

questions regarding the subspecies' presence in Huerfano, Costilla, and Pueblo Counties of Colorado. As stated in the 1998 listing rule, the Service did not accept this identification because further morphological analysis determined this individual to be a different species of mouse, the western jumping mouse, not the Preble's.

The third petitioner stated that favorable habitat may occur in other Colorado counties (Gilpin, Clear Creek, Fremont, Teller, Huerfano, and Costilla) that have not been surveyed. Since receipt of the third petitioner's petition, surveys have been undertaken in Fremont and Teller Counties. Gilpin, Clear Creek, and Teller are high-elevation counties west of known Preble's distribution with almost no favorable habitat. The only favorable habitat would occur where these counties meet lower elevation neighboring counties. The lower elevation habitat within the South Platte River drainage in northern Teller County may be occupied by the Preble's near the Jefferson County line. Surveys identified one Preble's mouse at approximately the county line but none upstream within Teller County. The habitat in Teller County is very limited in extent because the elevation rapidly becomes too high upstream from Teller County's border with Jefferson County. Similarly, elevations in Gilpin and Clear Creek Counties are generally too high to support the Preble's. At the eastern edge of both counties, mountain drainages exit into Jefferson County to lower elevation streams characteristic of the subspecies' range. Surveys of lower elevation streams in Gilpin and Clear Creek Counties suggest that habitat is marginal, at best, for the Preble's. Any additional habitat in these counties would not significantly increase the size of the Preble's geographical distribution and, therefore, would not alter the threat analysis in the 1998 listing rule.

Fremont, Costilla, and Huerfano Counties are not likely to support Preble's. Surveys of possibly suitable habitats in Fremont County have failed to document the Preble's (Christina Werner, Colorado Natural Heritage Program, in litt. 2003). While a portion of Huerfano County is within the Arkansas River drainage (where Preble's has been documented in the northernmost part), Huerfano County is even further south of known Preble's range and is even less likely to have suitable habitat for the Preble's. Costilla County is in the Rio Grande drainage. It lies far from known Preble's range, south and west of the Arkansas River drainage and separated by a mountain range.

The third petitioner stated the use of Sherman live traps as a reason why the subspecies' geographical distribution cannot be fixed entirely. The geographical distribution of the subspecies was determined based on small mammal surveys conducted in Colorado and Wyoming over the past 100 years primarily using snaptraps, not Sherman live traps. Therefore, surveys using Sherman live traps were not the primary information used to determine the species' geographical distribution. The use of Sherman live traps in surveying for Preble's became standard methodology in the early 1990s, and information from these surveys has refined but not significantly altered the subspecies geographical distribution.

Additionally, the third petitioner stated that the Service did not accurately identify the Preble's geographical range because of what the petitioner stated were errors in several citations (Whitaker 1972; Compton and Hugie 1993; Harrington et. al. 1995, and Meaney and Clippenger 1996). In defining the geographical distribution, the Service used all scientific information available; it did not rely only upon the citations mentioned by the third petitioner but used other citations as well to give a full picture of the species' range.

The third petitioner cites Shenk (1998) as saying that there is insufficient information on Preble's range and ecology. While Shenk cites gaps in knowledge on the Preble's, Shenk's intent was to identify information needed to support a conservation strategy for the Preble's and was not related to the species' listing.

The third petitioner stated that population declines have not been documented. The Preble's has been extirpated from some historically occupied areas. Surveys have identified various locations where the subspecies was historically present but is now absent (Ryon 1996). Since at least 1991, the Preble's has not been found in Denver, Adams, or Arapahoe Counties in Colorado. Its absence in these counties is likely due to urban development, which has altered, reduced, or eliminated riparian habitat (Compton and Hugie 1993; Ryon 1996).

The third petitioner referred to statements made by unidentified parties about lack of historical information and about additional animals being found. We have addressed the issue of insufficient information in previous paragraphs. We address the issue of additional surveys and documentation of additional populations in response to additional statements by the third petitioner below.

Based on information that (1) the Service has identified numerous known or potential population areas, and (2) there are large numbers of unsurveyed sites, the third petitioner concludes that the Preble's is abundant and has never been threatened.

The Service did identify areas of known or potential Preble's populations to assist local governments and other entities in planning activities (63 FR 66777, December 3, 1998). The sites identified as "potential" Preble's population areas had not been surveyed; the presence of Preble's in these locations was considered possible, but had not been verified. This list was a preliminary estimate of potential habitat; some of these potential sites have since been found not to have suitable habitat and/or not to support Preble's populations. The potential habitats since found to support Preble's continue to be subject to the threats listed in the 1998 listing rule.

The third petitioner asserts that the numbers of known and potential Preble's habitat indicate its abundance. The list of known or potential populations identifies fragments of the original Preble's habitat. The number of fragments may appear high but represent only a small portion of the original whole. The number of separate sites reflects the amount of fragmentation that has occurred within historic habitat and is an indication of the previous and continuing threats to Preble's habitat described in the 1998 listing rule.

Additional surveys have been undertaken since the 1998 listing rule in some locations throughout the subspecies' range where habitat was believed suitable and where the species was presumed to occur but had not been documented. Some of these surveys verified Preble's presence at the survey locations; others did not. While new populations have been documented and additional animals have been found, the threat analysis in the 1998 listing rule identified significant threats to the subspecies and its habitat throughout most of its range in both known and potentially occupied areas. The newly documented populations remain subject to the threats analyzed in the 1998 listing rule.

The third petitioner stated that there is no rational definition of habitat. Typical habitat for the Preble's comprises well-developed plains riparian vegetation with adjacent undisturbed grassland communities and a nearby water source. Well-developed plains riparian vegetation typically includes a dense combination of grasses, forbs, and shrubs; a taller shrub and tree