Least Weasel

Mustela nivalis

REGULATORY STATUS

USFWS: No special status
USFS R2: No special status
USFS R4: No special status
Wyoming BLM: No special status
State of Wyoming: Furbearing Animal (see regulations)

CONSERVATION RANKS

USFWS: No special status
WGFD: NSSU (U), Tier III
WYNDD: G5, S1S2
Wyoming Contribution: LOW
IUCN: Least Concern

STATUS AND RANK COMMENTS

The Wyoming Natural Diversity Database has assigned Least Weasel a state conservation rank ranging from S1 (Critically Imperiled) to S2 (Imperiled) because of uncertainty about the species' range and population trends in the state.

NATURAL HISTORY

Taxonomy:

Confusion exists over the taxonomic status of Least Weasel and its subspecies. Four subspecies are generally accepted in North America. *M. n. campestris* and *M. n. rixosa* occur near the eastern and northern borders, respectively, of Wyoming [1, 2]. Least Weasel in North America is sometimes considered a separate species (*M. rixosa*) from that found in the Palearctic, but this taxonomic revision has not yet been formally accepted [3-5].

Description:

Identification of Least Weasel is possible in the field. Least Weasel is the smallest member of the Order Carnivora in North America, ranging in total length from 166–225 mm [2, 6, 7]. The species has a long narrow body, short legs, and a tail that is approximately 25% of the length of the head and body. Ears are relatively large and round. Dorsal color ranges from pale ginger to dark chocolate brown, and the underside is white, cream, or yellow. Pelage turns entirely white during winter in northern populations. The tail does not have a black tip in either summer or winter. Males are noticeably larger than females; however, substantial geographic and individual variation exists with respect to size and color, and individuals from North America are among the smallest members of the species [2, 3]. In Wyoming, Least Weasel is most similar to Short-tailed Weasel (*M. erminea*) and Long-tailed Weasel (*M. frenata*), but both species are larger than Least Weasel, have longer tails, and have a black tip on the end of the tail in both summer and winter [2].

Distribution & Range:
Least Weasel is circumboreal, occurring throughout both the Nearctic and Palearctic regions of the world [2]. In North America, the species occurs as far south as Kansas and northern Georgia [8, 9]. In Wyoming, Least Weasel is known from limited confirmed records just west of Sheridan in north-central Wyoming [6] and in the Newcastle area in northeastern Wyoming [10]. The species also likely occurs along the northeastern border of the state adjacent to known records in southern Montana, the Black Hills in South Dakota, and western Nebraska [11-14]. Confirmed or suspected breeding has been documented in 5 of the 28 latitude/longitude degree blocks in the state, all in north-central and northeastern Wyoming [11]. Least Weasel has been expanding southward in the Great Plains since the 1960s [15, 16].

Habitat:
Least Weasel habitat use varies across its distribution and with fluctuating abundance of small rodent prey, including grasslands, prairies, shrub-steppe, semi-desert, riparian corridors and woodlands, open/sparse coniferous or deciduous forests, alpine meadows, tundra, hedgerows, and farmlands [2, 17]. In Wyoming, Least Weasel habitat likely consists of gently rolling ridges in sagebrush steppe and/or grasslands with willow and cottonwood riparian corridors [6]. Least Weasel prefers hunting in areas with cover from predators, especially raptors, and often hunts along forest edges and in talus, rock outcrops, and debris piles [2, 17, 18]. In Central Europe, the species also has been documented using a variety of urban landscapes [19].

Phenology:
Least Weasel is active throughout the year and does not hibernate. Throughout much of its distribution, the species can breed at any time of the year; however, litters in spring and late summer are most common. Least Weasel typically has two litters per year in the wild. Litters from arctic regions are generally larger than those in temperate regions. In North America, litters range from 1–15 young, averaging 5 in temperate North America. Gestation lasts 34–37 days. Altricial young are weaned at 42–56 days of age and reach adult size in 12–15 weeks. Spring-born individuals can reach sexual maturity in approximately 3 months [2].

Diet:
Least Weasel specializes on small rodent prey, especially voles, lemmings, and mice. The proportion of different rodent species in the diet varies geographically and with prey abundance, and Least Weasel will opportunistically switch among prey species based on availability and type of hunting habitat available [2]. Least Weasel will take a variety of prey species when small rodents are scarce, including eggs and nestling birds, moles, shrews, young rabbits, chipmunks, squirrels, amphibians, lizards, fish, and invertebrates [2, 20]. Weasels in the Italian Alps have been documented eating fruits, mainly in the Rosaceae family [21].

CONSERVATION CONCERNS

Abundance:
Continental: WIDESPREAD
Wyoming: VERY RARE
There are no robust estimates of Least Weasel abundance in Wyoming. However, a statewide abundance rank of VERY RARE can be inferred from its restricted distribution and limited detections in the state, and the species appears to be rare even within suitable environments in the occupied area [11].

Population Trends:
Historic: UNKNOWN
Recent: UNKNOWN
Historic and recent population trends for Least Weasel in Wyoming are unknown. Studies in Eurasia show that Least Weasel populations vary substantially with density of small rodent prey [2, 18, 22], complicating assessment of long-term population trends for this species. NatureServe considers the global population to be stable [8]; however, no recent long-term trend studies have been conducted.

Intrinsic Vulnerability:
MODERATE VULNERABILITY
Least Weasel has moderate vulnerability to extrinsic stressors in Wyoming because the species is known to use a variety of habitats in other areas yet has a severely limited distribution and low abundance in Wyoming. Least Weasel is capable of high reproductive productivity when prey is abundant and populations are large enough to allow individuals to find mates [2, 22, 23]. The species does not appear to skip breeding in low-prey years; rather, productivity is regulated by mortality of embryos or young [23].

Extrinsic Stressors:
MODERATELY STRESSED
Factors that impact abundance of small rodent prey and abundance of sympatric mustelids will likely affect Least Weasel populations [2, 24]. Populations of Least Weasel fluctuate substantially with prey abundance [22]. Furthermore, during low-prey years Least Weasel can be outcompeted by larger more dominant sympatric Mustelid species (e.g., *M. erminea*, *M. frenata*) capable of taking a wider range of prey species, excluding Least Weasel from foraging habitat, and even preying on Least Weasel [2, 17, 24]. Secondary poisoning from anticoagulant rodenticides used to control rodent populations can have lethal or sub-lethal (i.e., poor body condition) effects on Least Weasel, but exposure risks in Wyoming are unknown [25, 26]. As a furbearer, pelts of Least Weasel may be collected and sold; however, given its small size and overall rarity in the Wyoming, targeted trapping for Least Weasel is not likely to occur. Regular sources of mortality in Wyoming include vehicles and cats; however, the impact of these mortality sources on Least Weasel populations in the state are unknown [10].

KEY ACTIVITIES IN WYOMING

Least Weasel is classified as a Species of Greatest Conservation Need by the Wyoming Game and Fish Department. Currently, there are no research projects designed specifically for Least Weasel in Wyoming.

ECOLOGICAL INFORMATION NEEDS

Least Weasel would benefit from research to determine its detailed distribution and abundance in Wyoming, as well as factors limiting populations in the state. Information on diet is needed to determine how Least Weasel populations respond to variations in prey availability and density of competitors. Nothing is known about basic population demographic parameters (i.e., adult survival, recruitment, dispersal) for Least Weasel in Wyoming. Targeted research and monitoring for Least Weasel is hampered by the lack of a proven survey technique to detect the species. Finally, Least Weasel would also benefit from an assessment of potential extrinsic stressors in the state, such as potential exposure to secondary poisoning from rodenticides,

unintentional capture by fur-traders, and mortalities due to other anthropogenic activities and domestic cats.

MANAGEMENT IN WYOMING

This section authored solely by WGFD; Nichole L. Bjornlie. Least Weasel is assigned an NSSU rank because survey data that would provide for an assessment of population status are lacking. Consequently, priorities in Wyoming in the short-term will focus on addressing these data deficiencies. Of particular importance are data on population status and trends and a more refined understanding of distribution within the state. Because of the low density of Least Weasel on the landscape, acquiring these data will likely require targeted survey efforts. However, survey techniques for Least Weasel still need to be developed before other objectives for the species can be addressed. Additional priorities will focus on assessing habitat requirements and limiting factors, which will ultimately be used to develop management and conservation recommendations.

CONTRIBUTORS

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SPECIES PHOTOGRAPH

Figure 1: Photo not available.

Figure 2: North American range of *Mustela nivalis*. This map does not accurately reflect the species' range in Wyoming. (Map from: Patterson, B. D., et al. (2007) Digital Distribution Maps of the Mammals of the Western Hemisphere, version 3.0, NatureServe, Arlington, Virginia.)

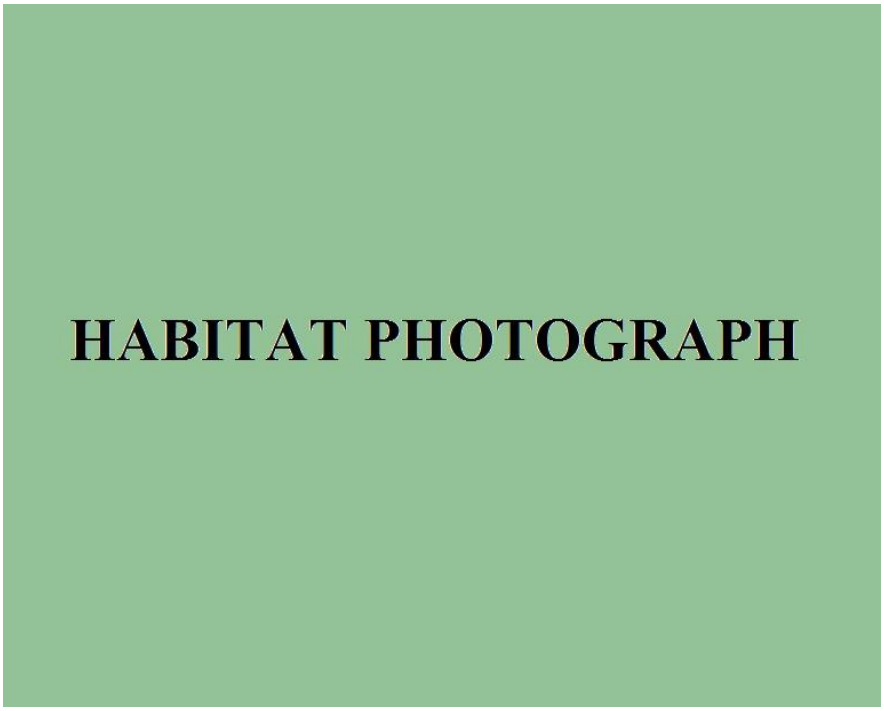

Figure 3: Photo not available.

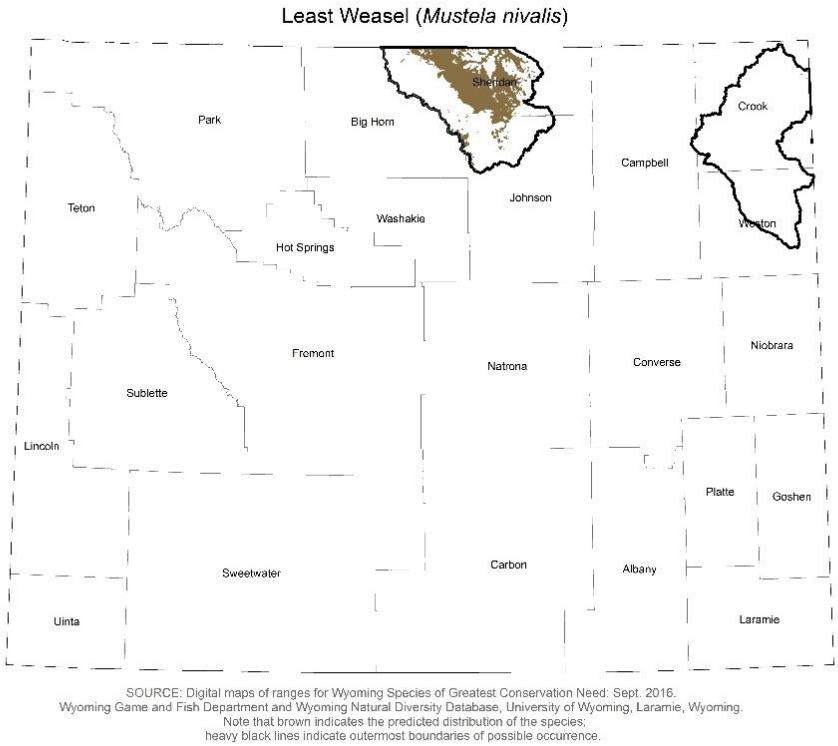

Figure 4: Range and predicted distribution of *Mustela nivalis* in Wyoming.