

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R4-ES-2019-0018;
FXES1113090FEDR-223-FF09E22000]

RIN 1018-BE09

Endangered and Threatened Wildlife and Plants; Reclassification of the Red-Cockaded Woodpecker From Endangered to Threatened With a Section 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service or USFWS), are reclassifying the red-cockaded woodpecker (*Dryobates* (= *Picoides*) *borealis*) from endangered to threatened (*i.e.*, downlisting it) under the Endangered Species Act of 1973, as amended (Act). This action is based on our evaluation of the best available scientific and commercial information, which indicates that the species' status has improved such that it is not currently in danger of extinction throughout all or a significant portion of its range, but that it is still likely to become so in the foreseeable future. We also finalize protective regulations under the authority of section 4(d) of the Act that are necessary and advisable to provide for the conservation of the red-cockaded woodpecker. In addition, we correct the List of Endangered and Threatened Wildlife to reflect that *Picoides* is not the current scientifically accepted generic name for this species. **DATES:** This rule is effective November 25, 2024.

ADDRESSES: This final rule is available on the internet at <https://www.regulations.gov>. Comments and materials we received are available for public inspection at <https://www.regulations.gov> at Docket No. FWS-R4-ES-2019-0018.

Availability of supporting materials: Supporting materials we used in preparing this rule, such as the 5-year review, the recovery plan, and the species status assessment report, are available on the Service's website at <https://fws.gov/species/red-cockaded-woodpecker-dryobates-borealis>, at <https://www.regulations.gov> at Docket No. FWS-R4-ES-2019-0018, or both.

FOR FURTHER INFORMATION CONTACT: Nicole Rankin, Manager Division of Conservation and Classification, U.S. Fish and Wildlife Service, Southeast Regional Office, 1875 Century

Boulevard, Atlanta, GA 30345; telephone 404-679-7089. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species warrants reclassification from endangered to threatened if it no longer meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range). The red-cockaded woodpecker is listed as endangered, and we are reclassifying (downlisting) it as threatened. We have determined the red-cockaded woodpecker does not meet the Act's definition of an endangered species, but it does meet the definition of a threatened species (likely to become an endangered species throughout all or a significant portion of its range within the foreseeable future). Reclassifying a species as a threatened species can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 *et seq.*). Finally, we are changing the scientific name of the red-cockaded woodpecker on the List of Endangered and Threatened Wildlife from *Picoides borealis* to *Dryobates borealis*, and such revisions to the Code of Federal Regulations can be accomplished only by issuing a rule.

What this document does. This final rule reclassifies the red-cockaded woodpecker from endangered to threatened (*i.e.*, "downlists" the species) on the List of Endangered and Threatened Wildlife and issues protective regulations under the authority of section 4(d) of the Act that are necessary and advisable to provide for the conservation of this species.

The basis for our action. Under the Act, we may determine that a species is an endangered species or a threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We may reclassify a species if

the best available commercial and scientific data indicate the species no longer meets the applicable definition in the Act. Based on the status review, the current threats analysis, and evaluation of conservation measures discussed in this final rule, we conclude that the red-cockaded woodpecker no longer meets the Act's definition of an endangered species and should be reclassified to a threatened species. The species is no longer in danger of extinction throughout all or a significant portion of its range but is likely to become so within the foreseeable future.

We have determined that red-cockaded woodpecker is a threatened species due to the following threats:

- Lack of suitable roosting, nesting, and foraging habitat due to legacy effects from historical logging, incompatible forest management, and conversion of forests to urban and agricultural uses (Factor A).
- Fragmentation of habitat, with resulting effects on genetic variation, dispersal, and connectivity to support demographic populations (Factor A).
- Stochastic events such as hurricanes, ice storms, and wildfires, exacerbated by the environmental effects of climate change (Factor E).
- Small populations (Factor E).

Acronyms and Initialisms Used in This Document

We provide the following list for the convenience of the reader:

ANHC—Arkansas Natural Heritage Commission
 BMPs—best management practices
 CCPs—comprehensive conservation plans
 DoD—Department of Defense
 EPA—Environmental Protection Agency
 ESMCs—endangered species management components
 FFWCC—Florida Fish and Wildlife Conservation Commission
 HCP—habitat conservation plan
 INRMPs—integrated natural resources management plans
 LDWF—Louisiana Department of Wildlife and Fisheries
 LRMPs—land and resource management plans
 NCWRC—North Carolina Wildlife Resources Commission
 NEPA—National Environmental Policy Act
 NRCS—Natural Resources Conservation Service
 NWR—National Wildlife Refuge
 PBG—potential breeding group
 RFA—Regulatory Flexibility Act
 SSA—species status assessment
 TPWD—Texas Parks and Wildlife Department
 USACE—U.S. Army Corps of Engineers
 USFS—U.S. Forest Service
 WMA—wildlife management area

Previous Federal Actions

Please refer to the proposed reclassification rule (85 FR 63474) for the red-cockaded woodpecker published on October 8, 2020, and the subsequent revised proposed 4(d) rule (87 FR 6118) published on February 3, 2022, for detailed descriptions of previous Federal actions concerning this species.

Peer Review

A species status assessment (SSA) team prepared an SSA report for the red-cockaded woodpecker. The SSA team was composed of Service biologists, which consulted with other species experts during the process. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we solicited independent scientific review of the information contained in the red-cockaded woodpecker SSA report. As discussed in the proposed rule, we sent the SSA report to six independent peer reviewers and received three responses. The peer reviews can be found at <https://www.regulations.gov> and <https://fws.gov/species/red-cockaded-woodpecker-dryobates-borealis>. In preparing the proposed rule, we incorporated the results of these reviews, as appropriate, into the SSA report, which was the foundation for the proposed rule and this final rule. A summary of the peer review comments and our responses can be found in the Summary of Comments and Recommendations below.

Summary of Changes From the Proposed Rule

In preparing this final rule, we reviewed and fully considered comments from the public on the proposed rule. In addition to minor editorial changes, we updated information in this final rule and the SSA report (USFWS 2022, entire) based on comments and additional information provided, as follows.

We incorporated information examining the effects of climate on breeding phenology and productivity in 19 populations across the range of the woodpecker (DeMay and Walters 2019). While we have added this information

to our discussion of climate change in this rule, we find that this information does not change our conclusion about the species' current risk of extinction.

We revised our discussion in the *Status Throughout a Significant Portion of Its Range* section to clarify the statutory difference between an endangered species and a threatened species in relation to the Service's significant portion of a species' range analysis. We added a discussion addressing catastrophic risks from natural events and how they are being effectively managed (e.g., through prompt post-storm response) and that small populations are not currently in danger of extinction due to ongoing active management (e.g., translocation, habitat management, artificial cavity installation) such that the species is not currently in danger of extinction in any portion of its range.

In the SSA report, we added information regarding partial brood loss in relation to habitat quality in eastern Texas (McCormick et al. 2004, entire, USFWS 2022, p. 25) and clarified "encroachment partnership" (USFWS 2022, p. 76). Additionally, we corrected an error in the SSA report stating that red-cockaded woodpeckers currently inhabit 12 ecoregions (USFWS 2022, p. 92) by revising it to 13 ecoregions, and adding the Mississippi River Alluvial Plain to the list of ecoregions.

Edits were made to tables 3, 5–9, 19–20, 24, 30, and 34 in the SSA report (USFWS 2022, pp. 108–109, 112–116, 141–142, 147, 153, and 158). The changes addressed the slight underreporting of population sizes and rate of growth for Babcock Webb Wildlife Management Area (WMA), Corbett WMA, McCurtain County Wilderness Area, and Lewis Ocean Bay Heritage Preserve properties. The current population size for Yawkey Wildlife Center was also updated from 14 to 15 individuals. Additionally, figure 24 was updated to address an error in how the high-resiliency populations were represented and to update the population changes for the properties outlined above (USFWS 2022, p. 110). Finally, figure 26 was updated to include a tropical storm and hurricane centerline track map for 2012–2022 (USFWS 2022, p. 121). Collectively, these minor updates to the SSA report do not change our overall understanding of the species' viability.

Finally, we made the following changes to the discussion and/or regulatory text of the 4(d) rule:

- We made editorial corrections to the wording of certain exceptions in the discussion and regulatory text of the 4(d) rule to increase clarity and to better

align the language with existing regulations and law; these editorial corrections do not alter the original meaning of these prohibitions and exceptions.

- Under the *Exceptions* discussion, we removed several paragraphs that described the Safe Harbor program, now known as the Conservation Benefit program, in greater detail. We made this change to reduce confusion by readers and redundancy in the text. One of the deleted paragraphs included a typographical error; the paragraph stated that there are currently 295 active clusters on lands that are enrolled in Safe Harbor Agreements (SHAs). Currently, across the species' range there are 273 red-cockaded woodpecker active clusters in SHAs, which may be converted into Conservation Benefit Agreements (CBAs) at some point, if needed. This issue is described in further detail in our response to *Comment 85*.

Summary of Comments and Recommendations

In the proposed rule published on October 8, 2020 (85 FR 63474), we requested that all interested parties submit written comments on the proposal by December 7, 2020. 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 USA Today. We received a request for a public hearing. We held a public hearing on December 1, 2020, that was announced in the **Federal Register** on November 16, 2020 (85 FR 73012). We published a revised proposed 4(d) rule on February 3, 2022 (87 FR 6118), and requested that all interested parties submit written comments on the proposal by March 7, 2022. All substantive information received during the comment periods has either been incorporated directly into this final determination or is addressed below.

Peer Reviewer Comments

As discussed in Peer Review above, we received comments from three peer reviewers on the draft SSA report. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding the contents of the SSA report. For example, peer reviewers provided additional nuanced information on species biology, including but not limited to, forest composition of specific National Forests, recommendations for cavities, and background on

kleptoparasitism; we updated the SSA report accordingly with this information. The peer reviewers also provided new references, or corrected existing references we cited in our SSA report, which we revised or in which we included relevant references, as appropriate. We also received a few comments from peer reviewers on recovery or listing policy that were outside the intended scope of the peer review of the SSA. The peer reviewers generally concurred with our methods and conclusions and provided support for thorough and descriptive narratives of assessed issues, additional information, clarifications, and suggestions to improve the final SSA report and rule. Peer reviewer comments are addressed in the following summary and were incorporated into the version 1.4 of the SSA report and this final rule as appropriate.

Comment 1: One peer reviewer expressed concern that timber harvesting was being promoted in the SSA report as a necessary strategy for maintaining quality red-cockaded woodpecker habitat when fire is the essential management application.

Our Response: In the SSA report, timber harvesting is mentioned as a potential management tool when hazardous large and small fuels have accumulated in red-cockaded woodpecker habitat, resulting in a significant impediment to a continuing program of prescribed fire. Timber harvesting is one option to reduce hazardous conditions through salvage of down or severely damaged timber and mulching of other debris and small-diameter excessive hardwoods. Both management options are included in the SSA report as timber harvesting is often used as a tool for restoration management for red-cockaded woodpecker habitat while fire is more frequently used for maintenance of habitat.

Comment 2: One peer reviewer expressed concern that the benefits of flying squirrel removal had been understated given the potential impacts of cavity kleptoparasitism (a cavity created and used by a red-cockaded woodpecker that is usurped by another species) by flying squirrels (Laves and Loeb, 1999; Mitchell et al., 1999). They also referenced that snakes may have a positive indirect effect on red-cockaded woodpeckers by consuming cavity kleptoparasites, in addition to their direct negative impacts on the species (Kappes and Sieving, 2011).

Our Response: Occasional loss of nests or cavities to kleptoparasitism is unlikely to have population-level

impacts in red-cockaded woodpecker populations that are healthy and of medium to large size. However, critically small populations or isolated groups may not be able to tolerate high rates of kleptoparasitism. While we agree that there can be value to removing kleptoparasites in small populations (Laves and Loeb, 1999), there have yet to be studies indicating population-level effect of flying squirrels on red-cockaded woodpeckers (Mitchell et al. 1999) to suggest that flying squirrel removal should be implemented for larger populations.

Federal and State Agency Comments

We also received comments from Federal and State agencies on the proposed reclassification and 4(d) rule during the comment period. We summarize and respond to these below. When appropriate, we combined similar comments received from public commenters into these comment summaries.

Delisting

Comment 3: In response to the original proposed downlisting rule, three State agencies (the Texas Parks and Wildlife Department (TPWD), Arkansas Natural Heritage Commission, and the North Carolina Wildlife Resources Commission (NCWRC)) and several public commenters expressed their belief that delisting the species would be premature because the active management that the species requires may not continue if the species were to lose all Federal protection.

Our Response: We do not find that the species currently warrants delisting. On the contrary, we find that the red-cockaded woodpecker is likely to become in danger of extinction within the foreseeable future; in other words, we find that the species meets the definition of a threatened species. As a conservation-reliant species, securing management commitments for the foreseeable future would ensure that red-cockaded woodpecker populations grow or are maintained. However, given that the red-cockaded woodpecker will still face a variety of stressors in the future (e.g., hurricanes, small population sizes) and due to the lack of certainty that effective management will continue in the foreseeable future, we find that this species meets the definition of a threatened species. We address the States' concerns about the decline in active management if the species' status changes in *Comment 4*, below.

Downlisting

Comment 4: The Louisiana Department of Wildlife and Fisheries (LDWF), NCWRC, and public commenters expressed concerns that a shift in status would divert critical funds away from the recovery and management efforts of the red-cockaded woodpecker.

Our Response: We acknowledge that the red-cockaded woodpecker is a conservation-reliant species and responds well to active management. For State agencies, a change from endangered to threatened does not change the eligibility of funding under section 6 of the Act.

Comment 5: LDWF and multiple public commenters expressed concern that downlisting the species will undermine goals outlined in management plans if agencies decide to alter or reduce voluntary protections. Public commenters also worried that downlisting could introduce additional stressors on the species, due to increased pressure from development, logging, and/or oil, mineral, and gas exploration on public lands.

Our Response: While we do not have commitments that all current management will continue, there is no information indicating that a downlisting would alter current management plans. It is important to note that downlisting the species from an endangered to a threatened status does not eliminate or alter the same need to achieve its recovery, and agencies are already managing red-cockaded woodpeckers in an effort to reach this goal. As mentioned, the management protections have always been voluntary, and the agencies could have altered or reduced them at any time, yet they have chosen not to due to their commitment to achieving recovery.

Regarding the risk of downlisting introducing additional stressors to the species on public lands, section 7(a)(2) obligations are the same regardless of whether a species is listed as an endangered species or a threatened species, *i.e.*, every Federal agency must ensure that their actions are not likely to result in jeopardizing the continued existence of the species.

Comment 6: The NCWRC claimed that the proposed rule states that 65 percent of populations have to reach moderate to high resiliency to justify downlisting of the red-cockaded woodpecker; however, the Service also stated in the proposed rule that only 13 percent of all existing clusters have moderate to very high resiliency. Therefore, the NCWRC

believes red-cockaded woodpeckers do not meet this standard for downlisting.

Our Response: We recognize that we made an error when we stated that 13 percent of all current red-cockaded woodpecker clusters are within moderate, high, or very highly resilient populations (85 FR 63474, October 8, 2020); this statement was incorrect, and we have rectified the error in this final rule. In fact, 13 percent of the 124 demographic populations analyzed in the SSA have moderate to very high resilience; this amounts to 16 populations. However, 65 percent of all known clusters (5,062 out of 7,794) occur in these 16 populations. Thus, 65 percent (not 13 percent) of all known red-cockaded woodpecker clusters are within moderate, high, or very highly resilient populations.

The proposed rule (85 FR 63474, October 8, 2020) does not specify that 65 percent of the populations must reach moderate to high resiliency to justify downlisting of the red-cockaded woodpecker. The proposed rule referenced 65 percent in the following context: Of the 98 populations for which trend data are available, only 13 percent are declining; in addition, over 65 percent of red-cockaded woodpecker clusters are currently in moderate to very high resiliency populations. Regardless, the species currently has sufficient levels of resiliency, redundancy, and representation, in large part due to effective habitat management, such that the species is no longer in danger of extinction (see Determination of Red-Cockaded Woodpecker Status below).

Comment 7: The LDWF and one public commenter requested clarification on how the guidelines and provisions of the 2003 Red-cockaded Woodpecker Recovery Plan (hereafter the “2003 recovery plan”) are applicable under the rule, noting that the revised 4(d) rule describes recovery plans as being strategies to guide conservation and not regulatory documents, but also states that the provisions of the 2003 recovery plan may still be applicable under the 4(d) rule.

Our Response: The 4(d) rule does not state that the provisions of the recovery plan will still be applicable. Recovery plans are not regulatory documents, but rather they provide a strategy to guide the conservation and recovery of the identified species. The 2003 recovery plan outlined the actions that, to the best of current understanding at the time, would aid in the recovery of the red-cockaded woodpecker. The 2003 recovery plan will still guide continued management for the species, and

provisions of the 4(d) rule are crafted to encourage this type of management.

Comment 8: LDWF requested a list of management plans for all red-cockaded woodpecker recovery units, including the dates of recent revisions and a timeline for next revision. They requested that the information be incorporated into the downlisting documents (we believe LDWF is referring to our SSA report and final rule) to provide insight into timing and frequency of the refinement of red-cockaded woodpecker population goals given that the proposed 4(d) rule relies on voluntary management plans for Federal agencies.

Our Response: While management plans are outside of the scope of the 4(d) rule, we encourage the LDWF to request management plan information from properties they are interested in. As noted in the Background of this rule, below, Federal agencies’ section 7 consultation obligations are not and cannot be removed by rules under section 4(d) of the Act. Federal agencies will still consult under section 7 of the Act if their actions may affect red-cockaded woodpeckers. As such, the management plans will still be subject to the consultation requirements of section 7 of the Act.

Policy and Process

Comment 9: The Arkansas Natural Heritage Commission (ANHC) and a public commenter questioned whether the peer review process was adequate. ANHC recommended that the SSA report be submitted to peer review journals, and the public commenter asked why we had sought peer review from six individuals but received review from only three.

Our Response: The peer review process for the SSA report complied with our July 1, 1994, peer review policy (59 FR 34270), the Office of Management and Budget’s December 16, 2004, Final Information Quality Bulletin for Peer Review, and our August 22, 2016, memorandum clarifying the peer review process.

The 2016 memorandum clarifying the peer review process requires that the Service solicit review from three or more objective and independent peer reviewers. In the case of the red-cockaded woodpecker SSA report, we sought review from six qualified peer reviewers. While our policies do not require us to receive three responses from peer reviewers (just to seek review from at least three peer reviewers), we received comments back from three reviewers, which we made available to the public when we published our proposed rule. A summary of the

comments received, and how they were addressed, can be found in the *Peer Reviewer Comments* section above. We are not aware of why three peer reviewers chose not to respond.

Recovery

Comment 10: Several State agencies (ANHC, LDWF, and the NCWRC) and public commenters expressed concerns about inconsistencies between the 2003 recovery plan and the SSA report; they believed that the 2003 recovery plan, rather than the SSA report, should be used as guidance for evaluating whether a change in species status is warranted.

Our Response: Recovery plans provide roadmaps to species recovery but are not required to achieve recovery of a species or to evaluate it for delisting or downlisting. A determination of whether a valid, extant species should be delisted or downlisted is made solely on the question of whether it meets the Act’s definitions of an “endangered species” or a “threatened species.” The SSA framework is an analytical approach developed by the Service to deliver foundational science for informing decisions under the Act (Smith et al. 2018, entire). The SSA characterizes species’ viability (the ability of a species to sustain populations in the wild over time) based on the best scientific understanding of current and future abundance and distribution within the species’ ecological settings using the conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 308–311). The SSA report provides decisionmakers with a scientifically rigorous characterization of a species’ status and the likelihood that the species will sustain populations over time, along with key uncertainties in that characterization.

The 2003 recovery plan provides management guidelines fundamental to the conservation and recovery of the red-cockaded woodpecker. The best available information in the SSA report does not invalidate the habitat management guidelines in the recovery plan. We continue to strongly encourage the application of these guidelines to the management of woodpecker populations on public and private lands.

Comment 11: ANHC and several public commenters suggested that the Service should have updated the 2003 recovery plan before considering a downlisting and noted specific guidance they believe should be updated.

Our Response: The SSA report for red-cockaded woodpeckers represents a compilation of the best available

scientific and commercial information on the current and future viability of the species. We used this analysis to inform our determination of the species' status. We did not need to consider the recommended management strategies outlined in the 2003 recovery plan to inform our decision regarding the species' status under the Act.

Updating recovery plans is a discretionary action; the Service may choose to update a species' recovery plan at any point, but it is not required to incorporate new science into recovery plans when the science becomes available, as stated in *Center for Biological Diversity v. Bernhardt*, 509 F. Supp. 3d 1256 (D. Montana 2020).

Comment 12: The LDWF and NCWRC expressed concern that some populations of red-cockaded woodpeckers have either only partially met or have not met recovery criteria for downlisting. Additionally, several commenters thought it was too soon to downlist the species and provided ideas for conditions that should be met, such as waiting for the population to become more stable, before downlisting would be appropriate.

Our Response: While recovery plans provide management guidelines fundamental to the conservation and recovery of species, they are guidance and not regulatory documents. There are many paths to accomplishing recovery of a species, and recovery may be achieved without all recovery criteria being fully met. The overriding considerations in determining listing status are the five factors listed in section 4(a)(1) of the Act.

Since the recovery plan was last revised in 2003, the number of red-cockaded woodpecker active clusters has increased from 5,627 to over 7,800 (USFWS 2022, entire). The population size objectives to meet applicable downlisting criteria have been met for 15 of 20 designated populations. All of these designated populations show stable or increasing long-term population growth rates ($\lambda \geq 1$).

Ecology and Populations

Comment 13: TPWD shared that in Texas, there was a 70 percent decline in red-cockaded woodpeckers on State lands between 1991 and 2019 and a 17 percent decline on private lands in the State during the same period. Additionally, Texas suggested that those populations that have increased in size occur on U.S. Forest Service (USFS) lands, which house 90.5 percent of the woodpeckers in the State; they suggested this indicates that, in Texas, the species is highly dependent on the

continued application of effective management practices.

The USFS also shared that their implementation of land and resource management plans (LRMPs) that were specifically designed to recover the red-cockaded woodpecker has increased the number of active red-cockaded woodpecker territories on National Forests from 2,000 to almost 3,700 over the past two decades.

Our Response: While we appreciate the trend information that TPWD and the USFS provided, without site-level detail, we were not able to compare this information to the SSA. However, we receive property reports from Federal, State, and Safe Harbor program lands with red-cockaded woodpeckers on an annual basis; these property reports informed the demographic information in our SSA, so we are confident that the SSA captures the trend information these commenters provided. Moreover, the general trends that TPWD and the USFS describe align with the findings of our SSA.

We also agree that the species remains highly dependent on active management. The currently stable or increasing growth rates, even in small populations, demonstrate the effectiveness of the current active management regime. New restoration techniques and changes in silvicultural practices have led to a substantial increase in the number and distribution of populations. Sixty-five percent of all red-cockaded woodpecker clusters are within moderate, high, or very high resiliency populations, and populations are spread across multiple ecoregions, providing for redundancy and representation. We fully expect this conservation management to continue into the foreseeable future, and we have structured our final 4(d) rule to facilitate the continuation of such management.

Population Stressor

Comment 14: The LDWF and members of the public raised concern about the risk of inbreeding depression in the majority of red-cockaded woodpecker populations (*i.e.*, those with fewer than 100 clusters), due to their small size and isolation. They highlighted the importance of translocations given that red-cockaded woodpeckers do not typically disperse between populations, given they are geographically isolated from each other. As a result, commenters felt that it is premature to reduce protections for the species.

Our Response: We agree that small populations having high degrees of isolation and habitat fragmentation are the most susceptible to risk from

inbreeding depression and negative genetic impacts and acknowledge the importance of habitat management and translocations for maintaining healthy populations. However, the species no longer meets the definition of an endangered species and instead meets the definition of a threatened species.

Because the species is still protected under the Act and because reclassification as a threatened species does not increase any existing permitting requirements that pertain to translocation, we expect current translocation efforts to continue unaffected. In fact, there are fewer permitting requirements for recovery efforts, such as translocation, for threatened species (*e.g.*, 50 CFR 17.31(b) and 50 CFR 17.32) than those for endangered species (*e.g.*, 50 CFR 17.21(c)(5) and 50 CFR 17.22). Additionally, most properties on public lands harboring red-cockaded woodpeckers have implemented management programs to sustain or increase habitat availability and connectivity and to meet population size objectives in the 2003 recovery plan or other management plans. Accordingly, managers are reducing fragmentation by restoring and increasing habitat and through the strategic placement of recruitment clusters to reduce gaps within and between populations.

Climate Change and Catastrophic Events

Comment 15: Multiple State agencies (Florida Fish and Wildlife Conservation Commission (FFWCC), ANHC, LDWF, NCWRC) and public commenters discussed how hurricanes are already intensifying and becoming more frequent along the Atlantic coast due to climate change and that this situation will only worsen in the future, resulting in detrimental effects on the recovery of the species, especially given that the majority of populations occur in coastal plain ecoregions. FFWCC noted that, despite active management, populations have not been able to reach their goal on Picayune Strand State Forest because of the impacts of such natural disasters.

Our Response: We agree that red-cockaded woodpecker populations and their habitats are periodically subjected to significant disturbances (*e.g.*, hurricanes) that increase mortality and destroy cavity trees, which can lead to temporary population declines. We acknowledge that every population in the coastal plain ecoregions has been affected by one or more hurricanes over the past two decades. As such, in the proposed rule and in this final rule, we identified hurricanes, and other naturally occurring disturbances that

destroy pines used for cavities and foraging, as one of the stressors affecting the species. However, populations can withstand and persist after hurricanes if biologists and land managers implement prompt, effective post-storm recovery actions, such as installing artificial cavities, reducing hazardous fuels, and restoring forests to suitable habitat. This emergency response and routine management are well-understood and are currently being implemented across the range of the woodpecker. Additionally, much of the red-cockaded woodpecker's currently occupied habitat is now protected under various management plans. As such, despite the regular occurrence of hurricanes within red-cockaded woodpecker habitat, 87 percent of populations evaluated in the SSA demonstrate stable to increasing growth rates, illustrating the effectiveness of currently ongoing active management in preventing species-level impacts from hurricanes (USFWS 2022, p. 112).

We recognize the impacts natural disasters have had on the Picayune Strand State Forest. Annual property report data from 2019–2021 show that the active clusters in Picayune Strand State Forest have maintained 14 active clusters. This number is due in large part to the management actions conducted by the land managers. Further details about impacts of hurricanes on the species can be found in the Habitat Loss and Degradation section, below.

Comment 16: The LDWF, NCWRC, and public commenters noted that it could take years to gather reliable population counts to fully understand impacts from a given natural disaster. They provided preliminary estimates of the impacts from Hurricanes Laura and Delta on Fort Polk, the Evangeline Unit of the Kisatchie National Forest, and the Alexander State Forest WMA, suggesting over 1,221 total cavity trees were lost.

Our Response: As these commenters acknowledge, we do not yet have monitoring data to illuminate the impacts of the most recent hurricane seasons on red-cockaded woodpecker populations. While we do not yet have data on the species' response to the most recent hurricane events, we know from responses to previous storms that populations can withstand and persist after hurricanes if biologists and land managers implement prompt, effective post-storm recovery actions, such as installing artificial cavities, reducing hazardous fuels, and restoring forests to suitable habitat. Such actions have been occurring after storm events for managed populations, such as the quick

response after Hurricane Michael in October 2018.

We recognize the impacts natural disasters have had on Fort Polk, the Evangeline Unit of Kisatchie National Forest, and the Alexander State Forest WMA. Annual property report data from 2019–2021 shows that Fort Polk has maintained between 46 and 49 active clusters; the Evangeline Unit of Kisatchie National Forest has increased the active clusters from 135 to 141; and the Alexander State Forest WMA has maintained 13 active clusters. These results are due in large part to the management actions conducted by the land managers. Both this emergency response and routine management are well-understood and are currently being implemented across the range of the woodpecker. In addition, much of the red-cockaded woodpecker's currently occupied habitat is now protected under various management plans. Please reference our response to *Comment 15* for more information on these findings.

Comment 17: The FFWCC, NCWRC, and public commenters called for updating the methods in the SSA analysis to better account for the effects of climate change and hurricanes on the species' future resiliency. One commenter provided a recent paper (DeMay and Walters 2019, entire) suggesting that our failure to consider this paper in our analysis demonstrates an inadequate consideration of climate change's effects on long-term population health.

Our Response: As we acknowledge in the SSA report, due to uncertainty and limitations in modeling, the projections from the future simulation models should not be viewed as definitively known future conditions (USFWS 2022, p. 136). Therefore, the projected resiliency in our three future scenarios may overestimate or underestimate potential future resiliency, as all models include assumptions about the future trends of threats, and the species' response to them. As our ability to model the species' response reliably and quantitatively to climate change improves, we may be able to provide greater clarity on the potential effects of hurricanes on red-cockaded woodpecker populations in the future.

We are aware of preliminary investigations that show correlation between breeding phenology and productivity and changing climate variables like temperature and wetness (DeMay and Walters 2019, entire). Although our SSA did not incorporate the findings of DeMay and Walters (2019), since it was published after the SSA report neared completion, the SSA report noted that southwestern

populations have lower productivity (USFWS 2022, p. 26) and considered earlier research which similarly suggested that climate change has the potential to influence productivity through anticipated changes in temperature and precipitation patterns (USFWS 2022, p. 92; Schiegg et al. 2002, entire). Thus, while we have added a summary of the paper by DeMay and Walters (2019) to our discussion of climate change in this rule, we find that it does not provide any new information to change our conclusion about the species' current risk of extinction. Additional information on climate change can be found in the Habitat Loss and Degradation section below and in the SSA report (USFWS 2022, pp. 121–124).

Comment 18: The ANHC suggested that figure 26 in the SSA report, which depicted tropical storm and hurricane tracks between 2003 and 2011, is outdated, especially given changes that have occurred over the most recent 5 years. They also claimed that the timeframe depicted in this figure is too narrow to be relevant.

Our Response: We recognize that figure 26 does not present a full picture of hurricanes and tropical storms that have occurred throughout the range of red-cockaded woodpeckers in the past few decades and have added an updated figure 26 to the SSA report (USFWS 2022, p. 122). However, it is important to note that the intent of this figure is to illustrate the potential stressor that hurricanes pose to red-cockaded woodpeckers, and the vulnerability of many populations to storms. This figure is not intended to present an exact quantitative measure of the number and types of storms that have occurred within the species' range; as we discuss in the SSA report, due to uncertainty and limitations in modeling, the projections from the future simulation models should not be viewed as definitive outcome for future conditions (USFWS 2022, p. 135).

Habitat Stressor and Conservation

Comment 19: LDWF, FFWCC, and public commenters provided feedback emphasizing the species' reliance on extensive and continual habitat management; they reiterated that the species is not yet self-sustaining and needs this active management (e.g., thinning, prescribed fire, provision of artificial cavities, and translocation) to maintain stability. As a result, they requested that the species not be reclassified without the continued support for existing management strategies. Additionally, one commenter

requested guidance on how to better manage the species on public lands.

Our Response: We recognize that the red-cockaded woodpecker is a conservation-reliant species and responds well to active management (USFWS 2022, p. 159). As such, the species is not being delisted and will continue to be afforded protections under the Act. Furthermore, we have structured our final 4(d) rule to facilitate the continuation of conservation management.

While we do not have commitments that all current management will continue, there is no information indicating that a downlisting would alter current management plans. It is important to note that downlisting the species from an endangered to a threatened status does not eliminate or alter the need to achieve its recovery, and agencies are already managing red-cockaded woodpeckers in an effort to reach this goal. As mentioned, the management protections have always been voluntary, and the agencies could have altered or reduced them at any time yet have chosen not to, due to their commitments to achieving recovery.

A species' reliance on conservation management does not, by definition, suggest that it must always be listed as endangered. With effective assurances of such management, or with sufficient viability, species that require active management may not be at risk of imminent extinction. We have listed multiple conservation-reliant species as threatened (e.g., Hawaiian goose, Peirson's milk-vetch, humpback chub) and have even delisted conservation-reliant species, when appropriate commitments to necessary management are in place (e.g., interior least tern, running buffalo clover, Kirtland's warbler).

Guidance on how to better manage the red-cockaded woodpecker on public lands can be found in the 2003 recovery plan, integrated natural resources management plans (INRMPs), forest management plans, National Wildlife Refuge plans, National Park plans, and State plans, among other sources.

Comment 20: The LDWF suggested that the downlisting proposal did not adequately address the current condition of red-cockaded woodpecker habitat on the landscape by not properly acknowledging that much of the currently occupied and potential red-cockaded woodpecker habitat remains degraded and is in need of additional restoration (e.g., timber stand improvement via thinning or prescribed burning) before populations could achieve maximum resiliency.

Our Response: As we discuss in greater detail under Summary of Conservation Management below, with the potential exception of several ecologically unique populations in pond pine and related habitat on organic soils in northeast North Carolina, none of the current or estimated future populations are capable of naturally persisting without ongoing management. The proposed downlisting rule relies on the analysis provided in the SSA report, which describes the many influences on viability, including foraging habitat loss, land use/construction, conservation management, and habitat degradation.

Most properties on public lands harboring red-cockaded woodpeckers have implemented management programs to sustain or increase populations consistent with population size objectives in the 2003 recovery plan or other plans. The species is reliant on active habitat management, as discussed in the SSA report (USFWS 2022, p. 131).

General Stressors

Comment 21: The NCWRC expressed concern that we have not adequately considered the stressor of human population expansion and encroachment into red-cockaded woodpecker habitat. They informed us that the area of private lands between the Sandhills Game Lands and Fort Bragg (now Fort Liberty), known collectively as "the Gap," is in need of continued active management or this area will not be able to serve to connect isolated populations on public lands.

Our Response: The effects of human expansion and encroachment have been taken into consideration. The SSA report describes many influences on viability, including foraging habitat loss, land use/construction, conservation management, and habitat degradation (USFWS 2022, pp. 124–131). Current red-cockaded woodpecker populations are highly dependent on active conservation management with prescribed fire, beneficial and compatible silvicultural methods to regulate forest composition and structure, the provision of artificial cavities where natural cavities are insufficient, translocation to sustain and increase small vulnerable populations, and effective monitoring to identify limiting factors for management (USFWS 2022, pp. 121–131). We recognize that human impacts, including development, have the potential to negatively affect red-cockaded woodpeckers through loss or degradation of habitat; however, through the continued protections under the Act, we are ensuring that any

action with a Federal nexus will be required to make sure that the continued existence of the species will not be jeopardized.

Comment 22: The FFWCC commented that we had not identified invasive exotic vegetation as a threat. They suggested that invasive plants are a major issue in Florida, especially in south Florida, and provided the following examples: *Melaleuca (Melaleuca quinquenervia)* monocultures appearing after fire, higher intensity wildfires that kill native pines, and decreased effectiveness of prescribed burns when Brazilian pepper (*Schinus terebinthifolius*) is present. They also recommended that we include invasive vegetation as a stressor in the final rule, given these negative effects and the fact that eradication is difficult.

Our Response: We agree that the rule does not state specific examples of the invasive, nonnative, exotic vegetation types that exist within various open pine habitat types throughout the red-cockaded woodpecker's range. However, the SSA report specifically identifies invasive species as an example of disturbances that have the potential to impact red-cockaded woodpecker habitat and, therefore, red-cockaded woodpecker population resilience (USFWS 2022, p. 74).

Throughout the SSA report, we acknowledge the importance of prescribed fire and its overall impact on the structure, function, and process of the open pine/grass systems (USFWS 2022, pp. 37–39, 124–127). We do agree and report that most of the prescribed fire references are generally linked to the improvements in hardwood midstory control, fuel load reduction, and overall open pine habitat restoration. However, we also recognize in the "Current Condition" portion of this document (below) that there are impacts from disturbance that represent hazardous fire fuels like those reported by the FFWCC, and these structural habitat components are potential threats to red-cockaded woodpecker resiliency.

Comment 23: The FFWCC suggested that we still do not know the effects of an ongoing hydrologic restoration project (Picayune Strand Restoration Project) on the Picayune Strand State Forest essential support population, and that this project's increased water flows could reduce the intensity of future wildfires; the FFWCC recommended that we also consider adaptive management strategies for mitigating any impacts to the red-cockaded woodpecker from increased water and prolonged hydroperiods.

Our Response: We appreciate the suggestion to consider the Picayune hydrologic restoration project and its potential indirect effects on red-cockaded woodpeckers. We also appreciate the request to consider an adaptive management approach as a means to mitigate for any unanticipated negative impacts that would be correlated with the hydrologic project. Since this comment was submitted, modeling efforts conducted by the U.S. Army Corps of Engineers (USACE) have predicted impacts from the anticipated flooding. The model results indicate that the red-cockaded woodpecker habitat will shift below the standard of management as the project progresses. While it is still unclear how quickly slashpine will react to being inundated, modeling efforts suggest there is a potential projected loss of up to 3 clusters as the result of this project. We are actively working with the USACE through the section 7 process to minimize any impacts.

The Service has a long history of supporting the application of adaptive management. When applied, assumption-based applications have rigorous datasets that support informed decision making. We support adaptive management approaches that (1) conceptualize the problem, (2) plan actions and monitoring, (3) implement actions and monitoring, (4) analyze, use, and adapt from the data, and (5) capture and share the learning. Based on the FFWCC comments, we fully support Picayune State Forest implementing an assumption-based (adaptive management) scientific approach in order to provide early detection of potential adverse impacts to the forest's red-cockaded woodpecker population.

Conservation Efforts and Plans

Comment 24: The NCWRC suggested two conservation initiatives that would aid in the management of the species after downlisting: (1) a conservation fund to support future land management and (2) a post-downlisting monitoring plan.

Our Response: As we continue down the path towards full recovery of red-cockaded woodpeckers, we will use the best available science to inform and facilitate further conservation efforts that benefit the species. While we do not have a specific conservation fund for red-cockaded woodpecker land management, we encourage partners to apply to grant opportunities available (e.g., Partners for Fish and Wildlife, Natural Resources Conservation Service (NRCS), section 6 funding (for State lands).

We are not required to create a post-downlisting monitoring plan; a specific monitoring plan is required only after delisting a species due to recovery. However, annual population monitoring of red-cockaded woodpeckers will continue once they are downlisted. For example, anyone enrolled with an SHA will continue to provide annual reports that include the number of breeding groups and increases/decreases in active clusters. Additionally, annual property reports from section 10(a)(1)(A) permits will include data on active clusters, inactive clusters, potential breeding groups, and descriptions of habitat management completed. Furthermore, the 4(d) rule requires Federal agencies and Department of Defense (DoD) properties to provide a report on their red-cockaded woodpecker populations to the Service annually.

4(d) Rule Exceptions

Comment 25: LDWF expressed concern that the 4(d) rule does not define "short-term" with regard to incidental take of red-cockaded woodpecker during habitat conversion, if there are short-term impacts to the species. The State agency requested that the Service define "short-term" and provide greater clarification on the magnitude of impact that habitat conversions can have on a given red-cockaded woodpecker population.

Our Response: The terms "short-term" and "magnitude" have not been defined in the rule because they have different meanings depending on many variables. In terms of wildlife species and biological populations, both short- and long-term effects, and the magnitude of those effects, depend on many influential inherent and external biological, ecological, and environmental factors like lifespan, reproductive timing, and generational time; population size, growth rate, and connectivity; population dynamics and demographics; and availability of natural resources. In this rule, it is anticipated that the temporal scale of short-term adverse effects (e.g., reducing a stand below the managed stability standard) to red-cockaded woodpeckers are likely to occur within one or two generations (i.e., 4–8 years; USFWS 2022, p. 71) in a resident population. The magnitude of long-term beneficial impacts from those same short-term adverse management actions are expected to be high and to span over multiple generations (three generations or more) within a resident population.

The 4(d) rule provides take exceptions only when habitat management actions are intended to further conservation of the species. However, any incidental

adverse effects to red-cockaded woodpeckers from these beneficial management actions would likely be low in magnitude; therefore, in this context, incidental adverse effects are not likely to rise to the level of incidental take of red-cockaded woodpeckers.

4(d) Rule Artificial Cavity Provisions

Comment 26: The South Carolina Department of Natural Resources recommended the threshold minimum diameter of 15 inches for cavity inserts should be followed and that areas lacking trees of sufficient size for insert installation should use the Copeyon method for drilled cavities (Copeyon 1990, pp. 303–311). Separately, a public commenter noted that Picayune Strand and Big Cypress rely on South Florida slash pine, which are naturally much smaller in diameter even when mature. They indicated they would have overall 32 percent fewer artificial cavities on the landscape if they had to select trees ≥ 14 inches.

Our Response: We currently support the artificial cavity standards defined by Allen (1991, p. 19), Copeyon (1990, pp. 303–311), and USFWS (2022, pp. 85–87). For the cavity insert technique, the guidance requires selected trees have a minimum of 15 inches diameter at cavity height, while the guidance for the drilled cavity technique generally requires knowledge of the tree's sapwood (3.5 inches or less) to heartwood (7 inches or more) ratios at cavity height. We agree that the drilled cavity technique provides more opportunity to utilize smaller diameter trees at cavity height where sapwood/heartwood ratios are suitable, and we continue to advocate drilled cavities as the preferred method. However, many landscapes are challenged with limited access restrictions. The number of return visits for drilled cavity applications, which includes screening, checks for resin leakage, and routine maintenance checks is often limited for those on access restricted landscapes. While we support the standards outlined above, we acknowledge that there are unique habitats in the region, such as Picayune and Big Cypress, that require site-specific application of this technique. These standards have been previously approved by the Service and are fundamentally based on the heartwood/sapwood ratio rather than the diameter of the tree.

4(d) Rule Military Exception

Comment 27: The LDWF requested that the annual property reporting language for DoD and other Federal properties be changed from "could" to

“must” when detailing the requirements for the annual report in the following sentence: “could include the property’s recovery goal; the number of active, inactive, and recruitment clusters; information on habitat quality; and the number of artificial cavities the property installed.”

Our Response: The annual property report language is outside of the scope of the 4(d) rule and played no part in our determination. However, as the DoD adjusts and modifies their INRMPs to best coordinate with the findings in the 4(d) rule, we anticipate the content of the INRMP to reflect mutually agreed upon conservation, protection, and management of fish and wildlife resources as stated in the Sikes Act (16 U.S.C. 670 *et seq.*). Per the Sikes Act, this will include requirements to monitor and improve the effectiveness of the plan.

4(d) Rule Provisions for Prescribed Burning and Herbicides

Comment 28: The LDWF requested that best management practices (BMPs) be used when prescribed burns are conducted in red-cockaded woodpecker clusters and associated foraging habitat and in protection of red-cockaded woodpecker cavity trees. Additionally, they recommended the 4(d) rule further define the BMPs using existing language from the SSA report. Similarly, a public commenter requested additional information be provided to clarify what is compatible or incompatible practice for prescribed fires and herbicide applications.

Our Response: This 4(d) rule includes the requirement, in § 17.41(h)(4)(iii)(A)–(B), to follow applicable BMPs and applicable Federal and State laws for both prescribed burns and herbicide application. Privately and other non-federally owned lands may have different needs and should tailor those individual needs to their BMPs. We continue to recommend the use of the 2003 recovery plan for guidance on compatible or incompatible practices for prescribed fires and herbicide applications.

4(d) Rule Exception for Service- or State-Approved Management Plans

Comment 29: Multiple commenters brought up issues that may impact landowner willingness to participate in the Safe Harbor program, currently known as the Conservation Benefit program, and expressed concerns over the permitting process (*i.e.*, lack of enforcement, ability to return to baseline conditions, and the burdensome process). Additionally, the South Carolina Department of Natural

Resources indicated concern that the prescribed fire and herbicide exception could disincentivize further Safe Harbor program enrollment (currently known as the Conservation Benefit program).

Our Response: We acknowledge these concerns now that landowners will have additional flexibility on how to manage their land for red-cockaded woodpeckers. Although the 4(d) rule and SHAs, currently known as CBAs, may provide many of the same benefits on managed non-Federal lands, the Conservation Benefit program provides the additional flexibility for land managers to remove new (above-baseline) clusters that emerge on their property without violating certain section 9 prohibitions of the Act. Without the incidental take exceptions in this 4(d) rule, take resulting from these activities would be prohibited, thus requiring a section 10(a)(1)(a) permit associated with a CBA or section 10(a)(1)(b) permit and habitat conservation plan (HCP) prior to implementation. These incidental take exceptions are applicable to all private lands regardless of participation in existing SHAs or future CBAs as long as the activity meets the stipulations described above. It is important to note that the 4(d) rule does not nullify existing SHAs or future CBAs. Existing enrollment and participation in SHAs or future CBAs does not preclude an enrollee from exceptions of the 4(d) rule (see “Provisions of the 4(d) Rule”).

4(d) Rule General Issue

Comment 30: The Alabama Division of Wildlife and Freshwater Fisheries requested clarification on prohibitions and exemptions regarding insecticide use. A public commenter requested insecticide use within the cluster area be approved by the Service and used only when necessary.

Our Response: This rule prohibits take, as set forth at § 17.21(c)(1) for endangered wildlife. We did not include any exceptions to this prohibition for take resulting from the use of insecticides from the prohibitions of section 9. If the property has red-cockaded woodpeckers, then there is a potential for take to occur from such activities and incidental take could still be exempted through a section 10 permit or an incidental take statement associated with a biological opinion. Thus, the 4(d) rule does not cause a change in the process for authorization of insecticide use in red-cockaded woodpecker clusters.

Public Comments

We received 234 unique comments from the general public on the proposed

listing and 4(d) rule during the 2 public comment periods. We summarize and respond to these comments below. However, we do not repeat issues that we have already addressed above and instead address only new issues that were not raised by peer reviewers or State or Federal agencies.

Downlisting

Comment 31: One public commenter indicated that the Service’s targets for downlisting have not been met and that public records indicated the Service had been planning to downlist or delist the species if State and Federal agencies were able to provide necessary assurances of continued management.

Our Response: Assurances of continued management are not required for reclassification of a species. Although there are uncertainties about the continuation of some management commitments, we fully expect much of the conservation management for red-cockaded woodpecker to continue into the foreseeable future and have structured our final 4(d) rule to encourage the continuation of such management.

Comment 32: Multiple commenters emphasized the importance of longleaf pine ecosystems in supporting biodiversity in the southeastern United States and the role of red-cockaded woodpeckers as umbrella and keystone species. Several of these commenters suggested that conserving red-cockaded woodpeckers, via management of longleaf pine ecosystems, provides cascading benefits to many other species, including other at-risk species, and proposed that the species remain protected for that reason.

Our Response: While we recognize the importance of the longleaf pine habitat, as referenced in the “Background” and “Summary of Stressors” below, section 4(a)(1) requires that the Secretary determine whether a species is an endangered species or threatened species because of any of the five factors listed. Section 4(b) of the Act requires that the determination be made “solely on the basis of the best scientific and commercial data available.” Thus, we cannot factor the need to protect other at-risk species or the ecosystem at large into the decision of whether or not a species meets the definition of threatened or endangered.

Comment 33: Some commenters believed that, since woodpeckers currently occupy less than their historical range, they should not be downlisted.

Our Response: Neither downlisting nor delisting require that the species

reoccupy their historical range. Under the Act, a species' status must be assessed using the five factors: (1) Present or threatened destruction, modification, or curtailment of its habitat or range; (2) overutilization of the species for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms; and (5) other natural or manmade factors affecting its continued existence.

Comment 34: One commenter expressed concern that, if the species is downlisted, land managers will return to past practices of reducing the use of fire, reducing control of woody understory vegetation, and illegally removing cavity trees on private lands; all of these actions would reduce habitat quality and quantity.

Our Response: The red-cockaded woodpecker will continue to receive protections under the Act as a threatened species. The 4(d) rule is designed to encourage continued habitat management by including exceptions to the prohibitions for incidental take caused by application of prescribed burns or herbicides on private lands to create or maintain habitat (*i.e.*, open pine ecosystems) or sustain and grow red-cockaded woodpecker populations, provided that the landowner, or their representative: (1) Follows applicable BMPs for prescribed burns and applicable Federal and State laws; (2) applies herbicides in a manner consistent with applicable BMPs and applicable Federal and State laws; and (3) applies prescribed burns and herbicides in a manner that minimizes or avoids adverse effects to known active clusters and red-cockaded woodpecker roosting and nesting behavior to the maximum extent practicable.

Our intent for this provision is to provide a simple means by which to encourage private landowners to pursue certain types of voluntary forest management activities (*i.e.*, prescribed burns and herbicide application) in a way that reduces impacts to the species and also removes any potential barriers to the implementation, such as the potential for violating the Act, of this beneficial forest management. Collaboration with partners in the forestry industry and their voluntary conservation and restoration of red-cockaded woodpecker habitat has helped advance red-cockaded woodpecker recovery to the point of downlisting; this provision would continue to encourage this beneficial management.

Comment 35: One commenter suggested that the downlisting would

not alter any of the protections the species receives and is thus merely a symbolic gesture.

Our Response: Downlisting the red-cockaded woodpecker is not merely a symbolic gesture. The species has achieved major gains in recovery in the past several decades. These gains have benefited the species to the point that it no longer meets the definition of an endangered species. While the species has not yet achieved full recovery, it is paramount in the effective implementation of the Act to ensure every listed species has the appropriate status, based on the best available scientific information regarding its extinction risk. In the case of the red-cockaded woodpecker, since the species no longer meets the definition of an endangered species, we are revising its classification to ensure its listed status aligns with the latest information on its viability.

While downlisting the red-cockaded woodpecker will continue to provide protections under the Act, the 4(d) rule includes exceptions to take prohibitions that provide additional management flexibilities that do not apply while the species is listed as endangered (*e.g.*, exception for take resulting from prescribed burns on private lands; exception for take resulting from installation of artificial cavities) (see "Provisions of the 4(d) Rule" below).

Comment 36: One commenter suggested that the species' status had not changed considerably since the 2006 5-year status review, in which we recommended that the species should remain listed as endangered and that the threats to the species have not been sufficiently ameliorated.

Our Response: Since the 5-year review in 2006, the species' status has continued to improve. Based on the best available scientific information including new information available since the 2006 5-year review (*i.e.*, the new analysis in the SSA), 87 percent of red-cockaded woodpecker demographic populations for which we have trend data demonstrate stable to increasing trends. The continued growth of populations since 2006, and the species' current stability, suggests the red-cockaded woodpecker is not in immediate danger of extinction. We are also downlisting the species because we believe the threats currently acting on the species are effectively managed. Since 2006, managers have continued to install more artificial cavities, have continued to actively manage habitat to improve quality, and have continued to translocate birds to enhance genetic health and viability. These activities have contributed to the stabilization of

the populations, and management of threats. Our rigorous analysis of stressors and species' condition in the SSA demonstrates the improved status of the species and effectiveness of current management.

Policy and Process

Comment 37: Multiple commenters expressed confusion about the status of the species' 5-year status reviews, and the relationship of these reviews to the proposed rule.

Our Response: The December 2, 2020, proposed rule to reclassify the red-cockaded woodpecker as a threatened species fulfilled the requirements of a 5-year status review for the species (85 FR 63474). While the proposed rule referenced biological information in the SSA report, the SSA alone does not represent the 5-year status review. According to the Act, a 5-year status review must contain an evaluation of the five listing factors for the species, and a recommendation as to the species' current status based on the relevant threats under those factors. In the proposed rule, we provided a thorough account of the stressors affecting the species and aligned these stressors with the five factors under the Act.

Our analysis in the proposed rule also took into account the submissions we received in response to the 5-year review initiation notice; we are not required to respond to each of these submissions individually, as we do for public comments on a proposed rulemaking. The public had an opportunity to provide feedback on our determination of species' status during the comment period on the proposed rule, and we have addressed that feedback here.

Comment 38: Multiple commenters took issue with our "significant portion of the range" analysis, suggesting that we did not adequately explain why the Florida Peninsula, West Gulf Coastal Plain, and southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions are not "significant." Other commenters believed that our discussion of significance was not consistent with our "Significant Portion of the Range" policy and court rulings concerning this policy.

Our Response: We revised our "significant portion of the range" analysis in this rule in response to these comments and to increase consistency with current practice. We removed the discussion of the significance of the portion that includes the Florida Peninsula, West Gulf Coastal Plain, and southernmost near-coastal extension of

the Upper West Gulf Coastal Plain ecoregions.

Ultimately, this discussion of significance was not necessary for our analysis since this portion does not have a different status than the whole. Despite the vulnerability of these areas to hurricanes, this stressor is not currently accelerating extinction risk in this part of the range, due to effective conservation management. Populations can withstand and persist after hurricanes if biologists and land managers implement prompt, effective post-storm recovery actions, such as installing artificial cavities, reducing hazardous fuels, and restoring forests to suitable habitat. Both this emergency response and routine management are well-understood and are currently being implemented across the range of the woodpecker. In addition, much of the red-cockaded woodpecker's currently occupied habitat is now protected under various management plans. As such, despite the regular occurrence of hurricanes within red-cockaded woodpecker habitat, 89 percent of the populations for which we have trend data demonstrate stable to increasing growth rates in this portion of the range, illustrating the effectiveness of currently ongoing active management in preventing broad impacts from hurricanes and other stressors (USFWS 2022, p. 112).

This risk may be particularly high in the foreseeable future in the Florida Peninsula, West Gulf Coastal Plain, and the southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions. Therefore, although some threats to the red-cockaded woodpecker are concentrated in these ecoregions, the timing of the effects of the threats in that portion is the same as that for the entire range—the foreseeable future. As a result, the red-cockaded woodpecker is not in danger of extinction now in this portion of its range. Given the fact that this portion has the same status as the species throughout all of its range, we do not need to evaluate its significance.

Comment 39: Commenters suggested other areas that could be considered a significant portion of the species' range (e.g., the populations that have low or very low resiliency and the western portion of the species' range, where there are no "high" or "very high" resiliency populations).

Our Response: Based on feedback from the comments, we considered whether the portion of the species' range that contains low or very low resiliency populations could constitute a portion that provides a basis for determining that the species is in danger of extinction throughout a significant

portion of its range. Based on our analysis, we did not find that this portion of the species' range, or any combination of areas that lack moderate, high, or very high resiliency populations, met the definition of an endangered species. Managers are currently applying active management to these small populations. As a result of this active management, the vast majority of these low or very low resiliency populations have stable or increasing growth rates, demonstrating the effectiveness of this active management in supporting the persistence of these small populations. Of the 108 demographic populations in low or very low resiliency classes, 86 have data on growth rates; 86 percent of these populations have growth rates greater than or equal to one (USFWS 2022, pp. 108–110). Under this current paradigm, these small populations are not currently in danger of extinction due to the active management (e.g., translocation, habitat management, artificial cavity installation) that supports their stability and growth. As a result, the red-cockaded woodpecker is not currently in danger of extinction in this portion of its range. Given the fact that this portion has the same status as the species throughout all of its range, we do not need to evaluate its significance.

Comment 40: One commenter expressed concern that the Service, contrary to the best available science, has been trying to downlist or delist the red-cockaded woodpecker to appease Federal partners. This commenter also questioned an interagency agreement signed with the Army on the same day that we announced the proposal to downlist the red-cockaded woodpecker, indicating concern that the agreement set a goal of eliminating section 7 consultations in favor of general INRMP consultations.

Our Response: The analysis in this rulemaking is based on the best available science, summarized in the SSA report. This scientific information has been peer-reviewed, and the public was provided with opportunities to review and comment on our analysis during two comment periods and one public meeting. We are required to coordinate, collaborate, and use the expertise of State agencies in developing the scientific foundation upon which the Service bases its determinations for listing actions (i.e., SSA reports) per the 1994 joint policy and 2016 Revised Interagency Cooperative Policy Regarding the Role of State Agencies in Endangered Species Act Activities (State Representation of Species Status Assessment Teams). We also frequently

collaborate with Federal partners in the development of SSAs to ensure we have the best available data and a thorough understanding of Federal management that may affect the species. In the development of the red-cockaded woodpecker SSA, we followed these common practices. We sought information from our State and Federal partners to inform the SSA, our understanding of relevant ongoing management, and any proposed status change under the Act.

Based on the best available information in the SSA, we have determined that the species no longer meets the definition of an endangered species under the Act. However, while many of the landowners and managers within the range of the species have committed to continuing to implement their conservation programs into the future, we do not have certain commitments that all current management will continue and that it will adapt as necessary to effectively address emerging stressors (e.g., intensifying hurricanes). As a conservation-reliant species, securing management commitments for the foreseeable future would ensure that red-cockaded woodpecker populations grow or are maintained. This conclusion is reinforced by the future-scenario simulations, which indicate that management efforts equal to or greater than current levels will further increase the number of moderate to very high resiliency populations and preserve small populations. Thus, uncertainties about the continuation of the management upon which the species relies informed our determination that a downlisting status of threatened is appropriate.

The purpose of the interagency agreement is to promote the conservation of the red-cockaded woodpecker. This agreement did not factor into the proposal to downlist the species. Additionally, it is important to note that Federal agency section 7 consultations obligations have not been altered in any way with this final rule.

Comment 41: One commenter believed that the Service's selection of 25 years as the foreseeable future was arbitrary and too short to reasonably forecast effects of threats to the species (e.g., climate change impacts), especially considering the species' reliance on very old pine trees.

Our Response: We determined the foreseeable future to be 25 years from present, because it is a timeframe in which we can reasonably estimate population responses to natural factors and management. As discussed under *Future Conditions* below, in the SSA

report, future population conditions under different management scenarios were simulated and modeled to 25 years into the future. During this process it was determined that we can rely on the timeframe presented in the scenarios and predict how future stressors and management will affect the red-cockaded woodpecker. This timeframe, given the species' life history, is also sufficient to identify any effects of stressors or conservation measures on the red-cockaded woodpecker's viability at both population and species levels. Finally, 25 years represents four to five generations of red-cockaded woodpecker, which would be sufficient time for population-level impacts from stressors and management to be detected.

Comment 42: One commenter contended that the proposed 4(d) rule fails to explain how it is necessary and advisable, because the rule's effect on private landowners and voluntary conservation is not considered. In addition, the commenter expressed concern that the Service did not explain why the Regulatory Flexibility Act (RFA) and National Environmental Policy Act (NEPA) analyses were not prepared for the proposed 4(d) rule.

Our Response: As discussed in our February 3, 2022, proposed reclassification rule, section 4(d) of the Act provides that the "Secretary shall issue such regulations as he deems necessary and advisable to provide for the conservation" of species listed as threatened. As discussed in the Background, 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. Thus, regulations promulgated under section 4(d) of the Act provide the Secretary with wide latitude of discretion to select appropriate provisions tailored to the specific conservation needs of the threatened species.

We considered the effect on private landowners of our proposed rule. The proposed rule explains that if a manager has received or receives a permit for a particular activity (e.g., a section 10(a)(1)(A) permit for monitoring red-cockaded woodpeckers, a permit issued for an existing SHA, CBA, or HCP), any take that occurs as a result of activities covered by this permit would remain exempted from the rule's prohibitions on take. Furthermore, our rule encourages private landowners to continue to enroll in the CBA program, under which the landowners receive formal regulatory assurances from the Service regarding their management responsibilities in return for

contributions to benefit the listed species. Any landowner who enrolls in a CBA is allowed to return their property to "baseline" conditions at any time. Additionally, this final rule excepts take from activities completed by a landowner that, when the species was endangered, would have required a permit under the Act.

Regarding the commenter's concern that a NEPA analysis was not undertaken, 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 a NEPA analysis in connection with regulations adopted pursuant to section 4(a) of the Act (see National Environmental Policy Act section below).

Regarding the commenter's concern that an RFA analysis was not provided, the Secretary, in making a determination of endangered or threatened species status under section 4(b)(1)(A) of the Act, "shall make determinations solely on the basis of the best scientific and commercial data available." Economic considerations are in addition to such data and cannot be part of the basis for the species' status determination, which includes the 4(d) rule. The rationale for sole use of best scientific and commercial information available is provided in the legislative history for the 1982 amendments to the Act, which describes the purposes of the amendments using the following language: "to prevent non-biological considerations from affecting [listing] decisions," Conf. Rep. (H.R.) No. 97-835 (1982) ("Conf. Rep."), at 19. As noted in the House Report, economic considerations have no relevance to determinations regarding the status of species and the economic analysis requirements of Executive Order 12291, and such statutes as the RFA and the Paperwork Reduction Act, will not apply to any phase of the listing process. Conf. Rep. (H.R.) No. 97-835 (p. 24153; 1982).

Comment 43: One commenter requested that the Service be more involved with assessing, approving, and enforcing actions affecting species protected under the Act so that the State agencies are not left with the burden of interpreting the 4(d) rule.

Our Response: We acknowledge the importance of our conservation partnership with State agencies and the role they play when interpreting rules for federally listed species in response to public inquiries. In addition to providing Frequently Asked Questions documents about the 4(d) rule, our local field offices are available to provide technical assistance. State agencies can direct questions to field offices to assist

with the interpretation of the 4(d) rule in addition to requesting assistance when enforcing protections for federally protected species.

Comment 44: Another commenter recommended that non-Federal management plans, including analyses of potential impacts from ongoing and proposed activities (within the time covered), be more "programmatic" in nature, such as "worst case" estimates included in some Army INRMP endangered species management components (ESMCs).

Our Response: While we are available to provide technical assistance to private landowners, we do not have the authority to tell private landowners how to manage their properties. The suggestion described by the commenter would be a relatively unique and specific situation to occur. We anticipate that people will follow the intent of the 4(d) rule and, as such, will apply appropriate management for the species to their properties.

General Biology, Ecology, and Population Issues

Comment 45: Several commenters provided critiques of the data and methodologies used in the SSA. One commenter expressed concerns that the data they provided for the SSA was the best possible outcome and worried that all the data might be inflated. Another commenter indicated concern that the "moderate" resiliency class included both populations that were declining and were not declining. Yet another commenter stated that the Service did not adequately articulate uncertainties related to the model.

Our Response: The data for the SSA was collected and analyzed according to established scientific procedures. Expert solicitation and peer review provided opportunities for public comment, and all analysis and decisions were based on the data provided. We rely on and trust that land managers provided accurate data.

The SSA report provides a description of the approach and method used to delineate demographic populations. The report also describes how the moderate category is a transitional resilience category, in which population sizes range from 102 to 248 active clusters and consist of both increasing and stable populations. The moderate category populations, unlike those in the high and very high categories, may vary considerably in their resilience depending on population size, management, and the spatial distribution and density of active clusters (USFWS 2022, p. 113).

We also described uncertainties within the SSA report, including the uncertainties associated with performing analyses with an imputed data set. With imputed data, a single value is provided for each missing value and analyzed as though it were true, while in reality there is uncertainty about the value of each missing observation (USFWS 2022, p. 227).

All of the issues raised were either already addressed in the SSA report or have been incorporated into the SSA report and/or this final rule.

Comment 46: One commenter provided details about concerns that the way the 2003 recovery plan delineated populations of red-cockaded woodpeckers was incorrect.

Our Response: SSA reports are scientific documents meant to be a single source for the species' biological information needed to inform decision-making in the rule. The SSA report did not use the same population boundaries as the 2003 recovery plan. As reviewed in the 2003 recovery plan, red-cockaded woodpecker populations functioned as demographically closed populations due to infrequent long-distance dispersal (USFWS 2003, pp. 25, 32). In the 2003 recovery plan, territory densities or distances among territories were not defined to explicitly categorize demographic populations. In the SSA, we instead used red-cockaded woodpecker dispersal data from long-term monitoring data and radio-telemetry studies to spatially delimit demographic populations according to nearest neighbor active clusters within 6 km (3.7 miles) (USFWS 2022, pp. 80–82). Ultimately, we delineated 124 demographic populations. In the SSA report, the essential support population this commenter referenced was split into nine demographic populations for our analysis. Although we are not currently contemplating changes to the 2003 recovery plan, we will consider this commenter's suggestion if we embark on any revisions to this plan.

Population Stressors

Comment 47: One commenter shared that, according to the North American Breeding Bird Survey, the woodpecker has had a cumulative population decline of 86 percent between 1966 and 2014, with an average of over 3.3 percent population decline per year (Red-cockaded Woodpecker Life History); they believed this decline would continue until the species becomes extinct.

Our Response: The Breeding Bird Survey is a roadside survey of North American birds that primarily covers the continental United States and

southern Canada. Every June, experienced birders volunteer to conduct surveys along established roadside routes to facilitate the estimation of population change for birds that are encountered during surveys. Although the Breeding Bird Survey provides a very large data set, there are potential problems with estimates of population change that are derived from Breeding Bird Survey data. Therefore, "regional credibility measures" are used to check certain attributes of the survey data, such as relative abundance on survey routes, precision of trends, and the completeness of the data set. It is possible that data analysis can be inaccurate and imprecise, depending on the level of data deficiency in a region; thus, the data are categorized into three credibility categories to assist in assessing reliability of the results. The Breeding Bird Survey results for the red-cockaded woodpecker reflect that the majority of the data are in the red category, meaning the data have important deficiencies and are not of sufficient quality to use in estimates of population change or for other reasons.

Decades of species-specific, red-cockaded woodpecker survey data have been obtained using standardized data collection methodology, and are the data that the Service relied upon in the SSA and to inform this rule. These data sets provide a large amount of high-quality data for assessing attributes of red-cockaded woodpecker populations and informing management decisions. Data collected during red-cockaded woodpecker surveys represent the best available species' information and are superior to species' data provided by the Breeding Bird Survey and any other means.

Comment 48: Several commenters believed that because a majority of populations have low resiliency to stochastic events and threats (primarily due to small population sizes), they remain in immediate danger of extirpation and do not have sufficient resiliency to warrant downlisting.

Our Response: These commenters correctly accounted for the number of demographic populations in the low and very low resiliency categories. However, the majority (65 percent) of total active clusters (5,062 active clusters out of 7,794 total active clusters) across the range of the species are in the 16 moderate-to-very-high resiliency populations. Furthermore, of the 98 populations for which we had sufficient data to measure growth rates, only 13 percent are in decline; in other words, 87 percent of red-cockaded woodpecker populations (for which we

had sufficient data) are stable or increasing, including the vast majority of low and very low resiliency populations (USFWS 2022, pp. 112–116). These stable and positive growth rates are indicative of the positive effects of red-cockaded woodpecker conservation management programs on these locations and the ability of such management to offset inherently low or very low population resilience.

In summary, after evaluating the threats to the species and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we find that the stressors identified above continue to negatively affect the red-cockaded woodpecker, but new restoration techniques and changes in silvicultural practices have led to stabilization of the red-cockaded woodpeckers' viability and even resulted in a substantial increase in the number and distribution of populations. Sixty-five percent of all current red-cockaded woodpecker clusters are within moderately, highly, or very highly resilient populations, and populations are spread across multiple ecoregions, providing for redundancy and representation. Given these current levels of resiliency, redundancy, and representation, we conclude that the red-cockaded woodpecker is not currently in danger of extinction throughout all or a significant portion of its range (*i.e.*, it no longer meets the definition of an endangered species).

Comment 49: Multiple commenters expressed concern about the continued loss of suitable habitat constraining population growth of the species, with one commenter stating that the Service did not adequately address carrying capacity issues in the SSA report.

Our Response: We recognize that some habitat loss may still be occurring and acknowledge that the lingering impacts of historical clearcutting and incompatible forest management, and conversion to urban and agricultural land still negatively affect the ability of red-cockaded woodpecker populations to grow, even when managed, as the carrying capacity of suitable forest areas across much of the range can be quite low. However, restoration activities such as prescribed fire and strategic placement of recruitment clusters can reduce gaps between populations and increase habitat and population size toward current carrying capacity. These activities are occurring across the range of the red-cockaded woodpecker on properties actively managed for red-cockaded woodpecker conservation (85 FR 63474 at 63479, October 8, 2020).

Carrying capacity was taken into consideration when assessing population size within the foreseeable

future in the simulations and scenarios run in the SSA. Values for each population were acquired from property and population managers who estimated carrying capacity for their populations at the end of the 25-year period. Carrying capacity reflected the estimated future amount of nesting and foraging habitat, and whether a potential increase in active territories to capacity was the result of recruitment clusters, budding, or pioneering (USFWS 2022, pp. 12–13). Additionally, we acknowledged in the SSA report (USFWS 2022, p. 14) that carrying capacity may have been underestimated in our analysis. The high densities of red-cockaded woodpeckers that occur in high-quality habitat suggest that carrying capacity estimates are overly conservative. If so, greater growth than our conservative simulations project and larger differences between management scenarios are possible.

Comment 50: One commenter shared their concern that small woodpecker populations in low-quality habitats, experiencing additional stressors, can quickly lose their pools of helper birds, leading to rapid population decline.

Our Response: Helpers are non-breeding adult offspring that remain on their natal territories for one or more years after fledging. Helpers assist in the rearing of young and other essential activities during years of delayed dispersal or until becoming replacement breeders on their natal territories. Annual levels of productivity and mortality may affect the following year's total number of helpers and the total number of groups with helpers found within a small red-cockaded woodpecker population; however, these variables do not similarly affect the total number of potential breeding groups (PBGs) in that same population. We acknowledge that small population size and limited availability of resources are impacting the species' viability within the foreseeable future, thus contributing to our decision to reclassify the red-cockaded woodpecker as a threatened species to ensure continued protections under the Act.

Climate Change and Catastrophic Events

Comment 51: Multiple commenters expressed that red-cockaded woodpeckers will not be able to shift to new areas or habitats, given their reliance on old, mature pines, rendering them even more vulnerable to climate-related stressors. One commenter suggested the need to protect and restore new habitats as climate refugia to ensure the continued survival of red-cockaded woodpeckers.

Our Response: We agree that red-cockaded woodpeckers are habitat specialists that rely on habitat management occurring in specific areas; they thus have limited capacity to shift their range in response to future climate changes. The majority of clusters are in moderate to very high resiliency populations, and 87 percent of populations with sufficient data indicate stable to increasing growth rates (USFWS 2022, pp. 107–112). However, if climate change decreases the suitability of habitat in certain parts of the species' range, as DeMay and Walters (2019, entire) suggest, it could increase extinction risk, due to the lack of unoccupied suitable habitat at more northern latitudes. Since red-cockaded woodpeckers have limited capacity to shift their range, ongoing, nimble habitat management applications, designed to meet changing climate conditions, will help the species achieve long-term population viability. Thus, while the species' limited capacity to shift their range is not currently manifesting in any declines in resiliency, redundancy, or representation, it is possible that, without effective management, this limited capacity could result in future viability declines. We cannot predict the scope of these potential declines due to limitations in our modeling. Consequently, while enhancing the resiliency of inland populations could further increase species' viability in the face of future impacts from climate change, the species currently has sufficient resiliency, redundancy, and representation such that it no longer meets the definition of an endangered species and warrants reclassification to a threatened species.

Comment 52: Public commenters suggested that the Service inadequately analyzed the potential synergistic effects of climate change on other stressors, such as large wind events, wildfires, sea level rise, tornadoes, ice storms, and pine beetles.

Our Response: In the SSA report, we discuss the stressors that wildfire (USFWS 2022, pp. 126–127); large wind events, tornadoes, sea level rise, and ice storms (USFWS 2022, pp. 84, 96, 121); and pine beetles (USFWS 2022, pp. 84, 126) can present to the species. While these natural disturbances are already occurring in parts of the species' range, effective management after disturbances (e.g., installing artificial cavities, reducing hazardous fuels, and restoring forests to suitable habitat) results in these disturbances currently only influencing individuals or temporarily affecting populations. As a result, these stressors are not currently having

detrimental species-level effects. As evaluated in the SSA, the stable to increasing population trend in 87 percent of the populations demonstrates that effective management has ameliorated these stressors such that they only have isolated and temporary negative effects (USFWS 2022, p. 112).

However, as these commenters suggest, uncertainty remains as to how these stressors may influence the species in the future. We were not able to model how resiliency of red-cockaded woodpecker populations might change in the future as a result of bark beetle outbreaks, sea level rise, tornados, drought, and other influences due to inconsistency in or unavailability of data (USFWS 2022, appendix 2, pp. 6–7). Should these stressors increase their scope or intensity in the future, and should effective management not keep pace with these increases, they could start to negatively affect populations, though we do not know of any research suggesting this will occur. We fully expect this post-disturbance management to continue into the foreseeable future, and we have structured our final 4(d) rule to facilitate the continuation of such management. The information these commenters provided supports our conclusion that, while the red-cockaded woodpecker is not currently in danger of extinction, the effects of climate change, paired with uncertain future management means that the species continues to meet the definition of a threatened species.

General Stressors

Comment 53: One commenter suggested that the Service did not adequately consider the cumulative effects of stressors on red-cockaded woodpeckers when making the decision to downlist the species.

Our Response: We incorporated the cumulative effects of stressors into the SSA when we characterize the current and future condition of the species. In order to assess the current and future condition of the species, we completed an iterative analysis that encompassed and incorporated threats individually and then accumulated and evaluated 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 integrated the cumulative effects of the factors and replaced a standalone cumulative effects analysis. To help clarify, we have added a brief discussion of cumulative effects to the

Summary of Biological Status and Threats section of this rule.

Comment 54: Multiple commenters took issue with the fact that the proposed downlisting did not consider the effects of southern pine beetles as a potential stressor.

Our Response: We agree that loss of cavity trees resulting from both outbreak (*i.e.*, epidemic) and non-outbreak (*i.e.*, endemic) southern pine beetles can substantially impact red-cockaded woodpeckers, as noted in the SSA report (USFWS 2022, pp. 39–40). In the SSA report we detail how southern pine beetles do not directly impact red-cockaded woodpeckers but do directly impact cavity trees. Southern pine beetle outbreaks can be minor or locally significant through killing the cavity trees and other pines used for foraging. The practice of thinning stands with outbreaks can cause direct loss of active clusters; however, the long-term benefits of stopping the outbreak often outweigh the short-term impacts of losing a few clusters (USFWS 2022, p. 84). Even though the SSA report provided a description of issues facing the red-cockaded woodpecker as it relates to southern pine beetles, these variables were not explicitly modeled; instead, they were implicitly present in the resulting models in the intercept and residual error terms, to the extent that they affected changes in population size over time (USFWS 2022, appendix 2, p. 5). Despite known outbreak events within red-cockaded woodpecker habitat (USFWS 2022, p. 140), 87 percent of populations evaluated in the SSA demonstrate stable to increasing growth rates, illustrating the effectiveness of currently ongoing active management such as described in the SSA report regarding species-level impacts from hurricanes (USFWS 2022, p. 112).

Comment 55: Multiple commenters suggested that we did not adequately consider the stressor of diseases, such as avian keratin disorder, in our SSA report or proposed rule.

Our Response: Given that avian keratin disorder research is ongoing, we could not explicitly include the data in the species-wide analysis (USFWS 2022, appendix 2, p. 5). Currently, there is no evidence that this disease or other novel diseases are having more than an individual-level effect on the species.

4(d) Rule Take Prohibitions

Comment 56: One commenter expressed their concern that potential section 9 violations are not being properly investigated, resulting in no punitive actions taken.

Our Response: We encourage the commenter to bring any information about specific potential section 9 violations to the attention of our Office of Law Enforcement.

Comment 57: One commenter expressed frustration that the Service did not account for economic costs when developing the 4(d) rule and indicated that failing to do so would make people see red-cockaded woodpeckers as a liability. Additionally, they indicated that the Service did not have sufficient justification for extending restrictions and costs associated with the section 9 prohibition and that this approach does not meet the “necessary and advisable” standard.

Our Response: In 1982, Congress amended the Act to add the requirement that listing determinations are to be made solely on the basis of the best scientific and commercial data available. In the Conference Report for the 1982 amendments to the Act, Congress specifically stated that economic considerations are not to be considered in determinations regarding the status of species and that the economic analysis requirements of Executive Order 12291 and such statutes as the Regulatory Flexibility Act do not apply to any phase of determining the listing status of an entity under the Act. If we determine that a species is a threatened species under the Act, part of our consideration for completing the listing process is to consider what regulations are necessary and advisable to provide for the conservation of the species under section 4(d) of the Act. As a result, a cost benefit analysis is not part of the process required to propose or finalize a section 4(d) rule.

We described on page 6120 of the revised proposed rule (87 FR 6118, February 3, 2022) that we have developed revisions to the section 4(d) rule that are designed to address the red-cockaded woodpecker’s specific threats and conservation needs. The statute does not require us to make a “necessary and advisable” finding with respect to the adoption of specific prohibitions under section 9; however, we find that this rule as a whole satisfies the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of the red-cockaded woodpecker.

As stated in the revised proposed rule, the section 4(d) rule will provide for conservation of the red-cockaded woodpecker by adopting the same prohibitions that apply to an endangered species under section 9 of

the Act and 50 CFR 17.21 and several exceptions to those prohibitions (87 FR 6118 at 6122, February 3, 2022). Included in the proposed rule are the revisions to the proposed section 4(d) rule that are designed to address the red-cockaded woodpecker’s specific threats and conservation needs (87 FR 6118 at 6120, February 3, 2022). These revisions have been carried forward into this final 4(d) rule.

4(d) Rule Exceptions

Comment 58: One commenter requested that the Service provide additional guidance in the Background, or in subsequent documents, to enable land managers to understand beneficial silviculture and management actions that would minimize incidental take versus actions that would likely be adverse for which the exceptions would apply.

Our Response: We acknowledge this concern and are committed to continuing to provide guidance pertaining to silvicultural and habitat management actions on red-cockaded woodpecker conservation. Additional guidance is also available by contacting the local Ecological Services Field Office.

Comment 59: Multiple commenters expressed concern that Federal agencies will start harvesting the older age classes of pines for the purpose of red-cockaded woodpecker habitat management or to gain timber sales revenue. They requested that take exemptions provided under this rule not extend to the removal of older age classes of pines and that such activities be undertaken only in consultation with the Service.

Our Response: We acknowledge the importance of older pine trees for red-cockaded woodpecker management; however, it is important to note that the incidental take exceptions in this 4(d) rule are intended to encourage necessary and beneficial habitat restoration and species’ management to advance recovery. To increase and maintain sustainable current and future habitat, red-cockaded woodpecker populations may require conversion of older age class stands of loblolly, slash, or other planted pines to site-appropriate species, as well as regenerating stands of older pines thereby providing a diversity of age-classes necessary to ensure the availability of foraging and nesting habitat in the future. We recognize that short-term adverse effects to red-cockaded woodpecker may be necessary to provide improved habitat quality and quantity in the long term with the expectation of increasing numbers of

red-cockaded woodpecker. While incidental take resulting from these activities may be excepted under certain circumstances, Federal action agencies would still need to fulfill their section 7 obligations under the Act. Through section 7 consultation, we would have the opportunity to review these activities and provide input on how to minimize impacts to the species.

Comment 60: One public commenter recommended that 50 CFR 17.41(h)(4)(iii) exceptions for private properties be strengthened by making the following changes: (1) explicitly incorporating the methods of cavity tree protections from the 2003 recovery plan into the rule and (2) requiring a take permit with specific requirements for how to avoid and minimize disturbances to roosting and nesting behavior when applying herbicide or prescribed burning.

Our Response: (1) The methods and levels of cavity tree protection needed varies across properties and ownership according to local habitat conditions, availability of resources for management, and several other factors; thus, land managers have latitude to incorporate appropriate, site-specific measures into their red-cockaded woodpecker habitat management plans, as long as those measures provide sufficient cavity tree protections. (2) These types of habitat management parameters are appropriately addressed in a population's red-cockaded woodpecker habitat management plan rather than a legal regulation, such as this rule.

Comment 61: Several public commenters requested the Service define the following terminology in the rule: (1) "known active cluster," (2) "red-cockaded woodpecker habitat restoration and management," and (3) "conditions not able to support red-cockaded woodpeckers."

Our Response: (1) "Active cluster" is defined in the revised rule as a cluster in which one or more of the cavity trees exhibit fresh resin as a result of red-cockaded woodpecker activity or in which one or more red-cockaded woodpeckers are observed, and the word "known" is used in this context by the common definition found to be generally recognized in Merriam-Webster's dictionary. Our intent for the term "known active cluster" is to encourage private landowners to pursue certain types of voluntary forest management activities (*i.e.*, prescribed burns and herbicide application) in a way that reduces impacts to the species but also removes any potential barriers to the implementation of this beneficial forest management, such as fear of

prosecution for take of the red-cockaded woodpecker. (2) Red-cockaded woodpecker habitat restoration and management encompasses a variety of activities designed to improve conditions for the species but that must be developed on site-specific bases to account for local habitat complexities. (3) The minimum habitat and resource conditions needed to support red-cockaded woodpeckers exhibit variation within and among populations across the species' range and are dependent on site-specific conditions and, therefore, are not quantifiable in this rule in a standard way that is representative of every population.

Comment 62: One public commenter expressed concern about language in the October 8, 2020, proposed rule (85 FR 63474) that indicated take would be limited to only "active cavity trees or suitable foraging habitat" and stated that this limitation could drastically reduce a red-cockaded woodpecker group's ability to persist given their dependency upon old pines for foraging and nesting.

Our Response: The rule language noted by the commenter was intended to give an example of take but was not meant to be a comprehensive list of what could cause take for the species. Under the Act, take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." This language was removed in the most recent proposed rule (87 FR 6118, February 3, 2022).

Comment 63: One public commenter requested that State employees continue to report any red-cockaded woodpecker injuries, deaths, or other impacts in a manner consistent with section 10 permittees if they are excepted by the proposed 4(d) rule.

Our Response: The 4(d) rule does not change this reporting process. Under section 6, State agencies will continue to report red-cockaded woodpecker injuries, deaths, and/or other impacts to the Service.

Comment 64: One commenter requested exceptions for incidental take resulting from other forest management activities, specifically mechanical brush clearing and thinning operations.

Our Response: We recognize the need for and support mechanical brush clearing and thinning when conducted to maintain or enhance red-cockaded woodpecker foraging and nesting habitat. However, incidental take resulting from such activities is not anticipated when conducted outside red-cockaded woodpecker clusters as it is not expected to significantly impair essential behavioral patterns, including breeding, feeding, or sheltering. Within

clusters during the breeding season, these activities may repeatedly disturb roosting and nesting red-cockaded woodpeckers, thereby significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering, potentially resulting in cavity abandonment or nest failure thus resulting in incidental take. Within clusters outside the breeding season, these activities are not anticipated to result in incidental take when avoided within at least 1 or 2 hours of dawn and dusk. Thus, flexibility exists to conduct such activities with red-cockaded woodpecker clusters outside the breeding season without the need for a take exception.

4(d) Rule Artificial Cavity Provisions

Comment 65: One public commenter expressed support of the Service's efforts to automate/streamline the permitting process associated with installing artificial cavity inserts, but questioned if it would require much more effort to amend permits if the Service employee is already going to have to review and file documentation letters for new trainees.

Our Response: We agree that this specific exception may not be substantial for all practitioners, but many partners have expressed that the permitting approval process is significantly delayed. To help clarify, we will be requiring only an acknowledgement letter from the certified trainer that the trainee has met the certification requirement. The letter should go to the Service's National Red-cockaded Woodpecker Coordinator and not through the permit process.

Comment 66: A few public commenters stated that there should be no exception for take associated with installation of artificial cavities and cavity restrictors, with several commenters expressing concern over risks associated with cavity restrictors if they are not installed and monitored properly.

Our Response: We acknowledge that we have had reports where red-cockaded woodpeckers have been adversely impacted due to issues related to artificial cavities. However, we advocate that proper installation protocols and training, onsite supervision, and attentive cavity maintenance scheduling will reduce potential adverse impacts. For example, take that occurs from the installation of artificial cavities and cavity restrictors is unfortunate; however, because proper training and maintenance protocols remain as they always have been, we expect take from artificial cavity

installation and restrictor plates to remain limited across the range.

Comment 67: Multiple commenters provided feedback pertaining to the minimum diameter of trees for artificial cavity installation, as well as recommendations for cavity maintenance (e.g., screening damaged unusable artificial cavity inserts, checking cavity trees annually) and safe installation practices (i.e., inspection by a federally permitted biologist).

Our Response: The current standards for cavity tree selection and artificial cavity installation continue to satisfy the best available science standard and will remain as the standards used to guide artificial cavity tree selection and installation. We currently support the artificial cavity standards defined by Allen (1991, p. 19), Copeyon (1990, pp. 303–311), and USFWS (2022, pp. 85–87). For the cavity insert technique, the guidance requires selected trees to have a minimum of 15-inch diameter at cavity height, while the drilled cavity technique, generally, requires knowledge of the tree's sapwood (3.5 inches or less) to heartwood (7 inches or more) ratios at cavity height.

We agree that attending to unsuitable cavities or cavities in disrepair should be part of a regular maintenance routine. Many of the procedures used to protect red-cockaded woodpeckers from unsuitable cavity conditions includes screening to minimize adverse effects. The SSA report describes protocols and procedures that are designed and intended to avoid and limit potential adverse effects to red-cockaded woodpeckers for both suitable and unsuitable cavities that have fallen into disrepair (USFWS 2022, pp. 22, 41, 42, and 53).

Comment 68: One public commenter suggested that the training requirements for the number of installed artificial cavity inserts and drilled cavities be the same as the existing permit requirements and provided some potential detailed language to include in the rule in § 17.41(h)(4)(iv)(A).

Our Response: The training requirements are not the same as the permit requirements so that the trainer is able to ensure the proficiency and skill level appropriate for the situation, as determined by the trainer. Training requirements for the number of installed artificial cavity inserts and drilled cavities can be obtained from the Service's National Red-cockaded Woodpecker Coordinator.

4(d) Rule Military Exception

Comment 69: Many public commenters expressed concern that the INRMP process is insufficient and

indicated mistrust that military installations would maintain the highest level of ecosystem habitat management without requirements in place.

Our Response: The Sikes Act states that INRMPs shall reflect mutual agreement of the military service, the Service, and the States on the conservation, protection, and management of fish and wildlife resources. Mutual agreement is reflected by signature of the plan or letter of concurrence. As such, we believe that the INRMP process is sufficient and trust in the commitment of the military installations to implement them.

Comment 70: One commenter questioned why the DoD installation exception was needed given existing Army Red-cockaded Woodpecker Guidelines already provide reduced restrictions as installations approach, meet, and/or exceed their population goals.

Our Response: The conditions described in the 1996 "Management Guidelines for the Red-Cockaded Woodpecker on Army Installations" would still apply as site conditions dictate their applicability; however, newly constructed INRMPs would better align with the conditions proposed in the 4(d) rule. In part, this is because the Army's Red-cockaded Woodpecker Guidelines were developed and implemented with the red-cockaded woodpecker listed as endangered, which in turn requires installations to develop an ESMC. It is clear then that not all the requisites of an ESMC will be applicable under the 4(d) rule. Additionally, site-specific military operations are not part of the Army-wide guidelines but are proposed as an integral component to best utilize the 4(d) rule's structure. Finally, with the implementation of the 4(d) rule, it is likely the Army may consider revising their guidelines to better align with the 4(d) rule.

Comment 71: Regarding the DoD installation exception, one commenter expressed concern that the Service approval of INRMPs would be a continuation of historical practices but with more exception requirements. Additionally, without the Service's approval of an INRMP, there is no valid exception for any take incidental to military training or management to maintain or restore red-cockaded woodpecker habitat and that the Service's denial of an INRMP approval could, by this exception, appear to be an additional form of notification for joint resolution among agencies, or to lead to formal consultation.

Our Response: The Sikes Act states that INRMPs shall reflect mutual

agreement of the military service, the Service, and the States on the conservation, protection, and management of fish and wildlife resources. If the process of approving INRMPs, by way of the requirements of the Sikes Act, were at a point of impasse between the Service and the DoD, then we agree that a notification for joint resolution among agencies or a request to enter formal consultation are potential solutions to achieve resolution.

Comment 72: Commenters recommended numerous additional conditions and amendments be applied to the exceptions for DoD installations. A summary of some of the recommendations include: (1) Creating standards for the INRMP process, (2) using a population-driven approach for the exceptions (for example, excluding the DoD exception for installations with populations in decline that have not met population goals), (3) requiring compliance with management guidelines for exceptions to apply, and (4) requiring that each INRMP under this rule has an ESMC.

Our Response: "Standards" would be valuable and are likely to enhance both INRMPs and new project proposals when articulating the expectations for evaluating and implementing red-cockaded woodpecker management applications under the 4(d) rule. Of course, we would likewise prefer that take, under either scenario, is limited. However, because many red-cockaded woodpecker populations have site-specific conditions, we anticipate local plan and project determinations to be most effective when guarding against population reductions. We anticipate red-cockaded woodpecker managers to align with, and continue to work toward, the regionwide description of the desired future condition that characterizes the optimal red-cockaded woodpecker habitat conditions.

Comment 73: One commenter requested clarification around long-term habitat projects in the vicinity of military bases currently being used by some military installations to offset destruction of red-cockaded woodpecker habitat. They indicated that these programs attempt to rely on an installation's promises that it will restore off-base habitat that it has acquired, which may not be suitable for either nesting or foraging, to offset takes from the destruction of currently suitable nesting and/or foraging habitat within the installation. This commenter asked that the Service not allow this by, at a minimum, ensuring that the long-term habitat projects do not fall under the "habitat management and military

training activities” outlined in the proposed rule.

Our Response: Section 4(d) of the Act requires that the Secretary issue regulations that are necessary and advisable to provide for the conservation of threatened species. Similarly, the intent of the INRMP is to follow the ESA and provide regulatory flexibility for the conservation of protected species. As a reminder, there are no changes in section 7 responsibilities for Federal agencies due to a 4(d) rule. With regard to the commenter’s concerns, there are rigorous requirements through formal consultation with the Service that would have to be met before an Army “compatible use buffer” property could be used as an offset (*e.g.*, land is permanently encumbered for protections, an endowment is set up to provide funding for management, the land has been validated by way of a spatially explicit population model that red-cockaded woodpecker will occupy the habitat in the future, there is a unique management plan). The details of consultation language, along with the parameters identified, would be reflected in the INRMP.

4(d) Rule Provisions for Prescribed Burning and Herbicides

Comment 74: A public commenter reported concerns that most private landowners are unlikely to contact a State agency prior to burning and that State agencies may not be aware of the protected status of the species.

Our Response: There are already requirements in place for private landowners to contact State wildlife agencies when conducting prescribed fires within red-cockaded woodpecker populations. Given the many decades of cooperation between the Service and the State wildlife agencies, and the past and present conservation programs enacted for the conservation of the red-cockaded woodpecker by these State wildlife agencies, we contend that all State wildlife agencies in the range of the red-cockaded woodpecker are aware of the species’ status under the Act.

Comment 75: One commenter stated that there is a risk of take occurring during prescribed burns on private lands for clusters lacking intensive monitoring, and that raking around cavity trees can only minimize the risk. Another commenter stated that habitat management intended to benefit the species should not result in take and requested a distinction in the exceptions for both Federal and private lands for take of actual woodpeckers compared to forms of harm or harassment.

Our Response: Take can result knowingly or otherwise, by direct and indirect impacts, and intentionally or incidentally. Additionally, there is a difference between short-term take of an individual and the long-term benefit to the conservation of the species from habitat management actions taken to benefit the species. This section 4(d) rule would prohibit take on both public and private lands with exceptions as described in § 17.41(h)(4)(ii)–(iii). Incidental take that results from activities such as prescribed burns could be allowed under certain authorizations, including being excepted under this section 4(d) rule, authorized by a permit under the Act (*e.g.*, section 10(a)(1)(A) permit issued for a CBA, section 10(a)(1)(B) permit issued for an HCP), or exempted through section 7 consultation (*e.g.*, consultations that cover landowners enrolled in NRCS or Partners for Fish and Wildlife conservation programs).

Given the array of management activities and how each could result in one or more forms of incidental take, distinguishing between take of individuals directly through killing or indirectly through harm or harassment affecting other aspects of the species’ ecology or behavior is not practical as both may result in lethal take. Federal agencies would still consult under section 7 of the Act if their actions may affect red-cockaded woodpecker, and if take is anticipated, the form of take would be identified in the subsequent biological opinion. This includes intraservice section 7 consultation for the issuance of section 10(a)(1)(A) permits for existing SHAs or future CBAs on private land, which identify the anticipated forms of take. Additionally, we agree that managers have a responsibility to avoid killing red-cockaded woodpeckers, as we included language that Federal land management agencies must incorporate appropriate conservation measures to minimize or avoid adverse effects of excepted habitat management activities on the red-cockaded woodpecker foraging habitat, on clusters, and on the species’ roosting and nesting behavior to the maximum extent practicable.

4(d) Rule Exception for Service- or State-Approved Management Plans

Comment 76: One commenter noted that not all State agencies involved in red-cockaded woodpecker conservation have section 6 cooperative agreements with the Service and thus are not able to utilize exceptions. Additionally, they stated that many conservation plans required for section 6 cooperative agreements with the Service are out of

date or lack the level of detail necessary for red-cockaded woodpecker management.

Our Response: We acknowledge that not all State agencies conducting red-cockaded woodpecker management activities have section 6 agreements with the Service. Section 6 cooperative agreements are limited to a State agency that establishes and maintains an adequate and active program for the conservation of endangered species and threatened species fitting the requirements of section 6(c)(1). Given the requirements, section 6 is often limited to State wildlife agencies with State regulatory authority, thus other State agencies that may manage for red-cockaded woodpeckers on their lands are ineligible.

We also acknowledge that State conservation plans throughout the red-cockaded woodpecker range vary and recognize that State agencies possess valuable expertise and foster crucial relationships with State conservation agency partners contributing to woodpecker conservation. The exceptions for conservation actions (50 CFR 17.31(b)) apply only to 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.

Comment 77: In general, commenters recommended additional detail and conditions be added to the Federal land management agency exception (§ 17.41(h)(4)(ii)). A summary of the recommendations include: (1) Clarify in the Background how the three requirements will be assessed, (2) use a population-driven approach for the exceptions, (3) conduct thorough Service review of proposed take due to management/restorations actions, and (4) add clarification on types of analyses and information in Federal habitat management plans with regard to “habitat management actions.”

Our Response: Population dynamics of the red-cockaded woodpecker are complex, involving number of adults and helpers and amount, type, and spatial arrangement of suitable roosting, nesting, and foraging habitat. Therefore, we believe it is appropriate for Ecological Services Field Office staff and species leads to cooperate with Federal partners during preparation, review, and/or revision of Federal plans, annual reviews, and/or reporting requirements, if applicable, and section 7 consultations. Because of this complexity, we chose not to specify how the three requirements associated with the exception for Federal land management agency properties will be

assessed or a limit to any decline or reduction in the property population size that may result because of implementing beneficial conservation management.

Federal land management agencies often cooperate with the Service and the States to prepare their habitat management plans (e.g., LRMPs and National Wildlife Refuge comprehensive conservation plans (CCPs)) and incorporate management methods to sustain and increase red-cockaded woodpecker populations as detailed in the 2003 recovery plan. Also, they have established procedures to give Federal, State, and local governments and the public adequate notice and an opportunity to participate in the planning process. Lastly, under this or any section 4(d) rule Federal land management agencies would still need to fulfill their section 7 obligations under the Act. As a result, Service approval of Federal agency habitat management plans is not needed for this exception to apply for the red-cockaded woodpecker.

While this 4(d) rule does not provide additional guidance reflecting our intent for plans or detailed guidance describing the kinds of information expected in the exception, it is important to note that this 4(d) rule would not alter or invalidate the 2003 recovery plan. Recovery plans are not regulatory documents, but rather provide a strategy to guide conservation and recovery of listed species.

Comment 78: One commenter suggests that the Service should (1) provide examples of suitable management plan details in the Background section, (2) provide consistent guidance to Federal agencies on the kinds of measures needed to effectively minimize and avoid adverse effects, and (3) require an analysis of the effects of certain types of management, which the Service should also be willing to provide as guidance or by other forms.

Our Response: Population dynamics of the red-cockaded woodpecker are complex, including but not limited to number of adults and helpers and amount, type, and spatial arrangement of suitable roosting, nesting, and foraging habitat. Therefore, we believe it is appropriate for Ecological Services Field Office staff and species leads to cooperate with Federal partners during preparation, review, and/or revision of Federal plans, annual reviews, and/or reporting requirements, if applicable, and section 7 consultations. Much of the guidance and examples being requested are already provided in various forms (e.g., 2003 recovery plan, Management

Guidelines for the Red-cockaded Woodpecker on Army Installations, Service memos, site-specific red-cockaded woodpecker consultation documents, among other sources).

Comment 79: One commenter suggests that the term “maximum extent practicable” be deleted as it could be misinterpreted.

Our Response: If a Federal agency’s ability to manage for the species is limited for any reason, this information will be described with justification in their consultation with us. Federal agencies are responsible for implementing the recovery goals and subsequent recovery criteria and should share the goal of moving the red-cockaded woodpecker to the point where the size, number, and distribution of populations will be sufficient to be delisted in the future. As a result, the terminology “maximum extent practicable” has remained in the final rule.

Comment 80: One public commenter requested that “State conservation agency” be defined in the rule and requested a table listing the agencies within each State that are authorized to permit red-cockaded woodpecker impacts.

Our Response: We will still be responsible for issuing and managing all section 10 permits and Federal agencies will continue to consult with us on activities that may affect the red-cockaded woodpecker. State agencies are responsible for the State-approved plans but are unable to permit or approve take under the ESA. As a result, it would not be necessary to include a table listing the specific State agencies responsible for authorizing permits.

Comment 81: Several commenters expressed some confusion regarding SHAs. One commenter requested clarification regarding the numbers cited in the rule for active clusters (295) and above baseline clusters (241) on Safe Harbor properties. They wanted to know if the 295 referred to baseline clusters. Another commenter asked that there be exception for SHAs, now known as CBAs, only if the “above baseline” clusters have exceeded State recovery goals.

Our Response: The description of red-cockaded woodpecker clusters and SHAs in the proposed 4(d) rule did not specify the number of baseline red-cockaded woodpecker clusters enrolled in these agreements. The number provided for active clusters includes both above baseline and baseline active clusters. The number provided for above baseline clusters on Safe Harbor properties includes both active and inactive above baseline clusters.

Currently there are 273 red-cockaded woodpecker active clusters (both above baseline and baseline) in SHAs across the species’ range; 295 was written in error. We have excluded this level of detail in the rule to simplify the language and focus on our intended description that this section 4(d) rule does not alter this valuable program or the permits associated with it.

The regulations being promulgated by this 4(d) rule do not change or authorize the reduction of baseline clusters associated with existing SHAs or future CBAs. Take exceptions for privately owned properties would not provide any additional flexibility. The permits associated with existing SHAs and future CBAs authorize take associated with prescribed burns, herbicide use, and other activities, as long as landowners follow the stipulations in their SHA or CBA and do not decrease the number of red-cockaded woodpecker clusters below their baseline. Restricting excepted take to only above baseline clusters would not provide additional protection to red-cockaded woodpecker populations on private lands and may disincentivize beneficial habitat management. Additionally, limiting these exceptions to only properties exceeding their recovery goal could be detrimental to red-cockaded woodpecker populations below their recovery goal that require habitat management activities necessary to ensure sustainable nesting and foraging habitat. Excepted take resulting from the habitat management activities described in this 4(d) rule is intended to increase and maintain sustainable current and future habitat. We recognize that short-term adverse effects to red-cockaded woodpecker may be necessary to provide improved habitat quality and quantity in the long term with the expectation of increasing numbers of red-cockaded woodpecker.

Comment 82: One commenter questioned why properties enrolled in SHAs have “baseline” and “above baseline” and military installations have “protected” and “unprotected” clusters, but that similar mechanisms are not in place for the USFS, State agencies, and private landowners not enrolled in SHAs, now known as CBAs.

Our Response: All public land managers and applicable State land management agencies are able to enroll and participate in the Conservation Benefit Agreement program. While the mechanism for “protected” and “unprotected” clusters was originally developed for military installations, if the USFS, State agencies, and private landowners would like the same coverage, they can seek consultation

with the Service. It is important to note that, in this context, “unprotected” and “protected” clusters only pertains to areas where military training can or cannot occur. Only training that would not be expected to impact red-cockaded woodpeckers could occur within “unprotected” clusters, whereas military training cannot occur within “protected” clusters.

Comment 83: One public commenter suggested that the Service except take associated with activities done in accordance with the private lands guidelines set forth in the 2003 recovery plan. The commenter stated that the plan clearly lists habitat management practices that benefit the species and that forest landowners are already implementing across the landscape.

Our Response: The Service is not excepting take associated with activities done in accordance with the private lands guidelines. We support beneficial forest management practices conducted in accordance with the private lands guidelines in the 2003 recovery plan guidelines. Incidental take resulting from such activities is not anticipated when they are conducted outside red-cockaded woodpecker clusters or inside red-cockaded woodpecker clusters outside the breeding season but not within at least 1 or 2 hours of dawn and dusk as such activities are not expected to significantly impair essential behavioral patterns, including breeding, feeding, or sheltering. Within clusters during the breeding season, these activities may repeatedly disturb roosting and nesting red-cockaded woodpeckers thereby significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering, potentially resulting in cavity abandonment or nest failure, thus resulting in incidental take. Thus, flexibility exists to conduct such activities within red-cockaded woodpecker foraging habitat and nesting habitat outside the breeding season without the need for a take exception.

Comment 84: One public commenter asked if the Service is required to request a formal intraservice section 7 consultation on the effect of any final 4(d) rule. They noted that they did not see any information about this requirement in the proposed rule and expressed that this would be an opportunity to provide additional guidance to agencies and landowners on how best to manage for the species.

Our Response: The Service is required to conduct an intraservice section 7 consultation on any final 4(d) rule. We described this consultation requirement in the revised proposed rule (87 FR 6118, February 3, 2022). In the rule we

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

4(d) Rule General Issues

Comment 85: We received multiple comments on the 4(d) rule as originally proposed in our October 8, 2020, proposed rule (85 FR 63474). These comments expressed confusion and concern about the framing of the prohibitions and exceptions. Some commenters believed the 4(d) rule, as originally proposed, was overly restrictive (even more restrictive than the regulations that apply while the species is listed as endangered), while other commenters believed the proposed 4(d) rule provided inadequate protection.

Our Response: We reconsidered the proposed 4(d) rule and published a revised proposed 4(d) rule on February 3, 2022 (87 FR 6118). The revisions addressed the vast majority of concerns raised in the public comments on the October 8, 2020, proposed rule (85 FR 63474).

Final Reclassification Determination Background

A thorough review of the taxonomy, range and distribution, life history, and ecology of red-cockaded woodpecker is presented in the SSA report (USFWS 2022, pp. 16–34; available at <https://www.regulations.gov> at Docket No. FWS–R4–ES–2019–0018) and is briefly summarized here.

Red-cockaded woodpeckers were first described as *Picus borealis* (Vieillot 1807, p. 66). However, in the recent 59th supplement to the checklist of North American birds by the American Ornithological Society (AOS), the AOS Committee on Classification and Nomenclature changed the classification of *Picoides borealis* to *Dryobates borealis* (Chesser et al. 2018, pp. 798–800). We accept the change of the red-cockaded woodpecker’s classification from *Picoides borealis* to *Dryobates borealis*, and in this final rule, we amend the scientific name to match the currently accepted AOS nomenclature.

The red-cockaded woodpecker is a territorial, non-migratory bird species that makes its home in mature pine forests in the southeastern United States. The red-cockaded woodpecker is a relatively small woodpecker. Both male and female adult red-cockaded

woodpeckers are black and white with a ladder back and large white cheek patches. Males have a tiny red streak, or red “cockade”, on their upper cheek.

Red-cockaded woodpeckers live in groups that share, and jointly defend, territories throughout the year. In cooperative breeding systems, some mature adults forgo reproduction and instead assist in raising the offspring of the group’s breeding male and female (Emlen 1991, entire). A potential breeding group (PBG) may consist of zero to as many as five helpers, but most PBGs consist of only a breeding pair plus one to two helpers.

Young birds either disperse in their first year or remain on the natal territory and become helpers. First-year dispersal is the dominant strategy for females, but both strategies are common among males (Walters et al. 1988, pp. 287–301; Walters and Garcia 2016, pp. 69–72). Male helpers may become breeders by inheriting breeding status on their natal territory or by dispersing to fill a breeding vacancy at another territory (Walters et al. 1992, p. 625). Female helpers almost never inherit the breeding position on their natal territory, instead relying on dispersal to neighboring territories to become breeders.

Red-cockaded woodpeckers are unique among North American woodpeckers in that they nest and roost in cavities they excavate in living pines (Steirly 1957, p. 282; Jackson 1977, entire). Cavities are an essential resource for red-cockaded woodpeckers throughout the year, because the birds use them for roosting year-round, as well as nesting seasonally. The aggregation of active and inactive cavity trees within the area defended by a single group is termed the cavity tree cluster (Conner et al. 2001, p. 106).

Red-cockaded woodpeckers were once common throughout open, fire-maintained pine ecosystems, particularly longleaf pine that covered approximately 92 million acres before European settlement (Frost 1993, p. 20). Original pine forests were old and open, and contained a structure dominated by two layers, a canopy and diverse herbaceous ground cover, maintained by frequent low-intensity fire (Brockway et al. 2006, pp. 96–98).

Currently, nesting and roosting habitat of red-cockaded woodpeckers varies across the species’ range. The largest populations tend to occur in the longleaf pine woodlands and savannas of the East Gulf Coastal Plain, South Atlantic Coastal Plain, Mid-Atlantic Coastal Plain, and Carolina Sandhills (Carter 1971, p. 98; Hooper et al. 1982, entire; James 1995, entire; Engstrom et

al. 1996, p. 334). The shortleaf/loblolly forests of the Piedmont, Cumberlands, and Ouachita Mountain regions (Mengel 1965, pp. 306–308; Sutton 1967, pp. 319–321; Hopkins and Lynn 1971, p. 146; Steirly 1973, p. 80) are another important habitat type. Red-cockaded woodpeckers also occupy a variety of additional pine habitat types at the edges of their range, including slash (*Pinus elliottii*), pond (*P. serotina*), pitch (*P. rigida*), and Virginia pines (*P. virginiana*) (Steirly 1957, entire; Lowery 1974, p. 415; Mengel 1965, pp. 206–308; Sutton 1967, pp. 319–321; Jackson 1971, pp. 12–20; Murphy 1982, entire).

Once a common bird distributed contiguously across the southeastern United States, the red-cockaded woodpecker was estimated range-wide around the time of listing in 1970 to be fewer than 10,000 individuals (approximately 1,500 to 3,500 active clusters; an aggregate of cavity trees used by a group of woodpeckers for nesting and roosting) in widely scattered, isolated, and declining populations (Jackson 1971, pp. 12–20; Jackson 1978, entire; USFWS 1985, p. 22; Ligon et al. 1986, pp. 849–850). Today, the Service's conservative estimate is that there are 7,800 active clusters range-wide (USFWS 2022, pp. 16, 108–110), almost double the number of clusters that existed in 1995.

Recovery Criteria

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of endangered and threatened species unless we determine that such a plan will not promote the conservation of the species. Under section 4(f)(1)(B)(ii), recovery plans must, to the maximum extent practicable, include objective, measurable criteria which, when met, would result in a determination, in accordance with the provisions of section 4 of the Act, that the species be removed from the Lists of Endangered and Threatened Wildlife and Plants.

Recovery plans provide a roadmap for us and our partners on methods of enhancing conservation and minimizing threats to listed species, as well as measurable criteria against which to evaluate progress towards recovery and assess the species' likely future condition. However, they are not regulatory documents and do not substitute for the determinations and promulgation of regulations required under section 4(a)(1) of the Act. A decision to revise the status of a species, or to delist a species, is ultimately based on an analysis of the best scientific and commercial data available to determine whether a species is no longer an

endangered species or a threatened species, regardless of whether that information differs from the recovery plan.

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

The original recovery plan was issued by the Service on August 24, 1979. A first revision was issued on April 11, 1995, and the second, and current, revision on January 27, 2003. The 2003 recovery plan provided management guidelines fundamental to the conservation and recovery of red-cockaded woodpeckers. The Service continues to strongly encourage the application of these guidelines to the management of woodpecker populations on public and private lands. Implementation of the 2003 recovery plan has been carried out through the incorporation of management guidelines for installing artificial cavities, management of cavity trees and clusters, translocation, silviculture, and prescribed fire into various Federal and State land management plans. In addition to the management guidelines, the 2003 recovery plan provides guidelines to private landowners for managing foraging habitat on private lands occupied by red-cockaded woodpeckers. After the issuance of the 2003 recovery plan, two additional sets of foraging guidelines were developed (USFWS 2005, entire). As described in the 2005 guidance, the recovery standard for good quality foraging habitat is intended for recovery management to sustain and increase populations.

The 2003 recovery plan contains both downlisting and delisting criteria (USFWS 2003, pp. 141–145). The current status of red-cockaded woodpecker partially meets the 2003 downlisting criteria. The number of red-cockaded woodpecker active clusters has increased from 5,627 to more than 7,800 since 2003 (USFWS 2022, entire). The population size objectives to meet applicable downlisting criteria have been met for 15 of 20 designated populations. All of these designated populations show stable or increasing long-term population growth rates ($\lambda \geq 1$). However, not all of the designated recovery populations are demographically a single functional population as intended by the 2003 recovery plan. Nine of the 20 designated recovery populations that count toward fulfilling downlisting population size criteria consist of multiple smaller demographic populations. Based on the largest single demographic population for a designated recovery population, 14 of 20 designated recovery populations have achieved downlisting population size criteria. As to delisting criteria, because the delisting criteria all require all-natural cavities, none of the delisting criteria have been fully met. With continued forest management to retain and produce sufficient old pines for natural cavity excavation, future populations would no longer be dependent on artificial cavities. Regardless, there has been encouraging progress towards meeting the delisting criteria, as 12 of 29 demographically delineated populations corresponding to designated recovery populations currently have achieved population sizes that meet the delisting criteria. We described that status of the downlisting and delisting criteria in detail in the proposed rule (85 FR 63474, October 8, 2020).

For the red-cockaded woodpecker, although all of the population objectives from the 2003 recovery plan have yet to be reached, the primary recovery task of increasing existing populations on Federal and State lands has been successful, and the population growth rates indicate sufficient resiliency to stochastic disturbances with effective management. In addition, redundancy of moderate to very high resiliency populations suggests that risks from future catastrophic events to overall viability are low.

Regulatory and Analytical Framework

Regulatory Framework

Section 4 of the Act (16 U.S.C. 1533) and the implementing regulations in title 50 of the Code of Federal

Regulations set forth the procedures for determining whether a species is an endangered species or a threatened species, issuing protective regulations for threatened species, and designating critical habitat for endangered and threatened species. On April 5, 2024, jointly with the National Marine Fisheries Service, the Service issued a final rule that revised the regulations in 50 CFR part 424 regarding how we add, remove, and reclassify endangered and threatened species and what criteria we apply when designating listed species' critical habitat (89 FR 24300). On the same day, the Service published a final rule revising our protections for endangered species and threatened species at 50 CFR 17 (89 FR 23919). These final rules are now in effect and are incorporated into the current regulations. Our analysis for this final decision applied our current regulations. Given that we proposed reclassifying this species under our prior regulations (revised in 2019), we have also undertaken an analysis of whether our decision would be different if we had continued to apply the 2019 regulations and we concluded that the decision would be the same. The analyses under both the regulations currently in effect and the 2019 regulations are available on <https://www.regulations.gov>.

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

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; or
- (E) Other natural or manmade factors affecting its continued existence.

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

factors in downlisting a species from endangered to threatened.

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

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

The Act does not define the term "foreseeable future," which appears in the statutory definition of "threatened species." Our implementing regulations at 50 CFR 424.11(d) set forth a framework for evaluating the foreseeable future on a case-by-case basis which is further described in the 2009 Memorandum Opinion on the foreseeable future from the Department of the Interior, Office of the Solicitor (M-37021, January 16, 2009; "M-Opinion," available online at <https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/M-37021.pdf>). The foreseeable future extends as far into the future as the Services can make reasonably reliable predictions about the threats to the species and the species' responses to those threats. We need not identify the foreseeable future in terms of a specific period of time. We will describe the foreseeable future on a case-by-case

basis, using the best available data and taking into account considerations such as the species' life-history characteristics, threat-projection timeframes, and environmental variability. In other words, the foreseeable future is the period of time over which we can make reasonably reliable predictions. "Reliable" does not mean "certain"; it means sufficient to provide a reasonable degree of confidence in the prediction, in light of the conservation purposes of the Act.

Analytical Framework

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent our decision on whether the species should be reclassified as a threatened species under the Act. However, it does provide the scientific basis that informs our regulatory decisions, which involve the further application of standards within the Act and its implementing regulations and policies.

To assess red-cockaded woodpecker viability, we used the three conservation biology principles of resiliency, redundancy, and representation (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency is the ability of the species to withstand environmental and demographic stochasticity (for example, wet or dry, warm or cold years), redundancy is the ability of the species to withstand catastrophic events (for example, droughts, large pollution events), and representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment (for example, climate conditions, pathogens). In general, species viability will increase with increases in resiliency, redundancy, and representation (Smith et al. 2018, p. 306). Using these principles, we identified the 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 individual species' life-history needs. The next stage involved an assessment of the historical and current condition of the species' demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions

about the species' responses to positive and negative environmental and anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time, which we then used to inform our regulatory decision.

The following is a summary of the key results and conclusions from the SSA report; the full SSA report (USFWS 2022, entire) can be found at Docket No. FWS-R4-ES-2019-0018 on <https://www.regulations.gov> and at <https://ecos.fws.gov/ecp/species/7614>.

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. In addition, the SSA report (USFWS 2022, entire) documents our comprehensive biological status review for the species, including an assessment of the potential threats to the species.

The following is a summary of this status review and the best available information gathered since that time that have informed this decision. In the discussion below, we summarize the conclusions of that assessment, which we provide in full under Docket No. FWS-R4-ES-2019-0018 on <https://www.regulations.gov> and at <https://fws.gov/species/red-cockaded-woodpecker-dryobates-borealis>.

Summary of Species Needs

In the SSA report, we discuss individual-, population-, and species-level needs of the red-cockaded woodpecker in detail (USFWS 2022, pp. 32–104). Red-cockaded woodpeckers require open pine woodlands and savannas with large, old pines for nesting and roosting. Old pines are required as cavity trees because cavity chambers must be completely within the heartwood to prevent pine resin in the sapwood from entering the chamber (Conner et al. 2001, pp. 79–155); a tree must be old and large enough to have sufficient heartwood to contain a cavity. In addition, old pines have a higher incidence of the heartwood decay that greatly facilitates cavity excavation. Cavity trees must be in open stands with little or no hardwood midstory and few or no overstory hardwoods. Hardwood encroachment on cavity trees resulting from fire suppression is a well-known cause of cluster abandonment.

Red-cockaded woodpeckers also require adequate foraging habitat. Over

75 percent of the red-cockaded woodpecker's diet consists of arthropods. Individuals generally capture arthropods on and under the outer bark of live pines and in dead branches of live pines. A large proportion of the arthropods on pine trees crawl up into the trees from the ground, which implies the condition of the ground cover is an important factor influencing abundance of prey for red-cockaded woodpecker (Hanula and Franzreb 1998, entire). The density of pines has a negative relationship with arthropod abundance and biomass, likely due at least in part to the negative effect of pine density on ground cover, from which some of the prey comes (Hanula et al. 2000, entire). Arthropod abundance and biomass also increase with the age and size of pines (Hooper 1996, entire; Hanula et al. 2000, entire), which is another reason older pines are so critical to this species. Accordingly, suitable foraging habitat generally consists of mature pines with an open canopy, low densities of small pines, a sparse hardwood or pine midstory, few or no overstory hardwoods, and abundant native bunchgrass and forb groundcovers. Frequent fire likely increases foraging habitat quality by reducing hardwoods and by increasing the abundance and perhaps nutrient value of prey (James et al. 1997, entire; Hanula et al. 2000, entire; Provencher et al. 2002, entire). Thus, frequent growing season fire may be critical in providing red-cockaded woodpeckers with abundant prey.

For the red-cockaded woodpecker to maintain viability, its populations or some portion thereof must be resilient. The SSA assessed resiliency at the population level, primarily by evaluating the current population size as the number of active clusters and secondarily by the associated past growth rate. Ultimately, a resilient population of red-cockaded woodpecker has a large number of active clusters and a positive growth trajectory. Red-cockaded woodpecker resiliency primarily depends upon a single factor: amount of managed suitable habitat.

Representation provides the ability of the species to adapt to physical (e.g., climate conditions, habitat conditions or structure across large areas) and biological (e.g., novel diseases, pathogens, predators) changes in its environment presently and into the future; it is a proxy measure for the evolutionary capacity or flexibility of the species. Representation is the range of variation found in a species, and this adaptive diversity is the source of species' adaptive capabilities. The red-cockaded woodpecker's adaptive

diversity can be thought of as the amount and spatial distribution of genetic and phenotypic diversity. By maintaining these two sources of adaptive diversity across a species' range, the responsiveness and adaptability of a species over time is preserved (USFWS 2022, pp. 90–104). The SSA evaluated representation based on the extent and variability of habitat characteristics across the geographical range of the species and characterized representative units for the red-cockaded woodpecker using ecoregions. This analysis generally followed the approach to representation used in the species' 2003 recovery plan (USFWS 2003, pp. 148, 152–155).

For the red-cockaded woodpecker to maintain viability, the species also needs to exhibit some degree of redundancy. Measured by the number of populations, their resiliency, and their distribution, redundancy increases the probability that the species has a margin of safety to withstand, or can bounce back from, catastrophic events. The SSA reported redundancy for red-cockaded woodpeckers as the total number and resilience of population segments and their distribution within and among representative units.

In summary, a species needs a suitable combination of all three characteristics (resilience, representation, and redundancy) for long-term viability.

Summary of Stressors

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have analyzed the cumulative effects of identified threats and conservation actions on the species. To assess the current and future condition of the species, we evaluate the effects of all the relevant factors that may be influencing the species, including threats and conservation efforts. Because the SSA framework considers not just the presence of the factors, but 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.

The primary risk factor (i.e., stressor) affecting the status of the red-cockaded woodpecker remains the lack of suitable habitat (Factor A). Wildfire, pine beetles, ice storms, tornadoes, hurricanes, and other naturally occurring disturbances that destroy pines used for cavities and foraging are stressors for the red-cockaded woodpecker (Factor E), especially given the high number of very small

woodpecker populations (Factor E) (USFWS 2022, pp. 40–41, 83–85, 105, 121–129). The number and severity of major hurricanes (Bender et al. 2010, entire; Knutson et al. 2010, entire; Walsh et al. 2014, pp. 41–42) is expected to increase in response to global climate change, and this increase could also disproportionately affect the smaller, less resilient woodpecker populations (Factor E). With rare exception, the vast majority of red-cockaded woodpecker populations remain dependent on artificial cavities due to the absence of sufficient old pines for natural cavity excavation and habitat treatments to establish and maintain the open, pine-savanna conditions favored by the species (Factor E). These populations will decline without active and continuous management to provide artificial cavities and to sustain and restore forest conditions to provide suitable habitat for natural cavities and foraging similar to the historical conditions (Conner et al. 2001, pp. 220–239, 270–299; Rudolph et al. 2004, entire).

Although published after the completion of the SSA report, a recent publication indicated potential effects of warming temperatures, resulting from climate change, on breeding phenology of red-cockaded woodpeckers. A description of this preliminary research has been incorporated below.

Habitat Loss and Degradation

The primary remaining threats to the red-cockaded woodpecker's viability have the same fundamental cause: lack of suitable habitat. Historically, the significant impacts to red-cockaded woodpecker habitat occurred as a result of clearcutting, incompatible forest management, and conversion to urban and agricultural land uses. Both the longleaf pine and other open pine ecosystems were eliminated from much of their original range because of early (1700s) European settlement, widespread commercial timber harvesting, and the naval stores (turpentine) industry (1800s). Early to mid-1900 commercial tree farming, urbanization, and agriculture contributed to further declines. Much of the remaining habitat is very different from the vast, historical pine forests in which the red-cockaded woodpecker evolved. The second growth longleaf pine forests of today, rather than being dominated by centuries-old trees as the original forests were, are just reaching the age (90–100 years) required to meet all the needs of the red-cockaded woodpecker. Furthermore, in many cases, the absence of fire has caused the original open savannas to degrade into

dense pine/hardwood forest. Much of today's forest is young and dense, and dominated by loblolly pine, with a substantial hardwood component and little or no herbaceous groundcover (Noel et al. 1998, entire; Frost 2006, pp. 37–38).

The impacts from this clearcutting and incompatible forest management have been significantly curtailed and replaced by beneficial conservation management that sustains and increases populations; however, stressors caused by adverse historical practices still linger, including insufficient numbers of cavities, low numbers of suitable old pines, habitat fragmentation, degraded foraging habitat, and small populations. These lingering impacts can negatively affect the ability of populations to grow, even when populations are actively managed for growth, as the carrying capacity of suitable forest areas across much of the range can be quite low. However, restoration activities such as prescribed fire and strategic placement of recruitment clusters can reduce gaps between populations and increase habitat and population size toward current carrying capacity. These activities are occurring across the range of the red-cockaded woodpecker on properties actively managed for red-cockaded woodpecker conservation.

Currently, stressors to the species resulting from exposure to habitat modification or destruction are lower, especially when compared to historical levels. Periodically, military training on DoD installations requires clearing of red-cockaded woodpecker habitat for construction of ranges, expansion of cantonments, and related infrastructure, but these installations have management plans to sustain and increase red-cockaded woodpecker populations. In addition, silvicultural management on Federal, State, and private lands also occasionally results in temporary impacts to habitat; for example, red-cockaded woodpecker habitat may be unavoidably, but temporarily, adversely affected in old, even-aged loblolly pine stands that require regeneration prior to stand senescence to sustain a matrix of future suitable habitat for a net long-term benefit. Similarly, red-cockaded woodpecker habitat may be temporarily destroyed in areas where offsite loblolly, slash, or other pines are removed and replaced by the more fire-tolerant native longleaf pine. However, the net result of these activities is a long-term benefit, as the goal is to restore these areas to habitat preferred by woodpeckers.

Climate Change

In 2019, DeMay and Walters published preliminary investigations

that examined the “effects of climate on breeding phenology and productivity in 19 populations across the range of the red-cockaded woodpecker” (DeMay and Walters 2019, p. 1). They found that birds at higher latitudes appear to be adjusting the timing of breeding in response to warming temperatures; they are nesting earlier and have resulting higher productivity. However, they found that birds in the southwestern portion of the range have been exhibiting declining productivity, even in populations with high-quality habitat and ongoing active management (*e.g.*, Eglin Air Force Base); the authors hypothesized this decline in productivity could be due to “a possible shift in acceptable climate conditions for the species” or an inability of these populations to make appropriate adjustments to the timing of reproduction in the face of a changing climate.

While the SSA report did not incorporate the findings of DeMay and Walters (2019), it did acknowledge that southwestern populations have lower productivity (USFWS 2022, p. 26) and referenced earlier research to similarly suggest that climate change has the potential to influence productivity through anticipated changes in temperature and precipitation patterns (USFWS 2022, p. 92; Schiegg et al. 2002, entire). Even with the lower productivity in the southwestern populations, it should be noted that the current species distribution covers 13 different ecoregions, all with unique climatic profiles, suggesting that the species has an increased ability to adapt.

Natural Disturbances

Wildfire, pine beetles, ice storms, tornadoes, and hurricanes are naturally occurring disturbances that destroy pines used for cavities. The loss of pines can result in subsequent reductions to population size unless management actions are taken to reduce or ameliorate adverse impacts. These management actions include providing artificial cavities, reducing hazardous fuels, and restoring forests to suitable habitat following these events. These disturbances can also destroy or degrade foraging habitat and cause direct mortality of woodpeckers. Small populations are the most vulnerable to these disturbances as there are fewer individuals to recover from the disturbance, potentially resulting in poorer survival or reproduction for the population. See the SSA report for more information about these natural disturbances (USFWS 2022, pp. 121–129).

Habitat destruction caused by hurricanes is the most acute and potentially catastrophic disturbance because hurricanes can impact entire populations. As noted in the SSA report, of the 124 current demographic populations, about 63 populations in the East Gulf Coastal Plain, West Gulf Coastal Plain, the lower portion of the Upper West Gulf Coastal Plain, and Florida Peninsula ecoregions are vulnerable to potential catastrophic impacts of hurricanes, particularly major hurricanes. Fifty-six of these 63 populations (89 percent) are identified as low or very low resiliency in the SSA report, which makes them significantly vulnerable to adverse impacts from exposure to hurricanes. In addition, the frequency of intense Atlantic basin hurricanes, particularly major Category 4 and 5 storms, may be expected to increase in response to global climate change during the 21st century (Bender et al. 2010, entire; Knutson et al. 2010, entire; Walsh et al. 2014, pp. 41–42, Vecchi et al. 2021, entire). That being said, we are unable to precisely predict the location and frequency of future storms affected by climate change relative to particular red-cockaded woodpecker populations, which is why we are unable to identify specific populations as being at risk from hurricanes. While larger populations (greater than 400 active clusters) are the most likely to withstand a strike by a major hurricane (e.g., Hooper et al. 1990, entire; Hooper and McAdie 1995, entire; Watson et al. 1995, entire), smaller populations are more vulnerable to adverse effects from them, including extirpation, as well as to the effects of recurring storms that subsequently deplete cavity trees and foraging habitat, causing reductions in population size. However, these smaller populations may be able to withstand and persist after hurricanes if biologists and land managers implement prompt, effective post-storm recovery actions, such as installing artificial cavities, reducing hazardous fuels, and restoring forests to suitable habitat. Such actions have been occurring after storm events for managed populations, such as the quick response after Hurricane Michael in October 2018.

Summary of Conservation Management

As noted above, the red-cockaded woodpecker is a conservation-reliant species and responds well to active management. The vast majority of properties on public lands harboring red-cockaded woodpeckers have implemented management programs to sustain or increase populations consistent with population size

objectives in the 2003 recovery plan or other plans (e.g., INRMP, USFS management plans, National Wildlife Refuge (NWR) management plans). Plans are specific to each property or management unit but generally contain the same core features (e.g., cavity management, translocation, prescribed burning). The most comprehensive plans call for intensive cavity management with the installation of artificial cavities to offset cavity loss in existing territories, maintenance of sufficient suitable cavities to avoid loss of active territories, and creation of new territories with recruitment clusters and artificial cavities in restored or suitable habitat to increase population size. The development of techniques to construct artificial cavities (Copeyon 1990, entire; Allen 1991, entire) offsets the lack of natural cavities and provides managers a new tool to greatly increase cavity availability. Fortunately, red-cockaded woodpeckers readily adapt to these artificial cavities, with thousands installed since the early 1990s. These cavity management activities are necessary until mature forests are restored with abundant old pines 65 and more years of age for natural cavity excavation.

Managers also reduce fragmentation by restoring and increasing habitat with strategic placement of recruitment clusters to reduce gaps within and between populations. Furthermore, red-cockaded woodpecker subadults from large or stable donor populations are translocated to augment growth of small, vulnerable populations. Of the current 124 demographic populations, 108 are small (fewer than 99 active clusters) with inherently very low or low resiliency. These are the most vulnerable to future extirpation due to stochastic demographic and environmental factors and inbreeding depression. Inbreeding depression in small, fragmented populations of up to 50 to 100 active clusters without adequate immigration can further increase the probability of decline and future extirpation; for these populations, red-cockaded woodpecker translocation programs reduce risks of adverse inbreeding impacts. As noted in the SSA report (see *Current Condition*, below), while resiliency is moderate for 10 of the current populations with 100 to 249 active clusters, and 6 populations exhibit high or very high resiliency, potential adaptive genetic variation is still expected to decline in all red-cockaded woodpecker populations (Bruggeman 2010, p. 22, appendix B, pp. 39–42; Bruggeman et al. 2010, entire; Bruggeman and Jones 2014, pp.

29–33). Effective management programs to sustain even the smallest populations are critical to reduce the risks of inbreeding, establish genetic connectivity among fragmented populations, and maintain ecological diversity and life-history demographic variation as patterns of representation within and across broad ecoregions.

Additionally, managers are implementing compatible silviculture methods to sustain, restore, and increase habitat with an increased use of effectively prescribed fire. Finally, managers are implementing monitoring programs looking at both habitat and populations to provide feedback for effective management. The future persistence of the species will require these management actions to continue. In order to facilitate this, we have structured our final 4(d) rule to encourage the continuation of such management. However, while many of the landowners and managers within the range of the species have committed to continuing to implement their conservation programs into the future, we do not have certain commitments that all current management will continue.

In the SSA report, we identified 124 current demographic populations with a total of 7,794 active clusters. Seventy-one of the 124 currently delineated red-cockaded woodpecker populations occur on lands solely owned and managed by Federal agencies, with 4,033 current active clusters. Seven additional populations with 2,026 active clusters occur on lands that are under mixed Federal and State ownership but are predominately managed by Federal agencies. Thirty-one populations are on lands managed solely by State agencies, with 557 active clusters. Thus, 88 percent of delineated populations with 6,616 active clusters (85 percent of all 7,794 active clusters in 124 populations) are on lands managed entirely by Federal and State agencies with statutes to require management plans addressing the conservation of natural resources. Two populations occur in a matrix of public and private lands, mostly Federal and State properties, with 816 active clusters. One population with 20 active clusters is managed by a State agency and private landowner.

There are additional active clusters of red-cockaded woodpeckers on nongovernmental lands enrolled in SHAs, but as noted above, we did not have adequate data to spatially delineate all demographic populations on these lands. Of the 933 active clusters managed by landowners with existing SHAs in 8 States (Alabama, Florida, Georgia, Louisiana, North Carolina,

South Carolina, Texas, and Virginia), demographic populations with respective population sizes have not been delineated for approximately 558 active clusters.

Below is a summary of the types of management plans that include elements directed at red-cockaded woodpecker management and conservation. Note that the numbers of populations below do not necessarily add up to the 124 current demographic populations identified in the SSA report, because some populations cross property boundaries and are managed by more than one landowner.

Department of Defense

Within the range of the red-cockaded woodpecker, the DoD manages habitat for 14 populations, 5 of which are in the moderate to very high resiliency categories, and 9 are in the low to very low resiliency categories. The Sikes Act requires DoD installations to conserve and protect the natural resources within their boundaries. INRMPs are planning documents that outline how each military installation with significant natural resources will manage those resources, while ensuring no net loss in the capability of an installation to support its military testing and training mission. Within the range of the red-cockaded woodpecker, all DoD installations have current INRMPs that address protection and recovery of the species, both through broader landscape-scale ecosystem stewardship and more specific management activities targeted directly at red-cockaded woodpecker conservation. These activities include providing artificial cavities to sustain active clusters, installing recruitment clusters to increase population size, sustaining and increasing habitat through compatible forest management and prescribed fire, and increasing the number and distribution of old pines for natural cavity excavation. Each installation has a red-cockaded woodpecker property or population size objective with provisions for monitoring. For most installations, a schedule is available for reducing certain military training restrictions in active clusters in response to increasing populations and attaining population size thresholds.

U.S. Forest Service

The USFS manages habitat for 49 red-cockaded woodpecker populations on 17 National Forests and the Savannah River Site Unit (owned by the Department of Energy but managed by the USFS). Of these populations, 10 have moderate to very high resiliency

and 39 identified as having low or very low resiliency. Under the National Forest Management Act of 1976 (16 U.S.C. 1600 *et seq.*), National Forests are required to develop plans that provide for multiple use and sustained yield of forest products and services, which includes timber, outdoor recreation, range, watershed, fish and wildlife, and wilderness resources. These plans, called “land and resource management plans” (LRMPs) and their amendments, have been developed for every National Forest in the current range of the red-cockaded woodpecker. The LRMPs for National Forests in three States (Louisiana, North Carolina, and Texas) predate the Service’s 2003 recovery plan. Nevertheless, all National Forests (even those with outdated LRMPs) have implemented management strategies to protect and manage red-cockaded woodpecker habitat and increase populations.

Current LRMPs approved prior to the 2003 recovery plan were developed in coordination with the Forest Service’s 1995 regional plan for managing the red-cockaded woodpecker on southern National Forests (USFS 1995, entire). The 1995 regional plan includes most of the new and integrated management methods (Rudolph et al. 2004, entire) to sustain and increase populations as incorporated in the recovery plan. These include installing artificial cavities, increasing population size with recruitment clusters, and restoring suitable habitat with forest management treatments and prescribed fire. Some of the more recent LRMPs, such as for National Forests in Mississippi, are more broadly programmatic, but incorporate the 2003 recovery plan by reference for appropriate conservation methods and objectives.

U.S. Fish and Wildlife Service

The National Wildlife Refuge (NWR) System manages 14 NWRs with red-cockaded woodpeckers, with 10 NWRs supporting rangewide species recovery. In the SSA report, we considered 3 of 19 populations found on NWRs to be moderate to very high resiliency while 16 have low to very low resiliency. Under the NWR System Improvement Act of 1997 (Pub. L. 105–57), NWRs prepare comprehensive conservation plans (CCPs), which provide a blueprint for how to manage for the purposes of each refuge; address the biological integrity, diversity, and environmental health of a refuge; and facilitate compatible wildlife-dependent recreation. NWRs have assigned population objectives from the 2003 recovery plan through their CCPs or modified in their habitat management

plans. Specific tasks in these plans include installation of artificial cavities; translocation; establishing recruitment clusters; population monitoring; prescribed fire; and silvicultural treatments, such as mid-story removal, thinning of younger stands, and, where necessary, increasing stand age diversity with regeneration of pine stands.

National Park Service

Within the Big Cypress National Preserve (Preserve) in Florida, the National Park Service (NPS) manages two red-cockaded woodpecker populations, one with low and the other with very low resilience. The NPS’s plans do not include specific provisions for red-cockaded woodpecker management; however, at the Preserve, the NPS conducts prescribed fire to maintain and improve the south Florida slash pine forest communities that support the species. The NPS also allows FFWCC biologists to conduct red-cockaded woodpecker surveys, monitor, periodically install a limited number of artificial cavities, and conduct translocations on occasion. From surveys and monitoring by the FFWCC, 75 percent of all cavity trees within the Preserve consist of natural cavities, which is an unusually high number relative to other populations, reflecting the predominately old condition of the Big Cypress south Florida slash pine forests (Spickler 2019, pers. comm.).

State Lands

The States of Arkansas, Florida, Georgia, Louisiana, North Carolina, Oklahoma, South Carolina, Texas, and Virginia have red-cockaded woodpecker populations on State-owned lands. All or parts of 40 currently delineated populations occur on State lands. Seven populations on or partially on State lands have moderate to very high resiliency, while 32 populations have low to very low resiliency. These properties range from State Forest Service or Forest Commission holdings to Department of Wildlife, Department of Natural Resources, and State Park Service properties. The mission, and therefore the extent and type of management, of each unit varies. For example, some State lands are managed generally to provide ecosystem benefits, such as managing pine-dominated forests with prescribed fire. However, other State properties implement proactive conservation management specifically for the red-cockaded woodpecker. For example, the FFWCC manages all of its properties under the umbrella of the Florida Red-cockaded Woodpecker Management Plan, with

other specific plans for the agency's WMAs.

Other Lands

Eight States have a Service-approved programmatic SHA with a section 10(a)(1)(A) enhancement of survival permit under the Act to enroll non-Federal landowners that voluntarily provide beneficial management. Of 459 enrolled non-Federal landowners, one is for a State property and all others are private nongovernmental lands. All or parts of 12 currently delineated demographic populations are covered under a current SHA. Again, we are aware of additional active clusters covered under SHAs, but we lack the data to delineate them as demographic populations. SHAs, now known as CBAs, are partnerships between landowners and the Service involving voluntary agreements under which the property owners receive formal regulatory assurances from the Service regarding their management responsibilities in return for contributions to benefit the listed species.

For the red-cockaded woodpecker, this includes voluntary commitments by landowners to maintain and enhance red-cockaded woodpecker habitat to support baseline active clusters, which is the number of clusters at the time of enrollment, and additional above-baseline active clusters that increase in response to beneficial management. Beneficial management includes the maintenance and enhancement of existing cavity trees and foraging habitat through activities such as prescribed fire, mid-story thinning, seasonal limitations for timber harvesting, and management of pine stands to provide suitable foraging habitat and cavity trees. Because above-baseline active clusters and habitat covered under these plans can be returned to "baseline" conditions, any population growth on lands covered by existing SHAs or future CBAs may not be permanent. In addition, enrolled landowners can terminate their agreement at any time. However, fewer than 5 of the 459 enrolled landowners have ever used their permit authorities to return the number of active clusters to baseline conditions, and only 12 landowners have terminated their agreement. There currently are 241 active above-baseline clusters in the program.

In summary, the red-cockaded woodpecker is a conservation-reliant species, but one that responds very well to active management. The majority of red-cockaded woodpecker populations are managed under plans that address population enhancement and habitat

management to sustain or increase populations, and to meet the 2003 recovery plan objectives for primary core, secondary core, and essential support populations. We expect these property owners will continue to implement their respective management plans while the species is listed as threatened, as the red-cockaded woodpecker will remain protected under the Act and the 2003 recovery plan is still applicable.

Current Condition

Resiliency

In the SSA report, we identified 124 demographic populations across the range of the red-cockaded woodpecker for which sufficient data were available to complete the SSA analysis for the recent past to current condition. We acknowledge there are other small occurrences of red-cockaded woodpeckers, particularly on private lands; however, spatial data for these other occurrences were incomplete, so for purposes of the SSA analysis, and subsequently throughout this final rule, we focused only on the 124 demographic populations that could be spatially delineated. The SSA categorizes two important parameters related to current population resiliency: current population size and associated population growth rate. Population resiliency size categories are defined as follows: very low (fewer than 30 active clusters); low (30 to 99 active clusters); moderate (100 to 249 active clusters); high (250 to 499 active clusters); and very high (greater than or equal to 500 active clusters).

Population resiliency size-classes were derived from spatially explicit individual-based models and simulations for this species (Letcher et al. 1998, entire; Walters et al. 2002, entire), the performance of which have been reasonably validated with reference to actual populations (Schiegg et al. 2005, entire; Walters et al. 2011, entire). We also considered subsequent modifications of these models and simulations that incorporated adverse effects of inbreeding depression on population persistence and growth (Daniels et al. 2000, entire; Schiegg et al. 2006, entire). These models were developed from extensive biological data and specifically designed to incorporate the dynamics of the red-cockaded woodpecker's cooperative breeding system that are not accurately represented in other types of population models (Ziegler and Walters 2014, entire). These models simulated populations of different initial sizes under natural conditions without any

limiting habitat and cavity conditions that could impair population growth.

We consider these results as indicators of inherent resilience because effects of conservation management actions to sustain and increase populations were not simulated. These beneficial management practices would include installation of recruitment clusters with artificial cavities to induce new red-cockaded woodpecker groups and translocation to augment the size and growth of small populations. The vast majority of the 124 current populations have been, and currently are, subject to specific conservation management actions for this species, including recruitment clusters. Thus, the inherent resilience size-classes derived from population models and simulations have been further qualified by actual growth rates as indicators of effects of beneficial management for this conservation-reliant species.

Populations with very low resiliency (fewer than 30 active clusters) are the most vulnerable to future extirpation following stochastic events, with declining growth and extirpation likely in 50 years. Populations with low resiliency (30 to 99 active clusters) are more persistent, but remain vulnerable to declining growth, inbreeding depression, and extirpation. Inbreeding depression reduces red-cockaded woodpecker egg hatching rates and survival of fledglings (Daniels and Walters 2000a, entire). Inbreeding in red-cockaded woodpeckers is a consequence of breeding among close relatives in response to naturally short dispersal distances of related birds among nearby breeding territories, exacerbated by small populations and fragmentation among populations that reduce immigration rates of unrelated individuals (Daniels and Walters 2000a, entire; 2000b, entire; Daniels et al. 2000, entire; Schiegg et al. 2002, entire; 2006, entire).

The consequences of inbreeding depression further reduce population growth rates and increase the probabilities of extirpation in populations in sizes up to about 100 active clusters (Daniels et al. 2000, entire; Schiegg et al. 2006, entire). The largest populations with low resiliency may have long-term average growth rates (λ or λ_{bda}) near 1.0 (a λ of 1.00 is considered stable, less than 1.00 is declining, and greater than 1.00 is increasing), but with slow rates of decline and a high risk of inevitable future extirpation.

The moderate resiliency category (100 to 249 active clusters) is a large transitional class. Smaller populations without inbreeding likely will

experience a slow decline, but without extirpation, in 25 to 50 years because the populations in at least some territories will survive, although as much smaller and more vulnerable populations. The largest populations in the moderate resiliency category may be relatively stable or nearly so. Populations with a high resiliency (250 to 499 active clusters) on average should be stable except perhaps for the very smallest, which may have average growth rates slightly less than 1.00.

In high resiliency populations, adverse demographic effects of inbreeding depression are not expected. Populations in the very high resiliency class (greater than or equal to 500 active clusters) are stable and the most resilient, with average growth rates of 1.0 or slightly greater. Based on the most recent data, 3 red-cockaded woodpecker populations fall within the very high resilience category (totaling 2,143 clusters); 3 are in high resilience populations (1,364 total clusters); 10 are in moderate resilience populations (1,555 total clusters); 37 are in low resilience populations (1,923 total clusters); and 71 are in very low resilience populations (809 total clusters). In short, of the estimated 7,794 active clusters distributed among 124 populations across the range of the species, 5,062, or 65 percent, are in 16 moderate to very high resiliency populations.

The second resiliency parameter measured in the SSA was growth rate of the populations. For the SSA, there was only sufficient GIS data to delineate past demographic populations with population size data to compute past-to-current growth rates for 98 of the 124 populations. Of these 98 populations, the Service determined that 13 (13.3 percent) were declining ($\lambda < 1.00$), 19 (19.4 percent) were stable ($\lambda = 1.00$ –1.02), and 66 (67.3 percent) were increasing ($\lambda > 1.02$). Combining growth rates with population sizes of these 98 populations, growth rates have been stable to increasing for all of those moderate, high, and very high resiliency populations where growth rate could be measured.

Of the 86 very low and low resiliency populations where growth rate could be measured, 73 populations demonstrated stable and positive growth rates, with several populations showing very high growth rates. This is indicative of the positive effects of red-cockaded woodpecker conservation management programs on these locations and the ability of such management to offset inherently low or very low population resilience. Growth rates are decreasing in only 13 (15 percent) of the low and

very low resiliency populations where growth rate could be measured.

Current population conditions in the SSA report were derived from the number and location of active clusters primarily in 2016 and 2017. These conditions did not take into account Hurricane Michael, which came ashore near Mexico Beach, Florida, on October 10, 2018, as a Category 4 storm. More than 1,500 cavity trees were blown down or damaged in populations in the Apalachicola National Forest, Silver Lake WMA, Jones Ecological Research Center, and Tate's Hell State Forest (Dunlap 2018, entire; McDearman 2018, entire). These represented three demographic populations: Apalachicola National Forest-St. Marks NWR-Tate's Hell State Forest, Jones Ecological Research Center, and Silver Lake WMA. The effects of Hurricane Michael did not change current conditions for these populations in terms of their resilience size-classes as described in the SSA report, and as summarized here.

After Hurricane Michael, 870 clusters were rapidly assessed in Apalachicola National Forest where 1,410 cavity trees were damaged or blown down, followed by the installation of 682 artificial cavities (Dunlap 2018, entire). In 2018, prior to this hurricane, the Apalachicola National Forest population survey estimate was 833 active clusters (Casto 2018, pers. comm.). After the hurricane, the 2019 survey estimate was 857 active clusters (Casto 2019, pers. comm.). At Silver Lake WMA, 154 cavity trees were damaged or lost; however, within 2 weeks of the storm more than 90 artificial cavities were installed (Burnham 2019a, p. 9). The pre-storm population was 36 active clusters and 32 PBGs, with a post-storm decline to 33 active clusters and 28 PBGs (Burnham 2019b, p. 6). About 24 percent of all cavity trees at the Jones Ecological Research Center were damaged or destroyed (Rutledge 2019, p. 13). The pre-storm Jones Center population was 38 active clusters with 34 PBGs (Henshaw 2019, p. 4). Post-storm, after installation of artificial cavities, there were 40 active clusters with 31 PBGs (Henshaw 2019, p. 4). At Tate's Hell State Forest, about 23 of 527 cavity trees among 61 active clusters and 51 PBGs were blown down (Alix 2018, pers. comm.). After post-storm management, the Tate's Hell State Forest currently consists of 64 active clusters and 54 PBGs (Alix 2020, pers. comm.).

The total increase of active clusters from all of the properties demonstrates that with prompt, active management, the vulnerability of these populations to stochastic events can potentially be reduced. Additional intermediate and

long-term habitat restoration treatments at these properties are still required to reduce hazardous fuels from large and small woody debris, restore habitat, and implement reforestation or regeneration in the most severely damaged pine stands. Overall, we do not anticipate that Hurricane Michael will affect long-term viability of these populations. However, we will continue to evaluate the success of the emergency, intermediate, and long-term response efforts.

In summary, although most of red-cockaded woodpecker populations for which we have data are still small and remain vulnerable to stochastic events and possibly inbreeding depression, the vast majority of populations are showing stable or increasing growth rates, and the majority of birds and clusters occur in a few large, resilient populations. Of the 98 populations for which trend data are available, only 13 percent are declining. In addition, over 65 percent of red-cockaded woodpecker clusters are currently in moderate to very high resiliency populations.

Representation

We evaluated representation based on the extent and variability of habitat characteristics across the species' geographical range. For the red-cockaded woodpecker, the SSA report characterizes representative units using ecoregions, which align with the recovery units identified in the 2003 recovery plan (USFWS 2003, pp. 145–161). These ecoregions are broad areas defined by physiography, topography, climate, and major historical and current forest types and thus serve as surrogates for the variability of habitat characteristics across the species' range, such as ecology, life history, geography, and genetics. There are currently 13 ecoregions containing at least one red-cockaded woodpecker population: (1) Cumberland Ridge and Valley; (2) Florida Peninsula (South/Central Florida); (3) East Gulf Coastal Plain; (4) Mid-Atlantic Coastal Plain; (5) Ouachita Mountains; (6) Piedmont; (7) South Atlantic Coastal Plain; (8) Sandhills; (9) Upper East Gulf Coastal Plain; (10) Upper West Gulf Coastal Plain; (11) West Gulf Coastal Plain; (12) Gulf Coast Prairie and Marshes; and (13) Mississippi River Alluvial Plain. In the SSA report, figures 20 and 24 provide maps illustrating the ecoregions (USFWS 2022, pp. 93, 111), and figure 25 includes the historical county records for the range of the species (USFWS 2022, p. 118).

The historical range of the red-cockaded woodpecker included the entire distribution of longleaf pine

ecosystems, but the species also inhabited open shortleaf, loblolly, slash pine, and Virginia pine forests, especially in the Ozark-Ouachita Highlands and the southern tip of the Appalachian Highlands with occasional occurrences noted for New Jersey, Pennsylvania, Maryland, and Ohio (Costa and Walker 1995, pp. 86–87). Red-cockaded woodpeckers no longer occur in six ecoregions (Ozarks, Central Mixed-Grass Prairies, Cross Timbers and Southern Mixed-Grass Prairies, Northern Atlantic Coast, Central Appalachian Forest, and Southern Blue Ridge). The 2003 recovery plan did not consider recovery in these areas to be essential to the conservation of the species.

In the 13 ecoregions containing the species, red-cockaded woodpeckers occupy a wide variety of pine-dominated ecological settings scattered across a broad geographic range. Considerable geographic variation in habitat types exists, illustrating the species' ability to adapt to a wide range of ecological conditions within the constraints of mature or old growth, southern pine ecosystems. However, of these 13 ecoregions, only 4 currently have populations that are considered to have high or very high resiliency (East Gulf Coastal Plain, South Atlantic Coastal Plain, Sandhills, and Mid-Atlantic Coastal Plain), and 6 have populations that are low or very low resiliency (Florida Peninsula, Ouachita Mountains, Cumberland Ridge and Valley, Piedmont, Gulf Coast Prairie and Marshes, and Mississippi River Alluvial Plain). Of those six, the latter four have only one or two populations each (a total of six populations), meaning these ecoregions, and the ecology, life history, geography, and genetics they represent, are particularly vulnerable to stochastic events. However, five of the six populations in these four ecoregions all demonstrate stable or increasing growth rates (growth rate for the sixth, Mitchell Lake in the Piedmont Ecoregion, could not be measured), primarily because they are being actively managed.

With regards to the genetic component of the ecoregions, a genetic analysis of material prior to 1970 in eight ecoregions indicates the species appears to have been a single genetic unit or population without significant genetic structure or differentiation (Miller et al. 2019, entire). The best available range-wide genetic data indicate a loss of genetic variation after 1970 with development of significant contemporary genetic structure among ecoregions. This structuring is most likely in response to fragmentation of this historically more widespread and

abundant species, reduced dispersal between populations and regions, and genetic drift (Stangel et al. 1992, entire; Haig et al. 1994, p. 590; Haig et al. 1996, p. 730; Miller et al. 2019, entire). However, the similarity of genetic parameters between the 1992–1995 and 2010–2014 periods indicates that a further significant loss of genetic diversity with an increase in differentiation among ecoregions may have been ameliorated by conservation management that began in the 1990s to rapidly increase populations and translocate individuals from large populations to augment small populations (Miller et al. 2019, entire). Mitochondrial DNA haplotype diversity has declined significantly since the pre-1970s, but not to the extent of a loss of any phylogenetically distinct lineages that may represent evolutionarily significant units (Miller et al. 2019, pp. 9–10).

In summary, the species no longer persists in six ecoregions where it was historically present. However, it is still currently represented in the 13 remaining ecoregions, and this level of representation has not decreased further since the 2003 recovery plan revision, which did not consider the extirpated ecoregions necessary for recovery. Nevertheless, while populations persist in the 13 ecoregions, many of the ecoregions contain only populations that have low or very low resiliency, and 4 ecoregions only have 1 or 2 populations, which are all low or very low resiliency, making them vulnerable to stochastic events.

Redundancy

In the SSA report, redundancy for red-cockaded woodpeckers is characterized by the number of resilient populations and their distribution within each ecoregion. Of the 124 current populations, there are 3 populations that have very high resiliency, 3 with high, 10 with moderate, 37 with low, and 71 with very low resiliency. As noted above, 4 of 13 ecoregions currently harbor high or very high resiliency populations: East Gulf Coastal Plain (2 populations), Mid-Atlantic Coastal Plain (1 population), Sandhills (2 populations), and South Atlantic Coastal Plain (1 population). In terms of redundancy, only two ecoregions, East Gulf Coastal Plain and Sandhills, have more than one population classified as having high or very high resiliency, and only these two ecoregions also have more than two populations classified as having moderate to very high resiliency. Redundancy of smaller populations is higher with a greater number of

populations in the moderate, low, and very low resiliency categories within and across ecoregions. Four ecoregions (South Atlantic Coastal Plain, Mid-Atlantic Coastal Plain, West Gulf Coastal Plain, and Upper East Gulf Coastal Plain) have two populations exhibiting moderate to high resiliency, and thus some level of redundancy in terms of resilient populations. Most of the populations in these regions have moderate resiliency. The greatest number of current populations reside in the Mid-Atlantic Coastal Plain (24) and Florida Peninsula (22), although most of these are in the very low and low resiliency class. However, even for the more resilient populations, habitat fragmentation has resulted in wide gaps between forested areas, meaning there is little connectivity between populations.

Across the range of the red-cockaded woodpecker, the populations with the most resiliency (high or very high) tend to be in the eastern half of the range and in coastal or near coastal ecoregions rather than interior. Florida Peninsula and the western ecoregions currently have populations in the moderate to very low resiliency categories. This concentration of the more resilient populations in coastal and near coastal areas could affect the species' ability to withstand catastrophic events such as hurricanes. Particularly for these populations, post-storm management actions are critical, as they can mitigate cavity loss and reduce hazardous fire fuels.

In summary, a species needs a suitable combination of all three characteristics (resiliency, representation, and redundancy) for long-term viability. Based on our analysis of the three factors, the red-cockaded woodpecker demonstrates some degree of stability or improvement in all three factors. The species' viability is reduced over historical levels, but habitat conditions and population numbers are improving. In terms of resiliency, most of the populations are still quite small, but the vast majority are stable or even growing. The species has not lost any representative populations since the 2003 revised recovery plan, and while a few ecoregions still contain only one or two populations, most of these populations are stable or growing. Finally, there is a fair degree of redundancy within ecosystems across the range of the species, although, again, most of these populations are still quite small and are isolated from each other. The improving viability of the red-cockaded woodpecker has been largely due to intensive, extensive management, including actions immediately after

large storm events to offset cavity loss and reduce hazardous fuels. Without this intervention, many populations, especially the low and very low resilience populations, likely would have been extirpated.

Future Conditions

Our analysis of stressors and risk factors, as well as the past, current, and future influences on what the red-cockaded woodpecker needs for long-term viability, revealed that the primary predictor of future viability of the species is the continuation of active management (including cavity management, midstory treatment such as prescribed fire, and translocation efforts).

We assessed future red-cockaded woodpecker population growth, population size (active clusters), and resiliency by first modeling past trends and variation in population size of demographically delineated populations as affected by factors including management treatments (e.g., number of artificial cavities, recruitment clusters, birds received by translocations, and frequency of prescribed fire and midstory hardwood control), dominant pine species, the density of active clusters, and parameters to account for unexplained sources of variation to population size by this procedure (USFWS 2022, chapter 6 and appendix 2). We obtained historical information for 87 demographically delineated populations and were also able to extrapolate missing data for certain populations by imputation with an expectation-maximization algorithm (USFWS 2022, appendix 1). Populations were separately modeled as small (6 to 29 clusters), medium (30 to 75 clusters), and large (more than 75 clusters) classes. Populations with fewer than six active clusters were not modeled because of high variation in growth rates.

For past growth rate of small populations, the most important variables were the number of new recruitment clusters, number of new artificial cavities in previously existing clusters (cavity management), midstory treatments by prescribed fire or mechanical methods, number of red-cockaded woodpeckers translocated into the population, and dominant pine type. Translocation had the greatest positive effect on growth of any management technique. For medium populations, recruitment clusters and midstory treatments by prescribed fire were significant management covariates. The best model for large populations included recruitment clusters, cavity management, and spatial configuration

of active clusters. In all cases, effects of recruitment clusters, cavity management, midstory treatment, and translocation were positive.

We then used the best assessed future growth and conditions for each red-cockaded woodpecker population to assess viability under four future 25-year management scenarios: Low management, medium management, high management, and the “manager’s expectation.” In the manager’s expectation scenario, we elicited estimates for red-cockaded woodpecker conservation management treatments (e.g., number of artificial cavities, number of recruitment clusters, midstory treatments, prescribed fire frequency, translocation, etc.) from property biologists, foresters, and managers.

For the low management scenario, values for each management covariate (e.g., cavity management, prescribed fire treatments, number of recruitment clusters, midstory hardwood treatment, translocation) were set to zero. However, this scenario does not reflect no management, but rather, the absence of management techniques specific to red-cockaded woodpeckers and instead a reliance on ecosystem management. Thus, some baseline habitat management, which would indirectly provide some nesting and foraging habitat, would be expected under the low management scenario. However, because most of the past populations for which we had sufficient data have been actively managed more aggressively than this scenario, we were unable to accurately model this type of minimal baseline habitat management. Therefore, future simulated population growth in the low management scenario is probably overestimated. Management covariate parameters for the medium management scenario assume the average of the past parameters employed to conserve red-cockaded woodpeckers over the past 20 years will continue into the future. For the high management scenario, management treatments for simulated populations reflect the parameter values in the 90th percentile of all past population treatments, as if populations were more intensely and extensively managed. The high management scenario thus represents projections of what might potentially be achieved should the species be systematically managed more intensely across its range than it has been in the past. The manager’s expectation scenario was based on what the experts, described above, thought was the most likely annual future number of recruitment clusters, artificial cavities, prescribed fire treatments, and

other management parameters at 5-year intervals for a 25-year period.

We chose to project 25 years into the future because the combination of species’ response to natural factors and management and the ability of managers to accurately predict future management treatments becomes highly uncertain at longer intervals. This is the timeframe in which the 95 percent confidence intervals around the future scenario modeling have reasonable bounds of uncertainty. This timeframe, given the species’ life history, is also sufficient to identify any effects of stressors or conservation measures on the red-cockaded woodpecker’s viability at both population and species levels. Finally, 25 years represents four to five generations of red-cockaded woodpecker, which would be sufficient time for population-level impacts from stressors and management to be detected. Additionally, the red-cockaded woodpecker is a conservation-reliant species that depends on open, mature southern pine forests that are developed and maintained by fire. These forest conditions do not currently occur without management due to the history of fire-exclusion, incompatible forest management, and other land uses. Planning and successfully implementing management and treatments for each active cluster and population requires extensive resources that are difficult for managers to accurately predict for longer than 25 years. In addition to a population’s response to management, there is natural variation in nest success, number of fledglings, survival of young-of-year and adults, and cooperative breeding dynamics with replacement of adult breeders by other birds dispersing from other territories. In turn, this affects annual variation in population size (active clusters) and patterns of population growth or decline. Simulations of future population conditions under different management scenarios included effects of some management treatments, though not all, as model parameters. However, effects of these management treatment parameters did not account for all sources of annual variation affecting population size that still occurred in the model and simulations. Because of the variation in future simulated population size at 25 years (USFWS 2022, appendix 2), future estimates of population size after 25 years are more uncertain.

Table 1 summarizes the model outputs for the four scenarios at the end of the 25-year simulation period. Data from 106 of the 124 current populations were available for future simulations. Of those 106 populations, initial

populations with fewer than 6 active clusters were not simulated unless they demographically merged with other populations to create new, larger populations during the 25-year period. In addition, the total number of simulated future populations at year 25 are not equal among management scenarios because of the different number of initial populations that demographically merge to establish new populations. In other words, a lower number of populations at the end than the start for each scenario does not

mean that all those populations were extirpated, rather some of the populations increased and merged to create new, larger populations. Therefore, the initial starting number of populations, and predicted number of populations at the end of the simulation period, varied. We also compare the results of current and future population resiliency classes as percentages in this final rule rather than absolute numbers because of this variation. Furthermore, although the initial starting numbers varied for each of the scenarios for the

reasons discussed above, we present the current condition of the 124 demographic populations as the starting place for each of these scenarios. The current condition (Past-to-Current in table 1) for these populations are: 57.3 percent have very low resiliency, 29.8 percent have low, 8.1 percent have moderate, 2.4 percent have high, and 2.4 percent have very high. For more details on the model, please see the SSA report (USFWS 2022, pp. 132–138, appendix 1, appendix 2).

TABLE 1—RESILIENCE SUMMARY BASED ON CURRENT CONDITION AND POPULATION SIMULATIONS UNDER FOUR FUTURE MANAGEMENT SCENARIOS

Model series/scenario	Population resiliency category percentages				
	Very low	Low	Moderate	High	Very high
Past-to-Current	57.3	29.8	8.1	2.4	2.4
Future Low	61.7	14.8	11.1	6.2	6.2
Future Medium	25.0	45.2	15.5	8.3	6.0
Future High	22.2	39.5	21.0	11.1	6.2
Future Manager's	28.6	42.9	14.3	8.3	5.9

Low Management Scenario

At the end of the 25-year simulation period, the predicted resiliency for the resulting 81 simulated demographic populations is: 6.2 percent of populations (5) very high; 6.2 percent (5) high; 11.1 percent (9) moderate; 14.8 percent (12) low; and 61.7 percent (50) very low. The low management scenario projects a modest increase in the percentage of current populations of moderate to very high resiliency from about 13 percent (16) to about 24 percent (19) of the 81 simulated populations compared to current conditions, but the majority of the populations that currently have low resiliency decline sufficiently to transition into the very low resiliency category. The projected outcome of this scenario clearly demonstrates the dependence of red-cockaded woodpecker population resiliency on intensive, species-specific management.

Medium Management Scenario

At the end of the 25-year simulation period, the predicted resiliency for the resulting 84 simulated demographic populations is: 6.0 percent of populations (5) very high; 8.3 percent (7) high; 15.5 percent (13) moderate; 45.2 percent (38) low; and 25.0 percent (21) very low. The medium management scenario projected a more substantial increase in the percentage of populations of moderate to very high resiliency from about 13 percent (16) to about 30 percent (25) of the populations. At the other end, the percentage of low

and very low resiliency populations decreased.

High Management Scenario

At the end of the 25-year simulation period, the predicted resiliency for the resulting 81 demographic populations are as follows: 6.2 percent of populations (5) very high; 11.1 percent (9) high; 21.0 percent (17) moderate; 39.5 percent (32) low; and 22.2 percent (18) very low. The high management scenario projected an even more substantial increase in the percentage of populations of moderate to very high resiliency, increasing to about 38 percent (31) of the populations. However, the land base available for conservation has a substantial effect on the growth of these populations under this scenario. For example, none of the populations with low or very low resiliency in this scenario has the carrying capacity on their respective managed properties to transition to a higher resiliency category, regardless of the intensive management reflected in this scenario. Thus, there are 50 red-cockaded woodpecker populations that, in the absence of acquisition of additional habitat for population expansion, will always remain small regardless of the management efforts.

Manager's Expectation Scenario

At the end of the 25-year simulation period, the predicted resiliency for the resulting 84 demographic populations is: 5.9 percent of the populations (5) very high; 8.3 percent (7) high; 14.3

percent (12) moderate; 42.9 percent (36) low; and 28.6 percent (24) very low. The results are very similar to the medium management scenario.

Future Representation and Redundancy of the Species

Under all management scenarios, five populations in four ecosystems are predicted to have very high resiliency (East Gulf Coastal Plain (2), Sandhills (1), Mid-Atlantic Coastal Plain (1), and South Atlantic Coastal Plain (1)). Under the Manager's Expectation and medium management scenarios, seven populations in five ecosystems are considered to have high resiliency (East Gulf Coastal Plain (2), South Atlantic Coastal Plain (1), Sandhills (2), Upper West Gulf Coastal Plain (1), and West Gulf Coastal Plain (1)). Also, compared to current conditions, the greater number of future high and very high resiliency populations are more widely distributed among ecoregions and include the western geographic range; however, over the whole range of the woodpecker, the occurrence of high and very high resiliency populations is most concentrated in the East Gulf Coastal Plain and Sandhills ecoregions.

Only two ecoregions (Cumberland Ridge and Valley and Gulf Coast Prairie and Marshes) have no simulated populations of moderate to very high resiliency in the manager's expectation, medium management, and high management scenarios, compared to six ecoregions (Florida Peninsula, Ouachita Mountains, Cumberland Ridge and

Valley, Piedmont, Gulf Coast Prairie and Marshes, and Mississippi River Alluvial Plain) that currently do not have moderate to very high resiliency populations. The one current population in the Mississippi River Alluvial Plain ecoregion was not simulated in the future. In the low management scenario, four ecoregions (Cumberland Ridge and Valley, Gulf Coast Prairie and Marshes, Ouachita Mountains, and Piedmont) that currently only have low or very low resiliency populations are not projected to gain any moderate to very high resiliency populations at 25 years.

Summary of Future Condition

The total number of simulated populations at 25 years varied slightly among the management scenarios because of a different number of initial populations that demographically merged during simulations to establish new and larger populations. Results of the manager's expectation and medium management scenarios were most similar, while the low management and high management scenarios represented more extreme future resiliency conditions. These simulations, particularly for the low management and high management scenarios, illustrate the extent to which the red-cockaded woodpecker is a conservation-reliant species that responds positively to management, and how successful management can sustain small populations with low or very low resiliency.

In all scenarios, most populations at year 25 were still in the very low, low, and moderate resiliency categories. However, the majority of populations were projected to be stable or increasing in all but the low management scenario, highlighting how successful management can sustain even small populations. The low management scenario illustrates that without adequate species-level management, in contrast to ecosystem management alone, very little increase in the number of moderate to very high resiliency populations can be expected and small populations of low or very low resiliency are unlikely to persist. The high management scenario represents the limit of what can be accomplished given the current land base and carrying capacity to support populations. However, management at current levels, as represented by the medium management scenario, further increases the number of moderate to very high resiliency populations and projects that small populations can be preserved. In addition, at current (or greater) levels of future management, redundancy and

representation are expected to improve significantly in response to increasing populations.

See the SSA report (USFWS 2022, entire) for a more detailed discussion of our evaluation of the biological status of the red-cockaded woodpecker and the influences that may affect its continued existence. Our conclusions in the SSA report, which form the basis for the determination below, are based upon the best available scientific and commercial data.

Determination of Red-Cockaded Woodpecker Status

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines an endangered species as a species "in danger of extinction throughout all or a significant portion of its range," and a threatened species as a species "likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range." The Act requires that we determine whether a species meets the definition of an endangered species or a threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) Overutilization for commercial, recreational, scientific, or educational purposes; (C) Disease or predation; (D) The inadequacy of existing regulatory mechanisms; or (E) Other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

Red-cockaded woodpeckers were once considered a common bird across the southeastern United States. At the time of listing in 1970, the species was severely threatened by lack of adequate habitat due to historical logging, incompatible forest management, and conversion of forests to urban and agricultural uses. Fire-maintained old growth pine savannas, on which the species depends, were extremely rare. What little habitat remained was mostly degraded due to fire suppression and silvicultural practices that hindered the development of older, larger trees needed by the species for cavity development and foraging. Even after listing, the species continued to decline. However, new restoration techniques, such as artificial cavities, along with changes in silvicultural practices and wider use of prescribed fire to recreate open pine parkland structure, has led to stabilization of the species' viability and

resulted in an increase in the number and distribution of populations. The majority of populations for which we were able to determine trends are stable or increasing ($\lambda = 1.0$ or greater), and only 13 percent are declining. Specifically, of the 86 very low and low resiliency populations where growth rate could be measured, 73 populations demonstrated stable and positive growth rates, with several populations showing very high growth rates. This is indicative of the positive effects of red-cockaded woodpecker conservation management programs on these locations and the ability of such management to offset inherently low or very low population resilience. Additionally, there are currently at least 124 populations across 13 ecoregions.

As discussed under *Future Conditions* above, in the SSA report, future population conditions under different management scenarios were simulated and modeled to 25 years into the future, and we determined that we can rely on the timeframe presented in the scenarios and predict how future stressors and management will affect the red-cockaded woodpecker.

When we modeled future scenarios, the majority of populations were projected to be stable or increasing in all but the low management scenario, highlighting how successful management can sustain even small populations. Future management at current and recent past levels, as represented by the medium management scenario, further increases the number of moderate to very high resiliency populations and projects that small populations can be preserved. In addition, at current (or greater) levels of management, redundancy and representation are expected to significantly improve because most populations are expected to increase in size across the ecoregions.

The red-cockaded woodpecker continues to face a variety of stressors due to inadequate habitat across its range, but these are now mostly legacy stressors resulting from historical forest conversion and fire suppression practices rather than current habitat loss. These legacy stressors include insufficient numbers of cavities and suitable, abundant old pines for natural cavity excavation; habitat fragmentation and its effects on genetic variation, dispersal, and connectivity to support demographic populations; lack of suitable foraging habitat for population growth and expansion; and small populations. The species also continues to face stress from natural events, especially hurricanes, the frequency and

intensity of which may continue to increase in the future.

Active conservation management over many decades has allowed the species' populations to expand, even in the face of this historically limited habitat and natural disturbances. However, red-cockaded woodpeckers rely on, and will continue to rely almost completely on, active management by property managers and biologists to install artificial cavities and manage clusters, restore additional habitat and strategically place recruitment clusters to improve connectivity, control the hardwood midstory through prescribed fire and silvicultural treatments, and translocate individuals to augment small populations and minimize loss of genetic variation. In addition, emergency response after severe storms and other natural disasters will continue to be necessary to prevent cluster abandonment and minimize wildfire fuel loading. However, both the emergency response and routine management are well-understood and are currently being implemented across the range of the woodpecker, and much of the red-cockaded woodpecker's currently occupied habitat is now protected under various management plans. As a conservation-reliant species, securing management commitments for the foreseeable future would ensure that red-cockaded woodpecker populations grow or are maintained. This conclusion is reinforced by the future scenario simulations, which indicate that management efforts equal to or greater than current levels will further increase the number of moderate to very high resiliency populations and preserve small populations.

After evaluating the threats to the species and assessing the cumulative effect of the threats under the section 4(a)(1) factors, we find that, while the legacy stressors identified above continue to negatively affect the red-cockaded woodpecker, new restoration techniques and changes in silvicultural practices have led to stabilization of the red-cockaded woodpecker's viability and even resulted in a substantial increase in the number and distribution of populations such that the species is not currently in danger of extinction. Sixty-five percent of all current red-cockaded woodpecker clusters are within moderate, high, or very highly resilient populations, and populations are spread across multiple ecoregions, providing for redundancy and representation. However, the species remains highly dependent on continued conservation management and the majority of populations contain small numbers of clusters, which could be

especially vulnerable to hurricanes or other natural disturbances in the foreseeable future without prompt management response.

We expect current conservation management to continue into the foreseeable future given that many of the landowners and managers within the range of the species have committed to continuing to implement their conservation programs and that we have structured our final 4(d) rule to facilitate the continuation of such management. However, absent the protections of the Act, we do not have commitments that all current management will continue and that it will adapt as necessary to effectively address emerging stressors (e.g., intensifying hurricanes). The absence of commitments to implement effective conservation efforts into the future for this conservation reliant species increases the risk of extinction in the foreseeable future. Thus, after assessing the best available information, we conclude that the red-cockaded woodpecker is not 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 within the foreseeable future throughout all or a significant portion of its range. The court in *Center for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), vacated the provision of the Final Policy on Interpretation of the Phrase "Significant Portion of Its Range" in the Endangered Species Act's Definitions of "Endangered Species" and "Threatened Species" (hereafter "Final Policy"; 79 FR 37578; July 1, 2014) that provided that if the Services determine that a species is threatened throughout all of its range, the Services will not analyze whether the species is endangered in a significant portion of its range.

Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant; and (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the "significance" question or the "status" question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to

the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

Following the court's holding in *Everson*, we now consider whether there are any significant portions of the species' range where the species is in danger of extinction now (i.e., endangered). In undertaking this analysis for red-cockaded woodpecker, 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 portions of the range where the species may be endangered.

We evaluated the range of the red-cockaded woodpecker to determine if the species is in danger of extinction now in any portion of its range. The range of a species can theoretically be divided into portions in an infinite number of ways. We focused our analysis on portions of the species' range that may meet the definition of an endangered species. For red-cockaded woodpecker, we considered whether the threats or their effects on the species are greater in any biologically meaningful portion of the species' range than in other portions such that the species is in danger of extinction now in that portion.

The statutory difference between an endangered species and a threatened species is the timeframe 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 within the foreseeable future. Thus, we reviewed the best scientific and commercial data available regarding the time horizon for the threats that are driving the red-cockaded woodpecker to warrant listing as a threatened species throughout all of its range.

We then considered whether these threats or their effects are occurring in any portion of the species' range such that the species is in danger of extinction now in that portion of its range. We examined the following threats: natural disasters such as hurricanes and vulnerability due to small population sizes and fragmentation, including cumulative effects. Other identified stressors, such as inadequate habitat, are uniform throughout the red-cockaded woodpecker's range. Although hurricanes may impact populations across the red-cockaded woodpecker's range, return intervals are shorter and impacts are more pronounced in near-coastal populations compared to inland populations (USFWS 2022, pp. 121–

124). Furthermore, while small populations occur throughout the species' range, we found a portion of the range that may have a different extinction risk due to a concentration of threats from the combination of both hurricanes and small population sizes in the Florida Peninsula, West Gulf Coastal Plain, and the southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions. This means these populations when combined together may constitute a portion of the species' range where the species could have a different status.

Despite the vulnerability of these areas to hurricanes, this stressor is not currently accelerating extinction risk in this portion of the range due to effective conservation management. Populations can withstand and persist after hurricanes if biologists and land managers implement prompt, effective post-storm recovery actions, such as installing artificial cavities, reducing hazardous fuels, and restoring forests to suitable habitat. Such actions have been occurring after storm events for managed populations, such as the quick response after Hurricane Michael in October 2018. Both this emergency response and routine management are well-understood and are currently being implemented across the range of the woodpecker. In addition, much of the red-cockaded woodpecker's currently occupied habitat is now protected under various management plans. As such, despite the regular occurrence of hurricanes within red-cockaded woodpecker habitat, especially in the coastal areas in the Florida Peninsula, West Gulf Coastal Plain, and the southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions, 89 percent of the populations for which we have trend data demonstrate stable to increasing growth rates in this portion of the range, illustrating the effectiveness of currently ongoing active management in preventing broad impacts from hurricanes and other stressors (USFWS 2022, p. 112). Catastrophic risk from natural events is being effectively managed (e.g., through prompt post-storm response) such that the species is not currently in danger of extinction in this portion of the range.

However, we also noted in the proposed rule and in this final rule that the frequency of major hurricanes (Bender et al. 2010, entire; Knutson et al. 2010, entire; Walsh et al. 2014, pp. 41–42) may increase in the future in response to global climate change, and this increase could disproportionately affect the smaller, less resilient woodpecker populations. Immediate

management response after natural disasters is key to preventing cluster abandonment in all populations and is critical to keeping smaller populations from being extirpated altogether. As a conservation-reliant species, securing management commitments for the foreseeable future, including commitments for effective post-storm response, would ensure that red-cockaded woodpecker populations grow or are maintained. However, given potential increased negative impacts from hurricanes in the future and due to the lack of certainty that effective post-storm response will continue in the foreseeable future, we find that red-cockaded woodpeckers are likely to become endangered within the foreseeable future throughout all of their range. This risk may be particularly high in the foreseeable future in the Florida Peninsula, West Gulf Coastal Plain, and the southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions. However, although some threats to the red-cockaded woodpecker are concentrated in the Florida Peninsula, West Gulf Coastal Plain, and the southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions, the timing of the effects of the threats and the species' anticipated responses in that portion is the same as that for the entire range for the foreseeable future. As a result, the red-cockaded woodpecker is not in danger of extinction now in this portion of its range.

We also considered whether the portion of the species' range that contains low or very low resiliency populations could constitute a portion that provides a basis for determining that the species is in danger of extinction in a significant portion of its range. However, based on our analysis, we did not find that this portion of the species' range, or any combination of areas that lack moderate, high, or very high resiliency populations, met the definition of an endangered species. Managers are currently applying active management to these small populations. As a result of this active management, the vast majority of these low or very low resiliency populations have stable or increasing growth rates, evidencing the effectiveness of this active management in supporting the persistence of these small populations. Of the 108 demographic populations in low or very low resiliency classes, 86 have data on growth rates; 86 percent of these populations have growth rates greater than or equal to one (USFWS 2022, pp. 108–110). Under this current paradigm, these small populations are

not currently in danger of extinction due to the active management (e.g., translocation, habitat management, artificial cavity installation) that supports their stability and growth. However, as we discuss above, given potential increased negative impacts from other stressors (e.g., hurricanes) in the foreseeable future and due to the lack of certainty that all active woodpecker management will continue at current rates in the foreseeable future, we find that the red-cockaded woodpecker meets the definition of threatened as the species is likely to become endangered within the foreseeable future throughout all of its range. These smaller populations will likely be particularly sensitive to these potential changes in stressors and management in the future. Therefore, although within the Florida Peninsula, West Gulf Coastal Plain, and the southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions, the red-cockaded woodpecker may be more vulnerable to future changes in threats and conservation, the best scientific and commercial data available do not indicate that the species' responses to the threats are such that the red-cockaded woodpecker is in danger of extinction now within the Florida Peninsula, West Gulf Coastal Plain, and the southernmost near-coastal extension of the Upper West Gulf Coastal Plain ecoregions. Therefore, we determine that the species 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 apply the aspects of the Final Policy, including the definition of "significant" that those court decisions held were invalid.

Determination of Status

Our review of the best scientific and commercial data available indicates that the red-cockaded woodpecker meets the definition of a threatened species. Therefore, we are downlisting the red-cockaded woodpecker as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

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. With this downlisting of the red-cockaded woodpecker, conservation measures continue to be provided including recognition as a listed species, planning and implementation of recovery actions, requirements for Federal protection, and prohibitions against certain practices. As discussed above, the 2003 recovery plan provides guidelines for installing artificial cavities, management of cavity trees and clusters, translocation, silviculture, prescribed fire under the management guidelines, and guidelines for managing foraging habitat on private lands under the private land guidelines. In addition, section 7(a)(1) and 7(a)(2) responsibilities of Federal agencies remain.

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

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

Examples of discretionary actions for the red-cockaded woodpecker that may be subject to consultation procedures under section 7 are land management or other landscape-altering activities on Federal lands administered by the DoD, USFS, USFWS, NWR, Federal Highway Administration, and U.S. Department of Energy as well actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from

the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation. Federal agencies should coordinate with the local Service Field Office (see **FOR FURTHER INFORMATION CONTACT**) with any specific questions on Section 7 consultation and conference requirements.

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

It is the policy of the Services, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the extent known at the time a species is listed, specific activities that will not be considered likely to result in violation of section 9 of the Act. To the extent possible, activities that will be considered likely to result in violation will also be identified in as specific a manner as possible. 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. Although most of the prohibitions in section 9 of the Act apply to endangered species, sections 9(a)(1)(G) and 9(a)(2)(C) of the Act prohibit the violation of any regulation under section 4(d) pertaining to any threatened species of fish or wildlife, or threatened species of plant, respectively. Section 4(d) of the Act directs the Secretary to promulgate protective regulations that are necessary and advisable for the conservation of threatened species. As a result, we interpret our policy to mean that, when we list a species as a threatened species, to the extent possible, we identify activities that will or will not be considered likely to result in violation of the protective regulations under section 4(d) for that species.

At this time, we are unable to identify specific activities that will or will not be considered likely to result in violation of section 9 of the Act beyond what is already clear from the descriptions of

prohibitions and exceptions established by protective regulation under section 4(d) of the Act.

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

Protective Regulations Under Section 4(d) of the Act

Background

Section 4(d) of the Act contains two sentences. The first sentence states that the Secretary shall issue such regulations as she deems necessary and advisable to provide for the conservation of species listed as threatened species. Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. With these two sentences in section 4(d), Congress delegated broad authority to the Secretary to determine what protections would be necessary and advisable to provide for the conservation of threatened species, and even broader authority to put in place any of the section 9 prohibitions, for a given species.

The courts have recognized the extent of the Secretary's discretion under this standard to develop rules that are appropriate for the conservation of a species. For example, courts have upheld, as a valid exercise of agency authority, rules developed under section 4(d) that included limited prohibitions against takings (see *Alsea Valley Alliance v. Lautenbacher*, 2007 WL 2344927 (D. Or. 2007); *Washington Environmental Council v. National Marine Fisheries Service*, 2002 WL 511479 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see *State of Louisiana v. Verity*, 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, "once an animal is on the threatened list, the Secretary has an almost infinite number of options available to [her] with regard to the permitted activities for those species. [She] may, for example, permit taking, but not importation of such species, or

[she] may choose to forbid both taking and importation but allow the transportation of such species” (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

The provisions of this species’ protective regulations under section 4(d) of the Act are one of many tools that we will use to promote the conservation of the red-cockaded woodpecker. Nothing in 4(d) rules change in any way the recovery planning provisions of section 4(f) of the Act, the consultation requirements under section 7 of the Act, or the ability of the Service to enter into partnerships for the management and protection of the red-cockaded woodpecker.

As mentioned previously in Available Conservation Measures, Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. These requirements are the same for a threatened species regardless of what is included in a 4(d) rule.

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

The red-cockaded woodpecker requires cavity trees, nesting habitat,

and foraging habitat (USFWS 2022, pp. 83–87). Red-cockaded woodpeckers rely on cavities for nesting and roosting (USFWS 2022, p. 33). Old pines are required as cavity trees because cavity chambers must be completely within the heartwood to prevent pine resin in the sapwood from entering the chamber and because heartwood diameter is a function of tree age (Jackson and Jackson 1986, pp. 319–320; Clark 1993, pp. 621–626; USFWS 2022, p. 32). In addition, old pines have a higher incidence of the heartwood decay that greatly facilitates cavity excavation (USFWS 2022, p. 32). As we explain in the 2003 recovery plan, given that the species requires these cavities to complete its life cycle, the number of suitable cavities available can limit population size (USFWS 2003, p. 20). Thus, the recovery plan states, “to prevent loss of occupied territories, existing cavity trees should be protected, so that a sufficient number of suitable ones are maintained at all times” (USFWS 2003, p. 20).

Red-cockaded woodpeckers also require open pine woodlands and savannas with large old pines for nesting and roosting (*i.e.*, nesting habitat) (USFWS 2022, p. 32). Cavity trees, with rare exception, occur in open stands with little or no hardwood midstory and few or no overstory hardwoods (USFWS 2022, p. 32). Suitable foraging habitat generally consists of mature pines with an open canopy, low densities of small pines, a sparse hardwood or pine midstory, few or no overstory hardwoods, and abundant native bunchgrass and forb groundcovers (USFWS 2022, p. 41).

Additionally, the red-cockaded woodpecker is a conservation-reliant species “highly dependent on active conservation management with prescribed fire, beneficial and compatible silvicultural methods to regulate forest composition and structure, the provision of artificial cavities where natural cavities are insufficient, translocation to sustain and increase small vulnerable populations, and effective monitoring to identify limiting biological and habitat factors for management” (USFWS 2022, p. 131). We emphasize this conservation reliance in the proposed rule (85 FR 63474, October 8, 2020) and indicate that the future persistence of the species will require these management actions to continue. As such, in addition to providing prohibitions necessary to protect individuals, the section 4(d) rule provides exceptions that will maintain and restore these essential nesting and foraging resources for the species (*i.e.*, cavity trees, nesting habitat, and

foraging habitat), which will advance the species’ recovery and conservation.

Specifically, the exceptions in the section 4(d) rule encourage beneficial habitat management on Federal lands, compatible prescribed burns and use of herbicides on eligible private and other non-Federal lands, and the provision of artificial cavities throughout the species’ range. These activities provide considerable benefit to the species and its habitat by maintaining or increasing the quantity and quality of cavity trees, nesting habitat, and foraging habitat. Additionally, this section 4(d) rule retains the exception for take that results from activities authorized by a permit under the Act, which includes permits we have issued under the SHA program or will issue under the CBA program. Together, these prohibitions and exceptions will maintain and restore essential nesting and foraging resources for the species, improving the availability of suitable habitat, and will promote continued recovery.

Additionally, one of the primary purposes of the Act is to provide a means whereby the ecosystems upon which endangered and threatened species depend may be conserved (16 U.S.C. 1531(b)); crafting a section 4(d) rule for red-cockaded woodpecker that encourages habitat management that benefits the species will also support conservation of the native pine-grass ecosystems upon which the species depends.

The provisions of this section 4(d) rule will promote conservation of the red-cockaded woodpecker by prohibiting take that can directly or indirectly impact population demographics. They also promote conservation of the species by providing more flexibility for incidental take that may result from activities that maintain and restore requisite habitat features.

Moreover, we acknowledge and commend the accomplishments of our Federal partners, State agencies, nongovernmental organizations, and private landowners in providing conservation for the red-cockaded woodpecker for the past four decades. This intensive management has facilitated population growth since the time of listing, thereby allowing us to downlist the species from endangered to threatened. Private and other non-Federal landowners’ SHAs and HCPs, DoD’s INRMPs, USFS LRMPs, and the NWR System’s CCPs currently provide specific measures for the active management and conservation of the species throughout its range, which have aided in the recovery of the species and its habitat. Overall, the majority of red-cockaded woodpecker populations

are managed under plans that address population enhancement and habitat management to sustain or increase populations and to meet the 2003 recovery plan objectives for primary core, secondary core, and essential support populations (USFWS 2003, pp. 156–159). Our section 4(d) rule does not invalidate or replace these successful programs. In fact, the section 4(d) rule continues to encourage participation in the CBA program, previously known as the SHA program, and provides incentives for public land managers and applicable State land management agencies to continue providing specific management for the benefit of the species and its habitat.

The provisions of this section 4(d) rule are only one of the many tools we can use to promote conservation of the red-cockaded woodpecker. For example, private and other non-Federal landowners may still pursue regulatory flexibility through existing mechanisms that currently promote the species' conservation, such as CBAs or HCPs. These mechanisms will continue to provide considerable assurances for landowners.

Similarly, this section 4(d) rule does not change an eligible private or other non-Federal landowner's ability to enroll in conservation programs such as those available through the NRCS or the Partners for Fish and Wildlife Program. These Federal programs provide technical and financial assistance to eligible private and other non-Federal landowners to support habitat management for the benefit of wildlife and other natural resources in the open-pine systems of the southeastern United States, as well as other habitat types throughout the country. Nationwide, these programs help conserve or restore hundreds of thousands of acres of wildlife habitat every year. As a result of the consultations these Federal programs conduct with us, enrolled private and other non-Federal landowners already receive allowances for incidental take associated with beneficial conservation practices, without having to embark on a complex permitting process; the reclassification of the red-cockaded woodpecker and the section 4(d) rule do not alter these programs. We encourage eligible private and other non-Federal landowners to continue participating in these valuable conservation programs.

Finally, this section 4(d) rule does not alter or invalidate the 2003 recovery plan. Recovery plans are not regulatory documents, but rather they provide a strategy to guide the conservation and recovery of the red-cockaded woodpecker.

The only portion of this document that has regulatory effect is the text presented below under Regulation Promulgation (*i.e.*, the text we add as paragraph (h) of § 17.41 of title 50 of the Code of Federal Regulations (50 CFR 17.41(h)); the explanatory text above and in "Provisions of the 4(d) Rule" below merely clarifies the intent of these regulations.

Provisions of the 4(d) Rule

Prohibitions

Exercising the Secretary's authority under section 4(d) of the Act, we have developed a rule that is designed to address the red-cockaded woodpecker's conservation needs. As discussed previously in Summary of Biological Status and Threats, we have concluded that the red-cockaded woodpecker is likely to become in danger of extinction within the foreseeable future primarily due to lack of suitable roosting, nesting, and foraging habitat resulting from the legacy effects of historical logging, incompatible forest management, and conversion of forests to urban and agricultural uses. Section 4(d) requires the Secretary to issue such regulations as she deems necessary and advisable to provide for the conservation of each threatened species and authorizes the Secretary to include among those protective regulations any of the prohibitions that section 9(a)(1) of the Act prescribes for endangered species. We are not required to make a "necessary and advisable" determination when we apply or do not apply specific section 9 prohibitions to a threatened species (*In re: Polar Bear Endangered Species Act Listing and 4(d) Rule Litigation*, 818 F. Supp. 2d 214, 228 (D.D.C. 2011) (citing *Sweet Home Chapter of Cmty. for a Great Or. v. Babbitt*, 1 F.3d 1, 8 (D.C. Cir. 1993), *rev'd on other grounds*, 515 U.S. 687 (1995))). Nevertheless, even though we are not required to make such a determination, we have chosen to be as transparent as possible and explain below why we find that, if finalized, the protections, prohibitions, and exceptions in this rule as a whole satisfy the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of the red-cockaded woodpecker.

The protective regulations for red-cockaded woodpecker incorporate prohibitions from section 9(a)(1) to address the threats to the species. The prohibitions of section 9(a)(1) of the Act, and implementing regulations codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the

United States to commit, to attempt to commit, to solicit another to commit or to cause to be committed any of the following acts with regard to any endangered wildlife: (1) import into, or export from, the United States; (2) take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect) within the United States, within the territorial sea of the United States, or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. This protective regulation includes all of these prohibitions because the red-cockaded woodpecker is at risk of extinction in the foreseeable future and putting these prohibitions in place will help to prevent negative effects from other ongoing or future threats.

In particular, this 4(d) rule will provide for the conservation of the red-cockaded woodpecker by prohibiting the following activities, unless they fall within specific exceptions or are otherwise authorized or permitted: importing or exporting red-cockaded woodpeckers; take of red-cockaded woodpeckers; possession and other acts with unlawfully taken specimens; delivering, receiving, transporting, or shipping red-cockaded woodpeckers in interstate or foreign commerce in the course of commercial activity; and selling red-cockaded woodpeckers or offering red-cockaded woodpeckers for sale in interstate or foreign commerce.

Under the Act, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Some of these provisions have been further defined in regulations at 50 CFR 17.3. Take can result knowingly or otherwise, by direct and indirect impacts, intentionally or incidentally. Regulating take will help decrease synergistic, negative effects from other ongoing or future threats. Therefore, we are prohibiting take of the red-cockaded woodpecker, except for take resulting from those actions and activities specifically excepted by the 4(d) rule.

As discussed in the SSA report for the species, effective monitoring, research, and translocation are important elements of the active management that promotes red-cockaded woodpecker conservation and recovery. However, in this section 4(d) rule, we prohibit all forms of take, which include capturing, handling, and similar activities. Such

activities include, but are not limited to, translocation, banding, collecting tissue samples, and research involving capturing and handling red-cockaded woodpeckers. While these activities are essential to conservation and recovery of the species, there are proper techniques to capturing and handling birds that require training and experience. Improper capture, banding, or handling can cause injury or even result in death of red-cockaded woodpeckers. Therefore, to ensure that these activities continue to be conducted correctly by properly trained personnel, the section 4(d) rule continues to prohibit take associated with translocation, banding, research, and other activities that involve capture or handling of red-cockaded woodpeckers; however, take that results from these activities could still be allowed under a section 10(a)(1)(A) permit.

Exceptions

Exceptions to the prohibition on take include all of the general exceptions to the prohibition against take of endangered wildlife as set forth in 50 CFR 17.21 and additional exceptions, as described below.

Despite these prohibitions regarding threatened species, we may under certain circumstances issue permits to carry out one or more otherwise-prohibited activities, including those described above. The regulations that govern permits for threatened wildlife state that the Director may issue a permit authorizing any activity otherwise prohibited with regard to threatened species. These include permits issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for zoological exhibition, for educational purposes, for incidental taking, or for special purposes consistent with the purposes of the Act (50 CFR 17.32). The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

Furthermore, we encourage landowners to continue to enroll in the CBA program, previously known as the SHA program. Exactly like the regulatory regime that applies while the species is listed as endangered, any new permits issued under the authority of the CBA program will provide landowners with additional management flexibility and exemption from some of the take prohibitions in this rule. As discussed in greater detail above, CBAs are partnerships between landowners and us or between the State and us involving voluntary agreements

under which the landowners receive formal regulatory assurances from us regarding their management responsibilities in return for contributions to benefit the listed species. This section 4(d) rule does not alter this valuable program, or the permits associated with it.

In addition, to further the conservation of the species, any employee or agent of the Service, any other Federal land management agency, the National Marine Fisheries Service, a State conservation agency, or a federally recognized Tribe, who is designated by their agency or Tribe for such purposes, may, when acting in the course of their official duties, take threatened wildlife without a permit if such action is necessary to: (i) Aid a sick, injured, or orphaned specimen; or (ii) dispose of a dead specimen; or (iii) salvage a dead specimen that may be useful for scientific study; or (iv) remove specimens that constitute a demonstrable but nonimmediate threat to human safety, provided that the taking is done in a humane manner; the taking may involve killing or injuring only if it has not been reasonably possible to eliminate such threat by live-capturing and releasing the specimen unharmed, in an appropriate area.

Next, we incorporate the exception to take prohibitions for threatened species found in 50 CFR 17.31(b), which authorizes employees or agents of the Service or State conservation agencies operating under a cooperative agreement with us in accordance with section 6(c) of the Act to take red-cockaded woodpeckers in order to carry out conservation programs for the species. We recognize the special and unique relationship that we have with our State natural resource agency partners in contributing to conservation of listed species. State agencies often possess scientific data and valuable expertise on the status and distribution of endangered, threatened, and candidate species of wildlife and plants. State agencies, because of their authorities and their close working relationships with local governments and landowners, are in a unique position to assist us in implementing all aspects of the Act. States solely own and manage lands occupied by at least 31 demographic populations and oversee State-wide SHAs, now known as CBAs, that have enrolled 459 non-Federal landowners covering approximately 2.5 million acres (85 FR 63474, October 8, 2020).

In this regard, section 6 of the Act provides that we must cooperate to the maximum extent practicable with the States in carrying out programs

authorized by the Act. Therefore, any qualified employee or agent of a State conservation agency that is a party to a cooperative agreement with us in accordance with section 6(c) of the Act, who is designated by his or her agency for such purposes, will be able to conduct activities designed to conserve red-cockaded woodpecker that may result in otherwise prohibited take without additional authorization.

This exception is very similar to an exception that currently applies while the woodpecker is listed as endangered (the exception under 50 CFR 17.21(c)(5)). While the exception in 50 CFR 17.31(b) is similar to the exception that currently applies while the species is listed as endangered (50 CFR 17.21(c)(5)), it does not provide the same limitations on take associated with carrying out conservation programs in States' cooperative agreements. State agencies may also enroll in the Conservation Benefit program, previously known as the Safe Harbor program, to receive permits that allow for certain types of take, if they are not otherwise covered by a cooperative agreement or otherwise prohibited.

The 4(d) rule will also provide for the conservation of the species by allowing exceptions that incentivize conservation actions or that, while they may have some minimal level of take of the red-cockaded woodpecker, are not expected to rise to the level that would have a negative impact (*i.e.*, would have only de minimis impacts) on the species' conservation. These exceptions will promote the maintenance and restoration of the habitat resources (cavity trees, nesting habitat, and foraging habitat) crucial to red-cockaded woodpecker recovery and conservation and not be subject to penalties and enforcement in accordance with section 11 of the Act.

As discussed above, active management targeted at maintaining and restoring red-cockaded woodpecker populations and habitat is essential to the continued recovery of the species. The analyses in the SSA report illustrate that it could take "many decades . . . to attain a desired future ecosystem condition in which red-cockaded woodpeckers are no longer dependent on artificial cavities and related special treatments. Without adequate species-level management, in contrast to ecosystem management alone, very little increase in the number of moderately to very highly resilient populations can be expected, and small populations of low or very low resilience are unlikely to persist" (USFWS 2022, p. 14). The species-specific exceptions in this section 4(d) rule aim to facilitate

management that will protect and enhance red-cockaded woodpecker populations.

For several reasons, conservation of red-cockaded woodpeckers as a species depends primarily on the conservation of populations on Federal properties (e.g., National Forests, NWRs, DoD installations). First, the vast majority of red-cockaded woodpeckers in existence today are on Federal lands (USFWS 2022, pp. 108–110; see table 7 in USFWS 2003, p. 137). Second, Federal properties contain most of the land that can reasonably be viewed as potential habitat for red-cockaded woodpeckers (USFWS 1985, p. 133). Third, existing Federal statutes, especially the Act, require that Federal agencies conserve listed species and maintain biodiversity within their lands. Section 2(c)(1) of the Act declares that it is the policy of Congress that all Federal departments and agencies shall seek to conserve endangered species and threatened species (16 U.S.C. 1531(c)(1)); the Act defines conservation as the use of all methods and procedures necessary to bring an endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary (16 U.S.C. 1532(3)). Private and other non-Federal landowners, in contrast, can contribute substantially to conservation, but such contributions above complying with the statutory prohibitions (e.g., direct harm) are voluntary. For those private and other non-Federal landowners that wish to increase the size of their population, we strongly encourage them to aim to achieve the recovery standard in the 2003 recovery plan or join the Conservation Benefit program, previously known as the Safe Harbor program (USFWS 2003, pp. 188–189).

Therefore, the species-specific exceptions in this section 4(d) rule address eligible private and other non-Federal lands differently from Federal lands for three reasons. First, these entities have differing recovery responsibilities. Second, because of section 7 consultation obligations, we will potentially be involved with Federal agencies' habitat management activities and any conservation activities that are authorized, funded, or carried out through Federal conservation programs on eligible private and other non-Federal lands. Third, there are other flexible programs that permit take that are already available to some State conservation agencies and other eligible private and non-Federal landowners (e.g., permits issued from existing SHAs, future CBAs, and HCPs and assistance provided by various conservation programs, such as

those administered by NRCS and the Partners for Fish and Wildlife Program).

First, we include an exception to the take prohibitions to allow incidental take on DoD installations that occurs as a result of implementing red-cockaded woodpecker habitat management and military training activities detailed in Service-approved INRMPs. In this rule, we define habitat management activities as activities intended to maintain or improve the quality and/or quantity of red-cockaded woodpecker habitat, including, but not limited to, prescribed burning; using herbicides and equipment to reduce midstory encroachment, thin overstocked pine stands, promote an open canopy pine system, and promote herbaceous groundcover; converting loblolly, slash, or other planted pines to more fire-tolerant native pines such as longleaf pine; planting and seeding native, site-appropriate pines and groundcover species; and regenerating areas of older pine forest, or any overrepresented age class, to increase and maintain sustainable current and future habitat.

Within the range of the species, most DoD Army, Air Force, and Marine Corps installations have red-cockaded woodpecker management plans and guidelines incorporated into their Service-approved INRMPs to minimize the adverse effects of the military training activities outlined in the INRMPs and to achieve red-cockaded woodpecker recovery objectives. These plans and guidelines all contain an ESMC for red-cockaded woodpecker conservation, which includes population size objectives, management actions to achieve conservation goals, monitoring and reporting, and specific training activities that are allowed or restricted within clusters and near cavity trees. Under the Sikes Act (16 U.S.C. 670 *et seq.*), we are required to review and approve INRMPs, when they are revised, at least every 5 years, and participate in annual reviews. In addition to this review and approval under the Sikes Act, we conduct section 7 consultation under the Act on INRMPs and ESMCs to ensure DoD installations' activities are not likely to jeopardize the continued existence of any listed species, including red-cockaded woodpeckers. Even with this exception in the section 4(d) rule, DoD installations will still need to comply with the Sikes Act requirement to obtain our approval of INRMPs and will still need to fulfill their section 7 obligations under the Act, including consulting, tracking and reporting amounts of incidental take that occur as a result of activities outlined in the INRMP (see "Implications for Implementation,"

below, for more detail on section 7 processes under section 4(d) rules).

In addition to excepting incidental take that results from red-cockaded woodpecker habitat management activities in INRMPs, this section 4(d) rule will except incidental take associated with routine military training activities that are included in a Service-approved INRMP. The military training activities that DoD installations include in their INRMPs have been specifically designed to minimize incidental take of listed species, including red-cockaded woodpeckers. The DoD uses long-established guidelines (e.g., Management Guidelines for the Red-Cockaded Woodpecker on Army Installations (U.S. Army 1996, entire)) to inform minimization measures that reduce incidental take associated with military training. Moreover, the DoD conducts section 7 consultation with us on the content of their INRMPs to ensure these military training activities will not jeopardize the species. Any incidental take resulting from new proposed training or construction activities that are not incorporated into a Service-approved INRMP are not excepted under this rule but could be exempted through an incidental take statement associated with a biological opinion resulting from a separate section 7 consultation under the Act. In other words, if a military installation's activities do not fall within the exceptions in this section 4(d) rule (*i.e.*, they are not incorporated in a Service-approved INRMP) or are not otherwise covered in an existing section 7 biological opinion, incidental take that results from those activities could still be exempted from the prohibitions in this section 4(d) rule via a new biological opinion's incidental take statement as long as the activities will not jeopardize the continued existence of the species.

To further ensure the DoD continues to monitor their red-cockaded woodpecker populations and habitats, the provisions in the section 4(d) rule will require each installation to share an annual property report regarding their red-cockaded woodpecker populations. This annual property report could include the property's recovery goal; the number of active, inactive, and recruitment clusters; information on habitat quality; and the number of artificial cavities the property installed. All military installations with red-cockaded woodpecker populations currently provide such a report to us, and we expect this to continue while the species is listed as threatened. This monitoring could inform adaptive

management during annual INRMP reviews.

As a result of existing conservation programs under Service-approved INRMPs, red-cockaded woodpecker populations have increased on all DoD installations. Of note, Fort Liberty, Fort Stewart, Eglin Air Force Base, Fort Moore, and Camp Blanding all have achieved or surpassed their 2003 recovery plan population size objectives and are expected to continue to manage towards larger populations (USFWS 2003, pp. xiii–xx, 212–213). Active and beneficial red-cockaded woodpecker management to increase population sizes on DoD installations has been an essential component of sustaining the species, and such management can balance the effects of military training.

Given the close, formal involvement we have in reviewing and approving INRMPs under the Sikes Act, the species-specific beneficial management practices that DoD installations must incorporate into the ESMCs of these plans, the monitoring that the DoD installations must conduct, and the section 7 consultation that will still occur for these plans to ensure conservation activities do not jeopardize the species, we find that the management resulting from INRMPs will continue to advance the conservation of the species, even if incidental take occurs. Therefore, this section 4(d) rule excepts incidental take resulting from red-cockaded woodpecker habitat management and military training activities on DoD installations carried out in accordance with a Service-approved INRMP.

Second, we include an exception to take prohibitions to allow incidental take that results from habitat management activities intended to restore or maintain red-cockaded woodpecker habitat on Federal land management agency properties; as noted earlier, we define “habitat management activities” for the purposes of the section 4(d) rule (see Regulation Promulgation, below). We provide this exception separately from the aforementioned exception for DoD properties to account for the fact that the Sikes Act requires a different level of our involvement in the development of INRMPs and provides different standards for content in INRMPs than other Federal natural resource management planning processes.

In order to benefit from this exception, Federal land management agencies must detail these planned habitat management activities in a Federal habitat management plan that includes a red-cockaded woodpecker management component, which

addresses factors including, but not limited to, the red-cockaded woodpecker population size objective and the habitat management necessary to sustain, restore, or increase foraging habitat, nesting habitat, and cavity trees to attain population size objective. Suitable management plans may be stand-alone documents or may be step-down plans with red-cockaded woodpecker-specific management components that implement more general plans (e.g., the habitat management plans that implement the NWR System’s CCPs and red-cockaded woodpecker-specific amendments to LRMPs). In addition to describing these habitat management activities in a Federal habitat management plan, Federal land management agencies must also incorporate appropriate conservation measures to minimize or avoid adverse effects of these habitat management activities on red-cockaded woodpecker foraging habitat, on clusters, and on the species’ roosting and nesting behavior to the maximum extent practicable; Federal agencies may identify these avoidance and minimization measures in these habitat management plans or in other documentation associated with the section 7 consultation process. The inclusion of “clusters” in this provision ensures Federal land managers are adequately protecting nesting habitat and cavity trees, in addition to foraging habitat, while executing their planned beneficial habitat management activities. We expect the red-cockaded woodpecker components of these Federal management plans to allow for adaptive management and frequent reevaluation of appropriate conservation activities and minimization measures.

Moreover, to further ensure Federal land management agencies continue to monitor their red-cockaded woodpecker populations and habitats, the provisions in the section 4(d) rule require each Federal property to share an annual property report with us regarding their red-cockaded woodpecker populations. This annual property report could include the property’s recovery goal; the number of active, inactive, and recruitment clusters; information on habitat quality; and the number of artificial cavities the property installed. All Federal properties with red-cockaded woodpecker populations currently provide such a report to us, and we expect this practice to continue while the species is listed as threatened. The reporting Federal agencies provide as part of section 7 consultations will also qualify as this annual property report.

As a result of this provision in the section 4(d) rule, we will, under certain conditions, except incidental take associated with habitat management activities on Federal lands that have short-term adverse effects to red-cockaded woodpeckers but that are intended to provide for improved habitat quality and quantity in the long term, with coinciding increases in numbers of red-cockaded woodpeckers, if these activities are detailed in a management plan that can adequately address site-specific considerations. Current and future red-cockaded woodpecker habitat conditions that require such restoration can vary significantly among sites and properties, to the extent that it would be ineffective to prescribe a universal condition by which this exception will apply. Therefore, in this section 4(d) rule, we state that incidental take associated with these activities will be excepted as long as the activities are intended to restore and maintain red-cockaded woodpecker habitat and are detailed in a Federal agency habitat management plan. These management plans can strategically and accurately assess the site-specific conditions. According to the section 4(d) rule, Federal agencies must also incorporate appropriate conservation measures to minimize the adverse effects of these activities on red-cockaded woodpecker foraging habitat, on clusters, and on the species’ roosting and nesting behavior. Because Federal agencies will still need to complete section 7 consultation, as appropriate, on these habitat management plans or projects, we will have the opportunity to review these restoration projects and provide input on how to minimize impacts to the species.

Again, we encourage comprehensive, proactive management that results in red-cockaded woodpecker population growth and stability since, according to the 2003 recovery plan, “development and maintenance of viable recovery populations is dependent on restoration and maintenance of appropriate habitat” (USFWS 2003, p. 32). Continued conservation activities and beneficial land management are necessary to address the threats of habitat degradation and fragmentation, and it is the intent of this rule to encourage these activities.

Most Federal properties within the range of the red-cockaded woodpecker already have management plans that detail habitat management activities specifically intended to restore or maintain red-cockaded woodpecker habitat; this exception will not require these agencies to rewrite these management plans or to reinstate

section 7 consultation on these plans or on relevant projects. Moreover, because this section 4(d) rule does not remove or alter the obligation of Federal agencies to complete section 7 consultation on their management plans, we will have the opportunity to review any major changes to these site-specific plans to ensure the Federal agency's habitat management activities are not likely to jeopardize the continued existence of any listed species, including the red-cockaded woodpecker. As part of this section 7 process, we will produce an incidental take statement for the estimated amount of take reasonably likely to occur as a result of the management plan's activities, even though that take is excepted under the section 4(d) rule. Additionally, Federal agencies will still track all incidental take, even if it is excepted under this provision. If they exceed the amount of take in this incidental take statement as a result of carrying out the activities in their management plan, they will need to reinitiate consultation (see "Implications for Implementation," below, for more detail on section 7 processes under section 4(d) rules).

This provision does not except take resulting from habitat management or other activities that provide no benefit to red-cockaded woodpecker recovery, even if these activities are also described in the Federal management plan; however, incidental take from such activities could still be exempted through an incidental take statement associated with a biological opinion resulting from section 7 consultation under the Act. In other words, if a Federal land management agency's activities cannot comply with the exceptions in this section 4(d) rule, incidental take that results from those activities could still be exempted from the prohibitions in this section 4(d) rule via a project-specific section 7 consultation as long as the activities will not jeopardize the continued existence of the species. Finally, because the prohibitions in this section 4(d) rule match those that currently apply under an endangered status, if Federal agencies are currently conducting management activities without resulting in take of red-cockaded woodpeckers, this rule will not affect their ability to continue conducting those activities, independent of this exception.

In short, if incidental take of red-cockaded woodpeckers occurs as a result of Federal land management agencies carrying out habitat management activities, as defined in the rule, this take is not prohibited as long as: (1) the habitat management activities

were implemented specifically to restore or maintain red-cockaded woodpecker habitat; (2) the Federal land management agency details these habitat management activities in a habitat management plan; (3) the Federal land management agency incorporates appropriate conservation measures to minimize or avoid adverse effects of these habitat management activities on red-cockaded woodpecker foraging habitat, on clusters, and on the species' roosting and nesting behavior to the maximum extent practicable; and (4) the Federal land management agency provides annual reporting to us.

Third, we include an exception to encourage private and other non-Federal landowners who are not enrolled in the existing SHA or future CBA program to carry out specific compatible forest management activities (namely, prescribed burns and application of herbicides), given the importance of these forest management tools for red-cockaded woodpecker recovery (USFWS 2022, p. 131). This provision does not change the measures in any existing SHAs or HCPs. While Federal lands bear additional responsibility when it comes to achieving the recovery goals for red-cockaded woodpeckers, private and other non-Federal lands still play an important role in the conservation of the species. They provide for connectivity between populations, which boosts resiliency, and support additional red-cockaded woodpecker clusters to enhance redundancy and representation of the species. This section 4(d) rule will continue to encourage voluntary red-cockaded woodpecker conservation on private and other non-Federal lands through the CBA program.

The exception further supports compatible forest management on private and other non-Federal lands, while continuing to maintain existing populations and is especially relevant for landowners that do not currently participate in the SHA, now known as the CBA, program. This provision provides an exception to take prohibitions for incidental take caused by application of prescribed burns or herbicides on private and other non-Federal lands to create or maintain habitat (*i.e.*, open pine ecosystems) or sustain and grow red-cockaded woodpecker populations, provided that the landowner, or their representative: (1) follows applicable BMPs for prescribed burns and applicable Federal and State laws; (2) applies herbicides in a manner consistent with applicable BMPs and applicable Federal and State laws; and (3) applies prescribed burns and herbicides in a manner that minimizes or avoids adverse effects to

known active clusters and red-cockaded woodpecker roosting and nesting behavior to the maximum extent practicable.

The first condition on this provision requires landowners to follow applicable BMPs for prescribed burns. States and counties within the range of red-cockaded woodpecker provide guidance documents with these BMPs to ensure practitioners safely apply prescribed burns in a way that minimizes impacts to communities, riparian ecosystems, forest roads, and vegetation (*e.g.*, North Carolina Forestry BMP Manual; Recommended Forestry BMPs for Louisiana).

The second condition on this provision requires landowners to follow applicable Federal and State laws in addition to the BMPs when applying herbicide. Some management plans specify additional criteria for the use of herbicides in habitat management that would benefit red-cockaded woodpeckers or their habitat.

The third condition on this provision calls for private and other non-Federal landowners to incorporate reasonable preventative measures, to the maximum extent practicable, to reduce any direct adverse effects of these activities where red-cockaded woodpeckers are already known to roost or nest, increasing the net benefit that prescribed burns and herbicide application can provide to red-cockaded woodpecker habitat and clusters. However, it does not require these private and other non-Federal landowners to survey for new clusters prior to carrying out a burn or using herbicides, nor does it require them to follow particular preventative measures we prescribe, although the methods we outline for cavity tree protection in our 2003 recovery plan can provide a helpful resource to landowners when identifying practical ways to minimize adverse effects (USFWS 2003, pp. 201–205). Thus, this measure asks that landowners responsibly apply prescribed burns and herbicides, without being unreasonably prohibitive on landowners' compatible or beneficial activities.

This provision also is relevant only in situations where take might occur as a result of a prescribed burn or the application of herbicides. For example, if a landowner does not currently have any red-cockaded woodpecker cavity trees, clusters, or foraging woodpeckers on their land, then it is not possible for these activities to result in incidental take. Thus, this landowner can proceed with prescribed burns or the use of herbicides without the possibility of violating the take prohibitions in the section 4(d) rule because such activities

do not result in take. It is only when a prescribed burn or the use of herbicides could result in incidental take of red-cockaded woodpeckers that private and other non-Federal landowners may wish to take advantage of this exception by following BMPs and conducting activities in a manner that minimizes or avoids adverse effects to known active clusters and red-cockaded woodpecker roosting and nesting behavior to the maximum extent practicable. Under this section 4(d) rule, if a private or other non-Federal landowner follows these BMPs and incorporates reasonable preventative measures while conducting prescribed burns and applying herbicides, while incidental take is unlikely, if it were to occur, the landowner would not be liable for such take. This provision only provides an exception to the take prohibitions for incidental take associated with prescribed burns or the use of herbicides when the use of these management practices are associated with maintaining any known red-cockaded woodpecker populations on their land; in other words, if a private or other non-Federal landowner wishes to pursue a prescribed burn that could impair red-cockaded woodpecker population dynamics in the long term, this exception does not cover any incidental take that results from that burn, even if the landowner follows relevant BMPs.

Finally, if landowners are already enrolled in the Safe Harbor program, this exception does not provide any additional flexibility; the permits associated with SHAs authorize take associated with prescribed burns, herbicide use, and other activities as long as landowners follow the stipulations in their SHA and do not decrease the number of red-cockaded woodpecker clusters below their baseline.

Our intent for this provision is to provide a simple means by which to encourage private and other non-Federal landowners to pursue certain types of voluntary forest management activities (*i.e.*, prescribed burns and herbicide application) in a way that reduces impacts to the species but also removes any potential barriers to the implementation of this beneficial forest management, such as fear of prosecution for take. Collaboration with partners in the forestry industry and their voluntary conservation and restoration of red-cockaded woodpecker habitat has helped advance red-cockaded woodpecker recovery to the point of downlisting; this provision continues to encourage this compatible or beneficial management. We also continue to

encourage eligible private and other non-Federal landowners to participate in existing conservation programs that promote forest management benefiting red-cockaded woodpeckers and provides take allowances for participating landowners through other means (*e.g.*, permits issued from existing SHAs, future CBAs, and HCPs; assistance provided by various conservation programs, such as those administered by NRCS and the Partners for Fish and Wildlife Program; and the associated section 7 consultations these Federal programs conduct with us that provide allowances for incidental take associated with beneficial conservation practices).

Finally, the section 4(d) rule provides an exception to take prohibitions for incidental take that occurs as a result of the installation of artificial cavities as long as individuals conducting the installation have completed training, have achieved a certain level of proficiency as detailed below, and are following appropriate guidelines. As described above, maintaining an adequate number of suitable cavities in each woodpecker cluster is fundamental to the conservation of the species. Loss of natural cavity trees was a major factor in the species' decline, and availability of natural cavity trees currently limits many populations. Until a sufficient number of large, old pines becomes widely available, installation and maintenance of artificial cavities is an essential management tool to sustain populations and bring about population increases, and we continue to encourage the installation of artificial cavities. However, we also acknowledge that there are proper techniques to install cavity inserts or drill cavities, and these techniques require training and experience. Improperly installed artificial cavities can cause injury or even result in death of red-cockaded woodpeckers attempting to roost or nest in them. Currently, because the species is listed as endangered, individuals must seek a section 10(a)(1)(A) permit to install artificial cavity inserts or drilled cavities.

However, we recognize that many of our partners have training and extensive experience in installing artificial cavities. Moreover, given the essential nature of artificial cavity installation for the continued conservation of the species, we want to remove any potential hurdles to the efficient and effective provisioning and maintenance of artificial cavities. Therefore, we provide an exception to take prohibitions in this rule for the installation, maintenance, and replacement of artificial cavity inserts

and drilled cavities on public and private lands. However, this exception applies only if the individual conducting the installation has either held a valid Service permit for that purpose and has continued to install, maintain, and replace cavities since the expiration of their permit or has completed a period of apprenticeship under the direction of a person that has been involved in cavity installation for at least 3 years (the trainer).

In order to complete their training, under the direct supervision of the trainer, the apprentice must install at least 10 drilled cavities, if they plan to install drilled cavities, or 10 inserts, if they plan to install inserts, and learn the proper maintenance and inspection procedures for cavities. After the apprentice has completed their training, the trainer must provide a letter to the apprentice and to our regional red-cockaded woodpecker recovery coordinator; the letter will outline the training the apprentice received and will serve as a record of the apprentice's training. Please note that a provision pertaining to restrictor plates, which was included in the proposed rule at proposed § 17.41(h)(2)(iii) (February 3, 2022, 87 FR 6118), has been removed from this final rule as the result of advancements, such as the use of PVC (polyvinyl chloride) inserts, in preserving cavity integrity.

Additionally, the individual conducting the installation must follow appropriate guidelines for the installation and use of artificial cavity inserts and drilled cavities, including: (1) Monitoring the cavity resource; (2) installing and maintaining the recommended number of suitable cavities in each cluster; (3) using the appropriate type of artificial cavity insert and method of artificial cavity installation; (4) installing artificial cavities as close to existing cavity trees as possible, preferably within 71 meters (200 feet) when adding to an existing cluster; (5) selecting a tree that is of appropriate age or diameter when installing a cavity insert; (6) selecting the appropriate location for artificial cavity installation on the tree; and (7) protecting red-cockaded woodpeckers from sap leakage by ensuring that no artificial cavity has resin leaking into the chamber or entrance tunnel.

The 2003 recovery plan can provide some additional detail on how an installer can ensure they successfully follow these guidelines (USFWS 2003, pp. 175–178). If an installer does not comply with the qualification requirements (*i.e.*, they have not held a valid Service permit or they have not completed the necessary training) or

with the installation guidelines in the section 4(d) rule and incidental take occurs as a result of artificial cavity installation, the installer will still be liable for this take. However, if an installer is qualified and follows the installation guidelines, while incidental take is highly unlikely, if it were to occur, the installer will not be liable for such take under this rule. We included this exception in our section 4(d) rule as a result of public comments on the October 8, 2020, proposal that supported its incorporation.

Implications for Implementation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

The trigger for consultation is whether a Federal action may affect a listed species or its critical habitat, not whether the action will result in prohibited take; species-specific section 4(d) rules, regardless of the take they prohibit or allow, cannot change this requirement to consult. Consultation is still required to satisfy the requirements of section 7(a)(2) of the Act to ensure that the activity will not jeopardize the species or result in adverse modification of critical habitat.

Thus, if a Federal agency determines that their action is not likely to adversely affect a listed species or its critical habitat, they must still receive our written concurrence, even if this activity is excepted under a section 4(d) rule. If a Federal agency determines that their action is likely to adversely affect a listed species or its critical habitat, even if it results only in take that is excepted under a section 4(d) rule, they must still pursue formal consultation with us and we must formulate a biological opinion that includes an incidental take statement. Even if a section 4(d) rule includes specific exceptions to take prohibitions, we must still describe or enumerate the amount or extent of this incidental take that is reasonably certain to occur (*i.e.*, in an incidental take statement), and the Federal action agency must monitor and report any such take that occurs. If an

action agency's activities exceed the amount of incidental take enumerated in the incidental take statement, those activities will trigger reinitiation of the consultation, even if this excessive take is still excepted under the section 4(d) rule (see *Center for Biological Diversity v. Salazar*, 695 F.3d 893 (2012)). This system allows the agency to keep track of any take to stay abreast of the status of the species. The Federal action agency may also trigger reinitiation of consultation if they do not implement the action as described in the biological opinion or as directed in the section 4(d) rule.

Even though section 4(d) rules do not remove or alter Federal agencies' section 7 consultation obligations, we will consider methods by which we might be able to streamline section 7 consultation on activities that may result in take that is excepted under this section 4(d) rule. This information and determination can be used to inform and serve as part of the basis of our analysis of whether an action is likely to jeopardize the continued existence of the species, making consultation more straightforward and predictable. For example, because of the nature of activities that will be consistent with this section 4(d) rule, and as the section 4(d) rule includes an explanation for why such activities provide for the conservation of the species, we could draft an analysis of the effects of these habitat management activities on the species for inclusion in all section 7 analyses that consider effects on the red-cockaded woodpecker. This analysis could be incorporated into any Service biological opinion (or action agency biological assessment), thereby creating efficiencies in the development of these documents and providing consistency for consultation on activities that are covered by the section 4(d) rule.

Finally, if Federal agencies have already completed section 7 consultation on particular projects, activities, or management plans and the biological opinion remains valid, they do not need to reinitiate consultation when the section 4(d) rule takes effect, if their Federal action (*e.g.*, management plan) has not changed. However, given the provisions in this section 4(d) rule, Federal agencies may find that reinitiating consultation, although not required, could grant additional flexibilities for their ongoing actions and activities.

Required Determinations

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

Regulations adopted pursuant to section 4(a) of the Act are exempt from the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) and do not require an environmental analysis under NEPA. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This includes listing, delisting, and reclassification rules, as well as critical habitat designations and species-specific protective regulations promulgated concurrently with a decision to list or reclassify a species as threatened. The courts have upheld this position (*e.g.*, *Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995) (critical habitat); *Center for Biological Diversity v. U.S. Fish and Wildlife Service.*, 2005 WL 2000928 (N.D. Cal. Aug. 19, 2005) (concurrent 4(d) rule)).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951, May 4, 1994), Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments), the President's memorandum of November 30, 2022 (Uniform Standards for Tribal Consultation; 87 FR 74479, December 5, 2022), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally-recognized Tribes and Alaska Native Corporations on a government-to-government basis. In accordance with Secretary's 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 did not receive any comments from Tribes on the proposed rulemaking, nor have we received any requests for government-to-government consultation. As such, we have fulfilled our relevant responsibilities.

References Cited

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

internet at <https://www.regulations.gov> and upon request from the Georgia Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this final rule are the staff members of the Fish and Wildlife Service's Species Assessment Team and the Georgia, Louisiana, and South Carolina Ecological Services Field Offices.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Plants, Reporting and

recordkeeping requirements, Transportation, Wildlife.

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 § 17.11, in paragraph (h), in the List of Endangered and Threatened Wildlife by revising the entry for “Woodpecker, red-cockaded” under **BIRDS** to read as set forth below:

§ 17.11 Endangered and threatened wildlife.

* * * * *
(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
* BIRDS	*	*	*	*
* Woodpecker, red-cockaded.	* <i>Dryobates borealis</i>	* Wherever found	* T	* 35 FR 16047, 10/13/1970; 89 FR [INSERT FIRST PAGE OF THE FEDERAL REGISTER DOCUMENT], 10/25/2024; 50 CFR 17.41(h). ^{4d}
* 	* 	* 	* 	*

■ 3. Amend § 17.41 by adding paragraph (h) to read as follows:

§ 17.41 Species-specific rules—birds.

* * * * *

(h) Red-cockaded woodpecker (*Dryobates borealis*). (1) *Definitions*. For the purposes of this paragraph (h), we define the following terms:

(i) *Habitat management activities* are activities intended to maintain or improve the quality and/or quantity of red-cockaded woodpecker habitat, including, but not limited to, prescribed burning; using herbicides and equipment to reduce midstory encroachment, thin overstocked pine stands, promote an open canopy pine system, and promote herbaceous groundcover; converting planted pines to more fire-tolerant, site-appropriate native pines found within the associated native pine, fire-dependent ecosystem; planting and seeding native, site-appropriate pines and groundcover species; and regenerating areas of older pine forest to increase and maintain sustainable current and future habitat for red-cockaded woodpeckers.

(ii) *Cavity tree* means any tree containing one or more active or inactive natural or artificial cavities.

(A) An *active cavity* is a completed natural or artificial cavity or cavity start exhibiting fresh pine resin associated with red-cockaded woodpeckers' cavity maintenance, cavity construction, or resin well excavation.

(B) An *inactive cavity* is a cavity that is not presently being used by red-cockaded woodpeckers.

(C) A *cavity start* is a void formed in the bole of the tree during the initial stages of cavity excavation and can be active or inactive.

(iii) *Cluster* means the aggregation of cavity trees within an area previously or currently used and defended by a single red-cockaded woodpecker group. A cluster may be active or inactive. A cluster encompasses the minimum convex polygon containing all of a group's cavity trees and the 61-meter (200-foot) buffer surrounding that polygon. The minimum cluster area size is 4.05 hectares (10 acres), as some clusters may contain only one cavity tree.

(A) An *active cluster* is defined as a cluster in which one or more of the cavity trees exhibit fresh resin as a result of red-cockaded woodpecker activity or in which one or more red-cockaded woodpeckers are observed.

(B) An *inactive cluster* is defined as a cluster that is not currently supporting any red-cockaded woodpeckers and shows no evidence of red-cockaded woodpecker activity.

(C) A *group* is a red-cockaded woodpecker social unit, consisting of a breeding pair with one or more helpers, a breeding pair without helpers, or a solitary male.

(iv) *Foraging habitat* is habitat that generally consists of mature pines with an open canopy, low densities of small

pinus, a sparse hardwood and/or pine midstory, few or no overstory hardwoods, and abundant native bunchgrass and forb groundcovers.

(2) *Prohibitions*. The following prohibitions in this paragraph (h)(2) that apply to endangered wildlife also apply to the red-cockaded woodpecker. Except as provided under paragraphs (h)(3) and (4) of this section and §§ 17.4 and 17.5, it is unlawful for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or cause to be committed, any of the following acts in regard to this species:

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

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

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

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

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

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

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

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

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

(iv) Possess and engage in other acts with unlawfully taken red-cockaded woodpeckers, as set forth at § 17.21(d)(2) for endangered wildlife and § 17.21(d)(3) and (4) for endangered migratory birds.

(4) *Exceptions from prohibitions for specific types of incidental take.* The following activities that cause take that is incidental to an otherwise lawful activity are not in violation of the prohibitions:

(i) *Department of Defense (DoD) installations.* Red-cockaded woodpecker habitat management and military training activities on DoD installations carried out in accordance with a Service-approved integrated natural resources management plan, provided that the DoD installation reports annually to the Service regarding their red-cockaded woodpecker populations.

(ii) *Federal land management agency properties.* Habitat management activities intended to restore or maintain red-cockaded woodpecker habitat on Federal land management agency properties, provided that:

(A) The Federal land management agency details these habitat management activities in a Federal habitat management plan;

(B) The Federal habitat management activities incorporate appropriate conservation measures to minimize or avoid adverse effects of these habitat management activities on, but not limited to, red-cockaded woodpecker foraging habitat, on clusters, and on the species' roosting and nesting behavior to the maximum extent practicable; and

(C) The Federal land management agency reports annually to the Service regarding their red-cockaded woodpecker populations.

(iii) *Privately and other non-federally owned properties.* Application of prescribed burns or herbicides on private and other non-Federal lands to

create or maintain habitat (*i.e.*, open pine ecosystems) or sustain and grow red-cockaded woodpecker populations, provided that the landowner or their representative:

(A) Follows applicable best management practices for prescribed burns and applicable Federal and State laws;

(B) Applies herbicides in a manner consistent with applicable best management practices and applicable Federal and State laws; and

(C) Applies prescribed burns and herbicides in a manner that minimizes or avoids adverse effects to known active clusters and red-cockaded woodpecker roosting and nesting behavior to the maximum extent practicable.

(iv) *Artificial cavities.* Installation, maintenance, and replacement of artificial cavity inserts and drilled cavities on public and private lands, provided that:

(A) The individual conducting the installation, maintenance, or replacement has either:

(1) Held a valid Service permit for that purpose, which expired after November 25, 2024, and has continued to install, maintain, and replace cavities since the expiration of their permit; or

(2) Completed the following training procedures for the type of artificial cavity they plan to install, maintain, or replace:

(i) The individual ("apprentice") has completed a period of apprenticeship to learn proper installation, maintenance, and replacement procedures for artificial cavities under the direction of a person ("trainer") who has been installing, maintaining, and replacing cavities for at least the past 3 years;

(ii) The apprentice has installed at least 10 drilled cavities or 10 inserts

under direct supervision and to the satisfaction of the trainer; and

(iii) The apprentice has learned the proper maintenance and inspection procedures for cavities.

(B) If the individual conducting the installation is an apprentice, the apprentice's trainer provides a letter to the apprentice and to the Service red-cockaded woodpecker recovery coordinator that outlines the training the apprentice received, which will serve as a record of the apprentice's training.

(C) The individual conducting the installation follows appropriate guidelines for the installation and use of artificial cavity inserts and drilled cavities, including, but not limited to:

(1) Monitoring the cavity resource;

(2) Installing and maintaining the recommended number of suitable cavities in each cluster;

(3) Using the appropriate type of artificial cavity insert and method of artificial cavity installation;

(4) Installing artificial cavities as close to existing cavity trees as possible, preferably within 71 meters (200 feet), when adding to an existing cluster;

(5) Selecting a tree that is of appropriate age or diameter, when installing a cavity insert;

(6) Selecting the appropriate location for artificial cavity installation on the tree; and

(7) Protecting red-cockaded woodpeckers from sap leakage by ensuring that no artificial cavity has resin leaking into the chamber or entrance tunnel.

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Martha Williams,

Director, U.S. Fish and Wildlife Service.

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