

a road density of 0.58 km/km² (0.93 mile/mi²) within the watershed and considers these roads to be "a primary source of erosion and sediment" (Lefevre 2000). The Forest Service has no plans to address the effects of roads in Sycamore Canyon watershed; thus there will continue to be sediment deposition and scouring in and along the stream channel.

Sycamore Canyon is a very popular place for recreation. The petitioners cite trampling and compaction of soils from foot traffic as negatively affecting the Gentry indigo bush in Sycamore Canyon. Gentry indigo bush plants grow on the floodplain terraces where hikers often create trails to avoid walking in the stream (Falk, pers. observation). Due to its narrow width, there are limited terraces in the canyon intensifying the use of Gentry indigo bush habitat as places to create trails. These activities degrade habitat and may reduce the areas occupied by Gentry indigo bush. We know of no plan to address the effects of recreation in this area.

The Forest Service has not systematically monitored the species on its land. While lack of monitoring is not a direct threat to the species, it does prevent us from adequately assessing the current status of the population. New information would greatly enhance our status review.

Two locations have been noted in Mexico. We have no information on population status or threats at these sites. We are not aware of any protection for these areas. As such, until further information is provided, we do not know how the Mexican populations will contribute to the status of this species.

Factor E: Other natural or manmade factors affecting its continued existence.

With respect to Factor E, the petitioners cite the rarity of the species and the possible extinction risk associated with stochastic events such as drought, flood, and wildfire. This species would most likely be negatively affected by environmental stochasticity (variations over time in the population's operational environment) and natural catastrophes (Menges 1991). We agree, based both on information presented by the petitioner and other information in our files. The most likely scenario is that of catastrophic flooding. Increased rainfall combined with an altered hydrograph in Sycamore Canyon may result in the species being washed out. Long-term drought (as the one we are currently in) may affect the species' ability to recover. The combination of small population size, reduced reproductive potential, and isolation makes this species vulnerable to extinction.

Finding

On the basis of our review, we find that the petition presents substantial information indicating that listing the Gentry indigo bush may be warranted. The main potential threat to the species appears to be loss of plants and habitat associated with heavy livestock use, an altered hydrograph in Sycamore Canyon, sediment loads in the Sycamore Canyon watershed, and the effects of recreation and other human uses of the drainage. There is also a possible increased risk of extinction associated with small, isolated populations from stochastic events.

We have reviewed the available information to determine if the existing and foreseeable threats pose an emergency. We have determined that an emergency listing is not warranted at this time, because the population has recovered in some degree, the population is within a RNA with some protections, and the potential exists for additional populations in Mexico. However, if at any time we determine that emergency listing of the Gentry indigo bush is warranted, we will seek to initiate an emergency listing.

The petitioners also requested that critical habitat be designated for this species. We always consider the need for critical habitat designation when listing species. If we determine in our 12-month finding that listing the Gentry indigo bush is warranted, we will address the designation of critical habitat in the subsequent proposed rule.

Public Information Solicited

When we make a finding that substantial information is presented to indicate that listing a species may be warranted, we are required to promptly commence a review of the status of the species. To ensure that the status review is complete and based on the best available scientific and commercial information, we are soliciting information on the Gentry indigo bush. We request any additional information, comments, and suggestions from the public, other concerned governmental agencies, Native American Tribes, the scientific community, industry, or any other interested parties concerning the status of the Gentry indigo bush. We are seeking information regarding the species' historical and current status and distribution, its biology and ecology, ongoing conservation measures for the species and its habitat, and threats to the species and its habitat, especially where it occurs in Mexico.

If you wish to comment or provide information, you may submit your comments and materials concerning this

finding to the Field Supervisor (*see ADDRESSES* section).

Our practice is to make comments and materials provided, including names and home addresses of respondents, available for public review during regular business hours. Respondents may request that we withhold a respondent's identity, to the extent allowable by law. If you wish us to withhold your name or address, you must state this request prominently at the beginning of your submission. However, we will not consider anonymous comments. To the extent consistent with applicable law, we will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

References Cited

A complete list of all references cited herein is available upon request from the Field Supervisor (*see ADDRESSES* section).

Author

The primary author of this document is Mima Falk, Tucson Sub-Office (*see ADDRESSES* section).

Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: January 25, 2005.

Marshall Jones,

Acting Director, Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018-AU12

Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition To Delist the Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) and Proposed Delisting of the Preble's Meadow Jumping Mouse

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 12-month petition finding and proposed rule.

SUMMARY: We the U.S. Fish and Wildlife Service (Service) announce a 12-month finding on a petition to delist the Preble's meadow jumping mouse (Preble's) (*Zapus hudsonius preblei*) under the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). After reviewing the best scientific and commercial information available, we find that the petitioned action is warranted and propose to delist or remove Preble's from the List of Endangered and Threatened Wildlife. We propose this action based on a review of all available data, which indicate that Preble's is not a discrete taxonomic entity, does not meet the definition of a subspecies, and was listed in error. Before this proposed action is finalized, the Service will conduct a status review and evaluate threats to the combined *Z. h. campestris* entity in all or a significant portion of its range. We will also analyze whether the Preble's portion of *Z. h. campestris* qualifies as a Distinct Population Segment in need of protection. We seek comments from the public regarding this proposal.

DATES: We will consider comments on this notice and proposed rule received until the close of business on May 3, 2005. Requests for public hearings must be received by us on or before March 21, 2005.

ADDRESSES: If you wish to comment, you may submit your comments and materials concerning this notice and proposal by one of several methods:

1. You may submit written comments to Field Supervisor, Colorado Field Office, Ecological Services, 755 Parfet Street, Suite 361, Lakewood, Colorado 80215.

2. You may hand-deliver comments to our Colorado Field Office at the above address or send via facsimile (fax: (303) 275-2371).

3. You may send comments via electronic mail (e-mail) to FW6_PMJM@fws.gov. See the Public Comments Solicited section below for file format and other information about electronic filing.

Comments and materials received, as well as supporting documentation used in the preparation of this 12-month finding and proposed rule, will be available for inspection, by appointment, during normal business hours, at the above address.

To request a public hearing, submit a request in writing to the Colorado Field Office at the above address.

FOR FURTHER INFORMATION CONTACT: Susan Linner, Field Supervisor, at the above address or telephone 303-275-2370.

SUPPLEMENTARY INFORMATION:

Background

The Preble's was listed as threatened on May 13, 1998 (63 FR 26517). At the time of listing, the primary threat to Preble's was habitat loss and degradation caused by agricultural, residential, commercial, and industrial development. On December 23, 2003, we received two petitions, from Coloradans for Water Conservation and Development and the State of Wyoming's Office of the Governor, to remove Preble's from the Federal List of Threatened and Endangered Wildlife and Plants pursuant to the Act. Both petitions maintain Preble's should be delisted based on "data error" (*i.e.*, subsequent investigations show that the best scientific or commercial data available when the species was listed, or the interpretation of such data, were in error) and "taxonomic revision" (*i.e.*, Preble's is not a valid subspecies). As explained in our 1996 Petition Management Guidance (Service 1996), subsequent petitions are treated separately only when they are greater in scope than, or broaden the area of review of, the first petition. In this case, as both petitions were almost identical, the State of Wyoming's petition was treated as a comment on the first petition received.

On March 31, 2004, we published a 90-day finding in the **Federal Register** that the petition presented substantial information to indicate the petitioned action may be warranted (69 FR 16944). Section 4(b)(3)(B) of the Act requires that within 12 months after receiving a petition to revise the Lists of Endangered and Threatened Wildlife and Plants that contains substantial information indicating that the petitioned action may be warranted, the Secretary shall make one of the following findings—(a) The petitioned action is not warranted; (b) the petitioned action is warranted; or (c) the petitioned action is warranted but precluded by pending proposals. Such 12-month findings are to be published promptly in the **Federal Register**. In accordance with section 4(b)(3)(A) of the Act, we have now completed a review of the best available scientific and commercial information on the species and have reached a determination that the petitioned action is warranted. When the proposed action is warranted, it should be accompanied by, or promptly followed by, a proposed rule to implement the warranted action. In this case, we have combined the 12-month finding and the proposed delisting rule into a single document.

General Species Information

Meadow jumping mice (*Zapus hudsonius*) are small rodents with long tails, large hind feet, and long hind legs. The tail is bicolored, lightly-furred, and typically twice as long as the body. Meadow jumping mice have a distinct, dark, broad stripe on their backs that runs from head to tail and is bordered on either side by gray to orange-brown fur. The underside fur is white and very fine in texture. Total length of an adult meadow jumping mouse is approximately 180 to 250 millimeters (mm) (7 to 10 inches (in)), with the tail comprising 108 to 155 mm (4 to 6 in) of that length (Kruttsch 1954, Fitzgerald *et al.* 1994).

Across its range, meadow jumping mice typically occur in moist habitats, including low undergrowth consisting of grasses, forbs, or both, in open wet meadows and riparian corridors, or where tall shrubs and low trees provide adequate cover (Kruttsch 1954, Quimby 1951, Armstrong 1972). Meadow jumping mice prefer lowlands with medium to high moisture over drier uplands. Fitzgerald *et al.* (1994) described meadow jumping mice as most common in wooded areas. Because adequate herbaceous or grassy ground cover is essential for the species, meadow jumping mice in the northern Great Plains are restricted primarily to riparian habitats (Jones *et al.* 1983).

Meadow jumping mice are primarily nocturnal or crepuscular, but also may be active during the day, when they have been seen moving around or sitting under a shrub (Shenk 1998). These mice are nomadic, and may roam up to 1 kilometer (km) (0.6 mile (mi)) in search of moist habitat. Meadow jumping mice usually move in hops of about 3 to 15 centimeters (cm) (1 to 6 in), but are capable of taking a few long jumps of 60 to 90 cm (2 to 3 feet). Meadow jumping mice, including Preble's, are true hibernators. Preble's usually enter hibernation in September or October and emerge the following May, after a potential hibernation period of 7 or 8 months. Adult Preble's reach weights that enable them to enter hibernation as early as the third week in August, whereas young of the year typically enter hibernation in September and October (Meaney *et al.* 2003).

Additional species information is available in the May 13, 1998, final rule to list the Preble's as a threatened species (63 FR 26517) and the June 23, 2003, final rule to designate critical habitat for the Preble's (68 FR 37275).

Taxonomy

The Preble's is a member of the family *Dipodidae* (jumping mice) (Holden 1992), which contains four extant genera. Two of these, *Zapus* and *Napaeozapus*, are found in North America (Hall 1981, Wilson and Ruff 1999).

In his 1899 study of North American jumping mice, Edward A. Preble concluded there were 10 species in the *Zapus* genus. According to Preble, meadow jumping mice (*Z. hudsonius*) included five subspecies. Preble classified all specimens of meadow jumping mice from the States of North Dakota, Montana, South Dakota, Wyoming, Nebraska, Colorado, and Missouri as *Z. h. campestris*.

Krutzsch (1954) revised the taxonomy of the genus after studying morphological characteristics of 3,600 specimens of *Zapus*. This revision recognized only 3 distinct species of jumping mice; the meadow jumping mouse, the western jumping mouse (*Z. princeps*), and the Pacific jumping mouse (*Z. trinotatus*), comprised of 11, 11, and 4 subspecies, respectively. Krutzsch relegated the majority of species previously recognized by Preble (1899) to subspecific status. Krutzsch based his reduction in the number of distinct species on Mayr's (1942) species concept, which defined species as actual or potential interbreeding individuals or populations that are reproductively isolated from other such groups. Mayr described a subspecies as a geographically localized subdivision of the species, which differs genetically and taxonomically (as illustrated by significant morphological characteristics) from other subdivisions of the species.

Krutzsch retained the name *Z. h. campestris*, but restricted its use to specimens from the Black Hills and Bear Lodge Mountains of northeastern Wyoming, southwestern South Dakota, and adjacent southeastern Montana. Individuals from North Dakota, and northwestern, central, and eastern South Dakota were classified as the subspecies *Z. h. intermedius*. Krutzsch described and named *Z. h. preblei* (Preble's) as separate from *Z. h. campestris* (Bear Lodge meadow jumping mouse) based on 11 specimens (4 adult and 7 non-adult). Krutzsch stated that although "the specimens of *Z. h. preblei* are few, the differences between this and neighboring named kinds is considerable." Krutzsch also commented on the presence of physical habitat barriers and lack of known intergradation between Preble's, known only from eastern Colorado and

southeastern Wyoming, and other identified subspecies of the meadow jumping mouse ranging to the east and north. Among recognized subspecies, Krutzsch found that Preble's most closely resembled the Bear Lodge meadow jumping mouse from northeastern Wyoming, but summarized differences in coloration and skull characteristics. Preble's was recognized as one of twelve subspecies of meadow jumping mouse by Hafner *et al.* (1981).

Jones (1981) examined the morphology of 9,900 *Zapus* specimens from across North America. Jones concluded that the Pacific jumping mouse was not a valid taxon and suggested reducing the number of species in the genus to two (the western jumping mouse and the meadow jumping mouse). At the subspecific level, Jones concluded that there was "no evidence of any population of *Zapus hudsonius* being sufficiently isolated or distinct to warrant subspecific status" and "No named subspecies is geographically restricted by a barrier, with the possible exception of *Z. h. preblei*." Jones made the statements above based on the subspecies concept proposed by Whitaker (1970) which said—(1) Subspecies must be divided by primary isolating mechanisms that stop or significantly reduce gene flow; (2) in the absence of primary isolating mechanisms, subspecies would still be capable of interbreeding; and (3) the existence of primary isolating mechanisms can be inferred from the genetic distinctness of subspecies, as evidenced by unique characteristics. The conclusions reached by Jones have not been incorporated into the formal taxonomy of the genus. These conclusions were never published in a peer-reviewed journal; therefore, the scientific community never formally assessed the validity of this work.

In a report to the Colorado Division of Wildlife, Riggs *et al.* (1997) analyzed mitochondrial deoxyribonucleic acid (mtDNA) from tissue samples of meadow jumping mice and western jumping mice from Colorado and Wyoming and concluded that Preble's mice form a homogenous group recognizably distinct from nearby populations of meadow jumping mice and adjacent species of the genus. Hafner (1997) reviewed the Riggs study, inspected Riggs' original sequence data, and agreed that Preble's form a relatively homogenous group compared to neighboring subspecies. Ramey *et al.* (2004) reviewed the Riggs study, and criticized the methodology for not rigorously testing whether Preble's formed a monophyletic group (*i.e.*, a

grouping of evolutionary lineages that includes a common ancestor and all descendent lineages) and for not providing statistical tests to support their conclusions.

Ramey *et al.* (2004) (a revision of Ramey *et al.* 2003 considered in the 90-day finding) examined four lines of evidence to test the taxonomic validity of the Preble's as described by Krutzsch (1954). First, they performed a phylogenetic and population genetic analysis of mtDNA sequence data, primarily from museum specimens of four subspecies of meadow jumping mouse, including Preble's (58 specimens), the Bear Lodge meadow jumping mouse (33 specimens), *Zapus hudsonius luteus* (32 specimens), and *Z. h. pallidus* (35 specimens). Ramey *et al.* used *Z. princeps princeps* (7 specimens), *Z. p. idahoensis* (3 specimens), and *Z. p. utahensis* (7 specimens) as the outgroup for the phylogenetic analysis. An outgroup is an organism from a distantly related group that shares a common ancestor with the group in question. Using an analysis of molecular variance (AMOVA), Ramey *et al.* examined genetic variation in a hierarchical fashion within and between Preble's and Bear Lodge meadow jumping mouse. This comparison revealed most of the genetic variation was within subspecies (64 percent) rather than among these subspecies (37 percent). Additionally, they found that all 4 identified Preble's mtDNA haplotypes were included within the 16 identified Bear Lodge meadow jumping mouse mtDNA haplotypes. However, Ramey *et al.* also documented a high level of mtDNA variation (nucleotide diversity) in Bear Lodge meadow jumping mouse compared to Preble's, "making these subspecies seem more diverged than the shared mtDNA haplotypes indicate."

Ramey *et al.* (2004) believed these findings are consistent with a founder effect. A founder effect is the establishment of a new population by a few original founders that carry only a small fraction of the total genetic variation of the parental population. A population may be descended from a small number of ancestral individuals for two reasons—(1) A small number of individuals may colonize a place previously uninhabited by their species; or (2) an established population may fluctuate in size such that a population passes through a "bottleneck" in which only a few individuals survive, and later expands again under more favorable conditions. Ramey *et al.* speculated that there were population "bottlenecks" during southward colonization into what is now Preble's range. Based on

their results and analysis, the authors concluded that Preble's is a less genetically diverse population of Bear Lodge meadow jumping mouse.

Second, Ramey *et al.* (2004) completed a morphometric analysis on skull measurements of the Preble's and the Bear Lodge meadow jumping mouse (testing the same nine skull measurements that Krutzsch (1954) used to support his taxonomic assertions). Four repeated measurements were taken with digital calipers and recorded to the nearest hundredth of a millimeter as per Conner and Shenk (2003). Ramey *et al.* employed the following criterion for testing distinguishability between subspecies— ≥ 90 percent of specimens correctly classified at a posterior probability of $p > 0.95$. Employing this method, the analysis of Ramey *et al.* found no basis for the quantitative morphological skull differences Krutzsch noted. While significant difference was observed between the Preble's and the Bear Lodge meadow jumping mouse in three of the nine skull measurements, two of these three differences did not correspond to those Krutzsch described.

Third, Ramey *et al.* (2004) performed a critical review of Krutzsch's qualitative description of Preble's as a subspecies. The authors found that the skull shape and pelage differences noted by Krutzsch (1954) had no quantitative basis and considered them "unsupported opinion."

Fourth, Ramey *et al.* (2004) discussed ecological distinctiveness as an integral part of the species concept presented by Crandall *et al.* (2000). Crandall *et al.* (2000) proposed a hypothesis-testing approach describing management units based upon genetic and ecological distinctiveness. Crandall *et al.* advocated that ecological differences among populations can drive adaptive change that would not be detected by molecular markers alone. Ramey *et al.* also examined the literature for evidence of ecological differences between subspecies. They found no published ecological evidence for discreteness between Preble's and the Bear Lodge meadow jumping mouse. Ramey *et al.* asserts that this lack of published information supports his conclusion that these subspecies should be synonymized.

Ramey *et al.* (2004) concluded that, based on the lack of genetic, morphological, or published ecological evidence for genetic distinctiveness between the Preble's and the Bear Lodge meadow jumping mouse, these subspecies should be synonymized (considered the same subspecies) as *Zapus hudsonius campestris*. This

taxonomic revision has not yet been published in a peer-reviewed journal and has not been incorporated into the formal taxonomy of the genus.

Peer Review of Ramey *et al.* 2004

The Ramey *et al.* (2004) report has undergone peer review. The Colorado Division of Wildlife solicited and received nine peer reviews of this report and transmitted those reviews to the Service on April 24, 2004. We solicited additional peer reviews focused on specific aspects of the report from seven scientists. In addition to the report, the Service sent reviewers maps of the meadow jumping mouse range; the May 13, 1998, final rule to list Preble's (63 FR 26517); and a November 5, 2003, working draft of a recovery plan for Preble's. Five peer reviewers responded to Service questions and provided comments on the study. Reviews from all 14 peer reviewers ranged from strong support of the work, to pointed criticism of study design, data interpretation, and conclusions. These reviews are available in their entirety at <http://mountain-prairie.fws.gov/preble/>. Because Ramey *et al.* 2004 remains unpublished, these peer reviews were crucial in our consideration of what constitutes the best scientific and commercial information available regarding the taxonomy of this subspecies. A summary of the peer reviews and other public comments follow below.

Of the 14 peer reviews, 5 supported the Ramey *et al.* (2004) study and its conclusions (Robert Bradley, Texas Tech, in litt. 2004; Keith Crandall, Brigham Young University, in litt. 2004; David Hafner, New Mexico Museum of Natural History, in litt. 2004; Brett Riddle, University of Nevada, Las Vegas, in litt. 2004; Lisette Waits, University of Idaho, in litt. 2004), 3 leaned toward support of the study and its conclusions (Carron Meaney, Meaney and Associates, Boulder, Colorado, in litt. 2004; Jeffry Mitton, University of Colorado, Boulder, in litt. 2004; Jack Sites, Brigham Young University, in litt. 2004), and 6 were generally critical of the study or skeptical of its conclusions (David Armstrong, University of Colorado, Boulder, in litt. 2004; Mary Ashley, University of Illinois at Chicago, in litt. 2004; Mary Conner, Utah State University, in litt. 2004; Marlis Douglas, Colorado State University, in litt. 2004; Sara Oyler-McCance, University of Denver and the Rocky Mountain Center for Conservation Genetics and Systematics, in litt. 2004; Gary White, Colorado State University, in litt. 2004). However, some of these peer reviewers were also supportive of portions of the study.

Those who supported the conclusions of Ramey *et al.* (2004) generally accepted most aspects of the report. Bradley (in litt. 2004) wrote that Ramey *et al.* was an "excellent piece of work" on a controversial issue and particularly liked the study design intended to test a series of hypotheses. Bradley thought that the morphological and mtDNA analyses are convincing in that the two taxa actually represent a single taxon. Crandall (in litt. 2004) believed appropriate markers and methods were used and that the conclusions were "right on"; he found the study impressive in its inclusion of both genetic and morphometric data coupled with an evaluation of previous work. Crandall thought the conclusions are well founded and well supported by the data. Hafner (in litt. 2004) noted that Ramey *et al.* employed appropriate methods, markers, evidence, and interpretation to convincingly argue that Preble's is not a valid subspecies, but that the synonymized entity remains imperiled. Riddle (in litt. 2004) thought that the data supported a lack of substantial morphological, ecological, and molecular differentiation between these two subspecies. Riddle thought this was a common outcome of molecular analyses of taxonomic subspecies within close geographic proximity, that are ecologically similar, and appear to have no surmounting biogeographic obstacles to movements across the landscape (from a historical perspective). While he did not support retaining Preble's and Bear Lodge meadow jumping mouse as separate taxonomic units, Riddle was concerned for the conservation status of the synonymized taxonomic unit. Waits (in litt. 2004) believed that the authors provided convincing evidence for synonymizing because the hypothesis testing did not reject the hypothesis that the two are essentially the same morphologically and genetically. Meaney (in litt. 2004) did not take a definitive position on the results or conclusions of Ramey *et al.*, but called the paper overall good science. Mitton (in litt. 2004) noted that appropriate markers and methods were used and suggested he would support the conclusions of Ramey *et al.* if the grounds for the removal of certain specimens could be validated. Jack Sites (Brigham Young University, in litt. 2004) viewed Ramey *et al.* as tentative support for synonymizing and suggested synonymizing if subsequent study validated their results.

Of the reviewers critical of the report, most felt its conclusion that Preble's and the Bear Lodge meadow jumping mouse

should be synonymized went beyond the data presented. Armstrong (in litt. 2004) saw the report as “a small piece of the puzzle of geographic variation in the meadow jumping mouse” and suggested that “a restricted, targeted investigation of this kind, laid out in an unpublished report, is not an appropriate vehicle for a taxonomic decision of the kind proposed.” Ashley (in litt. 2004) suggested that more data is needed to synonymize. Conner (in litt. 2004) thought that ecological, behavioral, physiological, and geographic factors needed to be included in any testing of Preble’s taxonomy. Douglas (in litt. 2004) stated, “Limitations of the data affect resolution of analysis and thus render the results inconclusive” and that “the overall tone of the manuscript lacks objectivity.” Oyler-McCance (in litt. 2004) had “no problem with the study itself except for some of the conclusions made by the authors,” and did not feel that this study resolves the taxonomic question. Regarding the report’s conclusion, White (in litt. 2004) stated, “the report should conclude that no differences were detected given the measurements conducted, and should not jump to the unfounded conclusion that the two subspecies are identical.”

Several reviewers discussed the use of mtDNA to delineate valid subspecies used by Ramey *et al.* (2004). For example, Douglas (in litt. 2004) noted that a timespan of greater than 10,000 years is the limit for mtDNA resolution and that taxa more recently diverged would be difficult to detect via mtDNA analysis. Oyler-McCance (in litt. 2004) noted that the genetic data gathered by Ramey *et al.* is from only one locus, and that this locus represents only the maternal history, which could very well differ from other genetic material of the subspecies. Oyler-McCance, Sites (in litt. 2004) and Riddle discussed the potential for introgression of Bear Lodge meadow jumping mouse mtDNA on the Preble’s nuclear background, but Riddle thought it unlikely to have happened simultaneously across the entire range of Preble’s, given the generally fragmented nature of Preble’s populations.

Another issue brought up by several reviewers was use of “ancient DNA” from museum specimens. Ramey *et al.* (2004) noted that since museum collections are accessible for future scientific research, reliance on museum specimens means the study is repeatable. Douglas (in litt. 2004) noted that the use of museum specimens allows for specimens to be obtained from a large geographic area and for a study to be completed in short order.

However, Douglas also detailed numerous problems with the use of ancient DNA such as the quality of DNA extracted from museum specimens is often inferior, making amplification difficult or the contamination of high-quality DNA from other samples possible.

Another issue associated with the use of ancient DNA is the size of DNA fragments (*i.e.*, the number of base pairs). Ramey *et al.* (2004) analyzed 355 base pairs of sequence data. Douglas (in litt. 2004) noted that this is a marginal data set for population level analyses; as a general rule, at least 1,000 base pairs should be evaluated to substantiate findings and make results conclusive. Although a larger number of base pairs is desirable (Courtney *et al.* 2004), mtDNA studies often utilize less than 1,000 base pairs (Riggs *et al.* 1997; Haig *et al.* 2004).

Other issues were brought up by the reviewers. Douglas (in litt. 2004) also questioned the use of western jumping mouse as Ramey *et al.*’s outgroup. Several reviewers discussed Ramey *et al.*’s removal of a number of specimens from their study and suggested their presumed identities be verified through further testing (Armstrong in litt. 2004; Douglas in litt. 2004; Mitton in litt. 2004; Hafner in litt. 2004). Ashley (in litt. 2004), Oyler-McCance (in litt. 2004), and Douglas (in litt. 2004) questioned Ramey *et al.*’s reliance on an AMOVA to evaluate variation within and among groups. Specifically, the standard for a subspecies employed by Ramey *et al.* requires greater diversity among accepted subspecies than within them. Ashley (in litt. 2004) also questioned the use of variation within and among groups as a “very strict criterion” to judge a subspecies’ validity, and suggested that based on haplotype frequencies the two subspecies are “genetically quite distinct.”

A number of the reviewers detailed the strengths and the weaknesses of the morphological portion of the analysis performed in Ramey *et al.* (2004). For example, Meaney (in litt. 2004) found that the morphometric data and analysis appear solid. Ashley (in litt. 2004) and Sites (in litt. 2004) noted Ramey *et al.*’s strongest case for synonymizing comes from the morphological aspects of the report, rather than the genetics analysis.

Many of the reviewers, such as Waits (in litt. 2004), Meaney (in litt. 2004) and Riddle (in litt. 2004) discussed the conclusion by Ramey *et al.* (2004) regarding ecological discreteness. Ashley (in litt. 2004), Conner (in litt. 2004), Douglas (in litt. 2004), and Oyler-McCance (in litt. 2004) said it was not clear that there had been any evaluation

of ecological difference and noted that the authors gave no references, making it difficult to judge how thoroughly they looked. Conner and Oyler-McCance also questioned what variables were compared. In Crandall’s view (in litt. 2004), clear ecological differences over evolutionary time would result in morphologic differences; as none were found, a lack of ecological differences can be inferred. Overall, Crandall and Mitton (in litt. 2004) agreed with Ramey *et al.* (2004) that there did not appear to be clear ecological distinctions between Preble’s and closely related taxa that justify conservation for Preble’s.

Other Public Comments

On March 31, 2004, we published a notice in the **Federal Register** (69 FR 16944) that the petition received on December 17, 2003, to delist Preble’s presented substantial information to indicate the petitioned action may be warranted. As part of this Notice, we requested information on the genetic and taxonomic classification of Preble’s, the abundance and distribution of the subspecies, and the threats faced by Preble’s in relation to the five listing factors (as defined in section 4(a)(1) of the Act). In response, we received nine letters containing comments and information from government agencies (Colorado Department of Natural Resources, El Paso Board of County Commissioners, Douglas County Open Space and Natural Resources), organizations (Colorado Farm Bureau, Center for Native Ecosystems, Coloradans for Water Conservation and Development), and individuals. As noted above, 14 peer reviews of Ramey *et al.* 2004a were received and considered. For a full discussion of this issue, read the Peer Review section of this notice above.

Colorado Department of Natural Resources called for the immediate delisting of the Preble’s based on genetic studies by Ramey *et al.* (2004a) and increases in known occurrence. They contended that essential conservation efforts to protect the Preble’s in Colorado would be carried on by State and local governments regardless of Federal listing status. They also provided extensive documentation of State and county efforts to conserve habitats within the Preble’s range in Colorado.

The El Paso County Board of County Commissioners supported delisting, described their efforts toward development of a regional Habitat Conservation Plan, and suggested that a decision to delist would save the county and its citizens time and money. The Douglas County Division of Open Space

and Natural Resources described habitat conditions and conservation measures employed in Douglas County, and commented that Douglas County populations should not be considered a distinct population segment of wider jumping mouse distribution.

In a single letter representing their combined comments, the Center for Native Ecosystems, Biodiversity Conservation Alliance, Native Ecosystem Council, and Forest Guardians opposed delisting of the Preble's. They discussed abundance and distribution of Preble's, genetics and taxonomic classification, threats to Preble's, and the status of the Bear Lodge meadow jumping mouse. The Colorado Farm Bureau supported delisting of Preble's and commented on the lack of threats to Preble's from agricultural activities. The Coloradans for Water Conservation and Development, one of the petitioners, provided comments that largely paralleled the contentions made in their petition. Three private individuals provided comments—One contending that delisting based on available genetic studies was premature; one largely criticizing the original listing; and one discussing threats to Preble's in the broader context of human impacts to the environment.

Petition Finding

We have carefully assessed the best scientific and commercial information regarding the taxonomy and biology of this species. We reviewed the petition and associated documents, information available in our files, and other published and unpublished information submitted to us during the public comment period following our 90-day petition finding. We reviewed new data and other information on the genetics, taxonomy, life history, ecology, status, and existing threats to Preble's.

At this time, we view Ramey *et al.* (2004) as the best scientific and commercial information available regarding the taxonomy of the Preble's and Bear Lodge meadow jumping mouse. Within the next year, the Service expects additional genetics information (*i.e.*, nuclear DNA results) that will verify (or refute) the conclusions of Ramey *et al.* The peer reviews of the report suggested a majority (8 out of 14) either support or lean toward supporting the taxonomic conclusions of Ramey *et al.* (2004). Therefore, on the basis of the lack of distinct genetic and morphologic differences between the two putative subspecies, we conclude that Preble's is likely not a valid subspecies of meadow jumping mice (*Zapus hudsonius*). Based on the above

conclusion, we find that the petitioned action is warranted because the original listing of Preble's as a subspecies of meadow jumping mouse was in error. Accordingly, we propose to delist or remove Preble's from the List of Endangered and Threatened Wildlife in 50 CFR 17.11.

The Service will evaluate threats to the combined entity (*Zapus hudsonius campestris*) in all or a significant portion of its range before this rule is finalized. This finding and proposed rule do not attempt to analyze threats to the combined entity, *Z. h. campestris*. We are initiating a status review and will analyze the threats to the species in the final rule. Finally, as discussed in the 90-day finding (69 FR 16944), the Service will analyze whether the Preble's portion of *Z. h. campestris* qualifies as a Distinct Population Segment in need of protection before this rule is finalized.

At this time, the Service is seeking additional information to perform this analysis. We currently have only limited information regarding the distribution, life history, ecology, and habitat of Bear Lodge meadow jumping mouse portion of *Z. h. campestris*, and no information regarding its abundance or population trends. While we have some information regarding land management and habitat conditions in the Black Hills, we lack information connecting these habitat conditions to population effects. Therefore, we are seeking additional information and data on meadow jumping mouse in the vicinity of the Black Hills. More detail of what is sought is outlined in the Public Comments Solicited section of this proposed notice and rule.

In making this determination we have followed the procedures set forth in section 4(a)(1) of the Act and regulations implementing the listing provisions of the Act (50 CFR part 242).

Effects of the Rule

Critical Habitat

Critical habitat is defined in section 3 of the Act as—(i) The specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species, and (II) that may require special management considerations or protection, and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of the Act, upon a determination by the Secretary of the Department of the Interior (Secretary

that such areas are essential for the conservation of the species. "Conservation" means the use of all methods and procedures needed to bring the species to the point at which listing under the Act is no longer necessary.

Critical habitat was designated for the Preble's on June 23, 2003 (68 FR 37275). The designation included eight habitat units totaling approximately 12,632 hectares (31,222 acres) found along 578.1 km (359.2 mi) of rivers and streams in eastern Colorado and in southeastern Wyoming. The designation includes river and stream reaches and adjacent areas in the North Platte River and South Platte River drainages. By removing the Preble's from the List of Endangered and Threatened Wildlife, this proposal, if finalized, will eliminate all currently designated critical habitat for the species.

Special Regulations Under Section 4(d)

Section 9 of the Act prohibits take of endangered wildlife. The Act defines take to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or to attempt to engage in any such conduct. However, the Act also provides for the authorization of take and exceptions to the take prohibitions. Take of listed species by non-Federal property owners can be permitted through the process set forth in section 10 of the Act. For federally funded or permitted activities, take of listed species may be allowed through the consultation process of section 7 of the Act. While section 9 of the Act establishes prohibitions applicable to endangered species, the Service has issued regulations (50 CFR 17.31) applying those same prohibitions to threatened wildlife. These regulations may be tailored for a particular threatened species through promulgation of a special rule under section 4(d) of the Act. When a special rule has been established for a threatened species, the general regulations for some section 9 prohibitions do not apply to that species, and the special rule contains the prohibitions, and exemptions, necessary and advisable to conserve that species.

On May 22, 2001, the Service adopted special regulations governing take of the threatened Preble's (66 FR 28125). The special regulations provide exemption from take provisions under section 9 of the Act for certain activities related to rodent control, ongoing agricultural activities, landscape maintenance, and existing uses of water. On October 1, 2002, the Service amended those regulations to provide exemptions for

certain activities related to noxious weed control and ongoing ditch maintenance activities (67 FR 61531). On February 24, 2004, the Service proposed permanent extension of the amended special regulations (69 FR 8359). On May 20, 2004, the Service extended the special regulations permanently (69 FR 19101). The current special regulations at 50 CFR 17.40(l) will be eliminated by this proposal, if finalized, because Preble's will no longer be protected by the Act.

Future Conservation Measures

Section 4(g)(1) of the Act requires us to monitor a species for at least 5 years after it is delisted based on recovery. Because Preble's is being delisted due to new information that demonstrates that the original classification was in error, rather than due to recovery, the Act does not require us to monitor this animal species following its delisting.

Public Comments Solicited

We intend that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, we solicit comments or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule. Generally, we seek information, data, and comments concerning the taxonomic classification and conservation status of Preble's and Bear Lodge meadow jumping mouse. More specifically, we seek data from any systematic surveys for Bear Lodge meadow jumping mouse, as well as any studies that may show population size or trends. We request quantitative information regarding the life history, ecology, and habitat use of Bear Lodge meadow jumping mouse, as well as information regarding the applicability of information relevant to other subspecies. We solicit information on the threats faced by the Bear Lodge meadow jumping mouse and Preble's in relation to the five listing factors (as defined in section 4(a)(1) of the Act). We seek information regarding the effects of current land management on population distribution and abundance of Bear Lodge meadow jumping mouse. And finally, we seek information regarding the possibility of contact and interaction between Bear Lodge meadow jumping mouse and adjacent subspecies of meadow jumping mouse (*i.e.*, *Zapus hudsonius intermedius* and *Z. h. pallidus*) or other information informing a Distinct Population Segment analysis.

Submit comments as indicated under **ADDRESSES**. If you wish to submit comments by e-mail, please avoid the

use of special characters and any form of encryption. Please also include your name and return address in your e-mail message.

Our practice is to make comments, including names and home addresses of respondents, available for public review during regular business hours. Individual respondents may request that we withhold their home address from the rulemaking record, which we will honor to the extent allowable by law. There also may be circumstances in which we would withhold from the rulemaking record a respondent's identity, as allowable by law. If you wish us to withhold your name or address, you must state this prominently at the beginning of your comment. However, we will not consider anonymous comments. We will make all submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, available for public inspection in their entirety. Comments and other information received, as well as supporting information used to write this rule, will be available for public inspection, by appointment, during normal business hours at the above address. In making a final decision on this proposal, we will take into consideration the comments and any additional information we receive. Such communications may lead to a final regulation that differs from this proposal.

Public Hearing

The Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor, Colorado Field Office, Ecological Services, 755 Parfet Street, Suite 361, Lakewood, Colorado 80215.

Peer Review

In accordance with our policy published on July 1, 1994 (59 FR 34270), we will solicit the expert opinions of at least three appropriate and independent specialists for peer review of this proposed rule. The purpose of such review is to ensure that decisions are based on scientifically sound data, assumptions, and analyses. We will send peer reviewers copies of this proposed rule immediately following publication in the **Federal Register**. We will invite peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposed delisting of this species. We will

summarize the opinions of these reviewers in the final decision document, and we will consider their input as part of our process of making a final decision on the proposal.

Paperwork Reduction Act

Office of Management and Budget (OMB) regulations at 5 CFR 1320, which implement provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), require that interested members of the public and affected agencies have an opportunity to comment on agency information collection and recordkeeping activities (5 CFR 1320.8(d)). The OMB regulations at 5 CFR 1320.3(c) define a collection of information as the obtaining of information by or for an agency by means of identical questions posed to, or identical reporting, recordkeeping, or disclosure requirements imposed on, 10 or more persons. Furthermore, 5 CFR 1320.3(c)(4) specifies that "ten or more persons" refers to the persons to whom a collection of information is addressed by the agency within any 12-month period. This rule does not include any collections of information that require approval by OMB under the Paperwork Reduction Act.

National Environmental Policy Act

The Service has determined that Environmental Assessments and Environmental Impact Statements, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Act. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

References

A complete list of all references cited herein is available upon request from the Colorado Field Office, U.S. Fish and Wildlife Service (see **ADDRESSES**).

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, the Service proposes to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99–625, 100 Stat. 3500, unless otherwise noted.

§ 17.11 [Amended]

2. Section 17.11(h) is amended by removing the entry for “Mouse, Preble’s meadow jumping” under “Mammals” from the List of Endangered and Threatened Wildlife.

§ 17.40 [Amended]

3. Section 17.40 is amended by removing and reserving paragraph (l).

§ 17.95 [Amended]

4. Section 17.95(a) is amended by removing the entry for critical habitat for the Preble’s meadow jumping mouse (*Zapus hudsonius preblei*).

Dated: January 28, 2005.

Marshall P. Jones Jr.,

Deputy Director, U.S. Fish and Wildlife Service.

[FR Doc. 05–2020 Filed 1–31–05; 10:56 am]

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