

STATUS REVIEW OF THE BEAR LODGE MEADOW JUMPING MOUSE (*Zapus hudsonius campestris*) IN WYOMING

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SUMMARY

The Bear Lodge meadow jumping mouse (*Zapus hudsonius campestris*) is one of 2 subspecies of the meadow jumping mouse that occur in Wyoming. It occurs in northeastern Wyoming (Crook and Weston counties) and adjacent portions of South Dakota. In Wyoming, it has been documented only in the Belle Fourche River basin. The second subspecies, Preble's meadow jumping mouse (*Z. h. preblei*), occurs in southeastern Wyoming and northern Colorado. Very few if any surveys for meadow jumping mice have occurred in the Cheyenne or Niobrara river basins in Wyoming. If meadow jumping mice occur in these areas, it would suggest that there is gene flow between the 2 subspecies, and conservation concerns may be eased. Also, there may be gene flow between the 2 Wyoming subspecies and subspecies to the east (*Z. h. intermedius* and *Z. h. pallidus*); note that the latter 2 subspecies are very widespread in the midwest. All subspecies of meadow jumping mouse are strongly associated with riparian environments

STATUS

The subspecies has no official USFWS status as of 23 March 2000. On a scale where 5 = secure and 1 = of extreme conservation concern, WYNDD ranks this subspecies as:

Global species status = 5.

The full species *Zapus hudsonius* is very secure globally.

Global subspecies status = 3.

The subspecies *Z. h. campestris* is of moderate conservation concern across its entire range.

State subspecies status = 2.

The subspecies is of conservation concern in the state of Wyoming.

This subspecies is rare, and Wyoming contains about 40% of its total range. Note that other subspecies of *Z. hudsonius* are very abundant and widespread to the east of Wyoming.

TAXONOMY

Generally considered a distinct subspecies on the basis of morphological characters and geographic isolation. Compared to other subspecies of *Z. hudsonius*, *Z. h. campestris* has darker upper parts with more black-tipped hairs; dark mid-dorsal band is more distinct; cranial measurements are larger on average; least interorbital constriction is wider; auditory bullae larger and more inflated;

incisive foramina wider and truncated posteriorly; frontal region less inflated (Krutzsch, 1954, Jones 1981). Jones (1981) suggested that morphological characters are so similar across the species that no subspecific status is warranted for any subpopulation. Geographic isolation may not be complete; *Z. h. campestris* may exchange genes with *Z. h. intermedius* and *Z. h. pallidus* to the east, and possibly even with *Z. h. preblei* to the south.

DISTRIBUTION

This subspecies occurs in northeastern Wyoming and adjacent portions of South Dakota, mainly in the Black Hills area (Long 1965, Clark and Stromberg 1987). Wyoming specimens have come only from the Belle Fourche River basin in Crook (7 known locations) and Weston (1 known location) counties. Note that 3 reports of *Z. hudsonius* have come from Johnson and Natrona counties, but specimen identification was not confirmed to either species or subspecies level. See attached maps.

HABITAT

As with all subspecies of *Z. hudsonius*, this subspecies occurs almost exclusively in riparian environments with heavy vegetation and year-round stream flow. A woody overstory (e.g., *Populus deltoides*, *Salix* spp.) may be needed to support high densities.

FOOD HABITS

Based on information for other *Z. hudsonius* populations, diet includes invertebrates, seeds, leaves, buds, fruits, and subterranean fungi.

PHENOLOGY

Like all subspecies of *Z. hudsonius*, *Z. h. campestris* hibernates during the winter in an underground burrow. Hibernation is probably initiated in September, with spring emergence in May.

TRENDS IN WYOMING

Difficult to estimate because of a lack of studies pertaining to the subspecies; populations may be stable.

MANAGEMENT CONSIDERATIONS

A significant portion of the range in Wyoming is managed by the USFS, which is mandated to conserve well-distributed, viable populations of all native species. Heavy grazing of riparian vegetation may reduce populations (Clark and Stromberg 1987). The effect of exotic riparian weeds on small mammals in general, and jumping mice in particular, is unknown.

INFORMATION NEEDS

Basic life history, distribution, habitat use, and abundance information are needed for the Wyoming portion of the population. Surveys in the Cheyenne and Niobrara river basins are needed to estimate connectivity between *Z. h. campestris* and *Z. h. preblei*; similarly, surveys in South Dakota and Nebraska are needed to estimate connectivity between these 2 subspecies and *Z. h. intermedius* and *Z. h. pallidus*.

LITERATURE SOURCES

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