DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R2–ES–2016–0137; FXES11130900000 178 FF09E42000]

RIN 1018–BB89

Endangered and Threatened Wildlife and Plants; Reclassifying *Echinocereus fendleri* var. *kuenzleri* From Endangered to Threatened

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule and 12-month petition finding.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to reclassify *Echinocereus fendleri* var. *kuenzleri* (Kuenzler hedgehog cactus) from endangered to threatened under the Endangered Species Act of 1973, as amended (Act). After review of the best available scientific and commercial information, we find that reclassifying *E. fendleri* var. *kuenzleri* as threatened is warranted. This document also serves as our 12-month finding on a petition to reclassify *E. fendleri* var. *kuenzleri* as threatened. We request information and comments from the public regarding this proposed rule and our 12-month finding.

DATES: To ensure that we are able to consider your comments on this proposed rule, they must be received or postmarked on or before March 7, 2017. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by February 21, 2017.

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

(1) *Electronically:* Go to the Federal eRulemaking Portal:

http://www.regulations.gov. In the Search box, enter FWS–R2–ES–2016–0137, which is the docket number for this proposed rulemaking. Then, click on the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rules link to locate this document. You may submit a comment by clicking on ''Comment Now!''

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R2–ES–2016–0137; Division of Policy, Performance, and Management Programs; U.S. Fish and Wildlife Service, MS: BPHC; 5275 Leesburg Pike; Falls Church, VA 22041–3803.

We request that you send comments only by one of the methods described above. We will post all comments on *http://www.regulations.gov.* This generally means that we will post any personal information you provide us (see Information Requested, below, for more information).

Copies of documents: This proposed rule and supporting documents are available on *http://www.regulations.gov.* In addition, the supporting file for this proposed rule will be available for public inspection, by appointment, during normal business hours, at the New Mexico Ecological Services Field Office, 2105 Osuna Road NE., Albuquerque, NM 87113; telephone 505–346–2525.

FOR FURTHER INFORMATION CONTACT: Wally Murphy, Field Supervisor, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, 2105 Osuna Road NE., Albuquerque, NM 87113; telephone 505–761–2525; facsimile 505–346–2542. If you use a telecommunications device for the deaf (TDD), call the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Information Requested

Any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American Tribes, the scientific community, industry, or other interested parties concerning this proposed rule. The comments that will be most useful and likely to influence our decisions are those supported by data or peer-reviewed studies and those that include citations to, and analyses of, applicable laws and regulations. Please make your comments as specific as possible and explain the basis for them. In addition, please include sufficient information with your comments to allow us to authenticate any scientific or commercial data you reference or provide. In particular, we seek comments concerning the following:

(1) Reasons why we should or should not reclassify *Echinocereus fendleri* var. *kuenzleri* under the Act (16 U.S.C. 1531 *et seq.*).

(2) New biological or other relevant data concerning any threat (or lack thereof) to this plant and existing regulations that may be addressing these or any of the below threats.

(3) New information concerning the population size or trends of *E. fendleri* var. *kuenzleri.*

(4) New information on how *E. fendleri* var. *kuenzleri* responds to wildland and prescribed fire.

(5) New information on the current or planned activities within the range of *E. fendleri* var. *kuenzleri* that may adversely affect or benefit the plant.

(6) New information or data on the projected and reasonably likely impacts to *E. fendleri* var. *kuenzleri* or its habitat associated with climate change.

Please note that 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, as 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.''

Prior to issuing a final rule on this proposed action, we will take into consideration all comments and any additional information we receive. Such information may lead to a final rule that differs from this proposal. All comments and recommendations, including names and addresses, will become part of the administrative record.

You may submit your comments and materials concerning the proposed rule by one of the methods listed in **ADDRESSES**. Comments must be submitted to *http://www.regulations.gov* before 11:59 p.m. (Eastern Time) on the date specified in **DATES**. We will not consider hand-delivered comments that we do not receive, or mailed comments that are not postmarked, by the date specified in **DATES**. Please note that comments posted to this Web site are not immediately viewable. When you submit a comment, the system receives it immediately. However, the comment will not be publicly viewable until we post it, which might not occur until several days after submission.

If you mail or hand-deliver hardcopy comments that include personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. To ensure that the electronic docket for this rulemaking is complete and all comments we receive are publicly available, we will post all hardcopy submissions on *http://www.regulations.gov.*

In addition, comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection in two ways:

(1) You can view them on *http://www.regulations.gov.* In the Search box, enter FWS–R2–ES–2016–0137, which is the docket number for this rulemaking.

(2) You can make an appointment, during normal business hours, to view the comments and materials in person at the U.S. Fish and Wildlife Service's New Mexico Ecological Services Field Office (see **ADDRESSES**).

Public Hearing

Section 4(b)(5)(E) of the Act provides for one or more public hearings on this proposed rule, if requested. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by the date shown in **DATES**. We will schedule public hearings on this proposal, if any are requested, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** at least 15 days before the first hearing.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. A thorough review of information that we relied on in preparing this proposed rule—including information on taxonomy, genetics, life-history, ecology, population distribution and abundance, and potential threats from our recent 5-year review (Service 2016)—is available at *http://www.regulations.gov* under Docket No. FWS–R2–ES–2016–0137. The purpose of peer review is to ensure that decisions are based on scientifically sound data, assumptions, and analyses. A peer review panel will conduct an assessment of the proposed rule, and the specific assumptions and conclusions regarding the proposed reclassification from endangered to threatened (*i.e.,* ''downlisting''). This assessment will be completed during the public comment period.

We will consider all comments and information we receive during the comment period on this proposed rule as we prepare the final determination. Prior to issuing a final rule on this proposed action, we will take into consideration all additional information and comments that we receive. Such information may lead to a final rule that differs from this proposal.

Background

Found on slopes of sandy gravel and amid rocky outcrops in southern New Mexico, *Echinocereus fendleri* var. *kuenzleri* is a very small member of the cactus family (Cactaceae) that grows in Great Plains grassland, oak woodland, or pinon-juniper woodland within elevations of 1,600 to 2,000 meters (5,200 to 6,600 feet). Individuals may be single stemmed or branched; when branched, the stems are usually fewer than four, but may number as many as eight (Service 1985, p. 3). Stems are normally short-conical, about 15 centimeters (cm) (6 inches (in)) long and 10 cm (4 in) wide, with 9 to 12 ribs with prominent tubercles from which the spine clusters originate, and central spines are usually absent (Castetter *et al.* 1976, pp. 76–82, Service 1985, p. 3). Useful characteristics to distinguish the taxon from other cacti within its range are its few, contorted, white, chalky-textured spines and large, magenta flowers (Service 1985, p. 4). Fruits are bright red when mature, with black seeds. The cactus flowers in late May and fruits ripen in July, with flowering occurring after only when a cactus reaches 4 to 5 years of age. Like other rare cacti related to this genus, it is believed that *E. fendleri* var. *kuenzleri* is an obligate outcrosser (self-incompatible) that requires pollination for sexual reproduction (Tepedino 1998). Little is known about the pollinators of this cactus, but it most likely involves a range of nectar- seeking insects (Ferguson 1989, pp. 217–224).

When we originally listed this cactus in 1979, we were aware of only a single population of approximately 200 plants located on the east slope of the Sacramento Mountains in New Mexico (Chaves and Otero Counties) (44 FR 61924; October 26, 1979). When the recovery plan was adopted in 1985, the plant was known to exist in two locations with a total of fewer than 500 plants. It is now reasonable to estimate, based on recent surveys, that several thousand cacti exist within the known range of this taxon, with approximately 3,300 individuals observed within 11 known population centers since 1981, when more intensive surveys were initiated (Service 2005, entire; 2016, entire). Since 1979, the range of this plant has also been extended 10 miles to the west in Otero County, 40 miles north in Lincoln County (DeBruin 1993), and approximately 100 miles to the southeast (from its northwestern-most location in Lincoln County) into the Guadalupe Mountains of Eddy County. Numerous new locations within this range place it within the U.S. Department of Agriculture (USDA) -Forest Service and U.S. Department of the Interior (USDI)- Bureau of Land Management (BLM) jurisdictions as well on private and State lands. It has also been found on the west side of the Sacramento Mountains in Lincoln County (Knight 1999), and on USDA-Forest Service and USDI–BLM lands in the northern Guadalupe Mountains in Eddy and Otero Counties (Chauvin et al. 2001, Sivinski 1996). Populations are not continuous within this range, but are patchy, scattered, and rare.

Some have questioned the taxonomic status of *Echinocereus fendleri* var. *kuenzleri,* by considering it to be a synonym of the common and widespread *E. fendleri* var. *fendleri* (Anderson 2001, Zimmerman and Parfitt 2003). However, other assessments by local experts acknowledged that at the northwest edge of the cactus' range, within one of the 11 known populations, *E. fendleri* var. *kuenzleri* individuals occur along with the variety *E. fendleri* var. *fendleri* and intergradations between both varieties can be found (Rare Plant Technical Council of New Mexico 2005, Marron Associates 2000, entire; Baker 2007, entire). However, because the remaining 10 populations located more toward the center of *E. fendleri* var. *kuenzleri*'s known distribution exhibit consistently reliable traits unique to this variety, the cactus warrants future study to verify a change in its taxonomic status (Rare Plant Technical Council of New Mexico 2005). The full taxonomic history can be found in the recovery plan (Service 1985) with the most recent updates in the 5-year review (Service 2016, entire). Recent taxonomic review of the varieties of *Echinocereus fendleri* retained *kuenzleri* as a variety (Felix et al. 2014). Because of the limited area of introgression and the identification of consistently reliable traits unique to this variety, we do not believe a taxonomic change is warranted at this time.

For a detailed discussion of *Echinocereus fendleri* var. *kuenzleri*'s description, taxonomy, life history, habitat, soils, distribution, and abundance, and a discussion of the role of fire in the taxon's regeneration, please see the recovery plan (Service 1985, entire) and the 5-year reviews (Service 2005, entire; 2016, entire) available for review at *http://www.regulations.gov* under Docket No. FWS–R2–ES–2016–0137.

Previous Federal Actions

We proposed to list this plant, with the scientific name *Echinocereus hempelli,* as an endangered species under the Act on June 16, 1976 (41 FR 24524), because of threats from the great demand by private and commercial collectors, road maintenance and improvements, cattle grazing, and real

estate development. We published a final rule listing the plant, with the scientific name *Echinocereus kuenzleri,* as an endangered species in the **Federal Register** on October 26, 1979 (44 FR 61924). We finalized a recovery plan for the plant, with the scientific name *Echinocereus fendleri* var. *kuenzleri,* in March 1985 (Service 1985).

Under the Act, we maintain the Lists of Endangered and Threatened Wildlife and Plants at 50 CFR 17.11 (for wildlife) and 17.12 (for plants) (Lists). We amend the Lists by publishing final rules in the **Federal Register**. Section 4(c)(2)(A) of the Act requires that we conduct a review of listed species at least once every 5 years. Section 4(c)(2)(B) requires that we determine: (1) Whether a species no longer meets the definition of endangered or threatened and should be removed from the Lists (delisted), (2) whether a species listed as endangered more properly meets the definition of threatened and should be reclassified to threatened (''downlisted''), or (3) whether a species listed as threatened more properly meets the definition of endangered and should be reclassified to endangered (''uplisted''). In accordance with 50 CFR 424.11(d), using the best scientific and commercial data available, we will delist a species if the data substantiate that the species is neither endangered nor threatened for one or more of the following reasons: (1) The species is considered extinct; (2) the species is considered recovered; or (3) the original data available when the species was listed, or the interpretation of such data, were in error. On July 21, 2004, we published a notice (69 FR 43621) announcing that we were conducting a 5-year review of the status of *E. fendleri* var. *kuenzleri* under section 4(c)(2) of the Act. In that notice, we requested that the public provide us any new information concerning this plant. The 5-year review, completed on June 7, 2005 (Service 2005), resulted in a recommendation to change the status of this cactus from endangered to threatened. The 2005 and 2016 5-year reviews for *E. fendleri* var. *kuenzleri* are available on the Service's Environmental Conservation Online System (ECOS) (*https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=Q1VW*).

On July 16, 2012, we received a petition dated July 11, 2012, from The Pacific Legal Foundation, Jim Chilton, the New Mexico Cattle Growers' Association, New Mexico Farm & Livestock Bureau, New Mexico Federal Lands Council, and Texas Farm Bureau requesting the Service to reclassify *Echinocereus fendleri* var. *kuenzleri* from endangered to threatened. The petition was based on the analysis and recommendations contained in the most recent 5-year review for this taxon. On September 9, 2013 (78 FR 55046), we published in the **Federal Register** a 90-day finding for the 2012 petition to reclassify *E. fendleri* var. *kuenzleri.* In our 90-day finding, we determined the 2012 petition provided substantial information indicating the petitioned actions may be warranted, and we initiated a status review for *E. fendleri* var. *kuenzleri.* This proposed downlisting rule constitutes the 12-month finding and our 5-year status review for *E. fendleri* var. *kuenzleri.*

Recovery and Recovery Plan Implementation

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from the List. However, revisions to the List (adding, removing, or reclassifying a species) must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is endangered or threatened (or not) because of one or more of five threat factors. Section 4(b) of the Act requires that the determination be made ''solely on the basis of the best scientific and commercial data available.'' Therefore, recovery criteria should indicate when a species is no longer an endangered species or threatened species because of any of the five statutory factors.

Thus, while recovery plans provide important guidance to the Service, States, and other partners on methods of minimizing threats to listed species and measurable objectives against which to measure progress towards recovery, they are not regulatory documents and cannot substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of or remove a species from the Federal List of Endangered and Threatened Plants (50 CFR 17.12) is ultimately based on an analysis of the best scientific and commercial data then available to determine whether a species is no longer an endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

In 1985, we finalized a recovery plan for *E. fendleri* var. *kuenzleri* but it provides no delisting criteria (Service 1985). The recovery plan states that *E. fendleri* var. *kuenzleri* could be reclassified to threatened status when existing natural populations are increased to approximately 5,000 individual plants and when that population level is maintained for a period of 5 consecutive years (downlisting criterion 1) (Service 1985, p. iii). The second downlisting criterion is based on the need for the Service to develop policy for propagated cacti and the introduction of 10,000 artificially propagated *E. fendleri* var. *kuenzleri* into the commercial market to counter the threat at that time of collection.

The first criterion was intended to address the point at which imminent threats to the plant had been ameliorated so that the populations were no longer in immediate risk of extirpation. Estimated abundance of individuals in all populations has changed over time, from approximately 200 individuals at the time of listing in 1979, to multiple populations with more than 3,300 individuals (Service 2005, p. 4; Service 2016, pp. 3–4). We believe there are likely more than 3,300 individuals across the range of *E. fendleri* var. *kuenzleri* because the difficulty in locating nonflowering plants and the lack of survey efforts in the entire suitable habitat limit the ability to observe many of these cacti potentially growing in areas of suitable habitat.

Currently, *E. fendleri* var. *kuenzleri* occurs in 11 unique population clusters defined by occupied locations separated by several miles of unsuitable or unoccupied habitats. According to data maintained by Natural Heritage New Mexico, approximately 97 percent of known *E. fendleri* var. *kuenzleri* individuals occur on lands managed by either the USDA-Forest Service (FS) or USDI–BLM (2016). There are two populations in the Guadalupe Mountains (mid-range and north range), eight populations in the Sacramento Mountains (north of Carrizozo), and one population in the lower hills of the Guadalupe Mountains, east of the Sacramento range (Service 2005, p. 5; Service 2016, pp. 3–4). Based on this information, this plant is much more numerous than originally determined and is distributed over a broader area.

The second criterion is for the Service to develop policy for commercial propagation and to introduce 10,000 propagated individuals into the commercial market. *Echinocereus*

fendleri var. *kuenzleri* is now readily available on the open market from commercial growers with Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) certificates (see *https://www.cites.org* for additional information on CITES). Local populations, especially near the type locality (location where the species was first identified), may continue to be impacted by occasional poaching from growers and hobbyists; however, at this time, this taxon is unlikely to be seriously threatened in most of its range by cactus collectors, because of availability from commercial growers. Thus, collection is no longer considered a major threat to this cactus and this second criterion is no longer relevant.

Various studies have occurred since development of the recovery plan that aid in our understanding of the status of *Echinocereus fendleri* var. *kuenzleri.* For example:

- Recent surveys indicate that *E. fendleri* var. *kuenzleri* is broadly distributed within its range, plant density can vary from location to location, and populations may be more dynamic than they were expected to be. For example, at Ft. Stanton, the population demonstrated a shift from inside of the survey plot to establishment outside of the survey plot. (Chauvin et al. 2012, entire; Muldavin et al. 2013, entire).
- May et al. (2008, p. 170) found *E. fendleri* var. *kuenzleri* was distributed randomly with respect to other vegetation and did not support the hypothesis that it is associated with vegetation that provides thermal protection.
- Both Baker (2007, entire) and Felix et al. (2014, p. 64) found morphological characters than differentiate this taxon from other similar taxa.
- Sivinski (2007, p. 93) found that wildfire can cause high mortality in this cactus, and it was slow to recover, with first flowering occurring at between four to five years after seedlings germinated.
- May (2006, entire) and Wester and Britton (2007, p. 11) found that prescribed fire had little effect on *E. fendleri* var. *kuenzleri* under low fuel loads and that prescribed, low intensity fire could be used to lower fuel loads, reducing the risk of catastrophic wildfires.

These and other data that we have analyzed indicate that most threats identified at listing and during the development of the recovery plan are reduced in areas occupied by *E. fendleri* var. *kuenzleri* and that the status of the cactus has improved, primarily due to finding additional populations over a broader range. However, more recent threats associated with fire regime alteration, the lack of a comprehensive habitat management plan, drought, and climate change effects may impede the plant's ability to recover.

Summary of Factors Affecting *E. fendleri var. kuenzleri*

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing species on, reclassifying species on, or removing species from the Lists of Endangered and Threatened Wildlife and Plants. The term ''species'' includes ''any subspecies of fish or wildlife or plants, and any distinct population segment [DPS] of any species of vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. 1532(16)). A species may be determined to be an endangered species or threatened species because of any one or a combination 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 man-made factors affecting its continued existence. A species may be reclassified on the same basis.

Determining whether the status of a species has improved to the point that it can be reclassified from endangered to threatened (''downlisted'') requires consideration of whether the species is endangered or threatened because of the same five categories of threats specified in section 4(a)(1) of the Act. For species that are already listed as endangered or threatened, this analysis of threats is an evaluation of both the threats currently facing the species and the threats that are reasonably likely to affect the species in the foreseeable future following the delisting or downlisting and the removal of the Act's protections.

A species is an ''endangered species'' for purposes of the Act if it is in danger of extinction throughout all or a significant portion of its range and is a ''threatened species'' if it is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The word ''range'' in the significant portion of its range phrase refers to the range in which the species currently exists. For the purposes of this analysis, we first evaluate the status of *Echinocereus fendleri* var. *kuenzleri* throughout all of its range, then consider whether this cactus is in danger of extinction or likely to become so in any significant portion of its range.

At the time of listing, the primary threats to *E. f.* var. *kuenzleri* were private and commercial collection, road improvement and maintenance, real estate development, and livestock grazing (44 FR 61924; October 26, 1979). By the time the recovery plan was developed in 1985, the same threats were still considered relevant (Service 1985, pp. 8–12). Subsequently, we conducted 5-year status reviews that included an analysis of factors that affect the plant (Service 2005, pp. 12–14; Service 2016, p. 5). The 2005 5-year status review found that the threat of habitat loss from road improvement and maintenance and real estate development (Factor A), and a direct threat from commercial collection (Factor B) have decreased since the time of listing, and are no longer considered significant threats. Livestock grazing (Factor C), continues to be a threat by trampling, only if areas are improperly managed and cattle are aggregated in areas where the cacti are growing. The 2005 review also identified an additional threat of fire based on the alteration of the natural fire regime (Service 2005). The 2016 5-year status review added the threats of drought and effects due to climate change because drought has impacted several populations and the long-term trend in the range of the cactus is one of increased temperatures and drying (Service 2016).

Recommendations to address the impacts of these emerging threats, including a long-term monitoring plan for *Echinocereus fendleri* var. *kuenzleri,* should be developed to further understand how these threats affect the long-term viability of the taxon.

Habitat Loss—Road Construction and Maintenance, Residential Development

Habitat loss by road construction and maintenance and through residential development is negligible in the area occupied by *Echinocereus fendleri* var. *kuenzleri.* Where road construction has occurred in occupied areas, individual cacti have been avoided or mitigation has been provided (Marron Associates 2013, entire). If this proposed rule is adopted, this avoidance would likely continue because *Echinocereus fendleri* var. *kuenzleri* would remain listed as threatened. Residential development has not been a threat due to the preference of the plant to grow in dry, rugged locations not favored for development. More importantly, the majority of the populations discovered after the recovery plan was written are

found on federally managed lands that are not likely to be developed.

Livestock Grazing

Grazing at low intensity stocking rates can be compatible with the presence of *Echinocereus fendleri* var. *kuenzleri,* primarily because the cactus tends to be found in rocky outcrops amid rugged locations, although minimal trampling can occur. Areas on USDA-Forest Service and USDI–BLM lands have fenced out livestock to effectively protect the cactus in strategic locations. Additionally, federal grazing allotment permits are evaluated for renewal at least every 10 years and grazing impacts analysis is part of the permit review. Permits can be reviewed sooner to meet management goals. During this review, livestock numbers can be adjusted to achieve conservation goals. Each range improvement (*e.g.,* water pipeline, fence, livestock water) on Federal surface is evaluated for impacts to special status species including endangered and threatened species. Each agency uses project-specific conservation measures to avoid impacts to *E. fendleri* var. *kuenzleri.*

Private and Commercial Collection

As mentioned previously, the collection of *Echinocereus fendleri* var. *kuenzleri* is uncommon at this time, due to the legal availability of the cactus in the commercial market. Certified commercial growers have *Echinocereus fendleri* var. *kuenzleri* readily available on the open market in accordance with CITES.

The following sections provide a summary of the current threats impacting *Echinocereus fendleri* var. *kuenzleri* now and those that may occur in the foreseeable future. These threats include alteration of the fire regime (Factors A and E), drought (Factors A and E), effects due to climate change (Factors A and E), and the effect of any existing regulatory mechanisms (Factor D) or conservation efforts that are ameliorating these impacts.

Fire Regime Alteration

Both arid grasslands and pinyon-juniper savanna, where *E. f.* var. *kuenzleri* occurs, had short-interval fire frequency historically (Payson et al. 2000, p. 122; Gebow and Halverson 2005, p. 4). The fire frequency interval has been extended by fire suppression and grazing (Payson et al. 2000, pp. 126, 132; Gebow and Halverson 2005, p. 4). Livestock grazing reduces the total amount of fine fuels (grasses) that would otherwise carry wild fire across a landscape, thus, extending the period between hotter, more damaging fire events. Use of prescribed fire as a management tool has been growing and is currently implemented to restore grasslands and savannas that have been impacted by historical fire suppression and grazing (Knapp et al. 2009, p. 1). Fires, whether wild or prescribed, within the grassland habitats of *Echinocereus fendleri* var. *kuenzleri* can have impacts to the cactus (Sivinski 2007, entire), such as slowing recovery and lessening the cactus' ability to withstand a short-interval fire frequency. The cactus typically undergoes about four to five years of slow growth before individuals are able to flower and set seed, so recolonization after a fire can take many years (Sivinski 2007, p. 4). However, Wester and Britton (2007, p. 11) found no evidence that the plant was negatively affected by prescribed fire, although high fuel loads did increase individual mortality. This suggests that prescribed burns in *Echinocereus fendleri* var. *kuenzleri* habitat could be designed to remove fuel loads without causing direct mortality associated with wildfire (May 2006, p. 44). While we originally believed that fire would negatively impact the *Echinocereus fendleri* var. *kuenzleri,* we now believe that active management, including the use of low intensity prescribed fire at longer frequencies, could restore the landscape to a natural fire frequency interval, reducing the likelihood of catastrophic wild fires, and thus, reducing impacts on the cactus when fire does occur. Because the cactus is capable of reproducing from seed, but reestablishment of populations may take considerable time, fire frequencies between 25 and 50 years have been recommended (Sivinski 2007, Muldavin 2012) to achieve the best population sustainability. A comprehensive habitat management plan should be developed to ensure that the use of fire is coordinated to optimize conditions for *Echinocereus fendleri* var. *kuenzleri.*

Drought

During 11 of the last 15 years (2001–2015), there has been moderate to exceptional drought conditions in the area where *Echinocereus fendleri* var. *kuenzleri* occurs, with 10 percent of the time in exceptional drought (National Drought Mitigation Center 2015, Four County Data). The 2002–2003 drought spanned all of southwestern North America and was anomalously dry with unusually high temperatures (Breshears et al. 2005, pp. 15, 144); similar conditions occurred in 2011–2013.

Echinocereus fendleri var. *kuenzleri* has likely experienced and rebounded from periods of drought in the past. However, should substantial effects due to climate change materialize with increased severity and frequency of drought, it would likely reduce the long-term survivorship of this cactus. Drought is also directly related to *Echinocereus fendleri* var. *kuenzleri* population health with regard to reproduction and establishment. As with many cactus species, seed germination and seedling survival is dependent on precipitation (Jordan and Nobel 1981, p. 905). Little is known about the *Echinocereus fendleri* var. *kuenzleri* seedbank. Even if seedbanks exist and persist, adequate precipitation during the seedling's first year of growth is essential for survival (Roller 1996a, p. 38). In studies of seed germination in similar cacti, Roller (1996a, p. 77) found that on average 88 percent of all seed produced during the summer monsoon season germinated; however, only a small portion of the seedlings survived. Surveys show few seedlings and young juvenile plants among the *Echinocereus fendleri* var. *kuenzleri* population survive (*e.g.* Ecosphere Environmental Services Inc. 1995, pp. 17–21; Schmalzel 2000d, p. 5; Baker 2011, pp. 5–7). Heat stress in adult cacti is minimal compared to other plant species, as they are able to survive heat stress due to both morphology and metabolism (Smith et al. 1984, pp. 647, 650; Wahid et al. 2007, p. 199). Extreme temperatures can, however, negatively impact seedling survival in many desert-adapted plants, and drought coupled with high temperatures lessens temperature tolerance in seedlings (Nobel 1984, pp. 310, 316). Finally, plants that are already stressed from prolonged drought are more susceptible to insect attack and disease. Without sufficient monitoring in place to assess *Echinocereus fendleri* var. *kuenzleri's* demographic responses and population trends, the severity of the threat of drought can only be surmised based on other cacti and other drought research.

Climate Change

Based on the unequivocal evidence of warming of the earth's climate from observations of increases in average global air and ocean temperatures, widespread melting of glaciers and polar ice caps, and rising sea levels recorded in the Intergovernmental Panel on Climate Change Report (IPCC 2007a, entire; 2013, entire), effects due to climate change are now a consideration for Federal agency analysis (Government Accounting Office 2007, entire). The Service will incorporate climate change into our decision making under the Act (Service 2010, entire). The earth's surface has warmed by an

average of 0.74 degrees Celsius (°C) (1.3 degrees Fahrenheit (°F)) during the 20th century (IPCC 2007b, p. 30). The IPCC (2013, p. 7) projects that there will very likely be an increase in the frequency of hot extremes, heat waves, and heavy precipitation events as a result of climate change.

This global climate information has been downscaled to our region of interest, and projected into the future under two different scenarios of possible emissions of greenhouse gases (Alder and Hostetler 2014, p. 2). Climate projections for the cactus area include a 5 to 6 percent increase in maximum temperature (up to 4 °C (7.2 °F)), an 11 percent decrease in precipitation, and a 25 percent increase in evaporative deficit over the next 25 years (National Climate Change Viewer, Four County Data, *http://www2.usgs.gov/climate_landuse/clu_rd/nccv/viewer.asp,* accessed May 15, 2016).

Effects due to climate change also include an increase in atmospheric carbon dioxide, which is commonly associated with increased temperatures and the greenhouse effect. This increased carbon dioxide directly affects plant photosynthesis (Huxman and Scott 2007, p. 28). At the plant level, adapting to drought involves the ability to balance carbon sequestration (the uptake and storage of carbon) and carbon respiration (efflux back into the atmosphere), while also maintaining sustainable evapotranspiration rates (Huxman and Scott 2007, p. 28). Adaptation would also require a plant to change its phenology (timing of life cycle events) to coincide successfully with extreme shifts in temperature, precipitation, and soil moisture (Walther et al. 2002, p. 389), which are all part of the evapotranspiration equation. The potential for rapid climate change, which is predicted for the future, could pose significant challenges for plants because they may not be able to adjust their phenology or photosynthetic mechanisms quickly enough.

Cacti have a unique photosynthetic pathway referred to as crassulacean acid metabolism (CAM), which is most effective in low soil moisture, intense sunlight, and high daytime temperature conditions, and is considered to be a desert adaptation (Nefzaoui et al. 2014, p. 121). CAM plants may have an advantage under these drier condition scenarios due to the effects of climate change (Reyes-Garcia and Andrade 2009, p. 755). If atypical cactus mortality occurs, this could be evidence that a climatic severity threshold may have been crossed even for this well-adapted CAM plant.

Munson et al. (2013, p. 2,030) forecasts declines in vegetative cover including cacti in Chihuahuan Desert habitats due to climate change. This is because growing seasons are becoming longer and warmer and in many regions (Kunkel 2013, p. 1) including the Southwest (Cayan et al. 2001, p. 399; Easterling 2002, p. 1329) due to the effects of climate change. This trend of longer and warmer growing seasons is projected to continue in the current climate change assessments. Earlier soil moisture stress would result in decreased flowering and reproduction for *Echinocereus fendleri* var. *kuenzleri.* Based on the limited distribution of this cactus, we consider drought and climate change an ongoing, yet not imminent, threat to *Echinocereus fendleri* var. *kuenzleri.*

Combination of Threats

When stressors occur together, one may exacerbate the effects of another, causing effects not accounted for when stressors are analyzed individually. Synergistic or cumulative effects may be observed in a short amount of time or may not be noticeable for years into the future, and could affect the long-term viability of *Echinocereus fendleri* var. *kuenzleri* populations. Livestock grazing interacts with the effect of natural fire frequency within *Echinocereus fendleri* var. *kuenzleri* habitats. Removal of fine fuels by grazing animals reduces the ability of a fire to start and carry through the landscape. Land managers have in the past followed an aggressive wildfire suppression program. The result is a disruption of the natural fire regime and an increase of woody vegetation in grassland and savanna habitats. Land managers presently see the need to reintroduce low intensity fire into these habitats for the purpose of restoring grasslands and increasing forage for livestock production. Impacts of these interacting processes to *E. fendleri* var. *kuenzleri* can be variable, and will need to be studied and management will be needed to provide the best outcome for the cactus.

Another threat combination can occur between drought, climate change effects, and predation. Although predation has not been a monitored factor for *Echinocereus fendleri* var. *kuenzleri,* in the case of other native small cacti, evidence of increased herbivory of adult cacti and seedlings by insect and mammalian predators has been observed during drought, most likely due to increases in thirst and decreases in other available forage. Rodents consume cacti for water, especially in times of drought (Riegel 1941, p. 96; Orr et al. 2015, p. 1058). Herbivory of cacti can also increase following damage to protective spines, such as post-fire. The rate of insect herbivory may increase due to warmer winters in recent decades (Rutman 2007, p. 6). Cacti already stressed from prolonged drought are more susceptible to insect attack and disease, which can cause declines in cactus populations.

Overall Summary of Factors Affecting E. fendleri var. kuenzleri

Alterations to the fire regime, including implementation of agency guidance to suppress wildland fires and changes to livestock grazing strategies, are likely the most immediate threatening factors to *Echinocereus fendleri* var. *kuenzleri* at this time. Staff at BLM and Fort Stanton are actively managing to keep fire from directly impacting *Echinocereus fendleri* var. *kuenzleri* individuals during prescribed burns. They are also implementing projects to remove pinyon and juniper trees thereby reducing heavy fuel loads. This management is expected to continue into the future. Increased emphasis on prescribed fire could mimic the natural historical fire regime and reduce the likelihood of damaging wildland fire in heavy fuel load areas. A comprehensive management plan that would guide standardized monitoring and address protection of the cactus for future prescribed fire programs may best be implemented after a species status assessment is conducted for *E. f.* var. *kuenzleri,* when more collaborators combine ideas of best adaptive management. This management plan will prove useful in addressing the remaining threats to the cactus.

The effects of climate change may cause extended periods of drought and alter blooming seasons, thus reducing the chances of successful reproduction cycles. Due to the rugged locations of occupied habitats, impacts from surface development (road building and maintenance, urban development) are not considered major threats to the existence of *Echinocereus fendleri* var. *kuenzleri.* Collection of *Echinocereus fendleri* var. *kuenzleri* is no longer considered a major threat due to successful propagation in legal cactus trade and commercial availability of this cactus. In addition, taxonomic uncertainties have been resolved at a regional level.

Finding

The determination of whether a species is endangered or threatened under the Act is based on whether a species is in danger of extinction or likely to become so because of any of five factors: (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. As required by section 4(a)(1) of the Act, we conducted a review of the status of this plant and assessed the five factors to evaluate whether *Echinocereus fendleri* var. *kuenzleri* is endangered or threatened throughout all of its range. We examined the best scientific and commercial information available regarding the past, present, and future threats faced by this cactus. We reviewed information presented in the 2012 petition, information available in our files and gathered through our 90-day finding in response to this petition, and other available published and unpublished information.

In considering factors that might constitute threats to a species, we must look beyond the exposure of the species to a factor to evaluate whether the species responds to the factor in a way that causes impacts to the species or is likely to cause impacts in the future. If a species responds negatively to such exposure, the factor may be a threat and, during the status review, our aim is to determine whether impacts are or will be of an intensity or magnitude to place the species at risk. The factor is a threat if it drives, or contributes to, the risk of extinction of the species such that the species warrants listing as an endangered or threatened species as those terms are defined by the Act. This does not necessarily require empirical proof of a threat. The combination of exposure and some corroborating evidence of how the species is likely affected could suffice. In sum, the mere identification of factors that could affect a species negatively is not sufficient to compel a finding that listing is appropriate; we require evidence that these factors act on the species to the point that the species meets the definition of an endangered or threatened species.

The known range of *Echinocereus fendleri* var. *kuenzleri* consisted of a single population of approximately 200 individuals when we listed it as endangered. As such, it was perceived to be upon the brink of extinction. The most serious threat to such a small population would be the elimination of plants in the wild by commercial and hobbyist collectors. Subsequent information on the range and abundance of this cactus has significantly altered this perception. In reality, *Echinocereus fendleri* var. *kuenzleri* exists across a much broader geographic range in several populations. Increased survey efforts and habitat model development have resulted in more occupied habitat identified, leaving open the potential of finding even more *Echinocereus fendleri* var. *kuenzleri* plants. Protection under the Act and CITES has curtailed unauthorized take by collectors. Dry conditions and remote growing locations of *Echinocereus fendleri* var. *kuenzleri* have lessened the impacts of land use within occupied habitats, and most of these habitats have been determined to exist on Federal lands. Thus, threats of collection and development have been diminished. Therefore, *Echinocereus fendleri* var. *kuenzleri* is no longer in danger of extinction now. Although now known to be more widespread and abundant than previously thought, *Echinocereus fendleri* var. *kuenzleri* remains a relatively rare plant taxon. It occurs only on the lower slopes of Sacramento and Guadalupe Mountain ranges and is an uncommon plant within this limited geographic range. Populations are generally small and scattered, and some habitat that appears suitable is presently unoccupied. Threats remain related to its limited population numbers and distribution, to wild or prescribed fires, and to trampling and erosion from livestock grazing and fire. However, because nearly all of known occupied habitat falls on lands managed by Federal agencies, conservation of the species will continue by addressing potential fire and grazing threats.

The recently published taxonomic determinations of *Echinocereus fendleri* var. *kuenzleri* status represent broad-brushed approaches that may not adequately address local variation. To establish the taxonomic status of *Echinocereus fendleri* var. *kuenzleri,* surveys are needed to determine the extent of interbreeding at the northern edge of the range and molecular research is needed to determine the genetic variation within *E. fendleri.* The controversy and lack of definitive data regarding the taxonomy of *Echinocereus fendleri* var. *kuenzleri,* combined with the limited distribution and actual population numbers, preclude a recommendation to delist based on taxonomic revision at this time.

As a result of recent information, we know that there are 11 known populations of *Echinocereus fendleri* var. *kuenzleri* compared to only 2 that were known at the time of listing and these individuals are spread across a 100 miles of rocky, isolated habitat patches. Significant impacts at the time of listing such as over collection and residential development that could have resulted in the extirpation of all or parts of populations have been eliminated or reduced since listing. We conclude that the previously recognized impacts to *E. fendleri* var. *kuenzleri* from present or threatened destruction, modification, or curtailment of its habitat or range (specifically, residential development, road maintenance) (Factor A); overutilization for commercial, recreational, scientific, or educational purposes (Factor B); disease or predation (Factor C); and other natural or manmade factors affecting its continued existence (specifically, reproductive isolation) (Factor E) do not rise to a level of significance, either individually or in combination, such that the species is in danger of extinction now. However, there continues to be concern about the long term impacts of drought, catastrophic wildfire, and effects due to climate change throughout the range of the species. Climate change data indicate an increase in temperature and a decrease in precipitation within the occupied *Echinocereus fendleri* var. *kuenzleri* range over the next 25 years. We anticipate that effects due to climate change, fire, and increased drought, and the compounding effects of these threats, including any associated threats such as increased herbivory and predation, are anticipated to impact all of the populations. However, none of these is an imminent threat or at a magnitude such that the taxon warrants endangered status. We conclude that these same factors support the status of threatened, as the cactus is still likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

In conclusion, we have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by *Echinocereus fendleri* var. *kuenzleri.* After review of the information pertaining to the five factors, we find that the ongoing threats are not of sufficient imminence, intensity, or magnitude to indicate that *E. fendleri* var. *kuenzleri* is presently in danger of extinction throughout all of its range. Yet, due to threats with ongoing impacts, we find that *E. fendleri* var. *kuenzleri* is likely to become an endangered species within the foreseeable future throughout all of its range.

Significant Portion of the Range Analysis

On July 1, 2014, we published a final policy interpreting the phrase ''significant portion of its range'' (SPR) (79 FR 37578). The SPR policy is

applied to all status determinations, including analyses for the purposes of making listing, delisting, and reclassification determinations. The procedure for analyzing whether any portion is an SPR is similar, regardless of the type of status determination we are making. The first step in our analysis of the status of a species is to determine its status throughout all of its range. If we determine that the species is in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range, we list the species as an endangered or threatened species and no SPR analysis will be required. Because we are proposing to reclassify the listing status of *E. f.* var. *kuenzleri* as a threatened species under the Act, we are not conducting an SPR analysis for this taxon.

Effects of This Rule

If this proposed rule is made final, it would revise 50 CFR 17.12(h) to reclassify *Echinocereus fendleri* var. *kuenzleri* from endangered to threatened on the List of Endangered and Threatened Plants. However, this reclassification does not significantly change the protections afforded this plant under the Act. Pursuant to section 7 of the Act, all Federal agencies must ensure that any actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of *Echinocereus fendleri* var. *kuenzleri.* The prohibitions of section 9 of the Act only apply directly to endangered species. However, the Service has extended most of these prohibitions to threatened plants through 50 CFR 17.71. The Act allows for the promulgation of a rule under section 4(d) that modifies the standard protections for threatened plants (found at 50 CFR 17.71); however no such rule is proposed here. In light of this, the prohibitions of 50 CFR 17.71 will apply for this species.

As applicable, recovery actions directed at *Echinocereus fendleri* var. *kuenzleri* will continue to be implemented as outlined in the recovery plan for this taxon (Service 1985, entire). One of the primary actions will be to develop a species status assessment, upon which we will base a revised recovery plan with delisting criteria for the cactus. Section 4(b)(6)(C) of the Act (16 U.S.C. 1533(b)(6)(C)) requires critical habitat to be designated concurrently with a final reclassification rule, unless it is not prudent or determinable. We will determine if critical habitat is prudent and determinable, and publish proposed critical habitat as necessary.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(a) Be logically organized;

(b) Use the active voice to address readers directly;

(c) Use clear language rather than jargon;

(d) Be divided into short sections and sentences; and

(e) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the names of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act

We determined we do not need to prepare an environmental assessment or an environmental impact statement, as defined under the authority of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*), in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

References Cited

A complete list of all references cited in this proposed rule is available on the Internet at *http://www.regulations.gov* under Docket No. FWS–R2–ES–2016–0137 or upon request from the Field Supervisor, New Mexico Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Author

The primary author of this proposed rule is the Southwest Regional Office in Albuquerque, New Mexico, in coordination with the New Mexico Ecological Services Field Office in Albuquerque, New Mexico (see **FOR FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

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

Proposed Regulation Promulgation

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

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

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

■ 2. Amend § 17.12(h) by revising the entry for ''*Echinocereus fendleri* var. *kuenzleri*'' under FLOWERING PLANTS in the List of Endangered and Threatened Plants to read as follows:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Scientific name	Common name	Where listed	Status	Listing citations and applicable rules
FLOWERING PLANTS.				
*	*	*	*	* *
Echinocereus fendleri var. *kuenzleri.*	Kuenzler hedgehog cactus.	Wherever found	T	44 FR 61924, 10/26/1979; [**Federal Register** citation of the final rule].
*	*	*	*	* *

Dated: December 22, 2016.

James W. Kurth,

Acting Director, Fish and Wildlife Service.

[FR Doc. 2016–31763 Filed 1–5–17; 8:45 am]

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