257. The total bidding credit discount that may be awarded to an eligible small business is capped at $25 million and there is a $10 million cap on the total bidding credit discount that may be awarded to an eligible rural service provider. In addition, to create parity among eligible small businesses and rural service providers competing against each other in smaller markets, the Commission adopts a $10 million cap on the overall amount of bidding credits that any winning designated entity may apply to winning licenses in markets with a population of 500,000 or less. Based on the technical characteristics of the 2.5 GHz band and their analysis of past auction data, the Commission anticipates that the caps will allow the majority of small businesses to take full advantage of the bidding credit program, thereby lowering the relative costs of participation for small businesses. While eligible entities will have the opportunity to compete at auction without being unduly constrained, the caps are reasonable enough to ensure that ineligible entities are not encouraged to undercut the Commission's rules, thereby achieving the Commission's dual statutory goals of benefitting designated entities and at the same time preventing unjust enrichment.

258. A Tribal lands bidding credit will also be available to winning bidders that intend to deploy facilities and provide services to qualifying Tribal lands that have a wireline penetration rate equal to or below 85 percent. The Tribal lands bidding credit is in addition to, and separate from, any other bidding credit winning bidders may qualify to claim. Therefore, small entities that are eligible for the small or rural bidding credit can also claim the Tribal lands bidding credit, provided they meet the requirements of 47 CFR 1.2107 and 1.2110(f).

259. These procedures for the conduct of Auction 108 constitute the more specific implementation of the competitive bidding rules contemplated by parts 1 and 27 of the Commission's rules and the underlying rulemaking orders, including the *2.5 GHz Report and Order* and relevant competitive bidding orders, and are fully consistent therewith.

260. *Report to Congress.* The Commission will send a copy of the *Auction 108 Procedures Public Notice,* in a report to Congress pursuant to the Congressional Review Act. In addition, the Commission will send a copy of the *Auction 108 Procedures Public Notice,* including the Supplemental FRFA to the Chief Counsel for Advocacy of the SBA.

Federal Communications Commission.

Marlene Dortch,

Secretary.

[FR Doc. 2022–07602 Filed 4–12–22; 8:45 am]

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R1–ES–2020–0153; FF09E21000 FXES1111090FEDR 223]

RIN 1018–BE76

Endangered and Threatened Wildlife and Plants; Threatened Species Status for Streaked Horned Lark With Section 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), affirm the listing of the streaked horned lark (*Eremophila alpestris strigata*), a bird subspecies from Washington and Oregon, as a threatened species under the Endangered Species Act of 1973, as amended (Act). We also revise the rule issued under section 4(d) of the Act (''4(d) rule'') for this bird. This final rule maintains this species as a threatened species on the List of Endangered and Threatened Wildlife and continues to extend the protections of the Act to the species.

DATES: This rule is effective May 13, 2022.

ADDRESSES: This final rule is available on the internet at *https://www.regulations.gov* under Docket No. FWS–R1–ES–2020–0153 and at *https://www.fws.gov/oregonfwo/.* Comments and materials we received, as well as supporting documentation we used in preparing this rule, are available for public inspection at *https://www.regulations.gov* under Docket No. FWS–R1–ES–2020–0153.

FOR FURTHER INFORMATION CONTACT: Paul Henson, State Supervisor, U.S. Fish and Wildlife Service, Oregon Fish and Wildlife Office, 2600 SE 98th Avenue, Suite 100, Portland, OR 97266; telephone 503–231–6179. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. On February 28, 2018, the Center for Biological Diversity filed suit against the Department of the Interior and the Service on the 2013 listing and 4(d) rules for the streaked horned lark (78 FR 61452; October 3, 2013). The plaintiff challenged the adequacy of our significant portion of the range analysis, and the 4(d) rule's exception to the take prohibition for agricultural activities in the Willamette Valley. The court did not vacate the rules but remanded them to us for reconsideration. On April 13, 2021, we published a proposed rule (86 FR 19186) that reflected an updated assessment of the status of the subspecies and proposed revisions to the current 4(d) rule. Under the Act, we are required to make a final determination on our proposal within 1 year.

What this document does. With this final rule, we affirm the listing of the streaked horned lark as a threatened species, and we revise the 4(d) rule for the species.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that the streaked horned lark faces threats from the ongoing loss and degradation of suitable habitat (Factor A), as well as land management activities and related effects, and recreation (Factor E), combined with the synergistic effects of small population size and climate change (Factor E), such that it is likely to become an endangered species within the foreseeable future.

Peer review and public comment. The purpose of peer review is to ensure that our listing determinations and 4(d) rules are based on scientifically sound data, assumptions, and analyses. The Service prepared the Species Status Assessment for the Streaked Horned Lark (SSA report) (U.S. Fish and Wildlife Service 2021a, entire) and sought peer review on the report in accordance with our joint policy on peer review published in

the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act. We solicited expert opinions of five appropriate specialists with expertise in ornithology and streaked horned lark biology and habitat, and we received three responses. These peer reviewers generally concurred with our methods and conclusions, and provided additional information, clarifications, and suggestions to improve the SSA report. Additionally, we sent the SSA report to six agency partners for review and received responses from three partners. We also considered all comments and information we received from the public during the comment period for the April 13, 2021, proposed rule (86 FR 19186).

Previous Federal Actions

On October 3, 2013, we published in the **Federal Register** (78 FR 61452) a final rule listing the streaked horned lark as a threatened species under the Act; that rule was accompanied by a 4(d) rule to except certain activities from the take prohibitions of the Act and our regulations in order to provide for the conservation of the streaked horned lark.

In addition, on October 3, 2013, we published in the **Federal Register** (78 FR 61506) a final rule designating critical habitat for the streaked horned lark in Washington and Oregon.

On February 28, 2018, the Center for Biological Diversity filed suit against the Department of the Interior and the Service on the listing and 4(d) rules for the streaked horned lark. The court did not vacate the rules but remanded the rules to us for reconsideration and ordered us to submit a revised proposed listing determination to the **Federal Register** no later than March 31, 2021. To facilitate consideration of new information, the Service conducted a new species status assessment (SSA) analysis informed by our SSA framework (Service 2016a, entire).

On April 13, 2021, we published a proposed rule (86 FR 19186) that reflected an updated assessment of the status of the subspecies (including an updated analysis of any significant portions of the range) based on the SSA report, and proposed revisions to the current 4(d) rule.

Supporting Documents

A team of Service biologists, in consultation with other species experts, prepared the SSA report for the streaked horned lark (U.S. Fish and Wildlife Service 2021a, entire). The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species. This final rule is based on the scientific information compiled in the SSA report.

Summary of Changes From the Proposed Rule

In preparing this final rule, we reviewed and fully considered comments from the public on the April 13, 2021, proposed rule (86 FR 19186). We made many small, nonsubstantive clarifications and corrections throughout the SSA report and this rule, including under Summary of Biological Status and Threats, below, in order to ensure better consistency, clarify some information, and update or add new references. We considered whether this additional information altered our analysis of the magnitude or severity of threats facing the species.

We updated the SSA report (to version 2.0) and the final rule based on comments and additional information provided as follows:

(a) We include updated survey information provided to the Service and other reports of additional occurrences we received.

(b) We use an updated definition of suitable habitat throughout the final rule; wherein suitable habitat is defined as early seral stage communities with low-statured vegetation and substantive amounts of bare ground or sparsely vegetated conditions.

(c) We update Table 3 in the SSA and present an updated Table 1 in this final rule.

(d) We omit the proposed rule's Figure 1 from this final rule and instead present a new Table 3 where mean number of pairs are detected across all sites per region. Subsequent tables are renumbered to remain in sequence.

(e) We add text to the exception of take in the 4(d) rule for habitat restoration activities (§ 17.41(a)(2)(iv)(E)) to clarify that the Service will determine whether these activities are consistent with this final rule on a case-by-case basis.

(f) We update the numbers reporting acreage of agriculture in the Willamette Valley, and specifically the amount of land used in production of grass seed.

We conclude that the information we received during the comment period for the proposed rule did not change our previous analysis of the magnitude or severity of threats facing the species or our determination that streaked horned lark is a threatened species.

Summary of Comments and Recommendations

In our April 13, 2021, proposed rule (86 FR 19186), we requested that all interested parties submit written comments on the proposal by June 14, 2021. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposed rule. Newspaper notices inviting general public comment were published in The Oregonian on April 18, 2021, The News Tribune on April 19, 2021, and The Olympian on April 19, 2021. We did not receive any requests for a public hearing. All substantive information provided during the comment period either has been incorporated directly into the final rule or is addressed below.

Peer Reviewer Comments

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought the expert opinions of five appropriate specialists regarding the 2021 SSA report. The peer reviewers have expertise that includes familiarity with streaked horned lark and its habitat, biological needs, and threats. We received responses from three specialists, which informed the SSA report and our April 13, 2021, proposed rule. The purpose of peer review is to ensure that our listing determinations and 4(d) rules are based on scientifically sound data, conclusions, and analyses. We reviewed all peer review comments we received from the specialists for substantive issues and new information regarding streaked horned lark and incorporated into the final SSA report (Service 2021a) as appropriate.

Public Comments

We received seven submissions during the comment period for the proposed rule. We reviewed all submissions for substantive comments and new information regarding the proposed rule. Four submissions included substantive comments or new information concerning the April 13, 2021, proposed rule and the SSA report (Service 2021a). Updated information received was incorporated into the final SSA report and our final rule as appropriate. Below, we provide a summary of the substantive comments raised in the public submissions we received; however, comments outside the scope of the proposed rule, and those without supporting information,

did not warrant an explicit response and, thus, are not presented here. Identical or similar comments have been consolidated.

(1) Comment: Several commenters argued that the subspecies should be listed as endangered in all or a significant portion of the range due to small population sizes, ongoing loss of habitat, and lack of protection across most of its range.

Response: The streaked horned lark has been listed since 2013 and since that time the Service has been coordinating with partners to implement recovery actions throughout the range. The subspecies continues to be affected by a variety of stressors including agriculture, airport management, military operations, dredged material placement, and recreation. Despite the ongoing influence of stressors, the subspecies is not currently in danger of extinction, because the species retains multiple populations in high and moderate condition across all representative regions and those populations occur in a variety of habitat types. While the subspecies has shown variable abundance across the range, both from location-to-location and year-to-year, each representative region has at least 8 redundant populations. Negative influence factors on the subspecies have not fluctuated much for the last 20 years and are not of a scope or magnitude such that the subspecies is currently in danger of extinction.

As noted in the Background and Summary of Biological Status and Threats sections, abundance of larks across the Willamette Valley appears relatively high, but many of these local populations cannot be surveyed due to lack of access. Although the current abundance of local populations along the Pacific Coast is lower than other areas, it has been low for many years, and we see no apparent declining trend in this regional population based on survey data from 2013 to 2019. Recent detections of birds at Clatsop Spit, as well as sites with restored habitat on private lands in the Willamette Valley, indicate that individuals can move between sites, and there are a few instances of detections at previously unoccupied locations, but recolonization appears low and difficult to predict.

(2) Comment: One commenter stated we should have coordinated with outside entities to quantify our assessment of streaked horned larks and evaluate specific threats or issues.

Response: The streaked horned lark has been listed since 2013, with recovery actions coordinated by the Streaked Horned Lark Recovery Working Group (Working Group). The Streaked Horned Lark Recovery Working Group consists of several entities outside of the Service, including state biologists from both Oregon and Washington as well as species experts from American Bird Conservancy, Oregon State University, Center for Natural Lands, and other private individuals. Species status assessments (SSAs) are typically led by Service biologists and can include biologists from other agencies (state, Tribes and Federal). However, regardless of membership on an SSA core team, we call upon species experts and technical experts from other agencies to help us fill information gaps or check our analytical approach and did so with the streaked horned lark SSA. We drafted the SSA internally in response to the litigation remand and provided the draft SSA report for peer and partner review to a variety of people for external coordination, including the members of the Working Group. We took their comments into consideration when finalizing the SSA report and drafting the April 13, 2021, proposed rule. We also sent notice of the availability of the proposed rule to the members of the Working Group and took their comments into consideration when finalizing the rule. The 60-day public comment period on the April 13, 2021, proposed rule (86 FR 19186) provided interested parties an opportunity to comment and provide information on the proposed rule.

(3) Comment: We received comments stating the analysis of the current resiliency, redundancy, and representation of streaked horned lark in the SSA report, which provided the basis for the reaffirmed status determination for the subspecies, is not in alignment with population targets in the draft recovery plan.

Response: Recovery plans provide important guidance to the Service, States, Tribes, and other partners on methods of enhancing conservation and minimizing threats to listed species, as well as criteria against which to measure progress towards recovery, but they are not regulatory documents and cannot substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. For this status determination, we analyzed the best available scientific and commercial data through the SSA framework to inform current and projected future resiliency of regional populations, and redundancy and representation of the subspecies. The SSA framework is currently the standard approach the Service is using for status assessments, and it may not always be in perfect alignment with a previously developed recovery plan.

Recovery plans identify metrics that describe what recovery of the species may look like; the SSA is used to analyze the current status of the species and project future conditions under a suite of plausible scenarios to support management decisions. The streaked horned lark draft recovery plan is supported by two supplementary documents: A Species Biological Report, which served as the basis for the SSA; and a Recovery Implementation Strategy, which details specific near-term activities identified in the draft recovery plan (U.S. Fish and Wildlife Service. 2019b, entire). For the streaked horned lark SSA, we incorporated information from the draft recovery plan into our analysis when appropriate and consistent with the SSA framework and, in response to peer review on the SSA, we revised our demographic metrics for current condition to be more in line with population targets in the draft recovery plan. As described under Determination of Streaked Horned Lark's Status, below, our review of the best available scientific and commercial information (which we analyzed in the SSA process) indicates that the streaked horned lark meets the Act's definition of a threatened species.

(4) Comment: We received several comments stating the methods of analysis used for interpreting changes in local and regional populations were flawed due to variability in survey efforts (both between years and between regions) and noting a lack of statistical analysis incorporated into our SSA and proposed rule. One commenter recommended we account for this variability in assessing population status and reference results presented in Keren and Pearson (2019). Another commenter stated that trends were based on data where conservation actions are implemented or land management activities are regulated through the section 7 consultation process and that this basis skews any apparent increase in population status over time toward the positive (which is not representative of the majority of the population that occurs on lands in the Willamette Valley, where no regulations protect the species from potential threats).

Response: We incorporated information from Keren and Pearson (2019) where appropriate in the SSA report and in this final rule, and in our discussion of variability in survey efforts (both between years and between regions) in both documents. In this rule, to incorporate the best available science,

we update Table 1 to show corrected population estimates, add Tables 2 and 3 to show mean number of pairs detected across all sites per region, and include additional information on our characterization of trends to reflect the variability in survey effort between regions and the uncertainty regarding trends (see additional explanation as population estimates as a function of survey effort in Tables 1–3). If information relating to the status of the species on private lands in the Willamette Valley becomes available after publication of this final rule, we will take that information into consideration and can reassess status at that time.

(5) Comment: One commenter stated that the process for evaluating connectivity between local populations and habitat conditions needs to be better described in the SSA report to account for how these metrics were evaluated with regards to the current condition.

Response: In the SSA report and this final rule, we revised our description of the metrics used to evaluate current condition, including connectivity of local populations during the breeding season and between years based on evidence from color-banded individuals, as well as general habitat conditions at sites in the Willamette Valley where lark populations are monitored regularly and where land management activities maintain suitable habitat.

Our assessment and conclusions regarding connectivity were based on seasonal and intra-annual observations of larks moving between sites (within a breeding season, based on color-banded or tagged birds, and observations of birds returning to alternate breeding sites relative to where they were banded) (see Figure 1 for additional information).

(6) Comment: We received comments stating that the availability of suitable habitat in the Willamette Valley may not be the primary driver of the subspecies' status and distribution, as evidenced by the abundance of suitable habitat where larks are not detected.

Response: In response to this comment, we clarified our definition of suitable habitat throughout this final rule as early seral stage communities with low-statured vegetation and substantive amounts of bare ground or sparsely vegetated conditions. This definition is consistent with that of suitable habitat in the draft recovery plan, the SSA, and scientific literature describing preferred habitats used by larks. We further acknowledge that there are other factors (in addition to the availability of suitable habitat) that drive the status of larks in the Willamette Valley. These include vegetation succession, land usage, crop conversion, the timing and method of equipment operation, the loss of natural disturbance processes, and any other habitat perturbations during the breeding season. We updated the SSA to clarify that the primary driver of the subspecies' status and distribution is a combination of habitat availability and disturbance activities during the breeding season.

(7) Comment: One commenter stated we need to better describe how the benefits of land management activities used to replicate or mimic suitable habitat conditions in the Willamette Valley outweigh the potential risks to breeding streaked horned larks.

Response: Early spring conditions in recently established grass seed fields in the Willamette Valley attract streaked horned lark by providing suitable habitat (*i.e.,* the areas between rows of grass that contain very little or no vegetation) for breeding. Streaked horned lark adults, nestling, and eggs can be negatively affected by mowing of these fields. Although streaked horned lark breeding can extend until late summer, that time period covers additional nest attempts, and the peak of breeding (first nest attempts) occurs in late May to mid-June before peak mowing (which typically occurs from mid-June to mid-July) in the Willamette Valley. Additional nesting attempts can occur from late June into August and may occur whether the first nest attempt failed or was successful (Pearson and Hopey 2004, p. 11). See also this discussion in the Summary of Biological Status and Threats section below.

(8) Comment: One commenter stated that although agricultural practices maintain habitat for larks, the industry is declining, and replacement crops are not suitable for larks. They note that if suitable crop types are declining, it would be logically consistent that lark populations would decline based on loss of habitat, but the proposed rule describes the current condition for the Willamette Valley population as increasing.

Response: As noted in our response to *Comment (6),* above, we acknowledge that there are drivers of population status other than grass seed production. In this rule, we present updated population survey numbers for the Willamette Valley population; however, there was variability in survey efforts and corresponding variability in mean number of birds detected during surveys across all regions. The increases at some local sites are balanced by fluctuations in lark detections during surveys and variability in survey effort across all years.

(9) Comment: One commenter stated that the timing of agricultural activities in the Willamette Valley is mischaracterized in the SSA report and the potential effects to nesting larks are greater than portrayed in the SSA report.

Response: Larks arrive on breeding sites in February (Pearson *et al.* 2016, p. 5), and the occupancy survey window extends from mid-April to mid-July. The nesting season (*i.e.* clutch initiation to fledging) for streaked horned larks begins in mid-April and ends in late August, with peaks in May and June (Pearson and Hopey 2004, p. 11; Moore 2011, p. 32; Wolf 2011, p. 5; Wolf and Anderson, 2014, p. 19). Harvest of grass seed usually commences in late June after the typical first nest attempt. While peak breeding occurs early in the summer, streaked horned larks can nest until August, and can re-nest throughout the summer, so they have multiple chances to breed even if a first nest attempt fails. Second and third breeding attempts typically occur during or after harvest practices have occurred. Nest success in general is highly variable. While there is potential for streaked horned lark nesting success to be impacted by grass seed harvest activities, the best available information does not indicate that those harvest activities are negatively affecting the current resiliency of streaked horned lark populations.

(10) Comment: One commenter stated that prairie restoration in the Willamette Valley does not substantially contribute to long-term conservation of streaked horned larks in the Willamette Valley. The commenter stated that because birds that breed in these locations are displaced from nearby sites and nests, they are at risk of lethal effects from land management activities, such as mowing or pesticide application, that are used to maintain vegetation at the restoration site. Another commenter said restoration success is likely based on soil structure (in general, glacial outwash in Puget Lowlands compared to fertile organic soil in Willamette Valley) and the likelihood of plant growth occurring following restoration.

Response: Larks at restoration sites throughout the subspecies' range are potentially affected by mowing and other land management activities similar to excepted activities at airports and in agricultural fields, but the results of prairie restoration in Willamette Valley indicate that restoration sites may provide short-term benefits to larks. Activities associated with streaked horned lark habitat restoration (*e.g.,*

removing nonnative plants and planting native plants, creating open areas, and maintaining sparse vegetation through vegetation removal or suppression via controlled burns) would be very beneficial to the subspecies; any adverse effects to the subspecies from these activities would likely be only short-term or temporary, especially with respect to harassment or disturbance of individual larks. In the long term, the risk of adverse effects to both individuals and populations is expected to be mitigated, as these types of land management activities will likely benefit the subspecies by helping to preserve and enhance the habitat of existing local populations over time.

(11) Comment: We received several comments stating that the success of most existing conservation efforts results from section 7 consultation with Federal agencies, leaving streaked horned lark on private lands mostly unprotected. We received other comments stating that private landowners should receive protection via safe harbor agreements or other programs to incentivize them to promote conservation for the species.

Response: It is well documented that listed species benefit from a higher level of protection on Federal lands when compared to privately owned lands, due in part to the requirement for section 7 consultation under the Act and other Federal programs. In contrast, protections for listed species on non-Federal lands rely more on section 9 take prohibitions and voluntary or discretionary conservation measures. Since we listed the streaked horned lark as threatened under the Act in 2013, numerous conservation measures resulting from section 7 consultation under the Act in the range of the streaked horned lark have helped reduce the effects of threats on the subspecies.

Conservation of listed species in many parts of the United States is dependent upon working partnerships with a wide variety of entities, including the voluntary cooperation of non-Federal landowners. Building partnerships and promoting cooperation of landowners are essential to understanding the status of species on non-Federal lands and may be necessary to implement recovery actions such as reintroducing listed species, habitat restoration, and habitat protection. We encourage any landowners with a listed species such as streaked horned lark present on their property and who want to help conserve the species or think they carry out activities that may negatively impact that listed species to work with the Service to promote conservation. We promote these private sector efforts through the Department of the Interior's cooperative conservation philosophy (see *https://www.fws.gov/services* for more information). Once a species is listed, for private or other non-Federal property owners we offer voluntary safe harbor agreements that can contribute to the recovery of species, habitat conservation plans that allow activities (*e.g.,* grazing) to proceed while minimizing effects to species, funding through the Partners for Fish and Wildlife Program to help promote conservation actions, and grants to the States under section 6 of the Act. We recently completed a Safe Harbor Agreement with a private landowner in the Willamette Valley to create and maintain habitat conditions that support larks and increase the distribution and abundance of larks in this region (U.S. Fish and Wildlife Service 2021b, entire).

(12) Comment: We received several comments stating that despite the joint effort to evaluate voluntary lark conservation in the Willamette Valley (funded by the USDA's Natural Resources Conservation Service, the Service, the American Bird Conservancy, and other partners), there was no incentive for agricultural producers (who are excepted under the 4(d) rule) to engage with the Federal government for conservation, even when financial incentives were available. One commenter stated that the assumption that the proposed 4(d) rule provides an incentive to landowners that results in creation or maintenance of habitat is erroneous and suggests producers do not make decisions based on market economics.

Response: We determined that the specific provisions in the 4(d) rule adequately protect streaked horned lark while facilitating the conservation and management of the species where individuals currently occur and may occur in the future. There are a variety of factors that understandably drive the type of crop that agricultural producers choose to grow and why they might change to a different crop over time. On farms where larks utilize crops such as perennial rye grass seed after the first few years of planting, the 4(d) is intended to remove possible disincentive to farmers to continue growing this crop—and not change the crop to something that will exclude use by larks or to keep it longer in non-suitable habitat status. Section 4(d) of the Act states that the Secretary shall issue such regulations as she deems necessary and advisable to provide for conservation of species listed as threatened. Section 4(d) of the Act provides the Secretary with broad discretion to select and promulgate appropriate regulations tailored to the specific conservation needs of the threatened species. As described below under II. Final Rule Issued Under Section 4(d) of the Act, the provisions of our 4(d) rule will promote conservation of the streaked horned lark by encouraging management of the landscape in ways that can meet both land management considerations and the conservation needs of the streaked horned lark. The prohibitions identified in the 4(d) rule, however, are considered necessary and advisable for the conservation of the streaked horned lark (see next comment and response).

(13) Comment: Several commenters stated that the proposed 4(d) rule leaves the streaked horned lark unprotected, and that existing regulations are insufficient to protect extant populations. One commenter stated that our rationale assumes that regulating agricultural practices would result in producers changing their practices or crops to avoid said regulations, but that the rise of the grass seed industry occurred in the same timeframe that larks began to decline. The commenter described the Willamette Valley as an ecological sink, where birds are attracted to habitat conditions, but management activities compromise reproductive success and survival. Commenters also note that the 4(d) rule excepts the agricultural industry as a whole, in spite of known effects on mortality, disturbance, and habitat alteration (shift in crop types based on market demands), for reasons other than conservation of the species, leaving the majority of the population in unregulated land use circumstances.

Response: With the loss of historical habitats during the last century, alternative breeding and wintering sites, including active agricultural lands, have become critical for the continued survival and recovery of the streaked horned lark. The largest area of potential habitat for streaked horned larks is the agricultural land base in the Willamette Valley. Larks are attracted to the wide, open landscape context and low vegetation structure in agricultural fields, especially in grass seed fields, probably because those working landscapes resemble the historical habitats formerly used by the subspecies when the historical disturbances associated with floods and fires maintained a mosaic of suitable habitats. In any year, some portion of the 920,000 ac (372,311 ha) of agricultural lands in the Willamette Valley will contain patches of suitable streaked horned lark habitat, but the geographic location of those areas may

not be consistent from year to year, nor can we predict their occurrence due to variable agricultural practices (crop rotation, fallow fields, etc.), and we cannot predict the changing and dynamic locations of those areas.

While agricultural activities also have the potential to harm or kill individual streaked horned larks or destroy their nests, maintenance of extensive agricultural lands (primarily grass seed farms) in the Willamette Valley is crucial to maintaining the population of streaked horned larks in the valley and aiding in the recovery of the subspecies in Oregon, and our revised 4(d) rule provides landowners some incentive to continue operating and maintaining their lands in a manner that is consistent with current operations which provide habitats that the birds currently rely on. As discussed in the response to Comment 12, we acknowledge that there are a number of reasons why a landowner may change their practices or convert their crop to a different commodity, however, and our revised 4(d) rule will promote conservation of the streaked horned lark in that it recognizes and supports management of the landscape in ways that meet both land management considerations and the conservation needs of the streaked horned lark.

Currently in the Willamette Valley, there are approximately 360,000 ac (145,000 ha) of grass seed fields in production. In any year, some portion of these lands will have suitable streaked horned lark habitat, but the geographic location of those areas may not be consistent from year to year, nor can we predict their occurrence due to variable agricultural practices (crop rotation, fallow fields, etc.), and we cannot predict the changing and dynamic locations of those areas. Maintenance of extensive agricultural lands (primarily grass seed farms) is crucial to maintaining the population of streaked horned larks. The beneficial effects to the subspecies from maintaining these agricultural activities outweighs the negative effects from injuries to particular individual larks from these same activities. The exception for incidental take for certain agricultural activities on non-Federal lands in the revised 4(d) rule applies to the entire range of the subspecies, to encourage management actions that would facilitate the use of areas other than civilian and military airports by streaked horned larks within the range of the subspecies in Oregon and Washington.

Because landowners are free to allow vegetation growth that results in the conversion of lands into habitats unsuitable for the streaked horned lark, conservation of the species will benefit from the support of agricultural practices that result in the creation and maintenance of habitat that is suitable for the subspecies. Excepting routine agricultural activities on non-Federal lands throughout the range of the streaked horned lark from the prohibition on take will provide an overall benefit to the subspecies by maintaining suitable habitat.

(14) Comment: One commenter disagreed with our rationale for including restoration in the proposed 4(d) exceptions, stating the potentially lethal effects to larks resulting from restoration activities such as mowing, spraying pesticides, and tilling compromise the overall justification for excepting these activities. They also state that inclusion of prairie restoration in the proposed 4(d) rule eliminates opportunities for partnerships to address impacts with successful tools (nest protection).

Response: We acknowledge that the effects from habitat restoration activities (mowing, spraying, tilling, etc.) on larks are similar to the effects of disturbance mechanisms that occur at airports (mowing) and on agricultural fields (mowing, tilling, harvesting, etc.), which maintain habitat for larks through semi-regular disturbance. However, we continue to support restoration of native habitats throughout the subspecies' range because these sites may provide additional temporary habitat for larks. Furthermore, while there are potential effects to larks from habitat management activities on restoration sites, if these activities were discontinued, plant growth and vegetation succession would occur, which would result in habitats no longer supporting the low-stature vegetation with areas of bare ground or sparsely vegetated ground that larks prefer. In parallel to our excepting of routine agricultural activities, excepting habitat restoration actions (that may include adverse effects to lark in the short-term), will provide an overall benefit by maintaining and/or adding to suitable habitat for the subspecies. While the loss of individuals is never welcome, the continuation of land management activities that create replacement habitat is very important for conservation of the subspecies, and the benefits to the subspecies as a whole appear to outweigh the associated cost of the loss of individuals.

(15) Comment: Two commenters expressed concern that the 4(d) rule precludes actions necessary for the lark's survival and recovery, namely nest protection for the brief incubation period for larks nesting on privately owned agricultural land. The commenters did not provide suggestions for how such a nest protection program may be designed or administered on those private lands other than referencing application of section 9 take prohibitions. They did reference positive nest conservation efforts for the lark at Joint Base Lewis McChord (JBLM) in Washington, and for the western snowy plover (*Charadrius alexandrinus nivosus*) as examples of what they believe should be implemented in Oregon's private agricultural lands.

Response: Some amount of nest mortality may occur as a consequence of excepted agricultural activities. The Service is sensitive to this concern and has taken reasonable steps to minimize the risk to nesting streaked horned larks while also supporting these same activities that maintain habitat the subspecies depends on for nesting.

The commenters cite to lark nest protection on Federal lands at JBLM and to nest protection buffers applied for western snowy plover on Federal and state lands in Oregon, calling for similar protections for lark nests on private agricultural lands in Oregon. However, there are significant problems with this recommendation that serve to underscore and highlight the reasonable justifications for the 4(d) exceptions.

First, the examples cited by the commenters involve conservation occurring completely on public lands: U.S. Department of Defense lands at JBLM for lark conservation and, for the snowy plover, lands owned by the U.S. Forest Service, Bureau of Land Management, and the Oregon Parks and Recreation Department. The requirements and opportunities for conservation on these Federal and state lands are significantly different than those for privately owned lands. Under the Act, the Federal agencies have a section 7 obligation to provide for the conservation of the streaked horned lark and western snowy plover. Likewise, on State Park lands, conservation of listed species is an explicit component of the State's land management goals, and the State voluntarily sought and received a section 10 permit from the Service for western snowy plover conservation on their park lands. These examples stand in sharp contrast to the conservation measures that are legally required of private landowners under the Act. The commenters' use of these examples does not recognize the important distinction between landownership and associated conservation obligations.

Secondly, the commenters' recommendation that we locate, identify, buffer, and protect streaked

horned lark nests on private agricultural lands presents several problems. The recommendation presupposes that we know where nests are across this vast landscape, or that we have a reliable mechanism for locating and accessing them. Unfortunately, we have very little detailed information about where streaked horned larks are nesting within this expansive agricultural private landscape of grass seed farms in the Willamette Valley (approximately 360,000 ac (145,000 ha)). As explained earlier, nesting sites shift over time and space, and larks are likely only using a very small subset of these areas in any given year, making nest site prediction and detection difficult. In addition, we do not have legal access to the majority of this privately owned landscape to survey and locate nests; this greatly limits our ability to identify and determine if and where any lark nests may be impacted. In the Willamette Valley, other than surveying for larks along the gravel margins of public roads or other public access points, we are reliant on private landowners to voluntarily share information about the presence of larks on their land as it becomes available to them. It is well documented in the scientific literature that most private landowners will not voluntarily share such information if they are concerned about adverse regulatory impacts to their economic livelihood, cultural practices, and private property rights (Raymond and Olive 2008, p. 485; Brook et al. 2003, pp. 1644–47; Mir and Dick 2012, entire). This dynamic makes conserving species on private lands one of the most difficult challenges of implementing the Act, both in Oregon and across the country (see, *e.g.,* Epanchin-Niell and Boyd 2020, p. 410). Therefore, under this very specific set of circumstances regarding private agricultural lands (and in contrast to the commenters' examples regarding western snowy plovers and streaked horned larks on public lands), the tradeoffs contained in this section 4(d) rule represent the best conservation approach to a very difficult situation.

I. Final Listing Determination

Background

A thorough review of the taxonomy, life history, and ecology of the streaked horned lark is presented in the SSA report (U.S. Fish and Wildlife Service 2021a, pp. 4–19).

The streaked horned lark, a small songbird endemic to the Pacific Northwest, is one of 42 subspecies of horned lark worldwide and one of five breeding subspecies of horned larks in Washington and Oregon (Beason 1995, p. 2). Adults are pale brown, but shades of brown vary geographically among the subspecies. The male's face has a yellow wash in most subspecies. Adults have a black bib, black whisker marks, black ''horns'' (feather tufts that can be raised or lowered), and black tail feathers with white margins (Beason 1995, p. 2). Adults feed mainly on grass and forb seeds, but feed insects to their young (Beason 1995, p. 6). At coastal sites, streaked horned larks forage in the wrack line (the area where kelp, seagrass, shells, etc. are deposited at high tide) and in intertidal habitats (Pearson and Altman 2005, p. 8), and streaked horned larks in the Willamette Valley eat seeds of introduced weedy grasses and forbs, focusing on the seed source that is most abundant (Moore 2008a, p. 9).

Streaked horned larks historically selected habitat in relatively flat, open areas that were maintained by flooding, fire, and sediment transport dynamics. The interruption of these historical processes due to flood control dams, fire suppression, and reduction of sediment transport by dams resulted in a steep decline in the extent of historical habitat available for the lark. Currently, streaked horned larks are found in open areas free from visual obstructions like grasslands, prairies, wetlands, beaches, dunes, and modified or temporarily disturbed habitats such as agricultural or grass seed fields, airports, dredged material placement sites, and gravel roads. Streaked horned larks need relatively flat landscapes with sparse vegetation, preferring habitats with an average of 17 percent bare ground for foraging and 31 percent of bare ground for nesting (Altman 1999, p. 18). Typically, preferred habitats contain short vegetation, contain forbs and grasses that are less than 13 inches (in) (33 centimeters (cm)) in height, and have few or no trees or shrubs (Altman 1999, p. 18; Pearson and Hopey 2005, p. 27). The large, open areas used by populations of larks are regularly disturbed via burning, mowing, herbicide application, crop rotation, dredging material placement, and/or other anthropogenic regimes.

Habitat characteristics of agricultural lands used by streaked horned larks include: (1) Bare or sparsely vegetated areas within or adjacent to grass seed fields, pastures, or fallow fields; (2) recently planted (0 to 3 years) conifer farms with extensive bare ground; and (3) wetland mudflats or ''drown outs'' (*i.e.,* washed out and poorly performing areas within grass seed or row crop fields). Currently, there are approximately 420,000 acres (ac) (169,968 hectares (ha)) of grass seed fields and 500,000 ac (202,343 ha) of other agriculture in Oregon. Of the 420,000 ac, approximately 360,000 ac (145,000 ha) are located in the Willamette Valley (Oregon Seed Council 2018, p. 1). In any year, some portion of these areas will have suitable streaked horned lark habitat, but the geographic location of those areas may not be consistent from year to year due to variable agricultural practices (fallow fields, crop rotation, etc.), and we cannot predict the changing and dynamic locations of those areas.

Horned larks form breeding pairs in the spring (Beason 1995, p. 11), and territory size is variable. Territory size can range from 1.5 to 2.5 ac (0.61 to 1.0 ha) (Altman 1999, p. 11), and varies widely between sites and across years. For example, for 16 pairs of larks, territories ranged in size from 4.0 to 20.6 ac (1.6 to 8.3 ha) (Wolf *et al.* 2017, p. 12). Territories overlap substantially, and represent the semi-colonial breeding behavior of the species, where breeding territories are adjacent to other pairs at the same site but nests are not in extremely close proximity (Wolf *et al.* 2017, p. 12). The nesting season (*i.e.,* clutch initiation to fledging) for streaked horned larks begins in mid-April and ends in late August, with peaks in May and early June (Pearson and Hopey 2004, p. 11; Moore 2011, p. 32; Wolf 2011, p. 5; Wolf and Anderson, 2014, p. 19). After the first nesting attempt in April, streaked horned larks will often re-nest in late June or early July (Pearson and Hopey 2004, p. 11). Nests are positioned adjacent to vegetation or other structural elements and are lined with soft vegetation (Pearson and Hopey 2005, p. 23; Moore and Kotaich 2010, p. 18). Streaked horned lark nesting success (*i.e.,* the proportion of nests that result in at least one fledged chick) is highly variable, which is consistent with other ground-nesting passerines (Best 1978, pp. 16–20; Johnson and Temple 1990, p. 6).

The average minimum viable population (MVP) for the groups Aves and Passerines has been identified as 5,269 and 6,415 individuals, respectively. This number was determined using methodology described in a meta-analysis of multiple taxa (birds, fish, mammals, reptiles and amphibians, plants, insects, and marine invertebrates) (Anderson 2015, p. 2). Although we do not know what the historical abundance was for streaked horned lark rangewide (historical abundance estimates throughout the lark's range are largely anecdotal in nature), based on the MVPs for similar species, it was most likely larger than the current abundance. The draft

recovery plan for streaked horned lark (U.S. Fish and Wildlife Service 2019, entire) has a rangewide population goal of 5,725 individuals. The most recent rangewide population estimate for streaked horned larks is 1,170 to 1,610 individuals. This estimate is based on data compiled from multiple survey efforts, plus extrapolation to areas of potential suitable habitat not surveyed (*e.g.,* inaccessible private lands), particularly in the Willamette Valley (Altman 2011, p. 213).

The streaked horned lark currently occurs in local populations (defined here as scattered breeding sites or areas of habitat to which individuals return each year) in three regions across the range: The South Puget Lowlands in Washington, the Pacific Coast and Lower Columbia River in Washington and Oregon, and the Willamette Valley in Oregon.

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(see Figure 1).

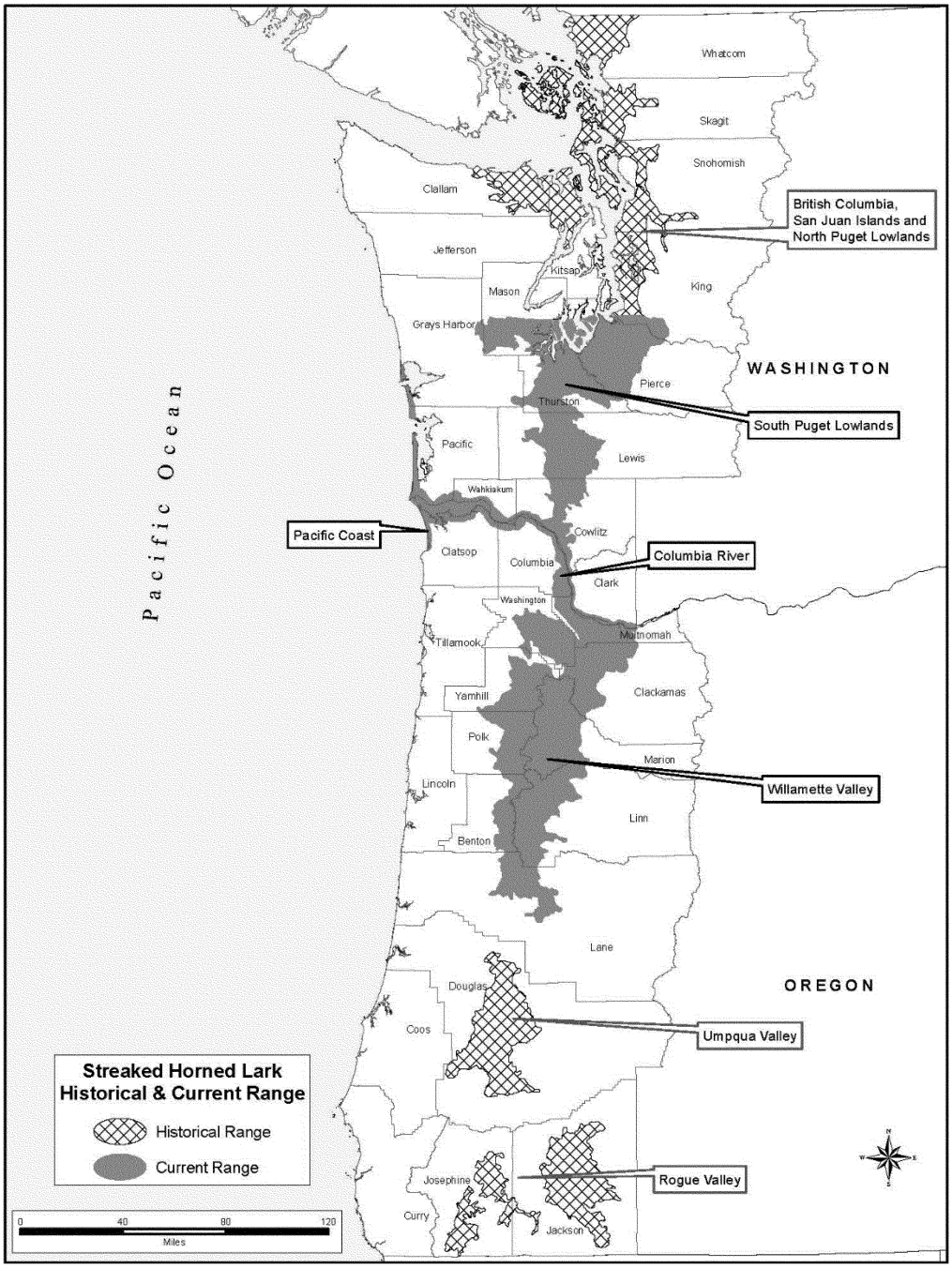

Figure 1. Historical distribution of streaked horned larks and current range map.

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Regional abundance estimates based on survey data from local populations between 2013 and 2019 are provided in Table 1. Based on 2013 to 2019 survey data from regularly monitored sites across the range of the subspecies, the number, distribution, and size of streaked horned lark local populations appear to have increased since our publication of the final rule in 2013.

TABLE 1—REGIONAL SUMMARIES OF BREEDING PAIRS, WITH NUMBER OF LOCAL POPULATIONS, BASED ON RECORDS FROM 2013 TO 2019

Regional population (with number of local populations)	2013	2014	2015	2016	2017	2018	2019
South Puget Lowlands (8)	75–76	97–101	119	129	139	130	121–127
Pacific Coast and Lower Columbia River (24)	81	89	77	85	77	86	97
Pacific Coast (5)	*10*	*12*	*11*	*9*	*13*	*13*	*10*
Lower Columbia River (19)	*71*	*77*	*66*	*76*	*64*	*73*	*87*
Willamette Valley (10)	96	23	109	127	92	133	165
Rangewide total	252–253	*209–213	305	341	308	349	383–389

*Several of the locations were not surveyed in 2014; other sites have no data available.

We acknowledge there is a high degree of variability in annual survey efforts in the three regions and the resulting number of birds detected at each local population in any given year. Some local populations are regularly monitored and abundance estimates are regularly provided; other populations are irregularly monitored and survey efforts are infrequent. To account for this variability, we calculated the number of sites surveyed for each year per region (see Table 2).

TABLE 2—ANNUAL SURVEY EFFORT FOR REGIONAL POPULATIONS BETWEEN 2013 AND 2019

Regional population	Number of sites surveyed per year						
	2013	2014	2015	2016	2017	2018	2019
South Puget Lowlands	6	8	8	7	7	8	7
Pacific Coast and Lower Columbia River	16	23	24	20	20	22	21
Willamette Valley	2	1	9	7	9	11	9

As shown in Table 2, there is annual variability in the level of effort in which surveys are conducted in a region each year. For example, survey efforts in the Willamette Valley ranged between 1 survey at the Corvallis Airport in 2014 to 11 surveys at 5 airports, 3 refuges, and 3 private sites in 2018. In addition, there is a high degree of annual variability in survey effort that occurs among the regional populations relative to the number of local populations in each region. Of particular interest is the survey effort that occurs in the Willamette Valley compared to the other two regions. The Willamette Valley is believed to support the majority of the rangewide population, and yet there are relatively few surveys conducted, and we believe the number of birds detected are a fraction of the number residing in this region. Conversely, in the South Puget Lowlands and Pacific Coast and Lower Columbia River regions, we believe the number of local populations surveyed detect the majority of the birds occupying these regions.

To assess for relative change in regional populations over time, we calculated the mean number of pairs that were detected across all local sites in a region per year relative to survey effort (see Table 3). Similar to the variability in survey effort, there is variability in the mean number of birds detected in each region, as well as between regions in all years. For example, 96 pairs were detected at two local sites in the Willamette Valley in 2013, resulting in a mean estimate of 48 pairs per site (see Tables 1 and 3). Comparatively, 92 pairs were detected at 9 local sites in the Willamette Valley in 2017 (see Tables 1 and 2). These results show a high degree of annual variability within a region due to level of survey effort and between regions due to number of sites surveyed.

TABLE 3—MEAN NUMBER OF PAIRS DETECTED ACROSS ALL SITES PER REGION

Regional population	Year and mean number of pairs detected						
	2013	2014	2015	2016	2017	2018	2019
South Puget Lowlands	12.5	12.1	14.5	17.7	20.3	15.1	17.3
Pacific Coast and Lower Columbia River	4.4	3.4	2.8	3.8	3.2	3.3	4.1
Willamette Valley	48.0	26.0	12.1	18.1	10.2	12.1	18.3

There is also high variability in the mean number of birds detected between regions and years. For example, more surveys were conducted in the Pacific Coast and Lower Columbia River region than the South Puget Lowlands and Willamette Valley combined, but the total number of pairs detected in the Pacific Coast and Lower Columbia River region was much lower in all years. The consistent and high degree of survey effort in this region is due, in part, to

regular monitoring by the U.S. Army Corps of Engineers (Corps) at all sites used for dredged material placement along the Columbia River. The coastal sites are not regularly monitored and surveys frequently result in no detections. The majority of the birds detected in the Pacific Coast and Lower Columbia River region are found on only a few sites along the Columbia River. Many of remaining sites in the Pacific Coast and Lower Columbia River region support less than 5 pairs. As a result, the high level of survey effort in this region has not corresponded with an increased number of birds detected.

In reviewing the annual variability in survey efforts for each region across all years and the high degree of variability in mean abundance estimates within and between regions, we acknowledge there are no clear trends to indicate if the current regional and rangewide population is increasing or decreasing.

The South Puget Lowlands region consists of eight local populations at three municipal airports and five sites at Joint Base Lewis McChord (JBLM). Since the streaked horned lark was listed in 2013, the five local populations at JBLM have increased in size and two of the municipal airport populations have experienced declining trends (Keren and Pearson 2019, p. 4). Recent analysis indicates a declining female population at the Olympia and Shelton airports, resulting in declining abundance trends at these local populations (Keren and Pearson 2019, p. 3). Despite these declines, the overall regional population has stabilized to some degree based on increases of the local populations at JBLM which are likely the result of conservation measures implemented as part of section 7 consultations.

The Pacific Coast and Lower Columbia River region currently consists of 24 local populations, including the new population recently detected at Clatsop Spit in Oregon. The region currently appears stable (Keren and Pearson 2019, p. 3), although local population surveys are inconsistent and do not occur at each site every year. Two of the sites on the coast of Washington (Oyhut Spit and Johns River) have no positive records since the 2013 listing and appear to be extirpated. There are few historical records of lark detections on the Washington and Oregon coast and those records indicate larks were only considered uncommon summer residents and never reported to occur in large numbers (Altman 2011, p. 200–202). Although the current abundance of local populations on the Pacific Coast is low compared to other areas, it has been low for many years. The physical size of the coastal sites is relatively small compared to the sites for other local populations (and therefore naturally limits the number of breeding pairs), and there is no consistent trend in this area based on survey data between 2013 and 2019. Despite recent observations of individual larks at Clatsop Spit (*i.e.,* not breeding pairs), the number, distribution, and size of local breeding populations along the Pacific Coast appears to have remained relatively constant.

The Willamette Valley regional population was previously estimated at 900 to 1,300 individuals, based on data compiled and extrapolated from multiple survey efforts between 2008 and 2010 (Altman 2011, p. 213), including estimates from the many known occupied but inaccessible sites on private lands in the region. The data used for the 2011 analysis is based on detections during roadside point counts in 2008 which detected 168 individuals, and surveys are occupied sites in 2009 and 2010 which detected approximately 250 breeding pairs at seven sites (Altman 2011, p. 213). Surveys from the 10 regularly monitored, accessible, occupied sites in the Willamette Valley counted 165 breeding pairs in 2019. These monitored sites include four municipal airports, three National Wildlife Refuges, two natural areas, and one survey on private land. One historical site for a local population in this region (Salem Municipal Airport) has had no positive records since 2013, and appears to be extirpated. As discussed above, there is a high degree of variability in abundance estimates based on total survey effort in a given year, which is inconsistent from year to year and site to site (see Table 2). The Willamette Valley regional population appears to be well distributed and stable, but the limited surveys of accessible sites may not accurately reflect the trend in the whole region. Streaked horned larks appear to be more abundant in the southern end of the valley where there is more suitable habitat.

Across the range of the subspecies, the number and distribution of local populations throughout the range have increased since 2013. The number of breeding pairs detected at regularly monitored sites increased from 252–253 in 2013, to 383–389 in 2019, including increases at JBLM and at two additional sites in the Lower Columbia River area (Clatsop Spit and Howard Island) and two additional sites in the Willamette Valley (Herbert Farms and Coyote Creek). As discussed above, there is variability in survey efforts and corresponding variability in mean number of birds detected during surveys across all regions between 2013 and 2019. In addition, we have evidence of local population variability with some local populations increasing and others decreasing, as well as regional analysis that shows some declines in the Puget Lowlands and the Willamette Valley. Due to this variability and because a rangewide population estimate has not been reanalyzed since 2011, we are unable to state conclusively that the rangewide population has increased. However, we have regularly monitored several sites throughout the range since 2013 and while there is variability in the abundance of local populations, we believe that is no evidence to support that there are precipitous declines across any of the regions or across the range as a whole.

The North American Breeding Bird Survey (BBS) analyzes regional data to provide a trend for rangewide breeding populations. In contrast to the data from site-specific surveys for the streaked horned lark from 2013–2019, the most recent BBS analysis for the region encompassing streaked horned larks indicates a 6.52 percent decline for the subspecies between 2005 and 2015 (95 percent confidence interval: −12.66 to −2.26 percent) (Sauer *et al.* 2017, p. 3). The streaked horned lark was listed as a threatened species under the Act in 2013, only 2 years before the last data set that was included in the most recent BBS analysis. When a species is listed and recovery actions begin, it may still be many years before the abundance recovers to the point where the species demonstrates a rangewide increasing population trend. Recovery actions require funding, staff, and time to implement. Documenting the subsequent species response to those actions takes additional time.

Regulatory and Analytical Framework

Regulatory Framework

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

species'' because of any of the following factors:

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

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

(C) Disease or predation;

(D) The inadequacy of existing regulatory mechanisms; or

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

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

We use the term ''threat'' to refer in general to actions or conditions that are known to or are reasonably likely to negatively affect individuals of a species. 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 expected response by the species, and the effects of the threats—in light of those actions and conditions that will ameliorate the threats—on an individual, population, and species level. We evaluate each threat and its expected effects on the species, then analyze the cumulative effects of all of the threats on the species as a whole. We also consider the cumulative effects of the threats in light of those actions and conditions that will have positive effects on the species, such as any existing regulatory mechanisms or conservation efforts. The Secretary determines whether the species meets the definition of an ''endangered species'' or a ''threatened species'' only after conducting this cumulative analysis and describing the expected effect on the species now and in the foreseeable future.

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

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

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent a decision by the Service on whether the species should be proposed for listing as an endangered or threatened species under the Act. It does, however, provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket No. FWS–R1–ES–2020–0153 on *https://www.regulations.gov.*

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

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

Summary of Biological Status and Threats

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

Factors Influencing the Species

In our October 3, 2013, listing rule (78 FR 61452), we found that the streaked horned lark was a threatened species due to loss and degradation of habitat from development, fire suppression, and invasive (native and nonnative) plants; dredge spoil deposition timing and placement on Columbia River islands; incompatibly timed burning and mowing regimes; activities associated with military training; conversion of large grass seed production fields to incompatible agricultural commodities; predation; small population effects; activities associated with airports; and recreation.

Stressors Considered but Determined Not To Be Influencing Condition

In our SSA, we carefully analyzed these previously identified threats, as well as additional potential threats and conservation measures, to determine if they operate at a scope and magnitude as to influence the condition, or resiliency, of populations rather than only some individuals (U.S. Fish and Wildlife Service 2021a, pp. 19–38). Based on our assessment, disease and pesticides do not rise to the level of affecting the condition of local or regional populations. Although the 2013 listing rule stated that predation was likely to be a significant and ongoing threat to the subspecies (particularly in the South Puget Lowlands region), our SSA did not find evidence of effects to the subspecies from predation beyond effects to individuals in any local population (U.S. Fish and Wildlife Service 2021a, p. 20). Predation (typically by coyotes and corvids) does occur and primarily influences eggs, nestling, and juvenile survival; however, we did not find that it occurred at a level beyond regular life-history dynamics. We acknowledge, however, that predation combined with the effects of small population size may reduce the resiliency of some local populations, as noted below under ''Synergistic Effects.'' In 2013, a predator control program under the Wildlife Services Predator Damage Management Program of the Animal and Plant Health Inspection Service, U.S. Department of Agriculture (USDA), was initiated at Leadbetter Point and Midway Beach on the Washington coast (U.S. Fish and Wildlife Service 2011). Data show that western snowy plovers have shown improved nesting success since the program was implemented; however, monitoring data for streaked horned larks are inconclusive, and we cannot reliably determine if predator control has improved nesting success for larks at these sites.

Stressors Influencing Current and Future Condition

The primary driver of the status of streaked horned lark has been the scarcity of large, open spaces with very early seral stage plant communities with low-statured vegetation and substantive amounts of bare or sparsely vegetated ground. Historically, habitat was created and maintained by natural ecological processes of flooding, fire, and coastal sediment transport dynamics, as well as prairies maintained by Native American burning. The loss of regular disturbance regimes that created these open spaces impacted the abundance and distribution of historical streaked horned lark populations. Although this loss of historical disturbance led to displacement of lark into less suitable alternative habitat and subsequent population declines, it is not considered a significant influence on the condition of current populations because the impact occurred decades ago and is not ongoing. Furthermore, our current and future condition analyses take into consideration the quality of habitat, so the condition ranking of any populations that were displaced into lower quality habitat due to loss of historical disturbance is reflective of that displacement.

The primary factors currently influencing the condition of streaked horned lark populations are the ongoing loss and conversion of suitable habitat, land management activities and related effects, and recreation. Since we listed the streaked horned lark as threatened under the Act in 2013, multiple entities have implemented a series of regulatory and voluntary conservation measures (section 7 consultations due to the listing of the subspecies under the Act) to offset negative impacts to larks and lark habitat, reducing the overall impact of stressors influencing local populations. We discuss these primary influence factors and associated conservation actions below.

Ongoing Loss and Conversion of Suitable Habitat

Following Euro-American settlement of the Pacific Northwest in the mid-19th century, fire was actively suppressed on grasslands in the Willamette Valley, allowing encroachment by woody vegetation into prairie habitat and oak woodlands (Franklin and Dyrness 1973, p. 122; Boyd 1986, entire; Kruckeberg 1991, p. 286; Agee 1993, p. 360; Altman *et al.* 2001, p. 262). Native and nonnative species that have encroached on these habitats throughout the lark's range include native Douglas fir (*Pseudotsuga menziesii*), nonnative Scotch broom (*Cytisus scoparius*), and nonnative grasses such as tall oatgrass (*Arrhenatherum elatius*) and false brome (*Brachypodium sylvaticum*) (Dunn and Ewing 1997, p. v; Tveten and Fonda 1999, p. 146). This expansion of woody vegetation and nonnative plant species, including noxious weeds, has reduced the quantity and quality and overall suitability of prairie habitats for larks (Tveten and Fonda 1999, p. 155; Pearson and Hopey 2005, pp. 2, 27). On JBLM alone, over 16,000 ac (6,600 ha) of prairie has been converted to Douglas fir forest since the mid-19th century (Foster and Shaff 2003, p. 284). Trees and/or other woody vegetation infiltrate open areas with formerly low vegetation and long sight lines preferred by streaked horned larks.

The introduction of Eurasian beachgrass (*Ammophila arenaria*) and American beachgrass (*Ammophila breviligulata*) in the late 1800s, currently found in high and increasing densities in most of coastal Washington and Oregon, has dramatically altered the structure of dunes on the coast (Wiedemann and Pickart 1996, p. 289). Beachgrass creates areas of dense vegetation unsuitable for larks (MacLaren 2000, p. 5). The spread of beachgrass has reduced the available nesting habitat for streaked horned larks in Washington at Damon Point and at Grays Harbor and Leadbetter Point on Willapa National Wildlife Refuge (NWR) (Washington Department of Fish and Wildlife 1995, p. 19; Stinson 2005, p. 65; U.S. Fish and Wildlife Service 2011, p. 4–2). On the Oregon coast, the low abundance of streaked horned lark is attributed to the invasion of exotic beachgrasses and resultant dune stabilization (Gilligan *et al.* 1994, p. 205). Without management (mechanical and chemical) to maintain the open landscape at sites like these, invasive beachgrasses will continue to influence current and future local populations of streaked horned larks and reduce suitability of these habitats, particularly in the Pacific Coast and Lower Columbia River regions.

Habitat restoration work on Leadbetter Point by the Service's Willapa NWR has successfully reduced the cover of encroaching beachgrasses into streaked horned lark habitat. In 2007, the area of open habitat measured 84 ac (34 ha). However, after mechanical and chemical treatment to clear beachgrass (mostly American beachgrass), including spreading oyster shells across 45 ac (18 ha), there is now 121 ac (50 ha) of sparsely vegetated habitat available, increasing the extent of open habitat (Pearson *et al.* 2009b, p. 23). The main target of the Leadbetter Point restoration project was the federally listed western snowy plover, but the restoration actions also benefited streaked horned larks. Before the restoration project, this area had just 2 streaked horned lark territories (Stinson 2005, p. 63); after the project, an estimated 7 to 10 territories were located in and adjacent to the restoration area (Pearson *in litt.* 2012b).

Human activity has converted native prairie and grassland habitats to residential and commercial development, reducing habitat availability for streaked horned larks throughout their range. About 96 percent of the Willamette Valley is

privately owned, and it is home to almost three-fourths of Oregon's human population, which is anticipated to nearly double in the next 50 years (Oregon Department of Fish and Wildlife 2016, p. 17). The Willamette Valley provides about half of the State's agricultural sales and is the location of 16 of the top 17 private-sector employers (manufacturing, technology, forestry, agriculture, and other services). In the South Puget Lowlands, prairie habitat continues to be lost, particularly via the removal of native vegetation and the excavation and conversion to non-habitat surfaces in the process of residential development (*i.e.,* buildings, pavement, residential development, and other infrastructure) (Stinson 2005, p. 70; Watts *et al.* 2007, p. 736). The region also contains glacial outwash soils and deep layers of gravels underlying the prairies that are valuable for use in construction and road building.

Industrial development has also reduced habitat available to breeding and wintering streaked horned larks. Rivergate Industrial Park, owned by the Port of Portland, is a large industrial site in north Portland near the Columbia River that was developed on a dredge disposal site. Rivergate has long been an important breeding site for streaked horned larks and a wintering site for large flocks of mixed lark subspecies. In 1990, the field used by streaked horned larks at Rivergate measured more than 650 ac (260 ha) of open sandy habitat (Dillon *in litt.* 2012). In the years since, the Port of Portland has constructed numerous industrial buildings on the site, subsequently reducing habitat availability for larks and likely displacing all breeding and wintering larks from the area (Port of Portland 2019, entire).

As part of the section 10(a)(1)(B) permit associated with the development of a habitat conservation plan (HCP) under the Act, the Port of Portland mitigated for the loss of streaked horned lark habitat by securing a long-term easement on a 32-ac (13-ha) parcel at Sandy Island. Sandy Island is an occupied breeding site on the Columbia River about 30 miles (mi) (50 kilometers (km)) north of the Rivergate industrial site and is designated as critical habitat for the streaked horned lark (Port of Portland 2017, p. 4). The Port's 30-year commitment to manage the site and protect breeding streaked horned larks helps to offset impacts to the regional population from the loss of available habitat at the Rivergate site.

Roughly half of all the agricultural land in Oregon, approximately 360,000 ac (145,000 ha), is devoted to grass seed production in the Willamette Valley (Oregon Seed Council 2018, p. 1). Grasslands, both native prairies and grass seed fields, are important habitats for streaked horned larks in the Willamette Valley, as they are used as both breeding and wintering habitat (Altman 1999, p. 18; Moore and Kotaich 2010, p. 11; Myers and Kreager 2010, p. 9). Demand for grass seed and the overall acreage of grass seed harvested in Oregon has declined since 2005 (Oregon State University 2005 and 2019, entire). In 2019, approximately 364,355 ac (147,450 ha) were planted for forage and turf grass seed crops in the Willamette Valley compared to approximately 484,080 ac (195,900 ha) in 2005 (Oregon State University 2005 and 2019, entire). The reduction in grass seed production has resulted in growers switching to other commodities, such as wheat, stock for nurseries and greenhouses, grapes, blueberries, and hazelnuts (U.S. Department of Agriculture National Agricultural Statistics Service 2009, p. 3; Oregon Department of Agriculture 2011, p. 1; U.S. Department of Agriculture National Agricultural Statistics Service 2017, pp. 34, 55, 101). These other crop types do not have the low-statured vegetation and bare ground preferred by the streaked horned lark.

The continued decline of the grass seed industry in the Willamette Valley due to the variable economics of agricultural markets will likely result in a continued conversion from grass seed fields to other agricultural types, and fewer acres of suitable habitat for streaked horned larks. Across the range, the conversion of streaked horned lark habitat into agricultural, industrial, residential, or urban development will continue to influence current and future streaked horned lark local or regional populations to some degree throughout the range of the species, although the Pacific Coast is less affected than other areas.

Land Management Activities and Related Effects

Streaked horned larks evolved in a landscape of ephemeral habitat with regular historical disturbance regimes that maintained the large, open spaces with very early seral stage plant communities with low-statured vegetation and substantive amounts of bare or sparsely vegetated ground relied upon by the subspecies. Human activity led to the stabilization of these historical disturbance regimes, as well as the unintentional creation of ''replacement'' habitat for streaked horned larks that mimics their preferred large, open spaces. Replacement habitat occurs in a variety of settings across the range of the streaked horned lark, including agricultural fields, at airports, and on dredge spoil islands. Open habitat is maintained in these areas by way of frequent human disturbance, including burning, mowing, cropping, chemical treatments (herbicide and pesticide application), or placement of dredged materials (Altman 1999, p. 19). Without regular large-scale, human-caused disturbance, the quantity of suitable habitat available to larks would decrease rapidly. These land management activities are key to providing and maintaining habitat for the streaked horned lark; without replacement habitat, the status of the subspecies would likely be much worse.

However, when these same activities are conducted during the most active breeding season (mid-April to mid-June) for streaked horned larks, they have the potential to result in destruction of nests, crushing of eggs or nestlings, or flushing of fledglings or adults (Pearson and Hopey 2005, p. 17; Stinson 2005, p. 72). During the nesting seasons from 2002 to 2004, monitoring at Gray Army Airfield, McChord Airfield, and Olympia Airport in the South Puget Lowlands region documented nest failure at 8 percent of nests due to mowing over nests, forcing young to fledge early (Pearson and Hopey 2005, p. 18). Additionally, although dredge deposits can mimic sandy beach habitat typically used by larks, they have also been documented to destroy breeding sites and active nests when deposition occurs during the nesting season (Pearson in litt. 2012a; Pearson et al. 2008a, p. 21; MacLaren 2000, p. 3; Pearson and Altman 2005, p. 10). In 2013 and 2014, the U.S. Army Corps of Engineers collaborated with the Service and initiated a strategic multi-year dredging program for the lower Columbia River. The placement of dredge spoils was coordinated to minimize impacts to streaked horned larks by prioritizing placement of material on unsuitable lark habitat during the breeding season and where placement on suitable lark habitat was necessary it occurred outside of the breeding season. Over time, the placement of dredged materials reinitiated habitat succession and the development of suitable lark habitat, supporting long-term availability of suitable lark habitat throughout the lower Columbia River with minimal impacts to larks.

In the Willamette Valley, some habitats in agricultural areas are consistently maintained and therefore available throughout the year (*e.g.,* on the margins of gravel roads), while other patches of suitable habitat shift as areas

such as large fields are mowed, harvested, sprayed, or burned. In 2017, the Willamette Valley NWR entered into a 4-year programmatic section 7 consultation with the Service for its farming and pesticide use program (U.S. Fish and Wildlife Service 2016b, entire). This programmatic consultation documents the National Wildlife Refuge System's commitment to adapting its farming activities to improve the status of the streaked horned lark on the William L. Finley, Ankeny, and Baskett Slough units of the Willamette Valley NWR complex. Conservation measures include ensuring that farming activities minimize disturbance to larks, and that pesticides used in agricultural fields have a low risk of adverse effects to larks and their food sources.

Vegetation Management Activities at Airports

Airports implement hazardous wildlife management programs that include vegetation management around roads and runways, to discourage the presence of wildlife near the runways and thereby promote human safety for flights. Streaked horned lark are very attracted to the wide, open spaces created by vegetation management, and several airports in the range are now sites for local populations of the subspecies. In the South Puget Lowlands, the streaked horned lark might have been extirpated if not for mowing at airports to maintain large areas of short grass (Stinson 2005, p. 70). Five of the eight streaked horned lark nesting sites in the South Puget Lowlands are located on or adjacent to airports and military airfields (Rogers 2000, p. 37; Pearson and Hopey 2005, p. 15). At least five breeding sites are found at airports in the Willamette Valley, including the largest known local population at Corvallis Municipal Airport (Moore 2008b, pp. 14–17). The Corvallis Municipal Airport implements some conservation measures to reduce impacts to larks during airshow and other events at the airport, as well as conservation measures associated with construction activities as described and implemented as part of a programmatic section 7 consultation with the Federal Aviation Administration (U.S. Fish and Wildlife Service 2020, entire). The Port of Olympia's Updated Master Plan includes recommendations to minimize impacts to larks at the Olympia airport by avoiding mowing during the breeding season; however, mowing still occurs during the breeding season (Port of Olympia/Olympia Regional Airport 2013, pp. 10–11) and the local population at the airport has fluctuated (both increased and decreased) in surveys from 2013 to 2019 (Wolf *et al.* 2020, p. 16). The overall count of 30 breeding pairs in 2013 at the Port decreased to 21 pairs in 2018, but then increased to 27 pairs in 2019.

In 2017, the JBLM finalized a programmatic section 7 consultation with the Service that covered multiple activities affecting streaked horned lark, including mowing (U.S. Fish and Wildlife Service 2017, entire), which is allowed during the breeding season only under emergency circumstances (Wolf *et al.* 2017, p. 34). The programmatic consultation also covered military training activities, requiring JBLM to schedule training events as late in the breeding season as possible and restricting the use of vehicles or structures within active nest buffers during these events (U.S. Fish and Wildlife Service 2017, p. 26). As part of the consultation, the JBLM proposed to carry out new conservation measures that have resulted in a significant reduction in adverse effects to larks from mowing and military training activities, as well as additional activities to restore prairie habitats. Additional conservation measures implemented as part of the consultation include an intensive monitoring and research program which informs long-term management goals for the base. As a result of this consultation, the breeding population of larks on JBLM increased from fewer than 100 pairs when the streaked horned lark was listed in 2013 (Wolf and Anderson 2014, p. 12), to over 120 pairs in 2019 (Wolf *et al.* 2020, p. 6). Similar conservation measures are not implemented at the municipal airports in the Puget Lowlands region or at the airports in the Willamette Valley region to reduce effects to streaked horned larks from operations and maintenance activities, including mowing.

Aircraft Strikes

Individual larks in these local populations near runways are at increased risk of aircraft strikes and collisions. Horned lark strikes are frequently reported at military and civilian airports throughout the country, but because of the bird's small size, few strikes result in significant damage to aircraft (Dolbeer *et al.* 2011, p. 48; Air Force Safety Center 2012, p. 2). Juvenile males seem to be struck most often, perhaps because they are trying to establish new territories in unoccupied but risky areas on runway margins (Wolf *et al.* 2017, p. 31). With respect to streaked horned larks in particular, in the 5-year period from 2013 to 2017, McChord Airfield had seven confirmed strikes, and Gray Army Airfield recorded one confirmed streaked horned lark strike (Wolf *in litt.* 2018). Since January 2017, 16 adults have been killed by strikes on JBLM, including 10 adults and 2 juveniles killed by strikes at McChord Airfield in 2020 (Wolf *in litt.* 2020).

The increased number of strikes in 2020 were a direct result of construction activities that redirected aircraft traffic to the northern half of the runway where lark density is highest and lark abundance was relatively high; this led to a higher than normal mortality rate from aircraft strikes. Aside from the 12 strikes in 2020, JBLM recorded a total of 12 strikes in the 7 years between 2013 and 2019, for a rate of 1.7 strikes per year. While aircraft strikes do occur in several local populations at airports throughout the range of the species (particularly in the South Puget Lowlands), the rate appears relatively low and the vegetation management conducted by these airports also maintains replacement habitat that supports breeding pairs (Pearson *et al.* 2008a, p. 13; Camfield *et al.* 2011, p. 10; FAA 2020, entire).

Dredge Material Deposition on the Columbia River

The streaked horned lark uses islands in the Lower Columbia River for both breeding and wintering habitat. The river channel is regularly dredged by the U.S. Army Corps of Engineers (Corps), and dredge deposits can both benefit and harm streaked horned larks, depending on the location and timing of deposition. In 2014, the Corps entered into a programmatic section 7 consultation with the Service for the Corps' navigation channel dredging and dredge materials placement program in the Lower Columbia River (U.S. Fish and Wildlife Service 2014, entire). In this consultation, the Corps committed to planning for the placement of dredge material to minimize adverse effects to the lark on the Corps' network of placement sites and to maintain enough habitat in suitable condition to maintain the current regional population of breeding larks and allow for additional population growth. The 5-year program has been successful; from 2014 to 2019, numbers in the Lower Columbia River increased from an estimate of 77 pairs to 87 pairs, with the increases occurring at dredge deposition sites (Center for Natural Lands Management 2019, pp. 3–4). The original 5-year consultation was extended through 2022. The Corps is currently working on a 20-year dredge material management plan, which will build on the success of the previous consultation.

Military Training and Associated Activities

Military training activities at the 13th Division Prairie at JBLM, including bombardment with explosive ordnance and hot downdraft from aircraft, as well as civilian events, have caused nest failure and abandonment at JBLM's Gray Army and McChord Airfields (Stinson 2005, pp. 71–72). JBLM is also used for helicopter operations (paratrooper practices, touch-and-go landings, and load drop and retrievals) and troop training activities. Artillery training, off-road use of vehicles, and troop maneuvers at the 13th and 91st Division Prairies have been conducted in areas used by streaked horned larks during the nesting season, contributing to nest failure and low nest success. In addition to military training activities, McChord Airfield hosts an international military training event known as the Air Mobility Rodeo, which is held in odd-numbered years. In even-numbered years, McChord Airfield hosts a public air show known as the Air Expo; this event incorporates simulated bombing and fire-bombing, including explosives and pyrotechnics launched from an area adjacent to one of JBLM's most densely populated streaked horned lark nesting sites. The Expo and Rodeo can affect the streaked horned lark through disturbance from aircraft; temporary infrastructure; and spectator-related nest abandonment, nest failure, and adverse effects to fledglings (Pearson *et al.* 2005, p. 18; Stinson 2005, p. 27).

Recreation

Recreation at coastal sites can cause the degradation of streaked horned lark habitat, as well as disturbance to adults and juveniles, and direct mortality to eggs, nestlings, and fledglings. Activities such as the annual spring razor clam digs, dog walking, beachcombing, off-road vehicle use, camping, fishing, and horseback riding in coastal habitats may directly or indirectly increase predation (primarily by corvids), resulting in nest abandonment and nest failure for streaked horned larks (Pearson and Hopey 2005, pp. 19, 26, 29). Streaked horned larks nest in the same areas as western snowy plovers along the Washington coast, and it is highly likely that recreation has caused nest failures for larks at sites that have documented nest failure for plovers; both species are ground nesters and, therefore, similarly at risk of effects of recreation. During western snowy plover surveys conducted between 2006 and 2010 at coastal sites in Washington, human-caused nest failures of between 1 and 2 nests per year were reported in 4 of the 5 years (2 in both 2006 and 2008, 1 in both 2009 and 2010) (Pearson *et al.* 2007, p. 16; Pearson *et al.* 2008b, p. 17; Pearson *et al.* 2009a, p. 18; Pearson *et al.* 2010, p. 16), and one of 16 monitored nests at Midway Beach on the Washington coast was crushed by a horse in 2004 (Pearson and Hopey 2005, pp. 18–19).

In 2002, JBLM began restricting recreational activity at the 13th Division Prairie to protect lark nesting sites; JBLM prohibited model airplane flying, dog walking, and vehicle traffic in the area used by streaked horned larks (Pearson and Hopey 2005, p. 29). JBLM continues to restrict recreational activities during the lark breeding season at the 13th Division Prairie, although enforcement, especially on weekends, is intermittent (Wolf *et al.* 2016, p. 43). In addition, the 2017 programmatic section 7 consultation JBLM entered into with the Service (U.S. Fish and Wildlife Service 2017, entire) included numerous positive conservation measures for the streaked horned lark, including prairie habitat restoration, monitoring and research program, and limits on military activities as well as recreational activities.

Summary of Threats

Table 4, below, summarizes the scope and magnitude of factors influencing the viability of streaked horned lark.

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Table 4. Summary of factors influencing regional populations.

Factors Influencing Populations		Regional Populations		
		South Puget Lowlands	Pacific Coast and Lower Columbia River	Willamette Valley
Habitat Fragmentation, Degradation, and Loss	Vegetation succession	XX	XX	XXX
	Encroachment of woody vegetation or grasses, invasive species	X	XXX	X
	Land use changes or conversion	X	X	XXX
	Crop conversion	--	--	XXX
	Loss of natural disturbance processes	XX	XX	XX
Land Management Activities and Related Effects	Vegetation management activities	XX	--	XX
	Military training and associated activities	X	--	--
	Dredged material placement	--	X	--
Recreation		--	XX	--
Aircraft Strikes		XX	--	X

Note: XXX indicates relatively frequent influence to the regional population; XX indicates moderate influence on the regional population; X indicates occasional influence on the regional population; no entry (--) indicates no known influence on the regional population.

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Climate Change

The effects of climate change have already been observed in the Pacific Northwest. Temperatures have risen 1.5 to 2 degrees Fahrenheit (°F) (0.83 to 1.1 degrees Celsius (°C)) over the past century, and the past three decades have been warmer than any other historical period (Frankson *et al.* 2017a, p. 1; Frankson *et al.* 2017b, p. 1). Climate change is widely expected to affect wildlife and their habitats in the Pacific Northwest by increasing summer temperatures, reducing soil moisture, increasing wildfires, reducing mountain snowpack, and causing more extreme weather events (Bachelet *et al.* 2011, p. 414). Climate change may increase the frequency and severity of stochastic weather events, which may have severe negative effects on small local populations throughout the range of the streaked horned lark. During the breeding season, small local populations of larks are distributed across the range; in the winter, however, streaked horned larks congregate mainly in the Willamette Valley and on islands in the Lower Columbia River. Such concentration exposes the wintering populations to potentially disastrous stochastic events such as ice storms or flooding, which could kill individuals, destroy limited habitat and food availability, or skew sex ratios. Severe winter weather could potentially impact one or more regional populations when birds congregate as larger flocks (Pearson and Altman 2005, p. 13).

Despite the climate projections for the region, the effects of climate change specific to prairie ecosystems are not anticipated to decrease the resiliency of regional streaked horned lark populations in the South Puget Lowlands, Lower Columbia River, and Willamette Valley regions. The grasslands and prairies of Washington and Oregon span a wide geographic and climatic range, encompassing a rich variety of soil types, vegetation cover, elevations, and weather patterns. The rich diversity of all of these factors will likely provide substantial buffering to streaked horned lark habitat from the effects of changing weather and climate (Bachelet *et al.* 2011, p. 412). It is

possible that increased summer droughts may affect less drought-tolerant trees and other forest species adjacent to prairies, possibly resulting in prairie expansion that could benefit the streaked horned lark (Bachelet *et al.* 2011, p. 417). Prairie and grassland ecosystems are well adapted to warm and dry conditions—periodic soil drought and future increases in temperature and drought for the region ''are unlikely to disadvantage (and may benefit) these systems'' (Washington Department of Fish and Wildlife 2015, pp. 5–31).

The outlook for streaked horned larks along the Pacific Coast is less encouraging due to the effects of climate change. Sea-level rise, increased coastal erosion, and more severe weather events will cause significant effects to lark habitats on the coast. Projected sea-level rise could increase erosion or landward shift of dunes; similarly, increased severe weather events with greater wave and wind action from storms could magnify disturbance of dune habitats (Washington Department of Fish and Wildlife 2015, pp. 5–31) and imperil nesting larks. Given these stressors, we expect that climate change may limit the resiliency of some local populations on the coast primarily by amplifying the negative effects from habitat loss due to the spread of invasive species, such as Eurasian beachgrass, where not managed. A conservation measure that may help reduce effects from climate change in one area of the coast in the range of the streaked horned lark is the Shoalwater Bay Shoreline Erosion Control Project (U.S. Fish and Wildlife Service 2018, entire), which is a long-term commitment by the Corps and the Shoalwater Bay Tribe to protect the reservation from coastal erosion. It has created and is maintaining habitat for both western snowy plovers and streaked horned larks, and provides secure nesting area on the coast for both species.

Small Population Size

Most species' populations fluctuate naturally, responding to various factors such as weather events, disease, and predation. These factors have a relatively minor impact on a species with large, stable local populations and a wide and continuous distribution. However, populations that are small, isolated by habitat loss or fragmentation, or impacted by other factors are more vulnerable to extirpation by natural, randomly occurring events (such as predation or stochastic weather events), and to genetic effects that plague small populations, collectively known as small population effects (Purvis *et al.* 2000, p. 3). These effects can include genetic drift, founder effects (over time, an increasing percentage of the population inheriting a narrow range of traits), and genetic bottlenecks leading to increasingly lower genetic diversity, with consequent negative effects on adaptive capacity and reproductive success (Keller and Waller 2002, p. 235).

Various effects of small population size, including low reproductive success, loss of genetic diversity, and male skewed sex-ratio, have been noted in the range of the streaked horned lark, particularly at some local populations in the South Puget Lowlands region and the Lower Columbia River (Anderson 2010, p. 15; Camfield *et al.* 2010, p. 277; Drovetski *et al.* 2005, p. 881; Keren and Pearson 2019, Figures 1 and 2; Drovetski *et al.* 2005, p. 881; Wolf *et al.* 2017, p. 27). Any local population of streaked horned larks with very low abundance that does not interbreed with other local populations will be at more risk in the future due to small population effects.

Current Condition

To maintain adequate resiliency, populations of streaked horned larks need large open spaces with suitable habitat structure—specifically, low-stature vegetation and scattered patches of bare ground—and an appropriate disturbance regime sufficient to maintain habitat and support increased numbers of breeding birds. The size of populations with high resiliency varies among regions, depending on the extent and quality of available habitat. Needs of the streaked horned lark in relation to degree of estimated population resiliency are summarized below in Table 4; to evaluate current condition, we assigned each condition category a number as shown.

TABLE 5—MATRIX FOR EVALUATING CURRENT CONDITION OF THE STREAKED HORNED LARK

Demographic and habitat parameters	High condition ←----------→ Low condition			
Abundance:				
South Puget Lowlands	Regular surveys detect ≥20 breeding pairs (3).	Regular surveys detect 10–20 breeding pairs (2).	Regular surveys detect ≤10 breeding pairs (1).	Extirpated: Larks no longer occupy site or region (0).
Pacific Coast and Lower Columbia River.	Regular surveys detect ≥15 breeding pairs on coast (3).	Regular surveys detect 7–15 breeding pairs on coast (2).	Regular surveys detect ≤7 breeding pairs on coast (1).	
	Regular surveys detect ≥20 breeding pairs on river (3).	Regular surveys detect 10–20 breeding pairs on river (2).	Regular surveys detect ≤10 breeding pairs on river (1).	
Willamette Valley	Regular surveys detect ≥25 breeding pairs (3).	Regular surveys detect 15–25 breeding pairs (2).	Regular surveys detect ≤15 breeding pairs (1).	
Population Trend	Increasing population trend (2).	Stable populations (1)	Declining or insufficient data to assess trends (0).	
Connectivity	Movement between local populations/regions (1).		No movement between local populations/regions (0).	
Habitat	Large, open areas with low-stature grasses, 17 percent bare ground (3).	Open areas with low-stature grasses, some shrubs and trees (2).	Small patches of suitable grasses surrounded by dense vegetation and trees (1).	Extirpated: Habitat to support larks no longer exists at a site (0).

TABLE 5—MATRIX FOR EVALUATING CURRENT CONDITION OF THE STREAKED HORNED LARK—Continued

Demographic and habitat parameters				
Beneficial Disturbance Regime.	Regular disturbance occurs to maintain habitat for nesting, no adverse effects during breeding season (3).	Semi-regular disturbance, habitat is available but not ideal for nesting, some adverse effects during breeding season (2).	Infrequent disturbance, habitat may be temporarily unavailable; high adverse effects during breeding season (1).	Extirpated: Disturbance does not occur to maintain habitat for larks; high adverse effects during breeding season (0).

Parameters that are in high condition support adequate population resiliency, whereas parameters that are in low condition reduce resiliency and increase the risk from stochastic events. Each of the five parameters were given equal weight, and the resulting resiliency scores were averaged to come up with an overall condition score for each local population unit as follows: High (≥1.7), Moderate (1.6 to 1.1), Low (1.0 to 0.2), and Extirpated (≤0.1). The overall condition score thresholds were based on the difference between the highest and lowest possible actual scores (2.4 and 0.2, respectively) for extant populations. If survey data showed a site had no detections of streaked horned larks, then the entire site is categorized as extirpated, regardless of the condition category assigned to the habitat or disturbance factors (*e.g.,* Oyhut Spit and Johns River Island in the Pacific Coast region).

The resulting current condition rankings of extant local population resiliency varied between high to low condition. Some local populations ranked high (those that scored 1.7 or greater) as a result of abundant populations and high-quality habitat; other populations ranked lower (those that scored 1.0 or less) in part because of a combination of low abundance, declining population trends between 2013 and 2019, poor quality habitat, and effects of land management activities.

The current range is a reduction compared to the historical range, where larks were detected on coastal and shoreline habitats as far north as British Columbia and the San Juan Islands in northwest Washington and in prairie habitats as far south as the Umpqua and Rogue Valleys in southwest Oregon. While the overall number of occupied sites represent a reduction from its historical range, of the 42 extant local populations across the three representational regions, there are 8 in high condition, 15 in moderate condition, and 19 in low condition (Table 6). Three sites that were occupied in years prior to the 2013 listing are currently considered extirpated.

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Table 6. Current condition rankings of streaked horned lark local populations.

Representational Area (Region)	Local Population Analysis Unit	Resiliency
South Puget Lowlands	Gray Army Airfield	High
	McChord Airfield	High
	13th Div. Prairie	High
	91st Div. Range 76	High
	Olympia Airport	Moderate
	91st Div. Range 50/53	Low
	Tacoma Narrows Apt.	Low
	Shelton Apt.	Low
Pacific Coast and Lower Columbia River	Rice Island	High
	Sandy Island	High
	Leadbetter Point	Moderate
	Miller Sands Is.	Moderate
	Pillar Rock Is.	Moderate
	Welch Island	Moderate
	Tenasillahe Is.	Moderate
	Brown Island	Moderate
	Crims Island	Moderate
	Howard Island	Moderate
	Lower Deer Is.	Moderate
	Graveyard Spit	Low
	Midway Beach	Low
	Damon Point	Low
	Clatsop Spit	Low
	Hump Island	Low
	Northport	Low
	Sand Island	Low
	Martin Bar	Low
	Austin Point	Low
	Gateway	Low
	Rivergate	Low
	PDX Airfield	Low
	PDX SW Quad	Low
	Oyhut Spit	*Extirpated*
	Johns River Island	*Extirpated*
Willamette Valley	Corvallis Apt.	High
	Baskett Slough NWR	High
	Ankeny NWR	Moderate
	William L. Finley NWR	Moderate
	Private Lands (WRPs)	Moderate
	Herbert Farm Ntrl. Area	Moderate
	Coyote Creek South	Moderate
	Eugene Apt.	Low
	McMinnville Apt.	Low
	Independence St. Apt.	Low
	Salem Municipal Apt.	*Extirpated*

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In general, the local populations with low condition have low abundance that has declined since 2013 and occur in locations that have less habitat

availability and therefore limited capacity to support high numbers of birds. In addition, certain land management activities at these locations, such as construction and development or sand-borrow activities on the Columbia River, would not support long-term resiliency even if population abundance stabilized and increased. Use of these sites is opportunistic based on habitat availability, and most of these sites are not anticipated to meaningfully contribute to subspecies viability or support high numbers of birds.

The South Puget Lowlands region has an overall increasing population trend (based on the 2013–2019 survey data). The region contains four local populations with high condition, one local population with moderate condition, and three local populations with low condition. Those local populations with low condition have small, declining populations and occur in areas where management activities have negative impacts on adult and juvenile birds, currently limiting resiliency. The populations at the JBLM airfields and 13th Division increased between 2013 and 2019, and movement between sites and habitat quality in these areas supports high resiliency. The Shelton Airport has a declining population trend. The Olympia Airport has good connectivity, and its condition is moderate, but the condition of the Shelton and Tacoma airports are low due to loss of habitat and/or size limitations.

The Pacific Coast and Lower Columbia River region has an overall stable population trend (based on the 2013–2019 survey data). It has 2 local populations in high condition (including Sandy Island, which is managed for the conservation of streaked horned lark), 9 local populations in moderate condition, 13 local populations with low condition, and 2 locations that have no breeding pairs and are assumed extirpated (Oyhut Spit and Johns River Island). While Leadbetter Point is managed to improve habitat quality for larks and reduce corvid predation, the local population has fluctuated in the last several years (between 6 in some years and 11 in other years) and abundance is inconsistent from year to year with no clear trend toward either an increasing or decreasing population that is demonstrated by the data. With more data from more survey years, as well as a more recent metapopulation analysis, we may be able to know more about the general trend of the data over time. A number of coastal sites and several Columbia River sites have low resiliency due to low abundance, small patches of high-quality habitat that currently limit potential abundance, limited connectivity, and/or management activities that are not optimal for successful breeding. While the Pacific Coast area currently has low numbers of breeding pairs, recent detections at Clatsop Spit (a previously unoccupied site) indicate the species could recolonize areas with suitable habitat. Streaked horned larks, however, have not recolonized new sites in the South Puget Lowlands despite 20 years of prairie restoration and intensive monitoring, suggesting recolonization is site-specific and difficult to predict.

The number of breeding pairs in the Willamette Valley region appears to have increased for 10 local populations (based on the 2013–2019 survey data), and the region supports two local populations in high condition, five in moderate condition, and three in low condition. One historical location at Salem Airport had no breeding pairs in surveys from 2013–2019 and is assumed extirpated. The three sites with low resiliency are municipal airports where abundance has declined since 2013, or where survey effort is inconsistent and abundance estimates are variable between years. The survey results reported in Table 1, above, may represent a small portion of the total number of streaked horned larks in the Willamette Valley due to lack of access on private lands, and there is no information to infer the condition of these potential populations.

Overall, we consider the streaked horned lark to have moderate-to-low redundancy based on few highly resilient populations throughout the range, low incidence of movement between local populations, and fewer incidences of movement between regions. The current redundancy of larks is characterized by 42 local populations across the range of the subspecies, of which 8 are considered to have high resiliency (4 in the South Puget Lowlands, 2 in the Pacific Coast and Lower Columbia River, and 2 in the Willamette Valley region). The draft recovery plan for streaked horned lark (U.S. Fish and Wildlife Service 2019, entire) provides a preliminary description of potential adequate redundancy and representation for the subspecies. The plan recommends that 38 resilient sites be managed for long-term conservation: 8 sites in the South Puget Lowlands; 3 sites along the Pacific Coast and 6 sites in the Lower Columbia River; and 21 sites in the Willamette Valley. The rangewide distribution of 42 local populations confers some measure of protection against catastrophic events, particularly in the Willamette Valley, where relatively large numbers of birds move about in response to changing habitat conditions. Recent detections of birds at sites previously unoccupied (*i.e.,* Clatsop Spit) suggest individuals are actively moving between sites, adapting to new areas, and potentially recolonizing areas with suitable habitat. However, incidences of movement and colonization of new areas occurs infrequently, reducing overall redundancy for larks.

The streaked horned lark has been extirpated from the northernmost extent of its historical range in the northern Georgia Basin and north Puget Lowlands and from the Rogue and Umpqua Valleys in the south. These losses from the northernmost (*i.e.,* cooler and wetter) and southernmost (*i.e.,* warmer and drier) extremes of the lark's known historical range demonstrate a substantial loss of ecological diversity. Within their current range, larks are found on native prairies; military and civilian airfields; coastal beaches, dunes, and sandy islands; restored native prairies; agricultural areas; road margins; and industrial sites. Occupied sites differ markedly within and among regions, which suggest that larks experience a broad range of ecological diversity. The South Puget Lowlands and Willamette Valley regional populations occur mainly in prairie, wetland, airport and road margins, and agricultural habitats; the Pacific Coast and Lower Columbia River regional population occurs primarily on coastal dune, shorelines, and sandy islands in the Columbia River. There are at least two local populations with high resiliency in each region, suggesting relatively good representation across the habitats within the species current range. Additional local populations in high and moderate condition throughout the range would benefit the overall level of redundancy and representation for the subspecies.

Future Condition

The main factors influencing the future viability of the streaked horned lark include ongoing and sustained habitat loss, continued land management activities and related effects, recreation, and the synergistic effects of climate change and small population size. When we assessed the future condition of the local populations in response to projected land use changes and climate conditions, we used the same habitat and population metrics that we applied in our current condition assessment. We forecasted the condition of local populations over time under three scenarios and used this

information to forecast the viability of the streaked horned lark over the next 30 years. We chose 30 years because it is within the range of the available hydrological and climate change model forecasts, encompasses approximately five generations of streaked horned lark, and represents a biologically meaningful timeframe (time period long enough to encompass multiple generations so that species' responses can be predicted). We evaluated land use trends by looking at data on the quantity and type of agricultural crops in production throughout Oregon every 5 years from the USDA's National Agricultural Statistics Service. In Oregon, where larks largely occur on private agricultural lands, we evaluated trends in land use and crop type over the past 20 years to inform future trends (U.S. Department of Agriculture National Agricultural Statistics Service 2007 and 2017b, Tables 26, and 31–34). Specifically, we used these data to evaluate trends in the overall quantity of grass and other seed farms, and we compared the changes to trends in the quantity of crop types that do not provide suitable habitat for larks, such as hazelnut orchards, blueberry farms, and wine grapes for viticulture.

To assess effects to the streaked horned lark from climate change, we relied on projections to mid-century from the U.S. Geological Survey, Land Change Science Program National Climate Change Viewer (Alder and Hostetler 2013, entire). The Coupled Model Intercomparison Project 5 provides a range of variability in climate projections for the time period 2025 to 2049. We used the combined range of the projection from two model scenarios, representative concentration pathways (RCP) 4.5 and RCP 8.5, to evaluate a range of potential future conditions. RCP 4.5 predicts that greenhouse gas emissions stabilize by the end of the century; RCP 8.5 predicts emissions continue to rise unchecked through the end of the century.

For this analysis, we evaluated possible future conditions using these climate scenarios and the resulting impacts on species and habitat through the year 2050. Climate change is not expected to decrease the resiliency of any local populations in the prairie ecosystem because prairie and grassland ecosystems are well adapted to warm and dry conditions like the periodic soil drought and future increases in temperature and drought forecasted for those areas. Despite the projected changes affecting wildlife in the Pacific Northwest overall, the effects of climate change specific to prairie ecosystems are not anticipated to decrease the resiliency of regional populations in the South Puget Lowlands, Pacific Coast and Lower Columbia River, and Willamette Valley regions. The grasslands and prairies of Washington and Oregon span a wide geographic and climatic range, encompassing a rich variety of soil types, vegetation cover, elevations, and weather patterns. This heterogeneity will likely buffer the effects of changing weather and climate (Bachelet *et al.* 2011, p. 412). It is possible that increased summer droughts may affect less drought-tolerant trees and other forest species adjacent to prairies, possibly resulting in prairie expansion (Bachelet *et al.* 2011, p. 417). Prairie and grassland ecosystems are well-adapted to warm and dry conditions and periodic soil drought, and future increases in temperature and drought for the region, ''are unlikely to disadvantage (and may benefit) these systems'' (Washington Department of Fish and Wildlife 2015, p. 5–31).

With respect to coastal populations, the current primary threat to habitat for the subspecies is the spread of invasive beachgrass, particularly Eurasian beachgrass, because it anchors dune habitats and thereby prevents natural, dynamic processes that form suitable habitat for the lark from occurring. The cumulative impact of projected sea-level rise, increased coastal erosion, and more severe weather events will limit the potential creation of suitable habitat in the remaining natural areas not affected by beachgrass. These synergistic threats may limit the resiliency of some local populations on the coast.

The degree to which some factors affecting larks will change in the future is uncertain. For this reason, we forecasted what the streaked horned lark may experience in terms of resiliency, redundancy, and representation under three plausible future scenarios over the next 30 years:

- Scenario 1—Status Quo: The adverse effects of habitat loss, climate change, and management activities and related effects at existing sites are consistent with current levels (including current levels of conservation); recreation increases, and act on current population sizes.
- Scenario 2—Improved Conditions: The adverse effects of habitat loss and climate change are reduced compared to current conditions; management actions continue at existing sites with additional conservation measures implemented to protect larks, including conservation of additional sites; recreation increases, and act on larger populations with reduced impact to overall population status.
- Scenario 3—Degraded Conditions: The adverse effects of habitat loss and climate change are increased; management activities continue at existing sites with no additional or reduced voluntary or regulatory conservation measures due to funding restrictions; recreation increases, and acts on smaller population sizes with increased impact to overall population status.

Based on the increase in abundance we have seen as a result of conservation measures for streaked horned lark (particularly at JBLM and on the Columbia River), we project that under Scenario 2/Improved Conditions populations would be larger, and, therefore, the overall combined impacts from both recreation and improved management activities and related effects would be limited. Under Scenario 3/Degraded Conditions however, populations would be smaller, and, therefore, the overall combined impacts from both recreation and management activities and related effects would increase.

Changes in the number and size of extant populations in response to assumed habitat conditions and changes in management activities at individual sites would result in changes to redundancy and representation for the subspecies. Under the status quo scenario, one population in the South Puget Lowlands drops from high to moderate condition, four local populations in the Pacific Coast and Lower Columbia River region drop from moderate to low condition, and all five moderate populations in the Willamette Valley drop to low condition. Even though the rate of change of the influence factors was not different than current levels under this scenario, the synergistic effects of small population size would amplify the effect of negative influence factors in some local populations over time. Under this scenario, the subspecies would continue to occupy roughly an equal number of habitat types and distribution of 42 local populations across the range, but some small, isolated populations may be at risk of eventual extirpation without intentional habitat management or conservation measures.

Under the improved conditions scenario, careful management and conservation actions are implemented to increase the quantity, quality, and distribution of suitable habitats for streaked horned larks. One local population in the South Puget Lowlands and three in the Pacific Coast and Lower Columbia River region improve from moderate to high condition, and one population in each of the South Puget

Lowlands and Willamette Valley regions move from low to moderate. As local populations become more resilient under this scenario, the species' ability to move between sites in response to changing environmental conditions and re-establish breeding populations would increase overall redundancy, buffering against adverse effects of catastrophic events. With respect to ecological representation, it is unlikely that birds would occupy new or different habitat types relative to current patterns of occupancy in the Pacific Coast and Lower Columbia River region under this scenario, due to the limited availability of alternative habitats that provide the structural habitat features preferred by larks. In the South Puget Lowlands and Willamette Valley regions, the number of local populations in high condition would increase; however, it is unlikely that larks would disperse into the north Puget Lowlands region, or south into the Umpqua and Rogue Valley areas without substantial recovery efforts to support habitat development in these areas.

Under the degraded conditions scenario, further habitat loss and increased instability would lead to reduced condition in many local populations with only one local population remaining in high condition in the range of the subspecies (Rice Island). Eighteen local populations would decrease in condition across the range of the streaked horned lark, leaving 10 moderate condition and 30 low condition populations distributed across the three regions. Under this scenario, Shelton Airport would become extirpated, reducing redundancy. Many other local populations would decrease in resiliency and be at higher risk of extirpation, putting the subspecies at risk of further reduction in redundancy. If local populations become less resilient, larks would be less able to move between sites in response to changing environmental conditions or re-establish local populations following a catastrophic event. Furthermore, the loss of local populations would decrease the species' representation and overall ability to adapt to changing environmental conditions.

Because the streaked horned lark is dependent on land management activities that create and maintain suitable replacement habitat throughout the species' range, the future viability of the species relies upon the continuation of these actions. The synergistic effects of both small population size and the effects of climate change will likely amplify the negative effects of influence factors and reduce resiliency of some local populations, particularly along the Pacific Coast, the South Puget Lowlands, and the Lower Columbia River.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects on the species, but we have also analyzed their potential cumulative effects. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. To assess the current and future condition of the species, we undertake an iterative analysis that encompasses and incorporates the threats individually and then accumulates and evaluates the effects of all the factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but to what degree they collectively influence risk to the entire species, our assessment integrates the cumulative effects of the factors and replaces a standalone cumulative effects analysis.

We considered all potential influence factors resulting from habitat fragmentation degradation and loss; land management activities and related effects; recreation; and aircraft strikes. We analyzed their level of effect in the various regional populations as noted in Table 4. The small size of these local populations may amplify the effects of stressors influencing individuals, but small population size does not influence populations on its own. The impact of the stressors summarized in Table 4 and the conservation measures implemented to minimize or mitigate impacts to larks and lark habitat is factored into our resiliency, redundancy, and representation (3R) assessment of populations for our current condition analysis. We anticipate habitat loss, changes in land use and agricultural practices, recreation on the Pacific Coast and Lower Columbia River, and aircraft strikes will continue to influence the condition of the streaked horned lark in the future to a degree that may affect the resiliency of populations. The projected future impact of these stressors is factored into the 3R assessment of populations in our future condition analysis.

Determination of Streaked Horned Lark's Status

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

Status Throughout All of Its Range

We evaluated threats to the streaked horned lark and assessed the cumulative effects of the threats under the Act's section 4(a)(1) factors. The primary driver of the status of streaked horned lark has been the scarcity of large, open spaces with very early seral stage plant communities with low-statured vegetation and substantive amounts of bare or sparsely vegetated ground. Historically, these open spaces were primarily created by natural disturbance regimes such as seasonal flooding of river systems, but the construction of dams and subsequent flood control negatively impacted creation of this open space habitat and thereby the abundance and distribution of historical lark populations. The loss of streaked horned lark habitat due to large-scale water management occurred decades ago and is not ongoing. The best available information indicates that overutilization (Factor B), predation or disease (Factor C), pesticides (Factor E), or loss of historical disturbance regimes (Factor A) are not current or imminent threats to the viability of the subspecies. The streaked horned lark has been affected through loss of preferred habitats (Factor A) as a result of successional changes in plant species composition and encroachment of woody vegetation; invasion of beach grasses; conversion of suitable habitat into unsuitable habitat through changes in land use; and changes in agricultural practices from crops that mimic preferred habitats (*i.e.,* grass seed farms) to crops that diminish habitat suitability (*i.e.,* hazelnut orchards and blueberry farms). The streaked horned lark is also affected by land management activities and related effects (Factor A), as well as other human activities (Factor E), including agricultural activities, airport

management activities and related airstrikes, military training and related activities, the placement of dredged materials, and recreation.

Despite the ongoing influence of these factors, the subspecies is not currently in danger of extinction, because the species retains multiple populations in high and moderate condition across all representative regions, those populations occur in a variety of habitat types, and no threat at its existing or imminent level could plausibly change that state of affairs. Each representative region has at least 8 redundant populations. Survey data from some regularly monitored sites across the range of the subspecies show an increase from 252–253 breeding pairs in 2013 at the time of listing to 383–389 breeding pairs in 2019. The subspecies has shown relative stability for the last 7 years based on survey data from known populations, with 42 populations across the range. Of the 42 populations, 23 are considered to be in high or moderate condition. The Pacific Coast and Lower Columbia River and the Willamette Valley region each have two populations that are in high condition; the South Puget Lowlands has four populations in high condition. Across the range, 15 local populations are considered in moderate condition. Negative influence factors on the subspecies have not fluctuated much for the last 20 years and are not of a scope or magnitude, either currently or imminently, such that the subspecies is currently in danger of extinction. Local populations in South Puget Lowlands and Lower Columbia River populations have benefited from conservation efforts implemented as part of section 7 consultations under the Act.

Abundance of larks across the Willamette Valley appears relatively high, but many of these local populations cannot be surveyed due to lack of access. Although the current abundance of local populations along the Pacific Coast is lower than other areas, it has been low for many years, and we see no apparent declining trend in this regional population based on survey data from 2013 to 2019. Recent detections of birds at Clatsop Spit, as well as sites with restored habitat on private lands in the Willamette Valley, indicate that individuals can move between sites, and there are a few instances of detections at previously unoccupied locations, but recolonization appears very low and difficult to predict.

In the foreseeable future, however, there is potential for a decline in resiliency of local populations across the range. The loss of preferred habitat will continue from plant succession and encroachment of woody vegetation, invasion of beach grasses, changes in land use, and changes in beneficial agricultural practices. The regular large-scale, human-caused disturbance (burning, mowing, cropping, chemical treatments, or placement of dredged materials) that now creates and maintains replacement habitat for the streaked horned lark will continue, as will the related effects of these activities that can negatively impact individual larks (nest destruction, mortality, disturbance, and aircraft strikes). Recreation will also continue. Any negative effects from these factors will likely be amplified in some local populations due to the synergistic effects related to small population size and the increased effects of climate change in the range over the next 30 years, particularly along the Pacific Coast, the South Puget Lowlands, and the Lower Columbia River. As climate change and small population size increase in influence, the realized benefit of these replacement habitats to the subspecies may decrease.

Additionally, any future changes in the maintenance of these landscapes will affect the resiliency of larks in the area. Agriculture remains the primary influence on land use in the Willamette Valley, and the resilience of larks in that area is tied to practices that can change given market demands. This uncertainty regarding future land use and anthropogenic effects to habitat increases the potential risk of extinction in the foreseeable future. Numerous conservation measures resulting from section 7 consultation under the Act in the range of the streaked horned lark have helped reduce effects of threats on the subspecies, but the continued effects of habitat loss (Factor A), land management activities and related effects, and recreation, in combination with small population size and the effects of climate change (Factor E), are expected to continue to affect the viability of the subspecies over the next 30 years.

Thus, after assessing the best available information, we conclude that the streaked horned lark is not currently in danger of extinction but is likely to become in danger of extinction within the foreseeable future throughout all of its range.

Status Throughout a Significant Portion of Its Range

Under the Act and our implementing regulations, a species may warrant listing if it is in danger of extinction or likely to become so in the foreseeable future throughout all or a significant portion of its range. The court in *Center for Biological Diversity* v. *Everson,* 2020 WL 437289 (D.D.C. Jan. 28, 2020) (*Center for Biological Diversity*), vacated the aspect of the Final Policy on Interpretation of the Phrase ''Significant Portion of Its Range'' in the Endangered Species Act's Definitions of ''Endangered Species'' and ''Threatened Species'' (Final Policy; 79 FR 37578, July 1, 2014) that provided that the Service does not undertake an analysis of significant portions of a species' range if the species warrants listing as threatened throughout all of its range. Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant and (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the ''significance'' question or the ''status'' question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

Following the court's holding in *Center for Biological Diversity,* we now consider whether there are any significant portions of the species' range where the species is in danger of extinction now (*i.e.,* endangered). In undertaking this analysis for the streaked horned lark, we choose to address the status question first—we consider information pertaining to the geographic distribution of both the species and the threats that the species faces to identify any portions of the range where the species is endangered. The statutory difference between an endangered species and a threatened species is the time horizon in which the species becomes in danger of extinction; an endangered species is in danger of extinction now while a threatened species is not in danger of extinction now but is likely to become so in the foreseeable future. Thus, for streaked horned larks, we considered whether the threats are geographically concentrated in any portion of the species' range such that the threats presently affect enough individuals in an area to influence the resiliency of a population.

We examined the following influence factors: Loss of preferred habitats as a result of successional changes in plant species composition and encroachment of woody vegetation; invasion of beach grasses; conversion of suitable habitat into unsuitable habitat through changes

in land use; changes in agricultural practices from crops that mimic preferred habitats to crops that diminish habitat suitability; land management activities and related effects, including airport management activities, military training, and the placement of dredged materials; recreation; and, the cumulative effects associated with climate change and small population size. While the influence of these factors varies somewhat across the range, there is no portion of the range where there is currently a concentration of threats relative to other areas in the range. The available information does not indicate that the effects of climate change, such as sea level rise, are currently decreasing the resiliency of streaked horned lark populations. In the future, the synergistic effects of climate change and small population size are likely to compound the negative effects of dune stabilization from beach grass invasion. This will likely limit the availability and distribution of habitat for streaked horned larks along the Pacific Coast, which could influence the resiliency of these local populations over the next 30 years such that they may be at risk of future extirpation. We have similar concerns that the synergistic effects of climate change and small populations size will also influence the future resiliency of local populations in the Columbia River and South Puget Lowlands. Overall, potential future reductions in resiliency of local populations across the range of the subspecies will limit redundancy and representation, and therefore could affect the future viability of the streaked horned lark.

Although the current abundance of local populations along the Pacific Coast is low compared to other areas, it has been low for many years. The size of those coastal sites is relatively small compared to other local populations and therefore naturally limits the number of breeding pairs, and we see no apparent declining trend in this regional population based on survey data between 2013 and 2019. Based on our review of the best available information, the population in the Pacific Coast region is not currently at risk of extirpation. As noted above, these populations are at risk of extirpation in the future.

The concentrated wintering populations of streaked horned lark in the Willamette Valley and on islands in the Columbia River could be exposed to stochastic events such as ice storms or severe flooding that could kill individuals, destroy limited habitat and food availability, or skew sex ratios. Severe winter weather could potentially impact one or more regional populations when birds congregate as larger flocks. However, available information does not indicate that winter storms are currently a threat that decreases the resiliency of streaked horned lark populations in these regions, and climate change projections specific to prairie ecosystems do not indicate a greater future threat from winter storms to streaked horned lark populations in these regions. The time horizon for the species' response to these ongoing and synergistic threats is not more immediate in any portions of the species' range.

Because there are no portions of the species' range where the species has a different status from its rangewide status, no portion of the species' range provides a basis for determining that the species is in danger of extinction in a significant portion of its range. Therefore, we determine that the streaked horned lark is not in danger of extinction now in any portion of its range, but that the species is likely to become in danger of extinction within the foreseeable future throughout all of its range. This does not conflict with the courts' holdings in *Desert Survivors* v. *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 need to consider whether any portions are significant and, therefore, did not apply the aspects of the Final Policy's definition of ''significant'' that those court decisions held were invalid.

Determination of Status

Our review of the best available scientific and commercial information indicates that the streaked horned lark meets the definition of a threatened species. Therefore, we affirm the current listing of the streaked horned lark 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, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies, private organizations, and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

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

Recovery planning consists of preparing draft and final recovery plans, beginning with the development of a recovery outline and making it available to the public within 30 days of a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened (''downlisting'') or removal from protected status (''delisting''), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. A notice announcing availability of the draft recovery plan for streaked horned lark was published in the **Federal Register** on October 30, 2019 (84 FR 58170); the draft plan is available on our website (*https://www.fws.gov/endangered*), or from our Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.,* restoration of

native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range 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.

Funding for recovery actions is available from a variety of sources, including Federal and State funding, including cost-share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the States of Oregon and Washington are eligible for Federal funds to implement management actions that promote the protection or recovery of the streaked horned lark. Information on our grant programs that are available to aid species recovery can be found at: *https://www.fws.gov/grants*.

Please let us know if you are interested in participating in recovery efforts for this species. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

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

Federal agency actions within the streaked horned lark's habitat that may require consultation include management and any other landscape-altering activities on Federal lands administered by the Service; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq.*) permits by the Corps; and road construction by the Federal Highway Administration in cooperation with the Service at Baskett Slough NWR.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the maximum extent practicable at the time a species is listed, those activities that would or would not constitute a violation of section 9 of the Act. The intent of this policy is to increase public awareness of the effect of a listing on proposed and ongoing activities within the range of the species. The discussion below regarding protective regulations under section 4(d) of the Act complies with our policy.

II. Final Rule Issued 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. The U.S. Supreme Court has noted that statutory language like ''necessary and advisable'' demonstrates a large degree of deference to the agency (see *Webster* v. *Doe,* 486 U.S. 592 (1988)). Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. Thus, the combination of the two sentences of section 4(d) provides the Secretary with a wide latitude of discretion to select and promulgate appropriate regulations tailored to the specific conservation needs of a threatened species. The second sentence grants particularly broad discretion to the Secretary when adopting some or all of the prohibitions under section 9 for any particular threatened 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 rules developed under section 4(d) as a valid exercise of agency authority where they prohibited take of threatened wildlife, or included a limited taking prohibition (see *Alsea Valley Alliance* v. *Lautenbacher,* 2007 U.S. Dist. Lexis 60203 (D. Or. 2007); *Washington Environmental Council* v. *National Marine Fisheries Service,* 2002 U.S. Dist. Lexis 5432 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats that 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).

On October 3, 2013, we issued a rule under the authority of section 4(d) of the Act to provide for the conservation of the streaked horned lark (78 FR 61452) (see 50 CFR 17.41(a)). That rule applies all of the prohibitions of section 9 of the Act to the streaked horned lark, with the following exceptions for incidental take: (1) Certain activities on airports on non-Federal lands; (2) certain agricultural activities on non-Federal land in the range of the subspecies in Oregon and (3) certain noxious weed control activities on non-Federal lands.

The provisions of this revised 4(d) rule will promote conservation of the streaked horned lark by encouraging management of the landscape in ways that meet the conservation needs of the subspecies. The provisions of this revised 4(d) rule are one of many tools that we will use to promote the conservation of the streaked horned lark. For these reasons, we find the revised 4(d) rule as a whole is necessary and advisable to provide for conservation of the streaked horned lark.

Provisions of the Revised 4(d) Rule

The provisions of the revised 4(d) rule for the streaked horned lark are discussed in more detail below, but we note here that the substantive differences between the current 4(d) rule for the streaked horned lark at 50 CFR 17.41(a) and this revised 4(d) rule are limited to the following: The exception for incidental take for certain agricultural activities on non-Federal lands applies throughout the range of the subspecies in Oregon and Washington, rather than only the Willamette Valley of Oregon; and the inclusion of an additional exception to the take prohibition for incidental take associated with habitat restoration activities that benefit streaked horned lark.

The primary driver of the status of streaked horned lark has been the scarcity of large, open spaces with very early seral stage plant communities with low-statured vegetation and substantive amounts of bare or sparsely vegetated

ground. Such areas occur sporadically within the larger agricultural landscape, depending on local soil and topographic conditions. Therefore, this revised 4(d) rule is designed to support the continuation of activities taking place in the range of the subspecies that lead to these features, and to encourage the development of these features in new areas in the range of the subspecies in the future. The revised 4(d) rule provides for the conservation of the streaked horned lark by prohibiting take, except as otherwise authorized, permitted, or incidental to the following activities: Wildlife hazard management at airports and accidental strikes by aircraft, normal agricultural practices in Oregon and Washington, noxious weed control on non-Federal lands, and habitat restoration activities beneficial to streaked horned lark. All take not included in those exceptions (for example, take of lark that is intentional and not incidental to the excepted activities, remains prohibited) will continue to be prohibited in order to support existing populations of the streaked horned lark.

Some management actions taken at airports are generally beneficial to streaked horned larks and have led to the creation of replacement habitat the subspecies relies upon. Streaked horned larks breed successfully and maintain populations at airports in the South Puget Sound and Willamette Valley. Airports maintain safe conditions for aviation, in part by routinely implementing programs to minimize the presence of hazardous wildlife on airfields. These activities unintentionally create suitable habitat for streaked horned larks. Activities involved in wildlife hazard management at airports that benefit streaked horned lark include hazing of hazardous wildlife (geese and other large birds and mammals) and modification and management of forage, water, and shelter to be less attractive to these hazardous wildlife, including vegetation management to maintain desired grass height on or adjacent to airports through mowing, discing, herbicide use, or burning.

As with other land management activities, vegetation management during the nesting season has the potential to destroy streaked horned lark nests and young. However, despite concerns over potential adverse effects of vegetation management during the breeding season at airports, this activity is very important to the maintenance of the low-statured vegetation required by nesting and wintering larks in the area. We believe that the beneficial effects of these actions outweigh the negative effects that occur from these actions during the nesting season. Therefore, excepting hazardous wildlife management from the Act's prohibitions of take, when conducted by airport staff or employees contracted by the airport to perform hazardous wildlife management activities, furthers the conservation of the subspecies by helping to prevent the spread of those noxious weeds that may render existing habitat unsuitable for the streaked horned lark.

The listing of the streaked horned lark imposes a requirement on airport managers where the subspecies occurs to consider the effects of their management activities on this subspecies when actions are funded or approved by the Federal Aviation Administration. Excepting hazardous wildlife management and accidental aircraft strikes from prohibitions on take eliminates the incentive for airports to reduce or eliminate replacement habitat that supports populations of streaked horned larks from the airfields, and therefore provides for the conservation of the species by allowing current beneficial management activities to continue. Accidental aircraft strikes are an unavoidable consequence of the vegetation management that also maintains habitat that supports breeding pairs. While aircraft strikes do occur in several local populations at airports throughout the range of the species (particularly in the South Puget Lowlands), the rate appears relatively low. Additionally, the potential take of streaked horned lark associated with the routine management, repair, and maintenance of roads and runways is minimal. Therefore, in order to support activities involved in wildlife hazard management that maintain habitat features beneficial to streaked horned lark, incidental take associated with wildlife hazard management activities, as well as aircraft strikes and routine maintenance of existing roads and runways at airports, is excepted from the prohibition on take. We recommend that airport operators follow the guidance provided in Federal Aviation Administration advisory circular 150/5200–33C, ''Hazardous Wildlife Attractants on or near Airports'' (FAA 2020, entire), and all other applicable related guidance.

In Oregon's Willamette Valley, large expanses of burned prairie or the scour plains of the Willamette and Columbia Rivers likely provided suitable habitat for streaked horned larks in the past. With the loss of these historical habitats during the last century, alternative breeding and wintering sites, including active agricultural lands, have become critical for the continued survival and recovery of the streaked horned lark. One of the largest areas of potential habitat for streaked horned larks is the agricultural land base in the Willamette Valley. Larks are attracted to the wide, open landscapes and low vegetation structure in agricultural fields, especially in grass seed fields, probably because those working landscapes resemble the historical habitats formerly used by the subspecies when the historical disturbances associated with floods and fires maintained a mosaic of suitable habitats. Habitat characteristics of agricultural lands used by streaked horned larks include: (1) Bare or sparsely vegetated areas within or adjacent to grass seed fields, pastures, or fallow fields; (2) recently planted (0 to 3 years) conifer farms with extensive bare ground; and (3) wetland mudflats or ''drown outs'' (*i.e.,* washed out and poorly performing areas within grass seed or row crop fields).

Currently in the Willamette Valley, there are approximately 360,000 ac (145,000 ha) of grass seed fields in production. In any year, some portion of these lands will have suitable streaked horned lark habitat, but the geographic location of those areas is not consistent from year to year, nor can we predict their occurrence due to variable agricultural practices (crop rotation, fallow fields, etc.), and we cannot predict the changing and dynamic locations of those areas.

These conditions make conservation of streaked horned larks a significant challenge on these large, intensively managed and privately owned agricultural landscapes. On the one hand, agricultural activities can harm or kill individual streaked horned larks or destroy their nests in some localized fields. However, maintenance and continued farming of these private agricultural lands (primarily grass seed farms) in the Willamette Valley creates and provides suitable habitat conditions throughout the Valley, and is therefore crucial to maintaining the overall population of streaked horned larks in the Valley and aiding in the recovery of the subspecies in Oregon. Streaked horned lark conservation in the Willamette Valley is challenging due to these conflicting factors: (1) Enabling and supporting the ongoing agricultural practices that maintain favorable habitat conditions on private lands; and, (2) minimizing the potential for impacting some nesting birds when these farming practices (*e.g.,* grass seed harvest) occur on those lands.

Achieving net conservation of listed species on privately-owned working lands (*i.e.,* farmland, rangeland, tree

farms, etc.) is one of the most difficult challenges in implementation of the Act (Baur et al. 2009, p. 3; Ciuzio et al. 2013, entire; Henson et al. 2018, p. 863). Under certain circumstances and for highly visible species, the prohibitions of the Act under section 9 can discourage local impacts to listed species where individuals of such species are known to occur, and harmful activities can be effectively investigated and addressed. However, using the regulatory functions of section 9 of the Act to achieve effective conservation on private lands is often limited due to a variety of reasons, such as the following: The species is not currently known to be present in otherwise suitable or historic habitat; access to such lands is restricted by the landowner; restoration or maintenance of a species' habitat requires the voluntary support or participation of the landowner; and conservation measures may conflict with a landowner's traditional economic use of their land. As a result, listed species are often viewed as a legal or economic liability by landowners, resulting in disincentives to conservation on these lands (Raymond and Olive 2008, p. 485; Brook et al. 2003, pp. 1644–47; Mir and Dick 2012, entire). This problem is especially acute where public lands are lacking and the species is dependent on private lands for its conservation (Eichenwald et al., p. 443), as is largely the case for the streaked horned lark.

These factors are part of the conservation challenge for this subspecies in the Willamette Valley, and we find that the beneficial effects from maintaining these agricultural practices to facilitate suitable habitat outweigh the negative effects from injuries to individual birds from these same activities.

Although we are unaware of any current breeding populations of streaked horned larks on agricultural lands in Washington, use of these habitats by streaked horned larks would aid in recovery of the subspecies in Washington as in Oregon and is therefore encouraged. The exception for incidental take for certain agricultural activities on non-Federal lands in the revised 4(d) rule applies to the entire range of the subspecies, to encourage management actions that would facilitate the use of areas other than civilian and military airports by streaked horned larks within the range of the subspecies in Oregon and Washington.

Because landowners are free to allow vegetation growth that results in the conversion of lands into habitats unsuitable for the streaked horned lark, conservation of the species will benefit from the support of agricultural practices that result in the creation and maintenance of habitat that is suitable for the subspecies. In general, private landowners, out of concern for being subjected to regulation associated with the Act, may alter land management practices or restrict conservation activities to discourage attracting listed species to their lands (Brook et al. 2003, pp 1644–1648; Mir and Dick 2012, p. 192; Cuizio et al. 2013, p. 271). In case of the streaked horned lark, given the importance of human-created habitat through ordinary agricultural management activities, this risk aversion would be detrimental to the conservation of the species. With this revised 4(d) rule, we remove the negative incentive for private landowners in Oregon to discontinue activities resulting in suitable habitat for larks based on such concerns, and we provide positive incentives for them to voluntarily report and conserve species on their property. Additionally, the rule reduces the liability concerns of private landowners in Washington who may be considering the implementation of agricultural practices that result in the creation and maintenance of habitat that is suitable for the lark, something we seek to encourage.

The primary crop type that results in habitat features preferred by lark is grass seed, and the typical harvest (combining) period for grass seed fields occurs in late June or early July, after the most active part of the breeding season for larks is done. Because the timing of ground disturbance for grass seed farms is after the primary part of the nesting season is over, it does not put the reproductive success of the subspecies at great risk, and the benefits of encouraging the continuation of the inadvertent creation of lark habitat through normal grass seed farming practices outweigh the benefit of restricting the timing of this exception to take. Excepting routine agricultural activities on non-Federal lands throughout the range of the streaked horned lark from the prohibition on take will provide an overall benefit to the subspecies by maintaining suitable habitat and removing incentives to decrease that suitable habitat to avoid liability under the Act. This exception to the prohibition on take for agricultural activities is rangewide in Oregon and Washington, and we find that the definition of ''normal farming practices'' in both the 2013 4(d) rule and this revised 4(d) rule is consistent with relevant Oregon and Washington State laws (Oregon Revised Statutes (ORS), chapter 30, section 30.930, and Revised Code of Washington (RCW), title 7, chapter 7.48, section 7.48.310, respectively).

Streaked horned larks nest, forage, and winter on extensive areas of bare ground with low-statured vegetation. These areas include native prairies, coastal dunes, fallow and active agricultural fields, wetland mudflats, sparsely vegetated edges of grass fields, recently planted conifer farms with extensive bare ground, moderately to heavily grazed pastures, gravel roads or gravel shoulders of lightly traveled roads, airports, and dredge deposition sites in the Lower Columbia River. The suppression and loss of ecological disturbance regimes such as fire and flooding across vast portions of the landscape have resulted in altered vegetation structure and facilitated invasion by nonnative grasses and woody vegetation, including noxious weeds, rendering habitat unsuitable for streaked horned larks. By their nature, noxious weeds grow aggressively and multiply quickly, negatively affecting all types of habitats, including those used by larks. Some species of noxious weeds spread across long distances through wind, water, and animals, as well as via humans and vehicles, thereby affecting habitats far away from the source plants.

Because noxious weed control maintains the low-statured vegetation and the open landscape that streaked horned lark relies upon, this activity is essential to the retention of suitable nesting, wintering, and foraging habitat. As with other land management activities, noxious weed control during the nesting season has the potential to destroy streaked horned lark nests and young. On the other hand, streaked horned larks can benefit from weeds, as they eat the seeds of weedy forbs and grasses. However, the benefit provided to nesting and wintering larks from the eradication (or removal) of noxious weeds wherever they may occur outweighs any potential benefit from weeds or concerns over timing of control. Therefore, excepting the routine mechanical or chemical management of noxious weeds from the prohibition of take furthers the conservation of the subspecies by helping to prevent the spread of those noxious weeds that may render habitat unsuitable for the streaked horned lark. It also encourages landowners to manage their lands in ways that meet their property management needs and also help to prevent degradation or loss of suitable habitat for the streaked horned lark. Noxious weed control targets those species included on County, State, and Federal noxious weed lists (see the

Federal list at *https://www.aphis.usda.gov/plant_health/plant_pest_info/weeds/downloads/weedlist.pdf*; Washington State counties each have a noxious weed control website, and selected Oregon State counties maintain noxious weed lists).

Finally, activities associated with streaked horned lark habitat restoration (*e.g.,* removing nonnative plants and planting native plants, creating open areas, and maintaining sparse vegetation through vegetation removal or suppression via controlled burns) will be very beneficial to the subspecies; any adverse effects to the subspecies from these activities will likely be only short-term or temporary, especially with respect to harassment or disturbance of individual lark. In the long term, the risk of adverse effects to both individuals and populations is expected to be mitigated as these types of activities will likely benefit the subspecies by helping to preserve and enhance the habitat of existing local populations over time. Reasonable care for habitat management may include, but will not be limited to, procuring and implementing technical assistance from a qualified biologist on habitat management activities, and best efforts to minimize streaked horned lark exposure to hazards (*e.g.,* predation, habituation to feeding, entanglement, etc.). Therefore, we include in the 4(d) rule an exception to the prohibition on take for any habitat restoration actions that would create or enhance streaked horned lark habitat, provided that reasonable care is taken to minimize such take.

We acknowledge that all of these activities excepted from incidental take in this rule have the potential to result in destruction of nests, crushing of eggs or nestlings, or flushing of fledglings or adults when conducted during the active breeding season for streaked horned larks. The 2013 listing rule (78 FR 61452; October 3, 2013) included dredge spoil deposition timing and placement on Columbia River islands; incompatibly timed burning and mowing regimes; activities associated with military training; and activities associated with airports as threats to the subspecies. Despite these threats noted at the time of listing, the Service determined that timing restrictions on these activities were not appropriate, stating in the rule: ''Our purpose in promulgating a special rule to exempt take associated with activities that inadvertently create habitat for the streaked horned lark is to allow landowners to continue those activities without additional regulation. We believe that imposing a timing restriction would likely reduce the utility of the special rule for land managers, and could have the unintended side effect of causing landowners to discontinue their habitat creation activities'' (78 FR 61452, October 3, 2013, p. 78 FR 61464). No timing restrictions were included in the 4(d) rule in 2013, and these land management activities have continued across the range since 2013. Survey data from regularly monitored sites throughout the range of the subspecies now show an increase from 252–253 breeding pairs in 2013, to 383–389 breeding pairs in 2019, despite the lack of timing restrictions on land management activities. While the loss of individuals is never welcome, the continuation of land management activities that create replacement habitat is very important to the conservation of the subspecies, and the benefits to the subspecies as a whole appear to outweigh the associated cost of the loss of individuals. This revised 4(d) rule provides for the conservation of the subspecies by including provisions that support the continuation of land management activities that create replacement habitat.

As discussed above under Summary of Biological Status and Threats, multiple factors are affecting the status of the streaked horned lark. A range of activities have the potential to affect the streaked horned lark, including the management of hazardous wildlife at airports and associated airstrikes, routine agricultural activities, and the routine removal or other management of noxious weeds. Prohibiting take of streaked horned lark rangewide under section 9 of the Act will help preserve the subspecies' remaining populations, slow their rate of decline, and allow for the maintenance of suitable habitat for the species. However, these same activities also benefit streaked horned lark through the creation of the very habitat features (large open spaces with very early seral stage plant communities with low-statured vegetation and substantive amounts of bare or sparsely vegetated ground) that streaked horned larks prefer; without these replacement habitats throughout the range, the status of the subspecies would likely be much worse. Therefore, while we are extending the take prohibition for the streaked horned lark, we are excepting from this prohibition take that is incidental to the management of hazardous wildlife at airports, accidental airstrikes by aircraft, routine agricultural activities, the routine removal or other management of noxious weeds, and habitat restoration activities for streaked horned lark. As discussed above, we believe that that these exceptions will provide for the conservation of the species by supporting the maintenance and creation of habitat features that the streaked horned lark relies upon.

The Service is fully aware of, and sensitive to, the potential for some individual birds to be harmed in the application of these land management practices. We encourage land managers who, in the course of carrying out these excepted activities, observe streaked horned larks nesting in the area of activity to temporarily suspend operations in those areas and to contact the local Service field office or their local State fish and wildlife agency for technical assistance. Possible measures that land managers and the agencies could then consider include temporarily avoiding these areas until fledging has occurred, hazing birds away from active farm or airport safety areas to avoid direct mortality, and seeking direct participation in Federal or state conservation reserve-type incentive programs to manage newly identified areas for longer term lark conservation.

When considering all reasonable measures and likely outcomes, we believe this approach will result in the best net conservation benefit for the subspecies. As discussed above, the vast majority of these lands are privately owned. Supporting landowners' ongoing activities that create or maintain lark habitat, while also encouraging the voluntary conservation of the species on these private lands, is likely to result in more net positive conservation outcomes at the population level when compared to an approach that does not include this section 4(d) take exception. An approach that relies primarily on section 9 take prohibitions and enforcement, for the reasons cited earlier and documented in the scientific literature regarding conservation of species on private lands, would likely result in the following: The loss of suitable habitat on agricultural lands; an increase in landowners actively managing their lands to not attract streaked horned larks; and, an overall reluctance of private landowners to report lark occurrence or support lark conservation. Therefore, we believe the 4(d) rule best promotes the recovery of the species when compared to all alternative approaches. These approaches are becoming increasingly necessary when attempting to conserve species on private lands (Epanchin-Neill and Boyd 2020, p. 415).

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 will help preserve the species' remaining populations, slow their rate of decline, and decrease synergistic, negative effects from other threats.

We may issue permits to carry out otherwise prohibited activities involving threatened wildlife under certain circumstances. Regulations governing permits for threatened species are codified at 50 CFR 17.32. With regard to threatened wildlife, we may issue a permit 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. There are also certain statutory exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

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

As a subspecies of the horned lark (*Eremophila alpestris*), the streaked horned lark is protected by the Migratory Bird Treaty Act (MBTA; 16 U.S.C. 703 *et seq.*). The MBTA makes it unlawful, at any time, by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, or any part, nest, or egg of any such bird included in the terms of four specific conventions between the United States and certain foreign countries (16 U.S.C. 703). See 50 CFR 10.13 for the list of migratory birds protected by the MBTA.

Like the previous 4(d) rule for the subspecies, this revised 4(d) rule adopts existing requirements under the MBTA as appropriate regulatory provisions for the streaked horned lark. Accordingly, under the revised 4(d) rule, take is not prohibited if the activity is authorized or exempted under the MBTA, such as activities under a migratory bird rehabilitation permit necessary to aid a sick, injured, or orphaned bird. Thus, if a permit is issued for activities resulting in take of streaked horned larks under the MBTA, it will not be necessary to have an additional permit under the Act.

Nothing in this revised 4(d) rule will change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of the streaked horned lark. However, interagency cooperation may be further streamlined through planned programmatic consultations for the species between Federal agencies and the Service, where appropriate.

III. Required Determinations

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

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*) in connection with regulations adopted pursuant to section 4(a) of the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt,* 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

Government-to-Government Relationship With Tribes

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

References Cited

A complete list of references cited in this rule is available on the internet at *http://www.regulations.gov* and upon request from the Oregon Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this rule are the staff members of the Service's Species Assessment Team and the Oregon Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

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

■ 2. Amend § 17.41 by revising paragraph (a) to read as follows:

§ 17.41 Special rules—birds.

(a) Streaked horned lark (*Eremophila alpestris strigata*).

(1) *Prohibitions.* The following prohibitions that apply to endangered wildlife also apply to streaked horned

lark. Except as provided under paragraph (a)(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 species:

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

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

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

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

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

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

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

(ii) Take, as set forth at § 17.21(c)(2) through (4) for endangered wildlife, and (c)(6) and (7) for endangered migratory birds.

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

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

(A) The management of hazardous wildlife at airport facilities by airport staff or employees contracted by the airport to perform hazardous wildlife management activities. Hazardous wildlife is defined by the Federal Aviation Administration as species of wildlife, including feral animals and domesticated animals not under control, that are associated with aircraft strike problems, are capable of causing structural damage to airport facilities, or act as attractants to other wildlife that pose a strike hazard. Routine management activities include, but are not limited to, the following:

(*1*) Hazing of hazardous wildlife;

(*2*) Habitat modification and management of sources of forage, water, and shelter to reduce the attractiveness of the area around the airport for hazardous wildlife. This exception for habitat modification and management includes control and management of vegetation (grass, weeds, shrubs, and trees) through mowing, discing, herbicide application, or burning; and

(*3*) Routine management, repair, and maintenance of roads and runways (does not include upgrades or construction of new roads or runways).

(B) Accidental aircraft strikes at airports on non-Federal lands.

(C) Agricultural (farming) practices implemented on farms in accordance with State laws on non-Federal lands in Washington and Oregon.

(*1*) For the purposes of this rule, farm means any facility, including land, buildings, watercourses and appurtenances, used in the commercial production of crops, nursery stock, livestock, poultry, livestock products, poultry products, vermiculture products, or the propagation and raising of nursery stock.

(*2*) For the purposes of this rule, an agricultural (farming) practice means a mode of operation on a farm that is or may be used on a farm of a similar nature; is a generally accepted, reasonable, and prudent method for the operation of the farm to obtain a profit in money; is or may become a generally accepted, reasonable, and prudent method in conjunction with farm use; complies with applicable State laws; and is done in a reasonable and prudent manner. Common agricultural (farming) practices include, but are not limited to, the following activities:

(*i*) Planting, harvesting, rotation, mowing, tilling, discing, burning, and herbicide application to crops;

(*ii*) Normal transportation activities, and repair and maintenance of unimproved farm roads (this exception does not include improvement or construction of new roads) and graveled margins of rural roads;

(*iii*) Livestock grazing according to normally acceptable and established levels;

(*iv*) Hazing of geese or predators; and

(*v*) Maintenance of irrigation and drainage systems.

(D) Removal or other management of noxious weeds. Routine removal or other management of noxious weeds are limited to the following, and must be conducted in such a way that impacts to non-target plants are avoided to the maximum extent practicable:

(*1*) Mowing;

(*2*) Herbicide and fungicide application;

(*3*) Fumigation; and

(*4*) Burning.

(E) Habitat restoration actions. Habitat restoration and enhancement activities for the conservation of streaked horned lark may include activities consistent with formal approved conservation plans or strategies, such as Federal, Tribal, or State plans that include streaked horned lark conservation prescriptions or compliance, which the Service has determined (on a case-by-case basis) would be consistent with this rule.

(v) Possess and engage in other acts with unlawfully taken wildlife, as set forth at § 17.21(d)(2) through (d)(4).

* * * * *

Martha Williams,

Director, U.S. Fish and Wildlife Service.

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 300

[Docket No. 210603–0121;RTID 0648–XB905]

International Fisheries; Western and Central Pacific Fisheries for Highly Migratory Species; Extension of Emergency Decisions of the Western and Central Pacific Fisheries Commission

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Temporary specifications.

SUMMARY: NMFS is extending the effective date of temporary specifications that implement two short-notice decisions of the Commission on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Commission or WCPFC). NMFS issued temporary specifications on June 11, 2021, to implement short-notice WCPFC decisions regarding purse seine observer coverage, purse seine transshipments at sea, and transshipment observer coverage. NMFS is extending the effective date of the temporary specifications on purse seine observer coverage and transshipment observer coverage until June 10, 2022. NMFS is also revoking the temporary specification on purse seine transshipment at sea. NMFS is undertaking this action under the authority of the Western and Central Pacific Fisheries Convention Implementation Act (WCPFC Implementation Act) to satisfy the obligations of the United States as a Contracting Party to the Convention on the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean (Convention).

DATES: The temporary specifications on purse seine observer coverage and transshipment observer coverage are in