



# United States Department of the Interior

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## Memorandum

To: Geographic Assistant Regional Director - Southern Ecosystems  
Regional Office, Region 6, Lakewood, Colorado, 60140

From: Field Supervisor, Ecological Services,  
Colorado Field Office, Lakewood, Colorado 

Subject: Intra-Service Section 7 consultation and Biological Opinion on Issuance of an  
Incidental Take Permit to Tracy and Lana Leonard, Boulder County, Colorado  
(ES/GJ-6-CO-00-F-010).

This document constitutes the biological opinion prepared pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act), on the effects of issuing an incidental take permit to Tracy and Lana Leonard (the Applicants) for the federally threatened Preble's meadow jumping mouse (*Zapus hudsonius preblei*) (Preble's), pursuant to section 10(a)(1)(B) of the Act. The proposed action involves construction of two single family residences on the 28.5 acre Leonard Property, in Boulder County, Colorado. This property is located at 11666 Crane Hollow Road, 1/4 mile south of Hygiene Road in the Northeast 1/4 of Section 35, Township 3, Range 70 West of the Sixth Principal Meridian. The incidental take would be in the form of potential disturbance to and loss of habitat used by Preble's.

This biological opinion is based on the project proposal as described in the Applicant's "Environmental Assessment/Habitat Conservation Plan for Issuance of an Endangered Species Section 10(a)(1)(B) Permit for the Incidental Take of the Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*) For Construction of Two Single Family Residences on Leonard Property, Boulder County, Colorado" of November 15, 1999, as well as additional details provided by Queen of the River Fish Co., Inc. (Consultant). The Service has determined that the proposed project may adversely affect the Preble's.

## CONSULTATION HISTORY

On May 13, 1998, Preble's was listed as threatened under the Act. Full protection for Preble's became effective on June 12, 1998. The Service received its first correspondence with the Applicants on September 22, 1999 and has since had various communications and meetings with the Applicants' and their Consultant. The subject HCP/EA and permit application were submitted to the Service, on November 17, 1999, and are incorporated herein by reference.

## **BIOLOGICAL OPINION**

This biological opinion is based on information regarding cumulative effects, conditions forming the environmental baseline, the status of the Preble's, and the importance of the project area to the survival and recovery of the species. The data used in this biological opinion constitute the best scientific and commercial information currently available.

It is the Service's biological opinion that neither the direct nor indirect effects of the proposed projects (which includes the implementation of conservation measures agreed to during informal consultation and outlined in this biological opinion) will jeopardize the continued existence of the Preble's. Although the projects may adversely affect the Preble's and its habitat along St. Vrain Creek, the proposed action and conservation measures will avoid the likelihood of jeopardy to the species. No critical habitat has been designated for this species, therefore, none will be affected.

### **DESCRIPTION OF THE PROPOSED ACTION**

The proposed action involves construction of two single family residences on the 28.5 acre Leonard Property, in Boulder County, Colorado. This property is located at 11666 Crane Hollow Road, 1/4 mile south of Hygiene Road in the Northeast 1/4 of Section 35, Township 3, Range 70 West of the Sixth Principal Meridian. Tracy and Lana Leonard have obtained a Non Urban Planned Unit Development (NUPUD) permit from Boulder County for development of their property which includes preservation of their historic homestead and creation of two additional building sites for family members. The approved Leonard NUPUD Outlot Management Plan (Figure 2) shows that the Leonard property originally totaled 35 acres. This included 3 residential lots totaling 5.25 acres (one historic home site totaling 2.25 acres and 2 new home sites totaling 3.0 acres), and outlots totaling 29.75 acres. The 6.5 acre Outlot A was sold under the approved NUPUD. Outlots C, D and E (totaling 1.75 acres) were used for the realignment of Crane Hollow Road. The majority of the property (21.5 acres) is in Outlot B which include the St. Vrain Creek Riparian Preservation Area (6.0 acres), a Recreation/Landscape Zone (8.3 acres), and an Agriculture Zone (7.2 acres). The St. Vrain Creek and associated riparian corridor traverses the northern portion of the property. The Recreation/Landscape Zone includes a 7 acre pond in the central portion of the property, and a 2 acre pond east of the occupied residence. The Agriculture Zone is composed of 2 parcels, the largest is an irrigated pasture located on the southern extent of the property. The entire original 35 acres with the exception of the residential lots have been granted to Boulder County through a conservation easement which will protect the St. Vrain Creek, its associated riparian communities, the adjacent pastures, and the ponds into perpetuity.

The incidental take would be in the form of potential disturbance to and loss of habitat used by Preble's. The principal actions likely to result in possible incidental take include site preparation prior to construction of the residential structures and associated landscaping. As part of this project, the Applicants will carry out conservation measures described in the Mitigation Plan section of their EA/HCP (incorporated herein by reference), to reduce and offset potential for impacts to Preble's at the site.

### Conservation Measures

Actions in the project description that the project proponent will implement to further the recovery of threatened and endangered species are known as conservation measures. As part of the proposed action, the beneficial effects of these conservation measures are taken into consideration in the jeopardy and incidental take analyses. Conservation measures are part of the proposed action and their implementation is required under the terms of this consultation. Specific conservation measures identified in the HCP/EA and included in this biological opinion that will benefit Preble's include the following.

1. Maximize the extent, quality, and connectivity of Preble's habitat along the St. Vrain corridor.
2. The St. Vrain corridor will be protected in perpetuity through a conservation easement.
3. Grazing will be managed within the Recreation/Landscape Zone to protect Preble's habitat.

### STATUS OF THE PREBLE'S MEADOW JUMPING MOUSE

Preble's is a small rodent in the family Zapodidae and is 1 of 12 recognized subspecies of the species *Z. hudsonius*, the meadow jumping mouse. Preble's is native only to the Rocky Mountains-Great Plains interface of eastern Colorado and southeastern Wyoming. This shy, largely nocturnal mouse lives in moist lowlands with dense vegetation. It is 8 to 9 inches long (its tail accounts for 60 percent of its length) with hind feet adapted for jumping. Preble's hibernates underground from September to May.

Records for Preble's meadow jumping mouse define a range including Adams, Arapahoe, Boulder, Denver, Douglas, El Paso, Elbert, Jefferson, Larimer, and Weld counties in Colorado; and Albany, Laramie, Platte, Goshen, and Converse counties in Wyoming (Kruttsch 1954, Compton and Hugie 1993). Armstrong et al. (1997, p. 77) described typical Preble's meadow jumping mouse habitat as "well-developed plains riparian vegetation with relatively undisturbed grassland and a water source in close proximity." Also noted was a preference for "dense herbaceous vegetation consisting of a variety of grasses, forbs and thick shrubs."

Preble's has undergone a decline in range and populations within its remaining range have been lost. Habitat loss and fragmentation resulting from human land uses have adversely impacted Preble's populations. David Armstrong (University of Colorado, pers. com. 1998) concluded that the meadow jumping mouse, in this region as elsewhere, is a habitat specialist, and that its specialized habitat is declining.

Compton and Hugie (1993, 1994) cited human activities that have adversely impacted Preble's meadow jumping mouse including: conversion of grasslands to farms; livestock grazing; water development and management practices; and, residential and commercial development. Shenk (1998) linked potential threats to ecological requirements of Preble's meadow jumping mouse and suggested that factors which impacted vegetation composition and structure, riparian hydrology, habitat structure, distribution, geomorphology, and animal community composition must be addressed in any conservation strategy.

Residential and commercial development, accompanied by highway and bridge construction, and instream alterations to implement flood control, directly remove Preble's meadow jumping mouse habitat, or reduces, alters, fragments, and isolates habitat to the point where Preble's meadow jumping mouse can no longer persist. Corn et al. (1995) proposed that a 100 meter (328 foot) buffer of unaltered habitat be established to protect the floodplain of Monument Creek from a range of human activities that might adversely effect Preble's or its habitat. Roads, trails, or other linear development through Preble's habitat may act as barriers to movement. Shenk (1998) suggested that on a landscape scale, maintenance of acceptable dispersal corridors linking patches of Preble's habitat may be critical to its conservation.

Further information about the biology and status of the Preble's can be found in the "Conservation Assessment and Preliminary Conservation Strategy for Preble's Meadow Jumping Mouse (*Zapus hudsonius preblei*)" (Shenk, 1998, available upon request).

## **ENVIRONMENTAL BASELINE**

In Boulder County, Preble's has been captured along South Boulder Creek, its tributaries, and associated ditches, and along the St. Vrain Creek, its tributaries and associated ditches. Populations of Preble's are known to occur along the St. Vrain 0.3 miles east of the Leonard property (Meaney, 1996). Although no trapping was conducted to determine absence or presence on the Leonard property, Preble's are assumed to occur along St. Vrain Creek due to the proximity of known Preble's populations and high quality habitat on the property. St. Vrain Creek through the Leonard property is densely vegetated by a cottonwood and grass plant association and the channel has been maintained in relatively undisturbed condition. Based on the 1996 capture, Preble's is assumed to occupy all suitable habitats within the project area. Preble's are also known from approximately 1.5 miles upstream on the St. Vrain Creek (R. Beane, pers. comm., 1999).

## **EFFECTS OF ACTION**

The proposed construction will directly affect 3.2 acres of potential Preble's habitat within the St. Vrain Creek watershed. The riparian corridor of the St. Vrain within the project site is assumed to be inhabited by Preble's year-round, but is not expected to be impacted by the proposed project. The area to be impacted is within uplands adjacent to the St. Vrain riparian corridor and represents only small portion of the potential Preble's foraging habitat present. The project will not impact the ability of Preble's to travel upstream or downstream along the St. Vrain Creek corridor in the project area.

## **CUMULATIVE EFFECTS**

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions in that area unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act if there are adverse effects or potential for take of a federally-listed species.

Substantial development is occurring in Boulder County. In the vicinity of the project site, property is controlled by a number of private owners as well as Boulder County Open Space. A

variety of land use changes may occur with potential direct or secondary impacts on Preble's. Secondary effects include those associated with stormwater discharge from developed areas, increases in noise, pollution, human activity, and domestic animals including livestock, cats and dogs. The 3.2 acres disturbed would contribute to the cumulative disturbance of Preble's habitat in Boulder County from development and other land use projects. The vegetation types impacted would be primarily upland foraging habitat.

The proposed action may contribute to take of Preble's mouse and/or their habitat in the region when added to Section 10(a)(1)(B) incidental take permits that may be issued by the Service for other projects. However, any Preble's take or habitat loss that may occur in the short term by loss of upland habitat should be offset by increasing the quality, quantity, and protection of riparian habitat through mitigation which could result in an increase in the number of Preble's on the Leonard property.

## **CONCLUSION**

After reviewing the current status of Preble's, the environmental baseline for the action area, the effects of the proposed actions and the cumulative effects, it is the Service's biological opinion that these actions, as proposed, are not likely to jeopardize the continued existence of Preble's. No critical habitat has been designated for this species, therefore, none will be affected.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulation pursuant to 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harass is defined by the Service as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the Service so that they become binding conditions of any grant or Section 10(a) permit issued to the Applicants, as appropriate, for the exemption in section 7(o)(2) to apply. The Service has the continuing duty to regulate the activity covered by this incidental take statement. The Service must ensure that the Applicants are required to assume and implement the terms and conditions of the incidental take statement through enforceable terms that are added to the Section 10(a) permit or grant document, or the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Service will require the Applicants to report the progress of the action or its impact on the species as specified in the Incidental Take Statement.

## **AMOUNT OR EXTENT OF TAKE**

The Service anticipates that it will be difficult to quantify or detect incidental take of Preble's due to direct mortality because of their small size and secretive nature. However, the following level of take can be anticipated by loss of food, cover, and other essential habitat elements. The Service anticipates that the proposed action will result in incidental take of an undetermined number of Preble's through loss of approximately 3.2 acres of suitable habitat and any harm or harassment of individuals during associated project construction and use. In this biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

## **REASONABLE AND PRUDENT MEASURES**

The Service believes that the following reasonable and prudent measures are necessary and appropriate to minimize impacts of incidental take of Preble's, and therefore should be added to the Section 10(a) permit requirements:

1. During construction, the area of proposed impact will be fenced with snow fence or a similar visible barrier to prevent inadvertent impacts to habitat outside the construction footprint.
2. Any designated contractors of the Applicants will monitor the extent of habitat impacted to ensure that it does not exceed the authorized area.
3. Any designated contractors of the Applicants, or the Applicant, will monitor all aspects of the proposed restoration, enhancement, and mitigation plan to ensure project completion and success.

## **TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the Act, the Service must ensure that the Applicants comply with the following terms and conditions which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. The section 10(a)(1)(B) permit, as evaluated in this biological opinion, will include permit conditions that require that the mitigation measures provided in the Project Description section to avoid, minimize, and compensate for adverse impacts to the Preble's and its habitat be completed.
2. The Service will include, as a permit condition, that any incidental take of Preble's must comply with all terms and conditions of said section 10(a)(1)(B) permit.
3. The Service will include, as a permit condition, that workers onsite will be informed by the Applicants, their agents, or their designated contractors as to the reason for and importance of limiting impacts to vegetated habitat outside the fenced work area.
4. The Service will include, as a permit condition, that the permittee must provide an annual report to the Service, once construction commences, which includes photographic

documentation of site conditions prior to construction and at completion of each phase of construction as defined in the EA/HCP.

5. The Service will include, as a permit condition, that once construction commences, the permittee conduct annual monitoring of revegetation efforts and mitigation efforts as described in the EA/HCP. Monitoring reports shall be forwarded to the Service after each growing season and prior to December 1 of each calendar year.
6. In the unlikely event that a Preble's mouse (dead, injured, or hibernating) is located during construction, the Colorado Field Office of the Service (303)275-2370 or the Service's Law Enforcement Office (303)274-3560 will be contacted immediately.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed action. If, during the course of the action, this level of incidental take (loss of approximately 3.2 acres of potential Preble's habitat) is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the reasonable and prudent measures provided. The Service will include, as a permit condition, that the Applicants shall immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

## **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities that may be used to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

The Service has no additional conservation recommendations.

## **REINITIATION NOTICE**

This concludes formal consultation on the proposed action of section 10(a)(1)(B) permit issuance to the Applicants for the construction of two single family residences on the 28.5 acre Leonard Property, in Boulder County, Colorado. As required by 50 CFR 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this biological opinion; (4) a new species not covered by this opinion is listed or critical habitat designated that may be affected by this action. In instances where the amount or extent of incidental take is exceeded, and operations causing such take should cease pending reinitiation.

If you have any questions concerning this Biological Opinion, please contact Lee Carlson, Field Supervisor of the Service's Colorado Field Office at (303) 275-2370.

cc: AES/TE, Washington, D.C.  
FWS/ES, Grand Junction  
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CDOW, Denver, CO (D. Weber)  
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Official File  
Reading File  
Linder

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