

**Billing Code 4310–55–S**

**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**Docket No. [FWS–R8–ES–2010–0077; 92210–1111–0000–B2]**

**Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition To List Spring Mountains Acastus Checkerspot as Endangered**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notice of 90-day petition finding.

**SUMMARY:** We, the U.S. Fish and Wildlife Service, announce a 90-day finding on a petition to list the Spring Mountains acastus checkerspot (*Chlosyne acastus robusta*) as endangered under the Endangered Species Act of 1973, as amended (Act). Based on our review, we find that the petition presents substantial scientific or commercial information indicating that listing the Spring Mountains acastus checkerspot butterfly as endangered or threatened may be warranted. Therefore, with the publication of this notice, we are

initiating a review of the status of the species to determine if listing the Spring Mountains acastus checkerspot butterfly as endangered or threatened is warranted. To ensure that this status review is comprehensive, we are requesting scientific and commercial data and other information regarding this subspecies. Based on the status review, we will issue a 12-month finding on the petition, which will address whether the petitioned action is warranted, as provided in section 4(b)(3)(B) of the Act.

**DATES:** To allow us adequate time to conduct this review, we request that we receive information on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Please note that if you are using the Federal eRulemaking Portal (see **ADDRESSES** section below), the deadline for submitting an electronic comment is Eastern Standard Time on this date.

**ADDRESSES:** You may submit information by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. In the box that reads “Enter Keyword or ID,” enter the Docket number for this finding, which is FWS–R8–ES–2010–0077. Check the box that reads “Open for Comment/Submission,” and then click the Search button. You should then see an icon that reads “Submit a Comment.” Please ensure that you have found the correct rulemaking before submitting your comment.
- *U.S. mail or hand-delivery:* Public Comments Processing, Attn: FWS–R8–ES–2010–0077; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, Suite 222; Arlington, VA, 22203.

We will post all information we receive on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the **Request for Information** section below for more details).

**FOR FURTHER INFORMATION CONTACT:** Jill Ralston, Deputy State Supervisor, U.S. Fish and Wildlife Service, Nevada Fish and Wildlife Office, 4701 North Torrey Pines Drive, Las Vegas, NV, 89130, by telephone 702-515-5230, or by facsimile to 702-515-5231. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800-877-8339.

**SUPPLEMENTARY INFORMATION:**

**Request for Information**

When we make a finding that a petition presents substantial information indicating that listing a species may be warranted, we are required to promptly review the status of the species (status review). For the status review to be complete and based on the best available scientific and commercial information, we request information on the Spring Mountains acastus checkerspot from governmental agencies, Native American Tribes, the scientific community, industry, and any other interested parties. We seek information on:

- (1) The subspecies' biology, range, and population trends, including:
  - (a) Habitat requirements for feeding, breeding, and sheltering;

- (b) genetics and taxonomy;
- (c) historical and current range including distribution patterns;
- (d) historical and current population levels, and current and projected trends; and
- (e) past and ongoing conservation measures for the subspecies, its habitat or both.

(2) The factors that are the basis for making a listing/delisting/downlisting determination for a species under section 4(a) of the Endangered Species Act of 1973, as amended (Act) (16 U.S.C. 1531 *et seq.*), are:

- (a) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (b) overutilization for commercial, recreational, scientific, or educational purposes;
- (c) disease or predation;
- (d) the inadequacy of existing regulatory mechanisms; or
- (e) other natural or manmade factors affecting its continued existence.

If, after the status review, we determine that listing the Spring Mountains acastus checkerspot is warranted, we will propose critical habitat (see definition in section 3(5)(A) of the Act) under section 4 of the Act, to the maximum extent prudent and determinable at the time we propose to list the subspecies. Therefore, within the geographical range currently occupied by the Spring Mountains acastus checkerspot, we request data and information on:

- (1) What may constitute “physical or biological features essential to the conservation of the species;”
- (2) where these features are currently found; and
- (3) whether any of these features may require special management considerations or protection.

In addition, we request data and information on “specific areas outside the geographical area occupied by the species” that are “essential to the conservation of the species.” Please provide specific comments and information as to what, if any, critical habitat you think we should propose for designation if the subspecies is proposed for listing, and why such habitat meets the requirements of section 4 of the Act.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made “solely on the basis of the best scientific and commercial data available.”

You may submit your information concerning this status review by one of the methods listed in the **ADDRESSES** section. If you submit information via <http://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If you submit a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this personal identifying information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <http://www.regulations.gov>.

Information and supporting documentation that we received and used in preparing this finding is available for you to review at <http://www.regulations.gov>, or you may make an appointment during normal business hours at the U.S. Fish and Wildlife Service, Nevada Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

## **Background**

Section 4(b)(3)(A) of the Act (16 U.S.C. 1531 *et seq.*) requires that we make a finding on whether a petition to list, delist, or reclassify a species presents substantial scientific or commercial information indicating that the petitioned action may be warranted. We are to base this finding on information provided in the petition, supporting information submitted with the petition, and information otherwise available in our files. To the maximum extent practicable, we are to make this finding within 90

days of our receipt of the petition, and publish our notice of the finding promptly in the **Federal Register**.

Our standard for substantial scientific or commercial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is “that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted” (50 CFR 424.14(b)). If we find that substantial scientific or commercial information was presented, we are required to promptly conduct a species status review, which we subsequently summarize in our 12-month finding.

#### *Petition History*

On September 18, 2009, we received a petition, dated September 16, 2009, from Bruce M. Boyd, requesting that the Spring Mountains acastus checkerspot be listed as endangered under the Act (Boyd 2009). The petition clearly identified itself as such and included the requisite identification information for the petitioner, as required by 50 CFR 424.14(a). In a November 24, 2009, letter to petitioner Bruce M. Boyd, we responded that we reviewed the information presented in the petition and determined that issuing an emergency regulation temporarily listing the butterfly under section 4(b)(7) of the Act was not warranted (Service 2009, p. 1). We also stated that funding was secured and that we anticipated making an initial finding in Fiscal Year 2010 as to whether the petition contains substantial information indicating that the action may be warranted. This finding addresses the petition.

### *Previous Federal Actions*

In 1991 and 1994, the Service included the Spring Mountains acastus checkerspot in a compilation of taxa that were to be reviewed for possible addition to the Lists of Endangered and Threatened Wildlife and Plants (56 FR 58804, November 21, 1991; 59 FR 58982, November 15, 1994). In both years the Spring Mountains acastus checkerspot was assigned to a “Category 2” species. Such a designation indicated that proposing to list was possibly appropriate, but adequate data on biological threat or vulnerability were not currently available. The trend for Spring Mountains acastus checkerspot was described as “Unknown.” This notice stressed that species in this category were not proposed for listing by the notice, nor were there any plans to list unless supporting information became available.

In the February 28, 1996, Candidate Notice of Review (61 FR 7595), we adopted a single category of candidate species defined as follows: “Those species for which the Service has on file sufficient information on biological vulnerability and threat(s) to support issuance of a proposed rule to list but issuance of the proposed rule is precluded.” In previous Candidate Notices of Review, species matching this definition were known as Category 1 candidates for listing. Thus, the Service no longer considered Category 2 species as candidates and did not include them in the 1996 or any subsequent Candidate Notices of Review. The decision to stop considering Category 2 species as candidates was designed to reduce confusion about the status of these species and to clarify that we

no longer regarded these species as candidates for listing.

### *Species Information*

The Spring Mountains acastus checkerspot (*Chlosyne acastus robusta*) is a subspecies of sagebrush checkerspot (*Chlosyne acastus*) belonging to the Nymphalidae (brush-footed butterflies) family. Synonyms of the genera *Chlosyne* have included *Charidryas* and *Thessalia* (Opler and Warren 2003, pp. 35–36). Early taxonomic assessments of specimens *C. a. robusta* ascribed it to *C. a. vallismortis* (= *C. palla vallismortis*; Austin 1981, p. 71). Later interpretations suggested that it was more closely aligned to *C. acastus* (Austin 1985, p. 108). Further evaluations resulted in recognition of Spring Mountains acastus checkerspot as a distinct subspecies (Austin 1998a, p. 576). There are nine subspecies of sagebrush checkerspot butterflies described for North America (Pelham 2008, pp. 379–380), of which four (*C. a. acastus*, *C. a. dorothyi*, *C. a. robusta*, and *C. a. neumoegeni*) occur in Nevada (Austin 1998b, p. 842).

The Spring Mountains acastus checkerspot is known only from the Spring Mountains in Clark and Nye Counties, Nevada (Austin 1998a, p. 577), at elevations ranging from minimums near 1,800 to maximums at 2,700 meters (m) (5,900–8,900 feet (ft); Weiss *et al.* 1997, p. 17). In low elevation desert areas adjacent to the distribution of Spring Mountains acastus checkerspot, a similar looking subspecies, *C. a. neumoegeni*, may occur (Austin 1998a, p. 577), and is likely the nearest subspecies spatially. The majority of observations and habitat for the Spring Mountains acastus checkerspot occur

within the Spring Mountains National Recreation Area, which is managed by the U.S. Department of Agriculture, Forest Service (hereafter referred to as Forest Service), Humboldt-Toiyabe National Forest. However, one colony occurs on private property which is bordered by Forest Service managed lands, and an incidental observation at another location has been documented on lands managed by the U.S. Department of Interior, Bureau of Land Management.

Sagebrush checkerspot habitat is described as dry washes in sagebrush-juniper woodland, oak or mixed conifer woodland, and streambeds (Opler 1999, p. 199). Elevations used by Spring Mountains acastus checkerspot coincide with the intergraded upper elevation of *Pinus monophylla*–*Juniperus osteosperma* (piñon-juniper) communities at 1,250–2,500 m (4,100–8,200 ft) and lower elevation of *Abies concolor*–*Pinus ponderosa* var. *scopulorum* (white fir-ponderosa pine) communities at 2,000–2,530 m (6,560–8,300 ft) (Niles and Leary 2007, pp. 5–6). Open vegetation communities associated with previous fire disturbances appear to be the preferred habitat (Boyd and Austin 2002, p. 5). Washes and linear features are used primarily as mating sites during the flight season (Boyd and Austin 2001, p. 6; Boyd and Austin 2002, p. 5).

Spring Mountains acastus checkerspot males may seek females all day by perching and sometimes patrolling gulches (Scott 1986, p. 307; Kingsley 2008, pp. 7-8). Males may perch on several projecting objects in the same area such as rocks or branches (Scott 1986, pp. 46-47, 307; Kingsley 2008, p. 4, 7-8). At these sites males behave territorially by remaining in the same area and pursuing any other butterflies or insects

that come within a zone of a few square meters around the male and continue this behavior towards the intruding animal until it leaves (Boyd and Austin 2001, p. 5; Boyd and Austin 2002, p. 5; Kingsley 2008, pp. 4, 7–8). During a brief flight season (Weiss *et al.* 1997, pp. 6, 37), females remain at the site long enough to find a male to mate with, and then leave the area to oviposit (Boyd and Austin 2001, p. 6; Boyd and Austin 2002, p. 5).

The flight season of the Spring Mountains acastus checkerspot is between mid-May and mid-July (Weiss *et al.* 1997, pp. 6, 37; Austin 1998a, p. 576; Boyd 2004, pp. 1–2), peaking near the later part of June (Weiss *et al.* 1997, pp. 6, 37; Boyd and Austin 1999, p. 20; Boyd and Austin 2002, p. 4; Boyd 2004, p. 8). Distances moved during flight periods have not been documented, though Schrier *et al.* (1976, p. 285) observed that a related species, the northern checkerspot (*C. palla*), could move as far as 1.6 kilometers (1 mile). During the flight season, Spring Mountains acastus checkerspot adults have been observed nectaring on *Eriodictyon angustifolium* (yerba santa), *Heliomeris multiflora* var. *nevadensis* (= *Viguiera multiflora*; Nevada golden-eye), *Packera multilobata* (= *Senecio multilobatus*; lobeleaf groundsel), unknown *Ceanothus* sp. (ceanothus species), unknown *Melilotus* sp. (clover species), *Penstemon palmeri* (Palmer penstemon), and an unknown *Apocynum* sp. (dogbane species) (Weiss *et al.* 1995, p. 9; Boyd *et al.* 2000a, p. 6; Jones & Stokes 2007a, p. 4).

*Chrysothamnus viscidiflorus* has been documented as a larval host plant (Boyd and Austin 2002, p. 2; Austin and Leary 2008, p. 99), and according to the petition, is

common and widely distributed in the range (Boyd 2009, p.1). Common names used interchangeably among subspecies of *C. viscidiflorus* have included Douglas rabbitbrush, chamisa, green rabbitbrush, yellow rabbitbrush, viscid rabbitbrush, sticky leaved rabbitbrush, downy rabbitbrush, and narrow leaved rabbitbrush (Stubbendieck *et al.* 2003, p. 249; Niles and Leary 2007, p. 19). Three subspecies of *C. viscidiflorus* have been documented in the Spring Mountains, including *C. v. lanceolatus* (variously known as viscid rabbitbrush, sticky leaved rabbitbrush, and yellow rabbitbrush), *C. v. puberulus* (downy rabbitbrush), and *C. v. viscidiflorus* (variously known as viscid rabbitbrush, sticky leaved rabbitbrush, and narrow leaved rabbitbrush) (Niles and Leary 2007, p. 19). It is unknown which of these subspecies of *C. viscidiflorus* are used as a larval host by Spring Mountains acastus checkerspot. Of butterfly host plants described by Weiss *et al.* (1997, Figure 4), *Chrysothamnus viscidiflorus* tends to be found in areas with the lowest percentages of tree canopy cover (mean of 17 percent) compared to other host plant species.

*Ericameria nauseosa* (= *Chrysothamnus nauseosus*, rubber rabbitbrush) also is suspected of being a larval host plant (Weiss *et al.* 1997, p. 6). Boyd and Austin (1999, pp. 20–21) attempted to feed *E. nauseosa* to Spring Mountains acastus checkerspot larvae unsuccessfully and reported that their results were inconclusive. However, they reported that other subspecies of sagebrush checkerspot butterflies used *Acamptopappus* sp. (goldenhead) and *Xylorhiza* sp. (woodyaster) as larval host plants (Austin and Austin 1980 as cited in Boyd and Austin 1999, p. 21).

Clusters of eggs are laid on the underside of host leaves and sometimes on flower buds (Scott 1986, p. 307). After the eggs hatch, the young larvae cluster together on leaves or flowers (Scott 1986, p. 307). Similar to other members of the subfamily Nymphalinae and closely related subspecies, the Spring Mountains acastus checkerspot larvae likely hibernate during the winter and may diapause [a period of arrested growth or reduced physiological activity, commonly induced by a seasonal change in photoperiod (i.e., day-length)] for many months or years (Scott 1986, pp. 27, 307).

Weiss *et al.* (1997, p. 2) indicated that butterfly populations are highly dynamic, and from year to year, butterfly distributions can be highly variable. Butterflies may be restricted to moist and cool habitats during dry, warm periods, potentially expanding their distribution during periods marked by cooler and moister conditions (Weiss *et al.* 1997, pp. 2–3). Some species, such as Spring Mountains acastus checkerspot, may exist as a metapopulation within the Spring Mountains (Weiss *et al.* 1997, p. 3). If this is the case, maintenance of dispersal corridors and unoccupied habitats is an important management consideration (Weiss *et al.* 1997, p. 3).

The Spring Mountains acastus checkerspot occurs throughout the Spring Mountains and has been observed in 17 areas (Table 1). However, the number of occupied areas reported in past studies varies (12 occupied areas were reported in Boyd and Austin 1999, p. 20) based on how observations are spatially grouped. Four of these areas (Trough Spring, Kyle Canyon, Griffith Peak Trail/Harris Spring Road/Harris Mountain Road, and Potosi Mountain/Mt. Potosi/Boy Scout Camp) are referred to

interchangeably as colonies or population sites (Boyd & Austin 1999, p. 9, 20–21; Boyd and Austin 2002, pp. 5, 13; Boyd 2004, pp. 2–3). Currently, only four colonies are known to exist. However, the increased existence of incidental sighting areas and the potential subsequent dispersal of individuals may indicate the presence of additional unknown colonies (Boyd and Austin 1999, p. 60-61; Boyd et al. 2000, p. 10) (Table 1).

A colony is “a local, isolated population” (Scott 1986, p. 108). Past researchers defined colonies of Spring Mountains *acastus* checkerspot based on the mate locating behavior of males, also referred to as mate locating sites (Boyd and Austin 2002, p. 5; Boyd 2009, p. 1). The remaining 13 areas are referred to as incidental observations or sighting areas (Boyd and Austin 2001, p. 2; Boyd and Austin 2002, p. 3; Boyd 2004, p. 3), where intermittent observations of a few butterflies were recorded at a location. The areas where the Spring Mountains *acastus* checkerspot has been observed in a colony or sighting area represent the overall known population of the subspecies.

The largest known colony occurs at Griffith Peak Trail/Harris Spring Road/Harris Mountain Road, and was first documented as a sighting area in 1990 and later described as a potential colony in 1999 (Boyd and Austin 1999, p. 20). The Trough Spring colony was first identified in 2001 (Boyd and Austin 2002, p. 5). Boyd (2004, p. 3) stated that a single male observed at Willow Spring/Willow Creek in 2003 may have dispersed from Trough Spring or another unknown colony, due to its not being sighted in the area since the 1980s. The Spring Mountains *acastus* checkerspot was first documented at Potosi

Mountain/Mt. Potosi/Boy Scout Camp in 1995 (Weiss *et al.* 1995, p. 6), and was described as a colony for the first time in 2000 (Boyd *et al.* 2000a, p. 4).

**Table 1. Areas where Spring Mountains acastus checkerspot observations have been documented.** (Areas ordered to begin with the most northern and end with the most southern.)

<i>Observation Area</i>	<i>First Year Observed</i>
Mt. Stirling	1983
Big Timber Spring	1995 – pre
Wheeler Pass Road	1987
Trough Spring*	2001
McFarland Spring/Whisky Spring/Camp Bonanza	2003
Willow Spring/Willow Creek	1979
Clark Canyon	1994
Foxtail Canyon	1998
Deer Creek & Picnic Area	1965
Deer Creek Road (Telephone Canyon side)	1981 or 87
Kyle Canyon – lower	1996 – pre
Kyle Canyon – middle*	1950
Kyle Canyon – upper	1987
Griffith Peak Trail/Harris Spring Road/Harris Mountain Road*	1990
Coal Spring	1992
Switchback Spring	2003
Potosi Mountain/Mt. Potosi/Boy Scout Camp*	1995

\*Asterisk indicates a colony. Colonies are isolated populations (Scott 1986, p. 108) based on mate locating behavior (Boyd and Austin 2002, p. 5; Boyd 2009, p. 1) of one or more males observed over a period of time and represent more than one incidental observation or sighting.

Sources: Weiss *et al.* 1997, pp. 6–7; Boyd and Austin 1999, pp. 19–21; Boyd 2004, pp. 2–3; Nevada Natural Heritage Program 2009.

DataSmiths (2007, p. 17) concluded that absence of adults at a site does not necessarily equate to ephemeral occupation or extirpation. Observations in areas reported for the Spring Mountains acastus checkerspot illustrate this. Boyd *et al.* (2000a, p. 4) searched 17 areas for the Spring Mountains acastus checkerspot in 1999 consisting of 8

historical and 9 potential sites. Spring Mountains acastus checkerspot were observed at five of the eight historical sites visited and two of these were described as potential new colonies. In later reports of surveys occurring in 2003, the Spring Mountains acastus checkerspot was observed again in the Willow Spring/Willow Creek area (Boyd 2004, pp. 2–3), where it was not observed during surveys in 1999 (Boyd and Austin 1999, p. 98–Table 7). Similarly, in 2003, the Spring Mountains acastus checkerspot also was observed in the McFarland Spring/Whisky Spring/Camp Bonanza area for the first time (Boyd 2004, p. 2), even though it was not observed there during previous surveys in 1998 (Boyd and Austin 1999, p. 104–Table 12). These examples demonstrate that not seeing individuals at a site during surveys does not necessarily equate with extirpation because adult surveys won't detect diapausing larvae, and short adult flight periods coupled with low numbers may drastically reduce the likelihood of observing Spring Mountains acastus checkerspot.

Yearly population variation of Spring Mountains acastus checkerspot also is expressed by variation in the numbers of observed individuals during repeat surveys at the same location (Table 2). At the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road site, surveys from 2000 and 2001 revealed that the highest total number of individuals observed on a single day increased from 19 to 104. In 2003, the highest number observed on a single day at the same site decreased to 27. In a 2006 interview with the petitioner, Boyd reported that the Spring Mountains acastus checkerspot had “done better” than other endemic species and had “good numbers” at Griffith Peak Trail/Harris Spring Road/Harris Mountain Road (Boyd 2006, pers. comm.), as well as at

Potosi Mountain/Mt. Potosi/Boy Scout Camp (Boyd 2006, p. 2). At locations where it was observed in 2006, the petition states that the butterfly appeared to be in “appropriate” numbers (Boyd 2006, p. 2). These observations support the conclusions of Weiss *et al.* (1997, p. 2) of highly dynamic butterfly populations where observations may occur periodically throughout a species range, and populations at colony sites may fluctuate as indicated by monitoring counts.

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**Table 2. Summary of monitoring results of Spring Mountains acastus checkerspot at three colony sites.**

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<i>Year</i>	<i>1999</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
<u>Kyle Canyon (middle)</u>								
Highest # / day	5	6	8	6	7	4	1	4
Highest # male / day	4	6	8	6	7	4	1	4
Highest # female / day	1	1	1	0	1	0	0	0
# Visits	11	9	6	4	4	1	6	8
Peak date(s)	June 19	June 15 & 30	June 18	June 24	June 10	June 21	June 13 & 21	June 24
<u>Griffith Peak Trail/Harris Spring Road/Harris Mountain Road</u>								
Highest # / day		19	104	50	27			
Highest # male / day		12	78	43	17			
Highest # female / day		5	26	9	10			
# Visits		9	5	5	4			
Peak date		June 11	June 18	June 20	June 29			
<u>Trough Spring</u>								
Highest # / day				20	41			
Highest # male / day				18	40			
Highest # female / day				7	3			
# Visits				3	5			
Peak date				June 18	June 1			

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Sources: (Boyd 2004, p. 8; Jones and Stokes 2007a, p. 4; Jones and Stokes 2007b, p. 3; Kingsley 2008, p. 3).

## **Evaluation of Information for This Finding**

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations at 50 CFR 424 set forth the procedures for adding a species to, or removing a species from, the Federal Lists of Endangered and Threatened Wildlife and Plants. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1) of the Act:

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) overutilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms; or
- (E) other natural or manmade factors affecting its continued existence.

In making this 90-day finding, we evaluated whether information regarding the threats to the Spring Mountains acastus checkerspot, as presented in the petition and other information available in our files, is substantial, thereby indicating that the petitioned action may be warranted. Our evaluation of this information is presented below.

For Factors A and E, we provide a discussion of our evaluation for each of the four known colonies. In addition, for Factor A, we discuss threats as they relate to all colonies. For Factors B, C, and D, we provide a discussion of our evaluation for the entire subspecies. Factor D is discussed after Factor E to improve the flow of the finding.

*A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range*

Information Provided in the Petition Concerning All Sites: The petition states that the overall numbers of all “covered” butterfly species in the Spring Mountains are declining, as seen with *Plebejus* (= *Icaricia*) *shasta charlestonensis* (Mt. Charleston blue butterfly). Specifically, the petition states that declines became apparent by 2005 and were exacerbated during the 2006, 2007, and 2008 seasons (Boyd 2009, p. 2). No data were reported for the 2009 season.

In addition, the petition noted several conservation agreements or plans exist to conserve the subspecies; however, few of the obligations documented in these agreements and plans have been met. The petitioner also states that monitoring requirements outlined in these agreements or plans were abandoned after 2003 (Boyd 2009, pp. 1–2).

Evaluation of Information Provided in the Petition and Available in Service Files Concerning All Sites: Between 1998 and 2002, butterfly monitoring occurred throughout the Spring Mountains (Boyd and Austin 1999 pp. 1–77; Boyd *et al.* 2000a pp. 1–24; Boyd *et al.* 2000b pp. 1–8; Boyd and Austin 2001 pp. 1–15; Boyd and Austin 2002 pp. 1–15; Dewberry *et al.* 2002 pp. 1–16; Boyd 2004, pp. 1–10). Butterfly numbers fluctuated between and within sites during this time (Table 2). Many unknown factors exist pertaining to the petitioner’s site visits including: 1) survey protocol standards, 2)

number of visits, 3) timing of visits, and 4) weather conditions during the visits. Since 2003, inventory efforts primarily have occurred where proposed activities may affect the subspecies (DataSmiths 2007, pp. 1–31; Forest Service 2007a, pp. 1–9; Forest Service 2007b, pp. 1–57; Jones and Stokes 2007a pp. 1–73; Jones and Stokes 2007b 1–50; Kingsley 2008, pp. 1–18). Such project-specific monitoring assists in determining potential project impacts. Monitoring for populations and habitats of Spring Mountains acastus checkerspot has occurred purposefully but intermittently, with different levels of effort, at various locations throughout the range of Spring Mountains acastus checkerspot. These differences and inconsistencies in monitoring make it difficult to determine the cause and effect relationships associated with activities that may affect the Spring Mountains acastus checkerspot (see Factor E discussion for information on butterfly population trends in general).

The Spring Mountains acastus checkerspot is included in a 1998 Conservation Agreement for the Spring Mountains National Recreation Area to facilitate cooperation among the parties (Forest Service, U.S. Fish and Wildlife Service, State of Nevada Department of Conservation and Natural Resources) in providing long-term protection for the rare and sensitive flora and fauna of the Spring Mountains (Forest Service 1998). The Conservation Agreement describes voluntary conservation actions (described below) for the butterfly on lands within the Forest Service’s jurisdiction (Forest Service 1998, pp. 44–49), which were intended to protect the subspecies and its habitat. Those efforts include research, inventory, and monitoring. The petition states that very few of the conservation actions in the Conservation Agreement have been completed and that

monitoring of sites was abandoned in 2003 (Boyd 2009, p. 2). The conservation actions outlined in the Conservation Agreement were to be carried out in a five year period between 1998 and 2002 (Forest Service 1998, p. 28). Between 1998 and 2002, butterfly monitoring occurred throughout the Spring Mountains (Boyd and Austin 1999, Boyd *et al.* 2000a, Boyd *et al.* 2000b, Boyd and Austin 2001, Boyd and Austin 2002, Dewberry *et al.* 2002, Boyd 2004). The frequency, intensity, and extent of monitoring have varied since 2003.

The Spring Mountains acastus checkerspot is a covered species under the Clark County Multiple Species Habitat Conservation Plan (MSHCP). The Clark County MSHCP identifies two goals for the Spring Mountains acastus checkerspot: (a) “Maintain stable or increasing population numbers and host and larval plant species;” and (b) “No net unmitigated loss of larval host plant or nectar plant species habitat” (RECON 2000a, Table 2.5, pp. 2-154; RECON 2000b, pp. B162-B164). The Forest Service is one of several signatories on the Implementing Agreement for the Clark County MSHCP because many of the activities from the 1998 Conservation Agreement were incorporated into the MSHCP. Primarily, activities undertaken by the Forest Service focused on conducting surveys and monitoring for butterflies. Although the Forest Service, Clark County, and the Service contracted some surveys and monitoring (see above), a butterfly monitoring plan was not fully implemented. The lack of inventory or monitoring does not directly correlate to any threat to the Spring Mountains acastus checkerspot or its habitat. However, monitoring population status may assist with identifying potential responses to threats.

In 2004, the Forest Service and the Service entered into a voluntary memorandum of agreement (MOA) to establish an interagency commitment to early communication, coordination, and conferencing to guide project development on Forest Service lands that provide habitat for the Spring Mountains acastus checkerspot (Forest Service and Service 2004, p. 1). This MOA is intended to ensure that forest activities are designed to reduce impacts to listed species under conservation agreements or habitat conservation plans (Forest Service and Service 2004, p. 4).

In 2007, a survey protocol was prepared to survey or inventory butterflies of concern at sites subject to Forest Service management (Forest Service et al. 2007, p. 1). The techniques were outlined to inventory butterflies by assessing habitat and walking survey transects to maximize the possibility of encountering targeted adult butterflies (Forest Service et al. 2007, p. 1). Monitoring of the species has occurred where activities may potentially affect the subspecies and its habitat (e.g., DataSmiths 2007, Forest Service 2007a, Forest Service 2007b Jones and Stokes 2007a, Jones and Stokes 2007b, Kingsley 2008), but it is unclear which conservation actions have taken place since 2003.

Information Provided in the Petition Concerning the Kyle Canyon (middle)

Colony Site: The petition notes that when this site has been surveyed, adults of both sexes of the Spring Mountains acastus checkerspot are consistently present, but that the numbers of individuals found are low (Boyd 2009, p. 3). The alleged threats at the Kyle Canyon (middle) colony include highway modifications (expansions, grading, and wash

realignments), power line maintenance, fuels reduction or treatment projects, and equestrian and vehicle traffic (Boyd 2009, p. 3). The petition also noted (Boyd 2009, p. 3) plans for a large Forest Service visitor's complex at the site of a former golf course, and construction of a hiking trail. The proposed hiking trail was asserted to traverse the length of the breeding site (Boyd 2009, p. 3).

Evaluation of Information Provided in the Petition and Available in Service Files Concerning the Kyle Canyon (middle) Colony Site: Information in Service files suggests that this colony site is small relative to the other colonies, but likely stable (see Table 1). Individuals have been found every season when surveyed, and the numbers of individuals found during surveys are consistently low. The petition states that this population has been declining since the late 1990s, but the data we have available show that the numbers at this site are low every year (Table 2).

We have no additional recent information in our files concerning threats from highway modifications (expansions, grading, and wash realignments), power line maintenance, and equestrian and vehicle traffic. Our files contain a 1999 report (Boyd and Austin 1999, p. 59) which lists a number of habitat-related factors that could adversely affect the Spring Mountains acastus checkerspot in the Kyle Canyon area including grading, sod dumping, large vehicle occurrence as indicated by tracks, and clearing. Neither the 1999 report, nor the petition, provide any information or supporting references that describe the scope, immediacy, and intensity to characterize any of these potential stressors.

Our files contain information on both the beneficial and negative impacts of recent fuels reduction projects. Fuels reduction projects are designed to reduce the volume and cover of woody vegetation. Some potential negative impacts of fuels reduction projects include the crushing of larvae, reductions in larval host plants or adult nectar plants, and reductions in the number of male perching or mate location sites. The most recent fuels reduction project is the Spring Mountains National Recreation Area Hazardous Fuels Reduction Project (Forest Service 2007a, pp. 1–9; Forest Service 2007b, p. 1–57). Design criteria outlined in the environmental assessment for this project (Forest Service 2007b, Appendix B Design Criteria W5, W6, W7, and M1) were developed to address impacts to the Spring Mountains acastus checkerspot and other butterflies listed under the Conservation Agreement, and included surveys for butterflies and habitat, habitat mapping, abstaining from any host plant removal in core colonies, avoidance of host plants, minimization of disturbance by using manual methods, monitoring during implementation, and post-project monitoring of butterflies and their habitat. The Forest Service began implementation of the Spring Mountains Hazardous Fuels Reduction Project in 2008, including employment of associated design criteria and conservation measures. A monitoring program is underway to assess the impacts and benefits to butterfly host plants.

The available information indicates that fuels treatment projects can have short-term, negative impacts to habitat and individuals, or loss of viability (Forest Service 2007a, pp. 18, 22–23). However, given the small documented population at the Kyle

Canyon (middle) site, any short-term negative impact could be a threat to this colony (see Table 2 above).

Fuels treatment projects may be beneficial to habitat and individuals by reducing the risk of wildfire in the localized areas where the Spring Mountains acastus checkerspot occurs. Over the long term, fuels reductions may improve habitat by increasing nectar and host plant availability. Studies of treatments in other areas of piñon-juniper showed correlated increases of nectar plants, host plants, and butterflies (Koniak 1985, p. 559; Kleintjes *et al.* 2004, pp. 235–236). The one known larval host, green rabbitbrush, re-sprouts or invades vigorously after fires or other disturbances (Koniak 1985, p. 559). The Spring Mountains acastus checkerspot could benefit from fuels treatment activities after a period of time as the treatments improve nectar or host plant availability.

Information in our files confirms plans for a visitor center and associated trail, but does not indicate that these projects will have a significant negative impact on the Spring Mountains acastus checkerspot. Design criteria and measures were incorporated into the project, specifically into the design of a hiking trail in or along Kyle Canyon Wash, to prevent and minimize impacts to the Spring Mountains acastus checkerspot (Forest Service 2009, pp. 4–5). These criteria and measures include employing construction techniques to avoid or minimize temporary disturbance through known Spring Mountains acastus checkerspot breeding areas; prohibit construction of Kyle Canyon Wash Trail and buried utilities from early May to mid-July (to avoid the butterfly's flight season); erect temporary construction fencing along the proposed construction limits of planned

improvements prior to any ground-disturbing activities; require the contractor to contain all construction activities within the approved construction limits; maintain temporary fencing until notified by the Contracting Officer; collect native seed from appropriate larval host and nectar plants and revegetate temporary construction disturbance areas following completion of construction; implement construction dust control measures to minimize impacts to blooming nectar plant populations; reduce off-trail use in documented Spring Mountains acastus checkerspot breeding/mate selection areas; and construct a fence/barrier adjacent to the newly constructed trail in Kyle Canyon Wash. When the project is implemented in 2011 or later, the incorporated design criteria and measures will avoid or limit impacts to the Spring Mountains acastus checkerspot in Kyle Canyon Wash. Any impacts to the Spring Mountains acastus checkerspot in Kyle Canyon Wash are anticipated to be minor, and negligible to the overall population of the subspecies at this site.

Information Provided in the Petition Concerning the Potosi Mountain/Mt.

Potosi/Boy Scout Camp Colony Site: The petition asserts that a 2007 fuels reduction project stacked cut waste more than a meter high along and on both sides of the dirt road at this site, effectively blocking all male perching/mate locating sites (Boyd 2009, p. 3).

Evaluation of Information Provided in the Petition and Available in Service Files

Concerning the Potosi Mountain/Mt. Potosi/Boy Scout Camp Colony Site: We have no information in our files to dispute or support the assertion that blocking has occurred or could threaten the Spring Mountains acastus checkerspot at this colony site. We interpret

the term “blocked” to mean obstruction of male perching/mate locating sites as a result of these areas being covered by debris. There is no information in our files to determine if or to what extent the alleged blocking of male perching sites is still occurring at this site. Though the numbers of sites available for perching by males may be reduced temporarily if cut waste is piled for later treatment (commonly chipping or burning), other sites may be available since the Spring Mountains acastus checkerspot has been observed using multiple perch sites during mate locating (Kingsley 2008, pp. 4, 7–8).

As noted above, fuels reduction projects may have a short-term negative impact by reducing the number of male perching/mate locating sites. The petition provided no population estimates for this colony, nor do we have any information in our files regarding population estimates for this colony. However, the petition states that individuals of both sexes were found at the site in 2006, but no individuals were found during the 2007 flight season (Boyd 2009, p. 3). No surveys have been completed since 2007.

Information Provided in the Petition Concerning the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road Colony Site: The petition states that there is no immediate threat to habitat or range as a whole at this site (Boyd 2009, pp. 3–4).

Evaluation of Information Provided in the Petition and Available in Service Files Concerning the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road Colony

Site: We have no additional information on threats to Spring Mountains acastus checkerspot habitat or range at this site.

Information Provided in the Petition Concerning the Trough Spring Colony Site:

The petition asserts that horses and introduced elk are having negative effects on the Trough Spring colony site (Boyd 2009, p. 4). The petition also indicates that while the site is closed to off-highway vehicle use, violations are not uncommon (Boyd 2009, p. 4). In addition, the petition states that 20 individuals were found when the site was surveyed in 2002, 41 individuals were found during surveys in 2003, but 0 individuals were found during a 2007 visit to the site (Boyd 2009, p.4).

Evaluation of Information Provided in the Petition and Available in Service Files

Concerning the Trough Spring Colony Site: We have no information in our files to dispute or support the assertion that the area is used by horses, elk, and off-highway vehicles. However, neither the petition, nor any available information in our files, provides any information or supporting references that describe the scope, immediacy, and intensity of any of these potential stressors. Providing a list of threats that might impact the subspecies does not satisfy the substantial information standard required for a petition finding under the Act.

During three site visits in 2002, the highest total number of individuals counted was 20. During five site visits in 2003, the highest total number of individuals counted was 41 (Table 2). While the petition notes a single site visit in 2007 where no individuals

were found, conducting a single visit during the flight period is not in accordance with standard butterfly monitoring protocol and is not considered adequate to gauge abundance or derive trends. However, because we have no recent survey data for this site, we cannot rule out the possibility that the 2007 survey result of zero individuals may indicate a downward trend in numbers at this site.

#### Summary of Factor A

Fuels reduction projects, ungulate grazing and trampling, and off-highway vehicles may negatively affect Spring Mountains acastus checkerspot individuals and habitat. All of these activities could negatively alter habitat through one or more of the following mechanisms: crushing larvae, reducing the amounts of larval host plants, reducing the amount of adult nectar plants, and reducing the amount of male perching/mate location sites. Declines in numbers of individuals have been observed at sites where fuels reduction projects (Potosi Mountain/Mt. Potosi/Boy Scout Camp Colony Site), ungulate grazing and trampling (Trough Spring Colony Site), and off-highway vehicle activities (Trough Spring Colony Site) occur. This provides evidence to suggest that the Spring Mountains acastus checkerspot may be negatively affected by these activities. Based on this information, we conclude that there is substantial scientific or commercial information in the form of declines in numbers of individuals at these sites to indicate that listing the Spring Mountains acastus checkerspot may be warranted due to the present or threatened destruction, modification, or curtailment of the subspecies' habitat or range.

*B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes*

Neither the petition nor information in our files provides any information pertaining to Factor B with regard to the Spring Mountains acastus checkerspot. Nevertheless, during our status review for this subspecies, we will further investigate any potential threats under Factor B.

*C. Disease or Predation*

Neither the petition nor information in our files provides any information pertaining to disease or predation with regard to the Spring Mountains acastus checkerspot. Nevertheless, during our status review for this subspecies, we will further investigate any potential threats under Factor C.

*E. Other Natural or Manmade Factors Affecting Its Continued Existence*

Information Provided in the Petition Concerning the Kyle Canyon (middle)

Colony Site: The petition (Boyd 2009, p. 3) asserts highway contaminants, road salt, equestrian and vehicle traffic, and increasing abundance of *Medicago* sp., a nonnative alfalfa species, are threats to Spring Mountains acastus checkerspot at the Kyle Canyon (middle) colony site.

Evaluation of Information Provided in the Petition and Available in Service Files

Concerning the Kyle Canyon (middle) Colony Site: We have no information or supporting references that describe the scope, immediacy, and intensity to characterize any of these potential stressors. However, the small documented population at this site may increase the vulnerability of the Spring Mountain acastus checkerspot to other potential threats. We will further investigate these potential threats as they pertain to the Spring Mountains acastus checkerspot during our status review for this subspecies.

Information Provided in the Petition Concerning the Potosi Mountain/Mt.

Potosi/Boy Scout Camp Colony Site: The petition asserts that a protracted drought is adding to the stresses associated with the fuels reduction project at the Potosi Mountain/Mt. Potosi/Boy Scout Camp site (Boyd 2009, p. 3).

Evaluation of Information Provided in the Petition and Available in Service Files

Concerning the Potosi Mountain/Mt. Potosi/Boy Scout Camp Colony Site: It has been observed that during drought, butterfly populations may be lower (Ehrlich *et al.* 1980, pp. 101–105; Thomas 1984, p. 344). In 2006, populations of many butterfly species were low throughout southern Nevada, south of the Great Basin, likely as a result of drought conditions (Murphy 2006, p. 3). In 2007, other species of butterflies in the Spring Mountains experienced population declines and these declines were hypothesized to be a result of drought (Datasmiths 2007, p. 22). While Boyd (2008, p. 2) speculated that populations of other butterfly species may have declined as a result of drought and other factors, population trends of Spring Mountains acastus checkerspot were not being

specifically monitored. Though populations may be low during some years as a result of drought, checkerspot species (*Chlosyne* sp.) may survive unfavorable weather years by diapausing for two or more years (Scott 1986, p. 307). Drought may not be a threat in and of itself to the Spring Mountains acastus checkerspot. However, drought coupled with other factors, such as fuels reduction projects and other man-made stressors, may result in the Spring Mountains acastus checkerspot being more susceptible to other threats.

Information Provided in the Petition Concerning the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road Colony Site: The petition asserts that disturbance by vehicle and hiking traffic are threats at the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road colony site as a result of direct disturbance to the butterflies by vehicles and hikers (Boyd 2009, pp. 3–4). According to the petition, use of the road and trail appears to be increasing, which disturbs the butterflies during the flight period. The petition states that the numbers of individuals found during surveys at this site have continued to decline each year starting with 104 individuals in 2001, 50 individuals in 2002, 27 individuals in 2003, and 3 individuals in 2007 (Boyd 2009, p. 4). This site has not been visited since 2007.

Evaluation of Information Provided in the Petition and Available in Service Files Concerning the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road Colony Site: We have no information in our files to support or dispute the assertion that hikers and vehicular traffic are disturbing Spring Mountains acastus checkerspot at this site.

Neither the petition, nor any available information in our files, provide any information or supporting references that describe the scope, immediacy, and intensity of any of these potential stressors. Surveys found butterfly numbers fluctuated from 19 individuals in 2000; to 104 individuals in 2001; to 50 individuals in 2002; to 27 individuals in 2003 (Table 2). The numbers may continue to be low such as on the petitioner's 2007 site visit, where he observed three individuals (Boyd 2009, p. 4). Based on the declining trend observed at this site, vehicle and hiking traffic may be a threat to the Spring Mountains acastus checkerspot at this site.

Information Provided in the Petition Concerning the Trough Spring Colony Site:

Even though this site is relatively remote and is closed to motorized vehicles, the petition asserts that traffic from off-highway vehicle activity does occur, and is a threat at the Trough Spring site (Boyd 2009, p. 4). The petition also states that 20 individuals were found when the site was surveyed in 2002, 41 individuals were found during surveys in 2003, but 0 individuals were found during a 2007 site visit during the appropriate time of year (Boyd 2009, p. 4).

Evaluation of Information Provided in the Petition and Available in Service Files

Concerning the Trough Spring Colony Site: We have no information or supporting references that describe the scope, immediacy, and intensity to characterize this potential threat; however, given the recent drop in numbers of individuals at this site, we conclude that illegal motorized vehicle activity may be a threat to the Spring Mountains acastus

checkerspot at this site. We will further investigate this potential threat during our status review for this subspecies.

#### Summary of Factor E

Due to the documented declining population trends at the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road colony site and the Trough Spring colony site, we conclude that vehicle and hiking traffic disturbing the butterfly during the flight period may be a threat to the Spring Mountains acastus checkerspot. Information provided by the petition and available in our files suggests that drought may be a potential added stressor to the Spring Mountains acastus checkerspot at some locations where additional threats occur. Therefore, based on our review of available information, we conclude that there is substantial scientific or commercial information to indicate that listing the Spring Mountains acastus checkerspot may be warranted due to other natural or manmade factors affecting the subspecies' continued existence.

#### *D. The Inadequacy of Existing Regulatory Mechanisms*

The petition does not provide any information pertaining to the inadequacy of existing regulatory mechanisms with regard to the Spring Mountains acastus checkerspot. In addition, the Service files do not provide any information pertaining to the inadequacy of existing regulatory mechanisms for the Spring Mountains acastus checkerspot. During our status review for this subspecies, we will further investigate existing regulatory

mechanisms under Factor D as they pertain to potential threats to the Spring Mountains acastus checkerspot.

## **Finding**

On the basis of our evaluation of the petition under section 4(b)(3)(A) of the Act, we determine that the petition presents substantial scientific or commercial information indicating that listing the Spring Mountains acastus checkerspot as threatened or endangered may be warranted.

The available information indicates fuels reduction projects may have a negative impact to Spring Mountains acastus checkerspot individuals and habitat. The possible declining trends at the Potosi Mountain/Mt. Potosi/Boy Scout Camp Colony Site indicate that fuels reduction projects may be a threat to the Spring Mountains acastus checkerspot at this site (Factor A). In addition, potential declining population trends at the Griffith Peak Trail/Harris Spring Road/Harris Mountain Road colony site and the Trough Spring colony site indicate that vehicle and hiking traffic disturbing the butterfly flight period may be a threat to the subspecies (Factor E). Additionally, drought (Factor E) may be an added stressor to the Spring Mountains acastus checkerspot at some locations where additional threats occur.

Because we have found that the petition presents substantial information indicating that listing the Spring Mountains acastus checkerspot may be warranted, we

are initiating a status review to determine whether listing the Spring Mountains acastus checkerspot under the Act is warranted. All relevant information pertaining to each of the five factors will be fully evaluated in the forthcoming status review.

The “substantial information” standard for a 90-day finding differs from the Act’s “best scientific and commercial data” standard that applies to a status review to determine whether a petitioned action is warranted. A 90-day finding does not constitute a status review under the Act. In a 12-month finding, we will determine whether a petitioned action is warranted after we have completed a thorough status review of the species, which is conducted following a substantial 90-day finding. Because the Act’s standards for 90-day and 12-month findings are different, as described above, a substantial 90-day finding does not mean that the 12-month finding will result in a warranted finding.

### **References Cited**

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

### **Author**

The primary authors of this notice are staff members of the Nevada Fish and Wildlife Office (see **ADDRESSES**).

**Authority**

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

Dated: \_\_\_\_\_

\_\_\_\_\_

Director, U.S. Fish and Wildlife Service

~~[Endangered and Threatened Wildlife and Plants; 90-Day Finding on a Petition To List Spring Mountains Acastus Checkerspot as Endangered]~~