

standard, and prohibit wideband operations on a going forward basis. The public safety community expressed broad support for a broadband allocation to enable advanced communications capabilities. The availability of a contiguous block of broadband spectrum, subject to a nationwide interoperability standard, would enable partnerships with commercial licensees in adjacent broadband spectrum. As a result, the proposed band plan would ultimately enable public safety entities to utilize the 700 MHz spectrum in a more cost-effective and spectrally efficient manner to address their homeland security and emergency response roles. Because the Commission does not anticipate that the proposal will impose additional economic burdens on public safety, and is in fact designed to reduce economic burdens on public safety, the Commission has taken steps to minimize any adverse impact of the rule changes.

114. The FNPRM also seeks comment on its tentative conclusion to consolidate the narrowband spectrum to the top of the public safety band and locate the broadband spectrum at the bottom of the public safety band, in light of the potentially significant benefits such reconfiguration would afford the public safety community. The alternative would be to retain the existing band plan. The FNPRM seeks comment on how to implement reconfiguration of the narrowband channels with minimum disruption to incumbent operations. The FNPRM invites comment on an appropriate transition mechanism, including how to accommodate public safety operations in the border areas with Canada and Mexico, and the costs of relocation and how such costs will be covered. The Commission expects that the number of entities impacted and expected cost of reconfiguration should be relatively minor. To assist the Commission in its analysis, however, commenters are requested to provide information regarding the number of narrowband radios that are deployed, as well as the number of radios that are in active use, and thus would be affected by the proposed changes to the 700 MHz public safety band plan as described in the FNPRM. The FNPRM recognizes that the public safety community's ability to fund the reconfiguration may be limited. Thus, in addition to considering whether public safety should pay for its own relocation costs, the FNPRM seeks comment on several alternatives, including whether to impose funding requirements on 700

MHz commercial licensees, and whether Federal or other grant monies could be used. In the event the Commission determines to license the broadband allocation to a nationwide public safety broadband licensee, the FNPRM also invites comment on whether that licensee should be assigned responsibility for funding the reconfiguration.

115. Although the economic burden on public safety to effectuate reconfiguration is expected to be relatively small, the FNPRM will develop a record on the true costs that would be implicated. The Commission remains open to considering alternatives, however, should an alternative be stated in comments that would reach our objectives and minimize the impact on public safety entities.

116. *Frontline Proposal.* In the FNPRM, the Commission seeks comment on Frontline's proposed "Public Safety Broadband Deployment Plan." Although Frontline proposes that the Commission offer bidding credits to applicants based on their status as a small business, the Commission tentatively concludes in the FNPRM that it should not offer any bidding preferences, such as bidding credits, to applicants for the "E Block" license. The FNPRM states, however, that the public interest would not appear to favor giving applicants a preference when bidding for the "E Block" license based on their limited financial resources, as the Commission does when it offers bidding credits to small businesses in these circumstances. The Commission stated that its concerns regarding the capital needed to implement a nationwide service are especially acute in this instance, because the "E Block" licensee would be responsible for constructing a network to meet the needs of critical public safety providers. The Commission seeks comment on this tentative conclusion.

F. Federal Rules That May Duplicate, Overlap, or Conflict With the Proposed Rules

117. None.

Ordering Clauses

118. *It is further ordered* pursuant to Sections 1, 2, 4(i), 5(c), 7, 10, 201, 202, 208, 214, 301, 302, 303, 307, 308, 309, 310, 311, 314, 316, 319, 324, 332, 333, 336, 337, 614, 615, and 710 of the Communications Act of 1934, as amended, 47 U.S.C. 151, 152, 154(i), 155(c), 157, 160, 201, 202, 208, 214, 301, 302, 303, 307, 308, 309, 310, 311, 314, 316, 319, 324, 332, 333, 336, and 337,

that this further notice of proposed rulemaking in WT Docket No. 06–150, CC Docket No. 94–102, WT Docket No. 01–309, WT Docket No. 03–264, WT Docket No. 06–169, WT Docket No. 96–86 and PS Docket No. 06–229 IS ADOPTED.

119. *It is further ordered* that pursuant to applicable procedures set forth in §§ 1.415 and 1.419 of the Commission's Rules, 47 CFR 1.415, 1.419, interested parties may file comments on the further notice of proposed rulemaking on or before May 23, 2007 and reply comments on or before May 30, 2007.

120. *It is further ordered* that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this further notice of proposed rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

121. *It is further ordered* that the Commission shall send a copy of this further notice of proposed rulemaking in a report to be sent to Congress and the General Accounting Office pursuant to the Congressional Review Act, 5 U.S.C. 801(a)(1)(A).

Federal Communications Commission.

Marlene H. Dortch,
Secretary.

[FR Doc. E7–8440 Filed 5–1–07; 8:45 am]

BILLING CODE 6712–01–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; 12-Month Finding on a Petition to List the Sand Mountain Blue Butterfly (*Euphilotes pallescens* ssp. *arenamontana*) as Threatened or Endangered with Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of 12-month petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce our 12-month finding on a petition to list the Sand Mountain blue butterfly (*Euphilotes pallescens arenamontana*) as threatened or endangered under the Endangered Species Act of 1973, as amended (Act). After a thorough review of all available scientific and commercial information, we find that the petitioned action is not warranted. We ask the public to continue to submit to us any new information concerning

the status of, and threats to, this subspecies. This information will help us to monitor and encourage the ongoing management of this subspecies.

DATES: The finding announced in this document was made May 2, 2007.

ADDRESSES: Data, information, comments, or questions regarding this notice should be submitted to the Field Supervisor, Nevada Fish and Wildlife Office, U.S. Fish and Wildlife Service, 1340 Financial Boulevard, Suite 234, Reno, NV 89502. The complete administrative file for this finding is available for inspection, by appointment and during normal business hours, at the above address.

FOR FURTHER INFORMATION CONTACT: Robert D. Williams, Field Supervisor, Nevada Fish and Wildlife Office (see **ADDRESSES**) (telephone 775/861-6300; facsimile 775/861-6301).

SUPPLEMENTARY INFORMATION:

Background

Section 4(b)(3)(B) of the Act (16 U.S.C. 1531 *et seq.*) requires that, for any petition to revise the List of Endangered and Threatened Wildlife and Plants that contains substantial scientific and commercial information that listing may be warranted, we make a finding within 12 months of the date of our receipt of the petition on whether the petitioned action is: (a) Not warranted, (b) warranted, or (c) warranted, but the immediate proposal of a regulation implementing the petitioned action is precluded by other pending proposals to determine whether any species is threatened or endangered, and expeditious progress is being made to add or remove qualified species from the List of Endangered and Threatened Wildlife and Plants. Such 12-month findings are to be published promptly in the **Federal Register**. Section 4(b)(3)(C) of the Act requires that a petition for which the requested action is found to be warranted but precluded shall be treated as though resubmitted on the date of such finding (that is, requiring a subsequent finding to be made within 12 months).

Previous Federal Action

We included the Sand Mountain blue butterfly under the name *Euphilotes rita* ssp. as a Category 2 candidate species in our November 21, 1991 Candidate Notice of Review (CNOR) (56 FR 58829). Category 2 included taxa for which information in our possession indicated that a proposed listing rule was possibly appropriate, but for which sufficient data on biological vulnerability and threats were not available to support a proposed rule. The Sand Mountain blue

butterfly remained a Category 2 candidate as *Euphilotes rita* ssp. in our 1994 CNOR (November 15, 1994; 59 FR 59020). In the CNOR published on February 28, 1996 (61 FR 7596), we adopted a single category of candidate species defined as follows: "Those species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list but issuance of the proposed rule is precluded." In previous CNORs, species matching this definition were known as Category 1 candidates for listing. Thus the Service no longer considered Category 2 species as candidates, and did not include them in the 1996 or any subsequent CNORs. The decision to stop considering Category 2 species as candidates was designed to reduce confusion about the status of these species, and to clarify that we no longer regarded these species as candidates for listing. Since the Sand Mountain blue butterfly was a Category 2 species, we no longer recognized it as a candidate species as of the February 28, 1996, CNOR (61 FR 7457).

On April 23, 2004, we received a formal petition, dated April 23, 2004, from the Center for Biological Diversity, Xerces Society, Public Employees for Environmental Responsibility, and the Nevada Outdoor Recreation Association, requesting that the Sand Mountain blue butterfly, currently recognized as *Euphilotes pallescens* ssp. *arenamontana* taxonomically, known only from Sand Mountain, Nevada, be listed as threatened or endangered in accordance with section 4 of the Act, and that critical habitat be designated for the species concurrent with the listing. The petition is available on the Nevada Fish and Wildlife Office Web site (go to <http://www.fws.gov/nevada/> and click on the Nevada Species link, then on Sand Mountain blue butterfly link).

Action on this petition was precluded by court orders and settlement agreements for other listing actions that required nearly all of our listing funds for fiscal years 2004 and 2005. On September 26, 2005, we received a 60-day notice of intent to sue, and on January 5, 2006, we received a complaint regarding our failure to carry out the 90-day finding on the petition to list the Sand Mountain blue butterfly. On April 20, 2006, we reached an agreement with the plaintiffs to submit to the **Federal Register** a completed 90-day finding by July 28, 2006. The agreement specified that if our 90-day finding concluded that the petition contained substantial information, we would complete a 12-month finding by

April 26, 2007 (*Center for Biological Diversity et al. v. Norton, and U.S. Fish and Wildlife Service* (CV-00023-LKK-GGH), (E.D. Cal)).

On August 8, 2006, we published our 90-day finding in the **Federal Register** (71 FR 44988), in which we concluded that the petition presented substantial scientific or commercial information to indicate that listing the Sand Mountain blue butterfly may be warranted, we initiated a status review of the taxon, and we solicited comments and information to be provided in connection with the status review by October 10, 2006. This notice constitutes our 12-month finding and is submitted in fulfillment of the April 20, 2006, stipulated settlement agreement.

On August 18, 2006, we became a signatory to the multi-party Sand Mountain Blue Butterfly Conservation Plan (Conservation Plan), which became effective September 21, 2006 (Lahontan Valley Environmental Alliance (LVEA), 2006). For a further discussion of the Conservation Plan, see the "Conservation Efforts" section below.

Biology and Distribution

The genus *Euphilotes*, in the family Lycaenidae, is comprised of five species of small, pale blue butterflies from western North America that are distinguished by discrete differences in genitalia (Pratt 1994, p. 388). The genus is noteworthy for its close relationship with the plant genus *Eriogonum* (wild buckwheat), a genus of about 250 species of shrubs, subshrubs, and herbs largely from western North America (Reveal 2005). *Euphilotes* taxa are among the most specialized of the North American butterflies in host plant adaptations (Pratt 1988, p. 63). They typically utilize species of *Eriogonum* for mating, obtaining nectar, host searching, and egg laying (Pratt 1994, p. 388). Many of the species and subspecies within the genus have highly restricted ranges, in part because of this specialized relationship with *Eriogonum*. The larvae (and to some degree the adults) of *Euphilotes* subspecies are known to specialize on the flowers and seeds of specific *Eriogonum* (Pratt 1988, p. 104). This relationship has been the subject of several studies on evolution (Shields and Reveal 1988, pp. 51-93; Pratt 1988, pp. 1-653; Pratt 1994, pp. 387-416).

The pale blue butterfly, *Euphilotes pallescens*, was first described by Tilden and Downey in 1955 under the name *Philotes pallescens* based on specimens collected in Tooele County, Utah (Pratt 1988, p. 18; Mattoni 1965, pp. 81, 94). Mattoni (1965, p. 94) reduced the taxon to a subspecies which he called *Philotes*

(=*Euphilotes*) *rita* ssp. *pallascens*, but he only examined a pair of specimens collected at the same time as the original collection by Tilden and Downey. Mattoni based his taxonomic conclusion on the configuration of the male genitalia, which was thought to be the primary characteristic distinguishing *P. rita* from all other members of the genus (Mattoni 1965, p. 81; Shields 1977, p. 2), and his opinion that “greater biological meaning arises from a classification based upon relationship rather than difference” (Mattoni 1965, p. 99).

In the first modern biosystematic analysis of the genus, Pratt (1988, 1994) used cladistic analysis, a method of examining taxonomic relationships among species using shared derived characteristics (features possessed by two or more taxa in common), to assess its members of the genus *Euphilotes*. He compared 79 morphological characters and analyzed enzymes (proteins), allelic variation (variation in genes coding for same trait), and diapause (period of suspended growth or development similar to hibernation) intensity among 36 taxa of *Euphilotes* from western North America (Pratt 1988, 1994). Based on these analyses, he concluded that *Euphilotes pallascens* should be recognized as a full species (Pratt 1994, pp. 401–402; Pratt and Emmel 1998, p. 209). The Sand Mountain blue butterfly was first described as *Euphilotes pallascens* ssp. *arenamontana* by Austin in 1998 (1998, pp. 556–557); it is one of seven named subspecies of the pallid blue butterfly in Nevada (Murphy et al. 2006, p. 2). Prior to the 1998 publication of this name, the Sand Mountain blue butterfly had been considered a potentially distinct subspecies of *Euphilotes rita* (Austin 1985, p. 105), the name under which it was previously assigned a Federal Category 2 candidate status (see Previous Federal Action section).

The Sand Mountain blue butterfly is small with pale blue coloration. Males have a wingspan that ranges from 10.0 to 11.8 millimeters (mm) (0.39 to 0.46 inches (in)), with an average of 11.1 mm (0.44 in). The dorsum (back) is pale bluish violet, often whitish distally, with a narrow (0.5 mm (0.002 in)) black outer margin. There is usually a series of dots on the hindwing, but sometimes no more than a terminal line on the forewing. There is generally an indistinct pinkish to pale orange aurora of moderate width on the posterior hindwing. At the vein tips on the posterior of both wings, there are fringes of white with indistinct gray checkering. The bottom surface of the male abdomen is chalky white. Macules

(patches of different coloration) are small, often nearly obsolete on the hindwing. Females have a wingspan that ranges from 10.0 to 11.9 mm (0.39 to 0.46 in), with an average of 10.9 mm (0.43 in). The female dorsum (back) is brown to tan, and usually pale bluish-gray basally on both wings. The forewing has a faint brown cell-end bar, while the hindwing has marginal dots. The forewing apex is usually whitish. The hindwing aurora is pale orange to pale pink, usually grading to nearly white distally and not strongly contrasting (Austin 1998, p. 556).

The Sand Mountain blue butterfly is the palest of all *Euphilotes*. The ground color of both sexes is considerably paler than that of *E. pallascens* ssp. *pallascens*. The pinkish aurora is unlike that of any other *Euphilotes*. The pale bluish-gray wing bases of the female do not contrast with the distal area of the wing as they do on *E. pallascens* ssp. *pallascens*. The black macules of *E. pallascens* ssp. *arenamontana* tend to be smaller than those of *E. pallascens* ssp. *pallascens* (Austin 1998, p. 557).

The species *Euphilotes pallascens* is distributed discontinuously from southern and central California (east of the Sierra Nevada) through the Great Basin of central Nevada and across central and southern Utah (Pratt 1994, p. 402; Shields 1977). The subspecies known as the Sand Mountain blue butterfly is known only from Sand Mountain, Churchill County, Nevada, where it is dependent on its host plant, *Eriogonum nummular* (Kearney buckwheat) (Austin 1998, p. 557; Shields 1977, p. 3), a long-lived, perennial shrub with numerous branches (Reveal 2002, p. 1), that occurs in scattered sandy locations in several western States (Welsh et al. 1993, p. 547). Searches have been conducted within 60 miles (mi) (100 kilometers (km)) of Sand Mountain in an effort to determine the presence or absence of Kearney buckwheat occurrences on sand dunes that might be able to sustain occurrences of Sand Mountain blue butterflies; to date, no additional populations of Kearney buckwheat have been found (Funari 2004; Caicco 2006a, 2006b). Kearney buckwheat was reported in 1981 to occur in small numbers along the eastern edge of Blowsand Mountain, which lies about 12 mi (19.2 km) southwest of Sand Mountain (The Nature Conservancy 2004), but no plants were observed during three reconnaissance surveys in 2003 and 2004 (Funari 2004). Many butterflies in the family Lycaenidae have very limited dispersal distances that revolve intimately around their patchily distributed host plants

(Peterson 1996, p. 1990). Dispersal of the Sand Mountain blue butterfly has not been studied, but in another species in the same genus, *Euphilotes enoptes*, most adults were found to move less than 1,640 feet (ft) (500 meters (m)) and their dispersal distance rarely exceeded 0.6 mi (1 km) (Arnold 1983 and Peterson 1994, as cited in Peterson 1996, p. 1990).

Isolated sand dunes are common throughout the Great Basin, often associated with depositional areas for windborne sediments derived from the now dry beds of Pleistocene Epoch lakes; these geologic features are referred to as pluvial lakes, indicating their origins during the periods of greater precipitation and lower evaporation typical of the Pleistocene climate of the Great Basin. Studies of dispersal of the sand dune-obligate beetle, *Eusattus muricatus*, widely distributed throughout the Great Basin and Mojave Deserts, have shown that populations on dunes separated by approximately 60 mi (100 km) generally exchange very few migrants, even among dunes within the same pluvial basin (Britten and Rust 1996, p. 651). Based on these data, the authors of this study recommended that all dune-obligate populations in the Great Basin separated by 60 mi (100 km) or more from the nearest dune within the same pluvial lake basin be considered genetically isolated (Britten and Rust 1996, p. 651). In fact, taxonomic distinctions made within *Euphilotes pallascens* are generally consistent with this approach, with *E. p.* ssp. *calneva* described from sand dunes in the Honey Lake area of northeastern California and near Sand Pass, in adjacent Nevada (Emmel and Emmel, pp. 277–282; Brussard 2006, p. 1; Murphy 2006a), and *E. p.* ssp. *ricei*, known only from the Silver State Sand Dunes, which are north of Winnemucca, Nevada (Austin et al. 2000, p. 3; Brussard 2006, p. 1; Murphy 2006a); each of these sand dune areas lies within the Lahontan pluvial basin at a minimum distance of about 120 mi (192 km) from Sand Mountain.

We conclude that it is highly unlikely that the Sand Mountain blue butterfly occurs at other sites within 60 mi (100 km). Areas within 60 mi (100 km) have been surveyed to various extents with no reported observations of the butterfly's host plant, Kearney buckwheat. We also conclude that the subspecies is unlikely to be found at sites located more than 60 mi (100 km) from Sand Mountain. Any population of *Euphilotes pallascens* found at any sites at distances greater than 60 mi (100 km) is most likely to be another subspecies of *Euphilotes pallascens*, based on the

current accepted taxonomy of the species and the likely genetic isolation of *E. pallescens* ssp. *arenamontana* due to its life history, ecology, and limited dispersal ability. Based on satellite imagery used to identify dune shrub habitat (BLM 2003, 2004), we estimate that the current range of the subspecies is approximately 1000 acres (405 ha), within which Kearney buckwheat is scattered in patches and is a dominant or co-dominant shrub on approximately 500–600 ac (202–243 ha) (BLM 2006b). Thus, while Sand Mountain blue butterflies may be present anywhere within their entire 1,000 ac (405 ha) range, only 50 to 60 percent of this range is thought to have the Kearney buckwheat shrubs on which they depend.

All *Euphilotes* larvae are believed to diapause by burying into the soil 12.7 to 38.1 inches (in) (5 to 15 centimeters (cm)) prior to pupation, which may be delayed for up to 6 years depending on climatic conditions (Pratt 1988, p. 319). When this period of diapause is broken, the pupae begin development and eventually emerge as adults from beneath the soil. The ability of larvae to suspend growth for varying periods of time may be part of the reason that the genus *Euphilotes* has high genetic diversity (Pratt 1988, pp. 427–428), presumably because it increases the likelihood for random mating.

Because of the small size of the Sand Mountain blue butterfly and the frequent high winds typical of the Sand Mountain area, it is likely that adult butterflies spend most of their life sheltered within the canopy of Kearney buckwheat plants (Murphy 2006a). Males of the genus exhibit a type of mate-searching behavior known as patrolling, which involves active searching for potential mates (Pratt 1988, p. 371).

Kearney buckwheat typically occurs at Sand Mountain as a dominant or co-dominant with other shrubs on less active, smaller vegetated dunes around the periphery of the main dune (The Nature Conservancy 2004, pp. 24–26). Kearney buckwheat flowers and seeds are the sole food source for the larvae (Pratt 1988, p. 64) and an important nectar source for adults during their flight period (Murphy et al. 2006, p. 1).

The flowering period of the Kearney buckwheat at Sand Mountain begins in late June to early July and continues through September (Reveal 2002, p. 2). Like many species of wild buckwheat (Meyer 2006), individual Kearney buckwheat plants may be in continuous flower for well over a month (Caicco 2006c). Individual flowers within a cluster bloom in succession so that after

the initial bloom, both seeds and flowers are present for extended periods (Caicco 2006c).

The Sand Mountain blue butterfly has one brood from mid July to mid-September (Austin 1998, p. 557; Shields 1977, p. 5), a period that coincides with the flowering/fruiting period of Kearney buckwheat. During the summer of 2006, scientists from the University of Nevada initiated a research effort to determine the distributional relationship between the butterfly, its host plant, and the dune shrub community. Sand Mountain blue butterflies were counted along a 17,061 ft (5,200 m) transect, with five surveys made between July 15 and August 9, 2006 (Murphy et al. 2006, p. 4). The number of Sand Mountain blue butterflies counted along the transects increased over the duration of the sampling period; because no decline was detected in the number of butterflies counted over that time period, researchers were unable to determine the precise length of the 2006 flight season (Murphy et al. 2006, p. 5 and Figure 2).

The researchers found that butterflies occurred across the entire extent of their study area, although, regardless of the sampling date, butterflies were always more abundant in the northeastern portions of the study than in the southwestern areas (Murphy et al. 2006, Figure 2). The researchers reported that “as the season matured, multiple [Sand Mountain blue] butterflies were observed flying around nearly every buckwheat plant at nearly every site on nearly every site visit. Even individual buckwheat shrubs, which were isolated from others by as many as hundreds of meters due to devegetation from vehicle activities, were visited by [Sand Mountain] blue butterflies” (Murphy et al. 2006, pp. 5–6).

The abundance of the butterfly was closely correlated with Kearney buckwheat flower phenology and abundance. Early in the flight season, many flowers were unopened; flowers sequentially opened as the sampling period progressed toward August, although some unopened buds remained after sampling was terminated (Murphy et al. 2006, p. 6). Butterfly abundance was strongly correlated with both the number of buckwheat inflorescences (flowers) and the abundance of the Kearney buckwheat itself (Murphy et al. 2006, p. 6 and Figure 6).

The researchers also found that the abundance of Kearney buckwheat varies considerably throughout the dune shrub habitat, with higher host plant and butterfly densities in some areas. At a number of their sample locations,

Kearney buckwheat was the most abundant shrub in the dune shrub community (Murphy et al. 2006, p. 6 and Figure 5). The buckwheat was usually among the dominant shrub species both along the transect itself and within individual plots (Murphy et al. 2006, p. 6 and Figure 6).

The scientists made three conclusions from the data they collected during the 2006 flight season of the Sand Mountain blue butterfly. First, there was a large number of Sand Mountain blue butterflies—“perhaps hundreds of thousands”—a number “substantially above a level that would indicate a need to carry out *in situ* or other actions to enhance population size above a critical minimum” (Murphy et al. 2006, p. 7). Second, the butterfly appears to co-occur with its host plant across the entirety of the shrub’s range at Sand Mountain, and the habitat quality for the butterfly increases in parallel with the shrub density from southwest to northeast across the site (Murphy et al. 2006, pp. 7–8). Third, the Kearney buckwheat occurs in a dune shrub community with abundant *Atriplex canescens* (four-wing saltbush) at lower elevations that transitions into a community with a more diverse assemblage of shrub species at higher elevations (Murphy et al. 2006, Figure 5). Along this gradient, the abundance of the Kearney buckwheat and, therefore, the density of butterflies varied in parallel (Murphy et al. 2006, p. 8).

Conservation Efforts

On August 18, 2004, the Lahontan Valley Environmental Alliance (LVEA), at the request of its board of directors, initiated a public planning effort to develop a conservation plan for the Sand Mountain blue butterfly. The LVEA was created in 1993 by an agreement among local governments and agencies to educate the public and coordinate efforts to protect the natural resources and agricultural-based economy of the communities in Churchill County. Over the past 13 years, the LVEA has worked with various interests to build knowledge and to improve communications among the communities, stakeholder groups, local governments, and State and Federal agencies involved in, or affected by, the natural resources issues of the region (LVEA 2006, p. 1).

Through the public planning effort described above, the LVEA organized and facilitated a working group to identify and address the needs of the Sand Mountain blue butterfly. This working group met regularly over the subsequent 21 months. In accordance

with the Nevada Open Meeting Law (Nevada Revised Statute, Chapter 241), all meetings were open to the public and noticed in advance with agendas posted in public facilities (Nevada Open Meeting Law Manual 2005). Meeting notes are posted on the LVEA Web site (go to <http://www.lvea.org/workgrp.htm> and click on the link for this species and then click on the link for meeting notes). Participants in the working group included representatives from the LVEA, the Bureau of Land Management (BLM), the Service, the City of Fallon, Churchill County, the Fallon Paiute Shoshone Tribe (Tribe), the Friends of Sand Mountain (FOSM), the California Off-Road Vehicle Association (CORVA), the United States Naval Air Station Fallon, and private citizens (LVEA 2006, pp. 1–2).

The purpose of this effort was to develop a Conservation Plan to provide long term protection for the Sand Mountain blue butterfly and its habitat, particularly, its host plant, Kearney buckwheat (*Eriogonum nummulare*). Final agreement on the Conservation Plan was reached on May 3, 2006, and it was signed by representatives of the BLM, the Service, the Tribe, CORVA, FOSM, and Churchill County in August and September, 2006. The Conservation Plan identifies specific actions that are necessary to: (1) Eliminate or reduce known threats, (2) incorporate species conservation measures into planning and management activities, (3) educate permittees and recreation users, and (4) monitor species status trends and habitat quality and requirements.

A designated route system, a conservation action identified in the Conservation Plan (LVEA 2006, pp. 14–19), has been implemented by the BLM at Sand Mountain to protect the habitat of the Sand Mountain blue butterfly from further damage and destruction by off-road vehicles (72 FR 12187, March 15, 2007). We used criteria specified in our Policy for Evaluation of Conservation Efforts When Making Listing Decisions (PECE) (68 FR 15100–15115, March 28, 2003) to evaluate the certainty of effectiveness of this designated route system and determined there is a high level of certainty of effectiveness of the designated route system; consequently, we can consider this action in making a determination as to whether the Sand Mountain blue butterfly meets the Service's definition of a threatened or endangered species (Service 2007).

Summary of Factors Affecting the Species

Section 4 of the Act (16 U.S.C. 1533) and implementing regulations at 50 CFR

Part 424 set forth procedures for adding species to the Federal List of Endangered and Threatened Wildlife. In making this finding, we summarize below information regarding the status of this species in relation to the five factors provided in section 4(a)(1) of the Act. In making our 12-month finding, we have considered and evaluated all scientific and commercial information in our files, including relevant information received during the comment period that ended October 10, 2006 (71 FR 44988).

Factor A: The Present or Threatened Destruction, Modification, or Curtailment of the Species' Habitat or Range

The Sand Mountain blue butterfly is known only from Sand Mountain in Churchill County, Nevada, where it is dependent on its larval host plant, Kearney buckwheat (Austin 1998). The entire Sand Mountain dune system is estimated to extend over 2,581 ac (1,044 ha), but Kearney buckwheat is not evenly distributed throughout this entire area; Kearney buckwheat plants are typically found on peripheral, more vegetated dunes, and are particularly common on the smaller dunes to the northeast of the main dune (BLM 2006a, Map 1). In most areas, Kearney buckwheat is a component of a diverse dune shrub habitat comprised of up to 13 shrub species (BLM 2004). An estimated 1,000 ac (405 ha) of dune shrub habitat with varying amounts of Kearney buckwheat existed in 2003 (BLM 2006b, p. 2). The current distribution of the shrubs, as described above, reflects both their natural adaptation to specific site conditions and the cumulative effect of 25 years of off-road vehicle use.

A portion of the Sand Mountain dune system lies within the Sand Mountain Recreation Area (SMRA), a BLM designation that encompasses 4,795 ac (1,940 ha), and is about 1.0 mi (1.6 km) wide and 3.5 mi (5.6 km) long. The specific BLM designation of the SMRA for recreational use does not limit off-road or other forms of recreation only to this area. Furthermore, the BLM designation restricts non-recreation type activities, such as mineral mining, from occurring within the boundary of the designation.

The recreational use designation for the SMRA was first established in 1968 (BLM 1985, p. 4). By 1973, recreational use had reached 32,254 visitors annually (BLM 1985, p. 5). The first approved management plan for the area was developed more than a decade later (BLM 1985). Based on BLM information, we estimate that 40 percent, or 400 ac

(162 ha) of the total of 1,000 ac (405 ha), of the Kearney buckwheat habitat occurs within the designated boundary of the SMRA (BLM 2006a, Map 1). The remaining estimated 60 percent of the Kearney buckwheat habitat occurs on BLM land outside of the eastern SMRA boundary. Until recently, off-road vehicle use was limited on only about 40 ac (16 ha) of the SMRA; no Kearney buckwheat plants occur in this limited-use area. The rest of the SMRA was open to unrestricted off-road vehicle use, as were all adjacent areas of the dune system.

As early as 1985, motorized recreation by motorcycles, four-wheel drive vehicles, three wheelers, and dune buggies, accounted for over 90 percent of the total visits to the SMRA (BLM 1985). Annual visitor use at the SMRA increased from about 16,000 persons in 1981 to about 65,000 persons in 2005 and was expected to increase again in 2006 (BLM 2006c). Visitation tends to peak on holiday weekends; for example, more than 5,000 people were present over the Labor Day weekend in 2006 (Nevada Appeal 2006, p. 1). In recent years, however, there has been a pattern of increased use on non-holiday weekends (BLM 2006c).

The BLM's Carson City Field Office has documented the expansion of an off-road vehicle route system based on an analysis of satellite imagery from 1978, 1994, 1999, and 2002; the route system has grown from about 20 mi (32 km) of off-road vehicle trails in 1981 to about 200 mi (320 km) in 2003 (BLM 2003). In addition to documenting the overall proliferation of off-road vehicle routes, the imagery clearly shows an increase in the amount of habitat fragmentation and an expansion of the off-road vehicle route system from the more accessible southern end of the main dune into dune shrub habitat adjacent to the SMRA toward the north and east that had been relatively undisturbed as recently as 1994 (BLM 2003).

Based on the trail proliferation visible in the satellite imagery from 1978 to 2003 (BLM 2003, 2004), we estimate that the shrub habitat on which the Sand Mountain blue butterfly depends may have been reduced by as much as 50 percent over the past 25 years. At most, 1,000 ac (405 ha) of dune shrub habitat remains, and within that area 500 ac (202 ha) to 600 ac (243 ha) may have Kearney buckwheat as a dominant or co-dominant shrub (BLM 2006c). We consider the entire 1,000 ac (405 ha) of dune shrub habitat to be the current range of the Sand Mountain blue butterfly; this includes non-Kearney buckwheat habitat through which the species passes, including areas devoid

of vegetation such as trails, as well as areas that support the Kearney buckwheat shrubs on which the butterfly depends for completion of its life cycle. Because the amount of Kearney buckwheat within a patch of dune shrub habitat varies, no precise data on the total number of individual Kearney buckwheat shrubs is available. We also have no reliable estimate of the historical distribution of the Kearney buckwheat at Sand Mountain other than an anecdotal report of a minor amount of vegetation having been lost along the periphery of the dune (Guiliani 1977); therefore, we consider the existing estimate of 1,000 ac (405 ha) of dune shrub habitat to approximate the historic range of the Sand Mountain blue butterfly.

The Sand Mountain dune system was included in an initial conservation assessment of blowing sand mountains prepared by The Nature Conservancy (2004). This conservation assessment ranked the long-term (defined as greater than 100 years) viability of the Sand Mountain dune ecosystem based on size, condition, and landscape context, using information from the existing literature and expert opinion (The Nature Conservancy 2004, p. 29). Each of these factors had the potential to be ranked as very good, good, fair, or poor based on specific viability criteria (The Nature Conservancy 2004, p. 35). Size was ranked as good if there was 1,236 ac–2,471 ac (500–1,000 ha) of connected habitat outside of the area heavily affected by off-road vehicle use (The Nature Conservancy 2004, p. 35). The condition rank was based on three criteria: (1) Whether invasive plants were present that could artificially stabilize dune dynamics; (2) whether other alterations affecting dune mobility, such as vegetation mortality or artificial mobilization of stable sands, were occurring; and (3), whether there was natural recruitment by key plant species. The condition was assigned a fair rank based on the fact that only the criterion regarding the presence of invasive plants was met (The Nature Conservancy 2004, p. 35). The landscape context was ranked very good based on the fact that the connection to the current sand source remained intact (The Nature Conservancy 2004, p. 35). Overall, the long-term viability of the Sand Mountain dune system was ranked marginally good, but it was noted that the “rapid trend towards an increasingly degraded condition of this area is of considerable concern” (The Nature Conservancy 2004, p. 35). The assessment noted that the condition of the area was primarily affected by off-

road vehicle use, which was of particular concern because of the small overall size of the area and the likelihood of increasing use levels at the SMRA (The Nature Conservancy 2004, p. 36). It should be emphasized that this ranking was for the Sand Mountain dune ecosystem as a whole and none of the viability criteria evaluated specifically addressed either the status of the Sand Mountain blue butterfly or the Kearney buckwheat. The relevance of this report to the dune shrub habitat lies in its assessment that the process that supplies the source of sand to the ecosystem remains intact, and the corroboration that it provides of the threats posed by off-road vehicles and invasive weeds.

There have been several observations over the past 25 years on the effects of off-road vehicles on the Sand Mountain dune shrub habitat, on the Kearney buckwheat, and on the relationship between the buckwheat habitat and the Sand Mountain blue butterfly. These include: (1) A letter documenting the extirpation of all plant life from an area 150 ft (46 m) wide along the edge of the main dune over a period of several years (Guiliani 1977); (2) a memorandum from the Service to the BLM reporting that up to half of 58 individual Kearney buckwheat plants inspected on the south side of the mountain had been crushed and broken off at the ground surface and were either dead or in the process of resprouting from the rootstocks (Service 1994); (3) a mid-1990’s report to the Service from a research scientist at the University of Nevada, Reno, stating that “as long as the foodplant remains as abundant as it is now in the overall dune area, we saw no particular threat to the continued existence of the butterfly” (Brussard 1995).

In our 90-day finding on the petition to list the Sand Mountain blue butterfly (71 FR 44988, August 8, 2006), we concluded that the petition provided substantial information to support the assertion that off-road vehicle use at Sand Mountain presents direct and indirect threats to the dune shrub habitat with Kearney buckwheat on which the Sand Mountain blue butterfly depends. In particular, we based our conclusion on the following—data provided by the petitioners that reliably documented a progressive loss of dune shrub habitat within the past 25 years, continuing fragmentation of dune shrub habitat, and an ongoing expansion of the route system into dune shrub habitat previously considered secure for the butterfly (BLM 2003); data that documents annual visitor use has more than doubled and the route system has

expanded from 20 mi (32 km) to over 200 mi (320 km) over this time period (BLM 2003); an estimate that 1,000 to 1,600 ac (405 to 647 ha) of dune shrub habitat remained in which Kearney buckwheat is a component (BLM 2004, p. 4); and our estimate, based on satellite imagery prepared by BLM (2003), that about 50 percent of the dune shrub habitat within the species current range may have been destroyed or altered over this 25-year time span.

The scientific literature documents the effects of off-road vehicles on terrestrial habitats in arid environments, including sand dunes. Effects include significant reductions in the number, density, and cover of plants, including shrubby perennials (Bury and Luckenbach 1983) and direct impacts on desert vegetation (Stebbins 1995; Lathrop 1983; Lathrop and Rowlands 1983). While none of these citations provides specific evidence of a direct significant threat to the Sand Mountain blue butterfly, the papers by Bury and Luckenbach (1983, pp. 211–213), Lathrop (1983, pp. 157–164), Lathrop and Rowlands (1983, pp. 138–141, 144–146), and Stebbins (1995, pp. 471–472) do provide documentation that off-road vehicles can damage and destroy plants and result in significant decreases in plant numbers, density, and cover, including shrubby perennials at various sites in the western North American deserts. Specific observations of such impacts at Sand Mountain have been reported previously (Guiliani 1977; Service 1994; The Nature Conservancy 2004, p. 36; BLM 2006e).

The scientific literature provides documentation that natural recovery rates of perennial vegetative cover damaged by off-road vehicles in arid environments can take decades and, in some cases, may require centuries (Lathrop and Rowlands 1983; Kockelman 1983; Webb and Wilshire 1983). The papers by Lathrop and Rowlands (1983, p. 143) and Kockelman (1983, p. 3) provide a timeframe for understanding natural recovery rates of habitats damaged by off-road vehicle use in arid environments. We previously found that these studies provided reliable documentation that even if off-road vehicle use were to be eliminated from Sand Mountain, natural recovery of the Kearney buckwheat habitat may take decades, a timeframe that might pose an indirect threat to the long-term viability of an obligate butterfly species that must reproduce annually and relies on the buckwheat as a host plant. We now have evidence, however, from the first comprehensive assessment of the status of the Sand Mountain blue butterfly to indicate that

a large viable population of the species exists despite the past loss of habitat; moreover, the presence of butterflies at even small, relatively isolated patches of Kearney buckwheat suggests that the butterfly is not particularly sensitive to habitat fragmentation (Murphy et al. 2006, pp. 5–6).

Furthermore, as noted in the Biology and Distribution section, since the publication of the 90-day finding, we have obtained new information on the abundance and status of the Sand Mountain blue butterfly and the potential threats of habitat loss and fragmentation to the species. Researchers collected data along several permanent transects installed throughout the distribution of the dune shrub habitat at Sand Mountain from July 15 through August 9, 2006 (Murphy et al. 2006, pp. 4–5). The scientists estimated that hundreds of thousands of adult Sand Mountain blue butterflies may have emerged during the 2006 flight season (Murphy et al. 2006, p. 7). Adult butterflies were associated with nearly all Kearney buckwheat shrubs along the transects and butterflies were distributed across the entire available habitat area, even with individual buckwheat shrubs isolated from others by hundreds of meters (Murphy et al. 2006, p. 6).

The scientists concluded the Sand Mountain blue butterfly numbers were “substantially above a level that would indicate a need to carry out in situ or other actions to enhance population size above a critical minimum” (Murphy et al. 2006, p. 7). Annual population numbers may vary considerably depending on local weather conditions, and the researchers note that the large population in 2006 may represent an atypical spike in the butterfly population (Murphy et al. 2006, p. 9). However, even if this number represents an upper population estimate, we believe that the very large number of butterflies observed during the recent survey clearly shows that the remaining Kearney buckwheat habitat is currently sufficient to support a viable population of the Sand Mountain blue butterfly.

Although sufficient habitat remains to support a robust population of the Sand Mountain blue butterfly (Murphy et al. 2006, p. 7), researchers have cautioned that “the sizable Sand Mountain blue population notwithstanding, continued degradation of the shrub community and losses of Kearney buckwheat will ultimately lead to the elimination of the butterfly” (Murphy et al. 2006, p. 9). To reduce the significance of the threat posed to the Sand Mountain blue butterfly by continued degradation of the shrub community and losses of

Kearney buckwheat, on December 12, 2006, the BLM implemented an emergency restriction on motorized use on 3,985 ac (1,612 ha) of land to prevent further adverse effects on the habitat of the Sand Mountain blue butterfly (BLM 2006b); the closure notice was published in the **Federal Register** on March 15, 2007 (72 FR 12187). This action, which reduces the route system both within and outside of the SMRA from an estimated 200 mi (320 km) to 21.5 mi (34.4 km), has returned the route mileage to about the 1980 level. The route designation system adopted by BLM is consistent with the Conservation Plan (LVEA 2006) and the restrictions are described by BLM as necessary to prevent further adverse effects to the habitat of the Sand Mountain blue butterfly (72 FR 12187). The route designation system is specifically designed to reduce threats from recreational use, weed infestation, fire, and the reduction of site potential, thereby furthering the objectives of eliminating off-road vehicle incursions into dune shrub and butterfly habitat; preventing route increases in dune shrub habitat; minimizing shrub damage and loss; and allowing for habitat regeneration and restoration (LVEA 2006, p. 15). The emergency restriction will remain in effect until the Resource Management Plan (RMP) has been updated to address the long-term management of the wildlife, cultural, vegetation, and recreational resources in the area or until the Field Office Manager determines it is no longer needed (BLM 2006b, p. 1; 72 FR 12187, March 15, 2007). Every indication we have from the BLM at both the field office and state office level is that the emergency restriction will remain in place until made permanent through an amendment to the RMP. The RMP must be updated in compliance with the Federal Land Management and Policy Act, the National Environmental Policy Act, and other applicable laws and policies which have, among other requirements, opportunity for public and agency review and comment. Under the terms of the Conservation Plan monitoring of compliance with the designated route system will continue and results will be reviewed every six months; areas in which non-compliance exceeds a specified threshold will be fenced (LVEA 2006, p. 60).

The Conservation Plan also includes increased law enforcement to ensure compliance in the use of the designated route system, especially on heavy use weekends and randomly at other times. Through an agreement with Churchill County, which is a party to the Plan,

local law enforcement staff will be used in the camping areas to allow BLM Park Rangers to patrol the route system and other areas (LVEA 2006, p. 20). Further, any person who fails to comply with the BLM restriction order may be subject to imprisonment for not more than 12 months or a fine in accordance with the applicable provisions of 18 U.S.C. 3571, or both (BLM 2006b, p. 3; 72 FR 12187, March 15, 2007). A handout was given to recreational users over Labor Day weekend, 2006, informing them of the completion and approval of the Conservation Plan, the upcoming mandatory route system, and the importance of demonstrating success in protecting the habitat for the Sand Mountain blue butterfly (BLM 2006d). A variety of additional public education activities are provided for in the Conservation Plan, including interpretive, cautionary and regulatory signage throughout the SMRA and dune system, as well as education pamphlets, brochures, and information available on Web sites and other forms of media (LVEA 2006, p. 21–24).

Implementation of the limited off-road vehicle route system is already occurring. We have evaluated the certainty of effectiveness of the designated route system using criteria specified in PECE (68 FR 15115, March 28, 2003). Based on our evaluation, we have determined that this conservation action satisfies all of the PECE criteria for the certainty of effectiveness (Service 2007). We conclude that the off-road vehicle route system is sufficiently certain to be implemented and effective so as to have reduced the present and future threat of destruction, modification, or curtailment of the habitat or range of the Sand Mountain blue butterfly to a level such that off-road vehicle impacts to habitat are not a basis for finding that listing is warranted.

Other components of the Conservation Plan have also been initiated related to research (LVEA 2006, pp. 27–28). These include mapping of current Kearney buckwheat and invasive weeds distribution; remote sensing of habitat characteristics, trends, and route analyses; studies of the Sand Mountain blue butterfly population status and habitat requirements; population dynamics of the Kearney buckwheat; and Kearney buckwheat propagation and transplantation studies. Kearney buckwheat habitat and invasive weeds mapping and remote sensing analysis of habitat characteristics, trends, and route analyses have been in progress for several years. The BLM has secured funding through grants to purchase additional imagery to continue

the trend analysis in 2006, 2009, and 2012 (LVEA 2006, p. 28). Research on the population status of the butterfly was initiated during the 2006 adult flight season by scientists from the University of Nevada, Reno, with funding through the Nevada Biodiversity Initiative; these data provide a baseline against which future fluctuations in the butterfly population can be compared (Murphy et al. 2006). Pilot studies of the population dynamics of the Kearney buckwheat have been initiated (LVEA 2006, p. 27), and seed of the Kearney buckwheat has previously been collected through the BLM Seeds of Success program. Propagation studies using these seeds, and other seeds to be collected on site, are to be conducted by the Natural Resource Conservation Service's newly established Fallon Plant Materials Center, which will also conduct transplantation studies of propagated seedlings into disturbed habitats at Sand Mountain (Tonenna 2006). While we did not rely on them making this finding, we recognized that these research components will both inform and facilitate efforts to recover damaged butterfly habitat at Sand Mountain as well as contribute to sound scientific data for future management actions.

In our 90-day finding, we addressed the claim by the petitioners that the constant disruption of the soil surface makes it difficult or impossible for seeds of the Kearney buckwheat to germinate and for seedlings to establish and concluded that the petitioners had provided no documentation for this claim (71 FR 44991). The Service has since made field visits to Sand Mountain and, while we have no quantitative data on this matter, we observed an absence of Kearney buckwheat seedlings in areas of high off-road vehicle use. We also observed numerous Kearney buckwheat seedlings in areas that received little, if any, off-road vehicle use (Caicco 2006c). These observations are consistent with previous reports (Tonenna 2003 as cited in The Nature Conservancy 2004, p. 37). We believe, based on these observations, that the constant disruption of the sand surface in heavily used areas may interfere with the establishment of Kearney buckwheat and could potentially pose a long-term threat to shrub regeneration and, therefore, to the long-term viability of the butterfly itself. However, the restriction of off-road vehicle recreation to the designated route system substantially reduces the magnitude and imminence of the threat to the regeneration of Kearney buckwheat. As described above,

sufficient habitat remains at Sand Mountain to support a large population of the Sand Mountain blue butterfly, and the reduction in the level of threat due to the designated route system, over the long-term, ensures that natural shrub regeneration and/or active restoration will maintain sufficient habitat to ensure the viability of the Sand Mountain blue butterfly.

Although not identified as a threat by the petitioners, trampling or grazing of buckwheat plants and/or seedlings by livestock was identified by the working group as a potential threat to the habitat of the butterfly, although it was acknowledged that more information was needed to determine the level of threat (LVEA 2006, pp. 11–12). Dune shrub habitat with and without Kearney buckwheat occurs within portions of two range allotments, where it comprises 1,357 ac (549 ha), or 2 percent, of the Salt Wells Allotment, and 331 ac (134 ha), or 0.5 percent, of the Frenchmen Flat Allotment. The stocking values are set at 270 cattle and 1,626 animal unit months (AUMS) from October 15 through April 15 for Salt Wells and 403 cattle and 2,001 AUMS from October 15 through April 15 for Frenchmen Flat. We are not aware of any evidence that supports trampling or grazing as a significant threat to the Kearney buckwheat.

Summary of Factor A

Biological data on the Sand Mountain blue butterfly collected by researchers document that hundreds of thousands may have been present during the 2006 adult flight season. These data show that a large, robust population of the Sand Mountain blue butterfly remains despite the estimated loss of as much as 50 percent of its habitat. The only known threat of potential significance in the foreseeable future is the destruction by off-road vehicles of the dune shrub habitat containing the Kearney buckwheat, upon which the butterfly depends for its survival. Habitat destruction is a gradual and cumulative process that affects not only mature shrubs, but also likely disrupts their reproductive capacity by constant disturbance of the sand surface, thereby preventing seedling establishment. The shrubs, however, are long-lived and the habitat remains sufficiently extensive such that the threat to the butterfly does not cause it to be in danger of extinction nor likely to become in danger of extinction in the foreseeable future. Further, an emergency restriction on motorized use on 3,985 ac (1,613 ha) to protect the habitat of the butterfly went into effect on December 12, 2006 and a closure notice regarding these

restrictions was published in the **Federal Register** on March 15, 2007 (72 FR 12187). The implementation of this emergency restriction, and the high level of certainty of its effectiveness, has substantially reduced the magnitude and significance of any long-term threat posed by off-road vehicles to the habitat and viability of the Sand Mountain blue butterfly. Therefore, we conclude that the Sand Mountain blue butterfly is not now, or in the foreseeable future, threatened by destruction, modification, or curtailment of its habitat or range.

Factor B: Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

We are not aware of any scientific or commercial data that indicate overutilization for commercial, recreational, scientific, or educational purposes poses a threat to the species.

Factor C: Disease or Predation

We are not aware of any scientific or commercial data that indicates either disease or predation poses a threat to the species.

Factor D: Inadequacy of Existing Regulatory Mechanisms

In our 90-day finding on the petition to list the Sand Mountain blue butterfly, we found that the petitioners had provided substantial information that existing regulatory mechanisms may be inadequate to prevent the progressive decline of the habitat on which the butterfly depends (page 44991 of 71 FR 44988, August 8, 2006). We based our determination on evidence that the public had raised the issue of the potential impacts of off-road recreational use on the invertebrate fauna of the dune system over 25 years ago (Hardy 1978); the inactivity of a monitoring plan initiated in the mid-1990's after personnel changes in both the BLM and Service; the lack of action on a 2002 proposed closure of 1,000 ac (405 ha) of dune shrub habitat by a group comprised of BLM and Service staff, representatives from conservation and off-road vehicle groups, and representatives of the Fallon-Paiute Shoshone Tribe; and the lack of compliance with a voluntary route system implemented by the BLM in 2004 that was intended to protect and restore the sand dune ecosystem.

The inadequacy of the voluntary off-road vehicle route system is well documented in a monitoring report on compliance with the encouraged route system for the period 2003–2006 (BLM 2006e). High levels of noncompliance occurred from the onset of implementation of the voluntary system,

and the number of incursions into habitat outside of the encouraged routes increased in 2006 (BLM 2006e, pp. 3–4). Multiple incursions into habitat outside of the encouraged route system typically occurred at any given point, so that the cumulative impacts were considered to be four times greater than the number of noncompliance points (BLM 2006e, p. 6.). BLM's information also indicates a strong relationship between the number of visitors and the number of noncompliance points (BLM 2006e, p. 7). Moreover, about 50 percent of all noncompliance points occurred at or near red carsonite posts installed to alert riders that travel was discouraged in areas behind the posts (BLM 2006e, p. 8). Overall, under the voluntary system 98 percent of all existing routes continued to be used and new routes were created, indicating an ongoing expansion of habitat degradation with little or no restoration of previously degraded areas (BLM 2006e, p. 13).

On December 12, 2006, the BLM implemented an emergency restriction on motorized use on 3,985 ac (1,613 ha) of land to prevent further adverse effects on the habitat of the Sand Mountain blue butterfly (BLM 2006b; 72 FR 12187, March 15, 2007). This action, which reduced the route system from an estimated 200 mi (320 km) to 21.5 mi (34.4 km), has returned the designated route mileage to about the 1980 level. The emergency restriction affects certain public lands within Sections 13, 14, 16, 21 through 24, 28, 29, 32, and 33, of Township 17 North, Range 32 East (Mt. Diablo Meridian) (72 FR 12187). This action restricts motorized vehicle use to selected existing routes that generally lie on the periphery of the Sand Mountain blue butterfly habitat, although several existing routes remain open to motorized use that cross between existing patches of dune shrub habitat; the designated routes were selected to prevent further adverse effects to the habitat of the Sand Mountain blue butterfly while maintaining recreational use at the SMRA. This action is consistent with the Conservation Plan (LVEA 2006) and is specifically designed to address threats from recreational use, weed infestation, fire, and the reduction of site potential, thereby furthering the objectives of eliminating or reducing the number of off-road vehicle incursions into dune shrub and butterfly habitat; eliminate route increase in dune shrub habitat; eliminate shrub damage and loss; and allow for habitat regeneration (LVEA 2006, p. 15). The emergency restriction will remain in effect until the Resource Management Plan has been

updated to address the long-term management of the wildlife, cultural, vegetation, and recreational resources in the area or until the Field Office Manager determines it is no longer needed (BLM 2006b, p. 1; 72 FR 12187, March 15, 2007). Every indication we have from the BLM at both the field office and state office level is that the emergency restriction will remain in place until made permanent through an amendment to the RMP.

The Conservation Plan also provides for increased law enforcement, especially on heavy use weekends and randomly at other times; through an agreement with Churchill County, which is a party to the Plan, local law enforcement staff will be used in the camping areas to allow BLM Park Rangers to patrol the route system and other areas (LVEA 2006, p. 20). In addition, any person who fails to comply with this restriction order may be subject to imprisonment for not more than 12 months or a fine in accordance with the applicable provisions of 18 U.S.C. 3571, or both (BLM 2006b, p. 3; 72 FR 12187, March 15, 2007). A handout was given to recreational users over Labor Day weekend, 2006, informing them of the completion and approval of the Conservation Plan, the upcoming mandatory route system, and the importance of demonstrating success in protecting the habitat for the Sand Mountain blue butterfly (BLM 2006d).

The Conservation Plan includes provisions for regular reporting on progress of implementation and effectiveness of various actions taken pursuant to the plan (LVEA 2006, p. 30). This includes provisions for regularly scheduled meetings of the parties to the plan, at which an evaluation of the implementation progress and effectiveness of the plan (including the route system and its enforcement) will be reviewed and, if necessary, modifications made and adaptive management actions initiated. The first meeting of the parties since the closure notice was put into effect occurred on March 15, 2007. Implementation progress was reviewed, the signage and fencing strategy and funding considerations were discussed, and the next meeting was scheduled for May 10, 2007. The agenda for the latter meeting will include further discussion of the fencing strategy and the scheduling of a site visit to discuss fence placement along key route segments. At every six-month meeting, the implementation success of the conservation actions will be evaluated, the success or failure of the objectives of each strategy will be determined and an adaptive

management plan will be triggered, if appropriate. At annual meetings, the long-term monitoring will be analyzed and continuation or modification of the plan will be determined, based on the triggers for overall plan success. We note also that BLM has demonstrated their commitment to monitor the situation and to take appropriate action, as illustrated by BLM's adoption of the mandatory route system based on monitoring of the voluntary route system that previously was in place.

As described above (see discussion of Factor A), we reviewed the route system in accordance with PECE and found that all of the criteria for certainty of effectiveness are met, and concluded there is a high level of certainty of effectiveness of the route system (Service 2007). We conclude that the emergency restriction on motorized vehicle use has established an adequate regulatory mechanism to protect the existing Kearney buckwheat habitat which, as noted above, remains sufficient to support a large, viable population of the Sand Mountain blue butterfly (Murphy et al. 2007, p. 7).

Summary of Factor D

Unrestricted off-road vehicle recreation at Sand Mountain has been the primary cause of the gradual process of destruction and modification of the dune shrub habitat of the Sand Mountain blue butterfly over the past two decades and remains the only threat of potential significance to the species in the foreseeable future. However, we have determined that the implementation and effectiveness of a mandatory, enforceable route system that restricts travel within the dune shrub habitat adequately addresses this potential threat by eliminating or greatly reducing further habitat deterioration and allowing for habitat recovery within closed areas. We believe that the strengthened regulatory approach and increased emphasis on encouraging compliance with the mandatory route system has substantially reduced the magnitude and imminence of the threat of off-road recreational use to the Kearney buckwheat habitat, which currently remains sufficient to support a large, viable population of the Sand Mountain blue butterfly. Therefore, we have determined that the inadequacy of existing mechanisms does not currently constitute a threat to the Sand Mountain blue butterfly.

Factor E: Other Natural or Manmade Factors Affecting the Continued Existence of the Species

Several other natural or manmade factors have been identified as potential

threats to the Sand Mountain blue butterfly, including invasive weeds (LVEA 2006, p. 10; The Nature Conservancy 2004, pp. 49–52; Murphy et al. 2006, p. 7 and Figure 7), wildfire (LVEA 2006, pp. 13–14; Murphy et al. 2006, p. 9); climate change (LVEA 2006, p. 14; Murphy et al. 2006, p. 9), camping (LVEA 2006, p. 11), hiking (LVEA 2006, p. 14), horseback riding (LVEA 2006, p. 14), pollution (LVEA 2006, p. 14), and military action (LVEA 2006, p. 14). In addition, in our 90-day petition finding, we acknowledged that while large fluctuations in size typical of insect populations may make a species with an extremely limited distribution, such as the Sand Mountain blue butterfly, more susceptible to extinction (Ehrlich 1992), we are aware of no information that large population fluctuations have occurred, or are likely to occur for this species. (71 FR 44992, August 8, 2006). Although researchers have acknowledged that the large population observed in 2006 may have been an anomaly, which could have obscured normal patterns of butterfly distribution that might suggest a more significant threat to the species than is indicated by the 2006 field observation (Murphy et al. 2006, p. 9), they also concluded that the Sand Mountain blue butterfly numbers were “substantially above a level that would indicate a need to carry out in situ or other actions to enhance population size above a critical minimum” (Murphy et al. 2006, p. 7). Based on this assessment, we believe that the population will remain viable into the foreseeable future.

Of the potential threats cited above, we consider the interrelated factors of invasive weeds and fire to be the most significant. The primary invasive weeds of concern at Sand Mountain are *Salsola tragus* (Russian thistle) and *Bromus tectorum* (cheatgrass). Large patches of both species are present in areas along the periphery of the sand dunes, principally in areas where livestock water tanks and camping are permanently located (LVEA 2006, p. 10). Researchers did not find cheatgrass to be a dominant species along transects in 2006 (Murphy et al. 2006, Figure 5). The seeds of these invasive weeds can be spread by wind, cattle, and off-road vehicle transport (LVEA 2006, p. 11). There is no evidence that these annual weeds are capable of artificially stabilizing the dune systems at Sand Mountain (The Nature Conservancy 2004, p. 53), and we do not consider artificial stabilization of the dune system to be a significant threat to the habitat of the Sand Mountain blue butterfly. We are unable to assess the

significance of off-road vehicles as a vector for weed transport because of lack of data, although they likely facilitate weed establishment through surface disturbance.

Because both cheatgrass and Russian thistle are annual plants, we do not believe that they pose a significant direct competitive threat to the Kearney buckwheat, a long-lived shrub. Cheatgrass and Russian thistle, however, do create a substantial fuel load that may increase both the likelihood and frequency of wildfire. Wildfires have not occurred over the past 25 years of record at Sand Mountain (LVEA 2006, p. 13), and wildfires likely have a low natural frequency in sparsely vegetated dune ecosystems. The Sand Mountain ecosystem was rated in fair condition based on the absence of known dune-stabilizing invasive plants (The Nature Conservancy 2004, p. 35). After a subsequent visit by a few assessment team members, however, it was noted that the abundance of invasive plants was much higher than assumed by the team during the analysis, and it was possible that they might have downgraded the rating to poor if they had been aware of this information (The Nature Conservancy 2004, p. 37). Vegetation data collected along transects by researchers during the 2006 field season, however, show that both the presence and abundance of Russian thistle vary spatially, and the invasive weed is absent in many areas; nevertheless, the researchers found fewer butterflies where Russian thistle was abundant (Murphy et al. 2006, p. 7, Figure 7). This observation clearly derives from the strong correlation between numbers of the butterfly and the number of buckwheat shrubs and their inflorescences (Murphy et al. 2006, Figure 4). Transect data presented by the researchers appear to show that greater abundance of Russian thistle (and lesser abundance of Kearney buckwheat) also correlates with a greater abundance of several other plants, including four-wing saltbush, *Oenothera deltoides* (desert evening-primrose), *Rumex venosus* (winged dock), and an unidentified species of wild buckwheat (Murphy et al. 2006, Figure 5). None of these plants are abundant in areas along the transects where the Kearney buckwheat is abundant (Murphy et al. 2006, Figure 5), suggesting the possibility that the particular habitats where these species, including Russian thistle, are dominant may not provide suitable habitat for the Kearney buckwheat.

We conclude, therefore, that annual invasive weeds, the combustible fuels

they create, and the potential for wildfires to occur and increase in frequency, thereby promoting the increase and establishment of invasive weeds, all pose risks to at least some of the habitat of the Sand Mountain blue butterfly. The extent and magnitude of the risks, however, is unclear because we have no quantitative information on the overall distribution and abundance of invasive weeds, nor are any data available on the response of the Kearney buckwheat to fire. The occurrence of the buckwheat in a habitat in which fire is naturally rare suggests that it is not fire-tolerant; the species, however, has an extensive branching caudex (root crown) from a deep woody taproot (Reveal 2002, p. 1), from which it has been observed to resprout after physical damage to its above-ground shoot (Service 1994). It may, therefore, be intolerant of fire but capable of surviving it. At this time, therefore, we are aware of no substantial evidence that invasive plants or fire currently pose a significant threat to the habitat or viability of the Sand Mountain blue butterfly.

Of the remaining potential threats to the Sand Mountain blue butterfly, camping was identified as such primarily because it constitutes an additional source of invasive weeds (LVEA 2006, p. 11) and is subject to the same considerations discussed above. In addition, the only campground is located in an area where Kearney buckwheat once occurred and the butterfly was first discovered (Austin 1998), but neither the buckwheat nor the butterfly occur there today so the campground itself no longer poses a direct threat to the species. Climate change is also a potential threat to the species (LVEA 2006, p. 14; Murphy et al. 2006, p. 9), but there is no available evidence to evaluate the imminence or magnitude of this threat. There is also no evidence that pollution or military action pose a significant threat to the species or its habitat, and their level was considered so low that they were not considered in the Conservation Plan (LVEA 2006, p. 14).

Summary of Factor E

Annual invasive weeds, the combustible fuels they create, and the potential for wildfires to occur and increase in frequency, thereby promoting the increase and establishment of invasive weeds all pose a threat to at least some of the habitat of the Sand Mountain blue butterfly. The extent and magnitude of this threat, however, is unclear because we have no quantitative information on the overall distribution and abundance of invasive

weeds, nor are there any data available on the response of the Kearney buckwheat to fire. No substantial evidence exists to support a conclusion that annual weeds or fire currently pose a significant threat to the habitat or viability of the Sand Mountain blue butterfly.

Finding

We assessed the best available scientific and commercial information regarding threats faced by the Sand Mountain blue butterfly. We have reviewed the petition, information available in our files, and information submitted to us during the public comment period following our 90-day petition finding (71 FR 44988; August 8, 2006). We also consulted with recognized butterfly experts and Federal land managers, and arranged for researchers to initiate field studies to assess the status of the subspecies and establish baseline data against which future changes in the butterfly population can be compared.

Based on counts made during the 2006 flight season, hundreds of thousands of adult Sand Mountain blue butterflies may have been present, a number sufficiently large for us to find that habitat loss to date does not pose a significant threat to the subspecies. The only known threat of potential future significance to the habitat of the Sand Mountain blue butterfly is the gradual destruction by off-road vehicles of the dune shrub habitat containing Kearney buckwheat, on which the butterfly depends, and associated impacts to the reproductive success of the shrub the constant disruption of the sand surface which interferes with seedling establishment. The magnitude and imminence of the threat posed by off-road vehicle recreation to the habitat of the butterfly, however, has been reduced by an emergency restriction that limits motorized vehicles to a designated route system that went into effect on December 12, 2006. We believe that implementation of this emergency restriction ensures that further habitat destruction is prevented and, over the long-term, natural shrub regeneration and active restoration will ensure that the Sand Mountain blue butterfly remains viable. There is no evidence that, based on the available information, other factors identified as potential threats, including large population fluctuations, invasive weeds, wildfire,

climate change, camping, hiking, horseback riding, pollution, and military activities pose a significant threat to the Sand Mountain blue butterfly.

The butterfly exists in only one population, and we consider the entire 1,000 ac (405 ha) of dune shrub habitat to be the current range of the Sand Mountain blue butterfly; this includes non-Kearney buckwheat habitat through which the species passes, including areas devoid of vegetation such as trails, as well as areas that support the Kearney buckwheat shrubs on which the butterfly depends for completion of its life cycle. As described above, researchers have found the butterfly appears to co-occur with its host plant, Kearney buckwheat, across the entirety of the shrub's distribution at Sand Mountain, even within small, relatively isolated patches of the shrub (Murphy et al. 2006, pp. 5–8). We believe, therefore, that the current range of the Sand Mountain blue butterfly approximates its historical range, although only 50 to 60 percent of the entire area of dune shrub habitat is estimated to support substantial numbers of the Kearney buckwheat on which the butterfly depends for completion of its life cycle. Because the area in which the population exists is so small, and there are no unique features of the area, there are no areas within the species' range that are significant portions of the range. In addition, the threats to the species are being addressed across its range, as described above, such that no area continues to face significant threats. Therefore, we find that the Sand Mountain blue butterfly is not threatened or endangered in all or a significant portion of its range, and listing it under the Endangered Species Act is not warranted at this time.

We will continue to assess the status of the butterfly by working with the BLM, other parties to the Conservation Plan, research scientists, and other individuals or groups interested in contributing to the conservation of this species. We will particularly focus on the designated route system and the effectiveness of this conservation action in eliminating and reducing the threats identified to the butterfly over the foreseeable future. In particular, we will closely follow the monitoring results of recreational user compliance with the designated route system.

As specified in PECE (68 FR 15114): “If we make a decision not to list a species or to list the species based in part on the contributions of a formalized conservation effort, we will track the status of the effort including the progress of implementation and effectiveness of the conservation effort. If any of the following occurs: (1) A failure to implement the conservation effort in accordance with the implementation schedule; (2) a failure to achieve objectives; (3) a failure to modify the conservation effort to adequately address an increase in the severity of a threat or to address other new information on threats; or (4) we receive any other new information indicating a possible change in the status of the species, then we will reevaluate the status of the species and consider whether initiating the listing process is necessary. Initiating the listing process may consist of designating the species as a candidate species and assigning a listing priority, issuing a proposed rule to list, issuing a proposed rule to reclassify, or issuing an emergency listing rule.”

We request that you submit any new information concerning the status of, or threats to, this species to our Nevada Fish and Wildlife Office (see **ADDRESSES** section) whenever it becomes available. New information will help us monitor the species and encourage its conservation. If an emergency situation develops for this or any other species, we will act to provide immediate protection.

References Cited

A complete list of all references cited herein is available, upon request, from the Nevada Fish and Wildlife Office (see **ADDRESSES** section).

Author

The primary author of this notice is the Nevada Fish and Wildlife Office (see **ADDRESSES**).

Authority: The authority for this action is section 4 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: April 26, 2007.

Randall B. Luthi,

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

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