DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R1-ES-2020-0082; FF09E22000 FXES1113090FEDR 223]

RIN 1018–BD97

Endangered and Threatened Wildlife and Plants; Reclassifying Fender's Blue Butterfly From Endangered to Threatened With a Section 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service or USFWS), are reclassifying Fender's blue butterfly (*Icaricia icarioides fenderi*) from endangered to threatened under the Endangered Species Act of 1973, as amended (Act). Fender's blue butterfly is endemic to the Willamette Valley of Oregon. This action is based on our evaluation of the best available scientific and commercial information, which indicates that the species' status has improved such that it is not currently in danger of extinction throughout all or a significant portion of its range, but that it is still likely to become so in the foreseeable future. We are also finalizing a rule issued under section 4(d) of the Act that provides for the conservation of the species.

DATES: This rule is effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

ADDRESSES*:* The proposed rule and this final rule, the comments we received on the proposed rule, and supporting documents are available at *https://www.fws.gov/oregonfwo* and at *https://www.regulations.gov* under Docket No. FWS-R1-ES-2020-0082.

FOR FURTHER INFORMATION CONTACT: Craig Rowland, Acting State Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, telephone 503-319-9488. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech

disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species may warrant reclassification from endangered to threatened if it no longer meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range). Fender's blue butterfly is listed as endangered, and we are reclassifying Fender's blue butterfly as threatened (i.e., "downlisting" the species) because we have determined it is not currently in danger of extinction. Reclassifying a species as a threatened species can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process.

What this document does. This rule reclassifies Fender's blue butterfly from endangered to threatened, with a rule issued under section 4(d) of the Act (a "4(d) rule"), based on the species' current status, which has been improved through implementation of conservation actions.

The basis for our action. Under the Act, we may determine that a species is an endangered species or a 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 may downlist a species listed as an endangered species if the best available commercial and scientific data indicate the species no longer meets the Act's definition of an endangered species. We have determined that Fender's blue butterfly is no longer in danger of extinction and, therefore, does not meet the Act's definition of an endangered species, but is still affected by the following current and ongoing threats to the extent that the species meets the

Act's definition of a threatened species: the loss, degradation, and fragmentation of prairie and oak savannah habitats, including conversion to non-habitat land uses (e.g., urban development, agriculture); elimination of natural disturbance regimes; encroachment into prairie habitats by shrubs and trees due to fire suppression; insecticides and herbicides; and invasion by nonnative plants.

We are promulgating a 4(d) rule. We are finalizing a 4(d) rule that prohibits all intentional take of Fender's blue butterfly and specifically allows incidental take by landowners or their agents while conducting management for the creation, restoration, or enhancement of short-stature native upland prairie or oak savannah conditions as a means to provide protective mechanisms to our State and private partners so that they may continue with certain activities that will facilitate the conservation and recovery of the species.

Previous Federal Actions

On June 23, 2021, we published in the *Federal Register* (86 FR 32859) a proposed rule to reclassify Fender's blue butterfly from an endangered species to a threatened species under the Act with a 4(d) rule. Please refer to that proposed rule for a detailed description of previous Federal actions concerning this species. The proposed rule and supplemental documents are provided at *https://www.regulations.gov* under Docket No. FWS-R1-ES-2020-0082.

Summary of Changes from the Proposed Rule

In preparing this final rule, we reviewed and fully considered all comments we received from peer reviewers and the public during the comment period on the proposed rule to downlist Fender's blue butterfly (86 FR 32859; June 23, 2021). We made minor, nonsubstantive changes and corrections throughout this document in response to those comments. Additionally, after further internal review and consultation with partners, in this rule, we amend the proposed 4(d) rule to allow manual removal of invasive and/or nonnative plant species during Fender's blue butterfly's flight period (April 15 to June 30). The long-term conservation benefits to the species of allowing this type of work during the flight season outweigh the potential negative effects to

any individuals on the landscape at that moment because removing invasive plants improves habitat suitability for host lupine plants, which improves butterfly viability. Overall, the information we received during the proposed rule's comment period did not change our determination that Fender's blue butterfly is no longer in danger of extinction throughout all or a significant portion of its range and, therefore, does not meet the Act's definition of an endangered species but that it is still likely to become endangered in the foreseeable future.

Lastly, during development of this final rule, we identified an error in the entry for Kincaid's lupine (*Lupinus sulphureus* spp. *kincaidii*; Fender blue butterfly's primary host plant) in the List of Endangered and Threatened Plants in title 50 of the Code of Federal Regulations (CFR) at § 17.12(h) (50 CFR 17.12(h)). Therefore, we are making one nonsubstantive, editorial correction to the date of the listing rule provided in the "Listing citations and applicable rules" column in that entry. That column of the List of Endangered and Threatened Plants is nonregulatory in nature and is provided for informational and navigational purposes only (see 50 CFR 17.12(f)). This correction is simply for the purposes of accuracy and clarity and does not alter the species' status or protections under the Act; an action changing this species' status or protections under the Act would require a separate rulemaking following the procedures set forth at 50 CFR part 424.

Supporting Documents

A species status assessment (SSA) team prepared an SSA report for Fender's blue butterfly. The SSA team was composed of Service biologists, in consultation with other species experts. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought the expert opinions of 12 appropriate

and independent specialists with knowledge of the biology and ecology of Fender's blue butterfly or its habitat regarding the SSA report. We received feedback from 5 of the 12 peer reviewers contacted. The purpose of peer review is to ensure that our determination regarding the status of the species under the Act is based on scientifically sound data, assumptions, and analyses. In preparing the proposed rule, we incorporated the results of these reviews, as appropriate, into the final SSA report, which is the foundation for this final rule.

I. Reclassification Determination

Background

Status Assessment for Fender's Blue Butterfly

We prepared an SSA report for Fender's blue butterfly (USFWS 2020, entire) that presents a thorough review of the taxonomy, life history, ecology, and overall viability of Fender's blue butterfly. In this final rule, we present only a summary of the key results and conclusions from the SSA report; the full report is available at *https://www.regulations.gov* under Docket No. FWS-R1-ES-2020-0082.

Fender's blue butterfly is found only in the prairie and oak savannah habitats of the Willamette Valley of Oregon. Adult Fender's blue butterflies are quite small, having a wingspan of approximately 25 millimeters (mm) (1 inch (in)). The upper wings of males are brilliant blue in color with black borders and basal areas, whereas the upper wings of females are brown.

Fender's blue butterfly relies primarily upon a relatively uncommon lupine plant, the Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*), also endemic to the Willamette Valley and listed as a threatened species under the Act (65 FR 3875; January 25, 2000), as the host plant for the larval (caterpillar) life stage (Hammond and Wilson 1993, p. 2). The only other host plants known for Fender's blue butterflies are *Lupinus arbustus* (longspur lupine) and *Lupinus albicaulis* (sickle-keeled lupine) (Schultz *et al*. 2003, pp. 64–67). Females lay single eggs, up to approximately 350 eggs in total, on the underside of the leaves of one of these three lupine species. Eggs hatch from mid-May to mid-July, and the larvae feed on the lupine until the plants

senesce and the larvae go into diapause for the fall and winter. The larvae break diapause in early spring, feed exclusively on the host lupine, and metamorphose into adults, emerging as butterflies between mid-April and the end of June. Adult Fender's blue butterflies only live 7 to 14 days, and feed exclusively on nectar from flowering plants (Schultz 1995, p. 36; Schultz *et al*. 2003, pp. 64–65).

Given its short adult lifespan, Fender's blue butterfly has limited dispersal ability. Butterflies are estimated to disperse approximately 0.75 kilometers (km) (0.5 miles (mi)) if they remain in their natal lupine patch, and approximately 2 km (1.2 mi) if they disperse between lupine patches (Schultz 1998, p. 290).

Recovery Planning and Recovery Criteria

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 Lists of Endangered and Threatened Wildlife and Plants.

Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species, or to delist a species, is ultimately based on an analysis of the best scientific and commercial data 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.

There are many paths to accomplishing recovery of a species, and recovery may be

achieved without all of the criteria in a recovery plan being fully met. For example, one or more criteria may be exceeded while other criteria may not yet be accomplished. In that instance, we may determine that the threats are minimized sufficiently, and that the species is robust enough, that it no longer meets the Act's definition of an endangered species or a threatened species. In other cases, we may discover new recovery opportunities after having finalized the recovery plan. Parties seeking to conserve the species may use these opportunities instead of methods identified in the recovery plan. Likewise, we may learn new information about the species after we finalize the recovery plan. The new information may change the extent to which existing criteria are appropriate for identifying recovery of the species. The recovery of a species is a dynamic process requiring adaptive management that may, or may not, follow all of the guidance provided in a recovery plan.

In 2010, we finalized the Recovery Plan for the Prairie Species of Western Oregon and Southwestern Washington (recovery plan), which applied to a suite of endemic species including Fender's blue butterfly (USFWS 2010, entire). The objective of the recovery plan is to achieve viable populations of the listed species distributed across their historical ranges in a series of interconnected populations. The historical range of Fender's blue butterfly is considered to be the Willamette Valley, which consists of nine counties in Oregon, because that is where the prairie plants on which the species relies for its survival and reproduction are distributed. The recovery plan objective was to be accomplished by establishing metapopulations of Fender's blue butterfly within restored prairie reserves across the geographic range (USFWS 2010, p. v). The recovery plan set abundance and distribution goals for Fender's blue butterfly by delineating three recovery zones (Salem, Corvallis, and Eugene) encompassing the historical range of the species in the Willamette Valley. The two downlisting criteria established for Fender's blue butterfly are as follows:

(1) Each recovery zone has one functioning network (a metapopulation with several interacting subpopulations, as defined in the recovery plan) with a minimum count of 200

butterflies, distributed among three subpopulations, for at least 10 years; in addition to this network, there must be a second functioning network or two independent populations with butterflies present each year in each recovery zone. Downlisting goals were set at a 90 percent probability of persistence for 25 years.

(2) Two functioning networks or one functioning network and two independent populations in each zone must be protected and managed for high-quality prairie habitat. The plan described high-quality prairie as habitat consisting of a diversity of native, non-woody plant species, various nectar plants that bloom throughout the flight season of Fender's blue butterfly, low frequency of nonnative plant species and encroaching woody species, and essential habitat elements (*e.g.*, nest sites and food plants) for native pollinators. At least one of the larval host plant species, *Lupinus sulphureus* ssp. *kincaidii*, *L. arbustus*, or *L. albicaulis*, must be present.

All three recovery zones have at least two metapopulations (see Table 1, below). The Baskett, Wren, West Eugene, and Willow Creek metapopulations have had more than 200 butterflies each year for at least 10 consecutive years and are therefore meeting the first (recovery) downlisting criterion. In addition, the Gopher Valley, Oak Ridge, Butterfly Meadows, Greasy Creek, Lupine Meadows, Coburg Ridge, and Oak Basin metapopulations have had butterflies present for at least 10 years although they have not exceeded the count of 200 butterflies. Thus, the species is currently meeting the first criterion for downlisting. That said, concern remains for the Corvallis recovery zone in the middle of the species' range, with metapopulations that are generally less robust and more vulnerable to deteriorating in condition over time.

The species is also currently meeting the second (habitat management and protection) downlisting criterion. In each recovery zone, there are at least three metapopulations with greater than 75 percent of their habitat protected (see Table 1, below). Managers of protected land either have a habitat management plan in place or are in the process of creating plans to maintain prairie quality for Fender's blue butterfly. Although the recovery plan has identified the number

of nectar species and sufficient amount of nectar to make up high-quality habitat, the metapopulations currently do not meet the strict definition spelled out in the recovery plan. However, we find that for the species to achieve recovery, it does not need to fulfill this part of the second downlisting criterion as laid out in the recovery plan. We will discuss this in greater detail below.

Table 1. Fender's blue butterfly distribution, abundance, and protection across recovery zones

Metapopulation	At least 200 butterflies for 10 years	# consecutive years ≥ 200 butterflies	Time period with ≥ 200 butterflies	Butterflies present for past 10 years	Habitat protection (%)
Salem Recovery Zone					
Baskett	Yes	18	2000–2018	Yes	100
Gopher Valley	No	7	2012–2018	Yes	100
Hagg Lake	No	8	2011–2018	No	100
Moores Valley	No	0		No	100
Oak Ridge	No	6	2013–2018	Yes	35
Turner Creek	No	0		No	45
Corvallis Recovery Zone					
Butterfly Meadows	No	6	2003–2009	Yes	24
Finley	No	3	2016–2018	No	100
Greasy Creek	No	0		Yes	4
Lupine Meadows	No	6	2003–2009	Yes	100
Wren	Yes	12	2006–2018	Yes	93
Eugene Recovery Zone					
Coburg Ridge	No	2	2006–2007	Yes	77
Oak Basin	No	0		Yes	100
West Eugene	Yes	15	2003–2018	Yes	100
Willow Creek	Yes	25	1993–2018	Yes	100

While Fender's blue butterfly meets downlisting criteria, the species does not meet delisting criteria. The three delisting criteria established for Fender's blue butterfly are as follows:

(1) Each of the three recovery zones has a combination of functioning networks and independent populations such that the probability of persistence is 95 percent over the next 100 years; annual population surveys in each functioning network and independent population must

contain at least the minimum number of adult butterflies as described in Table IV-2 in the recovery plan (Table 2) for 10 consecutive years.

(2) Sites supporting populations of Fender's blue butterflies considered in delisting criterion (1) must be protected and managed for high-quality prairie habitat as described in the recovery plan.

(3) Monitoring of populations following delisting will verify the ongoing recovery of the species, provide a basis for determining whether the species should be again placed under the protection of the Act, and provide a means of assessing the continuing effectiveness of management actions.

Table 2. Distribution and Abundance Goals for Delisting Fender's Blue Butterfly. Table is taken from recovery plan Table IV-2.

DELISTING GOALS		
Delisting goals are set at a 95% probability of persistence for 100 years. Each row below represents a combination of functioning networks and independent populations within a recovery zone. If each of the three recovery zones meets the criteria in one row below, the species would be projected to have a 95 percent probability of persistence for 100 years. Attainment of these population targets, together with the criteria for distribution, habitat quality and management described in the text, would indicate that the species has recovered and could be considered for delisting. Note that the minimum population size in the table represents the minimum population count in a network or independent population in each of 10 consecutive years. The average population size in a network or independent population corresponding to these minima would be substantially larger.		
Number of functioning networks (FN) and independent populations (IP) in a recovery zone	**Minimum population size per network over 10 years**	**Minimum population size per independent population over 10 years**
2 FN + 0 IP	4500	n/a
2 FN + 2 IP	800	3000
2 FN + 2 IP	1000	1000
2 FN + 2 IP	1500	500
2 FN + 3 IP	1000	700
2 FN + 3 IP	1500	300
3 FN + 0 IP	1000	n/a
3 FN + 1 IP	800	200
3 FN + 2 IP	500	250
4 FN + 0 IP	400	n/a

Delisting may be achieved with a variety of combinations of metapopulations and independent populations in each recovery zone as detailed in the recovery plan. Currently, each recovery zone has at least four metapopulations, meaning that each metapopulation would need a

minimum of 400 butterflies in each of 10 consecutive years to meet delisting criterion 1 (Table 2). At this time, none of the recovery zones meet this criterion. For delisting criterion 2, many of the sites for Fender's blue butterfly have protection in place. Currently, we have three habitat conservation plans (HCPs), 17 safe harbor agreements (SHAs), and many Partners for Fish and Wildlife (PFW) agreements in place. These agreements help maintain the species' habitat through prairie habitat restoration and enhancement. Overall, there is currently management and protection for Fender's blue butterfly habitat. However, these sites do not possess a sufficient number of butterflies to meet delisting criterion 1. Additionally, we also do not have post-delisting monitoring plans or agreements in place to assure habitat management will continue for this conservation-reliant species per delisting criterion 3. Therefore, although there are management plans in place for the species' habitat, because there are not a sufficient number of butterflies within the metapopulations and there are no long-term agreements for continual habitat management, this species does not meet the threshold for delisting.

The extinction thresholds underlying downlisting and delisting criteria were derived from a census-based population viability analysis (PVA) conducted shortly after we listed Fender's blue butterfly (USFWS 2010, pp. IV-29–IV-31, IV-34). However, for the reasons described below, we are conducting a new PVA using an individual-based population model and reevaluating the delisting recovery criteria in light of the best scientific data that are now available. As described in the SSA report, the PVA used to develop the initial recovery criteria relied upon several assumptions that, based on our improved understanding of the ecology of the butterfly, we now know are outdated and require modification. We also have an additional decade of monitoring data and increased confidence in the accuracy of a standardized monitoring protocol implemented in 2012 (USFWS 2020, pp. 47–52). Furthermore, the recovery plan set specific targets for the abundance and diversity of nectar species required to be of high-habitat quality to support Fender's blue butterfly, as well as a minimum density of lupine leaves (the host plant for the species' larval life stage). For various reasons detailed in the SSA report,

including a limited dataset and conflicting results regarding the correlation between these resources and densities of Fender's blue butterfly, these targets are also now in question (USFWS 2020, pp. 65–67).

Because we are in the process of reevaluating the current recovery criteria for Fender's blue butterfly as presented in the recovery plan for the species (USFWS 2010, pp. IV-29–IV-31 and IV-34), we did not assess the status of Fender's blue butterfly relative to all of the existing habitat targets. However, in our SSA, we did consider the status of the species relative to the overarching goals of protecting existing populations, securing the habitat, and managing for high-quality prairie habitats; all of these were downlisting and delisting considerations described in the recovery plan (USFWS 2010, p. IV-9). In addition, our evaluation under the SSA framework (USFWS 2016) reflects the fundamental concepts captured in the recovery plan strategy of achieving multiple populations with connectivity between them distributed across the historical range of the species. For example, we find that the minimum number threshold from the recovery plan remains valid because population size targets based on minimum population size eliminate confounding variation from stochastic events that may not reflect demographic changes. In other words, averages may be artificially high or low if there is one unusual weather year.

Additionally, we partially rely upon the habitat targets for nectar species for evaluating the status of the species. We acknowledge that the species needs a variety of different species as nectar sources. The recovery plan identifies the quantity of nectar needed per area and the number of native nectar species. However, we do not find that the quantity defined in these recovery plan habitat targets is needed for the recovery of the species as we have seen sites maintain viability despite not meeting the target (*i.e.*, there are sites that are able to maintain viability with lower quantities of nectar and nonnative nectar species). We also explicitly considered the quality of the prairie habitat, using the recommended guidelines for prairie quality and nectar availability in the recovery plan, and the management and protection status of

butterfly occurrences (see, *e.g.*, USFWS 2010, pp. IV-13, IV-29–IV-31).

Taxonomy

Fender's blue butterfly was first described in 1931 as *Plebejus maricopa fenderi* based on specimens collected near McMinnville, Oregon, in Yamhill County (Macy 1931, pp. 1–2). Fender's blue butterfly was classified in the Lycaenidae family within the subfamily Polyommatinae as a subspecies of Boisduval's blue butterfly based on adult characters and geographic distribution. The species *maricopa* was considered a synonym of the species *icarioides* and was later determined to be a member of the genus *Icaricia*, rather than the genus *Plebejus*. The worldwide taxonomic arrangement of the subtribe Polyommatina (which contains blue butterflies) was fluctuating between *Plebejus* and *Icaricia* until it was revised in 2013 as *Icaricia*. The current scientific name, *Icaricia icarioides fenderi*, was validated by the Integrated Taxonomic Information System (ITIS) and experts at the McGuire Center for Lepidoptera and Biodiversity, a division of the Florida Museum of Natural History at the University of Florida (see USFWS 2020, p. 15, for all citations).

Population Terminology

In some instances, populations that are spatially separated interact, at least on occasion, as individual members move from one population to another. In the case of Fender's blue butterfly, the clear delineation of discrete populations and subpopulations is challenging because of the uncertainty regarding the extent to which individuals at known sites interact with each other or with other individuals on the landscape of adjacent private lands that are inaccessible to researchers and remain unsurveyed. Thus, in the SSA report and in this document, we use the term "metapopulation" as a rough analog to the more familiar term "population." We use the term metapopulation to describe groups of sites occupied by Fender's blue butterflies that are within 2 km (1.2 mi) of one another and not separated by barriers. We chose this distance because it is the estimated dispersal distance of Fender's blue butterfly (Schultz 1998, p. 290). We assume that butterflies within a metapopulation are capable of at least occasional interchange

of individuals. We do not anticipate that metapopulations across the range of the species will interact with one another given the distance and structural barriers between them. The definition of metapopulation used here and in the SSA report is not the same as the "functioning network" defined in the recovery plan. The recovery plan defines a functioning network as three or more potentially interacting subpopulations that are no more than 2 km (1.2 mi) from one another. This definition is problematic because it requires knowledge of subpopulation boundaries, and it excludes metapopulations comprised of only two subpopulations. It also included a requirement for a minimum patch size of 18 hectares (ha) (44 acres (ac)) for each network, which we now know is not necessary, as the butterfly can thrive in much smaller patch sizes. Further information regarding these definitions is detailed in the SSA report (USFWS 2020, pp. 41–42).

Locations containing Fender's blue butterfly occur across multiple land ownerships, have varying degrees of habitat protection, and are managed in different ways. We use the term "site" to identify a management unit or land ownership designation; multiple sites may therefore comprise a single metapopulation. An "independent group" of Fender's blue butterfly refers to occupied sites that are more than 2 km (1.2 mi) from another occupied site and/or are separated by barriers from other occupied sites such that butterflies are unable to interact.

Historical and Current Abundance and Distribution

Due to the limited information collected on this subspecies prior to its description in 1931, we do not know the precise historical (prior to 1989) distribution of Fender's blue butterfly. Only a limited number of collections were made between the time of the subspecies' discovery and its presumed last observation on May 23, 1937, in Benton County, Oregon, leading the scientific community to assume the species was extinct (Hammond and Wilson 1993, p. 3).

Fender's blue butterfly was rediscovered in 1989, at the McDonald State Forest, Benton County, Oregon, on the uncommon plant, Kincaid's lupine. Surveys since its rediscovery indicate that the current distribution, which is identical to its historical distribution, of Fender's

blue butterfly is restricted to the Willamette Valley in Benton, Lane, Linn, Polk, Yamhill, and Washington Counties in Oregon.

While we do not know the precise historical abundance or distribution of Fender's blue butterfly, at the time the species was listed as endangered in 2000, we knew of approximately 3,391 individuals on 32 sites (USFWS 2020, p. 35). By retroactively applying the criteria for our refined population terminology, we calculate there would have been 12 metapopulations of Fender's blue butterfly distributed across approximately 165 ha (408 ac) of occupied prairie in four counties at the time of listing (see Table 3, below). Those numbers have now grown across all three recovery zones identified for Fender's blue butterfly (see *Recovery Planning and Recovery Criteria*, above) as a result of population expansion, discovery, and creation; currently, 15 Fender's blue butterfly metapopulations and 6 independent groups are distributed throughout the Willamette Valley in Benton, Lane, Linn, Polk, Washington, and Yamhill Counties. There are 137 total sites, containing more than 13,700 Fender's blue butterfly individuals, throughout an area totaling approximately 344 ha (825 ac) of occupied prairie habitat with a broad range of land ownerships and varying degrees of land protection and management (USFWS 2020, pp. 52–53). In 2016, the estimated number of Fender's blue butterflies hit a presumed all-time high of nearly 29,000 individuals (USFWS 2020, p. 71). Maps showing the historical and current distribution of Fender's blue butterfly throughout its range are available in the SSA report (USFWS 2020, pp. 51, 54–56).

Table 3. Comparison of Fender's blue butterfly abundance and distribution between time of listing 2000 and survey results from 2018 (USFWS 2020, Table 3.4).

	Listed as endangered (2000)	**Survey results as of 2018***
Number of metapopulations	12	15
Number of independent groups	0	6
Total abundance (number of individuals)	3,391	13,700
Number of sites	32	137
Area of prairie habitat known to be occupied, in hectares (acres)	165 (408)	344 (825)
Counties known to be occupied	4 (Benton, Lane, Polk,	6 (Benton, Lane, Linn,

	and Yamhill)	Polk, Washington, and Yamhill)

*Note this is not a total count, as not all sites can be surveyed every year; thus, the number of individuals reported in 2018 is an underestimate of the rangewide abundance.

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, issuing protective regulations for threatened species, and designating critical habitat for threatened and endangered species. In 2019, jointly with the National Marine Fisheries Service, the Service issued final rules that revised the regulations in 50 CFR parts 17 and 424 regarding how we add, remove, and reclassify threatened and endangered species and the criteria for designating listed species' critical habitat (84 FR 45020 and 84 FR 44753; August 27, 2019). At the same time the Service also issued final regulations that, for species listed as threatened species after September 26, 2019, eliminated the Service's general protective regulations automatically applying to threatened species the prohibitions that section 9 of the Act applies to endangered species (collectively, the 2019 regulations).

As with the proposed rule, we are applying the 2019 regulations for this final rule because the 2019 regulations are the governing law just as they were when we completed the proposed rule. Although there was a period in the interim—between July 5, 2022, and September 21, 2022—when the 2019 regulations became vacated and the pre-2019 regulations therefore governed, the 2019 regulations are now in effect and govern listing and critical habitat decisions (*see Center for Biological Diversity* v. *Haaland*, No. 4:19-cv-05206-JST, Doc. 168 (N.D. Cal. July 5, 2022) (*CBD* v. *Haaland*) (vacating the 2019 regulations and thereby reinstating the pre-2019 regulations)) and *In re: Cattlemen's Ass'n,* No. 22-70194 (9th Cir. Sept.

21, 2022) (staying the vacatur of the 2019 regulations and thereby reinstating the 2019 regulations until a pending motion for reconsideration before the district court is resolved)).

Our analysis for this decision applied the 2019 regulations. However, given that litigation remains regarding the court's vacatur of the 2019 regulations, we also undertook an analysis of whether the decision would be different if we were to apply the pre-2019 regulations. We concluded that the decision would have been the same if we had applied the pre-2019 regulations. The analyses under both the pre-2019 regulations and the 2019 regulations are included in the decision file for this decision.

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 consider these same five factors in downlisting a species from endangered to threatened (50 CFR 424.11(c) and (d)).

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. The term "threat" includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). 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 species' expected response 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 Services 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' 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 our decision on whether the species should be reclassified as a threatened species under the Act. However, it does 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 full SSA report, which may be found at Docket No. FWS-R1-ES-2020-0082 on *https://www.regulations.gov*.

To assess Fender's blue butterfly viability, 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 influences. 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 Factors Affecting Fender's Blue Butterfly

In this discussion, we review the biological condition of the species and its resource needs, 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.

Summary of Species Needs

Table 4 summarizes the key ecological resources required by individual Fender's blue butterflies at various life stages, as presented in the SSA report (from USFWS 2020, Table 2.4).

Table 4. Resource needs of Fender's blue butterfly at the level of the individual by life stage.

Life Stage	Timeline	Resource Needs
Egg	Mid-April through June	• Kincaid's lupine, longspur lupine, or sickle-keeled lupine
Larva (including diapause)	Mid-May through early April (including diapause)	• Kincaid's lupine, longspur lupine, or sickle-keeled lupine
Pupa	April through May	• Kincaid's lupine, longspur lupine, or sickle-keeled lupine
Adult butterfly	Mid-April through June	• Early seral upland prairie, wet prairie, or oak savannah habitat with a mosaic of low-growing grasses and forbs, an open canopy, and a disturbance regime maintaining the habitat • Kincaid's lupine, longspur lupine, or sickle-keeled lupine • Variety of nectar flowers

Based on our evaluation as detailed in the SSA report, we determined that for the species to be highly resilient, Fender's blue butterfly metapopulations need an abundance of lupine host plants and nectar plants within prairie patches of sufficient size, with habitat heterogeneity and minimal amounts of invasive plants and woody vegetation. Healthy metapopulations would also contain individuals distributed across multiple groups (redundancy) in lupine patches that are in close proximity of one another. Ideally, at the species level, highly resilient metapopulations would be distributed across the historical range of the species (redundancy and representation) and have multiple "stepping stone" habitats for connectivity across the landscape (redundancy and representation) (USFWS 2020, p. 33). A "stepping stone" habitat is a prairie patch that provides both lupine and nectar plants, and occurs in an area with barrier-free movement for butterflies; such areas are likely too small to support a subpopulation or metapopulation of butterflies over the long term, but they provide sufficient resources to support multi-generational movement of individuals between larger areas of habitat. The key resources and circumstances required to support resiliency in Fender's blue butterfly metapopulations, and redundancy and representation at the species level, are identified below in Table 5 (from USFWS 2020, Table 2.5). Based on the biology of the species and the information presented in the recovery plan, as synthesized in the SSA report, these are the characteristics of Fender's blue butterfly metapopulations that we conclude would facilitate viability in the wild over time (USFWS 2020, pp. 31–34).

Table 5. Resources and circumstances needed to support resiliency in Fender's blue butterfly metapopulations and redundancy and representation at the species level, based on the conditions required for the species as described in the recovery plan (USFWS 2020, Table 2.5).

Metapopulation Needs		
Habitat Quantity/Quality	**Abundance**	**Distribution**
Abundant density of lupine host plants	Minimum of 200 adult butterflies per metapopulation for 10 years	0.5–1.0 km (0.3–0.6 mi) between lupine patches within a metapopulation
A diversity of nectar plant species throughout the flight season	Consists of multiple sites with butterflies	Across the species' range

Prairie relatively free of invasive plants and woody vegetation, especially those that prevent access to lupine or nectar (*e.g.*, tall grasses)	Not applicable (n/a)	Stepping stone prairie patches with lupine and/or nectar to facilitate connectivity within a metapopulation
Patch sizes of at least 6 ha (14.8 ac) per metapopulation	n/a	n/a
Heterogeneity of habitat, including varying slopes and varying microtopography	n/a	n/a

Factors Affecting the Viability of the Species

At the time we listed Fender's blue butterfly as endangered (65 FR 3875; January 25, 2000), we considered the loss, degradation, and fragmentation of native prairie habitat in the Willamette Valley to pose the greatest threat to the species' survival. Forces contributing to the loss of the little remaining native prairie included urban development (named as the largest single factor threatening the species at the time); agricultural, forestry, and roadside maintenance activities, including the use of herbicides and insecticides; and heavy levels of grazing. In addition, habitat loss through vegetative succession from prairie to shrubland or forest resulting from the absence of natural disturbance processes, such as fire, was identified as a long-term threat, and the invasion of prairies by nonnative plants was identified as a significant contributor to habitat degradation. Although predation is a natural condition affecting the species, the listing rule considered that predation may significantly impact remaining populations of Fender's blue butterfly because they had been reduced to such low numbers. Small population size was also identified as posing a threat of extinction due to the increased risk of loss through random genetic or demographic factors, especially in fragmented or localized populations. Small population size is not a threat in and of itself; however, it may exacerbate the impacts from threats. Christmas tree farms were also identified as a threat due to habitat loss. However, we have not found Christmas tree farming has negatively affected the species or its habitat since 1992. Similarly, we have not found a population-level effect to the species from non-herbicide road maintenance by private landowners. We developed a state-wide Habitat Conservation Plan

to address all routine maintenance activities along rights-of-ways adjacent to roads managed by the Oregon Department of Transportation. While insect herbivory on host lupine plants was considered a possible indirect threat to Fender's blue butterfly, this threat has not manifested in reduced butterfly reproduction or survival. The possibility that the rarity of Fender's blue butterfly could render it vulnerable to overcollection by butterfly enthusiasts was cited as a potential threat. However, we have no evidence that collection of Fender's blue butterfly has occurred either before or since listing. Finally, the listing rule pointed to the inadequacies of existing regulatory mechanisms to protect Fender's blue butterfly or its habitat, especially on lands under private ownership. With assistance from partner organizations, we have undertaken steps to manage and protect butterfly habitat on both private and public lands, which includes Habitat Conservation Plans for roadside maintenance and other activities, Safe Harbor Agreements, Partners for Fish and Wildlife agreements, and individual site management plans. Threats not recognized or considered at the time of listing, but now evaluated, include the potential impacts resulting from climate change (Factor E).

Habitat Loss, Degradation, and Fragmentation

As discussed in the SSA report, habitat loss from land conversion for agriculture and urbanization, and from heavy grazing (Factor A), has decreased since the time of listing due to land protection efforts and management agreements; these activities are still occurring at some level, especially in Lane and Polk Counties, but not at the scope and magnitude seen previously (USFWS 2020, pp. 57–59; see also *Conservation Measures*, below). Habitat degradation due to invasion of prairies by nonnative, invasive plants and by woody species (Factors A and E) has decreased in many metapopulations due to active management using herbicides, mowing, and prescribed fire to maintain or restore prairie habitats, as well as augmentation of Kincaid's lupine and nectar species (USFWS 2020, appendix C; see also *Conservation Measures*, below). Some nonnative plants, such as the tall oatgrass, can be difficult to effectively manage, thereby requiring development of new methods to combat these invasive plants. While threats have been

reduced across the species' range, ongoing habitat management is required to maintain these improvements over time and will be critical to the viability of Fender's blue butterfly. In addition, habitat degradation due to invasion of prairies by nonnative, invasive plants and by woody species, which may potentially be exacerbated in the future by the effects of climate change, remains a significant and ongoing threat at sites that are not managed for prairie conditions.

The overall number of sites supporting Fender's blue butterfly has increased across all land ownership categories since listing, as has the percentage of sites with habitat management. Although the percentage of sites that are protected has remained roughly the same (just over 70 percent) relative to the time of listing, we now have a far greater number of sites that are protected (101 out of 137 sites protected, compared to 23 of 32 sites at the time of listing). More importantly, there is a significant increase in the proportion of sites that are actively managed by private and partner agencies to maintain or restore prairie habitat. At listing, only 31 percent of known sites (10 of 32) and only 44 percent of protected sites (10 of 23) were managed for prairie habitat to any degree. At present, 74 percent of current sites (101 of 137) and 100 percent of protected sites (101 of 101) are managed for prairie habitat. In addition, three HCPs, 17 SHAs, and a programmatic agreement for non-Federal landowners are now in place to undertake proactive conservation and restoration actions to benefit native prairie and minimize and mitigate effects to Fender's blue butterfly (see *Conservation Measures*). These projects will help maintain and may improve or expand the species' habitat. This significant increase in the number of sites protected and managed to benefit Fender's blue butterfly and its habitat represents substantial progress since listing in addressing the threat of habitat loss and degradation and demonstrates the effectiveness of existing conservation actions and regulatory mechanisms. Impacts from habitat conversion, woody succession, and invasive plant species are decreasing in areas with existing metapopulations of Fender's blue butterflies due to active habitat management and protection; these impacts are more likely to stay the same or increase in areas of remaining

prairie that are not currently protected or managed (USFWS 2020, p. 59). With continued protection and proper habitat management, greater range expansion is possible, as explored in detail under Future Scenario 3 (see *Future Species Condition*, below), potentially increasing representation and redundancy of Fender's blue butterfly.

Pesticides

Insecticides and herbicides can directly kill eggs, larvae, and adult butterflies during application of the chemicals to vegetation or from drift of the chemicals from nearby applications in agricultural and urban areas. For instance, *Bacillus thuringiensis* var. *kurstaki*, a bacterium that is lethal to all butterfly and moth larvae, is frequently used to control unwanted insects and has been shown to drift at toxic concentrations over 3 km (2 mi) from the point of application (Barry *et al.* 1993, p. 1977). Sublethal effects may indirectly kill all life stages by reducing lupine host plant vigor, decreasing fecundity, reducing survival, or affecting development time. Both insecticides and herbicides are used in agricultural practices, while herbicides are also used for timber reforestation and roadside maintenance and to control invasive species and woody vegetation encroachment. The threat to Fender's blue butterflies that may occur in roadside populations has been reduced through the development of several HCPs that specifically address pesticide application practices in these areas (*e.g.*, Oregon Department of Transportation HCP; see *Conservation Measures*, below). The potential for exposure of Fender's blue butterfly to herbicides or insecticides remains throughout the species' range, especially in agricultural areas. However, we do not have any record of documented exposure or other data to inform our evaluation of the magnitude of any possible exposure, or the degree to which herbicides or insecticides may be potentially affecting the viability of the species (USFWS 2020, pp. 60–61). That said, while we cannot quantify the magnitude of possible exposure, agricultural land is widely distributed throughout the Willamette Valley, more lands are being converted to agriculture, and pesticide use is generally occurring more now than at any other time in history (Forister *et al* 2019, p. 4). Because pesticides are used on most agricultural crops to increase crop

yield and prevent disease spread, pesticide use in the Willamette Valley is likely to affect multiple metapopulations.

Predation and Small Population Sizes

Although the listing rule stated that predation may have a significant negative impact on Fender's blue butterfly due to the reduced size of populations, the best available information does not indicate that predation is a limiting factor for the species. Small population size was also identified as posing a threat of extinction due to the increased risk of loss through random genetic or demographic factors, especially in fragmented or localized populations (Factor E). Some very small, isolated populations of Fender's blue butterfly known at the time of listing do appear to have become extirpated (USFWS 2020, pp. 51–52), and existing small metapopulations or independent groups remain especially vulnerable to extirpation. Overall, however, the threat of small population size has decreased since listing due to the discovery of new metapopulations, the expansion of existing metapopulations, and the creation of new metapopulations from reintroductions of Fender's blue butterflies. Most, but not all, metapopulations of Fender's blue butterfly have increased in abundance relative to the time of listing, and the total population size has increased from just over 3,000 individuals in 12 metapopulations distributed across four counties, to well over 13,000 individuals in 15 metapopulations distributed across six counties (USFWS 2020, pp. 52–53).

Climate Change

The severity of threat posed to Fender's blue butterfly from the impacts of climate change is difficult to predict. The Willamette Valley, and prairies specifically, may fare better than other regions; however, various changes in average annual temperatures and precipitation are predicted and may affect Fender's blue butterfly or its habitat (Bachelet *et al*. 2011, p. 424; USFWS 2017, p. B-10; USFWS 2020, pp. 61–62). Such potential changes include higher water levels in wet prairies during winter and spring, increased spring flooding events, and prolonged summer droughts. Two models have been used to conduct climate change vulnerability assessments for

butterfly species within the Willamette Valley using the Special Report on Emissions Scenarios (SRES) created by the Intergovernmental Panel on Climate Change (IPCC). Under the SRES B1 scenario (comparable to the representative concentration pathway (RCP) 4.5 scenario), both models ranked Fender's blue butterfly as stable. Under the SRES A1B scenario (RCP6.0), both models ranked Fender's blue butterfly as moderately vulnerable. Under the SRES A2 scenario (RCP8.5), however, Fender's blue butterfly was ranked as extremely vulnerable under one model and highly vulnerable under the other model due to its limited range and loss of both nectar and host plants. While the models do not agree on the degree of vulnerability, both models did show an increase in vulnerability as climate change scenarios worsened due to the species' limited range and the potential for loss of both nectar and host plants, as well as a possible increase in invasive, nonnative plants (Steel *et al*. 2011, p. 5; Kaye *et al*. 2013, pp. 23–24).

Conservation Measures

Because of extensive loss of native prairie habitats in the Willamette Valley and the resulting Federal listing of multiple endemic plant and animal species, the region has been the focus of intensive conservation efforts. Numerous entities, including Federal, State, and county agencies, nongovernmental organizations such as land trusts, and private landowners, have all become engaged in efforts to restore native Willamette Valley prairie and oak savannah habitats and the associated endemic animal communities. Collectively, the agencies and organizations that manage lands have acquired conservation easements and conducted management actions to benefit prairie and oak savannah habitats; in many cases, conservation efforts have been designed specifically to benefit Fender's blue butterfly. Various types of agreements have been established with private landowners to perform voluntary conservation actions on their land, while agencies are working collaboratively on habitat restoration and active prairie management under interagency agreements.

Our SSA report summarizes the conservation measures implemented across the range of Fender's blue butterfly since the species was listed in 2000 (USFWS 2020, pp. 62–65). These

measures include native prairie habitat restoration and management on public lands or lands that are managed by a conservation organization, including Baskett Slough National Wildlife Refuge and surrounding areas, William L. Finley National Wildlife Refuge, Fern Ridge Reservoir, West Eugene Wetlands, Willow Creek Preserve, Yamhill Oaks Preserve, Coburg Ridge, Lupine Meadows, Hagg Lake, a small portion of the McDonald State Forest, and some Benton County public lands. The long-term viability of Fender's blue butterfly is dependent on an ongoing, consistent commitment to active management to remove woody vegetation and invasive plants, thereby maintaining the native plant community and open prairie conditions required by this species.

The contributions of private landowners have also made a significant impact on the conservation of Fender's blue butterfly. Approximately 96 percent of the Willamette Valley ecoregion is in private ownership (Oregon Department of Fish and Wildlife 2006), and the majority (66 percent) of designated critical habitat for Fender's blue butterfly is on private lands (see 50 CFR 17.95(i) and 71 FR 63862, October 31, 2006). Thus, the conservation and recovery of Fender's blue butterfly, Kincaid's lupine, and the suite of native species associated with them relies in large part on the voluntary actions of willing non-Federal landowners to conserve, enhance, restore, reconnect, and actively manage the native prairie habitats that support these species. Many Fender's blue butterfly sites on private or other non-Federal lands across the range of the species now have PFW agreements, SHAs, or HCPs in place with the Service.

Through many PFW agreements in place with private landowners in the Willamette Valley, we provide technical assistance to landowners for the enhancement and restoration of native habitats on their lands; these conservation actions benefit multiple native species, including Fender's blue butterfly. We administer and implement a programmatic SHA for the benefit of Fender's blue butterfly. This program encourages non-Federal landowners to undertake proactive conservation and restoration actions to benefit native prairie, as well as Fender's blue butterfly and Kincaid's lupine, in Benton, Lane, Linn, Marion, Polk, Washington,

and Yamhill Counties, Oregon (USFWS 2016, entire). Since 2021, 17 properties covering approximately 595 ha (1,471 ac) are enrolled under the programmatic SHA as of November 2020; another 12 agreements that will cover an additional 417 ha (1,031 ac) are in development. In addition, three HCPs in place are designed to minimize and mitigate effects to Fender's blue butterfly: the Benton County HCP (2011; 50-year term), Yamhill County Road Rights-of-Way HCP (2014; 30-year term), and the Oregon Department of Transportation HCP (2017; 25-year term). These agreements include various provisions ensuring the implementation of best management practices and offsetting any potential negative impacts of activities through augmenting or enhancing populations of Fender's blue butterfly or prairie habitats.

Finally, nongovernmental organizations have actively pursued conservation easements and acquisition of properties throughout the Willamette Valley to benefit native prairies and Fender's blue butterfly. Specific examples include the 2005 acquisition and establishment of the Lupine Meadow Preserve by the Greenbelt Land Trust, and the 2008 acquisition and establishment of the Yamhill Oaks Preserve by The Nature Conservancy.

Overall, there are 137 total sites containing Fender's blue butterfly that occur over a broad range of land ownerships with varying degrees of land protection and management. Forty-four sites are on tracts of public land owned by the U.S. Army Corps of Engineers, Bureau of Land Management, Bureau of Reclamation, Oregon State University, or the Service, all of which are being managed for prairie habitat to varying degrees given funding and personnel. Fourteen sites are in public rights-of-way managed by the Oregon Department of Transportation or County Public Works, and all are being managed for prairie habitat. Thirty sites are on private land without any form of protection or active management for Fender's blue butterfly or its habitat. Another 43 sites are on private land with some level of protection via a conservation easement (20 sites) or under a cooperative agreement (23 sites) and are being managed for prairie habitat. More information on conservation measures performed by nongovernmental organizations specific to each metapopulation of Fender's blue butterfly are listed in the SSA

report under *Metapopulation Descriptions under Current Conditions* (USFWS 2020, appendix C).

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects on the species, but we have also analyzed their potential cumulative effects. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. To assess the current and future condition of the species, we undertake an iterative analysis that encompasses and incorporates the threats individually and then accumulates and evaluates the effects of all the factors that may be influencing the species including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative effects analysis. For Fender's blue butterfly, we analyzed the cumulative effects of habitat loss, conversion, and fragmentation; habitat succession to shrubs and woody plant species; encroachment of nonnative plants; application of pesticides; and climate change. We considered the source, immediacy, scope, and trajectory of each stressor; the life stages impacted, and the benefit conservation measures, such as habitat management and protection provided,

Current Species Condition

After assessing the biology of Fender's blue butterfly and the information presented in its recovery plan, we determined that the resiliency of a metapopulation of the species relies on an abundant supply of lupine host plants and nectar plants within prairie patches at least 6 ha (14.8 ac) in size, habitat heterogeneity, and minimal amounts of invasive plants and woody vegetation. Healthy metapopulations would also contain a minimum of 200 butterflies (resiliency) distributed across multiple groups within a metapopulation (redundancy) in lupine patches that are within 0.5 to 1.0 km (0.31 to 0.62 mi) of one another. At the species level, a highly resilient metapopulations would ideally be distributed across the historical range of the species

(representation and redundancy across metapopulations) and have numerous habitat "stepping stones" for connectivity across the landscape (redundancy and representation).

In our evaluation, we used the best scientific data available to evaluate the current condition of each Fender's blue butterfly metapopulation in terms of resiliency. We developed criteria to assess specific habitat and demographic factors contributing to the overall resilience of metapopulations, and to rank each metapopulation as to whether it is in high, moderate, or low condition; these categories reflected our estimate of the probability of persistence over a period of 25 to 35 years (explained below; see *Future Species Condition*), as detailed in the SSA report (USFWS 2020, pp. 71–73). Criteria used to score metapopulation condition included the number of sites contributing to the metapopulation, butterfly abundance, connectivity, habitat patch size, lupine density, presence of nectar species, and measures of prairie quality and habitat heterogeneity (USFWS 2020, Table 6.2, p. 73).

Five of the existing 15 Fender's blue butterfly metapopulations are ranked as having a high current condition, while 3 are ranked as moderate, 6 are ranked low, and one may be extirpated (see Table 6, below). Overall, the majority of metapopulations, 8 out of 15, are ranked as either in high or moderate condition, indicating a degree of resiliency across the range of the species. Fender's blue butterfly currently demonstrates a good degree of metapopulation redundancy, with multiple metapopulations occurring both within and across the three recovery zones spanning the historical range of the species. Although no direct measures of genetic or ecological diversity are available, we consider the species to have a good degree of representation, as there are multiple metapopulations and groups of Fender's blue butterfly distributed relatively evenly across the geographic range of the species (six in the Salem recovery zone, five in the Corvallis recovery zone, and four in the Eugene recovery zone), in all known habitat types (both prairie and oak savannah) and elevations.

Table 6. Current condition of Fender's blue butterfly metapopulations.

Metapopulation	Current Condition
Salem Recovery Zone	
Baskett	High
Gopher Valley	Moderate
Hagg Lake	High
Moores Valley	Possible extirpation
Oak Ridge	Moderate
Turner Creek	Low
Corvallis Recovery Zone	
Butterfly Meadows	Low
Finley	Moderate
Greasy Creek	Low
Lupine Meadows	Low
Wren	High
Eugene Recovery Zone	
Coburg Ridge	Low
Oak Basin	Low
West Eugene	High
Willow Creek	High

The discovery of Fender's blue butterflies in additional counties since the listing of the species, as well as the expansion of existing metapopulations, increases both the geographic range of the species and connectivity throughout the landscape. An increased number of metapopulations, composed of a greater number of individuals and with expanded distribution and connectivity across the range of Fender's blue butterfly (see Table 3, above), means the species has a greater chance of withstanding stochastic events (resiliency), surviving potentially catastrophic events (redundancy), and adapting to changing environmental conditions (representation) over time.

Future Species Condition

To understand the potential future condition of Fender's blue butterfly with respect to resiliency, redundancy, and representation, we considered a range of potential scenarios that incorporate important influences on the status of the species, and that are reasonably likely to occur. We additionally forecast the relative likelihood of each scenario occurring, based on our

experience with the species and best professional judgment (see USFWS 2020, p. 78). Through these future scenarios, we forecast the viability of Fender's blue butterfly over the next 25 to 35 years. We chose this timeframe because it represents up to 35 generations of Fender's blue butterfly, and therefore provides an adequate timeframe to consider the species' response to threats. The recovery plan also used this general timeframe for the determination of downlisting criteria, and this timeframe can reveal the immediate effects of habitat management strategies given that our current interim protections (*e.g.*, HCPs, SHAs) have a lifespan ranging from 10 to 50 years. We bracketed our timeframe to a shorter period based on our knowledge of the species and our ability to project current and future threats and conservation efforts. We scored the projected future condition of each metapopulation based on a ruleset incorporating abundance and trend data, quality of prairie habitat, level of habitat protection, and type of habitat management (see USFWS 2020, pp. 77–83). In addition to the high, moderate, and low condition categories, we added a fourth category in our future scenarios accounting for possible extirpation. The purpose of evaluating the status of Fender's blue butterfly under a range of plausible future scenarios is to create a risk profile for the species into the future, allowing for an evaluation of its viability over time.

Scenario 1 assumes "continuing efforts"—Fender's blue butterfly will continue on its current trajectory and influences on viability, habitat management, and conservation measures will all continue at their present levels. Due to our analysis of current management actions, protections, and threats, we consider this scenario as highly likely to play out over the next 25 to 35 years. Scenario 2 is based on an increased level of impact from negative influences on viability, particularly alterations in environmental conditions as a result of climate change. We consider this scenario moderately likely to occur over the next 25 to 35 years due to greater uncertainty in assessing the degree of climate change and the impact it may have on the species. Scenario 3 is based on increased conservation effort, including the potential for improved habitat conditions at currently occupied sites; metapopulation expansion by restoring currently

unoccupied prairie sites; and augmentation, translocation, and/or introduction of butterflies. In this scenario, we evaluated the potential for expansion at currently protected sites and protected areas identified as possible introduction sites (USFWS 2020, pp. 81–104). Due to questions regarding potential funding, personnel, and other conservation agreements needed to provide additional protections, we consider this scenario as also moderately likely to occur over the next 25 to 35 years. The results from these three scenarios describe a range of possible conditions in terms of viability of Fender's blue butterfly (USFWS 2020, pp. 104–106; see Table 7, below). We used two different methodologies for assessing future conditions. Under scenarios 1 and 2, we analyzed trends in population number and habitat quality and projected that out into the future. Meanwhile, in scenario 3, we mapped out and identified potential areas for conservation and worked with partners on the feasibility of conservation actions there. We then used these responses to project habitat enhancement in these areas and the impact that enhancement will have on the species' population trends. While these two methods differ, both apply our knowledge of the species and current and planned or potential management actions in order to project what its condition will be in the future.

Table 7. Condition scores for metapopulation resiliency, comparing current condition to three plausible future scenarios as described in the text. Relative likelihoods of each scenario at 25 to 35 years are also provided; see USFWS 2020, p. 77, for an explanation of confidence terminologies used to estimate the likelihood of scenario occurrence.

	Number of Metapopulations			
Condition Score	**Current Condition**	**Scenario 1—Continuing Efforts (highly likely)**	**Scenario 2—Considerable Impacts (moderately likely)**	**Scenario 3—Conservation Efforts (moderately likely)**
High	5	7	3	7
Moderate	3	1	5	5
Low	6	5	0	2
Possible Extirpation	1	2	7	1

Because the natural processes that historically maintained this ecosystem and Fender's blue butterfly's early seral habitat are now largely absent from the Willamette Valley, the species is reliant upon ongoing management that sets back succession and controls invasive tall grasses

and woody plant species. Therefore, an important consideration in our evaluation of the viability of the species is whether or not management actions will continue that restoration and maintenance of prairie systems, including actions that maintain populations of the lupine host plants and nectar resources in the Willamette Valley.

Scenario 1 results in improved condition for several metapopulations currently ranked as moderate as conservation efforts continue. On the other hand, metapopulations that are currently in low condition or already at risk of extirpation would likely either remain in that state or (in one case) degrade in condition from low to possible extirpation. Overall, we expect that the viability of Fender's blue butterfly under this scenario would improve relative to its current condition, characterized by increases in resiliency of existing metapopulations. Seven metapopulations would be in high condition, one in moderate condition, five in low, and two at risk of possible extirpation. There would be at least two metapopulations in high condition in each of the three recovery zones; the Salem recovery zone would be in the best condition, with three metapopulations in high condition. The resiliency of metapopulations would be lowest in the Corvallis recovery zone, with three of five metapopulations ranked either low or at risk of extirpation. Thus, there is a possibility for some loss of redundancy, with the Corvallis recovery zone at greatest risk. We anticipate that most, but not all, of the current metapopulations would maintain viability under this scenario.

Scenario 2 would be expected to result in decreases in resiliency and redundancy, with seven metapopulations subject to possible extirpation. While some metapopulations would likely retain their resiliency, more than half of the current metapopulations would be at risk of extinction within the next 25 to 35 years under this scenario. That said, we projected that all recovery zones would still maintain at least one metapopulation in high condition. We anticipate that, under these conditions, Fender's blue butterfly would persist, but its long-term viability in terms of resiliency, redundancy, and representation would be greatly diminished even with continued management for the conservation of the species.

Under Scenario 3, we expect resiliency to increase as several metapopulations remain at or move into high condition, with others transitioning from low to moderate condition; seven metapopulations would be in high condition, five in moderate condition, two in low condition, and one at risk of extirpation. Redundancy and representation would be maintained in all recovery zones; all recovery zones would have a minimum of two metapopulations in high condition. We anticipate that all of the currently extant metapopulations would maintain viability under this scenario, with the exception of one that is small and at risk of extirpation under all scenarios considered.

For the reasons described above under *Future Species Condition*, we forecast the future condition of Fender's blue butterfly out for a period of 25 to 35 years. Although information exists regarding potential impacts from climate change beyond this timeframe, the projections depend on an increasing number of assumptions as they move forward in time, and thus become more uncertain with increasingly long timeframes. For our purposes, as detailed above, we concluded that a foreseeable future of 25 to 35 years was the most reasonable period of time over which we could reasonably rely upon predictions of the future conservation status of Fender's blue butterfly.

Summary of Comments and Recommendations

In the proposed rule published on June 23, 2021 (86 FR 32859), we requested that all interested parties submit written comments on the proposal by August 23, 2021. We also contacted appropriate State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. A newspaper notice inviting public to provide comments was published in The Oregonian on July 4, 2021. We did not receive any requests for a public hearing. All substantive information we received during the comment period has been incorporated directly into the final determination or is addressed below. We received five public comments on the proposed rule, two of which included substantive comments that are summarized below and incorporated into this final rule as appropriate.

Peer Reviewer Comments

As discussed under **Supporting Documents** above, we received responses from five peer reviewers. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding the information contained in the SSA report. The peer reviewers generally concurred with our methods and conclusions, and provided additional information, clarifications, and suggestions to improve the final SSA report.

Public Comments

(1) *Comment:* One commenter stated that the species should not be downlisted until the effects of wildfire, exacerbated by climate change, on Fender's blue butterfly's critical habitat is better understood.

Response: We may downlist a species listed as an endangered species if the best available commercial and scientific data indicate the species no longer meets the Act's definition of an endangered species, which is the case for Fender's blue butterfly. Prior research suggests that fire can increase lupine leaf density and that Fender's blue butterfly adults recolonize burned areas from nearby unburned lupine patches by laying eggs on lupine in burned areas the seasons following fire, such that butterfly abundance quickly rebounds and potentially exceeds pre-fire levels. In Fall 2019, a prescribed fire at Baskett Slough National Wildlife Refuge expanded beyond its planned boundaries, resulting in a significant portion of occupied butterfly habitat being burned. A multi-year project began in 2020 to gain a better understanding of the rates of Fender's blue butterfly mortality and the patterns of recolonization after fire. Preliminary results indicate that there was no difference in egg density in burned versus unburned plots even though there were fewer lupine leaves in burned plots; that there was less larvae activity in burned plots; and that recolonization occurred within 100 meters of the unburned areas.

Further research may provide important information on the effects of wildfire on the species, but we know that fire is an essential ecosystem component, is necessary to maintain prairie habitat so that it is not converted to shrub land and forest, and is a tool used to prevent

succession to woody vegetation on the landscape. Regular fires reduce the abundance of shrubs and trees and favor the growth of grasses needed for Fender's blue butterfly habitat. Based on two climate change vulnerability models, it appears likely that Fender's blue butterfly may be negatively affected by long-term consequences of climate change; however, we are not able to specifically quantify the magnitude of effects to the species. While vulnerability was influenced by loss of nectar and host plants, the source of this loss was identified as invasive plants, not as wildfire. We have made no changes to the rule in response to this comment.

(2) *Comment:* One commenter stated that the Service's definition of a resilient population, 200 butterflies per metapopulation, does not equate to a healthy or resilient population. The commenter reiterated the fact that the Service identified the presence of at least 6 ha of high-quality habitat across three subpopulations (for a total of 18 ha) as necessary for a healthy population. The commenter stated that the Service needs to provide more up-to-date analysis in line with the research that has been done since the recovery plan was published.

Response: The minimum population of 200 mature individuals and 6 ha of high-quality habitat are both criteria identified in our recovery plan. Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. They rely on voluntary participation from landowners, land managers, and other recovery partners. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. Recovery is a dynamic process requiring adaptive management that may or may not fully follow the guidance provided in an earlier recovery plan. A determination of whether a valid, extant species should be downlisted or delisted is made solely on the question of whether it meets the Act's definition of an "endangered species" or of a "threatened species."

In determining whether a metapopulation is of low, moderate, or high resiliency, we rely on multiple lines of evidence in addition to the ones the commenter

mentioned. In our analysis, a minimum population criterion of 200 adults is used to gauge how long (in consecutive years) a metapopulation exists above this threshold. In addition to this factor, we also considered the average 5-year abundance of a metapopulation, connectivity within the metapopulation, average prairie patch size, lupine density, and other demographic and habitat factors to assess resiliency (see table 6.2 in the SSA for the complete list). The 200-adult threshold alone does not determine the resiliency of the population. Rather, it is one of the factors we considered, in addition to the other factors briefly mentioned here, to determine the resiliency of a metapopulation.

Continued research and management activities since the recovery plan was completed have revealed that highly resilient populations do not necessarily need 6 ha of high-quality habitat. We have observed multiple populations that thrived in smaller habitat size (Menke 2018, entire). As noted above, while our recovery plan provides the general criteria for assessing the status of the species, it is not a regulatory document, and we are not required to fulfill all of its provisions and criteria to make a determination under section 4(a)(1) of the Act that a listed species should be downlisted or delisted. That said, the recommendation in our SSA and proposed rule that Fender's blue butterfly populations with high resiliency have 6 ha of high-quality habitat was to create a baseline for assessing the health of the metapopulation. The 6 ha of high-quality habitat was not used as a hard line for determining high versus low resiliency of metapopulations.

(3) *Comment:* One commenter stated that the Service did not clearly identify what "high-quality habitat" means.

Response: We acknowledge the imprecise definition of high-quality habitat in the recovery plan. To address this issue, we split habitat condition into factors. Some of these factors, such as prairie patch size and lupine density, are mentioned in our response to the second comment. In addition to those factors, we also examined the diversity of nectar species, the composition of prairie habitat (woody versus shrub vegetation, and percentages of invasive

species), and the heterogeneity in habitat types. These metrics allow us to better analyze and determine quality of Fender's blue butterfly's habitat. Second, we have learned more about the habitat requirements for Fender's blue butterfly since the completion of the recovery plan, and we incorporated this new information into our analysis of current and future conditions in the SSA report.

(4) *Comment:* One commenter stated that the three future scenarios in the SSA report intermix potential effects due to climate change and habitat management effort. The commenter suggested that the Service introduce three additional scenarios to better capture potential impacts due to climate change. The commenter provided an example of changes to Fender's blue butterfly's phenology over the past three decades as a factor the Service should consider in the future condition analysis of the SSA. Additionally, the commenter expresses concerns about the continuing effects of climate change, in light of the recently released IPCC report in August 2021.

Response: Given the uncertainty inherent in projecting future biological status, we use scenarios to consider a range of plausible assumptions about both future stressors, such as climate change, and conservation efforts, such as habitat management, that may affect Fender's blue butterfly. Because we have limited confidence in any single projection of the species' future condition, our future scenarios seek to capture the range of plausible outcomes. Therefore, we are not attempting to quantify every effect from climate change or habitat management in our scenarios. We recognize the effects of climate change on this species based on climate vulnerability studies and seek to understand how different types and levels of management efforts will respond to different climate change scenarios. We thus create scenarios that examine what the species' future condition will be in different climate projection models and different levels of management activities.

The intermixing of climate change and habitat management actions, therefore, was intentional. In assessing the status of the species, we considered the risk of extinction across the

range of plausible scenarios. Because the probability of any one scenario occurring is incalculable, we concluded that adding additional scenarios would not necessarily better capture potential impacts of climate change. While the new IPCC report provides a global perspective on projected changes in climate, a downscaled model specific to the Pacific Northwest has not yet been released. As a result, we continue to rely on the best available scientific and commercial information to assess the impact of climate change on this species.

With regards to considering plant phenology in our future conditions, we reviewed the information presented in the paper cited in the comment. While the paper reports that peak flight activity for this species has changed, the trends in abundance based on phenological response has not. However, uncertainty remains regarding potential phenological mismatch with both host and nectar plants, and what, if any, the impacts will be to Fender's blue butterfly. Our future scenarios were designed to reflect the major stressors that could affect the species now and within the foreseeable. Therefore, we determined that plant phenology does not at present rise to the level where we would need to incorporate it into our future analysis.

(5) *Comment:* The commenter provided recommendations on changes to the proposed 4(d) rule. Broadly, these suggested changes revolved around tightening the timeframe for habitat management activities for invasive woody species and the equipment or methods used.

Response: We consulted internal and external experts on this issue. Overall, their response was that the suggestion was too restrictive and would interfere with habitat management beneficial to Fender's blue butterfly. While we acknowledge that larva are on the landscape, restricting the suggested time period for when landowners can perform various types of habitat improvements for the butterfly is not beneficial. The majority of land management activities that reduce invasive and/or nonnative plant species occur during the spring growing season, prior to the flight season. Therefore, by restricting activities outside the flight period (February to April timeline), we would restrict activities such as mowing tall grasses that can

outcompete lupine and cause further habitat issues in the future. Overall, the benefit to the species by these management actions outweighs the potential impacts to individual larvae.

Determination of Fender's Blue Butterfly's 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 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 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 Act's section 4(a)(1) factors, we find that Fender's blue butterfly has experienced a marked increase in resiliency, redundancy, and representation across its historical range, contributing to an overall increase in viability. We listed Fender's blue butterfly as endangered in 2000, upon a determination at that time that the species was presently in danger of extinction throughout all or a significant portion of its range (65 FR 3875, January 25, 2000, p. 3886). Since then, our evaluation of the best scientific and commercial data available indicates that the abundance and distribution of Fender's blue butterfly has improved as a result of metapopulation expansion, metapopulation discovery, and metapopulation creation, as well as a marked increase in habitat protection and management across the range of the species. The presence of Fender's

blue butterflies in new counties, the expansion of existing metapopulations, and the creation of new metapopulations increase both the geographic range of the species and potential connectivity throughout the landscape. In addition, active recovery efforts occurring since Fender's blue butterfly was listed have led to the amelioration of threats to the species, as detailed above under *Conservation Measures*. As described in the **Summary of Biological Status and Factors Affecting Fender's Blue Butterfly**, there has been a marked reduction in threats to the species posed by land conversion for agriculture and urbanization, heavy grazing, and invasion of prairies by nonnative, invasive plants and by woody species (Factors A and E), helped in large part by effective habitat restoration and management efforts in the Willamette Valley (Factor D). Furthermore, threats identified at the time of listing under such as, overcollection (Factor B) and predation (Factor C) have not materialized as originally anticipated. Our assessment of the present condition of the species demonstrates that Fender's blue butterfly is currently found in 137 sites totaling 15 metapopulations and 6 independent groups. The metapopulations primarily ranked in high to moderate condition throughout all three recovery zones established for the species within its historical range, exhibiting an appreciable degree of resiliency, redundancy, and representation such that the species is no longer currently in danger of extinction. Thus, after assessing the best available information, we conclude that Fender's blue butterfly no longer meets the Act's definition of an endangered species.

We next consider whether Fender's blue butterfly meets the Act's definition of a threatened species. Although threats to the species have been reduced relative to the time of listing, the species remains vulnerable. The potential for exposure to pesticides (herbicides, insecticides) is an ongoing threat to the species throughout its range, due to the close proximity of Fender's blue butterfly occurrence sites to agricultural lands as well as areas subject to spraying to control gypsy moths or mosquitoes. In addition, we have yet to develop an effective method for eradicating tall oatgrass, a nonnative, invasive plant that is rapidly expanding into prime prairie habitats and posing a growing management concern. The low availability of lupine

host plants, and inadequate supply of appropriate lupine seed for restoration efforts, is also a limiting factor for Fender's blue butterfly. The threat of overcollection to the long-term viability of the species is currently unknown but could have negative impacts. However, these acts are currently prohibited, likely reducing the threat. Next, we consider Fender's blue butterfly to be a "conservation-reliant" species (*sensu* Scott *et al*. 2010, p. 92), and it remains highly vulnerable to loss of its prairie habitat should active management cease. Because it relies on consistent disturbance to maintain its early seral prairie habitat, the future viability of Fender's blue butterfly is dependent upon ongoing management to set back succession and control the invasion of tall grasses and woody plant species since the natural processes that once historically maintained this ecosystem are now largely absent from the Willamette Valley. The viability of Fender's blue butterfly over the long term will therefore require addressing influences on viability including ongoing habitat conversion, loss of habitat disturbance resulting in habitat succession, invasion by nonnative plants, and exposure to insecticides and herbicides, as well as continued conservation and management efforts.

As noted in our endangered determination, there has been marked improvement in addressing many of the threats affecting the species including habitat loss due to conversion and invasion by non-native species. However, these efforts were achieved through management actions undertaken by the Service and our partners. The continuation of these efforts is vital due to the fact that succession of Fender's blue butterfly habitat by invasive species is an ongoing process. Controlling these invasives through management activities is essential to preventing succession. If these activities were downscaled or reduced, it could have drastically harmful effects on the species. This is demonstrated through our future scenarios in which we project out to 35 years.

Under the Continuing Effects scenario which assumes management activities continue at the current level, we project the number of metapopulations with high resiliency will increase from five to seven. This increase came from metapopulations whose current conditions were

rated as low and moderate. This trend is also reflected in the Conservation Effort scenario where the number of metapopulations with high resiliency is projected to increase. However, under the Considerable Impacts scenario where management efforts are reduced, we project the species will occur in eight metapopulations with high or moderate resiliency and zero metapopulations with low resiliency; seven metapopulations may be extirpated. Under current condition, one metapopulation may be extirpated. The Considerable Impacts scenario represents a significant decline because we project a possible extirpation of almost half of all existing metapopulations. These declines are due to the stressors discussed above including succession of native habitats due to invasive species. The potential loss of so many metapopulations would have severe impacts on the species' redundancy and representation as these potential losses occur across all three recovery zones. Overall, our future scenarios demonstrate that Fender's blue butterfly is a conservation reliant species and ensuring the continuation of management activities is vital to sustain and improve the species' condition.

In addition to our future scenarios, we also reviewed the delisting criteria as identified in the recovery plan. Using those criteria, eleven of the 15 metapopulations do not meet the minimum criteria of 200 butterflies each year, and connectivity both within and between metapopulations remains limited due to the reduction and fragmentation of native prairie habitats, as well as the relative rarity and patchy distribution of the primary host plant, Kincaid's lupine. In particular, concern remains for the Corvallis recovery zone in the middle of the species' range, with metapopulations that are generally less robust and more vulnerable to deteriorating in condition over time (under current conditions, only one metapopulation in this zone is considered highly resilient, compared to two or more in the other zones).

Thus, after assessing the best available information, including, but not limited to, the current status of the species, ongoing threats to the species, and predicted status of Fender's blue butterfly under various future scenarios, including the consequences of climate change, we conclude that Fender's blue butterfly is not currently in danger of extinction but is likely to

become in danger of extinction within the foreseeable future throughout all of its range.

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. The court in *Center for Biological Diversity* v. *Everson*, 2020 WL 437289 (D.D.C. Jan. 28, 2020) (Everson), 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" (Final Policy; 79 FR 37578; July 1, 2014) that provided that 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. Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant; and (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the "significance" question or the "status" question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

Following the court's holding in *Everson*, we now consider whether there are any significant portions of the species' range where the species is in danger of extinction now (*i.e.*, endangered). In undertaking this analysis for Fender's blue butterfly, we choose to address the status question first—we considered information pertaining to the geographic distribution of both the species and the threats that the species faces to identify any portions of the range where the species is endangered.

For Fender's blue butterfly, we considered whether the threats are geographically concentrated in any portion of the species' range at a biologically meaningful scale. We examined the following threats: habitat loss from land conversion for agriculture and

urbanization; habitat degradation resulting from invasion of prairies by nonnative plants or by succession to woody species; insecticides and herbicides; effects of climate change; small population size; and the cumulative effects of these threats.

Given the small size of the Willamette Valley, its relatively homogenous geological features, and the consistent vegetation structure and composition in Fender's blue butterfly habitat, threats to the species are equally present throughout its range. For instance, the human population, and the resulting urbanization and agricultural needs, are increasing throughout the Willamette Valley such that habitat loss is not concentrated in any portion of the range (Oregon Department of Administrative Services 2013). Similarly, habitat degradation due to invasion by nonnative plants and woody succession have been detected in all occupied Fender's blue butterfly habitat (USFWS 2020, p. 59). Insecticides and herbicides are used for both roadside maintenance and for management to maintain or restore prairie habitats. Although treatments occur in different habitat areas, we did not find these activities to be concentrated in any Fender's blue butterfly metapopulation (USFWS 2020, p. 61).

Due to the limited geographic scope of the Willamette Valley, climatic variables such as temperature and precipitation do not vary significantly in different portions of the range currently. Temperature is projected to increase or somewhat increase throughout the Willamette Valley while hydrological variables are projected to remain neutral (Kaye *et al*. 2013, P. 13). While climate vulnerability models project that there could be changes in plant composition rangewide (Kaye *et al*. 2013, pp. 24-25), the impacts from phenological changes to Fender's blue butterfly metapopulations would likely differ based on their current conditions rather on their geographic location.

Additionally, the Fender's blue butterfly diet, physical habitat, and reproductive needs are all consistent throughout its range. Because of the small geographic scale of the Willamette Valley, the lack of habitat differences, the same biological requirements, and the uniform distribution of threats, we have determined that neither individual nor cumulative threats are

concentrated to a degree in the current Fender's blue butterfly range such that the species would have a different biological status in any one recovery zone or metapopulation.

We found no concentration of threats in any portion of the range of Fender's blue butterfly at a biologically meaningful scale, and there is no evidence to suggest that these threats affect any of the metapopulations to a greater degree. Additionally, metapopulations that are in low condition are distributed throughout the species range and are not concentrated in any single portion of the range. Thus, there are no portions of the species' range where threats facing the species are concentrated to a degree where the species in that portion would have a different status from its rangewide status.

Therefore, no portion of the species' range provides a basis for determining that the species is in danger of extinction in a significant portion of its range, and we determine that the species is likely to become in danger of extinction within the foreseeable future throughout all of its range. This does not conflict with the courts' holdings in *Desert Survivors* v. *Department of the Interior*, 321 F. Supp. 3d 1011, 1070-74 (N.D. Cal. 2018), and *Center for Biological Diversity* v. *Jewell*, 248 F. Supp. 3d 946, 959 (D. Ariz. 2017) because, in reaching this conclusion, we did not need to consider whether any portions are significant and, therefore, did not apply the aspects of the Final Policy's definition of "significant" that those court decisions held were invalid.

Determination of Status

Our review of the best available scientific and commercial information indicates that Fender's blue butterfly meets the Act's definition of a threatened species. Therefore, we are reclassifying Fender's blue butterfly as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

II. Final Rule Issued Under Section 4(d) 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 listing on proposed and ongoing activities within the range of the listed species. The Act allows the Secretary to promulgate protective regulations for threatened species pursuant to section 4(d) of the Act. Because we are reclassifying this species as a threatened species, the prohibitions in section 9 of the Act will not apply directly. We are, therefore, adopting a set of regulations to provide for the conservation of the species in accordance with the Act's section 4(d), which also authorizes us to apply any of the prohibitions in section 9 to a threatened species. The 4(d) rule, which includes a description of the kinds of activities that will or will not constitute a violation, complies with this policy.

Background

Section 4(d) of the Act contains two sentences. The first sentence states that the Secretary shall issue such regulations as she deems necessary and advisable to provide for the conservation of species listed as threatened species. The U.S. Supreme Court has noted that statutory language similar to the language in section 4(d) of the Act authorizing the Secretary to take action that she "deems necessary and advisable" affords a large degree of deference to the agency (see *Webster* v. *Doe*, 486 U.S. 592, 600 (1988)). Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. Thus, the combination of the two sentences of section 4(d) provides the Secretary with wide latitude of discretion to select and promulgate appropriate regulations tailored to the specific conservation needs of the threatened species. The second sentence grants particularly broad discretion to the Service when adopting one or more of the prohibitions under section 9.

The courts have recognized the extent of the Secretary's discretion under this standard to

develop rules that are appropriate for the conservation of a species. For example, courts have upheld, as a valid exercise of agency authority, rules developed under section 4(d) that included limited prohibitions against takings (see *Alsea Valley Alliance* v. *Lautenbacher*, 2007 WL 2344927 (D. Or. 2007); *Washington Environmental Council* v. *National Marine Fisheries Service*, 2002 WL 511479 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see *State of Louisiana* v. *Verity*, 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, "once an animal is on the threatened list, the Secretary has an almost infinite number of options available to [her] with regard to the permitted activities for those species. [She] may, for example, permit taking, but not importation of such species, or [she] may choose to forbid both taking and importation but allow the transportation of such species" (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

The provisions of this 4(d) rule would promote conservation of Fender's blue butterfly by encouraging management of the habitat for in ways that facilitate conservation for the species. The provisions of this 4(d) rule are one of many tools that we would use to promote the conservation of Fender's blue butterfly.

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of Federal actions that are subject to the section 7 consultation process are actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq*.) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency

Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation.

This obligation does not change in any way for a threatened species with a species-specific 4(d) rule. Actions that result in a determination by a Federal agency of "not likely to adversely affect" continue to require the Service's written concurrence and actions that are "likely to adversely affect" a species require formal consultation and the formulation of a biological opinion.

Provisions of the Final 4(d) Rule

Exercising the Secretary's authority under section 4(d) of the Act, we have developed a rule that is designed to address the specific threats and conservation needs of Fender's blue butterfly. As discussed above in the **Summary of Biological Status and Factors Affecting Fender's Blue Butterfly**, we have concluded that Fender's blue butterfly is likely to become in danger of extinction within the foreseeable future primarily due to loss and degradation of habitat, including impacts from habitat conversion, woody succession, and invasive plant species (Factors A and E); and the potential exposure of Fender's blue butterfly to herbicides or insecticides and changes in vegetation composition due to climate change (Factor E). Although the condition of Fender's blue butterfly has improved, the species remains vulnerable to these threats due to the small size of many of its metapopulations, limited connectivity between metapopulations as a consequence of fragmentation and the reduced extent of native prairie habitats, and the relative rarity of its lupine host plants on the landscape. Section 4(d) requires the Secretary to issue such regulations as she deems necessary and advisable to provide for the conservation of each threatened species and authorizes the Secretary to include among those protective regulations any of the prohibitions that section 9(a)(2) of the Act prescribes for endangered species. We find that the protections, prohibitions, and exceptions in this rule as a whole satisfy the requirement in section 4(d) of the Act to issue regulations deemed necessary

and advisable to provide for the conservation of Fender's blue butterfly.

The protective regulations we are finalizing for Fender's blue butterfly incorporate prohibitions from section 9(a)(1) to address the threats to the species. Section 9(a)(1) prohibits the following activities for endangered wildlife: importing or exporting; take; possession and other acts with unlawfully taken specimens; delivering, receiving, transporting, or shipping in interstate or foreign commerce in the course of commercial activity; or selling or offering for sale in interstate or foreign commerce. This protective regulation includes all of these prohibitions for Fender's blue butterfly because the species is at risk of extinction in the foreseeable future and putting these prohibitions in place will help to regulate a range of human activities that have the potential to affect Fender's blue butterfly, including agricultural or urban development; certain agricultural practices (e.g., pesticide use); heavy levels of grazing; mowing; some practices associated with forestry (e.g., road construction); roadside maintenance activities; control of nonnative, invasive plant species; and direct capture, injury, or killing of Fender's blue butterfly.

We include the prohibition of import, export, interstate and foreign commerce, and sale or offering for sale in such commerce because, while the number of metapopulations and abundance within most metapopulations has increased since the time of listing, Fender's blue butterfly is not thriving to the degree that the species is considered to be capable of sustaining trade. Rare butterflies such as Fender's blue are easily subject to overcollection, and the potential for population declines as a result of increased collection was one of the factors considered in the original listing of Fender's blue butterfly as an endangered species. Fortunately, the potential threat of overcollection has not thus far been realized, but any increased incentive for capture of Fender's blue butterfly from the wild would be highly likely to result in negative impacts to the long-term viability of the species.

Fender's blue butterfly remains likely to become an endangered species within the foreseeable future throughout all of its range. Although the status of the species has improved

relative to when it was first listed as an endangered species, the species has not recovered to the point that it is capable of sustaining unrestricted capture or collection from the wild without the likelihood of negative impacts to the long-term viability of the species. Because capture and collection of Fender's blue butterfly remains prohibited as discussed below, maintaining the complementary prohibition on possession and other acts with illegally taken Fender's blue butterfly will further discourage such illegal take. Thus, the possession, sale, delivery, carrying, transporting, or shipping of illegally taken Fender's blue butterflies will continue to be prohibited in order to continue progress toward the conservation and recovery of the species.

Under the Act, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Some of these provisions have been further defined in regulation at 50 CFR 17.3. Take can result knowingly or otherwise, by direct and indirect impacts, intentionally or incidentally. Regulating incidental and intentional take will help preserve the remaining metapopulations of Fender's blue butterfly.

Although the number of metapopulations, and abundance within most metapopulations, has increased since the time of listing, Fender's blue butterfly remains a vulnerable species and has not yet attained full recovery. We do not consider Fender's blue butterfly capable of withstanding unregulated take, either intentional or incidental to otherwise lawful activities, without likely negative impacts to the long-term viability of the species. There are a few circumstances in which allowing incidental take may ultimately benefit Fender's blue butterfly as a species and further its recovery. We have outlined such circumstances below as exceptions to the prohibitions of take. By allowing take under specified circumstances, the rule will provide needed protection to the species while allowing management flexibility to benefit the species' long-term conservation. Anyone taking, attempting to take, or otherwise possessing a Fender's blue butterfly, or parts thereof, in violation of section 9 of the Act will still be subject to a penalty under section 11 of the Act, except for the actions that are specifically excepted under the 4(d) rule.

Incidental take by landowners or their agents is allowed while conducting management for the creation, restoration, or enhancement of short-stature native upland prairie or oak savannah conditions within areas occupied by Fender's blue butterfly, subject to the restrictions described herein and as long as reasonable care is practiced. An important aspect of prairie management is the timing and location of treatment. Lupine is patchy and distributed in small clumps low to the ground whereas invasive tall grasses are more uniform. This means the person doing the herbicide spray or other removal work needs to be able to recognize the plants to be sure they are treating the correct areas, the correct species, and know when to treat the area before the seed has set. To help avoid potential issues, we require a qualified biologist to be involved in the planning even if the landowners do the treatment themselves. The biologist does not need to be present on-site on the day of the treatment but does need to be consulted and involved beforehand. Reasonable care may include but is not limited to: (1) Procuring and/or implementing technical assistance from a qualified biologist on timing and location of habitat management activities prior to implementation; and (2) using best efforts to avoid trampling or damaging Fender's blue butterflies (eggs, larvae, pupae, adults) and their host and nectar plants during all activities.

Fender's blue butterfly is a conservation-reliant species. Active management for prairie conditions within the historical range of Fender's blue butterfly is essential for long-term viability and is one of the key recovery actions identified for the species. Allowing certain forms of active management for the purpose of creating, restoring, or enhancing native upland prairie or oak savannah conditions is necessary to facilitate and encourage the implementation of conservation measures that will address one of the primary threats to Fender's blue butterfly, the loss or degradation of native short-stature prairie or oak savannah habitat within the Willamette Valley. Restoration actions may include manual, mechanical, and herbicidal treatments for invasive and nonnative plant control that does not result in ground disturbance, including mowing and planting by hand of native vegetation, especially native food resources for Fender's

blue butterfly larvae (Kincaid's, longspur, or sickle-keeled lupine) or adults (native nectar species). Prescribed burning is a complex endeavor, and there is potential for impacts to Fender's blue butterfly beyond that which local metapopulations or subpopulations may be capable of withstanding should the burn exceed its intended geographic limits; therefore, we do not provide an exception for take as a result of prescribed burning in the 4(d) rule. Take coverage for prescribed burning can be obtained through section 7 consultation, a section 10(a)(1)(A) permit, or through the Programmatic Restoration Opinion for Joint Ecosystem Conservation by the Services (PROJECTS) program.

Providing landowners management flexibility facilitates the creation, restoration, and enhancement of native upland prairie and oak savannah habitats. Habitat is considered occupied by Fender's blue butterfly if it is within the historical range of the species and supports or may support lupine, unless a qualified biologist using direct observation has conducted surveys for adult Fender's blue butterfly during the April 15 to June 30 flight period and documented no adult butterflies. Occupied habitat also includes all nectar habitat within 0.5 km (0.3 miles) of habitat containing at least one of the three host lupine species and that is occupied by Fender's blue butterfly. Unsurveyed areas within 2 km (1.25 mi) of a known Fender's blue butterfly population shall be assumed occupied if no surveys are conducted. This 4(d) rule authorizes landowners to plant native vegetation by hand; conduct mechanical and manual treatments to control woody and invasive nonnative plants; perform tractor and hand mowing; and apply herbicides within occupied Fender's blue butterfly habitat. To prevent possible negative effects on Fender's blue butterfly or its host lupine, the following time restrictions apply to the exceptions to take by landowners in areas occupied by Fender's blue butterfly:

(1) Mechanical treatments for control of woody and invasive and nonnative plant species that do not result in ground disturbance are authorized within occupied habitat outside of the butterfly flight period (April 15 to June 30) to avoid impacts to adult butterflies.

(2) To prevent invasive plant species establishment, tractor mowing is authorized

throughout sites with Fender's blue butterflies before February 15 (when lupine emerges) and after August 15 (when lupine undergoes senescence). Mowing with handheld mowers is authorized throughout the year; however, a buffer of at least 8 m (25 ft) must be maintained between the mower and any individual lupine plant during Fender's blue butterfly's flight season (April 15 to June 30).

(3) Weed wiping and broadcast application of herbicides are authorized outside of the flight period of April 15 to June 30; however, additional timing and use restrictions are required based on the chemicals used. Contact the Oregon Fish and Wildlife Office prior to herbicide implementation for a list of currently acceptable herbicides, their application methods, their appropriate timing of use, and best management practices associated with herbicide use.

To better refine conservation activities affecting the species, we are amending the proposed rule on manual treatment. In this final rule, manual treatments for control of woody and invasive and nonnative plant species that do not result in ground disturbance are authorized within occupied habitat year-round. Additionally, planting by hand of native vegetation is authorized year-round.

We expect that the actions and activities that are allowed under this 4(d) rule, while they may cause some minimal level of harm or disturbance to individual Fender's blue butterflies, will on balance facilitate efforts to conserve and recover the species because they will make it easier for our State and private partners to implement recovery actions and restore the habitats required by Fender's blue butterfly. The loss or degradation of early seral prairie habitats is one of the primary threats to Fender's blue butterfly, and disturbance (such as that described under the take exemptions provided here) is required to restore or maintain the habitat characteristics that are essential to the survival of this conservation-reliant species.

In addition to other standard exceptions applied to this species in this 4(d) rule, we may issue permits to carry out otherwise prohibited activities, including those described above, involving threatened wildlife under certain circumstances. Regulations governing permits are

codified at 50 CFR 17.32. With regard to threatened wildlife, a permit may be issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for zoological exhibition, for educational purposes, for incidental taking, or for special purposes consistent with the purposes of the Act. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

We recognize the special and unique relationship with our State natural resource agency partners in contributing to conservation of listed species. State agencies often possess scientific data and valuable expertise on the status and distribution of endangered, threatened, and candidate species of wildlife and plants. State agencies, because of their authorities and their close working relationships with local governments and landowners, are in a unique position to assist us in implementing all aspects of the Act. In this regard, section 6 of the Act provides that we shall cooperate to the maximum extent practicable with the States in carrying out programs authorized by the Act. Therefore, any qualified employee or agent of a State conservation agency that is a party to a cooperative agreement with us in accordance with section 6(c) of the Act, who is designated by his or her agency for such purposes, will be able to conduct activities designed to conserve Fender's blue butterfly that may result in otherwise prohibited take without additional authorization.

Nothing in this 4(d) rule will change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or our ability to enter into partnerships for the management and protection of Fender's blue butterfly. However, interagency cooperation may be further streamlined through planned programmatic consultations for the species between us and other Federal agencies, such as the existing programmatic consultation on habitat restoration actions in the existing PROJECTS biological opinion (USFWS 2015, entire), which includes provisions for management actions that benefit Fender's blue butterfly.

Required Determinations

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

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*), need not be prepared in connection with determining a species' listing status under the Endangered Species Act. We published a notice outlining our reasons for this determination in the *Federal Register* on October 25, 1983 (48 FR 49244). This includes listing, delisting, and reclassification rules, as well as critical habitat designations and species-specific protective regulations promulgated concurrently with a decision to list or reclassify a species as threatened. The courts have upheld this position (*e.g.*, *Douglas County* v. *Babbitt*, 48 F.3d 1495 (9th Cir. 1995) (critical habitat); *Center for Biological Diversity* v. *U.S. Fish and Wildlife Service.*, 2005 WL 2000928 (N.D. Cal. Aug. 19, 2005) (concurrent 4(d) rule)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, Government-to-Government Relations with Native American Tribal Governments (59 FR 22951), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with Tribes in developing programs for healthy ecosystems, to acknowledge that Tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to Tribes. We have determined that no Tribes will be affected by this rule because there are no Tribal lands or interests within or adjacent to Fender's blue butterfly habitat.

References Cited

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

https://www.regulations.gov under Docket No. FWS-R1-ES-2020-0082 or upon request from the Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this rule are the staff members of the U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—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. In § 17.11, paragraph (h), amend the List of Endangered and Threatened Wildlife by revising the entry for "Butterfly, Fender's blue" under INSECTS to read as follows:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* * * * * * *				
INSECTS				
* * * * * * *				
Butterfly, Fender's blue	*Icaricia icarioides fenderi*	Wherever found	T	65 FR 3875, 1/25/2000; 88 FR [INSERT FEDERAL REGISTER PAGE WHERE THE DOCUMENT BEGINS], [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER];

				50 CFR 17.47(f);[4d] 50 CFR 17.95(i).[CH]
* * * * * * *				

3. In § 17.12, paragraph (h), amend the List of Endangered and Threatened Plants by revising the entry for "*Lupinus sulphureus* ssp. *kincaidii*" under FLOWERING 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				
* * * * * * *				
Lupinus sulphureus ssp. *kincaidii*	Kincaid's lupine	Wherever found	T	65 FR 3875, 1/25/2000; 50 CFR 17.96.[CH]
* * * * * * *				

4. In § 17.47, add paragraph (f) to read as follows:

§ 17.47 Special rules—insects.

* * * * *

(f) Fender's blue butterfly (*Icaricia icarioides fenderi*)--(1) *Definitions*. As used in this paragraph (f), the following terms have these meanings:

(i) *Occupied habitat*. Habitat within the historical range of Fender's blue butterfly in the Willamette Valley of Oregon that supports or may support lupine, unless a qualified biologist using direct observation has conducted surveys for adult Fender's blue butterfly during the April 15 to June 30 flight period and documented no adult butterflies. Occupied habitat also includes all nectar habitat within 0.5 kilometers (km) (0.3 miles (mi)) of habitat containing at least one of the three host lupine species and that is occupied by Fender's blue butterfly. Unsurveyed areas

within 2 km (1.25 mi) of a known Fender's blue butterfly population shall be assumed occupied if no surveys are conducted.

(ii) *Qualified biologist*. An individual with a combination of academic training in the area of wildlife biology or related discipline and demonstrated field experience in the identification and life history of Fender's blue butterfly, or in habitat restoration methods to benefit Fender's blue butterfly. If capture of individuals is required for accurate identification, the individual must hold a valid permit under section 10(a)(1)(A) of the Act.

(iii) *Lupine*. Any one of the three species of lupines known to be required as host plants for the larvae of Fender's blue butterfly: Kincaid's lupine (*Lupinus sulphureus* ssp. *kincaidii*), longspur lupine (*L. arbustus*), and sickle-keeled lupine (*L. albicaulis*).

(2) *Prohibitions*. The following prohibitions that apply to endangered wildlife also apply to Fender's blue butterfly. Except as provided under paragraph (f)(3) of this section and §§ 17.4 and 17.5, it is unlawful for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or cause to be committed, any of the following acts in regard to this species:

(i) Import or export, as set forth at § 17.21(b) for endangered wildlife.

(ii) Take, as set forth at § 17.21(c)(1) for endangered wildlife.

(iii) Possession and other acts with unlawfully taken specimens, as set forth at § 17.21(d)(1) for endangered wildlife.

(iv) Interstate or foreign commerce in the course of commercial activity, as set forth at § 17.21(e) for endangered wildlife.

(v) Sale or offer for sale, as set forth at § 17.21(f) for endangered wildlife.

(3) *Exceptions from prohibitions.* In regard to this species, you may:

(i) Conduct activities as authorized by a permit under § 17.32.

(ii) Possess and engage in other acts with unlawfully taken wildlife, as set forth at § 17.21(d)(2) for endangered wildlife.

(iii) Take, as set forth at § 17.21(c)(2) through (4) for endangered wildlife.

(iv) Take, as set forth at § 17.31(b).

(v) Take incidental to an otherwise lawful activity caused by:

(A) *Mechanical removal of invasive and/or nonnative plant species*. Mechanical treatments for invasive and nonnative plant control (including encroaching native woody species) that do not result in ground disturbance are authorized within occupied habitat outside the butterfly's flight period of April 15 to June 30, provided:

(*1*) Landowners or their agents conducting invasive or nonnative plant removal use reasonable care, which includes, but is not limited to, procuring and/or implementing technical assistance from a qualified biologist on timing and location of habitat management activities and avoidance of ground disturbance to avoid impacts to larvae or pupae. Best management practices for felling of trees, removal of vegetation off-site, and temporary piling of cut vegetation on-site are available from the Oregon Fish and Wildlife Office.

(*2*) Reasonable care during all activities includes best efforts to avoid trampling or damaging Fender's blue butterflies (eggs, pupae, larvae, and adults) and their host and nectar plants. Foot traffic shall be minimized in occupied habitat, and especially in the area of any lupine plants.

(B) *Manual removal of invasive and/or nonnative plant species*. Manual treatments for invasive and nonnative plant control (including encroaching native woody species) that do not result in ground disturbance are authorized within occupied habitat year-round, provided:

(*1*) Landowners or their agents conducting invasive or nonnative plant removal use reasonable care, which includes, but is not limited to, procuring and/or implementing technical assistance from a qualified biologist on location of habitat management activities and avoidance of ground disturbance to avoid impacts to larvae or pupae. Best management practices for felling of trees, removal of vegetation off-site, and temporary piling of cut vegetation on-site are available from the Oregon Fish and Wildlife Office.

(*2*) Reasonable care during all activities includes best efforts to avoid trampling or damaging Fender's blue butterflies (eggs, pupae, larvae, and adults) and their host and nectar plants. Foot traffic shall be minimized in occupied habitat, and especially in the area of any lupine plants.

(C) *Mowing*. Tractor mowing for invasive and nonnative plant control (including encroaching native woody species) and the maintenance of early seral conditions is authorized throughout occupied Fender's blue butterfly habitat before February 15 when lupine emerges and after August 15 when lupine undergoes senescence.

(*1*) Mowing with handheld mowers is authorized throughout the year; however, a buffer of at least 8 meters (25 feet) must be maintained between the mower and any individual lupine plant during Fender's blue butterfly flight season (April 15 to June 30).

(*2*) Prior to and during mowing, landowners or their agents must use reasonable care, which includes, but is not limited to, procuring and implementing technical assistance from a qualified biologist on timing and location of habitat management activities prior to conducting work; avoidance of ground disturbance to avoid impacts to larvae or pupae; and using best efforts during all activities to avoid trampling or damaging Fender's blue butterflies (eggs, pupae, larvae, and adults) and their host and nectar plants. Foot traffic shall be minimized in occupied habitat, and especially in the area of any lupine plants.

(D) *Herbicide application for removal of invasive and/or nonnative plant species by hand wiping, wicking, and spot-spray applications*. Hand wiping, wicking, and spot-spray applications of herbicides for either the removal of nonnative, invasive plant species or to prevent resprouting of woody species subsequent to cutting are authorized year-round.

(E) *Herbicide application for removal of invasive and/or nonnative plant species by weed wiping and broadcast application.* Weed wiping and broadcast application of herbicides are authorized outside of the flight period of April 15 to June 30; however, additional timing and use restrictions are required based on the chemicals used. Contact the Oregon Fish and Wildlife

Office prior to herbicide application for a list of currently acceptable herbicides, their application methods, their appropriate timing of use, and best management practices associated with herbicide use.

(*1*) Prior to and during herbicide application, landowners or their agents must use reasonable care, which includes, but is not limited to, procuring and implementing technical assistance from a qualified biologist on habitat management activities prior to conducting the work; complying with all State and Federal regulations and guidelines for application of herbicides; and avoiding broadcast spraying in areas adjacent to occupied habitat if wind conditions are such that drift into the occupied area is possible.

(*2*) Landowners or their agents conducting herbicide application must use best efforts to avoid trampling or damaging Fender's blue butterflies (eggs, pupae, larvae, and adults) and their host and nectar plants. Foot traffic shall be minimized in occupied habitat, and especially in the area of any lupine plants.

(F) *Ground disturbance for the purpose of planting native vegetation*. Limited ground disturbance (digging and placement by hand) is authorized for the purpose of planting native vegetation as part of habitat restoration efforts, especially native food resources used by larvae and adults, in areas occupied by Fender's blue butterfly.

(*1*) Larvae of Fender's blue butterfly require lupine. For adults, preferred native nectar sources include, but are not limited to, the following flower species: tapertip onion (*Allium acuminatum*), narrowleaf onion (*Allium amplectens*), Tolmie's mariposa lily (*Calochortus tolmiei*), small camas (*Camassia quamash*), Clearwater cryptantha (*Cryptantha intermedia*), Oregon sunshine (*Eriophyllum lanatum*), Oregon geranium (*Geranium oreganum*), Oregon iris (*Iris tenax*), meadow checkermallow (*Sidalcea campestris*), rose checkermallow (*Sidalcea virgata*), and purple vetch (*Vicia americana*).

(*2*) Prior to and during planting of native vegetation, landowners or their agents must use reasonable care, which includes, but is not limited to, procuring and implementing technical

assistance from a qualified biologist on timing and location of habitat management activities and using best efforts during all activities to avoid trampling or damaging Fender's blue butterflies (eggs, pupae, larvae, and adults) and their host and nectar plants. Foot traffic shall be minimized in occupied habitat, and especially in the area of any lupine plants.

(G) *Summary of authorized methods and timing of habitat restoration activities for Fender's blue butterfly.*

Table 1 to paragraph (f)(3)(v)(G)

Management activity	**Dates authorized for use in occupied habitat**
Mechanical treatments	Outside of the flight period of April 15 to June 30
Manual treatments	Year-round
Mowing—tractors	Before February 15 and after August 15
Mowing—handheld	Year-round, with a buffer of 8 meters (25 feet) between the mower and any individual lupine plant during the flight period of April 15 to June 30
Herbicides—hand wiping	Year-round
Herbicides—wicking	Year-round
Herbicides—spot-spray	Year-round
Herbicides—broadcast spray	Outside of the flight period of April 15 to June 30*
Herbicides—weed wiping	Outside of the flight period of April 15 to June 30*
Planting native vegetation	Year-round

*Additional timing restrictions will apply based on the chemicals used. Contact the Oregon Fish and Wildlife Office for additional information.

(H) *Reporting and disposal requirements*. Any injury or mortality of Fender's blue butterfly associated with the actions excepted under paragraphs (f)(3)(v)(A) through (E) of this section must be reported to the Service and authorized State wildlife officials within 5 calendar days, and specimens may be disposed of only in accordance with directions from the Service. Reports should be made to the Service's Office of Law Enforcement (contact information is at § 10.22 of this subchapter) or the Service's Oregon Fish and Wildlife Office and to the State of Oregon Department of Parks and Recreation, Stewardship Section, which has jurisdiction over invertebrate species. The Service may allow additional reasonable time for reporting if access to these offices is limited due to closure.

* * * * *

Martha Williams,
Director,
U.S. Fish and Wildlife Service.

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