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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2020–0017; FF08E00000 FXES11110800000 212]

RIN 1018-BF94

Endangered and Threatened Wildlife and Plants; Endangered Species Status for Tiehm's Buckwheat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list *Eriogonum tiehmii* (hereafter Tiehm's buckwheat), a plant species native to Nevada in the United States, as endangered under the Endangered Species Act of 1973, as amended (Act). If we finalize this rule as proposed, it would add this species to the List of Endangered and Threatened Plants and extend the Act's protections to the species.

DATES: We will accept any additional data, information, or comments received or postmarked on or before [INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for a public hearing, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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

(1) *Electronically*: Go to the Federal eRulemaking Portal: *https://www.regulations.gov*. In the Search box, enter the docket number or RIN for this rulemaking (presented above in the document headings). For best results, do not copy and

paste either number; instead, type the docket number or RIN into the Search box using hyphens. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on "Comment."

(2) *By hard copy*: Submit by U.S. mail to: Public Comments Processing, Attn: FWS–R8–ES–2020–0017, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

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

Availability of supporting materials: Our Species Status Assessment for Tiehm's buckwheat is available at *https://www.fws.gov/reno/* and at *https://www.regulations.gov* under Docket No. FWS–R8–ES–2020–0017.

FOR FURTHER INFORMATION CONTACT: Marc Jackson, Field Supervisor, U.S. Fish and Wildlife Service, Reno Ecological Services Field Office, 1340 Financial Boulevard, Suite 234, Reno, Nevada 89502; telephone 775–861–6337. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Endangered Species Act of 1973, as amended ("Act"; 16 U.S.C. 1531 et seq.), if we determine that a species is an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the *Federal Register*, unless doing so is precluded by higher-priority actions and expeditious progress is being made to add and remove

qualified species to or from the Lists of Endangered and Threatened Wildlife and Plants. The Service will make a determination on our proposal within 1 year. If there is substantial disagreement regarding the sufficiency and accuracy of the available data relevant to the proposed listing, we may extend the final determination for not more than six months. To the maximum extent prudent and determinable, we must designate critical habitat for any species that we determine to be an endangered or threatened species under the Act. Listing a species as an endangered or threatened species and designation of critical habitat can only be completed by issuing a rule.

What this document does. We propose to list Tiehm's buckwheat as an endangered species under the Act.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species 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. We have determined that Tiehm's buckwheat is primarily at risk of extinction due to the destruction, modification, or curtailment of its habitat and range from mineral exploration and development; road development and off-highway vehicle (OHV) use; livestock grazing; nonnative, invasive plant species; and herbivory. Climate change may further influence the degree to which some of these threats (herbivory and nonnative invasive plant species), individually or collectively, may affect Tiehm's buckwheat. In addition, existing regulatory mechanisms may be inadequate to protect the species.

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary) to designate critical habitat concurrent with listing to the maximum extent prudent and determinable. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas

within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat. In this proposed rule, we present our determination that designating critical habitat is prudent but not determinable at this time, and that we intend to propose designated critical habitat subsequently.

Peer review. In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we solicited reviews of the draft Species Status Assessment (SSA) for Tiehm's buckwheat. We sought the expert opinions of four independent specialists with expertise in botany, rare plant conservation, and plant ecology, and received responses from three of said experts. The purpose of peer review of the SSA report is to ensure that our listing determination is based on scientifically sound data, assumptions, and analyses. Comments from peer reviewers have been incorporated into our SSA as appropriate.

Information Requested

We intend that 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 any other interested parties concerning this proposed rule.

We particularly seek comments concerning:

(1) Tiehm's buckwheat biology, distribution, and population size and trend, including:

(a) Biological or ecological requirements of the species, including habitat requirements for pollination, reproduction, and dispersal;

(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) Ongoing conservation measures for the species, its habitat, or both.

(2) Factors that may affect the continued existence of the species, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species and existing regulations that may be addressing those threats.

(4) Additional information concerning the historical and current status, range, distribution, and population size of this species, including the locations of any additional populations of this species.

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.

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 a threatened species must be made "solely on the basis of the best scientific and commercial data available."

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via *https://www.regulations.gov*, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes 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. We will post all hardcopy submissions on *https://www.regulations.gov*.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *https://www.regulations.gov*.

Because we will consider all comments and information we receive during the comment period, our final determinations may differ from this proposal. Based on the new information we receive (and any comments on that new information), we may conclude that the species is threatened instead of endangered, or we may conclude that the species does not warrant listing as either an endangered species or a threatened species.

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the *Federal Register* and by news release at least 15 days before the hearing. For the immediate future, we will provide these public hearings using webinars that will be

announced on the Service's website, in addition to the *Federal Register*. The use of these virtual public hearings is consistent with our regulations at 50 CFR 424.16(c)(3).

Previous Federal Actions

On October 7, 2019, we received a petition from the Center for Biological Diversity (CBD; CBD 2019, entire) requesting that Tiehm's buckwheat be listed as threatened or endangered, that critical habitat be concurrently designated for this species under the Act, and that the petition be considered on an emergency basis. The Act does not provide for a process to petition for emergency listing; therefore, we evaluated the petition to determine if it presented substantial scientific or commercial information indicating that the petitioned action may be warranted. The Service published a 90-day finding on July 22, 2020 (86 FR 44265), stating that the petition presented substantial scientific or commercial information indicating that listing Tiehm's buckwheat may be warranted.

On September 29, 2020, CBD filed a complaint in the U.S. District Court for the District of Nevada against the Service alleging violations under the Administrative Procedure Act (5 U.S.C. 551 et seq.); CBD amended the complaint on October 14, 2020, to include a claim under the Act that the Service had missed the 1-year deadline of October 7, 2020, for issuing a 12-month finding for Tiehm's buckwheat. On April 21, 2021, the court issued a decision, and, in response to a stipulated request for a revised remedy order, on May 17, 2021, the court ordered the Service to deliver a 12-month finding on Tiehm's buckwheat to the *Federal Register* by May 31, 2021, and if warranted, a proposed listing rule by September 30, 2021, and if warranted and designating critical habitat is prudent and determinable, a proposed critical habitat determination by January 31, 2022 (or May 2, 2022, if the determination is deemed a "significant regulatory action" by the Office of Management and Budget). On May 20,

2021, the court issued an amended judgment, which serves as the final judgment in this case.

On June 4, 2021, the Service published a 12-month warranted finding (86 FR 29975) on the October 7, 2019, petition to list Tiehm's buckwheat. The Service now proposes to list Tiehm's buckwheat as an endangered species.

Supporting Documents

The Service prepared an SSA report for the Tiehm's buckwheat (Service, 2021 entire). The science provided in the SSA report is the basis for this proposed rule. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including past, present, and future impacts (both negative and beneficial) affecting the species. The SSA underwent independent peer review by scientists with expertise in botany, rare plant conservation, and plant ecology. The Service also sent the SSA report to three partner agencies, the Nevada Division of Forestry, the Nevada Division of Natural Heritage (NDNH), and the Bureau of Land Management (BLM), for review. We received comments from NDNH and BLM. Comments received during peer and partner review were considered and incorporated into our SSA.

Proposed Listing Determination

Background

A thorough review of the taxonomy, life history, and ecology of Tiehm's buckwheat is presented in the SSA report (Service 2021, pp. 13–22). A summary of the SSA is provided below.

Species Description, Habitat, and Needs

Tiehm's buckwheat was first discovered in 1983 and described in 1985. All available taxonomic and genetic research information indicates that Tiehm's buckwheat is a valid and recognizable taxon and represents a distinct species. Tiehm's buckwheat is

a low-growing perennial herb, with blueish gray leaves and pale, yellow flowers that bloom from May to June and turn red with age. Seeds ripen in late-June through mid-July (Reveal 1985, pp. 277–278; Morefield 1995, pp. 6–7).

Tiehm's buckwheat occurs between 5,906 and 6,234 feet (ft; 1,800 and 1,900 meters (m)) in elevation and on all aspects with slopes ranging from 0–50 degrees (Ioneer 2020a, p. 5; Morefield 1995, p. 11). The species occurs on dry, upland sites, subject only to occasional saturation by rain and snow and is not found in association with free surface or subsurface waters (Morefield 1995, p. 11). Although there is no information on Tiehm's buckwheat's specific water needs during its various life stages (i.e., dormant seed, seedling, juvenile, adult), it appears to be primarily dependent on occasional precipitation for its moisture supply (Morefield 1995, p. 11). Like most terrestrial plants, Tiehm's buckwheat requires soil for physical support and as a source of nutrients and water. Tiehm's buckwheat is a soil specialist specifically adapted to grow on its preferred soil type. The species is restricted to dry, open, relatively barren slopes with light-colored rocky clay soils derived from an uncommon formation of interbedded claystones, shales, tuffaceous sandstones, and limestones (Ioneer 2020a, p. 5; Morefield 1995, p. 10). Vegetation varies from pure stands of Tiehm's buckwheat to sparse associations with a few other low-growing herbs and grass species (Morefield 1995, p. 12). The abundance and diversity of arthropods (insects, mites, and spiders) observed in Tiehm's buckwheat subpopulations is especially high (1,898 specimens from 12 orders, 70 families, and 129 species were found in 2020) for a plant community dominated by a single plant species (McClinton *et al.* 2020, p. 11). Primary pollinator visitors to Tiehm's buckwheat include wasps, beetles, and flies (McClinton *et al.* 2020, p.18). Tiehm's buckwheat benefits from pollinator services and needs pollination to increase seed production.

Tiehm's buckwheat is a narrow-ranging endemic known only from one population, comprising eight subpopulations, in the Rhyolite Ridge area of Silver Peak

Range in Esmeralda County, Nevada. The single population of Tiehm's buckwheat is restricted to approximately 10 acres (4 hectares) across a 3-square-mile area, located entirely on public lands administered by BLM. The subpopulations are separated by a rural, unpaved, county road where subpopulations 1, 2, and 8 occur north of the road, and subpopulations 3, 4, 5, 6, and 7 occur south of the road (Figure 1). A 2019 survey estimated that the total Tiehm's buckwheat population is 43,921 individual plants (Table 1; Kuyper 2019, p. 2). Multiple survey efforts have not detected additional populations of the species.

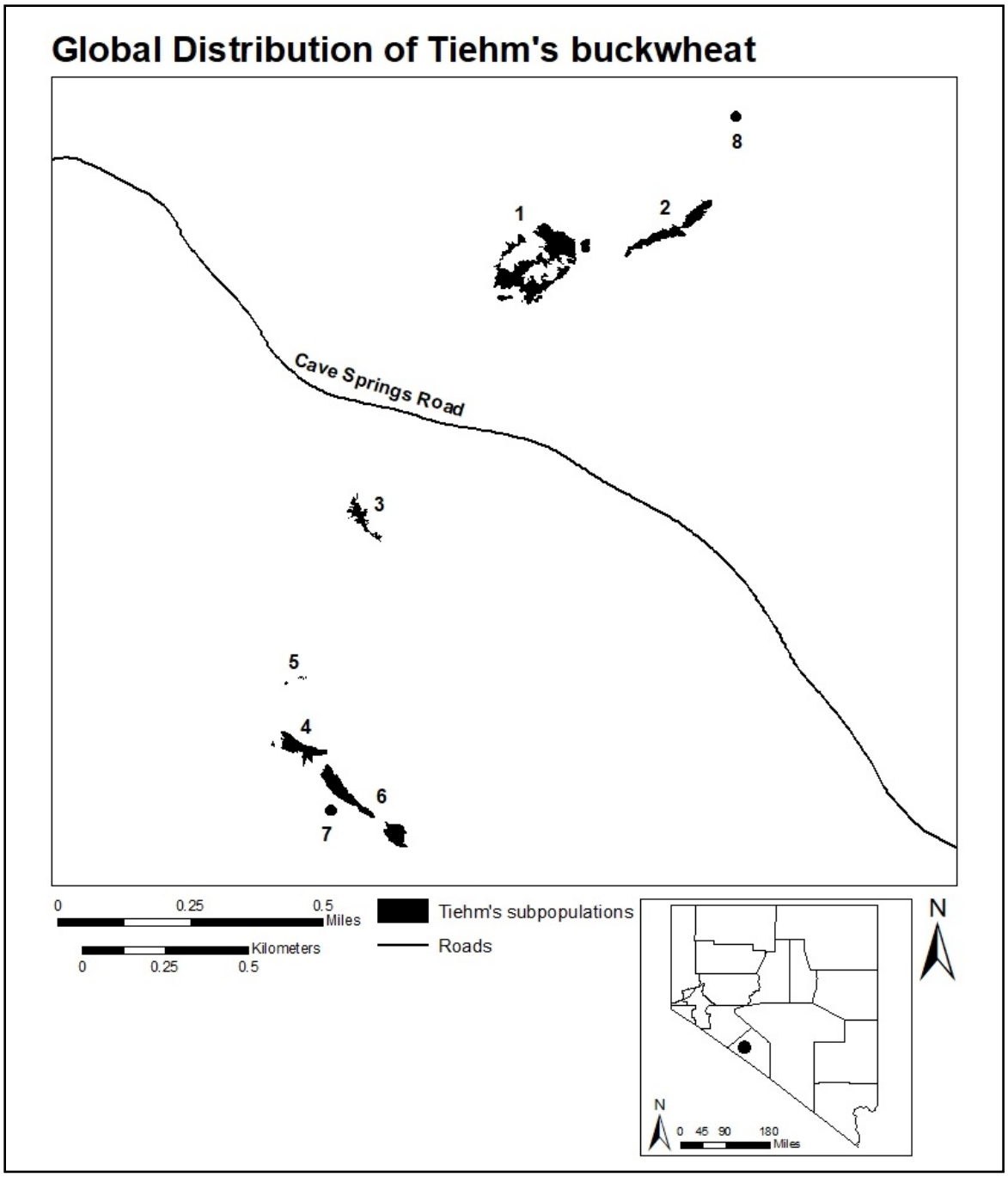

Figure 1—Global distribution of Tiehm's buckwheat. The single population comprises eight subpopulations, indicated by the corresponding numbers on the map.

TABLE 1—SUMMARY OF TIEHM'S BUCKWHEAT INDIVIDUALS AND OCCUPIED HABITAT

Population	Subpopulation	Estimated Number of Plants			Occupied Habitat (acres)	
		1994[a]	2008/2010[b]	2019[c]	2008/2010	2019

1	1	7,000+	15,380	9,240	4.71	4.81
	2	3,000+	4,000	4,541	1.17	1.56
	3	500+	4,000	1,860	0.62	0.63
	4	500+	1,960	8,159	0.58	1.04
	5	15	100	199[d]	0.03	0.04
	6	6,000+	11,100	19,871	1.64	1.88
	7	n/a	n/a	50[d]	n/a	0.004
	8	n/a	n/a	1[d]	n/a	(1 plant)
Total		**17,015+**	**36,540**	**43,921**	**8.75**	**9.97**

[a] Ocular estimate
[b] Method employed: "Estimating Population Size Based on Average Central Density" (Morefield 2008, entire: Morefield 2010, entire)
[c] Method employed: Modified density sampling methodology in BLM technical reference "Sampling Vegetation Attributes" (BLM 1999, Appendix B) and "Measuring and Monitoring Plant Subpopulations" (Elzinga *et al.* 1998; Kuyper 2019, entire
[d] Direct count

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species is an endangered species or a threatened species. The Act defines an endangered species as a species that is "in danger of extinction throughout all or a significant portion of its range" and a threatened species as a species that is "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following 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.

These factors represent broad categories of natural or human-caused actions or conditions that could have an effect on a species' continued existence. In evaluating these actions and conditions, we look for those that may have a negative effect on individuals of the species, as well as other actions or conditions that may ameliorate any negative effects or may have positive effects.

We use the term "threat" to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. These include actions or conditions that have a direct or indirect impact as well as those that affect individuals through alteration of their habitat or resources. The term "threat" may encompass—either together or separately—the source of the action or condition or the action or condition itself.

However, the mere identification of any threat(s) does not necessarily mean that the species meets the statutory definition of an "endangered species" or a "threatened species." In determining whether a species meets either definition, we must evaluate all identified threats by considering the expected response by the species, and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effect of all of the threats on the species as a whole. We also consider the cumulative effect of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an "endangered species" or a "threatened species" only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

The Act does not define the term "foreseeable future," which appears in the statutory definition of "threatened species." Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis. The term "foreseeable future" extends only so far into the future as the Service can reasonably determine that both the future threats and the species' responses to those threats are likely. In other words, the foreseeable future is the period of time in which we can make reliable predictions. "Reliable" does not mean "certain"; it means sufficient to provide a reasonable degree of confidence in the prediction. Thus, a prediction is reliable if it is reasonable to depend on it when making decisions.

It is not always possible or necessary to define foreseeable future as a particular number of years. Analysis of the foreseeable future uses the best scientific and commercial data available and should consider the timeframes applicable to the relevant threats and to the species' likely responses to those threats in view of its life-history characteristics. Data that are typically relevant to assessing the species' biological response include species-specific factors such as lifespan, reproductive rates or productivity, certain behaviors, and other demographic factors.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent a decision by the Service on whether the species should be proposed for listing as an endangered or threatened species under the Act. It does, however, provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can

be found at Docket No. FWS–R8–ES–2020–0017 on *https://www.regulations.gov* and at *https://www.fws.gov/reno/*.

To assess viability of the Tiehm's buckwheat, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency supports the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years), redundancy supports the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation supports the ability of the species to adapt over time to long-term changes in the environment (for example, climate changes). In general, the more resilient and redundant a species is and the more representation it has, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the species' ecological requirements for survival and reproduction at the individual, population, and species levels, and described the beneficial and risk factors influencing the species' viability.

The SSA process can be categorized into three sequential stages. During the first stage, we evaluated the individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species' responses to positive and negative environmental and anthropogenic impacts. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision.

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the species and its resources, and the threats that influence the species' current and future condition, in order to assess the species' overall viability and the risks to that viability.

For the Tiehm's buckwheat to maintain viability, its populations or some portion thereof must be resilient. A number of factors influence the resiliency of Tiehm's buckwheat, including suitable habitat, abundance, and recruitment. Elements of the species' habitat that determine whether the Tiehm's buckwheat population can grow to maximize habitat occupancy influence those factors, thereby influencing the resiliency of the population. These resiliency factors and habitat elements are discussed in detail in the SSA report (Service 2021, entire) and summarized here.

Summary of Biological Status and Threats

We reviewed the potential threats that could be affecting the Tiehm's buckwheat now and in the future. In this proposed rule, we will discuss only those threats in detail that could meaningfully impact the status of the species. Those threats that are not known to have effects on Tiehm's buckwheat, such as disease and overutilization for commercial and scientific purposes, are not discussed here, but are evaluated in the SSA report. The primary threats affecting the status of the Tiehm's buckwheat are physical alteration of habitat due to mineral exploration and development, road development and OHV use, livestock grazing, and nonnative, invasive plant species (all Factor A threats); herbivory (Factor C); and climate change (Factor E). Climate change may further influence the degree to which these threats, individually or collectively, may affect Tiehm's buckwheat. While we generally discuss these threats individually, threats can also occur simultaneously, thus additively affecting the resiliency of Tiehm's buckwheat. Where different individual threats occur at the same time and place, we will describe how they may interact with one another in the threats discussion below. Threats may be reduced

through the implementation of existing regulatory mechanisms or other conservation efforts that benefit Tiehm's buckwheat and its habitat. We also summarize and discuss how the existing regulatory mechanisms (Factor D) address these threats.

Herbivory

The naturally occurring Tiehm's buckwheat population (represented by one population with eight subpopulations) and a seedling transplant experiment suffered detrimental herbivory in 2020. All of the naturally occurring subpopulations experienced greater than 50 percent damage or loss of individual plants, while almost all experimental transplants were lost to rodent herbivores in a 2-week period (Service 2020, pp. 29–33). An environmental DNA analysis (*i.e.,* trace DNA found in soil, water, food items, or other substrates with which an organism has interacted) conducted on damaged Tiehm's buckwheat roots, nearby soils, and rodent scat strongly linked small mammal herbivory to the widespread damage and loss of the naturally occurring Tiehm's buckwheat population (Grant 2020, entire). This was the first time herbivory was documented on the species, although, prior to 2019, surveys of the population were infrequent. The significance of herbivory in the naturally occurring population depends not only on its frequency and intensity, but also on whether damaged plants can recover and survive, as we are uncertain if the species will be able to recover from this damage and loss. Rodent herbivore pressure precluded seedling survival in experimental plots. Further studies and monitoring need to be conducted to determine if management to reduce rodent herbivory is necessary to maintain Tiehm's buckwheat individuals and subpopulations, or if it was just a random catastrophic event that is not likely to occur on a regular basis.

The recent herbivory event that Tiehm's buckwheat experienced was extensive enough to compromise the long-term viability of individuals, subpopulations, and the

overall population. One possibility for why this occurred is that climate changes are causing changes in moisture availability. Total precipitation was above average in the Rhyolite Ridge area from 2015 through 2019, whereas in 2020, it was significantly below average. Increases in precipitation are typically followed by increases in rodent populations (Randel and Clark 2010; entire; Gillespie *et al.* 2008, pp. 78–81; Brown and Ernest 2002, pp. 981–985; Beatley 1976, entire). This sudden shift from above average to below average precipitation may be what impacted the local rodent population at Rhyolite Ridge; a large rodent population was seeking water from whatever source was available and, in this case, found the shallow taproots of mature Tiehm's buckwheat plants (Boone 2020, entire; Morefield 2020, p. 12). If herbivory was driven by a water-stressed rodent population, future alteration of temperature and precipitation patterns may create climate conditions for this situation to happen again, resulting in further damage or loss of Tiehm's buckwheat individuals.

Mineral Exploration and Development

The specialized soils on which Tiehm's buckwheat occurs are high in lithium and boron, making this location of high interest for mineral development. Trenches and mine shafts associated with mineral exploration and development have already impacted subpopulations 1, 2, 3, 4, and 6, resulting in the loss of some of the Tiehm's buckwheat habitat (Morefield 1995, p. 15). Future mineral exploration and development would be expected to result in similar or more detrimental impacts to the species. The BLM lands on which Tiehm's buckwheat grows are subject to the operation of the Mining Law of 1872, as amended (30 U.S.C. 22–54). Therefore, under BLM's regulations, operators may explore and cause a surface disturbance of up to 5 acres after an operator gives notice to BLM and waits 15 days (43 CFR 3809.21(a)). By contrast, if a listed species or designated critical habitat is present, an operator must submit a mining plan of operations

and obtain BLM approval for any surface disturbance greater than casual use (43 CFR 3809.11(b)(6)).

In May 2020, Ioneer USA Corporation (Ioneer) submitted a plan of operations to BLM for the proposed Rhyolite Ridge lithium-boron project. The proposed project is awaiting BLM permitting and approval and, if permitted, would result in the complete loss of Tiehm's buckwheat habitat and subpopulations 4, 5, 6, and 7, even with the voluntary protection measures included in Ioneer's project proposal. The voluntary protection measures included in Ioneer's project proposal are summarized below in the Conservation Measures and Existing Regulatory Mechanisms section (protection measures are described more thoroughly in Service 2021, pp. 39–40, 46–47). The potential impact from the proposed project, combined with the loss resulting from the recent herbivory event, would reduce the total Tiehm's buckwheat population by 70 to 88 percent, or from 43,921 individuals to roughly 5,289–8,696 individuals, and remove 30 percent of its total habitat (2.96 ac (1.2 ha); Ioneer 2020a, Figure 4, p. 29). The number of individuals estimated to survive is represented by a range, because we do not know yet if the plants damaged from herbivory will be able to recover and survive. The low end of this range is based on permanent loss of damaged plants, while the high end represents conditions if all the herbivore-damaged plants recover. At the end of the project as proposed, areas previously occupied by Tiehm's buckwheat in subpopulations 4–7 would be underwater within the boundaries of a quarry lake (Ioneer 2020b, pp. 71–72). Ioneer is proposing to remove and salvage all remaining plants in subpopulations 4, 5, 6, and 7 (between 11,701–16,205 plants depending on if damaged plants recover from herbivory) and translocate them to another location. However, because Tiehm's buckwheat is a soil specialist and adjacent, unoccupied sites are not suitable for all early life-history stages, herbivore impacts on transplanted seedlings, and lack of testing and multiyear monitoring

on the feasibility of transplanting the species, we are uncertain of the potential for success of translocation efforts.

Subpopulation 6 may be the most resilient of the eight Tiehm's buckwheat subpopulations because it has the most individuals, produces a higher average density of flowers (correlating to a higher seed output), supports high pollinator diversity, and supports a variety of size classes, including having the most individuals in the smallest size class indicating that this subpopulation is likely experiencing the most recruitment (Kuyper 2019, p. 3; Ioneer 2020a, pp. 7–8; McClinton *et al.* 2020, p. 23, 51). Loss of this subpopulation to the proposed Rhyolite Ridge lithium-boron project may have an immense impact on the overall resiliency and continued viability of the species, beyond just the numeric loss of redundancy and representation.

Rare plant species, like Tiehm's buckwheat, that have restricted ranges, specialized habitat requirements, and limited recruitment and dispersal, have a higher risk of extinction due to demographic uncertainty and random environmental events (Shaffer 1987, pp. 69–75; Lande 1993, pp. 911–927; Hawkins *et al.* 2008, pp. 41–42; Caicco 2012, pp. 93–94; Kaye *et al.* 2019, p. 2). Additionally, habitat fragmentation poses specific threats to species through genetic factors such as increases in genetic drift and inbreeding, together with a potential reduction in gene flow from neighboring individuals or subpopulations (Jump and Peñuelas 2005, pp. 1015–1016). The effects of habitat fragmentation from the proposed Rhyolite Ridge lithium-boron project on Tiehm's buckwheat may be compounded by the inherently poor dispersal of the species and its specific soil requirements.

Road Development and Off-Highway Vehicle Use

Ecological impacts of roads and ground-disturbing activities like OHV use include altered hydrology, pollution, sedimentation, silt and dust erosion and deposition, habitat fragmentation, reduced species diversity, and altered landscape patterns (Forman

and Alexander 1998, entire; Spellerberg 1998, entire). OHV impacts have occurred in subpopulation 1 (Caicco and Edwards 2007, entire; Donnelly and Fraga 2020, p. 1; Ioneer 2020a, p. 10) and can kill or damage individual plants and modify habitat through fragmentation and soil compaction. Mining and mineral exploration activities that grade, improve, and widen roads in the Rhyolite Ridge area may allow easier and greater access for OHVs and recreational use. Additionally, road development and increased vehicle traffic associated with the mine may create conditions that further favor the establishment of nonnative, invasive species within Tiehm's buckwheat habitat.

Ioneer's proposed Rhyolite Ridge lithium-boron project would construct and maintain service and haul roads within the Rhyolite Ridge area. Cave Springs Road (as seen on Figure 1) is currently maintained by Esmeralda County and bisects the Tiehm's buckwheat subpopulations. Realignment of this road is proposed to accommodate haul roads. It is expected that the rerouted road would be transferred to the county at closure, as an amendment to the county's existing right-of-way with BLM (Ioneer 2020b, p. 44). The expected amount of truck traffic associated with providing needed materials and supplies and product transport for the proposed project is anticipated to be 100 round trips per day, 365 days per year (Ioneer 2020b, p. 7).

Dust deposition, often a result of vehicle traffic on roads, negatively affects the physiological processes of plants including photosynthesis, reproduction, transpiration, water use efficiency, leaf hydraulic conductance, and stomatal disruption that impedes the ability of the stomata to open and close effectively (Hirano *et al.*1995, pp. 257–260; Vardaka *et al.* 1995, pp. 415–418; Wijayratne *et al.* 2009, pp. 84–87; Lewis 2013, pp. 56–79; Sett 2017, entire). Physiological disruption to Tiehm's buckwheat individuals from dust generated from vehicular traffic associated with the proposed Rhyolite Ridge lithium-boron project would likely negatively affect the overall health and physiological

processes of the population and of the subpopulations remaining (1, 2, 3, and 8) after full implementation of the proposed Rhyolite Ridge lithium-boron project.

Livestock Grazing

Livestock grazing has the potential to result in negative impacts to Tiehm's buckwheat individuals, subpopulations, and/or the population, depending on factors such as stocking rate and season of use. Livestock grazing may result in direct impacts to individual Tiehm's buckwheat plants due to trampling of vegetation and soil disturbance (compaction) in ways that can render habitat no longer suitable to established plants, while also discouraging population recruitment (by discouraging seed retention, seed germination, and seedling survival). Patterns of soil disturbance associated with grazing also can create conditions conducive to the invasion of nonnative plant species (Young *et al*. 1972, entire; Hobbs and Huenneke 1992, p. 329; Loeser *et al.* 2007, pp. 94–95).

Tiehm's buckwheat occurs in the BLM Silver Peak livestock grazing allotment (BLM 1997, p. 15, Map 17). The Silver Peak allotment (NV00097) was authorized on September 9, 2020, with a 4-year term that expires on September 24, 2024 (BLM 2021a, entire). There are no grazing exclosures associated with Tiehm's buckwheat within this BLM allotment; therefore, the species may be exposed to the effects of livestock grazing described in the above paragraph. Although some Tiehm's buckwheat individuals may be impacted by this threat, current grazing damage to Tiehm's buckwheat has not been observed. There are currently 658 active AUMs (animal unit months) and 2,507 temporarily suspended AUMs associated with the Silver Peak allotment due to stocking water range improvements that have fallen out of repair.

Upon expiration of the Silver Peak allotment, BLM will consider reauthorization and/or changing the number of active AUMs. Range improvements are in progress, and additional AUMs may be returned on this allotment (Truax 2020, pers. comm.).

However, grazing impacts could potentially increase in the future if additional AUMs are returned to this allotment.

Nonnative, Invasive Plant Species

Nonnative, invasive plant species could negatively affect Tiehm's buckwheat individuals, subpopulations, and/or the population through competition, displacement, and degradation of the quality and composition of its habitat (Gonzalez *et al.* 2008, entire; Simberloff *et al.* 2013, entire). Surveys of Tiehm's buckwheat conducted between 1994 and 2010 did not document any occurrences of nonnative, invasive species in its habitat (Morefield 1995, entire; Caicco and Edwards 2007, entire; Morefield 2008, entire; Morefield 2010, entire). However, saltlover *(Halogeton glomeratus)* has since become established to some degree and is part of the associated plant community in all subpopulations of Tiehm's buckwheat (CBD 2019, pp. 20–21; Ioneer 2020a, pp. 9–10). Vehicles can carry the seeds of nonnative, invasive plant species into the area, and soil disturbances, such as mineral exploration activities, can encourage the spread of saltlover, which alters the substrate by making the soil more saline and less suitable as habitat for Tiehm's buckwheat.

Road development and vehicle traffic associated with the proposed mine as well as livestock grazing, which currently occurs within the Tiehm's buckwheat population as part of the BLM's Silver Peak allotment, may create conditions that further favor the establishment of nonnative, invasive species within Tiehm's buckwheat habitat. For example, Ioneer's Rhyolite Ridge lithium-boron project proposes to construct and operate a quarry, processing plant, overburden storage facility, spent ore storage facility, and access roads (Ioneer 2020b, p. 11). If the project is approved, and these ground-disturbing activities occur, there is a potential for increase in spread of nonnative, invasive plant species. However, this possible increase would depend on conditions associated with

approval of the proposed project. Under the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), BLM has the discretion to analyze best management practices to help reduce the likelihood that nonnative, invasive plant species are introduced and spread in Tiehm's buckwheat habitat.

Climate Change

The effects of climatic changes in the Great Basin depend largely on the interaction of temperature and precipitation. Temperatures in the Great Basin have increased over the past 100 years. Between 1895 and 2011, temperatures in the Great Basin have increased 1.2° to 2.5°F (0.7° to 1.4°C), with a greater increase in the southern Great Basin (where *Eriogonum tiehmii* occurs) than in the northern Great Basin (Snyder *et al.* 2019, p. 3). Temperatures are increasing more at night than during the day and more in winter than in summer, leading to fewer cold snaps, more heatwaves, fewer frosty days and nights, less snow, and earlier snowmelt (Snyder *et al.* 2019, p. 3; Padgett *et al.* 2018, p. 167; Abatzoglou and Kolden 2013, entire; Knowles *et al.* 2006, p. 4557; Mote *et al.* 2005, entire; Stewart *et al.* 2005, p. 1152). Although these observed trends provide information as to how climate has changed in the past, climate models can be used to simulate and develop future climate projections.

Simulations using downscaled methods from 20 global climate models project mean average temperature during December, January, and February for the Rhyolite Ridge area to increase by 2.3 °F (1.3 °C) by 2060 and 3.4 °F (1.9 °C) by 2099 under moderate emission scenarios (RCP 4.5; Hegewisch and Abatzoglou (2020a). Under high emission scenarios (RCP 8.5), mean average temperatures during winter months increase by 3.6 °F (2 °C) by 2060 and 7.1 °F (3.9 °C) by 2099. Likewise, these models project maximum average temperatures during June, July, and August for the Rhyolite Ridge area to increase by 2.9 °F (1.6 °C) by 2060 and 4.1 °F (2.3 °C) by 2099 under moderate emission scenarios (RCP 4.5). Under high emission scenarios (RCP 8.5), maximum

average temperatures during summer months increased by 4.6 °F (2.6 °C) by 2060 and 8.9 °F (4.9 °C) by 2099 (Hegewisch and Abatzoglou 2020a).

Additionally, simulations using these downscaling methods from multiple models project annual precipitation for the Rhyolite Ridge area to increase by 0.4 in (10.16 mm (milometers)) by 2060 and 0.6 in (15.24 mm) by 2099 under moderate emission scenarios (RCP 4.5). Under high emission scenarios (RCP 8.5), annual precipitation increases by 0.3 in (7.62 mm) by 2060 and 0.7 in (17.78 mm) by 2099 (Hegewisch and Abatzoglou 2020a). Total precipitation was above average in the Rhyolite Ridge area during the period 2015–2019, ranging from 6.1 to 8.7 in (15.5 to 22 cm) a year (Hegewisch and Abatzoglou 2020b). Whereas, in 2020, total average precipitation for the same area was 2.7 in (6.8 cm; Hegewisch and Abatzoglou 2020c).

Tiehm's buckwheat is adapted to dry, upland sites, subject only to occasional saturation by rain and snow. Increasing temperature can affect precipitation patterns. The fraction of winter precipitation (November–March) that falls as snow versus rain is declining in the western United States (Palmquist *et al.* 2016, pp. 13–16). When temperatures are cold enough to limit water losses from plant transpiration and soils are not frozen, shifts from snow to rain may have minimal impact on deep soil water storage. If rainfall replaces snow and temperatures are increased enough to thaw soils to stimulate plant growth and physiological activity earlier in the year, this scenario would result in less deep soil water recharge (i.e., less soil water infiltration and more evaporation) and potential changes in plant community composition (Huxman *et al.* 2005, entire).

Fire is a naturally occurring phenomenon that impacts the distribution and structure of vegetation (Willis 2017, p. 52). However, due to increasing temperatures and reductions in precipitation, the severity and frequency of wildfires is likely to increase (Snyder *et al.* 2019, p. 8; Comer *et al.* 2013, pp. 130–135; Chambers and Wisdom 2009, pp. 709–710). While the Great Basin is extremely prone to fires, with 14 million ac (5.6

million ha) burning in the last 20 years, there are no reported accounts of fire within Tiehm's buckwheat habitat or in the surrounding Rhyolite Ridge area (BLM 2020, entire). We currently do not have any data to indicate what level of effect wildfire could have on Tiehm's buckwheat; however, it could result in habitat loss or habitat fragmentation and/or remove Tiehm's buckwheat individuals.

The direct, long-term impact from climate change to Tiehm's buckwheat is yet to be determined. The timing of phenological events, such as flowering, are often related to environmental variables such as temperature. Large-scale patterns of changing plant distributions, flowering times, and novel community assemblages in response to rising temperatures and changing rainfall patterns are apparent in many vegetation biomes (Munson and Long 2017, entire; Willis 2017, pp. 44–49; Hawkins *et al.* 2008, entire; Burgess *et al.* 2007, entire; Parmesan 2006, entire). However, we do not know if or how climate change may alter the phenology of Tiehm's buckwheat or cause changes in pollinator behavior.

In summary, Tiehm's buckwheat is adapted to dry, upland sites, subject only to occasional saturation by rain and snow. Under climate change predictions, we anticipate alteration of precipitation and temperature patterns, as models forecast warmer temperatures and slight increases in precipitation. The timing and type of precipitation received (snow vs. rain) may impact plant transpiration and the soil water recharge needed by Tiehm's buckwheat. Additionally, variability in interannual precipitation combined with increasing temperatures, as recently seen from 2015 through 2020, may make conditions less suitable for Tiehm's buckwheat by bolstering local rodent populations. High rodent abundance combined with high temperatures and drought may have contributed to the large herbivore impacts in 2020 in both the transplant experiment and native population. Thus, climate change may exacerbate impacts from rodent herbivory currently affecting this species and its habitat.

Conservation Measures and Regulatory Mechanisms

BLM

Tiehm's buckwheat is on the BLM Sensitive Species List (BLM 2008a, pp. 1–48). Although Tiehm's buckwheat is managed as a BLM sensitive species, BLM's regulations do not allow the agency to require conservation measures for sensitive species as a condition for exploring for, or developing minerals subject to disposal under the Mining Law of 1872, as amended (30 U.S.C. 22–54; Mining Law). Under BLM's handbook, the Silver Peak allotment permits grazing across 281,489 ac (113,915 ha) that also encompass the area occupied by Tiehm's buckwheat. Under the Federal Land Policy and Management Act of 1976, as amended (43 U.S.C. 1701 et seq.), BLM has the discretion to establish and implement special management areas, such as areas of critical environmental concern, to reduce or eliminate actions that adversely affect sensitive species, such as Tiehm's buckwheat. Although Tiehm's buckwheat is a BLM sensitive species, there are no special restrictions or terms and conditions regarding livestock use within the Silver Peak allotment where this species occurs nor are there any on the ground protections for Tiehm's buckwheat as a sensitive species. BLM has best management practices (BMPs) for invasive and nonnative species that focus on the prevention of further spread and/or establishment of these species (BLM 2008b, pp. 76–77). BMPs should be considered and applied where applicable to promote healthy, functioning native plant communities, or to meet regulatory requirements. BMPs include inventorying weed infestations, prioritizing treatment areas, minimizing soil disturbance, and cleaning vehicles and equipment (BLM 2008b, pp. 76–77). However, incorporation or implementation of BMPs is at the discretion of an authorized BLM officer.

In response to the recent herbivory event on Tiehm's buckwheat subpopulations, BLM has been monitoring the species biweekly. Photo plots were established near undamaged plants in subpopulations 1, 3, and 6 to help determine whether herbivory is

continuing (Crosby 2020a, pers. comm.; Crosby 2020b, pers. comm.). Ocular estimates from the photo plots indicate that herbivory is not ongoing (Crosby 2020b, pers. comm.). Game cameras that were installed by BLM when damage to the species was first reported were removed in mid-November 2020 but may be reinstalled if deemed necessary (Crosby 2020a,pers. comm.).

Ioneer

As part of the proposed Rhyolite Ridge lithium-boron project, Ioneer is developing a conservation plan for Tiehm's buckwheat to protect and preserve the continued viability of the species on a long-term basis. The conservation plan is in the early stages of development.

Ioneer has also implemented or proposed various protection measures for Tiehm's buckwheat. Ioneer funded the development of a habitat suitability model to identify additional potential habitat for Tiehm's buckwheat through field surveys (Ioneer 2020a, p. 12). In addition, a demographic monitoring program was initiated in 2019 to detect and document trends in population size, acres inhabited, size class distribution, and cover with permanent monitoring transects established in subpopulations 1, 2, 3, 4, and 6 (Ioneer 2020a, p. 16). Ioneer also funded collection of Tiehm's buckwheat seed in 2019 (Ioneer 2020a, pp. 13–14). Some of this seed was used by the University of Nevada, Reno, for a propagation trial and transplant study (Ioneer 2020a, p. 14). The remainder of this seed is in long-term storage at Rae Selling Berry Seed Bank at Portland State University (Ioneer 2020a, p. 13). Ioneer's proposed plans include avoiding subpopulations 1, 2, 3, and 8 (5,289 plants; Ioneer 2020a, p. 11), installing fences and signage around subpopulations 1 and 2 (Ioneer 2020a, p. 11), and removing and salvaging all remaining plants in subpopulations 4, 5, 6, and 7 (16,205–11,701 plants depending on if damaged plants recover from herbivory) and translocating them to

another location (Ioneer 2020a, p. 15). However, the proposed project may or may not be permitted by BLM, thus these protection measures may or may not be fully implemented.

Summary of Current Condition

Data about the Tiehm's buckwheat population are sparse, as research and monitoring to better understand the species are still in their infancy (Grant 2020, entire; Ioneer 2020a, pp. 11–18; McClinton *et al.* 2020, entire; Service 2020, entire). As a result, little is known about subpopulation connectivity and dispersal (i.e., gene-flow) and recruitment and/or seedling establishment, to inform population trend. Further studies and monitoring need to be conducted to determine if management to reduce herbivory is necessary to maintain Tiehm's buckwheat individuals and subpopulations, or if the 2020 event was just a random catastrophic event that is not likely to occur on a regular basis.

Globally, Tiehm's buckwheat is known from 8 subpopulations that make up a single population (Table 1). Surveys have not detected additional populations of Tiehm's buckwheat. Tiehm's buckwheat substantially contributes to supporting the high abundance and diversity of arthropods and pollinators found in the Rhyolite Ridge area. A specific set of soil conditions are required for the growth of Tiehm's buckwheat, as the species is specifically adapted to grow on its preferred soil type (Ioneer 2020a, p. 5; Morefield 1995, p. 10).

Tiehm's buckwheat occurs entirely on 10 ac (4 ha) of Federal lands with sparse associations of other plant species. Rare plant species, like Tiehm's buckwheat, that have restricted ranges, specialized habitat requirements, and limited recruitment and dispersal have a higher risk of extinction due to demographic uncertainty and random environmental events. Under current conditions, primary threats to the species include mineral exploration and development, road development and OHV use, livestock grazing, nonnative, invasive plant species, herbivory, and climate change. Many of the threats currently affecting the species have the potential to work in combination. For example,

mineral exploration, road development and OHV use, and livestock grazing can introduce nonnative, invasive plant species, which in turn can directly compete with and displace Tiehm's buckwheat within its habitat. With only one population (8 subpopulations), the risks to a small plant population like Tiehm's buckwheat include losses in reproductive individuals, declines in seed production and viability, loss of pollinators, loss of genetic diversity, and Allee effects (Willis 2017, pp. 74–77; Berec *et al.* 2007, entire; Eisto *et al.* 2000, pp. 1418–1420) which will impact a species that already has very limited redundancy and representation.

Determination of Tiehm's Buckwheat Status

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines endangered species as a species "in danger of extinction throughout all or a significant portion of its range," and threatened species as a species "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The Act requires that we determine whether a species meets the definition of endangered species or threatened species because of any of the following 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.

Status Throughout All of Its Range

After evaluating threats to the species and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we found that the population occurs in an extremely small area, has specialized habitat requirements, and has limited recruitment

and dispersal. Our analysis revealed that the species is vulnerable to ongoing and future threats that affect both individual plants and their habitat.

We have carefully assessed the best scientific and commercial information available regarding the current and future threats to Tiehm's buckwheat. We considered the five factors identified in section 4(a)(1) of the Act in determining whether Tiehm's buckwheat meets the definition of an endangered species (section 3(6)) or threatened species (section 3(20)). We find that Tiehm's buckwheat is in danger of extinction due to the present or threatened destruction, modification, or curtailment of its habitat or range including habitat loss and degradation due to mineral exploration and development, road development and OHV use, livestock grazing, and nonnative, invasive plant species (all Factor A threats); herbivory (Factor C); and climate change (Factor E). Of these, we consider mineral exploration and development and herbivory to be the greatest threats to Tiehm's buckwheat. The existing regulatory mechanisms (Factor D) are inadequate to protect the species from these threats. We did not identify threats to the continued existence of Tiehm's buckwheat due to overutilization for commercial, recreational, scientific, or educational purposes (Factor B).

In 2020, a detrimental herbivory event caused greater than 50 percent damage or loss of individual Tiehm's buckwheat plants across all subpopulations. Cumulative impacts from the herbivory and the proposed Rhyolite Ridge lithium-boron project (if permitted by BLM) would reduce the total Tiehm's buckwheat population by 70 to 88 percent, or from 43,921 individuals to roughly 5,289–8,696 individuals as we do not know yet if damaged plants will be able to recover and survive or if translocating plants is feasible. Road development and vehicle traffic associated with the proposed mine as well as livestock grazing may further affect the overall health and physiological processes of individual Tiehm's buckwheat plants and create conditions that further favor the establishment of nonnative, invasive species within the species' habitat. Increased

temperatures and alteration of precipitation patterns due to climate change may impact plant transpiration and soil water recharge needed by Tiehm's buckwheat, as well as bolstering local rodent populations. High rodent abundance combined with high temperatures and drought may have contributed to the herbivore impacts in 2020.

We find that Tiehm's buckwheat is in danger of extinction throughout all of its range due to the severity and immediacy of threats currently impacting the species now and those which are likely to occur in the near term. We find that a threatened species status is not appropriate because the threats are severe and imminent, and Tiehm's buckwheat is in danger of extinction now, as opposed to likely to become endangered in the future. Therefore, on the basis of the best available scientific and commercial information, we propose listing Tiehm's buckwheat as an endangered species in accordance with sections 3(6), 3(20), and 4(a)(1) of the Act.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. We have determined that the Tiehm's buckwheat is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portion of its range. Because the Tiehm's buckwheat warrants listing as endangered throughout all of its range, our determination is consistent with the decision in *Center for Biological Diversity v. Everson*, 2020 WL 437289 (D.D.C. Jan. 28, 2020), in which the court vacated the aspect of the Final Policy on Interpretation of the Phrase "Significant Portion of Its Range" in the Endangered Species Act's Definitions of "Endangered Species" and "Threatened Species" (79 FR 37578; July 1, 2014) that provided the Service does not undertake an analysis of significant portions of a species' range if the species warrants listing as threatened throughout all of its range.

Determination of Status

Our review of the best available scientific and commercial information indicates that the Tiehm's buckwheat meets the Act's definition of an endangered species. Therefore, we propose to list the Tiehm's buckwheat as an endangered species in accordance with sections 3(6), and 4(a)(1) of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness and conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning consists of preparing draft and final recovery plans, beginning with the development of a recovery outline and making it available to the public within 30 days of a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to

develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened ("downlisting") or removal from protected status ("delisting"), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (*https://www.fws.gov/endangered*), or from our Reno Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education.

If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the State of Nevada could be eligible for Federal funds to implement management actions that promote the protection or recovery of the Tiehm's buckwheat. Information on our grant programs that are available to aid species recovery can be found at: *https://www.fws.gov/grants*.

Although the Tiehm's buckwheat is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this

species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the species' habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by BLM or other Federal agencies (or permitted or funded by a Federal agency).

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered plants. The prohibitions of section 9(a)(2) of the Act, codified at 50 CFR 17.61, make it illegal for any person subject to the jurisdiction of the United States to: import or export; remove and reduce to possession from areas under Federal jurisdiction; maliciously damage or destroy on any such area; remove, cut, dig up, or damage or destroy on any other area in knowing violation of any law or regulation of any State or in the course of any violation of a State criminal trespass law; deliver,

receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of a commercial activity; or sell or offer for sale in interstate or foreign commerce an endangered plant. Certain exceptions apply to employees of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered plants under certain circumstances. Regulations governing permits are codified at 50 CFR 17.62. With regard to endangered plants, a permit may be issued for scientific purposes or for enhancing the propagation or survival of the species. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

It is our policy, as published in the *Federal Register* on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within the range of the species proposed for listing. Based on the best available information, the following actions are unlikely to result in a violation of section 9, if these activities are carried out in accordance with existing regulations and permit requirements; this list is not comprehensive:

(1) OHV or other vehicle use on existing roads and trails in compliance with the BLM Tonopah Field Office's resource management plan.

(2) Recreational use with minimal ground disturbance (e.g., hiking, walking).

Based on the best available information, the following activities may potentially result in a violation of section 9 of the Act if they are not authorized in accordance with applicable law; this list is not comprehensive:

(1) Unauthorized handling, removing, trampling, or collecting of the Tiehm's buckwheat on Federal land; and

(2) Removing, cutting, digging up, or damaging or destroying the Tiehm's buckwheat in knowing violation of any law or regulation of the State of Nevada or in the course of any violation of a State criminal trespass law.

Questions regarding whether specific activities would constitute a violation of section 9 of the Act should be directed to the Reno Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

II. Critical Habitat

Background

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

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

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

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

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

Our regulations at 50 CFR 424.02 define the geographical area occupied by the species as an area that may generally be delineated around species' occurrences, as determined by the Secretary (i.e., range). Such areas may include those areas used throughout all or part of the species' life cycle, even if not used on a regular basis (e.g., migratory corridors, seasonal habitats, and habitats used periodically, but not solely by vagrant individuals). Additionally, our regulations at 50 CFR 424.02 define the word "habitat" as follows: "For the purposes of designating critical habitat only, habitat is the

abiotic and biotic setting that currently or periodically contains the resources and conditions necessary to support one or more life processes of a species."

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

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation also does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult with the Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement "reasonable and prudent alternatives" to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features that occur in specific occupied areas, we focus on the specific features that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, prey, vegetation, symbiotic species, or other features. A feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. The implementing regulations at 50 CFR 424.12(b)(2) further delineate unoccupied critical habitat by setting out three specific parameters: (1) When designating critical habitat, the Secretary will first evaluate areas occupied by the species; (2) the Secretary will consider unoccupied areas to be essential only where a critical habitat designation limited to geographical areas occupied by the species would be inadequate to ensure the conservation of the species; and (3) for an unoccupied area to be considered essential, the Secretary must determine that there is a reasonable certainty both that the

area will contribute to the conservation of the species and that the area contains one or more of those physical or biological features essential to the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the *Federal Register* on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

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

As the regulatory definition of "habitat" indicates (50 CFR 424.02), habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are

important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act; (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species; and (3) the prohibitions found in section 9 of the Act. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of the species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available at the time of those planning efforts calls for a different outcome.

Critical Habitat Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered or threatened species. Our regulations (50 CFR 424.12(a)(1)) state that the Secretary may, but is not required to, determine that a designation would not be prudent in the following circumstances:

(i) The species is threatened by taking or other human activity and identification of critical habitat can be expected to increase the degree of such threat to the species;

(ii) The present or threatened destruction, modification, or curtailment of a species' habitat or range is not a threat to the species, or threats to the species' habitat stem solely from causes that cannot be addressed through management actions resulting from consultations under section 7(a)(2) of the Act;

(iii) Areas within the jurisdiction of the United States provide no more than negligible conservation value, if any, for a species occurring primarily outside the jurisdiction of the United States;

(iv) No areas meet the definition of critical habitat; or

(v) The Secretary otherwise determines that designation of critical habitat would not be prudent based on the best scientific data available.

As discussed earlier, there is currently no threat of collection or vandalism identified for this species under Factor B, and identification and mapping of critical habitat is not expected to initiate any such threat. In our SSA report and proposed listing determination for the Tiehm's buckwheat, we determined that the present or threatened destruction, modification, or curtailment of habitat or range is a threat to Tiehm's buckwheat and that those threats in some way can be addressed by section 7(a)(2) consultation measures. The species occurs wholly in the jurisdiction of the United States, and we are able to identify areas that meet the definition of critical habitat. Therefore, because none of the circumstances enumerated in our regulations at 50 CFR 424.12(a)(1) have been met and because the Secretary has not identified other circumstances for which this designation of critical habitat would be not prudent, we have determined that the designation of critical habitat is prudent for Tiehm's buckwheat.

Critical Habitat Determinability

Having determined that designation is prudent, under section 4(a)(3) of the Act we must find whether critical habitat for Tiehm's buckwheat is determinable. Our regulations at 50 CFR 424.12(a)(2) state that critical habitat is not determinable when one or both of the following situations exist:

(i) Data sufficient to perform required analyses are lacking, or

(ii) The biological needs of the species are not sufficiently well known to identify any area that meets the definition of "critical habitat."

We reviewed the available information pertaining to the biological needs of the species and habitat characteristics where this species is located. A careful assessment of the economic impacts that may occur due to a critical habitat designation is still ongoing, and we are in the process of working with the States and other partners in acquiring the complex information needed to perform that assessment. Therefore, the information sufficient to perform a required analysis of the impacts of the designation is lacking. For this reason, we conclude that the designation of critical habitat for the Tiehm's buckwheat is not determinable at this time.

When critical habitat is not determinable, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)); however, as described further in **Previous Federal Actions**, we are subject to a District of Nevada court order to submit to the *Federal Register* a proposed critical habitat determination by January 31, 2022 (or May 2, 2022 if the determination is deemed a "significant regulatory action" by the Office of Management and Budget).

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:

(1) Be logically organized;

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

(3) Use clear language rather than jargon;

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

(5) 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 numbers 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 (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act 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). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. At this time, we are not aware of Tribal lands occurring within the range of the Tiehm's buckwheat.

References Cited

A complete list of references cited in this rulemaking is available on the Internet

at *http://www.regulations.gov* and upon request from the Reno Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the U.S. Fish and Wildlife Service's Species Assessment Team and the Reno Ecological Services Field Office.

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; and 4201–4245, unless otherwise noted.

2. Amend § 17.12(h), the List of Endangered and Threatened Plants, by adding an entry for "*Eriogonum tiehmii* (Tiehm's buckwheat)" in alphabetical order under Flowering Plants to read as set forth below:

§ 17.12 Endangered and threatened plants.

* * * * *

(h) * * *

Scientific name	Common name	Where listed	Status	Listing citations and applicable rules
FLOWERING PLANTS				
* * * * * * *				
Eriogonum tiehmii	Tiehm's buckwheat	Wherever found	E	[*Federal Register* citation when

				published as a final rule]
* * * * * * *				

Martha Williams
Principal Deputy Director,
Exercising the Delegated Authority of the Director,
U.S. Fish and Wildlife Service.
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