

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R8-ES-2013-0105;
4500030114]

RIN 1018-AZ91

**Endangered and Threatened Wildlife
and Plants; Designation of Critical
Habitat for Mount Charleston Blue
Butterfly (*Icaricia (Plebejus) shasta
charlestonensis*)**

AGENCY: Fish and Wildlife Service,
Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for the Mount Charleston blue butterfly (*Icaricia (Plebejus) shasta charlestonensis*) under the Endangered Species Act of 1973, as amended (Act). In total, approximately 5,214 acres (2,110 hectares) in the Spring Mountains of Clark County, Nevada, fall within the boundaries of the critical habitat designation. The effect of this rule is to extend the Act's protections to the butterfly's critical habitat.

DATES: This rule is effective July 30, 2015.

ADDRESSES: This final rule is available on the Internet at <http://www.regulations.gov> and <http://www.fws.gov/Nevada>. Comments and materials we received, as well as some supporting documentation we used in preparing this final rule, are available for public inspection at <http://www.regulations.gov>. All of the comments, materials, and documentation that we considered in this rulemaking are available by appointment, during normal business hours at: U.S. Fish and Wildlife Service, Southern Nevada Fish and Wildlife Office, 4701 North Torrey Pines Drive, Las Vegas, NV 89130-7147; telephone 702-515-5230; facsimile 702-515-5231.

The coordinates or plot points or both from which the maps are generated are included in the administrative record for this critical habitat designation and are available at <http://www.regulations.gov> at Docket No. FWS-R8-ES-2013-0105 and at the Southern Nevada Fish and Wildlife Office at <http://www.fws.gov/Nevada> (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we developed for this critical habitat designation will also be available at the Fish and Wildlife Service Web site and Field Office set out above, and may also be included in the

preamble and at <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT:

Michael J. Senn, Field Supervisor, U.S. Fish and Wildlife Service, Southern Nevada Fish and Wildlife Office, 4701 North Torrey Pines Drive, Las Vegas, NV 89130-7147; telephone 702-515-5230; facsimile 702-515-5231. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. This is a final rule to designate critical habitat for the endangered Mount Charleston blue butterfly (*Icaricia (Plebejus) shasta charlestonensis*). Under the Endangered Species Act, any species that is determined to be an endangered or threatened species requires critical habitat to be designated, to the maximum extent prudent and determinable. Designations and revisions of critical habitat can only be completed by issuing a rule.

We listed the Mount Charleston blue butterfly as an endangered species on September 19, 2013 (78 FR 57750). On July 15, 2014, we published in the **Federal Register** a proposed critical habitat designation for the Mount Charleston blue butterfly (79 FR 41225). Section 4(b)(2) of the Endangered Species Act states that the Secretary of the Interior shall designate critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat.

The critical habitat areas we are designating in this rule constitute our current best assessment of the areas that meet the definition of critical habitat for the Mount Charleston blue butterfly. In this rule, we are designating approximately 5,214 acres (2,110 hectares) in the Spring Mountains of Clark County, Nevada, as critical habitat for the Mount Charleston blue butterfly.

This rule consists of a final rule designating critical habitat for the Mount Charleston blue butterfly. The Mount Charleston blue butterfly is listed as an endangered species under the Endangered Species Act.

We have prepared an economic analysis of the designation of critical habitat. In order to consider economic impacts, we prepared an incremental effects memorandum (IEM) and screening analysis, which together with our narrative and interpretation of effects we consider our draft economic

analysis (DEA) of the proposed critical habitat designation and related factors (IEc 2014). The analysis, dated May 20, 2014, was made available for public review from July 15, 2014, through September 15, 2014 (79 FR 41225). The DEA addressed probable economic impacts of critical habitat designation for the Mount Charleston blue butterfly. Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. We summarize and respond to the comments in this final determination.

Peer review and public comment. We sought comments from independent specialists to ensure that our designation is based on scientifically sound data and analyses. We obtained opinions from four knowledgeable individuals with scientific expertise to review our technical assumptions and analysis, and to help us determine whether or not we had used the best available information. These peer reviewers provided additional information, clarifications, and suggestions to improve this final rule. Information we received from peer review is incorporated into this final designation. We also considered all comments and information we received from the public during the comment period.

Previous Federal Actions

All previous Federal actions are described in the final rule listing the Mount Charleston blue butterfly as an endangered species (78 FR 57750; September 19, 2013).

Summary of Comments and Recommendations

We requested written comments from the public on the proposed designation of critical habitat for the Mount Charleston blue butterfly during one comment period. The comment period associated with the publication of the proposed critical habitat rule (79 FR 41225) opened on July 15, 2014, and closed on September 15, 2014. We also requested comments on the associated draft economic analysis during the same comment period. We did not receive any requests for a public hearing. We also contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and draft economic analysis during the comment period.

During the comment period, we received comment letters directly

addressing the proposed critical habitat designation. Overall, we received 706 comment letters addressing the proposed critical habitat designation or the draft economic analysis. All substantive information provided during the comment period has either been incorporated directly into this final determination or is addressed below. Comments we received were grouped into general issues specifically relating to the proposed critical habitat designation for the Mount Charleston blue butterfly and are addressed in the following summary and incorporated into the final rule as appropriate.

Peer Review

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from four knowledgeable individuals with scientific expertise that included familiarity with butterfly biology and ecology, conservation biology, and natural resource management. We received responses from all four of the peer reviewers.

We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding critical habitat for the Mount Charleston blue butterfly. Two peer reviewers agreed with our analyses in the proposed rule. A third peer reviewer, while not disagreeing with the designation of critical habitat itself, disagreed with some analyses or application of information. The fourth peer reviewer did not state a position. We received no peer review responses on the DEA. Peer reviewer comments are addressed in the following summary and incorporated into the final rule as appropriate.

Peer Reviewer Comments

(1) *Comment:* One peer reviewer commented that our references in the proposed rule to *Astragalus lentiginos* var. *kernensis* from Andrew *et al.* (2013) were a misidentification of the plant *Oxytropis oreophila* var. *oreophila*.

Our Response: We agree. We erroneously sent peer reviewers a draft copy of the proposed critical habitat designation that referenced *Astragalus lentiginos* var. *kernensis* from Andrew *et al.* (2013). However, based on a correction to this plant identification (Andrew *et al.* 2013, Errata Sheet; Thompson *et al.* 2014), the proposed critical habitat designation that published in the **Federal Register** (79 FR 41225; July 15, 2014) contained the correct plant identification of *Oxytropis oreophila* var. *oreophila*. This correction is also reflected in this final critical habitat designation.

(2) *Comment:* One peer reviewer did not agree with our depicting *Astragalus platytropis* and *Oxytropis oreophila* var. *oreophila* to *Astragalus calycosus* var. *calycosus* as functionally equivalent larval host plants for the Mount Charleston blue butterfly. The reviewer commented that numerous observations have been made of oviposition by the Mount Charleston blue butterfly in association with *A. c.* var. *calycosus*, and *A. c.* var. *calycosus* is present at all locations where Mount Charleston blue butterflies have been detected, suggesting this plant species is a required feature of habitat. The reviewer also commented that little reliable evidence exists that *A. platytropis* and *O. o.* var. *oreophila* function as commonly used host plants, and that the Service's assumption appeared to be based on an observation of one oviposition event by one female of one egg on each of *A. platytropis* and *O. o.* var. *oreophila*. Lastly, the peer reviewer commented on the difficulty of identifying butterfly eggs to species and questioned whether the observers had the expertise to do so.

Our Response: We agree that the plant species *Astragalus calycosus* var. *calycosus* functions as an important biological feature and is the most common host plant present throughout the range of the Mount Charleston blue butterfly; thus, we have included it as a primary constituent element. *A. c.* var. *calycosus* is more abundant through a broader elevation range and occurs in more plant communities than *Astragalus platytropis* and *Oxytropis oreophila* var. *oreophila*, in the Spring Mountains as well as within the range of the Mount Charleston blue butterfly (Nachlinger and Reese 1996, Table 6; Niles and Leary 2007, pp. 36 and 38; Andrew *et al.* 2013, p. 5). *A. c.* var. *calycosus* is the only host plant documented in lower elevation Lee Canyon locations (NewFields 2008, pp. 1–198 plus Appendices; Andrew *et al.* 2013, p. 5), where greater survey efforts to observe the butterfly have occurred, because of ease of access which has resulted in more frequent and consistent observations of the butterfly (Boyd 2006, p. 1; DataSmiths 2007, pp. 1–9; Boyd and Murphy 2008, p. 2–3). Therefore, prior to 2012, the emphasis and life-history knowledge of Mount Charleston blue butterfly host plants in the Spring Mountains of Nevada has focused on *A. c.* var. *calycosus*. Subsequent observations reported by Andrew *et al.* (2013, pp. 1–93) and Thompson *et al.* (2014, pp. 97–158) have demonstrated that additional host plants for the Mount Charleston blue butterfly exist,

which is consistent with documented use of multiple host plants by other Shasta blue butterfly subspecies (Emmel and Shields 1980, Table I). However, numerous observations and a longer history of knowledge of *A. c.* var. *calycosus* as a host plant do not negate the biological importance and functional equivalence of *A. platytropis* and *O. o.* var. *oreophila* as host plants important to the conservation of the Mount Charleston blue butterfly.

The evidence that was used to infer that *Astragalus platytropis* and *Oxytropis oreophila* var. *oreophila* are host plants for the Mount Charleston blue butterfly is consistent with much of the Lepidoptera science, which may include observations of adult associations (for example, female concentration areas, pre-oviposition behavior by females on plants (Shields *et al.* 1969, pp. 28–29; Scott 1992, p. 2; Austin and Leary 2008, p. 1); oviposition by females; and larval feeding and subsequent survival (Shields *et al.* 1969, pp. 28–29; Scott 1992, p. 2; Austin and Leary 2008, p. 1). We recognize that observation of a female butterfly ovipositing on a plant is not equivalent to actual observations of feeding on a particular plant species and survival of butterfly larvae. There are instances in Lepidoptera literature where adult female butterflies were documented ovipositing on plants, and hatched larvae fed on the plants but did not subsequently survive (Shields *et al.* 1969, p. 29; Chew and Robbins 1984, p. 68; Austin and Leary 2008, p. 1). Some genera, and even large proportions of some subfamilies, are known to oviposit haphazardly; however, the Shasta blue butterfly and its higher taxonomic classification groups have not been identified as species that oviposit haphazardly (Scott 1992, p. 2). The Mount Charleston blue butterfly is a member of the family Lycaenidae, subfamily Polyommatae, for which host plants are more easily determined than for other lycaenid species, based on obvious behavior by females and frequent, unequivocal association of females with host plants (Austin and Leary 2008, p. 58).

The evidence to support the conclusion that *Astragalus calycosus* var. *calycosus*, *Astragalus platytropis*, or *Oxytropis oreophila* var. *oreophila* function as host plants is based on observations and reports of: (1) Oviposition by Mount Charleston blue butterflies on *A. c.* var. *calycosus*, *A. platytropis*, and *O. o.* var. *oreophila* (Austin and Leary 2008, p. 86; Thompson *et al.* 2014, pp. 122–125); (2) pre-oviposition behavior by Mount Charleston blue butterflies associated

with all host plant species (Austin and Leary 2008, p. 86; Thompson *et al.* 2014, pp. 122–125); (3) observations of Mount Charleston blue butterfly eggs on all three host plant species (Thompson *et al.* 2014, pp. 122–125); (4) other Shasta blue butterfly apparently having close associations and ovipositing on *A. c.* var. *calycosus* and *A. platytropis* outside of the Spring Mountains (Emmel and Shields 1980, Table I) or other *Oxytropis* spp. (Austin and Leary 2008, p. 85); and (5) close association or oviposition on more than one host plant species by other subspecies of Shasta blue butterflies (Emmel and Shields 1980, Table I; Scott 1992, p. 100; Austin and Leary 2008, pp. 85–86) (note that some observations reported in Austin and Leary 2008 and Scott 1992 are the same as those originally reported by Emmel and Shields 1980). The Service does not have information or reported observations of feeding and subsequent survival or death of any Shasta blue butterfly subspecies on *A. c.* var. *calycosus*, *A. platytropis*, or *O. o.* var. *oreophila*. Such observations would provide additional evidence to confirm or refute these plant species as larval hosts for the Shasta blue butterfly.

In regard to evidence of egg observations of Mount Charleston blue butterflies, we agree with the peer reviewer and Scott (1986, p. 121) that identifying butterfly eggs is difficult, and reported observations should be critically evaluated. However, it is possible to identify eggs of various butterfly species to subfamily, genus, or even species (Scott 1986, p. 121). In addition, the context of how the egg is deposited on the plant and the context of where it is found should be considered. We believe observations of Mount Charleston blue butterfly eggs as reported by Thompson *et al.* (2014, pp. 122–131, Appendix F) are credible because: (1) Eggs deposited by Mount Charleston blue butterflies were directly observed, recorded, and photographed, which allowed for further comparison between and review by field observers; (2) eggs depicted (Thompson *et al.* 2014, pp. 129–130 and Appendix F) are deposited in a manner consistent with reports for other Shasta blue butterflies (Emmel and Shields 1980, pp. 132–138); (3) the South Loop locations of egg observations occurred in areas where and at times when the Mount Charleston blue butterfly was the predominant Lycaenid butterfly present (at least 95 percent of all Lycaenid butterflies observed) (Andrew *et al.* 2014, Table 2); (4) the other butterfly species reported at the South Loop location or in close proximity to where

eggs were observed have different reported host plants (for example, Southwestern azure butterfly (*Celastrina echo cinerea*) in Austin and Leary 2008, pp. 63–64), or deposit their eggs primarily on locations of the plant (for example, Reakirt's blue butterfly (*Echinargus isola*) on or near parts of flowers (Scott 1992, pp. 102–103; Austin and Leary 2008, pp. 90–91)) substantially different than those reported for the Mount Charleston blue butterfly (for example, leaves, petioles, and stems (Emmel and Shields 1980, pp. 132–138; Thompson *et al.* 2014, pp. 129–130 and Appendix F)); and (5) reviews by field experts and subject matter experts did not provide specific information to disprove the observations. Thus, the eggs that were observed were most likely Mount Charleston blue butterfly eggs, and not eggs of other butterfly species.

Based on the preceding discussion, the Service determines that *Astragalus calycosus* var. *calycosus*, *Astragalus platytropis*, and *Oxytropis oreophila* var. *oreophila* are functionally equivalent host plants for the Mount Charleston blue butterfly, and, thus, are retained as primary biological features.

(3) *Comment*: One peer reviewer did not agree that the Mount Charleston blue butterfly has been documented using for nectar *Antennaria rosea* (rosy pussy toes), *Cryptantha* spp., *Ericameria nauseosa* (rubber rabbitbrush), *Erigeron flagellaris* (trailing daisy), *Gutierrezia sarothrae* (broom snake weed), *Monardella odoratissima* (horsemint), *Petroradia pumila* var. *pumila* (rock-goldenrod), and *Potentilla concinna* var. *concinna* (Alpine cinquefoil).

Our Response: We reexamined the references we cited for observations of nectaring Mount Charleston blue butterflies on various plant species, and we have determined the references suggest the Mount Charleston blue butterfly has been observed to nectar on all of the above species. Thompson *et al.* 2014 (pp. 117) report observations of Mount Charleston blue butterflies nectaring on *Gutierrezia sarothrae*. Boyd and Murphy (2008, p. 9) clearly state the Mount Charleston blue butterfly has been observed to nectar on *Hymenoxys* spp. and *Erigeron* spp., and they go on to state that 10 plant species (p. 13 and Figure 2a on p. 16) “were considered as likely ‘higher quality’ [potential] resources—reflecting observations of use by the Mount Charleston blue in previous years.” We recognize Boyd and Murphy (2008) do not provide documentation of these 10 species being used by nectaring Mount Charleston blue butterflies; rather, we infer it is likely, based on Boyd and Murphy’s

(2008, p. 13) observations of Mount Charleston blue butterflies using the plant species, and the flowers of these plant species having the appropriate morphological characteristics for nectar use. Therefore, we are not including plant species as potential nectar sources for the Mount Charleston blue butterfly without reported observations of use.

(4) *Comment*: One peer reviewer commented that the primary constituent elements were not determined based on scientifically sound data and analyses, and are not defensible, because the reports the Service relied on to develop the primary constituent elements were either qualitative or did not provide range values with means and variances for several of the elements.

Our Response: We used the best scientific and commercial data available to determine the primary constituent elements essential to the conservation of the Mount Charleston blue butterfly. We focused on available data from areas occupied by the Mount Charleston blue butterfly at the time of listing, and any new information available or provided by peer reviewers and commenters since the proposed critical habitat designation was published (79 FR 41225; July 15, 2014). We used minimum quantity values or quality descriptions for several primary constituent elements from areas occupied by Mount Charleston blue butterflies, because they represent our current understanding of the minimum habitat or features necessary to support the life-history processes of the subspecies. We believe using this approach identifies the physical and biological features that are essential to the conservation and recovery of the Mount Charleston blue butterfly.

(5) *Comment*: One peer reviewer suggested horses in the Spring Mountains are feral, rather than wild, and should be referred to as such.

Our Response: We agree, because horses are not native to the Spring Mountains, let alone North America, and escaped from domestication (Matthew 1926, p. 149); we have replaced “wild” with “feral” in this final rule.

(6) *Comment*: One peer reviewer commented that citations were minimal within the *Primary Constituent Elements for Mount Charleston Blue Butterfly* section.

Our Response: We provide citations for information used to identify the primary constituent elements (PCEs) in the section immediately preceding *Primary Constituent Elements for Mount Charleston Blue Butterfly*, in the discussion of *Physical or Biological Features*. The PCEs are a concise list of the elements, and the pertinent

information and sources that led us to identify them are explained in detail and cited in the discussion of physical or biological features.

(7) *Comment:* One peer reviewer commented that the Pinyon (2011) work that we referenced was “qualitative work and could not be repeated, and was therefore not highly defensible.”

Our Response: We respectfully disagree and maintain that consideration of the information in Pinyon (2011) is consistent with our policy to use the best scientific and commercial data available to determine critical habitat. Our use of the information is described in *Criteria Used To Identify Critical Habitat*. We agree that some work performed and described by Pinyon 2011 is qualitative. For example, Pinyon (2011, p. 11) assigned areas of Mount Charleston blue butterfly habitat to either good, moderate, poor, or none based on the “presence of larval host plants, nectar plants, ground cover, and canopy density (visual estimate),” which may not be repeatable, to the extent that boundaries would coincide precisely, as with other investigators. While the precise boundaries could vary, the general areas where Pinyon (2011, Figure 8 and 9) identified and delineated moderate and high-quality habitat are in close proximity, or correlate closely, to concentrations of Mount Charleston blue butterfly locations and other investigator habitat delineations (Weiss *et al.* 1997, Map 3.1; SWCA 2008, Figure 1; Andrew *et al.* 2013, Figure 17, 20, and 22; Thompson *et al.* 2014, pp. 97–158). Thus, information from Pinyon (2011) is repeatable to some extent and defensible in the manner we applied it to determine critical habitat. (Also see our response to Comment 9, below.)

(8) *Comment:* One peer reviewer commented that unobserved nectar sources cannot be assumed to be present at locations the Mount Charleston blue butterfly has been observed, particularly given the uncertainty of the distances that the Mount Charleston blue butterfly can move.

Our Response: We respectfully disagree, because the Mount Charleston blue butterfly is typically observed moving short distances in the same area where its nectar (food for adults) and larval hosts occur; thus, unobserved (that is, unreported) nectar plants can be assumed to be present with a high degree of certainty at locations where the butterfly has been observed. (See also our response to Comment 3.)

(9) *Comment:* We received suggested changes from two peer reviewers on the general description of Mount Charleston

butterfly occurrence, which we stated is “on relatively flat ridgetops [and] gently sloping hills.” One peer reviewer referenced additional explanations provided by Boyd and Murphy (2008, p. 19). The other peer reviewer provided terrain slope data for plot points within areas where Mount Charleston blue butterfly adults have been observed.

Our Response: We incorporated the reference provided by the peer reviewer in the *Physical or Biological Features* section of this final rule. The terrain slope data from the second peer reviewer do not affect the general description of areas where Mount Charleston blue butterflies occur; thus, we did not include them in this final rule. However, we anticipate using the information during the recovery planning process for the subspecies.

(10) *Comment:* We received one peer review comment suggesting our analysis of potential climate change impacts would be helped by considering mechanisms by which the Mount Charleston blue butterfly or its resources may be affected directly or indirectly by changes in temperature and extreme precipitation.

Our Response: Because site- and species-specific information regarding impacts to the Mount Charleston blue butterfly and its resources from climate change is unavailable, we updated our discussion to include a description of general mechanisms that may be impacted by increasing temperatures and patterns of extreme drought and precipitation (see the “Habitats That are Protected from Disturbance or are Representative of the Historical, Geographical, and Ecological Distributions of the Subspecies” section, below). Also see our response to Comment 14.

Comments From Peer Reviewers and the Public

(11) *Comment:* We received peer review and public comments stating that the Service did not use, or misapplied, the best scientific and commercial data available. Commenters suggested that information from Andrew *et al.* (2013) and Thompson *et al.* (2014) was inaccurate or unreliable because of the inexperience of the researchers and the errors that were made by them.

Our Response: We respectfully disagree with these comments. In accordance with section 4 of the Endangered Species Act of 1973, as amended (Act; 16 U.S.C. 1531 *et seq.*), we are required to designate critical habitat on the basis of the best scientific and commercial data available. We used information from many different sources, including articles in peer-

reviewed journals, scientific status surveys and studies completed by qualified individuals, experts’ opinions or personal knowledge, and other sources, to designate critical habitat for the Mount Charleston blue butterfly. In accordance with our peer review policy, published on July 1, 1994 (59 FR 34270), we solicited peer review from knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. Additionally, we requested comments or information from other concerned governmental agencies, the scientific community, industry, and any other interested parties concerning the proposed rule. All comments and information we received on the proposed rule and the draft economic analysis, along with the best scientific data available, were evaluated and taken into consideration to inform the critical habitat designation in this final rule.

(12) *Comment:* We received two peer review comments and public comments on locations of potential removal of critical habitat within Lee Canyon Unit 2. One peer reviewer stated that areas within Unit 2, “should not be considered for removal until the current distribution, abundance, and condition of larval hosts, nectar sources, and other environmental characteristics consistent with occupancy have been assessed.” In addition, the peer reviewer stated that areas diminished by recreation or other treatments may be able to recover with “special management considerations and protection.” Similarly, one public comment stated that the areas should not be removed from critical habitat, and should be restored and managed for occupancy by the Mount Charleston blue butterfly. One peer reviewer commented that additional habitat outside the Mount Charleston blue butterfly’s current range in lower elevations should be designated.

Our Response: As described in the proposed rule, we considered campgrounds and day-use areas that have high levels of public visitation and associated recreational disturbance for removal from critical habitat, because these activities have resulted in degraded habitat, or the level of recreational activity limits or precludes the presence of the Mount Charleston blue butterfly and its primary constituent elements. In this rule, we refer to these as “removal areas.” The Act and our regulations require us to base our decisions on the best available information. In our proposed rule, we stated that we may remove from designation locations referred to as

Dolomite Campground, Foxtail Girl Scout Camp, Foxtail Group Picnic Area, Foxtail Snow Play Area, Lee Canyon Guard Station, Lee Meadows (extirpated Mount Charleston blue butterfly location), McWilliams Campground, and Old Mill Picnic Area and Youth Camp, because they have extremely high levels of public visitation and associated recreational disturbance. We did not receive specific information from peer reviewers or commenters that changed our understanding of the current habitat conditions and recreational use that occurs at Lee Meadows. Furthermore, Lee Meadows is not considered to be occupied habitat, because of habitat loss or degradation from past and ongoing recreation disturbance, and observations of the Mount Charleston blue butterfly have not been documented there since 1965 (see 78 FR 57750, September 19, 2013; Boyd and Murphy 2008, p. 6; and Andrew *et al.* 2013, pp. 51–52 for more details). While the Service would support efforts to restore and protect portions of the Lee Meadows area for the Mount Charleston blue butterfly, this management decision is outside the scope of the Service's authority. Based on the above, we have determined the criteria we established for removal areas apply to Lee Meadows, and we have removed Lee Meadows from this critical habitat designation.

(13) *Comment:* We received one peer review and one public comment that suggested fuel treatment, recreation development, and infrastructure projects were not included or identified as threats. In addition, the peer reviewer stated that butterfly habitat was being adversely affected by ongoing or planned projects, including the Old Mill Wildland Urban Interface Hazardous Fuels Reduction Project; McWilliams, Old Mill, Dolomite Recreation Sites Reconstruction Project; and Foxtail Group Picnic Area Reconstruction Project. The public commented that their recommendations for the Old Mill Wildland Urban Interface Hazardous Fuels Reduction Project were not being implemented.

Our Response: We identified threats from the implementation of recreational development projects and fuels reduction projects described by the commenter in the proposed rule for designation of critical habitat (79 FR 41234, 41237, and 41238; July 15, 2014). Additional information on threats to the species was considered in the final rule determining the status of the subspecies as endangered (78 FR 57750; September 19, 2013). Since the listing of the Mount Charleston blue butterfly, the U.S. Forest Service (Forest Service) has

consulted with the Service on actions they intend to implement, authorize, or fund that might affect the Mount Charleston blue butterfly, including the Old Mill Wildland Urban Interface Hazardous Fuels Reduction (Old Mill WUI) Project. When this final designation of critical habitat becomes effective (see **DATES**, above), the Forest Service has been notified that further consultation may be needed if ongoing or future projects affect designated critical habitat. Section 7 requires Federal agencies to ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of listed species, or adversely modify or destroy their critical habitat, which may be accomplished by avoiding, minimizing, or mitigating take and adverse effects to critical habitat. Nondiscretionary measures associated with such formal consultations can be developed accordingly during future consultations; however, a Federal action agency (for example, Forest Service) has the discretion and authority to implement conservation recommendations received from the public on any given project.

(14) *Comment:* We received one peer review and one public comment on climate change. The peer reviewer provided additional references, and recommended we describe the functional effects of climate change on the Mount Charleston blue butterfly. The public comment provided additional general references and requested that additional areas be included in the critical habitat designation to provide for adaptations to climate change.

Our Response: We agree that climate change will likely affect the Mount Charleston blue butterfly and its critical habitat. However, site-specific information on climate change and its effects on the Mount Charleston blue butterfly and its habitat are not available at this time. We received additional information on climate change; however, this information did not provide enough specificity on areas that likely will be impacted by climate change. Thus, we are not identifying additional areas to include in the critical habitat designation based on this information.

Comments From States

Section 4(i) of the Act states, “the Secretary shall submit to the State agency a written justification for [her] failure to adopt regulations consistent with the agency's comments or petition.” We did not receive official comments or positions on the proposed designation of critical habitat for the

Mount Charleston blue butterfly from State of Nevada agencies. One peer reviewer worked for the State of Nevada, Department of Agriculture, and concurred that the proposed critical habitat designation was supported by the data and conclusions.

Public Comments

(15) *Comment:* One public comment suggested that critical habitat is not determinable because of uncertainties of Mount Charleston blue butterfly habitat, location, and life history. Similarly, other commenters thought that critical habitat should not be designated until additional survey work is performed, because more information is needed on the distribution of butterfly and its host and nectar resources, and because once critical habitat is designated, it is difficult to change. One commenter stated that a thorough assessment of the designated wilderness area was needed to map the extent of habitat.

Our Response: We believe sufficient information exists (1) to perform the required analyses of the impacts of the critical habitat designation; and (2) to identify critical habitat based on the biological needs of the Mount Charleston blue butterfly. Based on our review, we have determined there is sufficient information available to identify critical habitat in accordance with sections 3(5)(A) and 4(b)(2) of the Act. Extensive, but not comprehensive, surveys for butterflies, and specifically the Mount Charleston blue butterfly and its habitat, have occurred across the subspecies' range and throughout the Mount Charleston Wilderness. As is generally the case with natural history, existing studies of the Mount Charleston butterfly have not been able to evaluate or address all possible variables associated with the subspecies. We recognize that future research will likely enhance our current understanding of the subspecies' biology, and additional survey work could provide a better understanding of the distribution of the Mount Charleston blue butterfly and its habitat. Nonetheless, the Act requires us to base our decisions on the best available scientific and commercial information at the time of designation, which is often not complete, and the scientific information about a species generally continues to grow and improve with time. Based on this, we utilized the best available information to determine areas of critical habitat for the Mount Charleston blue butterfly. We will review and consider new information as it becomes available.

(16) *Comment:* We received one comment that the Service selects peer reviewers that agree with our decision,

but we do not select peer reviewers that will disagree.

Our Response: Requests for peer reviewers were based on their availability and capacity as independent specialists with subject matter expertise. In selecting peer reviewers, we followed our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), the guidelines for Federal agencies as described in the Office of Management and Budget (OMB) "Final Information Quality Bulletin for Peer Review," released December 16, 2004, and the Service's "Information Quality Guidelines and Peer Review," revised June 2012. The peer review plan and peer review comments have been posted on our Web site at <http://www.fws.gov/cno/science/peerreview.html>.

(17) *Comment:* Multiple commenters expressed concern that the proposed critical habitat designation would prohibit or limit the expansion and development of additional recreational opportunities within areas proposed as critical habitat. In particular, commenters identified existing plans for development that would add hiking, mountain biking, and ski trails, some of which occur within the authorized special use permit area (SUPA) held by the Las Vegas Ski and Snowboard Resort (LVSSR).

Our Response: The act of designating critical habitat does not summarily preclude any activities on the lands that have been designated. Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. Furthermore, designation of critical habitat does not (1) affect land ownership; (2) establish any closures or restrictions on use of or access to areas designated as critical habitat; or (3) establish specific land management standards or prescriptions. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat.

The Service is committed to working with the Forest Service and LVSSR to implement conservation efforts that protect the Mount Charleston blue butterfly, while also allowing for reasonable expansion and development of the LVSSR compatible with the Mount Charleston blue butterfly, including skiing and snowboarding in the winter and mountain biking and hiking in the summer. The Mount Charleston blue butterfly can coexist

with managed recreation when such recreational activities are properly sited, and operation and maintenance of the infrastructure needed to support these activities is appropriately managed. For example, the Mount Charleston blue butterfly historically occurred and currently exists on active ski runs within the LVSSR. In addition, only part of the proposed LVSSR expansion area occurs within the critical habitat designation; future development and expansion of the LVSSR outside of these areas would likely be unaffected by this final rule.

(18) *Comment:* One commenter asserts that the screening analysis does not adequately address the potential economic effects of critical habitat designation and any resulting prohibitions or limitations to the future LVSSR expansion or development of recreational activities.

Our Response: In compliance with section 7 of the Act, the Forest Service has consulted with the Service on projects affecting the Mount Charleston blue butterfly since the subspecies was listed (78 FR 57750; September 19, 2013). During section 7 consultation, the Forest Service has proposed minimization measures designed to avoid or minimize impacts to the Mount Charleston blue butterfly and its habitat, such as pre-development site planning, effective oversight during implementation and development, and proper management of operations and maintenance activities. We anticipate that activities occurring within designated critical habitat also would have the potential to affect the subspecies and would require consultation regardless of the presence of designated critical habitat. That is, the designation of critical habitat is not anticipated to generate additional minimization or conservation measures for the Mount Charleston blue butterfly beyond those already generated by the listing. As such, the screening analysis limits the future incremental costs of designating critical habitat associated with the LVSSR to the administrative costs of analyzing and avoiding adverse modification of critical habitat during section 7 consultations. (Also see our response to Comment 17, above, for further discussion.)

(19) *Comment:* Some commenters state that areas of recreational development or expansion in the LVSSR Master Development Plan should be excluded from the designation because of the associated economic benefits, and because commenters believe the development plan will benefit the butterfly and its habitat.

Our Response: In accordance with section 4(b)(2) of the Act, the Secretary may exclude any area from critical habitat if she determines that the benefits of such exclusion outweigh the benefits of inclusion. The Service did not consider areas for exclusion under section 4(b)(2) where future recreational development is planned, because to our knowledge, the recreational development plans in place now do not identify benefits provided to the Mount Charleston blue butterfly. While it is possible that some benefits (see our response to Comment 17, above) for the Mount Charleston blue butterfly and its habitat may occur as a result of future development, specificity on future development plans or expected conservation benefits has not been provided. Therefore, areas of recreational development or expansion in the LVSSR Master Development Plan are not excluded from critical habitat designation.

(20) *Comment:* We received many comments from the public that the designation of critical habitat for Mount Charleston blue butterfly should not include the LVSSR Special Use Permit Area (SUPA), because other greater threats are affecting the butterfly than would occur from expansion of the ski area and associated recreational opportunities.

Our Response: We do not consider threats to a species or subspecies when determining areas to designate as critical habitat. Threats to the Mount Charleston blue butterfly were considered and analyzed during the determination of its status as endangered (78 FR 57750; September 19, 2013). We determined critical habitat for the Mount Charleston blue butterfly based on the definition in the Act as follows: The specific areas within the geographical area occupied by the [subspecies] at the time it [was] listed . . . on which are found those physical or biological features essential to the conservation of the species and which may require special management considerations or protections (16 U.S.C. 1532(5)(A)).

We recognize concerns exist regarding future development plans for the LVSSR SUPA. Areas of the LVSSR SUPA have provided habitat for the Mount Charleston blue butterfly for decades, as described in the final listing of the subspecies (78 FR 57750; September 19, 2013). The Service is committed to working with the Forest Service and LVSSR to allow for reasonable expansion and development of recreational opportunities, including skiing and snowboarding in the winter and mountain biking and hiking in the

summer, within the SUPA that are compatible with the Mount Charleston blue butterfly and its habitat.

(21) *Comment:* One commenter asserts the screening analysis is flawed because it contradicts existing case law by using “the functional equivalence approach when considering the economic impact of [critical habitat] designation on the LVSSR property [= SUPA] by concluding that any economic impact occurred as a result of the listing of the species.”

Our Response: Section 4(b)(2) of the Act requires the consideration of potential economic impacts associated with the designation of critical habitat. However, as we have explained elsewhere (see our response to Comment 17, above), the regulatory effect of critical habitat under the Act directly impacts only Federal agencies, as a result of the requirement that those agencies avoid “adverse modification” of critical habitat. Specifically, section 7(a)(2) of the Act states that, “Each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency . . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary . . . to be critical . . .” This then, is the regulatory impact of a critical habitat designation, and serves as the foundation of our economic analysis. We define it as an “incremental impact,” because it is an economic impact that is incurred above and beyond the baseline impacts that stem from the listing of the species (for example, costs associated with avoiding take under section 9 of the Act, mentioned by the commenter); thus it “incrementally” adds to those baseline costs. However, in most cases, and especially where the habitat in question is already occupied by the listed species, as is the case for the Mount Charleston blue butterfly, if there is a Federal nexus, the action agency already consults with the Service to ensure its actions will not jeopardize the continued existence of the species. Therefore, the additional costs of consultation to further ensure the action will not destroy or adversely modify critical habitat are usually relatively minimal. Because the Act provides for the consideration of economic impacts associated only with the designation of critical habitat, and because the regulatory effect of critical habitat is the requirement that Federal agencies avoid destruction or adverse modification of

critical habitat, the economic impacts of a critical habitat designation in occupied areas are generally limited to the costs of consultations on actions with a Federal nexus, and are primarily borne by the Federal action agencies. As described in our final economic analysis, in some cases private individuals may incur some costs as third-party applicants in an action with a Federal nexus. Beyond this, while small business entities may possibly experience some economic impacts as a result of a listing of a species as endangered or threatened under the Act, small businesses do not generally experience substantial economic impacts as a direct result of the designation of critical habitat.

(22) *Comment:* We received several comments that the Las Vegas Ski and Snowboard Resort Area should be excluded from critical habitat in accordance with the Ski Area Recreational Opportunity Enhancement Act of 2011 (Pub. L. 112–46), or the designation of critical habitat should give credence to the Act “. . . which aims to bolster summer tourism and stir year-round economic activity in mountain towns.”

Our Response: The Ski Area Recreational Opportunity Enhancement Act of 2011 (SAROE), which amends the National Forest Ski Area Permit Act of 1986 (16 U.S.C. 497b), does not supersede the requirements of the Endangered Species Act. Section 3 of SAROE provides the Secretary of Agriculture authority to authorize a ski area permittee to provide other recreational opportunities determined to be appropriate. The SAROE requires that authorizations by the Secretary of Agriculture be in accordance with “applicable land and resource management plan[s]” and “applicable laws (including regulations).” Furthermore, section 4 of SAROE states, “Nothing in the amendments made by this Act establishes a legal preference for the holder of a ski area permit to provide activities and associated facilities authorized by section 3(c) of the National Forest Ski Area Permit Act of 1986 (16 U.S.C. 497b(c)) (as amended by section 3).” There is no legal direction or requirement that stems from the SAROE for the Service to modify critical habitat. As described in our response to Comment 17, above, we expect that properly planned, designed, managed, and implemented recreation may occur in close proximity to Mount Charleston blue butterfly habitat.

(23) *Comment:* We received many public comments that the critical habitat area was too large, and the use of the

quarter-quarter sections to encompass areas of primary constituent elements was arbitrary and capricious, or illogical. Public comments suggested that of the 702 acres (ac) (284 hectares (ha)) authorized in the LVSSR SUPA that occur within proposed critical habitat, only 3.6 ac (1.5 ha) are known to be occupied by the Mount Charleston blue butterfly, and essentially are surrounded by a barrier of forest. One public comment stated the Mount Charleston blue butterfly has never been observed far from its habitat by leading experts, and suggested that designating areas between patches of habitat was overly broad and resulted in proposed designation of areas of unoccupied habitat not essential to the conservation of the Mount Charleston blue butterfly, and that such areas should not be designated as critical habitat.

Our Response: We used quarter-quarter sections (generally 40 ac (16 ha)) to delineate the boundaries of critical habitat units because, as stated in the proposed designation, they provide a readily available systematic method to identify areas that encompass the physical and biological features essential to the conservation of the Mount Charleston blue butterfly, and they provide boundaries that are easy to describe and interpret for the general public and land management agencies. The selection of any given quarter-quarter section was systematically selected based on our understanding of the best scientific and commercial data available on the occurrence of the physical and biological features essential to the conservation of the Mount Charleston blue butterfly. We recognize that there are areas within the critical habitat unit boundaries that do not possess the primary constituent elements, such as buildings, pavement, and other structures, and these areas are excluded by text in the final critical habitat rule (see section *Criteria Used To Identify Critical Habitat*). In the quarter-quarter sections that are included, suitable habitat is distributed across the area.

Reported acres of habitat in previous **Federal Register** documents do not reflect the best available science currently available. In the 90-day and 12-month findings (72 FR 29935–29936, May 30, 2007; 76 FR 12670, March 8, 2011), we reported some of the first patches of habitat for the Mount Charleston blue butterfly to be 3.7 ac (1.5 ha), and two areas of 2.4 ac (0.97 ha) and 1.3 ac (0.53 ha) at the LVSSR. As a result of additional survey work in 2012, we identified the area of known occupied habitat at LVSSR as 25.7 ac (10.4 ha) in the final rule listing the

Mount Charleston blue butterfly as endangered (78 FR 57754; September 19, 2013). Additional habitat has been mapped (Forest Service 2013, Figure 2) within the LVSSR SUPA, and more may be present in areas that have not been adequately surveyed. There are small areas with primary constituent elements distributed across the entire area of the LVSSR SUPA within Unit 2, which overlaps with approximately 60 percent of the LVSSR SUPA. The ability of the Mount Charleston blue butterfly to move among or between close patches of habitat within each critical habitat unit is necessary and essential for the conservation and recovery of the subspecies. Movements between patches of habitat to restore a functioning metapopulation (hypothesized to have failed because of reduced landscape permeability, as described in Boyd and Murphy 2008, p. 25) are necessary for recovery of the Mount Charleston blue butterfly.

We recognize that habitat is dynamic, the extent of habitat may shift, surveys have not occurred in every area, and butterflies move between patches of habitat. Therefore, we adjusted some of the methodology we used to identify critical habitat in this final rule. We used a 1,000-meter (3,300-foot) distance to approximate potential Mount Charleston blue butterfly movements within critical habitat units. We believe the use of quarter-quarter sections provides an effective boundary and scale that encompasses likely butterfly movements within and between habitat patches, and is easily recognizable by land management agencies and the general public. Therefore, this methodology resulted in the three separate occupied critical habitat units essential to the conservation and recovery of the Mount Charleston blue butterfly that are identified in this final rule.

(24) *Comment:* We received comments that feral horses were affecting the Mount Charleston blue butterfly and its habitat, and they should be removed.

Our Response: Threats to the Mount Charleston blue butterfly were evaluated in the final rule for listing the subspecies as endangered (78 FR 57750; September 19, 2013). Management of feral horses is outside the scope of the Service's authority, and comments on this matter should be directed to the appropriate land manager. The Service will continue to advocate for appropriate management levels of feral horses to avoid or minimize potential conflicts with the Mount Charleston blue butterfly.

(25) *Comment:* We received many public comments that the Service should assemble a recovery team and have a collaborative and inclusive recovery planning process.

Our Response: We agree that we should have a collaborative and inclusive recovery planning process, and will work to fulfill our statutory mandate under section 4 of the Act, which requires us to develop and implement a recovery plan for the Mount Charleston blue butterfly now that the species is listed and critical habitat is designated.

(26) *Comment:* We received several public comments suggesting that LVSSR SUPA should be excluded from critical habitat because more Mount Charleston blue butterflies were observed in Unit 1 than Unit 2, better habitat was present in Unit 1 than in Unit 2, and the Carpenter 1 Fire will likely improve habitat in Unit 1.

Our Response: Exclusions to critical habitat are considered in accordance with section 4(b)(2) of the Act (see our response to Comment 19), which does not allow consideration or comparison of population numbers between critical habitat units. We agree that Unit 1 likely has better habitat, has higher densities of Mount Charleston blue butterflies, and is more likely to improve in some areas as a result of the Carpenter 1 Fire. The critical habitat for the Mount Charleston blue butterfly in Unit 2 at LVSSR is essential to the conservation and recovery of the subspecies, because of the subspecies' restricted range, overall low numbers, and occupancy of few locations, which we described in the final listing rule (78 FR 57750; September 19, 2013). Additionally, the population of Mount Charleston blue butterflies in Unit 2 and at LVSSR is one of three known occupied locations. While other presumed occupied locations exist outside of designated critical habitat, the location within LVSSR is important because it is known occupied habitat with primary constituent elements essential to the conservation and recovery of the subspecies. Also see our responses to Comments 18 and 21, above.

(27) *Comment:* We received many public comments that critical habitat should include historical, but unoccupied, areas.

Our Response: We reviewed all areas where the Mount Charleston blue butterfly has been documented, as described in the final listing rule (78 FR 57750; September 19, 2013). For species listed under the Act, we may designate critical habitat in unoccupied areas when these areas are essential for the conservation of a species. However,

with the exception of the removal areas (see our response to Comment 12), we have determined that the three occupied critical habitat units identified in this rule contain the physical and biological features essential to the conservation of the Mount Charleston blue butterfly, and no unoccupied areas are necessary for designation.

(28) *Comment:* We received public comments that there was no evidence the Mount Charleston blue butterfly was unique, and, therefore, it should not be listed as endangered. In addition, we received comments that requested us to list the Mount Charleston blue butterfly under the Act.

Our Response: We evaluated and described the taxonomy of the Mount Charleston blue butterfly during the listing process of the subspecies, and it was determined to be a valid taxonomic entity for considering listing under the Act. The listing process required us to publish a proposed rule in the **Federal Register** (77 FR 59518; September 27, 2012) and solicit public comments on the rule (see *Previous Federal Actions* section for more details). Information we received during the 60-day comment period for the proposed rule informed the final rule determining endangered species status for the subspecies (78 FR 57750; September 19, 2013). Listing of the Mount Charleston blue butterfly as endangered was effective October 21, 2013.

(29) *Comment:* One commenter stated that the proposed rule to designate critical habitat relies too much on the use of linguistically uncertain or vague wording (for example, "presumed to," "suspected of," "likely to be," and "anticipated to") to support its conclusions.

Our Response: The language in the proposed and final rules reflects the uncertainty that exists in natural history studies, and we have attempted to be transparent and explicitly characterize that uncertainty where applicable. Under the Act, we base our decision on the best available scientific and commercial information, even if that information includes some level of uncertainty.

(30) *Comment:* We received one public comment proposing an additional removal area from Unit 2 within the LVSSR SUPA because of intensive levels of recreational activities.

Our Response: We reviewed and evaluated information on the additional proposed removal area within the LVSSR SUPA. Some of the proposed removal area contains concentrations of buildings, roads, ski lift structures, and recreation facilities (developed

infrastructure) that receive high levels of public recreation and facilities management. These areas lack physical or biological features necessary for the Mount Charleston blue butterfly, and because of the high concentrations of disturbance from public use and management, are not likely to be suitable in the future. Therefore, we do not include in this critical habitat designation a portion of the area mentioned by this commenter because its omission from the designation is consistent with the rationale for the removal areas we named in the July 15, 2014, proposed rule (see our response to Comment 12).

Comments From Federal Agencies

(31) *Comment:* The Forest Service commented that the benefits of designating critical habitat were negligible because they must consult with the Service as a result of the listed status of the Mount Charleston blue butterfly in areas that contain habitat for the butterfly, whether it is occupied or not. The Forest Service stated they assume that areas with suitable habitat are occupied by the Mount Charleston blue butterfly and have developed protocols and designed criteria, in coordination with the Service, which will “provide all the benefits listed in the Service’s proposal to designate critical habitat.”

Our Response: Under section 4(a)(3)(A) of the Act, the Service is required to designate critical habitat for species or subspecies listed as endangered or threatened, if prudent and determinable. The Service is not relieved of this statutory obligation when a Federal agency is already complying with section 7 obligations to consult if an action may affect a listed species or subspecies. While we appreciate the Forest Service’s previous and ongoing efforts to develop effective conservation and management strategies to protect the Mount Charleston blue butterfly and its habitat, section 4 of the Act requires the Service to identify areas that provide the physical or biological features essential to the conservation of the subspecies and designate these areas as critical habitat. We will continue to work with the Forest Service to implement conservation efforts that protect the Mount Charleston blue butterfly and its habitat while also consulting on projects that may affect the Mount Charleston blue butterfly.

(32) *Comment:* The Forest Service commented that they were concerned with the methods the Service used to define occupancy, particularly the inclusion of Unit 3 (North Loop, Mummy Springs location), where the

Mount Charleston blue butterfly has not been observed since 1995. The Forest Service indicated that because they presume occupancy in suitable habitat, they initiate section 7 consultations and the benefits of designating critical habitat are negligible.

Our Response: The Mount Charleston blue butterfly was last observed in the North Loop Unit 3 in 1995 by Weiss *et al.* (1997), who determined its presence and occupancy within this unit. Surveys have been insufficient to determine that the Mount Charleston blue butterfly has been extirpated from Unit 3. The last surveys for the Mount Charleston blue butterfly in Unit 3 occurred in 2006 (3 visits) and 2012 (2 visits) (Boyd 2006, p. 1; Kingsley 2007, p. 6; Andrew *et al.* 2013, p. 28), and some of these surveys occurred early in the season (mid-June and early July) making the likelihood of detecting adults to be low. Furthermore, Thompson *et al.* (2014, p. 156) indicate that, based on their experience performing extensive surveys for the Mount Charleston blue butterfly, it may persist at a location (for example, LVSSR and Bonanza), but be nearly undetectable with typical survey effort. For example, Boyd and Murphy (2008, p. 3) hypothesized that the failure to observe the Mount Charleston blue butterfly for 3 consecutive years and after intensive surveys in 2008, was “strong evidence” of its extirpation in Lee Canyon. However Thompson *et al.* observed an adult female at the same location surveyed at LVSSR on July 23, 2010. Thus, the Mount Charleston blue butterfly could be present at a location and remain undetected in areas with suitable habitat even with intensive surveys as exemplified by the preceding surveys during a 5-year time period. Therefore, it is appropriate to consider critical habitat in Unit 3 occupied.

We appreciate the work that the Forest Service has done to conserve the Mount Charleston blue butterfly, and we will continue to work with them to implement conservation efforts that protect the Mount Charleston blue butterfly while also consulting on projects that may affect the Mount Charleston blue butterfly in the future.

(33) *Comment:* The Forest Service suggested that the 2,440-meter (m) (8,000-foot (ft)) buffer proposed by the Service as needed for movement corridors was greater than the “known limits” of the Mount Charleston blue butterfly; therefore, the Forest Service recommended a 200-m (660-ft) buffer. The Forest Service suggested that movements by Mission blue butterflies (which are Boisduval’s blue butterflies) were not appropriate to use as a “surrogate” for movement by the Mount

Charleston blue butterfly, because it was larger, ranked among the most vagile species of Lycaenidae, and had a hill-topping mating behavior that suggests higher flight heights than the Mount Charleston blue butterfly.

Our Response: We have reviewed information on Lepidoptera movements emphasizing information on sedentary lycaenid butterflies, and revised the criteria for connectivity to provide an approximation based on a range of documented distances (300–1500 m) (see *Criteria Used To Identify Critical Habitat* section).

In general, we reexamined the criteria used to identify critical habitat as they relate to dispersal for butterflies and the 2,440-m (8,000-ft) buffer distance applied for connectivity and corridors. We originally used dispersal distances reported for the Mission blue butterfly (*Plebejus icarioides missionensis*), because of its close taxonomic relation to the Mount Charleston blue butterfly and the availability of measured dispersal distances for the Mission blue butterfly. The commenter is correct that the Boisduval’s blue butterfly is reported as “the largest blue” butterfly in North America. Scott (1986, p. 409) and Arnold *et al.* (1983, pp. 47–48) describe the Mission blue butterfly (*P. i. missionensis*) to “. . . rank among the most vagile species of Lycaeninae” because of long movements outside the study site (Scott 1975; Shreeve 1981). However, we are unaware of information to support the comment that the Boisduval’s blue or Mission blue butterfly is a hill-topping species or subspecies (Scott 1968, Table 2; Arnold *et al.* 1983, p. 32) or of information relating hill-topping or flight height to dispersal distance.

Based on reports and descriptions of its movements, we agree that the vagility of the Mount Charleston blue butterfly is likely similar to other related Lycaenidae, and its mobility can be characterized as sedentary or low (10–100 m (33–330 ft)) (Cushman and Murphy 1993, p. 40; Weiss *et al.* 1997, Table 2; Fleishman *et al.* 1997, Table 2; Boyd and Murphy 2008, pp. 3, 9; Thompson *et al.* 2013, pp. 118–121). However, studies of a butterfly’s mobility and short-distant movements observed in mark-release-recapture do not accurately detect the longest movements of individuals, and thus are likely not reliable estimates of a species’ dispersal distances (Wilson and Thomas 2002, pp. 259 and 264; Stevens *et al.* 2010, p. 625). In addition, the maximum distances obtained from mark-release-recapture studies underestimate how far butterflies may disperse. These studies also underestimate the number of

individuals which will move long distances, because individuals that leave a habitat patch or study area and do not reach another patch often go undetected (Cushman and Murphy 1993, p. 40; Wilson and Thomas 2002, p. 261).

Limited estimates of Mount Charleston blue butterfly movements are available. Distances between patches of habitat for Mount Charleston blue butterfly locations delineated by Andrew *et al.* 2013 and Thompson *et al.* 2014 in Unit 2 (measured in Geographic Information System (GIS)) range between 300 m and 700 m (990 ft and 2300 ft), suggesting the butterfly is capable of movements greater than the commenter's recommended 200 m (660 ft). Aside from characterizations of the Mount Charleston blue butterfly's within-patch movements, we are unaware of data describing its maximum dispersal distance. Therefore, any approximation of dispersal for the Mount Charleston blue butterfly must be inferred from other sources or species for which we do have available movement data. We recognize that there are numerous interacting factors, both intrinsic (for example, genetics, size, health, life history) and extrinsic (for example, habitat quality and configuration, weather, population density), that may affect dispersal estimates of butterfly species. As such, we have revised the criteria for connectivity to reflect the range of documented distances, as described above.

(34) *Comment:* The Forest Service requested that areas be removed from critical habitat designation that are within a 25-m (83-ft) buffer surrounding existing waterlines and administrative roads associated with previously removed recreation facilities, in Unit 2. The Forest Service stated the areas receive periodic maintenance, lack primary constituent elements, and are "within the bounds of justification used for excluding [sic] the initial recreation areas." In addition, the Forest Service requested that an area be removed from the proposed critical habitat designation in Unit 1, where radio repeaters with required annual maintenance occur. The Forest Service states that the area was surveyed for habitat and only the host plant *Astragalus platytropis* was present, and they stated that the nearest documented citing of a Mount Charleston blue butterfly was 200 m (660 ft) away.

Our Response: When determining critical habitat boundaries within this final rule, we made every effort to avoid including developed areas, such as lands covered by buildings, pavement,

and other structures, because such lands lack the physical or biological features for Mount Charleston blue butterfly. However, the Mount Charleston blue butterfly and its habitat have been documented in close proximity to trails and administrative roads (Weiss *et al.* 1997, p. 10 and Map 3.1; Boyd and Murphy 2008, pp. 4–7; Thompson 2014b) near some of the areas that the Forest Service requested we remove from critical habitat designation in Unit 2. In addition, the Mount Charleston blue butterfly and its habitat have been documented within the area near radio repeaters in Unit 1 (Andrew *et al.* 2013, Figure 17). Therefore, the areas the Forest Service requested for removal are designated as critical habitat in this rule.

Summary of Changes From Proposed Rule

Based on information we received during the comment period, we made the following changes to the proposed rule:

(1) We have updated the genus from *Plebejus* to *Icaricia* for the Mount Charleston blue butterfly to reflect more current scientific studies and use. The Service will now use *Icaricia shasta charlestonensis* for the Mount Charleston blue butterfly. This includes amending the scientific name we set forth in the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h).

(2) In response to the comments we received from peer and public reviewers, we have updated the following sections to incorporate literature and information provided or to clarify language based on suggestions made: *Species Information*, *Physical or Biological Features*, and *Primary Constituent Elements for the Mount Charleston Blue Butterfly* (see updated sections in this final rule).

(3) We have modified critical habitat boundaries to account for the areas initially proposed for removal, public comments on these proposed removals, and our subsequent review of the data on the proposed removals. In addition to the initial proposed removal areas, we have removed an area within the LVSSR SUPA to be consistent with the criteria, in that the areas are highly disturbed and receive high concentrations of public recreation or recreation management. We have modified the description of the areas removed from critical habitat. We have made changes to maps, units, and the text of this final rule. We have removed 267 ac (108 ha) from proposed Unit 2 and 80 ac (32 ha) from proposed Unit 1. In total, the final critical habitat designation has decreased from the

proposed designation by 347 ac (140 ha). The final area of critical habitat designated for the Mount Charleston blue butterfly is approximately 2,228 ac (902 ha) in Unit 1, 2,573 ac (1,041 ha) in Unit 2, and 413 ac (167 ha) in Unit 3, which amounts to a total of 5,214 ac (2,110 ha).

Changes From the Background Section of the Proposed Rule

Species Information

Taxonomy and Species Description

The Mount Charleston blue butterfly is a subspecies of the wider ranging Shasta blue butterfly (*Icaricia shasta*), which is a member of the family Lycaenidae. Pelham (2014) recognized six subspecies of Shasta blue butterflies. Discussion of previous taxonomic treatments and subspecies description may be found in the final rule to list the Mount Charleston blue butterfly and proposed rule to designate critical habitat (78 FR 57751 and 79 FR 41227).

We listed the Mount Charleston blue butterfly as *Plebejus shasta charlestonensis* as endangered effective on October 21, 2013 (see 78 FR 57750; September 19, 2013). We cited Pelham (2008, p. 265) as justification for using the name *Plebejus shasta charlestonensis*. Opler and Warren (2003, p. 30) used the name *Plebejus shasta* in their list of scientific names of butterflies, but did not list subspecies.

Based on more recent published scientific data and in keeping with regulations at 50 CFR 17.11(b) to use the most recently accepted scientific name, we will use the name *Icaricia shasta charlestonensis* for the Mount Charleston blue butterfly throughout this document. We are recognizing and accepting here the change in the scientific name for the Mount Charleston blue butterfly. *Icaricia* has previously been treated as a genus closely related to *Plebejus* (Nabokov 1945, pp. 1–61) or as a subgenus of *Plebejus* (Tilden 1973, p. 13).

Data-driven studies undertaken just prior to and just after our listing of the butterfly (Vila *et al.* 2011 and Talavera *et al.* 2013, pp. 166–192 (first published online September 2012)) support and confirm recognition of *Icaricia* as a genus distinct from *Plebejus* for a group of species that includes the Mount Charleston blue butterfly. The studies are based on analyses of mitochondrial and nuclear DNA of a broad array of New World species. This recognition and delineation of *Icaricia* is accepted and followed by Grishin (2012, pp. 117–120), who provides descriptions of morphological features to distinguish the Mount Charleston blue butterfly

from 4 of the other 13 blue butterflies that occur in the Spring Mountains of Nevada. Pelham's online *Catalogue of butterflies of the United States and Canada*, revised June 22, 2014, lists the Mount Charleston blue butterfly as a subspecies of *Icaricia shasta*. The format of Pelham's *Catalogue* does not include reference to supportive data (e.g., Vila *et al.* 2011 or Talavera *et al.* 2013). The Integrated Taxonomic Information System (ITIS) database (ITIS 2015) follows Pelham's *Catalogue*, but as yet has not been updated to the 2014 revised version and likewise does not cite supportive data.

We are recognizing the change in the scientific name of the Mount Charleston blue butterfly to *Icaricia shasta charlestonensis*, based on data presented by Vila *et al.* (2011) and Talavera *et al.* (2013) and accepted by Grishin (2012) and Pelham (2014). Updating the nomenclature, which is reflective of its current taxonomic status, does not impact the animal's description, distribution, or listing status.

Habitat and Biology

Weiss *et al.* (1997, pp. 10–11) describe the natural habitat for the Mount Charleston blue butterfly as relatively flat ridgelines above 2,500 m (8,200 ft), but isolated individuals have been observed as low as 2,000 m (6,600 ft). Boyd and Murphy (2008, p. 19) indicate that areas occupied by the subspecies feature exposed soil and rock substrates, with limited or no canopy cover or shading.

Other than observations by surveyors, little information is available regarding most aspects of the subspecies' biology and the key determinants for the interactions among the Mount Charleston blue butterfly's life history and environmental conditions. Observations indicate that above- or below-average precipitation, coupled with above- or below-average temperatures, influence the phenology of this subspecies (Weiss *et al.* 1997, pp. 2–3 and 32; Boyd and Austin 1999, p. 8), and are likely responsible directly or indirectly for the fluctuation in population numbers from year to year, because they affect host and nectar plants (Weiss *et al.* 1997, pp. 2–3 and 31–32). More research is needed to understand the functional relationship between the Mount Charleston blue butterfly and its habitat and weather.

Like most butterfly species, the Mount Charleston blue butterfly is dependent on available and accessible nectar plant species for the adult butterfly flight period, when breeding and egg-laying occurs, and for larval development

(described under *Physical or Biological Features*, below (Weiss *et al.* 1994, p. 3; Weiss *et al.* 1997, p. 10; Boyd 2005, p. 1; DataSmiths 2007, p. 21; Boyd and Murphy 2008, p. 9; Andrew *et al.* 2013, pp. 4–12; Thompson *et al.* 2014, pp. 97–158)). The typical flight and breeding period for the butterfly is early July to mid-August, with a peak in late July, although the subspecies has been observed as early as mid-June and as late as mid-September (Austin 1980, p. 22; Boyd and Austin 1999, p. 17; Thompson *et al.* 2014, pp. 105–116).

Like all butterfly species, both the phenology (timing) and number of Mount Charleston blue butterfly individuals that emerge and fly to reproduce during a particular year appear to be reliant on the combination of many environmental factors that may constitute a successful (“favorable”) or unsuccessful (“poor”) year for the subspecies. Specific information regarding diapause of the Mount Charleston blue butterfly is lacking, and while geographic and subspecific variation in life histories can vary, we presume information on the diapause of other Shasta blue butterflies is similar to that of the Mount Charleston blue butterfly. The Shasta blue butterfly is generally thought to diapause at the base of its larval host plant or in the surrounding substrate (Emmel and Shields 1980, p. 132) as an egg the first winter and as a larva near maturity the second winter (Ferris and Brown 1981, pp. 203–204; Scott 1986, p. 411); however, Emmel and Shields (1980, p. 132) suggested that diapause was passed as partly grown larvae, because freshly hatched eggshells were found near newly laid eggs (indicating that the eggs do not overwinter). More recent observations of late summer hatched and overwintering unhatched eggs of the Mount Charleston blue butterfly eggs laid in the Spring Mountains may indicate that it has an environmentally cued and mixed diapause life cycle; however, further observations supporting egg viability are needed to confirm this (Thompson *et al.* 2014, p. 131).

Prolonged or multiple years of diapause has been documented for several butterfly families, including Lycaenidae (Pratt and Emmel 2010, p. 108). For example, the pupae of the variable checkerspot butterfly (*Euphydryas chalcedona*, which is in the Nymphalid family) are known to persist in diapause up to 5 to 7 years (Scott 1986, p. 28). The number of years the Mount Charleston blue butterfly can remain in diapause is unknown. Boyd and Murphy (2008, p. 21) suggest the Mount Charleston blue butterfly “may

be able to delay maturation during drought or the shortened growing seasons that follow winters with heavy snowfall and late snowmelt by remaining as eggs through one or more years, or returning to diapause as larvae, perhaps even more than once.” Experts have hypothesized and demonstrated that, in some species of Lepidoptera, a prolonged diapause period may be possible in response to unfavorable environmental conditions (Scott 1986, pp. 26–30; Murphy 2006, p. 1; DataSmiths 2007, p. 6; Boyd and Murphy 2008, p. 22), and this has been hypothesized for the Mount Charleston blue butterfly as well (Thompson *et al.* 2014, p. 157). Little has been confirmed regarding the length of time or life stage in which the Mount Charleston blue butterfly diapauses.

Most butterfly populations exist as regional metapopulations (Murphy *et al.* 1990, p. 44). Boyd and Murphy (2008, p. 23) suggest this is true of the Mount Charleston blue butterfly. Small habitat patches tend to support smaller butterfly populations that are frequently extirpated by events that are part of normal variation (Murphy *et al.* 1990, p. 44). According to Boyd and Austin (1999, p. 17), smaller colonies of the Mount Charleston blue butterfly may be ephemeral in the long term, with the larger colonies of the subspecies more likely than smaller populations to persist in “poor” years, when environmental conditions do not support the emergence, flight, and reproduction of individuals. The ability of the Mount Charleston blue butterfly to move between habitat patches has not been studied; however, field observations indicate the subspecies has low vagility (capacity or tendency of a species to move about or disperse in a given environment), on the order of 10 to 100 m (33 to 330 ft) (Weiss *et al.* 1995, p. 9), and nearly sedentary behavior (DataSmiths 2007, p. 21; Boyd and Murphy 2008, pp. 3 and 9). Furthermore, movement of lycaenid butterflies, in general, is limited and on the order of hundreds of meters (Cushman and Murphy 1993, p. 40); however, there are small portions of a population that can make substantially long movements (Arnold 1983, pp. 47–48).

Based on this information, the likelihood of dispersal more than hundreds of meters (yards) is low for the Mount Charleston blue butterfly, but it may occur. It is hypothesized that the Mount Charleston blue butterfly could diapause for multiple years (more than 2) as larvae and pupae until vegetation conditions are favorable to support emergence, flight, and reproduction

(Boyd and Murphy 2008, pp. 12, 21). This could account in part for periodic high numbers (as was documented by Weiss *et al.* in 1995) of butterflies observed at more sites in years with favorable conditions than in years with unfavorable conditions. Additional future research regarding diapause patterns of the Mount Charleston blue butterfly is needed to further our understanding of this subspecies.

Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery,

or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on

Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to insure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) section 9 of the Act's prohibitions on taking any individual of the species, including taking caused by actions that affect habitat. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available

information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Physical or Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derive the specific physical or biological features essential for the Mount Charleston blue butterfly from studies of this subspecies' habitat, ecology, and life history as described below. Additional information can be found in the final listing rule published in the **Federal Register** on September 19, 2013 (78 FR 57750). We have determined that the Mount Charleston blue butterfly requires the following physical or biological features:

Space for Individual and Population Growth and for Normal Behavior

The Mount Charleston blue butterfly is known to occur only in the high elevations of the Spring Mountains, located approximately 40 kilometers (km) (25 miles (mi)) west of Las Vegas in Clark County, Nevada (Austin 1980, p. 20; Scott 1986, p. 410). Historically, the Mount Charleston blue butterfly was detected at elevations as low as 1,830 m (6,000 ft) in the Spring Mountains (Austin 1980, p. 22; Austin 1981, p. 66; Weiss *et al.* 1995, p. 5). Currently, the Mount Charleston blue butterfly is presumed or known to occupy habitat occurring between 2,500 m (8,200 ft) elevation and 3,500 m elevation (11,500 ft) (Austin 1980, p. 22; Weiss *et al.* 1997, p. 10; Boyd and Austin 1999, p. 17;

Pinyon 2011, p. 17; Andrew *et al.* 2013, pp. 20–61; Thompson *et al.* 2014, pp. 97–158). Dominant plant communities between these elevation bounds are variable (Forest Service 1998, pp. 11–12), but locations that support the Mount Charleston blue butterfly are characterized by open areas bordered, near, or surrounded by forests composed of ponderosa pine (*Pinus ponderosa*), Great Basin bristlecone pine (*Pinus longaeva*), and white fir (*Abies concolor*) (Andrew *et al.* 2013, p. 5). These open forest conditions are often created by disturbances such as fire and avalanches (Weiss *et al.* 1995, p. 5; DataSmiths 2007, p. 21; Boyd and Murphy 2008, pp. 23–24; Thompson *et al.* 2014, pp. 97–158), but the open-forest or non-forest conditions also exist as a function of occurring in higher subalpine elevations (*i.e.*, above treeline) (for example, Nachlinger and Reese 1996, Appendix I–64–72).

The Mount Charleston blue butterfly is described to occur on relatively flat ridgetops, gently sloping hills, or meadows, where tree cover is absent to less than 50 percent (Austin 1980, p. 22; Weiss *et al.* 1995, pp. 5–6; Weiss *et al.* 1997, pp. 10, 32–34; Boyd and Austin 1999, p. 17; Boyd and Murphy 2008, p. 19; Andrews *et al.* 2013, p. 3; Thompson *et al.* 2014, p. 138). Boyd and Murphy (2008, p. 19) go on to suggest general descriptions of Mount Charleston blue butterfly habitat may have resulted because of the areas where “collectors and observers disproportionately target . . . [to increase] opportunities to encounter” the Mount Charleston blue butterfly. However, until observations are made in areas that would alter our understanding of where Mount Charleston blue butterflies generally occur, we assume these locations and characteristics are likely correlated with the ecological requirements of the Mount Charleston blue butterfly's larval host plants (Weiss *et al.* 1997, p. 22) and adult nectar plants (described below).

Therefore, based on the information above, we identify flat or gently sloping areas between 2,500 m (8,200 ft) and 3,500 m (11,500 ft) elevation in the Spring Mountains as a physical or biological feature essential to the Mount Charleston blue butterfly for space for individual and population growth and for normal behavior.

Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

The best scientific information available regarding food, water, air, light, minerals, and other nutritional or physiological requirements of the Mount Charleston blue butterfly's life

stages (egg, larva, pupa, adult) result from observations by surveyors, and research to determine the requirements and environmental conditions essential to the Mount Charleston blue butterfly. In general, resources that are thought to fulfill these requirements occur in open areas with exposed soil and rock substrates with short, widely spaced forbs and grasses. These areas allow light to reach the ground in order for adult nectar and larval host plants to grow.

Adult Mount Charleston blue butterflies have been documented feeding on nectar from a number of different flowering plants, but most frequently the species reported are *Erigeron clokeyi* (Clokey's fleabane), *Eriogonum umbellatum* var. *versicolor* (sulphur-flower buckwheat), *Hymenoxys cooperi* (Cooper rubberweed), and *Hymenoxys lemmonii* (Lemmon bitterweed) (Weiss *et al.* 1997, p. 11; Boyd and Murphy 2008, pp. 13, 16; Pinyon 2011, p. 17; Andrew 2013, pp. 8; Thompson *et al.* 2014, pp. 117–118). Densities of nectar plants generally occur at more than 2 per square meter (m²) (0.2 per square foot (ft²)) for smaller plants such as *E. clokeyi* and more than 0.1 per m² (0.01 per ft²) for larger and taller plants such as *Hymenoxys* sp. and *E. umbellatum* (Thompson *et al.* 2014, p. 138). Nectar plants typically occur within 10 m (33 ft) of larval host plants and, in combination, provide nectar during the adult flight period between mid-July and early August (Thompson *et al.* 2014, p. 138). Other species that adult Mount Charleston blue butterflies have been documented using as nectar plants include *Antennaria rosea* (rosy pussy toes), *Cryptantha* species (cryptantha; the species *C. angustifolia* originally reported is likely a misidentification because this species occurs in much lower elevation desert habitat (Niles and Leary 2007, p. 26)), *Ericameria nauseosa* (rubber rabbitbrush), *Erigeron flagellaris* (trailing daisy), *Gutierrezia sarothrae* (broom snake weed), *Monardella odoratissima* (horsemint), *Petradoria pumila* var. *pumila* (rock-goldenrod), and *Potentilla concinna* var. *concinna* (Alpine cinquefoil) (Boyd and Murphy 2008, pp. 13, 16; Thompson *et al.* 2014, pp. 117–118).

Based on surveyors' observations, several species appear to be important food plants for the larval life stage of the Mount Charleston blue butterfly. Therefore, we consider those plants on which surveyors have documented Mount Charleston blue butterfly eggs to be larval host or food plants (hereafter, referred to as larval host plants). Based on this, *Astragalus calycosus* var.

calycosus, *Oxytropis oreophila* var. *oreophila*, and *Astragalus platytropis* are all considered larval host plants for the Mount Charleston blue butterfly (Weiss *et al.* 1997, p. 10; Austin and Leary 2008, p. 86; Andrew *et al.* 2013, pp. 7–8; Thompson *et al.* pp. 121–131) (see “Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring,” below, for more details). Note that in the final listing rule for the Mount Charleston blue butterfly (78 FR 57750; September 19, 2013), we reported *Astragalus lentiginosus* var. *kernensis* (Kern plateau milkvetch) as a larval host plant (Andrew *et al.* 2013, p. 3); however, this host plant was subsequently determined to be *Oxytropis oreophila* var. *oreophila* (mountain oxytrope) (Thompson *et al.* 2014, pp. 97–158), and has been described as such in this final rule. Future surveys and research may document the importance of other plant species as food resources for Mount Charleston blue butterfly larvae. Densities of host plants are generally greater than two per m² (0.2 per ft²) (Weiss 1997, p. 34; Andrew *et al.* 2013, p. 9; Thompson *et al.* 2014, p. 138).

In addition, the Mount Charleston blue butterfly requires open canopy cover (open forest). Specifically, the Mount Charleston blue butterfly requires areas where tree cover is absent or low. This may be due to ecological requirements of the larval host plants or adult nectar plants or due to the flight behavior of the Mount Charleston blue butterfly. As with most butterflies, the Mount Charleston blue butterfly typically flies during sunny conditions, which are particularly important for this subspecies given the cooler air temperatures at high elevations in the Spring Mountains of Nevada (Weiss *et al.* 1997, p. 31).

The areas where the Mount Charleston blue butterfly occurs often have shallow exposed soil and rock substrates with short, widely spaced forbs and grasses (Weiss *et al.* 1997, pp. 10, 27, and 31; Boyd 2005, p. 1; Service 2006a, p. 1; Kingsley 2007, pp. 9–10; Boyd and Murphy 2008, p. 19; Pinyon 2011, pp. 17, 21; Andrew *et al.* 2013, pp. 9–13; Thompson *et al.* 2014, pp. 137–143). These vegetative characteristics may be important because they would not impede the Mount Charleston blue butterfly's low flight behavior (Weiss *et al.* 1997, p. 31) (reported to be 15 centimeters (cm) (5.9 inches (in)) or less (Thompson *et al.* 2014, p. 118)). Some taller grass or forb plants may be present when their density is less than five per m² (Thompson *et al.* 2014, pp. 138–139).

Therefore, based on the information above, we identify open habitat that permits light to reach the ground, nectar plants for adults and host plants for larvae, and exposed soil and rock substrates with short, widely spaced forbs and grasses to be physical or biological features for this subspecies that provide food, water, air, light, minerals, or other nutritional or physiological requirements.

Cover or Shelter

The study and delineation of habitat for many butterflies has often been associated with larval host plants, breeding resources, and nectar sources for adults (Dennis 2004, p. 37). Similar to other butterfly species (Dennis 2004, p. 37), there is little to no information available about the structural elements required by the Mount Charleston blue butterfly for cover or shelter. However, we infer that, because of their low vagility, cover or shelter used by any life stage of the Mount Charleston blue butterfly will be in close association or proximity to larval or adult food resources in its habitat.

For larvae, diapause is generally thought to occur at the base of the larval host plant or in the surrounding substrate (Emmel and Shields 1980, p. 132). Mount Charleston blue butterfly larvae feed after diapause. Like other butterflies, after larvae become large enough, they pupate (Scott 1986, p. 24). Pupation most likely occurs in the ground litter near a main stem of the larval host plant (Emmel and Shields 1980, p. 132). After pupation, adults feed and mate in the same areas where larvae diapause and pupation occurs. In addition, no specific areas for overnight roosting by adult Mount Charleston blue butterflies have been reported. However, adults have been observed using areas in moderately dense forest stands immediately adjacent to low-cover areas with larval host and nectar plants (Thompson *et al.* 2014, p. 120).

Therefore, based on the information above, we identify areas with larval host plants and adult nectar plants, and areas immediately adjacent to these plants, to be a physical or biological feature for this subspecies that provides cover or shelter.

Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

The adult Mount Charleston blue butterfly has specific site requirements for its flight period when breeding and reproduction occur, and these requirements may be correlated to its limited vagility and short adult life stage. The typical flight and breeding period for the Mount Charleston blue

butterfly is early July to mid-August with a peak in late July, although the subspecies has been observed as early as mid-June and as late as mid-September (Austin 1980, p. 22; Boyd and Austin 1999, p. 17; Thompson *et al.* 2014, pp. 104–116). Breeding opportunities for individual Mount Charleston blue butterflies are presumably short in duration during its adult life stage, which may range from 2 to 12 days, as has been reported for other closely related species (Arnold 1983, Plebejinae in Table 44). Therefore, the Mount Charleston blue butterfly may generally be constrained to areas where adult nectar resources are in close proximity to plants on which to breed and lay eggs. Researchers have documented Mount Charleston blue butterfly breeding behavior in close spatial association with larval host and adult nectar plants (Thompson *et al.* 2014, pp. 121–125).

The presence of Mount Charleston blue butterfly adult nectar plants, such as *Erigeron clokeyi*, appears to be strongly associated with its larval host plants (Andrew *et al.* 2013, p. 9). Female Mount Charleston blue butterflies have been observed ovipositing a single egg per host plant, which appears to weakly adhere to the host plant surface; this has been observed most typically within basal leaves (Thompson *et al.* 2014, p. 129). Ovipositing by butterflies on plants is not absolute evidence of larval feeding or survival (Austin and Leary 2008, p. 1), but may provide a stronger inference in combination with close adult associations and repeated observations. Presuming the Mount Charleston blue butterfly's diapause behavior is similar to other Shasta blue butterflies, the Mount Charleston blue butterfly diapauses as an egg or as a larva at the base of its egg and larval host plants or in the surrounding substrate (Emmel and Shields 1980, p. 132; Ferris and Brown 1981, pp. 203–204; Scott 1986, p. 411).

In 1987, researchers documented two occasions when Mount Charleston blue butterflies oviposited on *Astragalus calycosus* var. *calycosus* (= var. *mancus*) (Austin and Leary 2008, p. 86). Based on this reported documentation and subsequent observations of adult Mount Charleston blue butterflies associations with the plant, *Astragalus calycosus* var. *calycosus* was the only known larval host plant for the Mount Charleston blue butterfly (Austin and Leary 2008, p. 86). In 2011 and 2012, researchers from the University of Nevada Las Vegas observed female Mount Charleston blue butterflies landing on and ovipositing on *Oxytropis oreophila* var. *oreophila* (mountain oxytrope) and *Astragalus*

platytropis (broadkeeled milkvetch), which presumably also function as larval host plants (Andrew *et al.* 2013, pp. 4–12; Thompson *et al.* 2014, pp. 122–134). Andrew *et al.* (2013, p. 5) also documented Mount Charleston blue butterfly eggs on all three plant species. Other subspecies of Shasta blue butterflies have been reported to use more than one plant during larval development, including *Astragalus platytropis* (Austin and Leary 2008, pp. 85–86). Because the subspecies has been documented ovipositing on these three plant species and other subspecies of Shasta blue butterflies are known to use multiple larval host plants, we consider *Astragalus calycosus* var. *calycosus*, *Oxytropis oreophila* var. *oreophila*, and *Astragalus platytropis* to be the host plants used during Mount Charleston blue butterfly larval development.

Therefore, based on the information above, we identify areas with larval host plants, especially *Astragalus calycosus* var. *calycosus*, *Oxytropis oreophila* var. *oreophila*, or *Astragalus platytropis*, and adult nectar plants, especially *Erigeron clokeyi*, *Eriogonum umbellatum* var. *versicolor*, *Hymenoxys cooperi*, and *Hymenoxys lemmonii*, during the flight period of the Mount Charleston blue butterfly to be a physical or biological feature for this subspecies that provides sites for breeding, reproduction, or rearing (or development) of offspring.

Habitats That Are Protected From Disturbance or Are Representative of the Historical, Geographical, and Ecological Distributions of the Subspecies

Habitat for the Mount Charleston blue butterfly that is protected from disturbance or representative of the historical, geographical, and ecological distributions of the subspecies occurs in locations with limited canopy cover that comprise the appropriate species of larval host and adult nectar plants. Although some of these open locations occur due to wind and other environmental stresses that inhibit tree and shrub growth, fire is one of the most prevalent disturbances across the landscape of the Mount Charleston blue butterfly. To better understand the fire frequency and severity as it relates to historic and current conditions at Mount Charleston blue butterfly locations, we characterized locations using biophysical setting (BPS) with associated fire regime groups and fire regime condition developed by Provencher (2008, pp. 1–25 and Appendix II; Barrett *et al.* 2010, p. 15). Fire regime groups are classified by fire frequency, which is the average number of years between fires, and fire severity, which represents the percent

replacement of dominant overstory vegetation (Barrett *et al.* 2010, p. 15). Fire regime condition is “. . . landscape-level measure of ecological departure between the pre-settlement and current distributions of vegetation succession classes and fire regimes for a given area” (Provencher 2008, p. 3 citing Hann and Bunnell 2001). Fire regimes groups can be broadly categorized for Mount Charleston blue butterfly locations based on elevation. Higher elevation locations, generally above 2,740 m (9,000 ft) elevation, occur in fire regime groups 4 and 5 (Provencher 2008, Appendix II; e.g., BPS Rocky Mountain Alpine Fell-Field and Inter-Mountain Basins Subalpine Limber-Bristlecone Pine Woodland). Lower elevation locations, generally below 2,740 m (9,000 ft), occur in fire regime groups 2 and 3 (Provencher 2008, Appendix II; e.g., BPS Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland, and Rocky Mountain Mesic Montane Mixed Conifer Forest and Woodland).

In higher elevation locations where the Mount Charleston blue butterfly is known or presumed to occur (South Loop Trail, Mummy Springs (North Loop Trail), upper Bonanza Trail, and Griffith Peak), disturbance from fire is relatively infrequent, with variable severity (fire regime groups 4 and 5 in Provencher 2008, Appendix II; see example BPS above), occurring every 35 to 200 years at a high severity, or occurring more frequently than every 200 years with a variable but generally high severity (Barrett *et al.* 2010, p. 15). Other disturbances likely to occur at the high-elevation Mount Charleston blue butterfly locations are from wind and other weather phenomena (Provencher 2008, Appendix II). At these high-elevation habitats, fire regime conditions are relatively similar to historic conditions (Provencher 2008, Table 4, 5 and Appendix II), so vegetation succession should be within the normal range of variation. Vegetation succession at some high-elevation areas that currently lack trees may cause these areas to become more forested, but other areas that are scoured by wind or exposed to other severe environmental stresses may remain non-forested (for example, South Loop Trail; Andrew *et al.* 2013, pp. 20–27) (Provencher and Anderson 2011, pp. 1–116; NVWAP 2012, p. 177). Thus, we expect higher elevation locations will be able to continue to provide open areas with the appropriate vegetation necessary to support individuals and populations of Mount Charleston blue butterflies.

In contrast, at lower elevation locations where the Mount Charleston blue butterfly is known or presumed to occur (Las Vegas Ski and Snowboard Resort (LVSSR), Foxtail, Youth Camp, Gary Abbott, Lower LVSSR Parking, Lee Meadows, Bristlecone Trail, and lower Bonanza Trail), disturbance from fire is likely to occur less than every 35 years with more than 75 percent being high-severity fires, or is likely to occur more than every 35 years at mixed-severity and low-severity (fire regime group 2 and 3 in Provencher 2008, Appendix II; see example BPS above). At these lower elevation habitats, fire regime conditions have departed further from historic conditions (Provencher 2008, Table 4, 5 and Appendix II). Lack of fire due to fire exclusion or reduction in natural fire cycles, as has been demonstrated in the Spring Mountains (Entrix 2008, p. 113) and other proximate mountain ranges (Amell 2006, pp. 2–3), has likely resulted in long-term successional changes, including increased forest area and forest structure (higher canopy cover, more young trees, and more trees intolerant of fire) (Nachlinger and Reese 1996, p. 37; Amell 2006, pp. 6–9; Boyd and Murphy 2008, pp. 22–28; Denton *et al.* 2008, p. 21; Abella *et al.* 2012, pp. 128, 130) at these lower elevation locations. Without fire in some of these locations, herbs and small forbs may be nearly absent as the vegetation moves towards later successional classes with increasing tree overstory cover (Provencher 2008, Appendix II). Therefore, habitat at the lower elevation Mount Charleston blue butterfly locations is more dissimilar from what would be expected based on historic fire regimes (Provencher 2008, Table 4, 5 and Appendix II). Thus, in order for Mount Charleston blue butterfly individuals and populations to be maintained at lower elevation locations, active habitat management will likely be necessary.

The Carpenter 1 Fire in July 2013 burned into habitat of the Mount Charleston blue butterfly along the ridgelines between Griffith Peak and South Loop spanning a distance of approximately 3 miles (5 km). Within this area, low-, moderate-, or high-quality patches of Mount Charleston blue butterfly habitat intermixed with non-habitat have been documented (Pinyon 2011, Figure 8 and 9). The majority of Mount Charleston blue butterfly moderate- or high-quality habitat through this area was classified as having a very low or low soil-burn severity (Kallstrom 2013, p. 4). The characteristics of Mount Charleston blue

butterfly habitat in this area of widely spaced grass and forbs, exposed soil and rocks, and low tree canopy cover result in lower fuel loading and continuity, which likely contributed to its low burn severities.

The effects of the Carpenter 1 Fire on Mount Charleston blue butterfly habitat ranged from low or no apparent effects to nearly complete elimination of plant cover (Herrmann 2014, p. 18). Based on a description of monitoring in 2014, the negative effects of the fire on the Mount Charleston blue butterfly and its habitat appear to be inversely related to the quality of habitat, where patches of high-quality habitat with low tree canopy cover were likely less affected (Herrmann 2014, pp. 3–21). Overall, host and nectar plants were diminished in cover and abundance within the burn perimeter but are still present and recovering with new growth (Herrmann 2014, pp. 17–19). Habitat within the burn perimeter will likely improve based upon habitat conditions in a nearby historic burn area (Herrmann 2014, pp. 17–19). Surveys in 2014 have confirmed that the Mount Charleston blue butterfly survived and is present within and adjacent areas outside the fire perimeter (Herrmann 2014, p. 3).

Recreational activities, trail-associated erosion, and the introduction of weeds or invasive grasses are likely the greatest threats that could occur within areas of Mount Charleston blue butterfly habitat burned by the Carpenter 1 Fire. Other potential threats to the Mount Charleston blue butterfly habitat associated with the fire may include trampling or grazing of new larval host or nectar plants by feral horses (*Equus ferus*) and elk (*Cervus elaphus*). However, use of this Mount Charleston blue butterfly habitat in these watersheds by feral horses and elk is currently very low.

We are unaware of site- or species-specific analyses of climate change for the Spring Mountains in Nevada or impacts to the Mount Charleston blue butterfly; therefore, we rely on general predictions of climate change for alpine areas in the Southwest and predictions of climate change impacts to other invertebrate species to assess potential impacts of climate change to the Mount Charleston blue butterfly and its habitat. The Intergovernmental Panel on Climate Change (IPCC) has high confidence in predictions that extreme weather events, warmer temperatures, and regional drought are very likely to increase in the northern hemisphere as a result of climate change (IPCC 2007, pp. 15–16). Climate models show the southwestern United States has transitioned into a more arid climate of drought that is

predicted to continue into the next century (Seager *et al.* 2007, p. 1181). Garfin *et al.* (2013, p. 3) indicate that average daily temperatures have been higher and drought has been more severe from 2001 to 2010, when compared to average decadal occurrences from 1901 to 2010; however, “multiple drought events in the preceding 2,000 years . . . exceeded the most severe and sustained droughts from 1901 to 2010” (Garfin *et al.* 2013, p. 3). In the past 60 years, the frequency of storms with extreme precipitation has increased in Nevada by 29 percent (Madsen and Figdor 2007, p. 37). These trends are anticipated to continue and include warmer summer and fall temperatures; more frequent and intense winter precipitation; decreased late-season snowpack; and hotter, more severe, and more frequent droughts (Garfin *et al.* p. 6).

Changes in local southern Nevada climatic patterns cannot be definitively tied to global climate change; however, they are consistent with IPCC-predicted patterns of extreme precipitation, warmer than average temperatures, and drought (Redmond 2007, p. 1), and Garfin *et al.* (2013, p. 448) concurred with the 2009 National Climate Assessment (Karl *et al.* 2009, p. 131) that “increasing temperatures and shifting precipitation patterns will drive declines in high-elevation ecosystems [of the Southwest] such as alpine forests and tundra.” In general, we expect these same trends to occur in the Spring Mountains, but effects on the Mount Charleston blue butterfly or its habitat from climate change will vary across the subspecies’ range because of topographic heterogeneity (Luoto and Heikkinen 2008, p. 487).

Analyses of climate change impacts to other invertebrate species suggest different aspects of a species’ biology may be affected, including physiological and morphological responses (Roy and Sparks 2000; Altermatt 2012); shifts in spatial patterns and availability of refugia (Beaumont and Hughes 2002; Peterson *et al.* 2004; Heikkinen *et al.* 2010; Mattila *et al.* 2011; Oliver *et al.* 2012); shifts in temporal patterns (for example, flight periods) (Aldridge *et al.* 2011; Altermatt 2012); and shifts in host and nectar plant phenology and availability. Because the magnitude and duration of different aspects of climate change are expected to be seasonally variable (Garfin *et al.* 2013, pp. 5–6), impacts to microhabitats and, therefore, different butterfly life stages also are expected to be variable (Kingsolver *et al.* 2011; Radchuk *et al.* 2013). Results from Kingsolver *et al.* 2011 and Radchuk *et al.* 2013 indicate species and life-stage

responses to increasing temperatures in field and lab settings are variable, so specific predictions of how climate change will impact the various microhabitats needed for the Mount Charleston blue butterfly’s life stages are unknown. However, based on predicted increases in temperatures and patterns of extreme precipitation and drought for alpine areas of the Southwest, we believe that climate change will impact some biological aspects of the Mount Charleston blue butterfly and its high-elevation habitat. A negative response to such climate change patterns may exacerbate threats already facing the subspecies as a result of its small population size and threats to its habitat.

Based on the information above, we identify habitat where natural disturbance, such as fire that creates and maintains openings in the canopy (fire regime groups 2, 3, 4, and 5), to be a physical or biological feature for this subspecies that provides habitats that are representative of the historical, geographical, and ecological distributions of the subspecies.

Primary Constituent Elements for the Mount Charleston Blue Butterfly

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of the Mount Charleston blue butterfly in areas occupied at the time of listing, focusing on the features’ primary constituent elements. Primary constituent elements are those specific elements of the physical or biological features that provide for a species’ life-history processes and are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species’ life-history processes, we determine that the primary constituent elements specific to the Mount Charleston blue butterfly are:

(i) Primary Constituent Element 1: Areas of dynamic habitat between 2,500 m (8,200 ft) and 3,500 m (11,500 ft) elevation with openings or where disturbance provides openings in the canopy that have no more than 50 percent tree cover (allowing sunlight to reach the ground); widely spaced, low (less than 15 cm (0.5 ft) in height) forbs and grasses; and exposed soil and rock substrates. When taller grass and forb plants greater than or equal to 15 cm (0.5 ft) in height are present, the density is less than five per m² (50 per ft²).

(ii) Primary Constituent Element 2: The presence of one or more species of host plants required by larvae of the

Mount Charleston blue butterfly for feeding and growth. Known larval host plants are *Astragalus calycosus* var. *calycosus*, *Oxytropis oreophila* var. *oreophila*, and *Astragalus platytropis*. Densities of host plants must be greater than two per m² (0.2 per ft²).

(iii) Primary Constituent Element 3: The presence of one or more species of nectar plants required by adult Mount Charleston blue butterflies for reproduction, feeding, and growth. Common nectar plants include *Erigeron clokeyi*, *Hymenoxys lemmonii*, *Hymenoxys cooperi*, and *Eriogonum umbellatum* var. *versicolor*. Densities of nectar plants must occur at more than two per m² (0.2 per ft²) for smaller plants, such as *E. clokeyi*, and more than 0.1 per m² (0.01 per ft²) for larger and taller plants, such as *Hymenoxys* sp. and *E. umbellatum*. Nectar plants typically occur within 10 m (33 ft) of larval host plants and, in combination, provide nectar during the adult flight period between mid-July and early August. Additional nectar sources that could be present in combination with the common nectar plants include *Antennaria rosea*, *Cryptantha* sp., *Ericameria nauseosa* ssp., *Erigeron flagellaris*, *Gutierrezia sarothrae*, *Monardella odoratissima*, *Petradoria pumila* var. *pumila*, and *Potentilla concinna* var. *concinna*.

Special Management Considerations or Protection

When designating critical habitat, we assess whether the specific areas within the geographical area occupied by the subspecies at the time of listing contain features which are essential to the conservation of the subspecies and which may require special management considerations or protection. Special management considerations or protection may be necessary to eliminate or reduce the magnitude of threats that affect the subspecies. Threats to the Mount Charleston blue butterfly and its features identified in the final listing rule for the Mount Charleston blue butterfly (78 FR 57750; September 19, 2013) include: (1) Loss and degradation of habitat due to changes in natural fire regimes and succession; (2) implementation of recreational development projects and fuels reduction projects; (3) increases of nonnative plants; (4) collection; (5) small population size and few occurrences; and (6) exacerbation of other threats from the impacts of climate change, which is anticipated to increase drought and extreme precipitation events. In addition to these threats, feral horses present an additional threat by causing the loss and degradation of

habitat resulting from trampling of host and nectar plants as well as the direct mortality of Mount Charleston blue butterfly where it is present (Boyd and Murphy 2008, pp. 7 and 27; Andrew *et al.* 2013, pp. 37–66; Thompson *et al.* 2014, pp. 150–152).

Threats to the Mount Charleston blue butterfly and its habitat and recommendations for ameliorating them have been described for each location and the subspecies in general (Boyd and Murphy 2008, pp. 1–41; Andrew *et al.* 2013 pp. 1–93; Thompson *et al.* 2014, pp. 97–158, 267–288). Management activities that could facilitate ameliorating these threats include (but are not limited to): (1) Reestablishment and maintenance of habitat and landscape connectivity within and between populations; (2) habitat restoration and control of invasive nonnative species; (3) monitoring of ongoing habitat loss and nonnative plant invasion; (4) management of recreational activities to protect and prevent disturbance of Mount Charleston blue butterflies to reduce loss or deterioration of habitat; (5) maintenance of the Forest Service closure order prohibiting collection of the Mount Charleston blue butterfly and other blue butterfly species without a permit, in order to minimize the detrimental effects of collecting rare species; (6) removal or exclusion of feral horses in Mount Charleston blue butterfly habitat; and (7) providing educational and outreach opportunities to inform the public regarding potential adverse impacts to the species or sensitive habitat from disturbance caused by recreational activities in the summer or winter. These management activities will protect the physical and biological features by avoiding or minimizing activities that negatively affect the Mount Charleston blue butterfly and its habitat while promoting activities that are beneficial to them. Additionally, management of critical habitat lands will help maintain or enhance the necessary environmental components, foster recovery, and sustain populations currently in decline.

All of the areas designated as critical habitat occur within the Spring Mountains National Recreation Area, and are covered by the 1998 Spring Mountains National Recreation Area (SMNRA) Conservation Agreement. To date, the Conservation Agreement has not always been effective in protecting existing habitat for the Mount Charleston blue butterfly or yielding significant conservation benefits for the species. The Forest Service is currently in the process of revising the SMNRA

Conservation Agreement, and the Service is a cooperator in this process. However, as the Conservation Agreement is currently under revision, and completion has not occurred prior to publication of this final rule, it is unclear what level of protection or conservation benefit the final SNMRA Conservation Agreement will provide for the Mount Charleston blue butterfly.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. We review available information pertaining to the habitat requirements of the species. In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we consider whether designating additional areas—outside of the geographical area currently occupied—are necessary to ensure the conservation of the species. We are designating critical habitat in areas within the geographical area occupied by the subspecies at the time of listing in October 2013 because such areas contain the physical or biological features that are essential to the conservation of the subspecies. We are not designating areas outside the geographical area occupied by the subspecies at the time of listing because they would provide limited benefit and are not needed to conserve the species.

When determining the possible distribution of areas that meet the definition of critical habitat for the Mount Charleston blue butterfly, we considered all known suitable habitat patches remaining within the subspecies' historical range from Willow Creek, south to Griffith Peak within the SMNRA. For the Mount Charleston blue butterfly, we included locations of known populations and suitable habitat immediately adjacent to, or areas between, known populations that provide connectivity between these locations.

This section provides the details of the process we used to delineate the critical habitat for the Mount Charleston blue butterfly. The areas designated as critical habitat in this final rule are areas where the Mount Charleston blue butterfly occur and that contain the physical and biological features essential to the conservation of the species. These areas have been identified through incidental observations and systematic surveys or studies occurring over a period of several years. This information comes from multiple sources, such as reports, journal articles, and Forest Service project information. Based on this

information, we are designating critical habitat in specific areas within the geographical area currently occupied by the Mount Charleston blue butterfly that contain the physical and biological features essential to the conservation of the species.

We delineated the final critical habitat boundaries using the following steps:

(1) We compiled and mapped Mount Charleston blue butterfly observation locations (points) and polygons of habitat that included larval host and nectar plants, or only larval host plants delineated in previous studies or surveys from Austin (1980), Weiss *et al.* (1997), Service (2006b), DataSmiths (2007), Newfields (2008), SWCA (2008), Carsey *et al.* (2011), Holthuijzen *et al.* (2011), Pinyon (2011), Andrew *et al.* (2013), Herrmann (2014), and Thompson *et al.* (2014). The location information from the data sources used provided enough information to identify specific geographic areas by corroborating narratively described locations and mapped locations. These surveys are the best available data on the current distribution, habitat, and features that provide the basis for identifying areas of critical habitat for the Mount Charleston blue butterfly.

(2) Observed locations of Mount Charleston blue butterflies described above were used to create larger polygons of suitable habitat by buffering observed locations by 100 m (330 ft). These polygons assumed that suitable habitat was present up to 100 m (330 ft) around an observed location, because it is estimated that individual Mount Charleston blue butterflies can utilize areas between 10 to 100 m (33 to 330 ft; Weiss *et al.* 1995, Table 1) from observed locations.

(3) Polygons of suitable habitat were identified from previously delineated habitat (described above) and were considered suitable if the habitat polygon contained: (a) Observed locations of Mount Charleston blue butterflies; (b) larval host and nectar plants; (c) delineated habitat that was rated by the investigator (Pinyon 2011, pp. 1–39) as either “moderate” or “good” quality; or (d) larval host plants. It was assumed that nectar plants would also be present in areas where larval host plants were detected and butterflies were observed because both larval host and nectar plants must be in close proximity for Mount Charleston blue butterflies to be present (Boyd and Murphy 2008, pp. 1–31; Thompson *et al.* 2014, p. 138).

(4) We evaluated connectivity corridors of butterfly populations between or adjacent to areas of suitable habitat because these areas are likely

important for butterfly dispersal. In contrast to distances moved within a single patch of habitat, which has been estimated to be between 10 to 100 m (33 to 330 ft), dispersal can be defined as movement between patches of habitat (Bowler and Benton 2005, p. 207). Studies suggest that closely related butterfly taxa have more similar mobility than distantly related butterfly taxa (Burke *et al.* 2011, p. 2284). We determined the approximate maximum dispersal distance of the Mount Charleston blue butterfly to be 1,000 m (3,281 ft) based on documented movement distances observed during mark-and-recapture studies of lycaenid butterflies described to be sedentary. Of the studies using mark-and-recapture studies that we examined, we found that the furthest distances ranged between 300 and 1,500 m (987 and 4,920 ft) (Bink 1992 as referenced in Sekar 2012, Table 2; Saarinen 1993 as cited in Komonen *et al.* 2008, p. 132; Peterson 1996, p. 1990; Lewis *et al.* 1997, pp. 283, 288–289; Peterson 1997, p. 175; Fischer *et al.* 1999, pp. 43 and 46; Baguette *et al.* 2000, p. 103; Bourn and Warren 2000, p. 9; Franzén and Ranius 2004, p. 130; Krauss *et al.* 2004, p. 358; Binzenhöfer *et al.* 2008, p. 267; Chuluunbaatar *et al.* 2009, p. 60; Barua *et al.* 2011, p. 44; Hovestadt *et al.* 2011, p. 1073; COSEWIC 2012, p. 30). Therefore, we approximated connectivity corridors by buffering polygons of suitable habitat by 500 m (2,461 ft), which allowed us to determine if polygons of suitable habitat were within the approximate 1,000 m (3,281 ft) dispersal distance of each other. Areas that did not contain surveyed habitat or were rated as “poor” quality or “inadequate” habitat by investigators were not considered. Quarter-quarter sections (see below for description of quarter-quarter section) that were bounded on all sides by other quarter-quarter sections meeting the above criteria were included to avoid creating “doughnut holes” within corridors.

(5) Observed locations, suitable habitat, and connectivity corridors, as described above, are all considered to be within the present geographic range of the subspecies.

(6) Critical habitat boundaries were delineated using a data layer of the Public Land Survey System (PLSS), which includes quarter-quarter sections (16 ha (40 ac)). Quarter-quarter sections are designated as critical habitat if they contain observed locations, suitable habitat, or connectivity corridors. Quarter-quarter sections were used to delineate critical habitat boundaries because they provide a readily available

systematic method to identify areas that encompass the physical and biological features essential to the conservation of the Mount Charleston blue butterfly and they provide boundaries that are easy to describe and interpret for the general public and land management agencies. Critical habitat boundaries were derived from the outer boundary of the polygons selected from the PLSS quarter-quarter sections in the previous steps.

(7) We removed locations from the critical habitat designation based on information received through the notice-and-comment process on the proposed rule. Some of these locations overlap slightly with Mount Charleston blue butterfly habitat previously mapped by DataSmiths 2007. These locations are at the fringe of previously mapped habitat and most of these areas lack one or more of the physical or biological features or are heavily impacted by public recreation and facilities management. We removed a 25-m (82-ft) perimeter distance around established boundaries or developed infrastructure that is consistent with the conclusions of a study on the Karner blue butterfly (*Lycæides melissa samuelis*), which indicated that habitat within short distances of recreational features may be insufficient to offset recreational impacts on butterfly behavior (Bennett *et al.* 2010, p. 27; Bennett *et al.* 2013, pp. 1794–1795). This distance also is consistent with observations that impacts associated with the campgrounds, day-use areas, and roads tend to be concentrated within a 25-m (82-ft) buffer (Cole 1993, p. 111; Cole 2004, p. 55; Monz *et al.* 2010, p. 556; Swick 2013).

Specifically, we removed locations referred to as Dolomite Campground, Foxtail Girl Scout Camp, Foxtail Group Picnic Area, Foxtail Snow Play Area, Lee Canyon Guard Station, Lee Meadows (extirpated Mount Charleston blue butterfly location), McWilliams Campground, Old Mill Picnic Area, Youth Camp, and LVSSR base facilities and lift terminals. These locations are within the established boundaries or developed infrastructure (for example, buildings, roads, parking areas, fire pits, base ski lift terminals, etc.) for the above-listed campgrounds, day-use areas, and ski area facilities, which have extremely high levels of public visitation and associated recreational disturbance. High levels of recreational disturbance in these areas have either severely degraded available habitat, including host and nectar plants, or the intense level of recreational activity severely limits or precludes the use of these areas by the Mount Charleston blue butterfly. Additionally, small

“doughnut holes” and slivers of land encircled by the buffered areas are not included the final designation, because these fragments do not meet the definition of critical habitat for this subspecies.

When determining critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features necessary for Mount Charleston blue butterfly. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this final rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the

requirement of no adverse modification, unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We are designating as critical habitat lands that we have determined are occupied at the time of listing and contain the physical or biological features to support life-history processes that we have determined are essential to the conservation of Mount Charleston blue butterfly. Three units are designated, based on the physical or biological features being present to support the Mount Charleston blue butterfly's life-history processes. All units contain all of the identified physical or biological features and support multiple life-history processes.

The critical habitat designation is defined by the map, as modified by any accompanying regulatory text, presented at the end of this document in the Regulation Promulgation section. We include more detailed information on the boundaries of the critical habitat

designation in the preamble of this document. The coordinates or plot points or both on which the map is based are available to the public on <http://www.regulations.gov> at Docket No. FWS-R8-ES-2013-0105, on our Internet site http://www.fws.gov/nevada/nv_species/mcb_butterfly.html, and at the field office responsible for the designation (see **FOR FURTHER INFORMATION CONTACT** above).

Final Critical Habitat Designation

We are designating three units as critical habitat for the Mount Charleston blue butterfly. The critical habitat areas described below constitute our best assessment at this time of areas that meet the definition of critical habitat. Those three units are: (1) South Loop, (2) Lee Canyon, and (3) North Loop. All three units are occupied. The approximate area of each critical habitat unit and the land ownerships are listed in Table 1.

TABLE 1—CRITICAL HABITAT UNITS FOR THE MOUNT CHARLESTON BLUE BUTTERFLY

[Area estimates reflect all land within critical habitat unit boundaries]

Critical habitat unit	Land ownership by type	Size of unit in acres (hectares)
1. South Loop	Federal	2,228.0 (901.6)
	State	0
	Local	0
	Private	0
2. Lee Canyon	Federal	2,569.3 (1,039.7)
	State	0
	Local	2.2 (0.9)
	Private	1.2 (0.5)
3. North Loop	Federal	412.9 (167.1)
	State	0
	Local	0
	Private	0
Total	Federal	5,210.2 (2,108.5)
	State	0
	Local	2.2 (0.9)
	Private	1.2 (0.5)

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for the Mount Charleston blue butterfly, below.

Unit 1: South Loop

Unit 1 consists of approximately 2,228 ac (902 ha) and is located in Clark County, Nevada. This unit extends south and southeast from near the summit of Charleston Peak along high-elevation ridges to Griffith Peak. The unit likely represents the largest population of Mount Charleston blue butterflies and is the southernmost area identified as critical habitat for the subspecies.

The unit is within the geographic area occupied by the Mount Charleston blue butterfly at the time of listing. It contains the physical or biological features essential to the conservation of the subspecies, including: Elevations between 2,500 m (8,200 ft) and 3,500 m (11,500 ft); no tree cover or no more than 50 percent tree cover; widely spaced, low (less than 15 cm (0.5 ft) in height) forbs and grasses, with exposed soil and rock substrates; the presence of one or more species of larval host plants; and the presence of one or more species of nectar plants.

Habitat in the unit is threatened by the impacts associated with climate

change, such as increased drought and extreme precipitation events. Therefore, the physical or biological features essential to the conservation of the species in this unit may require special management considerations or protection to minimize impacts resulting from this threat (see *Special Management Considerations or Protection*, above).

A portion of this unit was burned in July 2013, as part of the Carpenter 1 Fire, which burned into habitat of the Mount Charleston blue butterfly along the ridgelines between Griffith Peak and South Loop, spanning a distance of approximately 3 mi (5 km). Within this

area, there are low-, moderate-, or high-quality patches of Mount Charleston blue butterfly habitat intermixed with non-habitat. The majority of Mount Charleston blue butterfly habitat of moderate or high quality in this area was classified as having a very low burn-severity or low soil burn-severity (Kallstrom 2013, p. 4). Areas with the highest observed concentrations of Mount Charleston blue butterflies within moderate- and high-quality habitat were outside the fire perimeter. Areas of lower quality habitat appear to have had higher tree canopy cover and generally experienced low to moderate soil burn-severity.

Although the burn in this unit may have had short-term impacts to larval host or nectar plants, it is likely that the burn may have long-term benefits to Mount Charleston blue butterfly habitat by reducing canopy cover, thereby providing additional areas for larval host and nectar plants to grow, and releasing nutrients (Brown and Smith 2000, p. 26) into the soil, improving overall plant health and vigor, depending upon successional conditions such as soil types and moisture, and seed sources (Kallstrom 2013, p. 4). Therefore, we are designating as critical habitat areas that contained the physical or biological features essential to the conservation of the Mount Charleston blue butterfly prior to the Carpenter 1 Fire, but may have been burned by the fire, because we expect that these areas continue to contain the physical or biological features essential to conservation of the subspecies.

This unit is completely within the boundaries of the U.S. Department of Agriculture, Humboldt-Toiyabe National Forest, Spring Mountains National Recreation Area. The entire unit is within the Mount Charleston Wilderness, and southwestern portions of the unit overlap with the Carpenter Canyon Research Natural Area. This unit is within the area addressed by the Spring Mountains National Recreation Area Conservation Agreement.

Unit 2: Lee Canyon

Unit 2 consists of approximately 2,569 ac (1,040 ha) of Federal land, 2.2 ac (0.9 ha) of local land, and 1.2 ac (0.5 ha) of private land, and is located in Clark County, Nevada. This unit extends south and southeast from McFarland Peak and along the Bonanza Trail through Lee Canyon to slopes below the north side of the North Loop Trail and the west side of Mummy Mountain. This unit represents the northernmost area identified as critical habitat for the subspecies.

The unit is within the geographic area occupied by the Mount Charleston blue butterfly at the time of listing. It contains the physical or biological features essential to the conservation of the subspecies including: Elevations between 2,500 m (8,200 ft) and 3,500 m (11,500 ft); no tree cover or no more than 50 percent tree cover; widely spaced, low (less than 15 cm (0.5 ft) in height) forbs and grasses, with exposed soil and rock substrates; the presence of one or more species of larval host plants; and the presence of one or more species of nectar plants.

Habitat in the unit is threatened by: Loss and degradation of habitat due to changes in natural fire regimes and succession; implementation of recreational development projects and fuels reduction projects; increases of nonnative plants; and the exacerbation of other threats from the impacts of climate change, which is anticipated to increase drought and extreme precipitation events. Therefore, the features essential to the conservation of the species in this unit require special management considerations or protection to minimize impacts resulting from these threats (see *Special Management Considerations or Protection*, above).

This unit is completely within the administrative boundaries of the U.S. Department of Agriculture, Humboldt-Toiyabe National Forest, Spring Mountains National Recreation Area, with less than 1 percent owned by private landowners or Clark County. Approximately 33 percent of the west side of the unit is within the Mount Charleston Wilderness. This unit is within the area addressed by the Spring Mountains National Recreation Area Conservation Agreement.

Unit 3: North Loop

Unit 3 consists of approximately 413 ac (167 ha) and is located in Clark County, Nevada. This unit extends northeast from an area between Mummy Spring and Fletcher Peak along high-elevation ridges down to an area above the State Highway 158. The unit represents the easternmost area identified as critical habitat for the subspecies.

The unit is within the geographic area occupied by the Mount Charleston blue butterfly at the time of listing. It contains the physical or biological features essential to the conservation of the subspecies including: Elevations between 2,500 m (8,200 ft) and 3,500 m (11,500 ft); no tree cover or no more than 50 percent tree cover; widely spaced, low (less than 15 cm (0.5 ft) in height) forbs and grasses with exposed

soil and rock substrates; the presence of one or more species of larval host plants; and the presence of one or more species of nectar plants.

Habitat in the unit is threatened by the impacts associated with climate change, such as increased drought and extreme precipitation events. Therefore, the features essential to the conservation of the species in this unit require special management considerations or protection to minimize impacts resulting from this threat (see *Special Management Considerations or Protection*, above).

This unit is completely within the boundaries of the U.S. Department of Agriculture, Humboldt-Toiyabe National Forest, Spring Mountains National Recreation Area. Approximately 92 percent of the unit is within the Mount Charleston Wilderness. This unit is within the area addressed by the Spring Mountains National Recreation Area Conservation Agreement.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of "destruction or adverse modification" (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 434 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the

responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

- (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or
- (2) A biological opinion for Federal actions that may affect and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency’s discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Application of the “Adverse Modification” Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for the Mount Charleston blue butterfly. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the Mount Charleston blue butterfly. These activities include, but are not limited to, actions that would cause the quality, quantity, functionality, accessibility, or fragmentation of habitat or features to change unfavorably for Mount Charleston blue butterfly. Such activities could include, but are not limited to: Ground or soil disturbance, either mechanically or manually; clearing or grading; erosion control; silviculture; fuels management; fire suppression; development; snow management; recreation; feral horse or burro management; and herbicide or pesticide use. These activities could alter: Invasion rates of invasive or nonnative species, habitat necessary for

the growth and reproduction of these butterflies and their host or nectar plants, and movement of adults between habitat patches. Such alterations may directly or cumulatively cause adverse effects to Mount Charleston blue butterflies and their life cycles.

Exemptions

Application of Section 4(a)(3) of the Act

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that: “The Secretary shall not designate as critical habitat any lands or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan [INRMP] prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.” There are no Department of Defense lands with a completed INRMP within the critical habitat designation.

Consideration of Impacts Under Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if she determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless she determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor. We have not excluded any areas from critical habitat under section 4(b)(2) of the Act.

Consideration of Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared an incremental effects memorandum (IEM) and screening analysis which together with our narrative and interpretation of effects we consider our draft economic analysis (DEA) of the proposed critical habitat designation and related factors

(IEc 2014). The analysis, dated May 20, 2014, was made available for public review from July 15, 2014, through September 15, 2014 (79 FR 41225; IEC 2014). The DEA addressed probable economic impacts of critical habitat designation for the Mount Charleston blue butterfly. Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that pertained to our consideration of the probable incremental economic impacts of this critical habitat designation. Additional information relevant to the probable incremental economic impacts of critical habitat designation for the the Mount Charleston blue butterfly is summarized below and available in the screening analysis for the the Mount Charleston blue butterfly (IEc 2014), available at <http://www.regulations.gov>.

Executive Orders (E.O.s) 12866 and 13563 direct Federal agencies to assess the costs and benefits of available regulatory alternatives in quantitative (to the extent feasible) and qualitative terms. Consistent with the E.O. regulatory analysis requirements, our effects analysis under the Act may take into consideration impacts to both directly and indirectly impacted entities, where practicable and reasonable. We assess to the extent practicable, the probable impacts, if sufficient data are available, to both directly and indirectly impacted entities. As part of our screening analysis, we considered the types of economic activities that are likely to occur within the areas likely affected by the critical habitat designation. In our evaluation of the probable incremental economic impacts that may result from the designation of critical habitat for the Mount Charleston blue butterfly, first we identified, in the IEM dated February 10, 2014, probable incremental economic impacts associated with the following categories of activities: (1) Federal lands management (Forest Service); (2) fire management; (3) forest management; (4) recreation; (5) conservation/restoration; and (6) development. We considered each industry or category individually. Additionally, we considered whether their activities have any Federal involvement. Critical habitat designation will not affect activities that do not have any Federal involvement; designation of critical habitat affects only activities conducted, funded, permitted, or authorized by Federal agencies. In areas where the Mount Charleston blue butterfly is present, Federal agencies already are required to consult with the Service under section

7 of the Act on activities they fund, permit, or implement that may affect the species. Consultations to avoid the destruction or adverse modification of critical habitat will be incorporated into the existing consultation process. Therefore, disproportionate impacts to any geographic area or sector are not likely as a result of this critical habitat designation.

In our IEM, we attempted to clarify the distinction between the effects that can result from the species being listed and those attributable to the critical habitat designation (*i.e.*, the difference between the jeopardy and adverse modification standards) for the Mount Charleston blue butterfly. Because the designation of critical habitat for Mount Charleston blue butterfly was proposed shortly after the listing, it has been our experience that it is more difficult to discern which conservation efforts are attributable to the species being listed and those that can result solely from the designation of critical habitat. However, the following specific circumstances in this case helped to inform our evaluation: (1) The essential physical and biological features identified for critical habitat are the same features essential for the life requisites of the species, and (2) any actions that would result in sufficient harm or harassment to constitute jeopardy to the Mount Charleston blue butterfly would also likely adversely affect the essential physical and biological features of critical habitat. The IEM outlines our rationale concerning this limited distinction between baseline conservation efforts and incremental impacts of the designation of critical habitat for this species. This evaluation of the incremental effects has been used as the basis to evaluate the probable incremental economic impacts of this designation of critical habitat.

The critical habitat designation for the Mount Charleston blue butterfly totals approximately 5,214 acres (2,110 hectares) in three units, all of which were occupied at the time of listing and contain the physical and biological features essential to the conservation of the species. In these areas, any actions that may affect the species or its habitat would also affect designated critical habitat, and it is unlikely that any additional conservation efforts would be recommended to address the adverse modification standard over and above those recommended as necessary to avoid jeopardizing the continued existence of the Mount Charleston blue butterfly. Therefore, only administrative costs are expected in all of the critical habitat designation. While this additional analysis will require time

and resources by both the Federal action agency and the Service, it is believed that, in most circumstances, these costs would predominantly be administrative in nature and would not be significant.

The Forest Service has administrative oversight of 99.9 percent of the critical habitat area and, as the primary Federal action agency in section 7 consultations, would incur incremental costs associated with the critical habitat designation. In some cases third parties may be involved in areas such as Unit 2 in Lee Canyon, particularly where the Las Vegas Ski and Snowboard Resort special-use-permit area overlaps. However, consultation is expected to occur even in the absence of critical habitat, and incremental costs would be limited to administrative costs resulting from the potential for adverse modification. It is unlikely that there will be any incremental costs associated with the 0.1 percent of non-Federal land, for which we do not foresee any Federal nexus and thus is outside of the context of section 7 of the Act.

The probable incremental economic impacts of the Mount Charleston blue butterfly critical habitat designation are expected to be limited to additional administrative effort, as well as minor costs of conservation efforts resulting from a small number of future section 7 consultations. This is due to two factors: (1) All the critical habitat units are considered to be occupied by the species, and incremental economic impacts of critical habitat designation, other than administrative costs, are unlikely; and (2) the majority of critical habitat is in designated Wilderness Areas where actions are currently limited and few actions are anticipated that will result in section 7 consultation or associated project modifications. Section 7 consultations for critical habitat are estimated to range between \$410 and \$9,100 per consultation. No more than 12 consultations are anticipated to occur in a year. Based upon these estimates, the maximum estimated incremental cost is estimated to be no greater than \$109,200 in a given year. Thus, the annual administrative burden is unlikely to reach \$100 million. Therefore, future probable incremental economic impacts are not likely to exceed \$100 million in any single year, and disproportionate impacts to any geographic area or sector are not likely as a result of this critical habitat designation.

Exclusions Based on Economic Impacts

Our economic analysis did not identify any disproportionate costs that are likely to result from the designation. Consequently, the Secretary is not

exercising her discretion to exclude any areas from this designation of critical habitat for the Mount Charleston blue butterfly based on economic impacts.

A copy of the IEM and screening analysis with supporting documents may be obtained by contacting the Southern Nevada Fish and Wildlife Office (see **ADDRESSES**) or by downloading from the Internet at <http://www.regulations.gov>.

Exclusions Based on National Security Impacts or Homeland Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense where a national security impact might exist. In preparing this final rule, we have determined that no lands within the designation of critical habitat for Mount Charleston blue butterfly are owned or managed by the Department of Defense or Department of Homeland Security, and, therefore, we anticipate no impact on national security or homeland security. Consequently, the Secretary is not exercising her discretion to exclude any areas from this final designation based on impacts on national security or homeland security.

Exclusions Based on Other Relevant Impacts

Under section 4(b)(2) of the Act, we also consider any other relevant impacts resulting from the designation of critical habitat. We consider a number of factors, including whether the landowners have developed any HCPs or other management plans for the area, or whether there are conservation partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

In preparing this final rule, we have determined that the Clark County HCP is the only permitted HCP or other approved management plan for the Mount Charleston blue butterfly, and the final designation does not include any tribal lands or tribal trust resources. We did not receive comments on the designation of critical habitat for the Mount Charleston blue butterfly as it relates to the Clark County HCP. We anticipate no impact on tribal lands, partnerships, or HCPs from this critical habitat designation. Accordingly, the Secretary is not exercising his discretion to exclude any areas from this final

designation based on other relevant impacts.

Required Determinations

Regulatory Planning and Review (Executive Orders 12866 and 13563)

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 et seq.), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 et seq.), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than

50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

The Service's current understanding of the requirements under the RFA, as amended, and following recent court decisions, is that Federal agencies are only required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself, and therefore, not required to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7 only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies will be directly regulated by this designation. There is no requirement under RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities are directly regulated by this rulemaking, the Service certifies that, if promulgated, the final critical habitat designation will not have a significant economic impact on a substantial number of small entities.

During the development of this final rule, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. Based on

this information, we affirm our certification that this final critical habitat designation will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute “a significant adverse effect” when compared to not taking the regulatory action under consideration. The economic analysis finds that none of these criteria is relevant to this analysis. Thus, based on information in the economic analysis, energy-related impacts associated with Mount Charleston blue butterfly conservation activities within critical habitat are not expected. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal

Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because because minimal critical habitat is within the jurisdiction of small governments. Consequently, we do not believe that the critical habitat designation would significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (“Government Actions and Interference with Constitutionally Protected Private Property Rights”), we have analyzed the potential takings implications of designating critical habitat for the Mount Charleston blue butterfly in a takings implications assessment. As discussed above, the

designation of critical habitat affects only Federal actions. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. Due to current public knowledge of the protections for the subspecies and the prohibition against take of the subspecies both within and outside of the critical habitat areas, we do not anticipate that property values will be affected by the critical habitat designation. Based on the best available information, the takings implications assessment concludes that this designation of critical habitat for the Mount Charleston blue butterfly does not pose significant takings implications.

Federalism—Executive Order 13132

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this critical habitat designation with, appropriate State resource agencies in Nevada. We did not receive official comments or positions on the proposed designation of critical habitat for the Mount Charleston blue butterfly from State of Nevada agencies. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, the rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are more clearly defined, and the physical and biological features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist these local governments in long-range planning (because these local governments no longer have to wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) will be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the applicable standards set forth in sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, the rule identifies the elements of physical or biological features essential to the conservation of the Mount Charleston blue butterfly. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. We determined that there are no tribal lands occupied by the Mount Charleston blue butterfly at the time of listing that contain the physical or biological features essential to conservation of the species, and no tribal lands unoccupied

by the Mount Charleston blue butterfly that are essential for the conservation of the species. Therefore, we are not designating critical habitat for the Mount Charleston blue butterfly on tribal lands.

References Cited

A complete list of all references cited is available on the Internet at <http://www.regulations.gov> and upon request from the Southern Nevada Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this rulemaking are the staff members of the Pacific Southwest Regional Office and the Southern Nevada Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—[AMENDED]

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

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. Amend § 17.11(h) by revising the entry for “Butterfly, Mount Charleston blue” under INSECTS in the List of Endangered and Threatened Wildlife to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
*	*	*	*	*	*		*
INSECTS							
*	*	*	*	*	*		*
Butterfly, Mount Charleston blue.	<i>Icaricia (Plebejus) shasta charlestonensis</i> .	U.S.A. (Clark County, NV; Spring Mountains).	Entire	E	820	17.95(i)	NA
*	*	*	*	*	*		*

■ 3. In § 17.95, amend paragraph (i) by adding an entry for “Mount Charleston Blue Butterfly (*Icaricia (Plebejus) shasta charlestonensis*),” in the same order that the species appears in the table at § 17.11(h), to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

* * * * *

(i) *Insects.*

* * * * *

Mount Charleston Blue Butterfly (*Icaricia (Plebejus) shasta charlestonensis*)

(1) Critical habitat units are depicted for Clark County, Nevada, on the map below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of the Mount Charleston blue butterfly consist of three components:

(i) Areas of dynamic habitat between 2,500 meters (m) (8,200 feet (ft)) and 3,500 m (11,500 ft) elevation with openings or where disturbance provides openings in the canopy that have no more than 50 percent tree cover (allowing sunlight to reach the ground); widely spaced, low (less than 15 centimeters (cm) (0.5 ft) in height) forbs and grasses; and exposed soil and rock substrates. When taller grass and forb plants greater than or equal to 15 cm (0.5 ft) in height are present, the density is less than five per square meter (m²) (50 per square foot (ft²)).

(ii) The presence of one or more species of host plants required by larvae of the Mount Charleston blue butterfly for feeding and growth. Known larval host plants are *Astragalus calycosus* var. *calycosus*, *Oxytropis oreophila* var. *oreophila*, and *Astragalus platytropis*. Densities of host plants must be greater than two per m² (0.2 per ft²).

(iii) The presence of one or more species of nectar plants required by adult Mount Charleston blue butterflies for reproduction, feeding, and growth. Common nectar plants include *Erigeron clokeyi*, *Hymenoxys lemmonii*, *Hymenoxys cooperi*, and *Eriogonum umbellatum* var. *versicolor*. Densities of nectar plants must occur at more than two per m² (0.2 per ft²) for smaller plants, such as *E. clokeyi*, and more than 0.1 per m² (0.01 per ft²) for larger and taller plants, such as *Hymenoxys* sp. and *E. umbellatum*. Nectar plants typically occur within 10 m (33 ft) of larval host plants and, in combination, provide nectar during the adult flight period between mid-July and early August. Additional nectar sources that could be present in combination with the common nectar plants include *Antennaria rosea*, *Cryptantha* sp., *Ericameria nauseosa* ssp., *Erigeron flagellaris*, *Gutierrezia sarothrae*, *Monardella odoratissima*, *Petradoria pumila* var. *pumila*, and *Potentilla concinna* var. *concinna*.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on July 30, 2015.

(4) *Critical habitat map units.* Data layers defining map units were created on a base of Bureau of Land Management Public Land Survey System quarter-quarter sections. Critical habitat units were then mapped using Universal Transverse Mercator (UTM) Zone 11 North, North American Datum (NAD) 1983 coordinates. The map in this entry, as modified by any accompanying regulatory text, establishes the boundaries of the critical habitat designation. The coordinates or plot points or both on which the map is based are available to the public at the Service's Internet site at http://www.fws.gov/nevada/nv_species/mcb_butterfly.html, at <http://www.regulations.gov> at Docket No. FWS-R8-ES-2013-0105, and at the field office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(5) Map of critical habitat units for the Mount Charleston blue butterfly follows:

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Critical Habitat for Mount Charleston Blue Butterfly
(*Icaricia (Plebejus) shasta charlestonensis*)
Units 1, 2, and 3. Clark County, Nevada



* * * * *

Dated: June 15, 2015.

Michael Bean,

*Principal Deputy Assistant Secretary for Fish
and Wildlife and Parks.*

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