If the EPA finalizes this proposed rulemaking, the Administrator intends to exercise the complete discretion afforded to him under the CAA to make and publish a finding that the final action, which would be locally or regionally applicable, is based on a determination of ''nationwide scope or effect'' within the meaning of CAA section 307(b)(1). Through this rulemaking action (in conjunction with a series of related actions on other SIP submissions for the same CAA obligations), the EPA interprets and applies section 110(a)(2)(D)(i)(I) of the CAA for the 2015 ozone NAAQS based on a common core of nationwide policy judgments and technical analysis concerning the interstate transport of pollutants throughout the continental U.S. This proposal, if finalized, would be based on several determinations of nationwide scope or effect, each of which has the purpose of ensuring consistency and equity in implementing the good neighbor provision for ozone across all States, including: (1) the determination that use of the same 2023 and 2026 analytical year air quality modeling and monitoring analytics (including the use of the violating-monitor receptor identification methodology) that were used in the Disapproval Action and the Good Neighbor Plan are appropriate for purposes of evaluating Missouri's November 2022 Submission; (2) the determination that 1 percent of NAAQS is the appropriate contribution threshold at Step 2 of the four-step framework nationwide; and (3) the determination that the MoDNR's Step 3 analysis and Step 4 implementation approach are inconsistent with and not adequate to replace the EPA's nationwide findings and the emissions control programs in the Good Neighbor Plan for sources in Missouri and 19 other similarly situated States that remain linked through the 2026 analytic year.

These determinations would provide important bases for the action, if finalized, and are needed to ensure consistency and equity in the treatment of all States in addressing the multistate problem of interstate ozone pollution under the good neighbor provision for the 2015 ozone NAAQS. Missouri seeks by its November 2022 Submission to avoid the implementation of the Good Neighbor Plan in Missouri, through a set of emissions control requirements that are demonstrably and substantially less stringent than what the EPA determined was needed to eliminate ''significant contribution'' for the 2015 ozone NAAQS in the Good Neighbor Plan. The Good Neighbor Plan is designed as a ''collective approach'' to effectively address the nationwide problem of interstate ozone transport in an equitable and consistent manner across the covered States. *See Kentucky Energy and Environment Cabinet* v. *EPA,* No. 23–3605 (6th Cir. Nov. 9, 2023), Order at 8. The determinations underlying this proposed disapproval would, if finalized, have nationwide scope and effect, among other reasons, because they would ensure that the Good Neighbor Plan (until replaced by SIPs meeting the statutory requirements) may be implemented on a consistent basis for all covered States, including Missouri, and may deliver the full amount of relief from upwind emissions that the EPA has found downwind jurisdictions are due.[101] For these reasons, the Administrator intends, if this proposed action is finalized, to exercise the complete discretion afforded to him under the CAA to make and publish a finding that this action is based on a determination of nationwide scope or effect for purposes of CAA section 307(b)(1).[102]

This action is subject to the provisions of CAA section 307(d). CAA section 307(d)(1)(V) of the CAA provides that the provisions of section 307(d) apply to ''such other actions as the administrator may determine.'' Pursuant to CAA section 307(d)(1)(V), the Administrator determines that this action is subject to the provisions of CAA section 307(d).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Ozone.

Authority: 42 U.S.C. 7401 *et seq.*

Michael S. Regan,

Administrator.

[FR Doc. 2024–15826 Filed 8–5–24; 8:45 am]

BILLING CODE 6560–50–P

[101] In the report on the 1977 Amendments that revised section 307(b)(1) of the CAA, Congress noted that the Administrator's determination that the ''nationwide scope or effect'' exception applies would be appropriate for any action that has a scope or effect beyond a single judicial circuit. *See* H.R. Rep. No. 95–294 at 323, 324, reprinted in 1977 U.S.C.C.A.N. 1402–03.

[102] If the EPA takes a consolidated, single final action on this and any other proposed SIP actions with respect to obligations under CAA section 110(a)(2)(D)(i)(I) for the 2015 ozone NAAQS, that action may be nationally applicable, and the EPA would also anticipate that in that instance, in the alternative, the Administrator would make and publish a finding that such final action is based on a determination of nationwide scope or effect.

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R6–ES–2023–0182; FXES1111090FEDR–245–FF09E21000]

RIN 1018–BF92

Endangered and Threatened Wildlife and Plants; Endangered Status for the Eastern Regal Fritillary, and Threatened Status With Section 4(d) Rule for the Western Regal Fritillary

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to list the eastern regal fritillary (*Argynnis idalia idalia*) as an endangered species and to list the western regal fritillary (*A. i. occidentalis*) as a threatened species under the Endangered Species Act of 1973, as amended (Act). This determination also serves as our 12-month finding on a petition to list the regal fritillary, as these two subspecies make up the entire species. After a review of the best available scientific and commercial information, we find that listing both subspecies is warranted. Accordingly, we propose to list the eastern subspecies as endangered and the western subspecies as threatened with protective regulations issued under section 4(d) of the Act (a ''4(d) rule''). We find that designation of critical habitat for both subspecies is not determinable at this time.

DATES: We will accept comments received or postmarked on or before October 7, 2024. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. eastern time on the closing date. We must receive requests for a public hearing, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by September 20, 2024.

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

(1) *Electronically:* Go to the Federal eRulemaking Portal: *https://www.regulations.gov.* In the Search box, enter FWS–R6–ES–2023–0182, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on ''Comment.''

(2) *By hard copy:* Submit by U.S. mail to: Public Comments Processing, Attn: FWS–R6–ES–2023–0182, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

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

Availability of supporting materials: Supporting materials, such as the species status assessment report, are available at *https://www.regulations.gov* at Docket No. FWS–R6–ES–2023–0182.

FOR FURTHER INFORMATION CONTACT:

For the eastern regal fritillary—Sonja Jahrsdoerfer, Project Leader, Pennsylvania Ecological Services Field Office, 110 Radnor Road, Suite 101, State College, PA 16801; telephone 814–206–7474.

For the western regal fritillary—Chris Swanson, Field Supervisor, North and South Dakota Ecological Services Field Offices, 420 South Garfield Avenue, Suite 400, Pierre, SD 57501; telephone 605–222–0228. 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. Please see Docket No. FWS–R6–ES–2023–0182 on *https://www.regulations.gov* for a document that summarizes this proposed rule.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act (16 U.S.C. 1531 *et seq.*), the term ''species'' includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature. A subspecies warrants listing under the Act if it meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range). If we determine that a subspecies warrants listing, we must list the subspecies promptly and designate the subspecies' critical habitat to the maximum extent prudent and determinable. We have determined that the eastern regal fritillary (eastern subspecies) meets the Act's definition of an endangered species and that the western regal fritillary (western subspecies) meets the Act's definition of a threatened species; therefore, we are proposing to list them as such. Listing a subspecies as an endangered or threatened species can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 *et seq.*).

What this document does. We propose to list the eastern regal fritillary as an endangered species and to list the western regal fritillary as a threatened species with a 4(d) rule. As explained later in this document, we conclude that the designation of critical habitat for these subspecies is not determinable at this time.

The basis for our action. Under the Act, we may determine that a subspecies is an endangered or threatened species because of any of five factors: (A) the present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that the eastern regal fritillary is endangered due to the loss and fragmentation of its remaining grassland habitats from invasive plants and woody encroachment (Factor A) and periodic disturbances, such as fire, military operations, and other management activities if they are too large, frequent, or intense (Factor A). These threats are exacerbated by the ongoing effects of drought and climate change (Factors A and E).

We have determined that the western regal fritillary is threatened due to the expected continued loss and fragmentation of large, intact native grasslands through conversion by agriculture and development (Factor A); invasive plants and woody vegetation (Factor A); the reduction of violets and nectar sources from the broadcast application of herbicides (Factor A); and periodic disturbances from fire, mowing, and haying that are too large, frequent, or intense (Factor A). These threats are all exacerbated by the ongoing and expected effects of drought and climate change (Factors A and E).

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary), to the maximum extent prudent and determinable, to designate critical habitat concurrent with listing. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of the species. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat.

Information Requested

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from governmental agencies, Native American Tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The subspecies' biology, range, and population trends, including:

(a) Current ranges, including distribution patterns and the locations of any additional populations of the subspecies;

(b) Current population levels, and current and projected trends; and

(c) Past and ongoing conservation measures for the subspecies, their habitats, or both.

(2) Threats and conservation actions affecting the subspecies, including:

(a) Factors that may be affecting the continued existence of the subspecies, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors;

(b) Relevant data concerning any threats (or lack thereof) to the subspecies; and

(c) Existing regulations or conservation actions that may be addressing threats to these subspecies.

(3) Additional information concerning the current status of the subspecies.

(4) Information to assist with applying or issuing protective regulations under section 4(d) of the Act that may be

necessary and advisable to provide for the conservation of the western regal fritillary.

(a) In particular, information concerning the extent to which we should include any of the section 9 prohibitions in the 4(d) rule; or

(b) whether we should consider any additional or different exceptions from the prohibitions in the 4(d) rule.

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

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, do not provide substantial information necessary to support a determination. Section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or a threatened species must be made solely on the basis of the best scientific and commercial data available.

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

If you submit information via *https://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *https://www.regulations.gov.*

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

Our final determinations may differ from this proposal because we will consider all comments we receive during the comment period as well as any relevant information that becomes available after this proposal is published. Based on the new information we receive (and, if relevant, any comments on that new information), we may conclude that the eastern subspecies is threatened instead of endangered or that the western subspecies is endangered instead of threatened, or we may conclude that one or both of the subspecies do not warrant listing as either an endangered species or a threatened species. In addition, we may change the parameters of the prohibitions or the exceptions to those prohibitions in the protective regulations under section 4(d) for the western regal fritillary if appropriate in light of comments and new information received. For example, we may expand the prohibitions to include prohibiting additional activities if we conclude that those additional activities are not compatible with conservation of the western regal fritillary. Conversely, we may establish additional exceptions to the prohibitions in the final rule if we conclude that the activities would facilitate or are compatible with the conservation and recovery of the western subspecies. In our final rule, we will clearly explain our rationale and the basis for our final decisions, including why we made changes, if any, that differ from this proposal.

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing. We may hold the public hearing in person or virtually via webinar. We will announce any public hearing on our website, in addition to the **Federal Register**. The use of virtual public hearings is consistent with our regulations at 50 CFR 424.16(c)(3).

Previous Federal Actions

We designated the regal fritillary as a Category 2 candidate in the May 22, 1984, Review of Invertebrate Wildlife for Listing as Endangered or Threatened Species (49 FR 21664). We defined Category 2 candidates as taxa for which we had information that proposed listing was possibly appropriate, but conclusive data on biological vulnerability and threats were not available to support a proposed rule at the time. The species remained so designated in subsequent annual candidate notices of review (CNORs) (54 FR 554, January 6, 1989; 56 FR 58804, November 21, 1991; 59 FR 58982, November 15, 1994). In the February 28, 1996, CNOR (61 FR 7596), we discontinued the designation of Category 2 species as candidates; therefore, the regal fritillary was no longer a candidate species.

On April 19, 2013, we received a petition from WildEarth Guardians to list the regal fritillary under the Act. On September 18, 2015, we published in the **Federal Register** (80 FR 56423) a substantial 90-day finding for the regal fritillary. The eastern and western subspecies are the only two subspecies of the regal fritillary species, so this document constitutes our 12-month warranted petition finding and our proposed listing rule for the regal fritillary.

Peer Review

A species status assessment (SSA) team prepared an SSA report for the eastern and western subspecies of regal fritillary. 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 both subspecies, including the impacts of past, present, and future factors (both negative and beneficial) affecting the subspecies.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review in listing actions under the Act, we solicited independent scientific review of the information contained in the SSA report for the eastern and western subspecies. We sent the SSA report to 14 appropriate and independent peer reviewers and received 5 responses. Results of this structured peer review process can be found at *https://www.regulations.gov* under Docket No. FWS–R6–ES–2023–0182 and at *https://fws.gov/library/categories/peer-review-plans.* In preparing this proposed rule, we incorporated the results of these reviews, as appropriate, into the SSA report, which is the foundation for this proposed rule.

Summary of Peer Reviewer Comments

As discussed in Peer Review above, we received comments from five peer reviewers on the draft SSA report. We reviewed all comments from the peer reviewers for substantive issues and new information regarding the contents of the SSA report. The peer reviewers concurred with our methods and conclusions, and provided additional information, clarifications, and suggestions, including corrections on wingspan measurements, suggestions for additional relationships between nodes on our conceptual models, potential uncertainty associated with geospatial landcover and climate

models, and other editorial suggestions. We updated the SSA report accordingly. No substantive changes to our analysis and conclusions within the SSA report were deemed necessary, and we addressed all peer reviewer comments in version 1.0 of the SSA report (Service 2023, entire).

I. Proposed Listing Determination

Background

A thorough review of the taxonomy, life history, and ecology of the regal fritillary, including both the eastern and western subspecies, is presented in the SSA report (Service 2023, pp. 44–68, 180–194). We use the term ''species'' to refer to the regal fritillary and any information describing or relating to the species applies to both the eastern and western subspecies, unless specified otherwise.

The regal fritillary is a large, nonmigratory butterfly found in the grassland habitats of the Fort Indiantown Gap (FTIG) National Guard Training Center in Pennsylvania (the eastern subspecies) and portions of 14 States, from Indiana to Colorado and from North Dakota to Oklahoma (the western subspecies). Adults have dorsal orange forewings and dark hindwings that feature black bars, fine white markings, and two rows of large spots at the base of the wings. Adults are similar in size to the monarch butterfly (*Danaus plexippus*), with wingspans ranging from approximately 6.8 to 10.5 centimeters (cm) (2.67 to 4.13 inches (in)) (Selby 2007, p. 14); however, the regal fritillary's predominately orange forewings and dark hindwings distinguish it from other butterflies (Service 2023, p. 44).

The regal fritillary has one generation per year. In the late summer and early fall, females lay eggs that hatch into larvae within 2 to 3 weeks. The larvae overwinter in nearby grassland vegetation before emerging in early spring to search for violets (*Viola* spp.), their only food source (Royer and Marrone 1992, p. 21; Kopper et al. 2000, pp. 661, 663). In late May through mid-July, the larvae pupate in the leaf litter of warm season grasses (Selby 2007, p. 32; Ferster and Vulinec 2010, p. 7) and emerge as adults beginning in June (Service 2023, pp. 49, 50). Adults rely on nectar sources for food, and reproductive rates improve when nectar plants are abundant and high-quality (Wagner et al. 1997, p. 268; Selby 2007, p. 33). Adult males live for approximately 4 to 6 weeks and begin to die off in mid-July; adult females live for 8 to 12 weeks and may survive into late October (Wagner et al. 1997, p. 266; Kopper et al. 2001, pp. 174–175; Service 2023, pp. 4, 49).

Regal fritillary adults are strong and rapid flyers and may move long distances in search of nectar (Schweitzer 1989, p. 135; Selby 2007, p. 26; Service 2023, p. 50). Adults, particularly females, can move significant distances, up to 161 kilometers (100 miles), during their several-months-long lifespan to access suitable habitats on the landscape (Hammond 2021, pers. comm.; Service 2023, p. 50). Individuals may disperse to avoid localized threats and poor habitat conditions, which allows the species to respond to changing environmental conditions and to recolonize suitable habitats, but dispersal depends on the availability of nectar and the connectivity and size of the available habitats (Schweitzer 1989, p. 135; Selby 2007, p. 26; Hammond 2021, pers. comm.; Service 2023, pp. 50, 192). Recolonization may fail if source populations are too far away or if habitat patches are too small, isolated, disconnected, or degraded (Hammond 2021, pers. comm.; Service 2023, p. 50).

The regal fritillary is a landscape-level species that needs large, intact grasslands at a landscape scale, and depends on a shifting mosaic of large, well-connected, diverse grasslands with violets for larvae; nectar sources for adults; and warm season, native bunchgrasses for shelter at all life stages (Ferster and Vulinec 2010, p. 39; Caven et al. 2017, p. 199; Service 2023, pp. 51, 55). The grasslands need to be large and contiguous, generally more than 3.86 square miles (1,000 hectares), and be maintained by periodic disturbances. Such disturbances, which include fire, mowing, and military operations for the eastern subspecies, and fire, haying, and grazing for the western subspecies, help maintain the grasslands by reducing woody plants and encroachment (Service 2023, pp. 4, 8, 69–85).

However, large, intense or frequent, or permanent disturbances can also cause negative individual- or population-level effects, particularly during the sedentary, early life stages of the butterfly (Service 2023, p. 4). The regal fritillary cannot survive in altered landscapes, including row crop fields, nonnative pastures, developed areas surrounding prairie remnants (Selby 2007, p. 3), or forests (Service 2023, p. 51). As a result, the regal fritillary is considered a grassland specialist (Swengel 1996, p. 76) and an indicator of the health of native prairie (Royer and Marrone 1992, p. 4; Service 2023, p. 51).

The regal fritillary is also a ''boom-and-bust'' species, which means that when environmental conditions and habitat characteristics are favorable, significant increases in annual population abundance and distribution may occur (Service 2023, pp. 4, 280, 284). When conditions are unfavorable, individuals become scarce, and local extirpations may occur in areas that may be recolonized when and if conditions improve. The ability to disperse over relatively long distances and the boom-and-bust dynamic helps the species withstand stochastic events, catastrophic events, and environmental change. However, the loss and fragmentation of grassland habitats can interfere with the boom-and-bust pattern by isolating populations, contributing to local extirpations, and limiting recolonizations.

The largest and most resilient regal fritillary populations occupy large, diverse, contiguous grasslands at a landscape scale. These large populations better withstand stochastic events and function as source populations for the species to recolonize nearby areas when favorable conditions return. Assemblages of regal fritillary populations create a metapopulation, which for the regal fritillary includes at least three or more populations separated by 32 to 160 kilometers (20 to 100 miles) that are linked by infrequent dispersal, are spread over multiple habitats and breeding sites, and have some local areas remaining occupied despite losses of individual populations. This metapopulation structure provides reliable habitat refugia during adverse conditions and source populations for recolonizations during favorable conditions (Schweitzer 1989, p. 135; Royer and Marrone 1992, p. 26; Service 2023, p. 55). Metapopulation-level processes, supported by the species' dispersal ability and boom-and-bust dynamic, appear to be critical to the long-term persistence of the regal fritillary. However, the fragmentation of prairie grasslands across the species' overall range, largely the result of conversion to other land uses for the western subspecies and woody encroachment for the eastern subspecies, has resulted in smaller, more widely separated populations with genetic exchange occurring at reduced rates from historical levels. As a result, the metapopulation structure is currently absent for the eastern subspecies and limited for the western subspecies, particularly in the Midwest (Schweitzer 1993, p. 9; Service 2023, p. 55).

Historically, the regal fritillary was considered common among prairie and grassland butterflies in the United States, particularly in tallgrass prairie habitats (Hammond and McCorkle

1983(84), p. 219), with an overall historical range across 32 States (Selby 2007, pp. 10, 14; Service 2023, p. 56). But, beginning in the 1930s and continuing through the 1990s, the species' overall range contracted substantially, most severely in the East and Midwest (Wagner et al. 1997, pp. 261, 262; Selby 2007, p. 17). Following this decline, the eastern subspecies now occupies a small portion of Pennsylvania at FTIG, and the western subspecies occupies portions of 14 States (Service 2023, p. 57). After 2009, when the last eastern individual was observed in Virginia (Chazal 2014, p. 2), FTIG in Pennsylvania became the sole remaining site in the East with a known population (Service 2023, p. 57). Several factors may have contributed to the rapid decline of the species in the East, including land use changes, development, forest succession, pesticide use, and other activities or events that resulted in the collapse of the metapopulation processes (Williams 1999, p. 3; Schweitzer 1993, p. 9). In the West, the loss of native prairie grasslands since the 1800s via conversion to agriculture and development had the most significant impact on the regal fritillary (Service 2023, pp. 5, 57).

Taxonomists previously classified the regal fritillary as *Speyeria idalia,* but now classify the species as *Argynnis idalia,* in the subgenus *Speyeria.* The eastern and western subspecies are genetically and morphologically different and are currently separated by approximately 869 kilometers (540 miles), from Pennsylvania to Indiana, so genetic exchange between the two subspecies is highly unlikely (Service 2023, pp. 34, 46). The best available scientific information indicates that there are two valid subspecies of regal fritillary: the eastern subspecies (*A. i. idalia*) and the western subspecies (*A. i. occidentalis*) (Williams 2001b, entire; Williams et al. 2003, p. 17; Keyghobadi et al. 2013, p. 235; Rutins et al. 2022, p. 4; Service 2023, pp. 182–186). We discuss the distribution and trends for each subspecies below, with additional information provided in our SSA report (Service 2023, entire).

Eastern Regal Fritillary: Distribution and Trends

The eastern subspecies is currently found as a single population located on FTIG. Moisture levels are more mesic (moderately moist) in the East than in the West. The eastern subspecies has distinct haplotypes that are not present in any other known extant regal fritillary population (Williams 2001, pp. 146, 151; Service 2023, pp. 34, 64). Currently, there are approximately 800 individuals in the population at FTIG, and the population exhibits signs of restricted gene flow (Keyghobadi et al. 2006, p. 3; Rutins et al. 2022, p. 4; Service 2023, pp. 64–65).

Established in 1931, FTIG has been used continuously for military training exercises that periodically disturb the ground and open grassland patches, and incidentally help maintain remnant grassland patches as an old field, successional stage (Ferster et al. 2008, p. 142). Without these activities, the remaining grassland habitats for the eastern regal fritillary would have converted to forests like the surrounding ecoregions (Ferster et al. 2008, p. 142). FTIG also uses prescribed burns and mechanical treatments, such as mowing and tree cutting, specifically to maintain and improve the eastern subspecies' remaining grassland habitats (Ferster and Vulinec 2010, pp. 39, 40; Service 2023, p. 52). As a result, the eastern subspecies is found in the remaining grasslands at FTIG on approximately 457 acres (185 hectares) that are the result of military and other activities that maintain open areas and promote regal fritillary presence (Zercher et al. 2002, p. 13; Service 2023, p. 61). FTIG has monitored the eastern subspecies since 1997 (Ferster and Vulinec 2010, p. 31) and conducts surveys annually to monitor the population and habitats (Zercher et al. 2002, pp. M–6–M–8; Pennsylvania Department of Military and Veterans Affairs (PADMVA) 2021, entire; Zografou et al. 2021, p. 10; Rutins et al. 2022, p. 2). Conservation activities to benefit the eastern subspecies at FTIG are conducted through an integrated natural resources management plan (INRMP); however, the activities at FTIG that benefit the eastern subspecies could change at any time depending on funding and priorities (PADMVA 2021, pp. 20, 31; Swartz 2022, pers. comm.).

Western Regal Fritillary: Distribution and Trends

The western subspecies currently occupies portions of 14 States: Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Wisconsin, and Wyoming. The western subspecies historically occupied a much larger portion of the overall species' range than the eastern subspecies. Thus, while the eastern subspecies was nearly eliminated with the east-to-west contraction in the subspecies' range, populations of the western subspecies remain where large grasslands are unconverted, intact, and contiguous. However, the western subspecies is generally considered to have a declining population trend, largely a result of land conversion to agriculture and development. Habitat fragmentation generally decreases east to west across the western subspecies' range, and as the size and number of suitable prairie remnants increases, there is a corresponding increase in size, number, and long-term viability of the western subspecies' populations (Selby 2007, p. 18).

The western subspecies occurs in 21 populations, or analytical units, as described in the SSA report (Service 2023, pp. 65–67), and 3 representation units: the Midwest, Northern Great Plains, and Central Great Plains. In the Midwest, across Arkansas, Illinois, Indiana, Iowa, Minnesota, Missouri, and Wisconsin, western regal fritillary populations are now restricted to small, isolated patches of prairie remnants that are generally less than 98.9 acres (40 hectares) in size (Robertson et al. 1997 in Panzer and Schwartz 2000, p. 363), scattered across a landscape primarily dominated by agriculture. To the west, the Northern and Central Great Plains are the remaining strongholds for the western subspecies, as large, intact grasslands remain. Western regal fritillary populations within Kansas, Nebraska, North Dakota, and South Dakota are relatively larger and more numerous, due to the less fragmented suitable grassland patches compared to those in the Midwest (Selby 2007, p. 20). Approximately 84 percent of the western regal fritillary's gross, overall range (the outer boundary of all 21 populations) is privately owned (Service 2023, p. 66). Approximately 7 percent of this gross, overall range is Tribal, 4 percent is State, 2 percent is managed by the Bureau of Land Management, 2 percent is managed by the U.S. Forest Service, and less than 1 percent each is managed by the Service, the Department of Defense, and the National Park Service (Service 2023, p. 66).

The Northern Great Plains and Central Great Plains representation units currently support relatively more intact and better-connected grasslands, primarily used for livestock grazing or haying, than the Midwest unit, but the plains units are drier, are more prone to drought, and have fewer tallgrass species comprising the grasslands, which may reduce the quality of the habitats for the western regal fritillary. The Northern Great Plains representation unit experiences shorter growing seasons and colder weather patterns than those in the Central Great Plains, which may also reduce the quality of the habitats for the western

regal fritillary. Habitats in the Midwest representation unit are primarily small, isolated patches in an agriculturally dominated landscape, and many sites exist as conservation preserves, *i.e.,* small remnants of the once-vast tallgrass prairie, which may be less than suitable for the western regal fritillary (Service 2023, p. 130).

At the western extent of the western subspecies' overall range, grasslands are drier and classified as shortgrass prairie rather than tallgrass or mixed grass, which may provide lower quality habitat for the western subspecies. As a result, populations tend to be small and isolated. Scattered occurrences in the western part of the western subspecies' overall range generally occur in riparian zones or other moist habitats where nectar sources and violets are available (Selby 2007, p. 14). The States on both the western and southern fringes of the regal fritillary's range, including Arkansas, Colorado, Oklahoma, and Wyoming, are sparsely occupied by the western subspecies, with individuals occurring only in the portions of those States that border adjacent occupied areas in other States, including Kansas and Nebraska. Western regal fritillary individuals have been observed in Montana, but there are no known populations (Service 2023, p. 56).

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal Regulations 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 endangered and threatened species. On April 5, 2024, jointly with the National Marine Fisheries Service, we issued a final rule that revised the regulations in 50 CFR part 424 regarding how we add, remove, and reclassify endangered and threatened species and what criteria we apply when designating listed species' critical habitat (89 FR 24300). On the same day, we published a final rule revising our protections for endangered species and threatened species at 50 CFR 17 (89 FR 23919). These final rules are now in effect and are incorporated into the current regulations.

The Act defines an ''endangered species'' as a species that is in danger of extinction throughout all or a significant portion of its range, and a ''threatened species'' as a species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range. The Act requires that we determine whether any species is an endangered species or a threatened species because of any of the following factors:

(A) The present or threatened destruction, modification, or curtailment of its habitat or range;

(B) Overutilization for commercial, recreational, scientific, or educational purposes;

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

(E) Other natural or manmade factors affecting its continued existence.

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

We use the term ''threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. 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.

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, which is further described in the 2009 Memorandum Opinion on the foreseeable future from the Department of the Interior, Office of the Solicitor (M–37021, January 16, 2009; ''M-Opinion,'' available online at *https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/M-37021.pdf*). The foreseeable future extends as far into the future as the U.S. Fish and Wildlife Service and National Marine Fisheries Service (hereafter, the Services) can make reasonably reliable predictions about the threats to the species and the species' responses to those threats. We need not identify the foreseeable future in terms of a specific period of time. We will describe the foreseeable future on a case-by-case basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat projection timeframes, and environmental variability. In other words, the foreseeable future is the period of time over which we can make reasonably reliable predictions. ''Reliable'' does not mean ''certain''; it means sufficient to provide a reasonable degree of confidence in the prediction, in light of the conservation purposes of the Act.

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 proposed for listing as an endangered or 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.

To assess the viability of the eastern and western subspecies of regal fritillary, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency is the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years);

redundancy is the ability of the species to withstand catastrophic events (for example, droughts, large pollution events); and representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate conditions, pathogens). In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified the subspecies' ecological requirements for survival and reproduction at the individual, population, and subspecies levels, and described the beneficial and risk factors influencing the subspecies' viability.

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

The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket No. FWS–R6–ES–2023–0182 on *https://www.regulations.gov.*

Summary of Biological Status and Threats

In this discussion, we review the biological condition of the eastern and western regal fritillary and their resources, and the threats that influence each subspecies' current and future condition, in order to assess each subspecies' overall viability and the risks to that viability. We analyze these factors both individually and cumulatively to determine the current condition of each of the subspecies and project the future condition of each subspecies under several plausible future scenarios. We begin with a summary of the species' needs and risk factors, which are generally similar for both subspecies, followed by a summary of conditions first for the eastern subspecies and then the western subspecies.

Species Needs

Eastern and western regal fritillary individuals share many of the same needs, including large, contiguous blocks of native grasslands, violets to support larvae, warm season bunchgrasses for shelter, and nectar sources for adults (Service 2023, pp. 5–8, 69–85), so this discussion applies to both the eastern and western subspecies. In general, regal fritillary individuals need an adequate abundance of violets and nectar sources, appropriate grassland conditions (including litter, tall or shrubby cover), warm season bunchgrass tussocks, and adequate moisture and ambient temperatures in order to breed, feed, and shelter. Grasses are generally native species (indigenous to the particular area), and are either tallgrasses or mixed grasses, although the eastern regal fritillary may be more tolerant of nonnative grasses with similar bunchgrass structure. Ambient temperatures need to be suitable, generally between 75 to 105 °F (24 to 41°C) during the appropriate season for larvae to grow and for adults to survive (McCorkle and Hammond 1988, p. 192; Selby 2007, p. 36; Nail 2016, pp. 4, 9, 13, 15; Klockmann and Fischer 2017, p. 10872; Service 2023, p. 76). The grasslands need to be sufficiently large and contiguous (Kelly and Debinski 1998, p. 272; Schweitzer 1989, p. 134), ideally more than 2,471 acres (1,000 hectares) in size, and be maintained by periodic disturbances (Service 2023, pp. 8, 70–86).

The regal fritillary is a landscape-scale (spatially heterogeneous geographic areas characterized by diverse interacting patches or ecosystems) species, so large, contiguous blocks of native grasslands are the species' primary resource need (Service 2023, pp. 4, 55, 81–86). Large, contiguous grasslands tend to have more variable site conditions that support more diverse plant life; their greater area encompasses more habitat overall, and they are more likely to exhibit the shifting mosaics of heterogeneous habitats that favor sufficiently resilient regal fritillary populations. Generally, the larger the grassland patch, the better it supports abundant and adequately resilient regal fritillary populations, as long as the patch is also maintained with periodic disturbance.

Individuals do not appear to prefer small habitat patches (Schweitzer 1989, p. 134), which do not support the required shifting resources and disturbance regimes that maintain grassland habitats and sufficiently resilient regal fritillary populations. For the western subspecies, small habitat patches may be as small as 400 acres (162 hectares) in size (Hammond 2021, pers. comm; Service 2023, pp. 82–84). Small grassland tracts containing regal fritillary colonies may be more vulnerable to extirpation than larger blocks of native grasslands, but multiple colonies on small patches that are close to one another and occur as part of a collectively larger group of habitats may function together as a population. When adults in colonies can move across the matrix to reach other suitable habitat patches, the collective occupied habitats may exhibit diverse conditions that can better support the species' life-history needs.

To be sufficiently resilient, regal fritillary populations need to be of adequate size, with at least 200 to 500 adults or more to maintain genetic diversity and withstand stochastic events (Service 2023, p. 89). For redundancy and representation, the species needs metapopulation processes supported by an adequate number and distribution of sufficiently connected, large populations across the large, contiguous grasslands to withstand catastrophic events and adapt to environmental change (Service 2023, pp. 7–8, 89–91).

Risk Factors for the Eastern and Western Subspecies

We reviewed the potential risk factors (*i.e.,* threats, stressors) that could be affecting the eastern and western subspecies of regal fritillary (Service 2023, pp. 8–11, 93–120, 215–277). Here, we discuss only those risk factors in detail that we considered drivers of resiliency, or those that could meaningfully affect the status of either subspecies. Many of the threats and risk factors are the same or similar for both subspecies, so where the effects are expected to be similar, we present one summary that applies to both subspecies. Where the threats and their effects may be unique to one subspecies, we address those specifically.

Both subspecies are vulnerable to fragmentation and isolation when habitats are degraded or lost. The primary risk factors (*i.e.,* threats) affecting the status of the eastern subspecies are invasive plants, particularly woody encroachment that results in forest succession; drought; climate change factors; and periodic disturbances from large or intense fire or other activities. The eastern subspecies is vulnerable to woody encroachment, and periodic disturbances are necessary to ensure the grasslands do not become reforested, but these disturbances may

also present a risk if they are too frequent or intense.

The primary risk factors (*i.e.,* threats) affecting the status of the western subspecies are grassland conversion, primarily due to agriculture; herbicides that are applied broadly (often aerially); drought; invasive grasses and woody vegetation; periodic disturbances from fire, haying, and grazing; and climate change factors (Service 2023, pp. 10, 119–120). Although disease, predation, parasitism, competition and hybridization with sympatric butterflies, and collection may affect individuals, we did not find these risk factors to be current or future threats to either subspecies. We summarize these risk factors below, with additional detail and analysis provided in our SSA report (Service 2023, pp. 8–11, 93–120, 215–277).

Grassland Conversion: Agriculture and Development

This risk factor applies only to the western subspecies. An estimated 400 million acres (162 million hectares) of native prairie historically existed in North America prior to European settlement in the 1800s; these biomes have since been converted primarily to agriculture, resulting in as much as a 99.9 percent reduction in native prairie ecosystems, with the most severe declines among former tallgrass habitats (Samson and Knopf 1994, p. 418; Service 2023, p. 97). Conversion of grasslands to other uses, such as for agriculture and development, reduces the amount, availability, connectedness, size, and quality of the native grasslands needed by the regal fritillary (Hammond and McCorkle 1983(84), p. 218; Davis et al. 2007, p. 1342; Powell et al. 2007, p. 124; Selby 2007, p. 3; Sims 2017, p. 1; Swengel and Swengel 2017, p. 2; Marschalek 2020, p. 891; Niemuth et al. 2021, p. 2). While agriculture is the dominant activity that has reduced North American grasslands, any development activity that removes native prairie sod, such as road construction, road maintenance, gravel mining, housing and commercial developments, and energy projects, may reduce and fragment western regal fritillary habitat (Selby 2007, p. 3; Service 2023, pp. 98–100).

The majority of tallgrass prairie that remains today, particularly in the Midwest, is limited to small, isolated remnant tracts that are fractions of their former size and extent. Farther west, mixed-grass prairie has also been impacted by conversion and other uses; mixed-grass prairie has been reduced to 30 percent of historical amounts (World Rangeland Learning Experience 2021, entire). Much of the mixed-grass prairie is also fragmented and isolated due to grassland conversion. Shortgrass prairies at the western edge of the western subspecies' range are the most intact, but western regal fritillary populations may not occur there and may instead be found as small, ephemeral colonies in scattered moist habitats within these relatively dry grasslands (Selby 2007, p. 24).

Conversion of grasslands to agriculture reduces and fragments western regal fritillary habitats and isolates populations, which, when they are reduced to small, isolated remnant habitat patches, are vulnerable to local extirpations. Remaining grassland patches may be too small to support the violets, grasses, and nectar sources needed by individuals, and the patches are often surrounded by an unsuitable matrix of agriculture and development. Conversion to agriculture and development present a barrier to dispersal and gene flow by preventing individuals from either attempting to disperse or reducing the likelihood that dispersals will result in successful recolonization. When dispersals are less successful, recolonizations become less likely, genetic diversity declines, inbreeding may suppress population expansion, populations are less able to adapt to their changing environment, and local extirpations may begin to outpace recolonizations (Service 2023, p. 98).

Agricultural conversion of grasslands occurs at a rate of more than 1 million acres (404,685 hectares) per year, with projected conversion ''hotspots'' projected in western regal fritillary habitats in North Dakota, South Dakota, Iowa, and Missouri (Lark et al. 2020, p. 3). This risk factor to the western regal fritillary is ongoing and projected to increase in the future (Service 2023, pp. 96–99, 134, 142, 245–255).

Broad Application of Herbicides

This risk factor applies only to the western subspecies. Herbicides are chemicals that may be used at least once in a growing season to control broadleaf weeds or grasses in crop fields. Herbicides are also commonly used to control woody vegetation and weeds in both public and private grasslands, including native prairie. If not used carefully, herbicides can indirectly impact regal fritillary populations by eliminating or reducing nectar and foodplants, especially if applied during critical periods of the western regal fritillary's lifecycle. Adverse effects can occur when herbicides are applied within regal fritillary habitat or nearby, where they can drift into western regal fritillary habitat (Dana 1997, p. 3; Stark et al. 2012, pp. 25, 27; Cordova et al. 2020, p. 5; Service 2023, p. 101). The effects of herbicide use may be especially problematic in areas where violets and nectar food sources are already limited, such as in small, isolated grassland patches. Additionally, herbicide drift from adjacent croplands into regal fritillary habitats may have limited and temporary effects to individuals and habitats by temporarily reducing the availability of violets and nectar sources. Active and inert ingredients in herbicides may also be toxic to western regal fritillary individuals.

The application of herbicides is most detrimental to the western regal fritillary when it is applied, often aerially, across large areas of native grasslands specifically to reduce native forbs, including violets, so that more grasses are available to graze livestock. This practice dramatically reduces the quantity of violets and nectar sources available to the western regal fritillary (Service 2023, pp. 101–102). This practice of broad herbicide application to reduce native forbs is ongoing, particularly on private lands in eastern South Dakota, the Flint Hills of Kansas, and Oklahoma (Service 2023, pp. 101–102). Unlike the potentially limited or temporary effects to habitats and individuals from herbicide drift, this practice directly exposes native grasslands to herbicides and could dramatically reduce the numbers of violets and nectar sources. The reduction and removal of violets and nectar sources in native grasslands may extirpate local colonies (Selby 2007, p. 36) and, if more widespread, could also decrease population abundance and resiliency. This risk factor is ongoing and is likely to increase in the future.

Invasive and Woody Plants and Encroachment

This risk factor applies to both the eastern and western subspecies. Invasive, nonnative (exotic) plants and woody vegetation may degrade the quality and quantity of native grasslands needed by both the eastern and western regal fritillary. These nonnative plants may spread into native habitats from purposefully planted areas to form self-perpetuating populations (Fulbright et al. 2013, p. 505). The invading plant species of concern and the magnitude, scope, and exposure to the eastern and western subspecies vary by location. Invasive grass species include Kentucky bluegrass (*Poa patrensis*) and smooth brome (*Bromus inermus*), which are the two primary species invading the Midwestern and Northern Great Plains

prairies (Royer and Marrone 1992, p. 28; Selby 2007, p. 33; Gaskin et al. 2021, p. 236–237; Service 2023, pp. 104–105, 256). Woody plant species may include eastern red cedar (*Juniperus virginiana*) for the western subspecies and a variety of woody species from the surrounding forested habitat at FITG for the eastern subspecies, (Swartz 2021, pers. comm.; Service 2023 pp. 105–107; 256). Conservation efforts that target invasive plants, which may include fire, grazing, or mechanical or chemical controls, may reduce the stressor. However, invasive grasses and woody plant encroachment are challenging to control and known to degrade native grassland quality and quantity and may become more widespread, and potentially problematic, in the future.

Although an issue for both subspecies, woody encroachment is a primary risk factor for the eastern subspecies, where forested ecosystems are more prevalent and contributed to the historical decline of the eastern subspecies' grassland habitats. At FTIG, prescribed fire, mowing, and targeted brush cutting are used frequently to suppress shrub and tree sprouts, and without this important vegetation management, habitat for the eastern subspecies would be rapidly reforested and rendered unsuitable (Service 2023, p. 105). As with invasive grasses, over time, the continued degradation due to woody encroachment is likely to increasingly fragment and isolate habitats and is a risk factor to both the eastern and western subspecies.

Periodic Disturbances: Fire, Haying, Mowing

This risk factor applies to both the eastern and western subspecies, with fire a risk factor for the eastern subspecies and fire, haying, and mowing a risk factor for the western subspecies. Fire, haying, mowing, and other activities, such as the manual or chemical removal of weeds or woody vegetation, are common disturbances in grasslands and are necessary to conserve these habitats, but they may negatively impact both the eastern and western subspecies (Selby 2007, p. 3). Unmanaged grasslands may become overgrown, invaded by woody vegetation or exotic species, or covered in thatch that inhibits floral diversity and suppresses violets and nectar sources. Although beneficial at the appropriate frequency, magnitude, and intensity, periodic disturbances can trample, crush, burn, or poison individuals, and temporarily or permanently remove important resource needs. When these periodic disturbances occur in large, contiguous native grassland landscapes, mortality typically does not result in population losses, as individuals may disperse to adjacent areas and affected habitats may eventually be recolonized.

However, periodic disturbances on smaller, more-isolated patches of grasslands, which are now the dominant patch size available for both subspecies, may extirpate local populations, and without nearby refugia, these disturbances can potentially preclude recolonization or cause population impacts lasting several years (Swengel 1996, p. 73). Timing and intensity can also determine the level of impact. For example, moderate-to-light grazing that maintains native grasslands and removes excessive thatch, controls invasive species, and stimulates native plant growth, is generally considered beneficial to the regal fritillary, but heavy grazing that does not promote native grasslands is not (Royer and Marrone 1992, p. 28; Service 2023, p. 110); fires on a 3- to 5-year rotation (Henderson et al. 2018, p. 41; McCullough et al. 2019, p. 9) may be beneficial, while shorter or longer intervals between burns are more detrimental (McCullough et al. 2019, p. 9), although annual burns may still provide some benefits to habitat compared to no burning (Henderson et al. 2018, p. 41). When applied on a landscape scale appropriately (proper timing, extent, intensity, frequency), these disturbances can minimize regal fritillary mortality while creating a shifting mosaic of habitats in various successional stages that provide a net benefit to the species' resiliency. However, when applied inappropriately, they pose a threat to both regal fritillary individuals and populations, particularly those that are already at risk due to other factors, such as their small size and isolation.

Currently, the Midwest populations of the western subspecies, because they occur in small, isolated patches, are vulnerable to the negative impacts of improperly applied periodic disturbances. Many populations in the Great Plains are also small, but the landscape is less fragmented; thus, disturbed sites are more easily recolonized when favorable vegetative conditions return. However, this could change in the future as more conversion and drought reduce and fragment habitats. At FTIG, the INRMP guides the periodic disturbances to benefit the eastern subspecies, but should these periodic disturbance activities stop, the resiliency of the eastern subspecies could decline significantly (Service 2023, p. 110).

Drought

This risk factor applies to both the eastern and western subspecies. By reducing precipitation, drought can significantly reduce violet and nectar sources, so drought is a risk factor for both the eastern and western subspecies. The regal fritillary is sensitive to prolonged, dry periods from drought, and population extirpations may occur, particularly in small, isolated habitats that lack heterogeneity (Service 2023, p. 106). With their long flight period and relatively long lifespan, adult regal fritillaries, particularly females, require a nearly continuous supply of nectar during summer and fall to survive and reproduce (Wagner et al. 1997, p. 266). Drought may decrease the availability of the needed flowering nectar plants (Royer and Marrone 1992, p. 25), so drought may increase an adult's risk of starvation, reduce breeding success, and increase risks associated with forced emigration in search of food. Spring droughts may reduce the availability of violets, so larvae may starve or their growth may be stunted (Service 2023, p. 106). Therefore, prolonged and extended dryness associated with drought during any season is a risk factor for regal fritillary individuals of all life stages. At FTIG in Pennsylvania, there is generally more moisture than in the West, so the eastern regal fritillary may be less vulnerable to drought than the western subspecies.

Climate Change

Specific impacts of climate change on pollinators are not well understood; however, expected changes forecasted for terrestrial species and communities include increased ambient temperature, changes to annual and seasonal precipitation patterns, increased frequency of extreme events, and changes to hydrologic regimes (Staudinger et al. 2013, p. 466). These climate changes may lead to decreased resource availability (due to mismatches in temporal and spatial co-occurrences), decreased availability and suitability of larval habitat (due to increased flooding or storms), and increased stress from overheating (due to higher temperatures) (Cohen et al. 2018, p. 226; Zografou et al. 2021, p. 3283). Based on the known biology and life history of the species, increasingly warmer temperatures may have effects such as interruption of winter diapause, which would result in energy expenditure and potentially reduced first instar survival; alteration of violet and/or nectar plant phenology, availability, or abundance, which would impact food resources for

larval and adult stages; unusual post-winter diapause cold periods, which would impact larval survival; and direct mortality of regal fritillaries at all life stages due to excessive heat, drought, or severe storms. Despite having a wide climatic tolerance based on its range, the regal fritillary experiences very large fluctuations in annual numbers—even in populations with stable to increasing trends—suggesting that extreme weather can negatively impact regal fritillary abundance (Swengel and Swengel 2017, p. 19). Several populations in western Iowa, for example, were extirpated during extreme drought in the mid-2010s, with no perceived recovery as of the summer of 2021 (Hammond 2021, pers. comm.).

Climate variability may lead to shifts in geographic range, as has been reported for regal fritillary populations in Wisconsin and North Dakota (Swengel and Swengel 2017, p. 19), as well as decoupling pollinators from matching both host plant and nectar plant phenologies (Memmott et al. 2007, p. 712), as demonstrated in other butterfly species (Forister et al. 2010, pp. 2088–2089; Hickling et al. 2006, p. 452). Spring larval emergence may rely on suitable temperatures, photo period, or a combination of both, leading to larvae emerging when violets are older and less palatable. Drier summers could force regal fritillaries to leave otherwise suitable habitat in search of nectar sources. Other potential effects from climate change include increased flooding and storm events, which may directly reduce available larval habitat suitability (*e.g.,* violet abundance) (Goulson et al. 2015, p. 4). Finally, effects from climate change may increase stress on regal fritillaries in the future, further compounding pressures from other factors, including pathogens, nonnative species, and habitat loss (Goulson et al. 2015, pp. 4–5; Kerr et al. 2015, pp. 178–179; Williams and Osborne 2009, p. 371).

Summary of Risk Factors for the Eastern and Western Regal Fritillary

Our analysis of the past, current, and future influences on the needs of the eastern regal fritillary for long-term viability revealed that invasive plants, woody encroachment, and periodic disturbances from fire or other activities pose the greatest impact on the eastern subspecies' current and future viability. Drought and associated effects of climate change may also influence the viability of the eastern regal fritillary. For the western regal fritillary, grassland conversion, primarily due to agriculture; herbicides that are applied broadly (often aerially); drought; invasives grasses and woody vegetation; incompatible periodic disturbances from fire, haying, and mowing; and climate change factors pose the greatest impact on the western subspecies' current and future viability.

Conservation Efforts and Regulatory Mechanisms

The State of Pennsylvania does not consider invertebrates for its State threatened and endangered species programs, so does not confer State-level protections to the eastern regal fritillary. A variety of conservation efforts have been and are implemented to benefit the eastern regal fritillary at FTIG. Since 2011, a regal fritillary captive-rearing program has attempted to reintroduce the eastern regal fritillary into suitable habitats off FTIG, although the attempts to establish a population have not yet been successful (Service 2023, p. 113). The INRMP, developed under the Sikes Act, helps guide conservation objectives and activities at FTIG specifically for the eastern regal fritillary, including increasing or maintaining population levels, nectar sources, and larval host plants. Conservation actions include extensive seasonal monitoring; habitat management using burning, mowing, and brush removal; and reintroduction efforts. Additionally, FTIG completed a candidate conservation agreement (CCA) to append to the INRMP that helps formally document regal fritillary butterfly conservation intentions at the military installation (FITG and Service 2024, entire). These conservation efforts have helped maintain grassland habitats at FTIG for the eastern subspecies. However, these conservation actions in the INRMP and draft CCA are not regulatory or binding and could stop with changing funding or priorities (PADMVA 2021, pp. 20, 31; Swartz 2022, pers. comm; FITG and Service 2024, entire). As a result, there are no binding and enforceable regulatory mechanisms that address threats to the eastern regal fritillary.

The States of Indiana and Wisconsin have assigned the western regal fritillary State-level protections as an endangered species and the State of Illinois recognizes the species as a threatened species (Service 2023, p. 179). The States of Iowa, Minnesota and Wyoming identify the western regal fritillary as a species of concern (Service 2023, p. 179. These designations may allow State agencies to develop programs to manage and conserve nongame and endangered species, but they do not provide binding and enforceable regulatory mechanisms that may reduce threats to the western regal fritillary. Additionally, conservation measures and actions may occur locally in many areas to benefit the western regal fritillary, but most are likely to be voluntary and may not be able to ameliorate or mitigate the identified threats to the species (Service 2023, pp. 116–117). These actions often depend on limited sources of funding and may not necessarily conducted with the needs and life history of the regal fritillary in mind and may or may not be beneficial to the subspecies (Service 2023, pp. 116–117). Appropriate haying, grazing, and burning are generally known to be beneficial to regal fritillaries by promoting native grassland habitats, and these actions do occur under all types of land ownership. However, land use activities conducted without knowledge or consideration for the subspecies' life-history and habitat needs can be detrimental to individuals and populations, particularly on small, isolated habitat patches. Additionally, activities are not typically conducted in a coordinated manner among landowners or on a scale large enough to improve the resiliency, redundancy, or representation of the western subspecies.

Current Condition of the Eastern Regal Fritillary

To evaluate resiliency for the eastern regal fritillary, we evaluated the current condition of several habitat factors (native grasslands, riparian and wetland areas, ambient temperature, precipitation) and two demographic factors (population trend and abundance) (Service 2023, pp. 120–131). Currently, the eastern regal fritillary is found in one population, and based on our evaluation of the habitat and demographic factors, that single population currently has low resiliency and provides the subspecies' redundancy and representation. The single population is found on FTIG military base in Pennsylvania, where ongoing management activities to benefit the subspecies are conducted through an INRMP on approximately 457 acres (185 hectares). These management activities have helped maintain grassland habitats for the eastern regal fritillary, such that many of the available habitats are in good condition. FITG has monitored the eastern regal fritillary on the military base since 1992 (Ferster 2005, p. 8). The population peaked in 2014 with approximately 5,400 individuals, but declined starting in 2017 to approximately 800 individuals, and the population size has never rebounded to its high numbers from 2014 (Swartz 2022, pers. comm.; Service 2023, p. 64). As a result, the abundance and growth trend are currently both in very low

condition, so the eastern subspecies has low resiliency (Service 2023, pp. 123, 126–128). Additionally, military activities and periodic disturbance activities such as fire, which can benefit the eastern subspecies by reducing woody encroachment, may also present a risk to the subspecies if they are discontinued or if they are too frequent, intense, or catastrophic. Active military exercises and other activities occur without consideration of the subspecies elsewhere in grassland habitats at FTIG. The eastern subspecies' resiliency and redundancy are limited by the condition of the subspecies' small, narrowly distributed habitats and depend on the reduction of its primary threat, woody encroachment, through management and other voluntary activities. The eastern subspecies is different genetically and morphologically than the western subspecies, and the east representative unit provides a unique, more mesic, ecological type. The eastern regal fritillary's small population size, narrow distribution, and limited ecological and genetic diversity indicate that the eastern subspecies is currently vulnerable to stochastic events, catastrophes, and environmental change.

Current Condition of the Western Regal Fritillary

To evaluate resiliency for the western regal fritillary, we evaluated the current condition of several habitat factors (native grasslands, riparian and wetland areas, ambient temperature, precipitation) and two demographic factors (population trend and abundance) (Service 2023, pp. 120–131). Currently, the western subspecies has 21 populations, or analytical units in the SSA, distributed across 3 representation units, which feature a diversity of climates, habitats, and genetics. Based on our evaluation of the habitat and demographic factors, of the 21 populations, 3 currently have high resiliency, 7 have medium resiliency, 10 have low resiliency, and 1 is currently functionally extirpated with no resiliency, although it supports habitats and has recent observations (Service 2023, pp. 16, 124–126). Populations with high resiliency have better habitat and demographic conditions than populations with medium or low resiliency, so are better able to withstand stochastic events. Populations with medium resiliency are about as likely as not to withstand a stochastic event, those with low resiliency are less likely to withstand a stochastic event, and those with no resiliency are considered functionally extirpated, so unlikely to withstand a stochastic event. The three populations with high resiliency are in the Northern and Central Great Plains representation units, and no populations currently have very high or very low resiliency (Service 2023, pp. 16, 128). All the populations in the Midwest representation units currently have low resiliency because of generally poor habitat conditions following the conversion of these areas to agriculture and other development. Additionally, populations in the Midwest exhibit relatively less genetic diversity than those in the Northern Great Plains or Central Great Plains, an indication of their fragmentation and isolation (Service 2023, pp. 21, 129). However, across the entire Northern and Central Great Plains representation units, based on genetics, the western regal fritillary is considered one, large population with high gene flow over hundreds of kilometers (Williams et al. 2003, pp. 13, 14). The 21 populations are distributed across portions of 14 States. As a result, the western subspecies currently has levels of resiliency, redundancy, and representation that make it less vulnerable to extinction.

Future Conditions

As part of the SSA, we developed three future condition scenarios to capture the range of uncertainties regarding future threats to and the projected responses of the eastern and western subspecies of regal fritillary. Our scenarios included a continuation scenario, which incorporated the current risk factors continuing on the same trajectory as they are now. We also evaluated two future scenarios that incorporated varying levels of increasing risk factors with elevated negative effects on populations of the eastern and western subspecies. However, because we determined that the current condition of the eastern subspecies is consistent with an endangered subspecies (see *Eastern Subspecies: Determination of Status,* below), we are not presenting the results of our future conditions analysis for the eastern subspecies in this proposed rule. Please refer to the SSA report (Service 2023, pp. 132–152) for the full analysis of future conditions for both subspecies.

We projected the future condition of the western subspecies of regal fritillary under three plausible future scenarios across the next 50 years, to approximately 2075. This 50-year timeframe for our future projections accounts for approximately 50 annual regal fritillary generations and is an adequate time period to assess the response of populations to stressors and conservation efforts, given that the historical range of the eastern subspecies contracted to its current distribution within approximately 50 years. It is also a time period for which we can reasonably project climate conditions based on the best available climate models across the range of the western subspecies.

The future scenarios described in the SSA report represent three possible future conditions based on projected climate conditions and plausible states of the threats for the western regal fritillary, as summarized in *Risk Factors for the Eastern and Western Subspecies,* above. The future scenarios project the threats into the future and consider the impacts those threats could have on the viability of the western subspecies. We apply the concepts of resiliency, redundancy, and representation to the future scenarios to describe the range of plausible future conditions of the western subspecies. Uncertainty is inherent in any projection of future condition, so we must consider plausible scenarios to make our determinations. When assessing the future, viability is not a specific state, but rather a continuous measure of the likelihood that the subspecies will sustain populations over time.

We included climate change impacts in our future scenarios as a factor that would add to the negative effects of the primary threats to the western subspecies and its habitat. Climate change is expected to increase ambient temperatures, reduce precipitation, and increase the frequency and duration of drought across the overall range of the western subspecies. Warmer ambient temperatures may interrupt winter diapause, which would result in energy expenditure and potentially reduced first instar survival; alter violet and nectar plant phenology, availability, or abundance, which would impact food resources for larvae and adults; result in unusual post-winter diapause cold periods, which would impact larval survival; and direct mortality of regal fritillaries at all life stages due to excessive heat, drought, or severe storms. Increased frequency and duration of drought may reduce the availability of violets and nectar sources. We used the best available climate data and models, including representative concentration pathways (RCPs) 4.5 and 8.5 and underlying temperature and precipitation models, to project the plausible outcomes for these factors, which were incorporated into our three future scenarios (Service 2023, pp. 133–136, 141–143). We summarize the results of our future conditions analysis for the western regal fritillary below.

Our future scenarios analysis for the western regal fritillary revealed that in 50 years, stressors will increase at their current rates of increase, or will increase moderately or significantly more than their current rates of increase. When stressors continue at their current rates, we projected that grassland habitats will continue to become smaller, more fragmented, and isolated, such that resiliency declines for at least four of the populations in 50 years (Service 2023, pp. 141–152). Although the number, distribution, and diversity of western subspecies populations decline only slightly under this future scenario, the scenario still represents increased risk for the western subspecies with the declines in resiliency. With a moderate future increase in stressors, the quality and quantity of habitats decline further such that resiliency declines for up to 11 populations, with drops from medium to low resiliency, and some to very low resiliency (Service 2023, pp. 141–152). Finally, with the most significant projected increase in stressors, 10 of the 21 populations lose resiliency and become extirpated, 7 populations have very low resiliency, 1 population has low resiliency, and only 3 have medium resiliency (Service 2023, pp. 141–152). This future scenario represents a large decline in resiliency, redundancy, and representation for the western subspecies in 50 years, with a corresponding decline in viability. Across all of our plausible future scenarios, our analysis revealed that the western regal fritillary is at a greater risk of extinction in the future.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have analyzed the cumulative effects of identified threats and conservation actions on the species. To assess the current and future condition of the species, we evaluate the effects of all the relevant 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 the degree to which the factors collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative-effects analysis.

Determination of Status

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

Status Throughout All of Its Range

After evaluating threats to the eastern and western regal fritillary and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we found that both subspecies have declined in overall abundance and distribution. Historically, populations of the regal fritillary functioned on a vast, metapopulation scale and were abundant and broadly distributed, particularly in the Midwest and Great Plains. Millions of individuals likely occupied the North American prairies prior to establishment of European agriculture in the 1800s (Hammond and McCorkle 1983(84), p. 219). Natural disturbance processes including climate, grazing, and fire maintained the open grassland habitats, and there were enough violet and nectar components for the regal fritillary. This vast range may have facilitated an eastward range expansion, perhaps via coastal grasslands, where the regal fritillary opportunistically moved into inland habitats created and maintained by human activities (Service 2023, p. 131).

Today, grassland patches of adequate size, diversity, and connectivity are significantly reduced, both in number and proximity, interrupting the landscape-level scales at which the regal fritillary historically functioned. Accessibility to suitable habitats has become increasingly restrictive for the eastern and western regal fritillary, as many remaining suitable grassland patches are small and isolated, primarily the result of conversion in the West and woody encroachment in the East. The eastern subspecies is extirpated from nearly every formerly known occupied eastern location and is confined to one small population that is extremely vulnerable to environmental and demographic stochasticity. For the western subspecies, a small fraction, less than one percent, of the historically vast tallgrass prairies of the Midwest remains today, mostly as grassland remnants that are severely fragmented and isolated (Samson and Knopf 1994, p. 418, Service 2023, p. 97). Conditions at the westernmost extent of the western subspecies' overall range are currently not as severe, as large mixed-grass prairies remain, but much of these grasslands have been or could be converted to agriculture and other development. In the future, the climate in the West is projected to be drier and warmer, and important resource needs, such as violets and native grasses, may become limited. Without large, intact, contiguous grasslands, dispersals of individuals from occupied habitats are often already dead ends, as individuals move into a matrix that may be composed of unsuitable agricultural fields where they are unable to find the resources they need to survive and establish the next annual generation. For both the eastern and western subspecies, the risk of genetic collapses increases without regular successful dispersal events, and the eastern regal fritillary has already experienced restricted gene flow. The western regal fritillary has reduced genetic diversity in the Midwest. Natural periodic disturbances that historically maintained the shifting mosaic of habitats on the landscape scale have been replaced with permanent land use changes and land use management regimes that, when applied inappropriately, have reduced or eliminated regal fritillary populations. As a result, both subspecies are increasingly vulnerable to stochastic events and synergistic processes that have significantly greater potential to cause population extirpations that may outpace recolonization rates.

Eastern Subspecies: Status Throughout All of Its Range

The eastern regal fritillary has declined significantly in overall distribution and abundance since the 1930s. Once broadly distributed across the eastern United States, the eastern subspecies is now found only in one population on approximately 457 acres (185 hectares) of remnant grasslands on FTIG in Pennsylvania. Due to the small size of the occupied habitats and the single population, the eastern regal fritillary currently has low resiliency, limited redundancy, and reduced ecological and genetic diversity (representation). As a result, the eastern subspecies is vulnerable to stochastic and catastrophic events, such as hot and dry summers, long and cold winters, and destructive fires. The eastern

subspecies' low level of resiliency, coupled with its limited redundancy and representation and ongoing and immediate threats currently results in a high risk of extinction for the eastern regal fritillary.

The remaining eastern subspecies' grassland habitats at FTIG depend on the ongoing reduction of woody encroachment through active management. These activities are critical to the viability of the eastern regal fritillary and have helped ensure that the eastern subspecies remains in this area in contrast to its historical extirpation throughout much of its overall range. Active management at FTIG, whether intentional or unintentional, has reduced and continues to reduce habitat loss and fragmentation from woody encroachment, such that FTIG is now the lone site where the eastern subspecies is still found. Although conservation activities at FTIG are ongoing and have benefited the eastern subspecies by maintaining grassland habitats, they are implemented only in specific areas and could stop or change at any time depending on funding and priorities, thus increasing the subspecies' vulnerability. Military activities and periodic disturbance activities such as fire, which can benefit the eastern subspecies by reducing woody encroachment, may also present a risk to the subspecies if they are discontinued or if they are too frequent, intense, or catastrophic. As a result, the eastern regal fritillary is vulnerable to extinction, not only because of its limited abundance, distribution, and diversity, but also by its complete reliance on important and effective land management activities that are not guaranteed to continue.

Our analysis of the eastern subspecies' current condition, as well as the conservation efforts discussed above, show that the eastern regal fritillary is in danger of extinction throughout all of its range due to the severity and immediacy of threats currently impacting its single population (see *Risk Factors for the Eastern and Western Subspecies,* above). The single population is isolated, has limited potential for natural recolonization, and has a high risk of extirpation from stochastic and catastrophic events, so the risk of extinction for the eastern regal fritillary is high; therefore, the species meets the definition of an endangered species and is not a threatened species.

Eastern Subspecies: Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a subspecies may warrant listing if it is in danger of extinction or likely to become so within the foreseeable future throughout all or a significant portion of its range. We have determined that the eastern subspecies of regal fritillary is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portion of its range. Because the eastern subspecies of regal fritillary warrants listing as endangered throughout all of its range, our determination does not conflict with the decision in *Center for Biological Diversity* v. *Everson,* 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), which vacated the provision 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'' (hereafter ''Final Policy''; 79 FR 37578, July 1, 2014) that provided that if the Service had determined that a species was threatened throughout all of its range, the Service would not analyze whether the species was endangered in a significant portion of its range.

Eastern Subspecies: Determination of Status

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

Western Subspecies: Status Throughout All of Its Range

Currently, the western regal fritillary has 21 populations distributed across portions of 14 States and 3 representation units, which feature a diversity of climates, habitats, and genetics. Three populations have high resiliency, 7 have medium resiliency, 10 have low resiliency, and 1 has no resiliency. All the populations in the Midwest representative unit currently have low resiliency following the conversion of grasslands to agriculture and development. Populations in North and South Dakota, eastern Montana, eastern Wyoming, the Sandhills in west-central Nebraska, and the Flint Hills in eastern Kansas, currently have high resiliency, because of the high-quality condition of their habitat and demographic factors. Genetic exchange occurs across much of the Northern and Central Great Plains, indicating that enough suitable habitats currently remain such that dispersals and recolonizations help maintain the landscape-level metapopulation structure for the western regal fritillary.

We considered whether the western regal fritillary is presently in danger of extinction throughout all of its range and determined that it is not. The current conditions as assessed in our SSA report show that there are three populations with high resiliency and seven populations with medium resiliency distributed broadly across two large representation units. There are an additional eight populations in the Midwest representation unit with low resiliency and reduced ecological and genetic diversity, so although this area contributes less to the overall viability of the western subspecies, it still provides some resiliency and redundancy for the subspecies. Across all three representation units, there are multiple, sufficiently resilient populations distributed across a large, ecologically diverse area. As a result, the western regal fritillary currently has sufficient resiliency, redundancy, and representation to withstand stochastic and catastrophic events and environmental change. Although threats are currently acting on the western subspecies and many of those threats are expected to continue into the future, we did not find that the subspecies is currently in danger of extinction throughout all of its range.

In the future, as stressors, such as conversion to agriculture, invasive plants, and drought, continue to reduce the quality and quantity of native grasslands, we expect western regal fritillary populations to be at an increased risk of extirpation. We project the least amount of decline in the western subspecies' viability if the stressors continue at their current rates and the greatest decline if stressors increase significantly. Across all of our future projections, fewer populations will have high and medium resiliency, with increases in the number and distribution of populations with low, very low, or no resiliency (extirpation). With increasing threats in the future, grassland habitats will become smaller, more isolated, and more fragmented, and individuals will be less able to disperse and recolonize, so we project overall declines in the resiliency, redundancy, and representation of the western subspecies in 50 years. As a result, we expect that, in the foreseeable future, the western regal fritillary will be at an increased risk of extirpation.

According to our assessment of plausible future scenarios in the SSA

report, the western subspecies is likely to become an endangered subspecies within the foreseeable future of 50 years throughout all of its range. Our future scenarios help address future uncertainty by describing plausible outcomes for the primary risk factors to the western subspecies. Fifty years encompasses 50 annual generations of the western regal fritillary and a time period when stressors are reasonably expected to change and we can make reasonably reliable predictions about the threats and the western regal fritillary's responses to those threats. In the foreseeable future, we expect more grasslands to be converted to agriculture and development and to become drier, as ambient temperatures increase and droughts increase in intensity, magnitude, and frequency. We expect increases in invasive plants, broad herbicide application, and periodic disturbances. As a result, we expect additional reductions in the size and distribution of large, intact blocks of grasslands and the underlying resources needed by the western regal fritillary, including violets, bunch grasses, and nectar sources. Violets and nectar sources become more scarce as herbicides are broadly applied to reduce forbs in the remaining tracts of grasslands. Climate change could further exacerbate the effects of drought. As habitats become smaller and more isolated, metapopulation processes could fail, with subsequent declines in the resiliency of the remaining populations of the western subspecies, as well as the redundancy and representation of the subspecies, and we expect the western regal fritillary to become more vulnerable to stochastic and catastrophic events and environmental change. Therefore, the western regal fritillary is likely to become an endangered subspecies within the foreseeable future throughout all of its range.

After evaluating threats to the western subspecies and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we find that the viability of the western subspecies will continue to decline in the next 50 years so that the subspecies is likely to become in danger of extinction within the foreseeable future throughout all of its range due to the projected loss and fragmentation of grassland habitats from conversion to agriculture and development, drought, invasive and woody plants, the broad application of herbicides, and the synergistic effects of these threats with climate change. Thus, after assessing the best available information, we conclude that the western subspecies of regal fritillary 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.

Western Subspecies: 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,* 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), vacated the provision 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'' (hereafter ''Final Policy''; 79 FR 37578, July 1, 2014) that provided if the Services determine that a species is threatened throughout all of its range, the Services will not analyze whether the species is endangered in a significant portion of its range.

Therefore, we proceed to evaluating whether the western subspecies is endangered in a significant portion of its range—that is, whether there is any portion of the western subspecies' range for which both (1) the portion is significant; and (2) the subspecies 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 subspecies' range.

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

We evaluated the range of the western regal fritillary to determine if the subspecies is in danger of extinction now in any portion of its range. The range of a subspecies can theoretically be divided into portions in an infinite number of ways. We focused our analysis on portions of the western subspecies' range that may be in danger of extinction (*i.e.,* meet the Act's definition of an endangered species). For the western regal fritillary, we considered whether the threats or their effects on the subspecies are greater in any biologically meaningful portion of the subspecies' range than in other portions, such that the subspecies is in danger of extinction now in that portion.

We examined the range of the western subspecies for biologically meaningful portions that may be at a higher risk of extirpation, as reflected by current resiliency of the 21 populations. Currently, 10 of the 21 populations have low resiliency, so they are at a greater risk of extirpation than the populations with more resiliency. These 10 populations are geographically concentrated along the eastern edge of the western subspecies' overall range. Eight of these populations with low resiliency make up the Midwest representation unit, which was historically dominated by vast tallgrass prairies, but today is an agriculturally dominated landscape with prairie remnants existing primarily as small, isolated patches. The other two populations currently with low resiliency, the Lake Agassiz Plain and Ozark Highlands populations, immediately adjoin the Midwest representation unit, so were included in our potential portion.

We then considered whether this biologically meaningful portion of 10 populations with low resiliency may be at a higher risk of extirpation. We examined the following threats, for the reasons described above: grassland conversion, invasive plants, broad application of herbicides, periodic disturbances, drought, climate change, and cumulative effects. We concluded that although the populations in this portion have low resiliency, largely the result of low and very low conditions of the large, contiguous blocks of native grasslands, reproduction and recolonization still occurs with abundance and growth trends ranging from low to medium conditions (Service 2023, p. 125). Additionally, the portion has sufficient redundancy and representation across the 10 populations such that it is not currently in danger of extinction. The 10 populations cover a wide geographic area that spans portions of 6 States across a variety of climatic and habitat types from north-to-south and east-to-west, such that there is no stochastic or catastrophic event that would extirpate the portion in the near term. Therefore, we conclude that the portion does not have a different status from the remainder of the western subspecies' range. Because we

determined that this portion does not have a different status, we did not need to assess its potential significance. As a result, we found no portion of the western subspecies' range where the biological condition of the subspecies differs from its condition elsewhere in its range such that the status of the subspecies in that portion differs from any other portion of the subspecies' range.

Therefore, no portion of the western subspecies' range provides a basis for determining that the subspecies is in danger of extinction in a significant portion of its range, and we determine that the western regal fritillary 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. *U.S. 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 apply the aspects of the Final Policy, including the definition of ''significant'' that those court decisions held to be invalid.

Western Subspecies: Determination of Status

Our review of the best available scientific and commercial information indicates that the western subspecies of regal fritillary meets the Act's definition of a threatened species. Therefore, we propose to list the western subspecies of regal fritillary as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

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

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

The recovery planning process begins with development of a recovery outline made available to the public soon after a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions while a recovery plan is being developed. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) may be established to develop and implement recovery plans. The recovery planning process involves the identification of actions that are necessary to halt and reverse the species' decline by addressing the threats to its survival and recovery. The recovery plan identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened (''downlisting'') or removal from protected status (''delisting''), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery outline, draft recovery plan, final recovery plan, and any revisions will be available on our website as they are completed (*https://www.fws.gov/program/endangered-species*), or from our Pennsylvania or South Dakota Ecological Services Field Offices (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.,* restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their ranges may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

If these subspecies are listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the State of Pennsylvania would be eligible for Federal funds to implement management actions that promote the protection or recovery of the eastern regal fritillary. The States of Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, Oklahoma, South Dakota, Wisconsin, and Wyoming would be eligible for Federal funds to implement management actions that promote the protection or recovery of the western regal fritillary. Information on our grant programs that are available to aid species recovery can be found at: *https://www.fws.gov/service/financial-assistance.*

Although the eastern and western regal fritillary are only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for these subspecies. Additionally, we invite you to submit any new information on these subspecies whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7 of the Act is titled, ''Interagency Cooperation'' and mandates all Federal action agencies to use their existing authorities to further the conservation purposes of the Act and to ensure that their actions are not likely to jeopardize the continued existence of listed species or adversely modify critical habitat. Regulations implementing section 7 are codified at 50 CFR part 402.

Section 7(a)(2) states that each Federal action agency shall, in consultation with the Secretary, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Each Federal agency shall review its action at the earliest possible time to determine whether it may affect listed species or critical habitat. If a determination is made that the action may affect listed species or critical habitat, formal consultation is required (see 50 CFR 402.14(a)), unless the Service concurs in writing that the action is not likely to adversely affect listed species or critical

habitat. At the end of a formal consultation, the Service issues a biological opinion containing its determination of whether the Federal action is likely to result in jeopardy or adverse modification.

In contrast, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action which *is likely* to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of critical habitat proposed to be designated for such species. Although the conference procedures are required only when an action is likely to result in jeopardy or adverse modification, action agencies may voluntarily confer with the Service on actions that may affect species proposed for listing or critical habitat proposed to be designated. In the event that the subject species is listed or the relevant critical habitat is designated, a conference opinion may be adopted as a biological opinion and serve as compliance with section 7(a)(2) of the Act.

Examples of discretionary actions for the eastern and western regal fritillary that may be subject to conference and consultation procedures under section 7 are land management or other landscape-altering activities on Federal lands administered by the Natural Resources Conservation Service, the Bureau of Land Management, the National Park Service, and the Department of Defense, as well as 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 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. Federal agencies should coordinate with the local Service Field Office (see **FOR FURTHER INFORMATION CONTACT**) with any specific questions on section 7 consultation and conference requirements.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, and the Service's implementing regulations codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit or to cause to be committed any of the following: (1) import endangered wildlife into, or export from, the United States; (2) take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) endangered wildlife within the United States or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. Certain exceptions to these prohibitions apply to employees or agents of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

We may issue permits to carry out otherwise prohibited activities involving endangered wildlife under certain circumstances. Regulations governing permits for endangered wildlife are codified at 50 CFR 17.22. With regard to endangered wildlife, a permit may be issued for scientific purposes, for enhancing the propagation or survival of the species, or for take incidental to otherwise lawful activities. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

II. Protective Regulations Under Section 4(d) of the Act

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. 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. With these two sentences in section 4(d), Congress delegated broad authority to the Secretary to determine what protections would be necessary and advisable to provide for the conservation of threatened species, and even broader authority to put in place any of the section 9 prohibitions for a given species.

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 species' proposed protective regulations under section 4(d) of the Act are one of the many tools that we would use to promote the conservation of the western regal fritillary. Nothing in 4(d) rules 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 the ability of the Service to enter into partnerships for the management and protection of the western regal fritillary. As mentioned previously in Available Conservation Measures, section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, even before the listing of any species or the designation of its critical habitat is finalized, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of critical habitat

proposed to be designated for such species. These requirements are the same for a threatened species regardless of what is included in its 4(d) rule.

Section 7 consultation is required for Federal actions that ''may affect'' a listed species regardless of whether take caused by the activity is prohibited or excepted by a 4(d) rule (''blanket rule'' or species-specific 4(d) rule). A 4(d) rule does not change the process and criteria for informal or formal consultations and does not alter the analytical process used for biological opinions or concurrence letters. For example, as with an endangered species, if a Federal agency determines that an action is ''not likely to adversely affect'' a threatened species, this will require the Service's written concurrence (50 CFR 402.13(c)). Similarly, if a Federal agency determinates that an action is ''likely to adversely affect'' a threatened species, the action will require formal consultation with the Service and the formulation of a biological opinion (50 CFR 402.14(a)). Because consultation obligations and processes are unaffected by 4(d) rules, we may consider developing tools to streamline future intra-Service and inter-Agency consultations for actions that result in forms of take that are not prohibited by the 4(d) rule (but that still require consultation). These tools may include consultation guidance, Information for Planning and Consultation effects determination keys, template language for biological opinions, or programmatic consultations.

Provisions of the Proposed 4(d) Rule for the Western Regal Fritillary

Exercising the Secretary's authority under section 4(d) of the Act, we have developed a proposed rule that is designed to address the western subspecies' conservation needs. As discussed previously in Summary of Biological Status and Threats, we have concluded that the western regal fritillary is likely to become in danger of extinction within the foreseeable future primarily due to the loss and fragmentation of grasslands through conversion by agriculture and development, the broadcast application of herbicides, invasive and woody plants, periodic disturbances, drought, and the synergistic effects of climate change. 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)(1) of the Act prescribes for endangered species. We are not required to make a ''necessary and advisable'' determination when we apply or do not apply specific section 9 prohibitions to a threatened species (In re: Polar Bear Endangered Species Act Listing and 4(d) Rule Litigation, 818 F. Supp. 2d 214, 228 (D.D.C. 2011) (citing *Sweet Home Chapter of Cmtys. for a Great Or.* v. *Babbitt,* 1 F.3d 1, 8 (D.C. Cir. 1993), *rev'd on other grounds,* 515 U.S. 687 (1995))). Nevertheless, even though we are not required to make such a determination, we have chosen to be as transparent as possible and explain below why we find that, if finalized, the protections, prohibitions, and exceptions in this proposed 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 the western regal fritillary.

The protective regulations we are proposing for the western regal fritillary incorporate prohibitions from section 9(a)(1) of the Act to address the threats to the subspecies. The prohibitions of section 9(a)(1) of the Act, and implementing regulations codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit or to cause to be committed any of the following acts with regard to any endangered wildlife: (1) import into, or export from, the United States; (2) take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) within the United States, within the territorial sea of the United States, or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. This protective regulation includes all of these prohibitions because the western regal fritillary is at risk of extinction within the foreseeable future and putting these prohibitions in place will help to conserve the subspecies' remaining populations, slow its rate of decline, and decrease synergistic, negative effects from other stressors.

In particular, this proposed 4(d) rule would provide for the conservation of the western regal fritillary by prohibiting the following activities, unless they fall within specific exceptions or are otherwise authorized or permitted: importing or exporting; take; possession and other acts with unlawfully taken specimens; delivering, receiving, carrying, 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.

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 regulations at 50 CFR 17.3. Take can result knowingly or otherwise, by direct and indirect impacts, intentionally or incidentally. Regulating take would help preserve the subspecies' remaining populations, slow their rate of decline, and decrease synergistic, negative effects from other stressors. Therefore, we propose to prohibit take of the western regal fritillary, except for take resulting from those actions and activities specifically excepted by the 4(d) rule.

Exceptions to the prohibition on take would include all of the general exceptions to the prohibition on take of endangered wildlife, as set forth in 50 CFR 17.21 and additional exceptions, as described below. Despite these prohibitions regarding threatened species, we may under certain circumstances issue permits to carry out one or more otherwise-prohibited activities, including those described above. The regulations that govern permits for threatened wildlife state that the Director may issue a permit authorizing any activity otherwise prohibited with regard to threatened species. These include permits 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 (50 CFR 17.32). The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

In addition, to further the conservation of the species, any employee or agent of the Service, any other Federal land management agency, the National Marine Fisheries Service, a State conservation agency, or a federally recognized Tribe, who is designated by their agency or Tribe for such purposes, may, when acting in the course of their official duties, take threatened wildlife without a permit if such action is necessary to: (i) Aid a sick, injured, or orphaned specimen; or (ii) Dispose of a dead specimen; or (iii) Salvage a dead specimen that may be useful for scientific study; or (iv) Remove specimens that constitute a demonstrable but nonimmediate threat

to human safety, provided that the taking is done in a humane manner; the taking may involve killing or injuring only if it has not been reasonably possible to eliminate such threat by live capturing and releasing the specimen unharmed, in an appropriate area.

We recognize the special and unique relationship that we have 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 must 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, would be able to conduct activities designed to conserve the western regal fritillary that may result in otherwise prohibited take without additional authorization.

The proposed 4(d) rule would also provide for the conservation of the western subspecies by excepting otherwise prohibited take associated with several activities either intended to incentivize conservation actions or that, while they may have some minimal level of take of the western regal fritillary, are not expected to rise to the level that would have a negative impact (*i.e.,* would have only de minimis impacts) on the western subspecies' conservation. We propose to except incidental take associated with routine livestock operations, livestock grazing, noxious weed control, annual haying and mowing, prescribed fire, brush control, and mowing section line rights-of-way and recreational trails; we describe each in more detail below. These activities are expected to have negligible impacts to the western regal fritillary and its habitat.

(1) Routine Livestock Operations

Incidental take caused by the routine livestock ranching activities that are described below and that are implemented on private, State, or Tribal lands or on other lands not under Federal jurisdiction (*e.g.,* lands owned by county or local governments) would not be prohibited, as long as those activities are otherwise legal and conducted in accordance with applicable State, Federal, Tribal, and local laws and regulations. For the purposes of this proposed 4(d) rule, routine livestock ranching activities include (as described below) the construction and maintenance of fences, the gathering and management of livestock, and the development and maintenance of watering facilities for livestock.

(a) Fence Construction and Maintenance

Fences are an essential tool for livestock and ranch management. In addition, the strategic distribution of fencing is also necessary to implement multicell rotational grazing systems, which may be necessary to improve grazing management and provide a conservation benefit to the western regal fritillary's habitat. Therefore, incidental take associated with the construction and maintenance of fencing to manage livestock and ranches will be excepted.

(b) Livestock Gathering and Management

The installation and maintenance of corrals, loading chutes, and other livestock working facilities are critical to ranch operations. These activities may be carried out with only minimal impacts to the western regal fritillary. Therefore, incidental take associated with livestock gathering and management activities will be excepted.

(c) Development and Maintenance of Livestock Watering Facilities

Without a suitable water source in a pasture, livestock ranching is impossible. The proper distribution of livestock watering sources is also a prerequisite to implementing improved grazing management via the use of multicell rotational grazing systems that may be necessary to conserve western regal fritillary habitat and to provide a conservation benefit to the subspecies on grazed sites. This activity includes both the initial development of water sources and their maintenance. Dugout ponds, for example, typically require a cleanout after 15 to 20 years.

(2) Livestock Grazing

Incidental take of the western regal fritillary that may result from livestock grazing on private, State, or Tribal land would be excepted from the take prohibitions of section 9 of the Act. By excepting take of the western regal fritillary caused by livestock grazing, we acknowledge the positive role that some ranchers have played in conserving the western regal fritillary and that grazing can be compatible with maintaining remaining native grasslands. Grazing and browsing by livestock may improve and maintain regal fritillary habitat by removing herbaceous vegetation that shades and competes with violets and results in earlier successional stages within the grasslands, contributing to the landscape-level mosaic of habitats used by the western regal fritillary. Best management practices to make grazing compatible with regal fritillary conservation may include light-to-moderate grazing intensities in the late fall and early spring, patch burn grazing methods to maintain a shifting mosaic of habitats and prevent woodland encroachment, and avoiding the broadcast spraying of herbicides across large areas to kill plants that compete with grasses. Recovery of the western regal fritillary will depend on the protection and restoration of high-quality habitats supporting violets and nectar sources on private lands and on public lands that are grazed by private individuals under lease or other agreements. Therefore, incidental take associated with livestock grazing on private, State, or Tribal lands, including light-to-moderate grazing intensities in the late fall and early spring, and patch burn grazing methods that may help maintain an annually shifting mosaic of fire and grazing across a landscape to increase the diversity and structure of vegetation will be excepted.

(3) Noxious Weed Control

State and county laws require landowners to control noxious weeds on their property, and the timing of control actions is usually dependent on the growth stage of the weed species. Control of noxious weeds may also be important to protecting western regal fritillary habitat because native plant diversity declines when nonnative plant species invade and become established in prairies (Boettcher *et al.* 1993, p. 35). Spot spraying, hand pulling, or mechanical treatment of noxious weeds would be excepted from the take prohibitions and may occur at any time during the year. Incidental take that occurs as a result of mowing that is carried out for the purpose of controlling one or more noxious weed species will also be excepted.

Broadcast application of herbicides, however, may result in significant deterioration of native plant diversity in prairies (Smart et al. 2011, p. 184). Therefore, we would not except incidental take of the western regal fritillary that may result from broadcast spraying of herbicides, which we define as the application of herbicides, often aerially or by vehicles, evenly, widely, and indiscriminately across the entire

application area, unless the application area is dominated by noxious weeds.

(4) Haying and Mowing

Haying and mowing of native grasslands can improve western regal fritillary habitats by removing vegetation that outcompetes violets for light, nutrients, and water; stimulating the growth of native nectar sources; and improving the mosaic of diverse successional stages. Therefore, we will except incidental take associated with annual haying and mowing in western regal fritillary habitats.

(5) Prescribed Fire

Prescribed fire is a key grassland management tool that can preserve native grassland habitat by controlling woody encroachment and introduced species and stimulating growth of native vegetation. When used with other grassland management techniques and best management practices, the periodic disturbance caused by prescribed fire helps maintain suitable regal fritillary habitat on the landscape. We acknowledge that fire is also a stressor to the western subspecies. Adverse effects to individuals may occur if burning occurs in occupied habitats, and local population-level impacts are possible if suitable occupied habitats are burned extensively without retaining refugia or if such sites are lacking adjacent proximal occupied habitats that could serve as recolonization sources. However, these effects can be controlled to maximize the benefits to the western regal fritillary. Therefore, we will except incidental take associated with prescribed fire if the following conditions are met to reduce adverse effects:

(a) Prescribed fire burn units must be established to avoid burning the majority of suitable habitat at the landscape scale and to allow for refugia; and

(b) The return interval for prescribed fire on a particular unit is 3 to 5 years.

(6) Brush Control

If allowed to become too dense, woody vegetation can crowd out native grassland habitat. Consequently, brush control would be excepted from the take prohibitions and may occur at any time during the year. Brush control methods may include mechanical means, burning, grazing, or spot use of herbicides if in compliance with the other excepted activities in the 4(d) rule. If mechanical means such as brush hogs are used, the blade must be set to 20 cm (8 in) or higher above the ground. If herbicides are used, an appropriate systemic herbicide to prevent regrowth must be directly applied to cut stems. Broadcast spraying in western regal fritillary habitat would not be excepted because it may remove all violet and nectar plants for the western subspecies.

(7) Mowing Section Line Rights-of-Way and Recreational Trails

Section line rights-of-way and some recreational trails need to be mowed several times during the growing season to ensure that snow will not catch and block vehicle access and to ensure access and safety for hiking and other intended recreational activities, respectively. Section line rights-of-way typically have disturbed soil that has been contoured for a roadway and are likely to contain only small proportions of western regal fritillary habitat at any affected site. Recreational trails are travel ways established either through construction or use that are intended for and passable by at least one or more of the following: foot traffic, bicycles, in-line skates, wheelchairs, or cross-country skis. Such trails are typically narrower than roads. Therefore, impacts to western regal fritillary individuals and populations are likely to be minimal, and any incidental take that results from mowing section line rights-of-way and recreational trails will be excepted.

III. Critical Habitat

Background

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

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

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

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

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

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

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

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

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat

designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat).

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

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

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

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) Conservation actions implemented under section 7(a)(1) of the Act; (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species; and (3) the prohibitions found in section 9 of the Act for the eastern subspecies or the 4(d) rule for the western subspecies. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of the species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans, or other species conservation planning efforts if new information available at the time of those planning efforts calls for a different outcome.

Critical Habitat Determinability

We have determined that critical habitat is prudent, but not presently determinable, for both the eastern and western subspecies of regal fritillary. Our regulations at 50 CFR 424.12(a)(2) state that critical habitat is not determinable when one or both of the following situations exist:

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

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

When critical habitat is not determinable, the Act allows the Service an additional year to publish a critical habitat designation (16 U.S.C. 1533(b)(6)(C)(ii)).

We have reviewed the available information pertaining to the biological needs of the regal fritillary and habitat characteristics where each subspecies is located. Careful assessments of the economic and environmental impacts that may occur due to a critical habitat designation are not yet complete, and we are working to acquire the complex information needed to perform those assessments. At this time, the information needed to perform the required analysis of the impacts of the designation is lacking for both subspecies. Therefore, we conclude that the designation of critical habitat for both the eastern and western subspecies of regal fritillary is not determinable at this time. The Act allows the Service an additional year to publish a critical habitat designation that is not determinable at the time of listing (16 U.S.C. 1533(b)(6)(C)(ii)).

Required Determinations

Clarity of the Rule

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

(1) Be logically organized;

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

(3) Use clear language rather than jargon;

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

(5) Use lists and tables wherever possible.

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

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

Regulations adopted pursuant to section 4(a) of the Act are exempt from the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) and do not require an environmental analysis under NEPA. 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), E.O. 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 federally recognized Tribes on a government-to-government basis. In accordance with Secretaries' 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. The eastern subspecies does not occur on Tribal lands. For the western subspecies, we solicited information from the Tribes within the subspecies' range to inform the development of our SSA report, but we did not receive any responses. We will continue to coordinate with affected Tribes throughout the listing process, as appropriate.

References Cited

A complete list of references cited in this rulemaking is available on the internet at *https://www.regulations.gov* and upon request from the South Dakota Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

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

List of Subjects in 50 CFR Part 17

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

Proposed Regulation Promulgation

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

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

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

■ 2. In § 17.11, in paragraph (h), amend the List of Endangered and Threatened Wildlife by adding entries for ''Fritillary, eastern regal'' and ''Fritillary, western regal'' in alphabetical order 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				
*	*	*	*	* *
Fritillary, eastern regal	*Argynnis idalia idalia*	Wherever found	E	[**Federal Register** citation when published as a final rule].
Fritillary, western regal	*Argynnis idalia occidentalis.*	Wherever found	T	[**Federal Register** citation when published as a final rule]; 50 CFR 17.47(i).[4d]
*	*	*	*	* *

■ 3. Amend § 17.47 by adding paragraph (i) to read as follows:

§ 17.47 Special rules—insects.

* * * * *

(i) Western regal fritillary (*Argynnis idalia occidentalis*). (1) *Prohibitions.* The following prohibitions that apply to endangered wildlife also apply to the western regal fritillary. Except as provided under paragraph (i)(2) 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 subspecies:

(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.

(2) *Exceptions from prohibitions.* In regard to this subspecies, you may:

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

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

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

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

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

(A) Routine livestock ranching activities on private, State, or Tribal lands, or any other lands not under Federal jurisdiction, including:

(*1*) The construction and maintenance of fences to manage livestock and ranches;

(*2*) The installation and maintenance of livestock gathering and management features, such as corrals, loading chutes, and other livestock working and ranching facilities; and

(*3*) The development of new livestock watering sources and facilities and the maintenance of existing livestock watering facilities.

(B) Livestock grazing on private, State, or Tribal lands, including light-to-moderate grazing intensities in the late fall and early spring, and patch burn grazing methods that may help maintain an annually shifting mosaic of fire and grazing across a landscape to increase the diversity and structure of vegetation.

(C) Noxious weed control efforts, including spot spraying, hand pulling, and mechanical treatments (such as mowing) in all areas.

(D) Haying and mowing in western regal fritillary habitats.

(E) Prescribed fire that:

(*1*) Incorporates established burn units to avoid burning a majority of the western regal fritillary habitat on the landscape and maintains refugia for the western regal fritillary; and

(*2*) Operates on 3- to 5-year return intervals for the burn units.

(F) Brush control of woody vegetation, that:

(*1*) If conducted using mechanical methods, uses blades set at 20 centimeters (8 inches) or more above the ground; and

(*2*) If conducted using chemical treatments, uses appropriate, systemic herbicides to prevent regrowth applied directly to cut stems.

(G) Mowing section line rights-of-way and recreation trails.

Gary Frazer,

Acting Director, U.S. Fish and Wildlife Service.

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