studied in three habitat types: old field, sagebrush, and pine forest. The Great Basin Pocket Mouse occurred at densities ranging from 12 to 28/ha in sagebrush habitats and at 2-8/ha in old fields and Ponderosa Pine forest. The Western Harvest Mouse occurred at variable densities up to 10/ha in old fields and up to 5/ha in sagebrush habitats. Mean number of lactating females for Great Basin Pocket Mice ranged from 4-8 in sagebrush, 1-5 in old fields and pine forests combined. Mean juvenile survival to adulthood ranged from 3.28 young Great Basin Pocket Mice per pregnant female in sagebrush, 4.67 in old field, and 1.82 in pine forest habitats. Mean juvenile survival to adulthood of Western Harvest Mice ranged from 1.46-1.72 young per female in old field and sagebrush habitats. Conservation of habitat features (high biomass and structural diversity of grasses and forbs) in linear habitats has the potential to maintain populations of Western Harvest Mice. The Great Basin Pocket Mouse needs features of sagebrush and old field habitats that need to be conserved as natural non-linear components in mosaics of natural and anthropogenic habitats. Both species could act as “indicators” of habitat integrity for a wide range of other vertebrate, invertebrate, and plant species in the Okanagan Valley.

Key Words: Great Basin Pocket Mouse, *Perognathus parvus*, Western Harvest Mouse, *Reithrodontomys megalotis*, old fields, population dynamics, reproduction, sagebrush habitat, conservation, dispersal, British Columbia.