

petition from Advocates et al. for reconsideration of the July 15, 2022 final rule (87 FR 42339).

Issued in Washington, DC, under authority delegated in 49 CFR 1.95 and 501.5.

Raymond R. Posten,

Associate Administrator for Rulemaking.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2021–0007;
FXES1111090FEDR–245–FF09E21000]

RIN 1018–BE80

Endangered and Threatened Wildlife and Plants; Threatened Status for the Suwannee Alligator Snapping Turtle 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), determine threatened species status under the Endangered Species Act of 1973 (Act), as amended, for the Suwannee alligator snapping turtle (*Macrochelids suwanniensis*), a large, freshwater turtle species from the Suwannee River basin in Florida and Georgia. This rule adds the species to the List of Endangered and Threatened Wildlife. We also finalize a rule issued under the authority of section 4(d) of the Act that provides measures that are necessary and advisable to provide for the conservation of this species. We have determined that designating critical habitat for the Suwannee alligator snapping turtle is not prudent.

DATES: This rule is effective July 29, 2024.

ADDRESSES: This final rule is available on the internet at <https://www.regulations.gov> under Docket No. FWS–R4–ES–2021–0007 and on the Service’s Environmental Conservation Online System (ECOS) species page at <https://ecos.fws.gov/ecp/species/10891>. Comments and materials we received, as well as supporting documentation we used in preparing this rule, are available for public inspection at <https://www.regulations.gov> under Docket No. FWS–R4–ES–2021–0007.

Availability of supporting materials: Supporting materials we used in preparing this rule, such as the species status assessment report, are available at

<https://www.regulations.gov> at Docket No. FWS–R4–ES–2021–0007.

FOR FURTHER INFORMATION CONTACT:

Lourdes Mena, Classification and Recovery Division Manager, Florida Ecological Services Field Office, 7915 Baymeadows Way, Suite 200, Jacksonville, FL 32256–7517; email: Lourdes.Mena@fws.gov; telephone: 352–749–2462.

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SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, a species warrants listing if it meets the definition of an endangered species (in danger of extinction throughout all or a significant portion of its range) or a threatened species (likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range). If we determine that a species warrants listing, we must list the species promptly and designate the species’ critical habitat to the maximum extent prudent and determinable. We have determined that the Suwannee alligator snapping turtle meets the Act’s definition of a threatened species; therefore, we are listing it as such. Listing a species as an endangered or threatened species can be completed only by issuing a rule through the Administrative Procedure Act rulemaking process (5 U.S.C. 551 *et seq.*).

What this document does. This rule lists the Suwannee alligator snapping turtle (*Macrochelys suwanniensis*) as a threatened species and finalizes the rule issued under the authority of section 4(d) of the Act (the “4(d) rule”) that provides measures 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 or threatened species based on any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors

affecting its continued existence. We have determined that the primary threats acting on the Suwannee alligator snapping turtle include illegal harvest and collection (Factor B), nest predation (Factor C), and hook ingestion and entanglement due to bycatch associated with freshwater fishing (Factor E).

Previous Federal Actions

Please refer to the April 7, 2021, proposed rule (86 FR 18014) for a detailed description of Previous Federal actions concerning the Suwannee alligator snapping turtle.

Peer Review

A species status assessment (SSA) team prepared an SSA report, version 1.0, for the Suwannee alligator snapping turtle (Service 2020, entire). The SSA team was composed of Service biologists, in consultation with other species experts. The SSA report represents a compilation of the best scientific and commercial data available concerning the status of the species, including the impacts of past, present, and future factors (both negative and beneficial) affecting the species.

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we sought peer review of the SSA report version 1.0 (Service 2020, entire). As discussed in the proposed rule, we sent the SSA report to four independent peer reviewers and received responses from one reviewer. The peer review can be viewed at <https://www.regulations.gov> and at our Florida Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**). In preparing the proposed rule, we incorporated the results of this review, 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 we received on our April 7, 2021, proposed rule to list the Suwannee alligator snapping turtle as a threatened species with a 4(d) rule. We updated the Suwannee alligator snapping turtle SSA report (to version 1.2 (Service 2022, entire) based on comments and additional information provided during the proposed rule’s

comment period. Those updates are reflected in this final rule, as follows:

1. We update the description of the species' representation and redundancy and clarify these conservation principles to provide a better understanding of the species' current and future viability.

2. We include new information provided during the comment period regarding the effectiveness of best management practices (BMPs) associated with forest management practices. We added a discussion on ways in which the implementation of such BMPs provides conservation benefits to the species.

3. For the 4(d) rule, we are not including the exception from prohibitions associated with Federal and State captive-breeding programs to support conservation efforts for wild populations. We determined this provision is redundant with the exception under 50 CFR 17.31(b), which is already included in the 4(d) rule.

4. For the 4(d) rule, we are not including the exception from the prohibitions regarding incidental take resulting from herbicide/pesticide use from this final rule. We do not have enough information about the types or amounts of pesticides that may be applied in areas where Suwannee alligator snapping turtle occurs to be able to assess the future impacts to the species. The additional materials provided during the public comment period indicate impacts to other turtle species from pesticide use occurs (Bishop et al. 1991, entire; Sparling et al. 2006, entire; Kittle et al. 2018, entire). Therefore, including this exception to incidental take may not provide for the conservation of the species. Further, we note that the Environmental Protection Agency (EPA) has not consulted on most pesticide registrations to date, so excepting take solely based on user compliance with label directions and State and local regulations EPA has not consulted on most pesticide registrations to date and is not appropriate in this situation. Retaining this exception in the absence of consultation on a specific pesticide registration may create confusion regarding the consideration of these impacts and whether Federal regulatory processes apply to these activities. It was not our intent to supersede the consultation on the pesticide registration nor other Federal activities.

5. For the 4(d) rule, we revise the text of the exception from incidental take prohibition resulting from forestry management practices. We remove the terms "silviculture and silvicultural practices" and replace them with "forest

management practices" to clarify the exception to incidental take prohibitions, as this is more appropriate for the intent and purpose of the rule.

6. For the 4(d) rule, we are not including the exception from incidental take prohibition resulting from construction, operation, and maintenance activities that occur near and in a stream. We determined this exception is too vague to meaningfully provide conservation benefits to the species. In addition, this exception could have caused confusion regarding whether Federal or State regulatory processes apply to these activities. Many activities occurring near or in a stream require permits or project review by Federal or State agencies, and including this exception could have been interpreted as removing these requirements, which was not our intention.

7. For the 4(d) rule, we are not including the exception from incidental take prohibition resulting from maintenance dredging activities that occur in the previously disturbed portion of a maintained channel. We determined this exception is too vague to meaningfully provide conservation benefits to the species. In addition, dredging activities to promote river traffic can cause temporary turbidity, leading to decreased ability to see and ambush prey species; the removal of underwater snags, which could reduce prey availability by eliminating areas where prey is found (e.g., congregation areas, nursery areas, feeding areas); and the filling of scour areas used to ambush prey. In addition, this exception could have caused confusion regarding whether Federal or State regulatory processes apply to these activities. All in-water work, including dredging in previously dredged area, requires appropriate State and Federal permits, so including this exception could have been interpreted as removing this requirement, which was not our intention.

8. For the 4(d) rule, we are not including the exception from prohibitions for Tribal employees and State-licensed wildlife rehabilitation facilities. A provision under 50 CFR 17.31(b)(1) now extends to federally recognized Tribes the exceptions to prohibitions for threatened wildlife to aid, salvage, or dispose of threatened wildlife and is already included in this 4(d) rule. We also are not including the exception from prohibitions for State-licensed wildlife rehabilitation facilities because it is redundant with the provision at 50 CFR 17.21(c)(3), which allows take of endangered wildlife without a permit if such action is

necessary to aid a sick, injured, or orphaned specimen without additional authorization, which is also already included in the 4(d) rule.

9. We update information to reflect that the alligator snapping turtle (*Macrochelys temminckii*) was transferred from Appendix III of CITES to Appendix II (CITES 2023, pp. 45–46).

10. We make minor, nonsubstantive editorial corrections and revisions for clarity and consistency throughout this document.

The information we received during the comment period on our April 7, 2021, proposed rule did not change our determination that the Suwannee alligator snapping turtle meets the Act's definition of a threatened species. The information provided through the comment period also did not cause us to revise our determination that designation of critical habitat for the Suwannee alligator snapping turtle is not prudent.

Summary of Comments and Recommendations

In the proposed rule published on April 7, 2021 (86 FR 18014), we requested that all interested parties submit written comments on the proposal by June 7, 2021. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposed listing determination and proposed 4(d) rule. A newspaper notice inviting general public comment was published in the Gainesville Sun on April 21, 2021. We did not receive any requests for a public hearing. All substantive information provided during the comment period either has been incorporated directly into the final rule or is addressed below.

As discussed in Peer Review above, we received a response from one peer reviewer on the draft SSA report. As discussed above, because we conducted this peer review prior to the publication of our proposed rule, we had already incorporated all applicable peer review comments into version 1.1 of the SSA report, which was the foundation for the proposed rule and this final rule and ultimately into the latest version of the SSA report, version 1.2 (Service 2022, entire). The peer reviewer generally concurred with our methods and conclusions and provided additional information regarding seed dispersal by the common snapping turtle (*Chelydra serpentina*). We added the information provided by the peer reviewer into the SSA report, version 1.1 (Service 2021, entire) as appropriate.

Public Comments

We received 34 public comments in response to our April 7, 2021, proposed rule. We reviewed all comments we received during the public comment period for substantive issues and new information regarding the proposed rule. Seventeen comments provided substantive comments or new information concerning the proposed listing of the species' status, proposed 4(d) rule, and prudency determination for critical habitat for the Suwannee alligator snapping turtle. Below, we provide a summary of public comments we received; however, comments that we incorporated as changes into the final rule, comments outside the scope of the proposed rule, and those without supporting information did not warrant an explicit response and, thus, are not presented here. Identical or similar comments have been consolidated and a single response provided.

Comments From States

(1) *Comment:* The Georgia Department of Natural Resources (GDNR), Wildlife Resources Division commented that occasional observations by biologists and anglers indicate that ensnarement and/or hook ingestion by Suwannee alligator snapping turtle may occur as a result of legal fishing methods in Georgia, and research is needed to further quantify population impacts of incidental take on this species. The GDNR also recommended the rule place greater emphasis on promoting practices and regulations to reduce impacts to the Suwannee alligator snapping turtle from abandoned fishing gear.

Our Response: We plan to work with both GDNR and the Florida Fish and Wildlife Conservation Commission (FWC) to better understand impacts from legal and abandoned fishing gear. As discussed in our April 7, 2021, proposed rule, turtle bycatch from legal recreational and commercial fishing with hoop nets and trot lines (and varieties including jug lines, bush hooks, and limb lines) is a concern for the conservation of the species due to its effects on species abundance, particularly in light of the species' life-history traits. It is important to ensure that fishing activities take into consideration the need to prevent accidental turtle deaths from the use of such fishing gear, and we will work with our State partners to identify measures and revisions to existing State fishing regulations to reduce bycatch of Suwannee alligator snapping turtle. Given we did not receive information during the comment period for bycatch

reduction techniques, we did not include an exception for incidental take of the Suwannee alligator snapping turtle resulting from bycatch from otherwise lawful recreational and commercial fishing in our final 4(d) rule. Therefore, take of the species resulting from bycatch activities is prohibited in the 4(d) rule.

Public Comments Categorized by Topic Species' Status

(2) *Comment:* One commenter stated their view that the Suwannee alligator snapping turtle should be listed as an endangered species rather than a threatened species.

Our Response: An endangered species is one that is in danger of extinction throughout all or a significant portion of its range. Based on the best available information as described in the SSA report (Service 2022, entire), we do not find that the Suwannee alligator snapping turtle is currently in danger of extinction throughout all or a significant portion of its range. The current condition of the species provides for sufficient resiliency, redundancy, and representation such that it is not currently in danger of extinction (see Determination of Suwannee Alligator Snapping Turtle Status in the proposed listing rule (86 FR 18014, April 7, 2021, at pp. 18026–18028) and below in this final rule). When evaluating the species' status based on the threats and the species' response to the threats in the future, the species meets the Act's definition of a threatened species because it is at risk of becoming an endangered species within the foreseeable future throughout all of its range. The commenters did not provide any new information regarding threats to the Suwannee alligator snapping turtle or its current status that was not already considered in the SSA report (Service 2021, entire) or our April 7, 2021, proposed rule. With no new information to consider, our conclusion regarding the status of the Suwannee alligator snapping turtle remains the same.

(3) *Comment:* A commenter suggested we list the common snapping turtle (*C. serpentina*) under the Act based on similarity of appearance (see 16 U.S.C. 1533(e)) to help curb the threat of incidental captures of Suwannee alligator snapping turtles by trappers that are targeting common snapping turtles.

Our Response: Under section 4(e) of the Act (16 U.S.C. 1533(e)), a species may be listed as endangered or threatened due to similarity of appearance of a listed species if the

species so closely resemble one another that it is difficult to tell them apart and if this similarity is a threat to the species that is warranted for listing. The likelihood of incidental capture from legal common snapping turtle harvest is anticipated to be low due to the disparity between the preferred habitat types used by the common snapping turtle and the Suwannee alligator snapping turtle. Common snapping turtle habitat typically includes impoundments such as lakes, ponds, and oxbows. The Suwannee alligator snapping turtle prefers more riverine systems. While there may be some overlap between these habitat types and their ranges, the Suwannee alligator snapping turtle can be distinguished from the common snapping turtle based on certain physical characteristics. The common snapping turtle shares some similar features to the Suwannee alligator snapping turtle, but there are distinctive characteristics that can aid in differentiation of the two species. The Suwannee alligator snapping turtle's carapace has three keeled ridges and a curved, hooked, beak-like projection at the mouth, while the common snapping turtle lacks these features. Because of the physical characteristics that are unique to each species that facilitate identification, we have determined that listing the common snapping turtle due to similarity of appearance is not necessary or appropriate.

(4) *Comment:* One commenter noted the Service's analysis of redundancy and representation for the Suwannee alligator snapping turtle in the SSA report was contrary to the agency's SSA framework and commented that we did not describe representation in a meaningful way.

Our Response: Our analysis of the Suwannee alligator snapping turtle's redundancy and representation adheres to the definitions presented in the SSA framework. Representation is the ability of the species to adapt to both near-term and long-term changes in its physical and biological environment, and redundancy is the ability of the species to withstand catastrophic events. At the time of our April 7, 2021, proposed rule, the best available scientific information regarding the Suwannee alligator snapping turtle indicated there was no genetic or environmental condition variation across the species' range. We assessed representation, which measures a species' adaptive potential in the face of natural or anthropogenic changes, as inherently low for this species, because the best available information at that time showed it lacked significant genetic variation within its single population. Based on

the public comments and new literature related to assessing adaptive capacity (Thurman et al. 2020, entire), in this final rule and our revised SSA report, version 1.2 (Service 2022, entire), we updated our discussion of representation by describing the Suwannee alligator snapping turtle's adaptive capacity in terms of its genetic, biological, and ecological traits necessary to understand the species' plasticity to changing conditions over time. Adaptive capacity reflects the amount of tolerance for change based on genotypic and phenotypic attributes. Change can include impacts from climate change (e.g., higher air and water temperatures, saltwater intrusion, etc.) and humans (e.g., water withdrawal, fishing gear, habitat alterations, etc.). We assessed the Suwannee alligator snapping turtle to have low to moderate adaptive capacity in the life-history and demography traits and moderate to high adaptive capacity in the distribution, movement, evolutionary potential, ecological role, and abiotic niche traits. Further information on how we describe the species in terms of its adaptive capacity with its ability to acclimate to environmental stressors can be found in our SSA report, version 1.2 (Service 2022, pp. 37–39).

For redundancy, in our proposed and this final rule, we assessed current redundancy as limited, as the species is considered a single population with no physical barriers to movement. While there is only a single population, it is widely distributed across the historical range. We assessed the chance of a catastrophic event affecting the entire species as very low. However, given the Suwannee alligator snapping turtle is currently assessed as a single population with an estimated abundance of 2,000 turtles across the species' historical range, we determined redundancy to be naturally limited, given the species' distribution is limited to the Suwannee River basin.

4(d) Rule

(5) *Comment:* One commenter inquired why the Service did not apply the blanket 4(d) rule to this species.

Our Response: Prior to August 27, 2019, the prohibitions for endangered species under section 9 of the Act were generally extended to threatened species (referred to as the “blanket 4(d) rule”) unless we adopted a species-specific 4(d) rule for a particular species. On August 27, 2019, we published a final rule (84 FR 44753) removing the blanket 4(d) rule for threatened species. That 2019 final rule was in effect when we published our April 7, 2021, proposed

rule for the Suwannee alligator snapping turtle and is still in effect. On May 6, 2024, a rule became effective that re-instated the blanket 4(d) rule (89 FR 23919). The updated regulations extend the majority of the protections (all of the prohibitions that apply to endangered species under section 9 with certain exceptions to those prohibitions) to threatened species, unless we issue an alternative rule under section 4(d) of the Act for a particular species (i.e., a species-specific 4(d) rule). For species with a species-specific 4(d) rule, that rule contains all of the protective regulations for that species. We exercised our authority under section 4(d) of the Act and developed a proposed species-specific 4(d) rule to address the specific threats and conservation needs of the Suwannee alligator snapping turtle. The 4(d) rule is necessary and advisable to provide for the conservation of the Suwannee alligator snapping turtle. For the species-specific 4(d) rule, we determined that it is not necessary to apply all of the Act's section 9 prohibitions to the Suwannee alligator snapping turtle; the provisions of the species-specific 4(d) rule are described below under Provisions of the 4(d) Rule and set forth below under Regulation Promulgation.

(6) *Comment:* One commenter expressed concern that the Service's description of the exceptions for construction, operation, and maintenance in the 4(d) rule is too broad and vague to determine when the exception applies.

Our Response: We agree that it is difficult to understand and identify specific situations when the exception to incidental take resulting for construction, operation, and maintenance activities would apply. Accordingly, as stated above under Summary of Changes from the Proposed Rule, we are not including an exception to the incidental take prohibitions in the 4(d) rule for the Suwannee alligator snapping turtle because it is too vague to meaningfully provide conservation benefits to the species. In addition, many activities occurring near or in a stream require permits or project review by Federal or State agencies, and, if retained, this exception would have caused confusion with respect to the requirements that must be met when undertaking these activities.

(7) *Comment:* One commenter expressed concern about an exception for silviculture and forestry BMPs, given the implementation of less effective silviculture and forestry BMPs for riparian areas and potential negative impacts to the species.

Our Response: State-approved BMPs for silviculture and forestry maintain riparian buffers, resulting in reduced sedimentation into the stream from upland sources, reduced water temperature, increased dissolved oxygen, and more material for in-water woody debris. These attributes promote aquatic diversity and are required for healthy habitats.

Implementing BMPs that avoid or minimize the effects of habitat alterations in areas that support Suwannee alligator snapping turtles will provide additional measures for conserving the species by reducing indirect effects to the species. We recognize that silvicultural operations are widely implemented in accordance with State-approved forestry BMPs (as reviewed by Cristan et al. 2018, entire), which provide more stringent riparian protections, and the adherence to these BMPs broadly protects water quality, particularly related to sedimentation (as reviewed by Cristan et al. 2016, entire; Warrington et al. 2017, entire; and Schilling et al. 2021, entire). For example, Florida's State silviculture BMPs for designated outstanding Florida waters, such as the Suwannee and Santa Fe Rivers, require a 300-foot buffer on each side of the river. Forestry and silvicultural activities that implement State-approved BMPs will have a de minimis impact on the species, and we have determined that this exception to the incidental take prohibitions in the 4(d) rule will be beneficial to the species. If forestry and silvicultural activities do not implement or improperly implement BMPs, then this exception will not apply.

(8) *Comment:* One commenter suggested that current regulatory mechanisms are inadequate to address the threat of incidental bycatch to the Suwannee alligator snapping turtle, and a 4(d) rule that exempts take incidental to recreational fishing activities would only be appropriate if the methods of fishing that incidentally capture turtles were prohibited or significantly modified to prevent incidental capture.

Our Response: In the proposed rule, we requested information regarding ideas for the design of a turtle escape or exclusion device and modified trot line techniques that would effectively eliminate or significantly reduce bycatch of alligator snapping turtles from recreational fishing; however, we did not receive any comments to inform fishing gear modifications to reduce bycatch of Suwannee alligator snapping turtles. Recreational fishing activities are regulated by State natural resource and fish and game agencies, and these agencies issue permits for these

activities in accordance with their regulations. We will coordinate with State agencies to better understand the impacts of permitted recreational fishing on Suwannee alligator snapping turtles. In addition, we will work with the State to reduce the risk of bycatch, which may include modifying fishing mechanisms based on the best available science related to reducing fishing impacts through research and development on innovative fishing technologies and methodologies.

Additionally, we will continue coordinating with State agencies on the development of public awareness programs regarding identification and conservation of the Suwannee alligator snapping turtle. Further, since we did not receive information during the comment period for bycatch reduction techniques, we do not include in the 4(d) rule an exception to incidental take of the Suwannee alligator snapping turtle resulting from bycatch from otherwise lawful recreational and commercial fishing using techniques to reduce bycatch. Therefore, take of the species resulting from bycatch is prohibited by the 4(d) rule.

(9) *Comment:* One commenter expressed concern about the 4(d) rule's exception to the take prohibition for pesticide and herbicide use. The commenter stated that the exception is arbitrary and not supported by the best available scientific and commercial data. The commenter stated that exposure to pesticides and herbicides is harmful to turtle species and provided several citations to support the comment (such as, Bishop et al. 1991, entire; Sparling et al. 2006, entire; Kittle et al. 2018, entire))

Our Response: After review of the comments to the proposed rule and revisiting the best available scientific and commercial information, we are not including the pesticide and herbicide use exception from the incidental take prohibitions in the final 4(d) rule. In the proposed rule and this final rule, we describe the primary threats to the Suwannee alligator snapping turtle as illegal harvest and collection, nest predation, and hook ingestion and entanglement due to bycatch associated with freshwater fishing. And although nest predation is a primary threat to the species, the most common nest predators identified are raccoons (*Procyon lotor*). Nonnative, invasive species, such as feral pigs (*Sus scrofa*) and red imported fire ants (*Solenopsis invicta*), occur across the species' range, but to date, nest predation by these nonnative species has not been documented. In the preamble of our proposed 4(d) rule, we proposed an

exception to incidental take prohibitions resulting from invasive species removal activities using pesticides and herbicides as these types of activities could be considered beneficial to the native ecosystem and are likely to improve habitat conditions for the species. However, we do not have enough information about the types or amounts of pesticides that may be applied in areas where Suwannee alligator snapping turtle occurs to be able to assess the future impacts to the species.

The additional materials provided during the public comment period do not indicate Suwannee alligator snapping turtle is impacted greatly from pesticides used to reduce impacts from nonnative, invasive species; however, the information provided does indicate impacts to other turtle species from pesticide use (Bishop et al. 1991, entire; Sparling et al. 2006, entire; Kittle et al. 2018, entire). As documented in other turtle species from the literature provided by the commenter, we assessed that there is the potential of indirect effects from pesticides on the Suwannee alligator snapping turtle, and therefore, including this exception to incidental take may not provide for the conservation of the species.

Further, we note that the Environmental Protection Agency (EPA) has not consulted on most pesticide registrations to date, so excepting take solely based on users complying with labels is not appropriate in this situation. Thus, we are not including the exception from the prohibitions regarding incidental take resulting from herbicide/pesticide use from this final rule.

(10) *Comment:* One commenter suggested modifying the 4(d) rule to except captive breeding for turtles held in captivity prior to the effective date of the listing to allow for appropriate captive-breeding programs to contribute to the conservation of the species.

Our Response: We recognize the contribution of permitted captive breeding to the conservation of species. However, there are currently no captive-breeding efforts occurring for the Suwannee alligator snapping turtle; therefore, there are no existing captive-breeding programs that we could except prior to the effective date of this final rule (see **DATES**, above). There are programs underway for *M. temminckii* that include captive rearing, head-start programs, and reintroductions that are successful. Similar programs may be implemented in the future to conserve the Suwannee alligator snapping turtle. In our proposed 4(d) rule, we included a provision allowing incidental take

associated with Federal and State captive-breeding programs to support conservation efforts for wild populations. However, we determined this provision is duplicative of an exception under 50 CFR 17.31(b), which we also included in the proposed 4(d) rule and retain in this final 4(d) rule. Therefore, this final 4(d) rule does not include a separate captive-breeding exception from the incidental take prohibitions.

Critical Habitat

(11) *Comment:* A commenter claimed that the Service did not provide sufficient support for the not-prudent finding for critical habitat designation regarding the threat of illegal collection of the Suwannee alligator snapping turtle. The commenter also indicates the location data and maps are already available to the public in published reports.

Our Response: We recognize that designation of critical habitat can provide benefits to listed species; however, for the Suwannee alligator snapping turtle, increased threats caused by the designation outweigh the benefits (for further discussion, see 86 FR 18014, April 7, 2021, at p. 18032). We do not dispute the claim that publicly available reports identify specific location data for the species, including locations of where the species occurs from trapping efforts. We acknowledge that general location information is provided within the proposed rule and this final rule, and some specific location information can be found through other sources. However, because the critical habitat designation process includes identifying the physical or biological features for the species and specific areas occupied by the species, the designation of critical habitat would describe and disclose areas of higher quality habitat that supports more turtles, which may allow collectors to better focus their efforts in these areas, thereby exacerbating the threat of collection or other harm from humans.

I. Final Listing Determination

Background

Please refer to the April 7, 2021, proposed rule (86 FR 18014) and the SSA report, version 1.2 (Service 2022, pp. 4–14) for a full summary of species' information. Both are available on our ECOS website for the species at <https://ecos.fws.gov/ecp/species/10891> and at <https://www.regulations.gov> under Docket No. FWS–R4–ES–2021–0007.

A thorough review of the taxonomy, distribution, life history, and ecology of

the Suwannee alligator snapping turtle (*Macrochelys suwanniensis*) is presented in the SSA report version 1.2 (Service 2022, pp. 13–22); however, much of this information is based on the *Macrochelys* genus as a whole and describes the Suwannee alligator snapping turtle using the best available information.

Turtles in the genus *Macrochelys* are the largest species of freshwater turtle in North America, are highly aquatic, and are somewhat secretive. The genus includes two distinct species, *M. temminckii* and *M. suwanniensis*. *Macrochelys* turtles are characterized as having a large head, long tail, and an upper jaw with a strongly hooked beak. They have three raised keels with posterior elevations on the scutes of the carapace (upper shell), which is dark brown and often has algal growth that adds to their camouflage. Their eyes are positioned on the side of the head and are surrounded by small, fleshy, pointed projections that are unique to the genus.

Suwannee alligator snapping turtles are primarily freshwater turtles endemic to the Suwannee River basin and found more abundantly in the middle reaches of the Suwannee River where freshwater springs contribute to an increase in productivity of the aquatic system (Enge et al. 2014, p. 36). These turtles are typically bottom-dwelling, but surface periodically to breathe (Thomas 2014, p. 60). While the species is typically found in fresh water, it can tolerate some salinity and brackish waters, as barnacles have been found on the carapace of some turtles. The species is found in a variety of habitats across its range, but all life stages rely on submerged material (*i.e.*, deadhead logs and vegetation) as important structure for resting, foraging, and cover from predators (Enge et al. 2014, p. 39).

The Suwannee River basin encompasses parts of southern Georgia and northern Florida. Main water bodies that currently or historically supported the Suwannee alligator snapping turtle include the Suwannee River, Santa Fe River, New River, Alapaha River, Little River, and Withlacoochee River. Individuals occupy main river channels and tributaries where habitat is present.

Throughout this document, we provide descriptions of the Suwannee alligator snapping turtle where the information is available specific to the species. We describe the Suwannee alligator snapping turtle as *Macrochelys suwanniensis* or Suwannee alligator snapping turtle. We reference *Macrochelys* when describing the genus and *Macrochelys temminckii* (abbreviated as *M. temminckii*) when referring to the second species of the

genus, alligator snapping turtle. Since the taxonomic distinction of the two *Macrochelys* spp. is relatively recent, we may refer to the genus, or alligator snapping turtles in general, to describe life-history traits.

The general life stages of *Macrochelys* spp. can be described as egg, hatchling (first year), juvenile (second year until age of sexual maturity), and adult (age of sexual maturity through death). Each life stage has specific requirements in order to contribute to the productivity of the next life stage. They excavate nests in sandy soils or other dry substrate near freshwater sources that are within 8 to 656 feet (ft) (2.5 to 200 meters (m)) from the shore. The incubation period for Suwannee alligator snapping turtle is between 105 to 110 days (Ernst and Lovich 2009, p. 145).

Males achieve sexual maturity in 11–21 years and females in 13–21 years (Ernst and Lovich 2009, p. 144; Reed et al. 2002, p. 4). The age of sexual maturity can be influenced by the size of the turtle, as size increases are greater when food resources and other environmental conditions are more favorable. Adult Suwannee alligator snapping turtles require streams and rivers with submerged logs and undercut banks, clean water, and ample prey.

Female alligator snapping turtles may produce a single clutch once a year or every other year at most even if the conditions are good (Reed et al. 2002, p. 4). Clutch size may vary across the species' range to between 9 and 61 eggs, with a mean clutch size of 27 eggs (Ernst and Lovich 2009, p. 145). Most nesting occurs from May to July (Reed et al. 2002, p. 4).

Suwannee alligator snapping turtles are long-lived species; provided suitable conditions, adults can reach carapace lengths of up to 29 inches and 249 pounds for males, while females can reach lengths of 22 inches and 62 pounds. The oldest documented *Macrochelys* turtle in captivity survived to at least 80 years of age, but in the wild, the species may live longer (Ernst and Lovich 2009, p. 147). The generation time for the species is around 31 years (range = 28.6–34.0 years, 95 percent confidence interval, Folt et al. 2016, p. 27).

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 part 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 listing for 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; we concluded that the decision would be the same. The analyses under both the regulations currently in effect as of May 6, 2024, 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 use the term “threat” to refer in general to actions or conditions that are known to or are reasonably likely to

negatively affect individuals of a species. The term “threat” includes actions or conditions that have a direct impact on individuals (direct impacts), as well as those that affect individuals through alteration of their habitat or required resources (stressors). The term “threat” may encompass—either together or separately—the source of the action or condition or the action or condition itself.

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

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

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

Analytical Framework

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

To assess Suwannee alligator snapping turtle’s 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 the individual species’ life-history needs. The next stage involved an assessment of the historical and current condition of the species’ demographics and habitat characteristics, including an explanation of how the species arrived at its current condition. The final stage of the SSA involved making predictions about the species’ responses to positive and negative environmental and

anthropogenic influences. Throughout all of these stages, we used the best available information to characterize viability as the ability of a species to sustain populations in the wild over time. We use this information to inform our regulatory decision. The following is a summary of the key results and conclusions from the SSA report; the full SSA report can be found at Docket FWS-R4-ES-2021-0007 on <https://www.regulations.gov>.

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.

The Suwannee alligator snapping turtle is found in the Suwannee River basin in Georgia and Florida. The species is mostly aquatic and uses a variety of habitat types including deeper water of large rivers and their major tributaries; however, they are also found in a wide variety of habitats, including small streams, springs, bayous, canals, swamps, lakes, reservoirs, and ponds. This large turtle species is an opportunistic feeder and consumes a variety of foods. Fish comprise a significant portion of its diet; however, crayfish, mollusks, smaller turtles, insects, snakes, birds, and vegetation (including acorns) have also been reported (Elsey 2006, pp. 448–489; Elbers and Moll 2011, entire). Additional information regarding the species’ needs is provided in the SSA report (Service 2022, pp. 4–14) and the proposed listing rule (86 FR 18014; April 7, 2021).

Threats

We provide information regarding past, present, and future influences, including both positive and negative influences, on the Suwannee alligator snapping turtle’s current and future viability, including illegal harvest (Factor B), bycatch (Factor E), habitat loss and degradation (Factor A), nest predation (Factor C), climate change (Factor E), and conservation measures. The existing regulatory mechanisms (Factor D) have not been adequate to arrest the decline of the species. Additional threats such as historical commercial and recreational harvest targeting the species, disease, parasitic insects, boating, and contaminants are described in the SSA report (Service 2022, pp. 15–22); these additional threats may negatively affect individuals of the species or have historically

affected the species, particularly when compounded with other ongoing stressors or threats, but they do not impact the species' overall current or future viability.

Harvest (Commercial and Poaching)

Commercial and recreational turtle harvesting practices in the last century resulted in a decline of the Suwannee alligator snapping turtle across its range (Enge et al. 2014, p. 4). Commercial harvest of both species of alligator snapping turtles reached its peak in the late 1960s and 1970s, when the meat was used for commercial turtle soup products and sold in large quantities for public consumption. In addition, many restaurants served turtle soup and purchased large quantities of alligator snapping turtles from trappers in the southeastern States (Reed et al. 2002, p. 5). In the 1970s, the demand for turtle meat was so high that as much as three to four tons of alligator snapping turtles (*M. temminckii*) were harvested from the Flint River in Georgia per day (Pritchard 1989, p. 76). The Florida Game and Fresh Water Fish Commission (now the Florida Fish and Wildlife Conservation Commission (FWC)) reported significant numbers of turtles being taken from the Apalachicola and Ochlocknee Rivers to presumably be sent to restaurants in New Orleans and other destinations (Pritchard 1989, pp. 74–75). While such large-scale removal of *Macrochelys* turtles occurred across the range of the genus, the population demographics of Suwannee alligator snapping turtles in Florida indicate there was likely less commercial harvesting activities in the Suwannee River drainage than elsewhere (Enge et al. 2017, p. 6; Enge et al. 2014, entire; Johnston et al. 2015, entire).

Florida prohibited the commercial harvest of all *Macrochelys* spp. in 1972, and recreational or personal harvest in 2009; Georgia prohibited all harvest in 1992 (Service 2022, pp. 27–29). Despite the prohibitions on commercial and recreational harvest for the species, the historical removal of large turtles continues to affect the species due to their low fecundity, low juvenile survival, long lifespan, and delayed maturity. Commercial harvest is not currently a threat to the Suwannee alligator snapping turtle, but the effect of historical, large-scale removal of large turtles is ongoing.

Although both Florida and Georgia have prohibited recreational harvest, there is an international and domestic demand for turtles for consumption and for herpetofauna enthusiasts who collect turtle species for pets (Stanford et al.

2020, entire). The Suwannee alligator snapping turtle is no exception; farmed, hatchling alligator snapping turtles may be sold for up to 400 U.S. dollars per turtle (Lejeune et al. 2020, p. 8; MorphMarket 2024, unpaginated). Illegal harvest, or poaching, of Suwannee alligator snapping turtles may occur anywhere within the species' range for both the pet trade and turtle meat trade. The best available information regarding potential pressure from poaching comes from documented reports by law enforcement agencies and court cases involving the congeneric (species within the same genus) alligator snapping turtle. In 2017, three men were convicted of violating the Lacey Act (16 U.S.C. 3371–3378; 18 U.S.C. 42) because they collected 60 large alligator snapping turtles (*M. temminckii*) in a single year in Texas and transported them across State lines (see *United States v. Travis Leger et al.*, No. 1:17–CR–00040 (E.D. Tex.)). We expect that illegal harvest is affecting Suwannee alligator snapping turtles, given it has been documented on many occasions for the heterospecific alligator snapping turtle. Illegal harvest is an ongoing threat to the Suwannee alligator snapping turtle because removing adult female turtles from the population lowers the viability of the species by reducing reproductive potential; in addition, the species is long-lived, slow to mature, and juvenile survival is very low, making it more difficult for the historically over-harvested population to recover.

Aside from the local and domestic use of turtles, the global demand for pet turtles and turtle meat continues to increase. Many species of turtles are collected from the wild as well as bred in captivity and are sold domestically and exported internationally. *Macrochelys* spp. are regularly exported out of the United States, typically as hatchlings or juveniles, to initiate brood stock for overseas turtle farms and for turtle collectors. According to the Service's Law Enforcement Management Information System (LEMIS), which provides reports about the legal international wildlife trade, most shipments of live alligator snapping turtles exported from 2005 to 2018 consisted of small turtles destined mostly for Hong Kong and China (Service 2018, entire). Prior to 2006, up to 23,780 *M. temminckii* per year were exported from the United States (70 FR 74700; December 16, 2005). Since the time of the proposed listing, the species has been uplisted to CITES Appendix II that may provide additional protections to the species. See the section below for

additional information, Conservation Efforts and Regulatory Mechanisms.

Impacts of Harvest

Because of the Suwannee alligator snapping turtle's delayed maturity, long generation times, and relatively low reproductive output, the species cannot sustain collection from the wild, especially of adult females, over any length of time (Reed et al. 2002, pp. 8–12). Adult turtles do not reach sexual maturity until 11 to 21 years of age. A mature female typically produces only one clutch per year consisting of 8–52 eggs (Ernst and Barbour 1989, p. 133). These turtles are characterized by low survivorship in early life stages, but surviving individuals may live many decades once they reach maturity. The life-history traits of the species (low fecundity, late age of maturity, and low survival of nests and juveniles) contribute to the population's slow response rebound after historical over-exploitation. Therefore, population growth rates are extremely sensitive to the harvest of adult females. Adult female survivorship of less than 98 percent per year is considered unsustainable, and a further reduction of this adult survivorship will generally result in significant local population declines (Reed et al. 2002, p. 9), although dynamics likely vary across the species' range. These data underscore how influential adult female mortality is on the ability of the species to maintain viability.

Although regulatory harvest restrictions have decreased the number of Suwannee alligator snapping turtles harvested, populations have not necessarily increased in response. This lag in population response is likely due to the demography of the species—specifically delayed maturity, long generation times, and relatively low reproductive output. The Suwannee alligator snapping turtle population remains low despite commercial and recreational harvest prohibitions (Florida Fish and Wildlife Conservation Commission 2017, p. 6). Through expert elicitation, the magnitude of the threat of illegal harvest or poaching across the basin ranges from 20–55 percent of the species' range may be affected (Service 2022, p. 28).

Bycatch

Suwannee alligator snapping turtles can be killed or harmed incidentally during fishing and other recreational activities. Some of these threats include fishhook ingestion; drowning when hooked on trotlines (a fishing line strung across a stream with multiple hooks set at intervals), limb lines, bush

hooks (single hooks hung from branches), or jug lines (line with a hook affixed to a floating jug); and injuries or drowning when entangled in various types of fishing line. The magnitude of the threat due to incidental hooking (*i.e.*, recreational trot and limb lines, fishing tackle, etc.) as provided through expert elicitation describes the impact to the species as affecting between 30–75 percent of the species' range (Service 2022, p. 28).

Hoop nets are also used to capture catfish and baitfish and are made up of a series of hoops with netting and funnels where fish enter but are unable to escape through the narrow entry point. The nets are left submerged and may entrap small Suwannee alligator snapping turtles that enter the traps and are unable to escape. Actively used or discarded fishing line and hooks pose harm to Suwannee alligator snapping turtles. They can ingest baited fishhooks and attached fishing line and depending on where ingested hooks and line lodge in the digestive tract, they can cause harm or death (Enge et al. 2014, pp. 40–41). For example, hooks and line can cause gastrointestinal tract blockages, and the hooks can puncture the digestive organs, leading to mortality (Enge et al. 2014, pp. 40–41). Fishhooks have been found in the gastrointestinal tracts of radiographed Suwannee alligator snapping turtles (Enge et al. 2014, entire; Thomas 2014, pp. 42–43).

Trotlines also negatively affect Suwannee alligator snapping turtles. Trotlines are a series of submerged lines with hooks off a longer line. Trotline fishing involves leaving the lines unattended for extended periods, before returning to check them. Limblines and bush hooks are similar to trot lines in that they are typically set and left unattended; however, they only use a single hook. The turtles can become entangled in the lines and drown, as well as ingest trotline hooks and lines, also causing drowning or internal injuries. Bycatch from trotlines that resulted in mortality of *Macrochelys* turtles has been well documented. Dead turtles have been found on lines that had seemingly been abandoned (Moore et al. 2013, p. 145). The lines and hooks may also become dislodged from their place of attachment when left unattended, becoming aquatic debris that remains in the waterway for extended periods of time and may continue to be an entanglement hazard for many species, including Suwannee alligator snapping turtles.

Habitat Alteration and Degradation

The Suwannee alligator snapping turtle's aquatic and nesting habitats

have been altered by anthropogenic disturbances. Changes in the riparian or nearshore areas affect the amount of suitable soils for nesting sites because the species constructs nests on land near the water. Riparian cover is important as it moderates in-stream water temperatures and dissolved oxygen levels. In addition to affecting the distribution and abundance of alligator snapping turtle prey species, these microhabitat conditions affect the snapping turtles directly. Moderate temperatures and sufficient dissolved oxygen levels allow the turtles to remain stationary on the stream bottom for longer periods, increasing the ambush foraging opportunities. Changes in the riparian structure may affect the microclimate and conditions of the associated water body, directly affecting the foraging success of the turtles.

Activities and processes that can alter habitat include dredging, deadhead logging (removal of submerged or partially submerged snags, woody debris, and other large vegetation for wood salvage), removal of riparian cover, channelization, stream bank erosion, siltation, and land use adjacent to rivers (*e.g.*, clearing land for agriculture). These activities negatively influence habitat suitability for Suwannee alligator snapping turtles. Erosion can change the stream bank structure, affecting the substrate that may be suitable for nesting or accessing nesting sites. Siltation affects water quality and may reduce the health and availability of prey species. Channelization destroys the natural benthic habitat and also affects the water depth and normal flow. Submerged obstacles may be removed during the channelization, which affects the microhabitat dynamics within the waterway and removes important structures for alligator snapping turtles to use for resting, foraging, and cover from predators. While channelization within the species' range does not regularly occur, it is not prohibited. Deadhead logs and fallen riparian woody debris, where present, provide refugia during low-water periods and resting areas for all life stages and support important feeding areas for hatchlings and juveniles (Enge et al. 2014, p. 40; Ewert et al. 2006, p. 62).

Suwannee alligator snapping turtle habitat is also influenced by water availability and quantity, as well as water quality, across the species' range. Groundwater withdrawals in the Florida portion of the species' range are managed by the Suwannee River Water Management District (SRWMD); withdrawals increased by 64 percent between 1975 and 2000, mostly for

irrigation. Most withdrawals in the basin occur in agricultural areas along the Suwannee River during the spring (March through May) (Thom et al. 2015, p. 2). Water withdrawals may reduce flow in some streams, effectively isolating some turtles from the rest of the population or making immature turtles more vulnerable to predators. Additionally, reduced water levels may impact prey abundance and distribution through restricting habitat connectivity, reducing dissolved oxygen levels, and increasing water temperatures.

Water quality may also be a factor for Suwannee alligator snapping turtles as contaminants enter the aquatic systems through runoff. The Lower Suwannee River's middle and lower basins are directly impacted by nutrients, including nitrates. Agricultural practices are the main source of nitrates, which specifically come from fertilizers and in some cases from manure and other waste products. They introduce nitrates to the river and groundwater (*i.e.*, springs) through surface runoff and groundwater seepage. Groundwater seepage transports nitrates to the aquifer, which then reemerge through springs and other groundwater discharge, especially during low-flow periods (Pittman et al. 1997, entire; Katz et al. 1999, entire; Thom et al. 2015, p. 2).

The direct effects of water quality and water quantity on the Suwannee alligator snapping turtle have not been quantified; however, as the human population that relies on water systems in the species' range continues to increase, the indirect effects across the entire range, coupled with other stressors, is likely to further reduce the species' viability. Underscoring the potential severity of this threat, Florida's human population is anticipated to grow from nearly 21.5 million in 2019 to more than 24.0 million by 2030 (Rayer and Wang 2020, p. 9). The public water supply demand will increase with increased human population growth. All counties within the species' range in Florida (Alachua, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Lafayette, Levy, Madison, Suwannee, and Union Counties) are part of the SRWMD supply area and are projected to increase the public water supply demand by an average of 11.29 percent in millions of gallons of water per day from 2010 to 2035 (SRWMD 2015, p. 42). In addition, the human population in these counties will experience an average of 17.25 percent population growth from the year 2010 to 2035 (SRWMD 2015, p. 43). As the human population increases, other threats to the species and its habitat are

likely to increase. For example, recreational use of the Suwannee River will more than likely continue to rise, which will increase human encounters with Suwannee alligator snapping turtles through incidental bycatch. Also, more development may result in an increase in contaminated runoff and declines in water quality.

Nest Predation

Nest predation rates for *Macrochelys* spp. are high. Raccoons (*Procyon lotor*) are common nest predators, but nine-banded armadillos (*Dasypus novemcinctus*), Virginia opossums (*Didelphis virginiana*), bobcats (*Lynx rufus*), and river otters (*Lontra canadensis*) may also depredate nests (Ernst and Lovich 2009, p. 149; Ewert et al. 2006, p. 67; Holcomb and Carr 2013, p. 482). Additional nonnative species found within the species' range that may depredate nests include feral pigs (*Sus scrofa*) and invasive red imported fire ants (*Solenopsis invicta*) (Pritchard 1989, p. 69). Although not documented in Suwannee alligator snapping turtle nests, fire ants are prevalent across the species' range, and predation by fire ants was the suspected culprit in the failure of alligator snapping turtle (*M. temminckii*) nests in Louisiana (Holcomb 2010, p. 51). Beyond nest failure, some hatchlings endured wounds inflicted by fire ants that led to the loss of a limb or tail, which reduced their mobility and their chance of survival (Holcomb 2010, p. 72). The recovery of the species from historical overharvest depends on successful reproduction and survival of young. The currently low population size does not allow for absorbing the impact of elevated nest predation. The degree of added threat from the newer, introduced nest predators is unknown, but we can conclude that the overall threat from nest predation is greater than it was in the past because of introduced predators such as feral hogs, and fire ants. The magnitude of nest predation by native and exotic species affected between 5–10 percent of the spatial extent of the species' range, as provided through expert elicitation (Service 2022, p. 28). Coupled with other threats, nest predation will continue to negatively affect the species' overall viability.

Climate Change

Climate change may also affect the Suwannee alligator snapping turtle to varying degrees, but the extent of impact is influenced by certain geographical factors, including proximity to the coast and latitudinal thermogradients. Climate change may affect the Suwannee alligator snapping turtle in

several ways. First, the effects of decreased precipitation due to climate change will cause an increase in water withdrawal for human use (*i.e.*, potable water and agriculture irrigation). Additionally, reduced precipitation may directly and indirectly impact habitat, food, and water availability throughout the Suwannee River basin. Available water will be reduced as evaporation increases with continued warming temperatures. Furthermore, increased temperatures may have physiological impacts on sex ratios because these turtles have temperature-dependent sex determination, and higher temperatures may skew the sex ratio.

In the southeastern United States, temperatures are predicted to warm by 4 to 8 degrees Fahrenheit (°F) (2.2 to 4.4 degrees Celsius (°C)) by 2100 (Carter et al. 2014, p. 399). Temperature determines the sex of the *Macrochelys* developing embryos; certain nest temperatures result in primarily male hatchlings with females produced at temperatures of the two extremes of the intermediate male-producing temperatures. Females are produced when the nest temperatures are either cooler or warmer than the temperature threshold for male development. In order to develop mixed ratios of both sexes, fluctuating temperatures near the intermediate and extremes are ideal. In addition to temperature effects on sex ratio, temperature has been associated with nest viability, with highest viability in nests with intermediate sex ratios (produced at the male-producing intermediate temperature range with fluctuations of warmer or cooler temperatures for female-producing temperatures during the incubation period) and lowest in nests with female-biased sex ratios (Ewert and Jackson 1994, pp. 28–29). Thus, warming temperatures might lead to Suwannee alligator snapping turtle nests with strongly female-biased sex ratios. These skewed sex ratios may result in declining viability as mating behaviors are altered and other issues with unbalanced populations arise.

Collectively, these impacts from reduced precipitation and increased temperature would reduce the quality or availability of suitable habitat for the Suwannee alligator snapping turtle (Thom et al. 2015, p. 126). Climate change impacts on the Suwannee alligator snapping turtle will likely act in concert with, and exacerbate, the impacts of other threats and stressors.

Other Stressors

Other stressors that may affect Suwannee alligator snapping turtles include disease, nest parasites,

contaminants from urban and agricultural runoff, and historical recreational harvest, but none of these stressors are having species-level impacts on the Suwannee alligator snapping turtle. These stressors may act on individuals or have highly localized impacts. While each is relatively uncommon, these stressors may exacerbate the effects of other ongoing threats.

Additional information on these stressors acting on the species is available in the species' SSA report under "Factors Influencing Viability" (Service 2022, pp. 23–29). This information includes historical and current threats that have caused and are causing a decline in the species' viability. The primary threats currently acting on the species include illegal harvest, nest predation, and hook ingestion and entanglement due to bycatch associated with freshwater fishing. These primary threats are not only affecting the species now but are expected to continue impacting the species and were included in the species' future condition projections in the SSA report (Service 2022, pp. 41–56).

Conservation Efforts and Regulatory Mechanisms

Clean Water Act

Section 401 of the Federal Clean Water Act (CWA; 33 U.S.C. 1251 *et seq.*) requires that an applicant for a Federal license or permit provide a certification that any discharges from the facility will not degrade water quality or violate water-quality standards, including State-established water quality standard requirements. Section 404 of the CWA establishes programs to regulate the discharge of dredged and fill material into waters of the United States.

Nationwide, regional general, or individual permits are issued by the Florida Department of Environmental Protection or U.S. Army Corps of Engineers to fill wetlands; to install, replace, or remove culverts; to install, repair, replace, or remove bridges; or to realign streams or water features. These permit types are summarized below.

- Nationwide permits are for "minor" impacts to streams and wetlands, and do not require an intense review process. The impacts allowed under nationwide permits usually include projects affecting stream reaches less than 150 ft (45.72 m) in length, and wetland fill projects up to 0.50 acres (0.2 hectares). Mitigation is usually provided for the same type of wetland or stream impacted and is usually at a 2:1 ratio to offset losses.

- Regional general permits are for various specific types of impacts that are common to a particular region; these permits will vary based on location in a certain region or State.

- Individual permits are for the larger, higher impact, and more complex projects. These require a complex permit process with multi-agency input and involvement. Impacts in these types of permits are reviewed individually, and the compensatory mitigation chosen may vary depending on the project and types of impacts.

The CWA regulations, set forth in title 40 of the Code of Federal Regulations (CFR) for the Environmental Protection Agency and in title 33 of the CFR for the U.S. Army Corps of Engineers, ensure proper mitigation measures are applied to minimize the impact of activities occurring in streams and wetlands where the species occurs. These regulations contribute to the conservation of the species by minimizing or mitigating the effects of certain activities on Suwannee alligator snapping turtles and their habitat.

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Suwannee alligator snapping turtle is included in the CITES Appendices under *Macrochelys temminckii*, based on the CITES standard nomenclature reference for turtles (Fritz & Havaš 2007, p. 172), which recognizes *M. temminckii* as the only taxon in the genus *Macrochelys*. This species was originally included in CITES Appendix III in 2006, when the genus was recognized as a single species, described as *Macrochelys* and synonymous with *Macrochelys* (70 FR 74700; December 16, 2005). At the 19th Conference of the Parties (November 2022), *Macrochelys temminckii* was transferred from Appendix III of CITES to Appendix II (CITES 2023, pp. 45–46). Because CITES only recognizes a single species of *Macrochelys* (*M. temminckii*), both taxa, the alligator snapping turtle and the Suwannee alligator snapping turtle, are protected under CITES Appendix II regulations.

CITES requires permits for exports of Appendix II species, which are only issued when: (1) the Scientific Authority has advised that the export will not be detrimental to the survival of the species; (2) the Management Authority is satisfied that the specimen(s) were legally acquired; and (3) the Management Authority is satisfied that any living specimens will be prepared and shipped so as to minimize the risk of injury, damage to health, or cruel treatment. Export

numbers are also monitored by U.S. CITES Authorities and reported to CITES annually. Whenever a Scientific Authority determines that the export of specimens of any such species should be limited in order to maintain that species throughout its range at a level consistent with its role in the ecosystems in which it occurs and well above the level at which that species might become eligible for inclusion in Appendix I, the Scientific Authority shall advise the appropriate Management Authority of suitable measures to be taken to limit the grant of export permits for specimens of that species. These requirements help regulate and document legal, international trade; they further ensure that specimens entering international trade are acquired legally, and that the trade of the species is biologically sustainable for, and will not be detrimental to the survival of, the species. Thus, Appendix II regulations complement and lend additional support to State wildlife agencies in their efforts to regulate and manage these species, improve data gathering to increase knowledge of trade in the species, and strengthen State and Federal wildlife enforcement activities to prevent poaching and illegal trade.

When this taxon was included in CITES Appendix III, reporting of annual exports was also required. While CITES reporting indicates the number of turtles exported with other relevant data, in the past, the information required for the export reports has not always accurately identified the source stock of the exported turtle(s). Most alligator snapping turtles that were exported between 2005 and 2018 were identified as “wild” individuals; however, many were likely from farmed parental stock (Service 2018, entire). The discrepancy in reporting the actual source of the internationally exported turtles has not allowed us to easily evaluate the impact of export on Suwannee alligator snapping turtles. Inclusion in Appendix II, unlike Appendix III, requires an evaluation that the export will not be detrimental to the survival of the species, which will help better assess the impact of export.

National Wildlife Refuges

Approximately 5 percent of the Suwannee alligator snapping turtle’s range includes areas within two National Wildlife Refuges (NWR), Okefenokee in Georgia and Lower Suwannee in Florida. These NWRs are managed by the Service to conserve native wildlife species and their habitats and are protected from future development. Both NWRs have

comprehensive conservation plans (CCP) that ensure each NWR is managed to fulfill the purpose(s) for which it was established.

Okefenokee NWR is at the northernmost proximity of the species’ range and is a freshwater wetland. There are only a few anecdotal reports of the species occurring within Okefenokee NWR. There have been no systematic surveys conducted within the swamp, so the extent of use by the species of that area has not yet been documented. However, the paucity of documented and anecdotal records from the surrounding areas would indicate that the species is not common or widespread at this location.

The Okefenokee NWR CCP includes a strategy within the wildlife management goal to “develop and implement surveys to determine distribution and population status of amphibians and reptiles, particularly those species that are threatened, endangered, or species of special concern.” The CCP also includes an objective to “identify factors influencing declines in the refuge’s fishery by examining water chemistry, groundwater withdrawals, water quality, pH levels, invertebrate populations, and the physical environment” (Service 2006, pp. 84–86). This knowledge would clearly benefit management of the Suwannee alligator snapping turtle.

The Lower Suwannee NWR is at the mouth of the Suwannee River where it feeds into the Gulf of Mexico. Twenty miles of the Suwannee River is within the refuge and is suitable habitat for Suwannee alligator snapping turtles, albeit less so as salinity increases the closer the river gets to the Gulf of Mexico. The species is considered common within the refuge, and nesting has been confirmed; however, the species is not commonly seen (due to their ability to burrow into the river or creek banks, or to sit on the bottom of the river and stay submerged until surfacing for air is needed), and cryptic coloration when submerged makes detection of the species very difficult (Woodward 2021, pers. comm.). The Lower Suwannee NWR CCP includes management actions that may benefit the species and provides goals for wildlife, habitat, and landscape management. The CCP’s objectives and strategies provide that the refuge monitor and manage wildlife populations, manage the habitats for endangered and threatened species and species of special concern in the State of Florida, and promote interagency and private landowner cooperation (Service 2001, pp. 11–22). The Lower Suwannee River NWR provides logistical,

operational, in-kind, and financial support to FWC's Suwannee alligator snapping turtle team to conduct surveys on the refuge.

Department of Defense—Moody Air Force Base

Moody Air Force Base (Base) is near Valdosta, Georgia, and has many freshwater ponds and a large lake, Mission Lake, that drains into the Grand Bay system. Suwannee alligator snapping turtles do not commonly occur on the Base, but they are occasionally found. The Base's integrated natural resources management plan (INRMP) describes *Macrochelys* as occurring on the Base; however, there are no management activities described directly for the species in the INRMP. The Department of Defense ensures INRMPs are consistent with the Sikes Act Improvement Act of 1997, as amended through 2010 (16 U.S.C. 670 *et seq.*), which requires the preparation, implementation, update, and review of an INRMP for each military installation in the United States and its territories with significant natural resources.

State Protections

The Suwannee alligator snapping turtle is protected by State law in both Florida and Georgia as a threatened species. Florida Administrative Code rule 68A-27.003 makes it illegal to take, possess, or sell (except as specifically permitted or authorized) species listed as federally designated endangered or threatened species and State-designated threatened species; this includes the species' parts, their nests, and their eggs. Since the original 2011 biological status review for the Suwannee alligator snapping turtle (FWC 2011, entire), two species of alligator snapping turtle were differentiated based upon genetic and skeletal differences (Thomas 2014, entire), necessitating new biological status reviews of both species. During FWC's 2017 biological assessment of *Macrochelys*, the biological review group determined that *M. suwanniensis* was distinct and warranted designation as State-threatened based upon International Union for Conservation of Nature (IUCN) Red List criteria (Enge *et al.* 2017, p. 3).

Florida developed a species action plan (SAP) that includes all *Macrochelys* spp. due to their similarity in appearance, vulnerability to deliberate human take, incidental take with fishing gear, pollution, riverine habitat alteration, and nest predation (FWC 2018, p. iii). The objectives of the SAP include habitat conservation and management, population management, monitoring and research, rule and

permitting intent, law enforcement, incentives and influencing, education and outreach, and coordination with other entities (FWC 2018, pp. 10–27). Implementation of the *Macrochelys* spp. SAP is ongoing (FWC 2018, entire). FWC has established a team of biologists who continue to study the species to better understand the species and population trends.

Both *Macrochelys suwanniensis* and *M. temminckii* are found in Georgia, but their ranges do not overlap. Georgia listed *M. temminckii* as threatened in 1992, which at the time included both species, and continues to cover both species as threatened. State law protects threatened animal species by prohibiting their harassment, capture, killing, sale, and purchase, as well as the destruction of their habitat on public lands (Georgia Administrative Code, rule 391-4-10-.06). In the State's wildlife action plan, the Department of Natural Resources indicates they intend to conduct genetic, taxonomic, and reproductive studies of high-priority species (GDNR 2015, p. D-5). Current State regulations are intended to minimize the impact of poaching and also contribute to the conservation of the species through public outreach.

State and Federal Stream Protections (Deadhead Logging)

Structural features within the water are important components of the habitat for Suwannee alligator snapping turtles. Submerged and partially submerged vegetation provide feeding and sheltering areas for all age classes. The structural diversity and channel stabilization created by instream woody debris provides essential habitat for spawning and rearing aquatic species (Bilby 1984, p. 609; Bisson *et al.* 1987, p. 143). Snag or woody habitat was reported as the major stable substrate in southeastern Coastal Plain sandy-bottom streams and a site of high invertebrate diversity and productivity (Wallace and Benke 1984, p. 1651). Wood enhances the ability of a river or stream ecosystem to use the nutrient and energy inputs and has a major influence on the hydrodynamic behavior of the river (Wallace and Benke 1984, p. 1643). One component of this woody habitat is deadhead logs, which are sunken timbers from historical logging operations. Deadhead logging is the removal of submerged cut timber from a river or creek bed and banks. However, current State regulations minimize the impact of deadhead logging on the Suwannee alligator snapping turtle. Florida allows deadhead logging only with proper permits from the Florida Department of

Environmental Protection; this State agency assesses the proposed activity's impacts on wildlife before issuing a permit. Further, the State of Florida prohibits deadhead logging in some of the waterways in the species' range. Georgia is not currently processing permits; therefore, deadhead logging is not currently being permitted in any of Georgia's waterways.

State and Federal Stream Protections (Buffers and Permits)

A buffer such as a strip of trees, plants, or grass along a stream or wetland naturally filters out dirt and pollution from rainwater runoff before it enters rivers, streams, wetlands, and marshes. This vegetation not only serves as a filter for the aquatic system, but the riparian cover influences microhabitat conditions such as in-stream water temperature and dissolved oxygen levels. These habitat conditions not only influence the distribution and abundance of alligator snapping turtle prey species but also directly affect Suwannee alligator snapping turtles. Moderate temperatures and sufficient dissolved oxygen levels allow the turtles to remain stationary on the stream bottom for longer periods, increasing their ambush foraging opportunities. Loss of riparian vegetation and canopy cover result in increased solar radiation, elevation of stream temperatures, loss of allochthonous (organic material originating from outside the channel) food material, and removal of submerged root systems that provide habitat for alligator snapping turtle prey species (Allan 2004, pp. 266–267).

The Georgia Erosion and Sediment Control Act of 1975 restricts disturbance and trimming of vegetation within a 25-ft (7.62-m) buffer adjacent to creeks, streams, rivers, saltwater marshes, and most lakes and ponds, and the Georgia Planning Act of 1989 requires some local governments to adopt a 100-ft (30.48-m) buffer. Georgia also has a non-point water pollution source management program under which the State established and updates a nonpoint source management plan; this plan sets long-term goals and short-term activities for the State, partners, and stakeholders to address non-point source pollution. Although not focused on buffers per se, the Florida Surface Water Improvement and Management Act of 1987 addresses Statewide non-point source pollution impacts to waterbodies on a landscape scale and partners with Federal, State, and local governments, and the private sector to restore damaged ecosystems and prevent pollution from storm water runoff. These State laws provide

riparian protections and promote water quality, which protect potential nesting areas for the Suwannee alligator snapping turtle.

Suwannee River Water Management District (SRWMD)

Water conservation measures restricting lawn and landscaping irrigation can benefit the Suwannee alligator snapping turtle by limiting water withdrawal, which directly benefits the turtle through maintaining available habitat and supporting habitat for prey species, and by reducing runoff of fertilizers and other turf management chemicals that could disrupt or alter water chemistry in the streams. The SRWMD manages the water and other related resources within the range of the Suwannee alligator snapping turtle including the Suwannee, Withlacoochee, Alapaha, Santa Fe, and Ichetucknee Rivers within Florida. The agency monitors the water quantity and quality by regular testing and reporting. It also implements water-use restrictions to conserve freshwater resources of springs and rivers within the SRWMD. Unnecessary water use is discouraged, and landscape irrigation restrictions are implemented as needed, such as limiting watering to twice per week based on district water conservation measures that apply to residential landscaping, public or commercial recreation areas, and businesses that are not regulated by a district-issued water use permit (SRWMD 2021, unpaginated). Landscape irrigation accounts for the largest percentage of household water use in the State of Florida. Mandatory lawn and landscape watering measures are in effect throughout the SRWMD. These restrictions contribute to maintaining healthy groundwater level and flows.

Current Condition

The current condition for the Suwannee alligator snapping turtle considers the current abundance, current threats, and current conservation actions in the context of what is known about the species' historical range. In order to determine species-specific population and habitat factors along with threats and conservation actions influencing the species, expert elicitation was used in the absence of available related information. To describe Suwannee alligator snapping turtle's current resiliency, redundancy, and representation, we assessed the species as a single population, because there is evidence that the turtles may move between the mouths of the Suwannee and Santa Fe Rivers in Florida. The

entire species is estimated to have an abundance of 2,000 turtles across its entire range in Georgia and Florida (Service 2022, p. 34).

The primary threats currently acting on the species include illegal harvest, nest predation, and hook ingestion and entanglement due to bycatch associated with freshwater fishing. Other stressors acting on the species include historical commercial and recreational harvest, habitat alteration and degradation, and the effects of climate change. The species is State-listed as threatened in both Florida and Georgia. When evaluating range expansion or contraction, recent surveys have confirmed minimal change in the known, limited historical range.

The resiliency of the single Suwannee alligator snapping turtle population is described according to its abundance, threats, and range expansion or contraction. Current resiliency was assessed as current abundance, along with information about current threats, conservation actions, and distribution serving as auxiliary information about the causes and effects of current versus historical abundances. There is little information with which to make rigorous comparisons between current and historical abundances; however, population depletions historically occurred for consumption and cumulated through the 1970s, when turtles and turtle meat were exported regionally for commercial use. Information about the magnitude of the changes in abundance over time comes from anecdotal observations by trappers (Pritchard 1989, pp. 74, 76, 80, 83). The historical large-scale removal of large, reproductive turtles from the population for commercial harvest continues to affect the species and its ability to rebound. The species is described as a single population with an estimated abundance of 2,000 turtles across most of its historical range. As a result of the impacts from historical and ongoing threats, as described above, the population size has been reduced from historical levels. This decline has impacted the current ability of the species to withstand environmental stochasticity. Additional information regarding current condition descriptions is included in the SSA report (Service 2022, pp. 30–40).

The home range for Suwannee alligator snapping turtles has been reported between 780 ft (243 m) and 6,604 ft (2,013 m) (Thomas 2014, pp. 41–42). Turtles are not confined to any part of their range as long as there are no physical barriers; while this species is aquatic with the exception of nesting, these turtles are capable of moving

across land if necessary, as conditions become unsuitable or resources are diminished. When describing the species' representation, for the purposes of the SSA in evaluating the species' current and future viability, the species consists of a single representative unit. Representation is used to describe the species' ability to withstand environmental changes over time, or the species' adaptive capacity. We describe the species in terms of its adaptive capacity with its ability to acclimate to environmental stressors (Service 2022, pp. 37–39). We considered life-history attributes and assessed the species' propensity to respond to chronic environmental influences (Thurman et al. 2020, entire). The species has a type 3 survivorship curve, meaning only a few individuals reach maturity with adults usually having a long life span. This type of survivorship limits the Suwannee alligator snapping turtle to an overall low to moderate adaptive capacity in the life-history and demographic attributes. The high rating of its fecundity and parity is overshadowed by the low rate of hatchling survivorship to maturity. The low level of parental investment allows females to nest and resume feeding and sheltering activities with minimal impacts to their health, thus allowing for a high adaptive capacity for this attribute. The species has a moderate to high adaptive capacity in the distribution, movement, evolutionary potential, ecological role, and abiotic niche attributes. The life history and demographic attributes used in determining the species' adaptive capacity have the greatest influence on the species' ability to respond to changes in its physical and biological environments over time. Therefore, representation will continue to be low to moderate.

The best available science regarding the species indicates there is no genetic variation within the species' single population across the species' range that would allow for delineating additional representative units.

The Suwannee alligator snapping turtle's redundancy is likewise limited to the single population, with an estimated abundance of 2,000 turtles, across its range. Redundancy is related to a species' response to a catastrophic event. While there is only a single population, it is widely distributed across the historical range; therefore, the chance of a catastrophic event affecting the entire species is very low.

In summary, the overall current condition of the species' viability is affected by the residual effects of historical overharvest, historical and

ongoing impacts from recreational fishing, including incidental limb line/ bush hook take and bycatch, and from hook ingestion, illegal harvest, habitat alteration, nest predation, and the species' life history (*i.e.*, low annual recruitment and delayed sexual maturity). Because of these threats, and particularly the legacy effects of historical harvest, the overall current condition is a single population with an estimated abundance of 2,000 turtles across most of the species' historical range. The species' resiliency is likely lower than it was historically as a result of the loss of reproductive females and the species' life history (long-lived, late age to sexual maturity, low intrinsic growth rate). However, the species was not well-studied historically, so there is little information (anecdotal observations) with which to make comparisons between historical and current abundance estimates. Redundancy and representation are limited, respectively, since the species is considered a single population with little genetic variability and there are no physical barriers to movement.

Future Condition

The future condition of the Suwannee alligator snapping turtle is described in detail in the SSA report (Service 2022, pp. 41–56). When evaluating the species' future viability, we consider the current condition of the species and the threats acting on the species to develop a model to determine future trends of species' estimated abundance. We applied six plausible scenarios that factored in the estimated abundance and threats acting on the species to project the future resiliency of the Suwannee alligator snapping turtle (see table, below). Three scenarios consider conservation actions to be applied, while the remaining three scenarios project conditions with no conservation actions. Conservation actions that could decrease the spatial extent of habitat

threats include but are not limited to: increased enforcement of state laws or law enforcement presence to reduce poaching or bycatch on illegally set trot or limb lines, prohibited recreational fishing or certain gear (*e.g.*, trotlines, hoopnets) in the Suwannee River basin, and management actions that reduce the densities of nest predators. In addition to habitat modification, long term female population augmentation can be implemented by head-starting and captive breeding programs by Federal, State, and non-governmental organizations. The actual amount that any of these actions would influence the prevalence of threats will depend on factors like the time, money, personnel, and conservation partners available, but we selected a 25 percent reduction in the spatial extent of threats to explore how much a change of that amount affected future population dynamics (Service 2022, pp. 37–38).

To assess future conditions and the viability of the Suwannee alligator snapping turtle, we constructed a female-only, stage-structured matrix population model to project the population dynamics over 50 years to encompass a two-generation period for the species and the reliability in predicting the response to the threats in that time frame. Species experts identified five primary threats that were likely to reduce stage-specific survival probabilities: commercial fishing bycatch (includes entanglement, drowning, or otherwise dying from interaction with fishing gear; influencing hatchling, juvenile, and adult survival), recreational fishing bycatch (has the same impacts as commercial fishing bycatch; influenced juvenile and adult survival), hook ingestion (surviving a bycatch event but enduring the lingering effects of an ingested hook; influenced juvenile and adult survival), illegal collection (*i.e.*, poaching; influenced hatchling,

juvenile, and adult survival), and subsidized nest predators (influenced nest survival) with two having the greatest impact (illegal harvest and nest predation). The subsidized nest predator threat reflects additional nest depredation beyond what would be expected from common nest mesopredators (*e.g.*, raccoons and opossums), with fire ants (*Solenopsis* spp.) being the primary nest predator.

We used the best available information from the literature to provide values for the population matrix and elicited data from species experts to quantify stage-specific initial abundance, the spatial extent of threats, and threat-specific percent reductions to survival. To account for potential uncertainty in the effects of each threat, the six future scenarios were divided along a spectrum: threat-induced reductions to survival were decreased by 25 percent, were unaltered, or were increased by 25 percent. To simulate conservation actions, the spatial extent of each threat was either left the same or reduced by 25 percent (see table, below). The 25 percent was selected using expert input and included a logical extent in which we would expect to see evident impacts to the population. We used a fully stochastic projection model that accounts for uncertainty in demographic parameters to predict future conditions of the Suwannee alligator snapping turtle units under the six different scenarios. We then used the model output to predict the probability of extinction and quasi-extinction. In the model, quasi-extinction is defined as the point in time at which the Suwannee alligator snapping turtle population declined to less than 5 percent of the starting abundance (females only). Time to quasi-extinction varied across scenarios, but in general, the Suwannee River basin is likely to reach this in 32–42 years (Service 2022, p. 46).

TABLE 1—SIX FUTURE SCENARIOS MODELED FOR THE SUWANNEE ALLIGATOR SNAPPING TURTLE'S SINGLE POPULATION WITH MAGNITUDE OF THREAT AND CONSERVATION ABSENT/PRESENT. SCENARIO NAMES ARE GIVEN IN QUOTATION MARKS

Threat magnitude	Conservation absent ¹	Conservation present ²
Decreased	“ <i>Decreased Threats</i> ” Impact of threats: <i>Reduced 25%</i>	“ <i>Decreased Threats +</i> ” Impact of threats: <i>Reduced 25%</i> .
Expert-Elicited ³	“ <i>Expert-Elicited Threats</i> ” Impact of threats: <i>Expert-elicited</i>	“ <i>Expert-Elicited Threats +</i> ” Impact of threats: <i>Expert-elicited</i> .
Increased	“ <i>Increased Threats</i> ” Impact of threats: <i>Increased 25%</i>	“ <i>Increased Threats +</i> ” Impact of threats: <i>Increased 25%</i> .

¹ The spatial extent of threats for the Conservation Absent scenarios were expert-elicited.

² The spatial extent of threats for the Conservation Present scenarios were reduced by 25 percent.

³ Experts throughout the range of the Suwannee alligator snapping turtle were elicited for their expert, professional opinion on the threats to the species.

Suwannee alligator snapping turtle abundance was predicted to decline over the next 50 years in all six scenarios. The single population's resiliency measure also declined as abundance declined. Given the high uncertainties parameterized in the model, the species does not have a high likelihood of extinction in the basin within 50 years, however the loss of 95 percent of the adult female abundance is expected to occur (quasi-extinction) Resiliency continues to decline in all scenarios.

Future representation for Suwannee alligator snapping turtle is expected to decline as the adaptive capacity for the distribution, movement, evolutionary potential, ecological role, and abiotic ecological attributes may not provide the species with the capacity to offset the low to moderate life history and demography complexes. These two attribute categories directly impact reproduction and the ability to maintain or to grow the population. Representation is further reduced by the continued impacts of human activities (e.g., unattended fishing gear and reduced water flow) and the probability of low numbers of adult females within the population. (Service 2022, p. 48).

Future redundancy for Suwannee alligator snapping turtle is expected to decline over the next 50 years. Where the species persists in the future, they are predicted to be rare and not found in resilient groupings. The addition of conservation actions, or different assumptions about the impact of threats on the species' demography may alter the time to quasi-extinction by about a decade at most, typically less. No scenarios resulted in stable or increasing population within the Suwannee River basin (Service 2022, p. 48).

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.

Determination of Suwannee Alligator Snapping Turtle 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 endangered species or threatened species because of any of the following factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

Status Throughout All of Its Range

After evaluating threats to the Suwannee alligator snapping turtle and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we determined that the historical and ongoing threats that are acting on the Suwannee alligator snapping turtle include illegal harvest and collection (Factor B), nest predation (Factor C), and hook ingestion and entanglement due to bycatch associated with freshwater fishing (Factor E). While historical activities that included removal of turtles for consumption through recreational and commercial harvest (Factor B) continue to suppress the viability of the species despite current harvest prohibitions, the species is currently well-distributed across most of its historical range. There are currently about 2,000 individuals distributed throughout the entire species' range across southern Georgia and northern Florida in the Suwannee River basin (Service 2022, p. 27).

The magnitude of the threats acting on the species were obtained through expert elicitation. Incidental hooking (i.e., recreational trot and limb lines, fishing tackle, etc.) affects between 30–75 percent of the species. Illegal harvest or poaching across the basin ranges from 20–55 percent. Nest predation by native and exotic species affected between 5–10 percent of the spatial extent of the species' range (Service 2022, p. 28). Due to the delayed age of sexual maturity

and a generation time of about 28 years, the species is slow to recover from historical harvest pressures that reduced the species' viability. As the genus was recently split, the specific impact of large-scale harvest on Suwannee alligator snapping turtles is unknown; however, for *Macrochelys temminckii*, 22 years after *M. temminckii* commercial harvest ended in Georgia, surveys conducted during 2014 and 2015 in Georgia's Flint River revealed no significant change in abundance since 1989 (King et al. 2016, entire). We expect commercial harvest had a similar impact on the Suwannee alligator snapping turtle as it did on the alligator snapping turtle. Thus, despite prohibition of legal harvest of the Suwannee alligator snapping turtle in Georgia and Florida, the Suwannee alligator snapping turtle population will similarly be slow to recover.

Alligator snapping turtle populations experienced severe depletion in the past when these turtles were heavily harvested, primarily for consumption, prior to prohibitions (Factor B). This past large-scale removal of large, adult turtles continues to affect the current demographics because the species has a relatively long lifespan, late age to maturity, and low fecundity with production of a single clutch every 1 to 2 years. The current recruitment rate has declined because of past commercial harvest practices, which caused the large-scale loss of adult females that have the highest reproductive potential; however, successful reproduction is occurring. The species is not currently impacted by commercial harvest; however, the species' resiliency is lower than it was historically as a result of the loss of reproductive females, low juvenile survival, and the species' life-history traits (long-lived, late age to sexual maturity, low intrinsic growth rate). The current estimated population size of 2,000 turtles provides sufficient contribution to the species' current viability through successful reproduction, albeit at a lower recruitment rate than historically. Thus, after assessing the best available information, we conclude that the Suwannee alligator snapping turtle is not currently in danger of extinction throughout all of its range.

When evaluating the future viability of the species to determine whether the species may become an endangered species within the foreseeable future throughout its range, we found that the threats currently acting on the species are expected to continue across its range into the future, resulting in greater reduction of the number and distribution of reproductive individuals.

We determined the appropriate timeframe for assessing whether this species is likely to become in danger of extinction in the foreseeable future is 50 years. Based on our knowledge of the species' life history and the threats acting on the species, this 50-year timeframe provides a period for which we can make reasonably reliable predictions about the threats to the species and the species' response to those threats. Additional information regarding the model and future scenarios is available under "Future Conditions" in the SSA report (Service 2022, pp. 51–56).

This species is highly dependent upon adult female survival to maintain viable populations. Existing and ongoing threats affecting adult female survival are projected to reduce recruitment to an extent that the single population will continue to decline in the foreseeable future. While there is uncertainty regarding the rate at which population declines will occur, these threats are projected to drive the species towards extinction unless reduced.

A key statutory difference between a threatened and an endangered species is the timing of when a species may be in danger of extinction. As described above, the Suwannee alligator snapping turtle is not in danger of extinction throughout its range at this time. However, the best available information shows that the species' viability is expected to decline with quasi-extinction projected to occur within the next 50 years under all modeled future scenarios (Service 2022, p. 41). Based on modeling results, which address uncertainty regarding the extent and severity of threats, resiliency is expected to decline under all scenarios. Regardless of the scenario, the projected loss of resiliency with limited representation and redundancy, across the range of the species will place the Suwannee alligator snapping turtle at risk of extinction across all of its range due to the inability of this species to maintain a viable population in the foreseeable future.

Recreational harvest of *Macrochelys* spp. was prohibited in Georgia and Florida, in 1992 and 2009, respectively, and State-listed as threatened in Georgia (in 1992) and Florida (in 2018). Based on the projection of future conditions, these threats will cause about a 20-year shift in the species' resiliency, indicating these factors will act faster on the generations in the foreseeable future.

Despite the implementation of the conservation actions described earlier in this final rule, the lag in the species' response to historical over-harvesting indicates other factors may be acting on

the species or additional conservation actions are needed. The future conditions projections, which include three conservation-based scenarios, based on the female-only matrix population model indicates a 95 percent decline in less than 50 years under the most optimistic scenario. Therefore, given the future projections in the model, the species is likely to become in danger of extinction within the foreseeable future. Thus, after assessing the best available information, we conclude that Suwannee alligator snapping turtle is likely to become an endangered species 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" (Final Policy; 79 FR 37578; July 1, 2014) that provided if the Services determine that a species is threatened throughout all of its range, the Services will not analyze whether the species is endangered in a significant portion of its range.

Therefore, we proceed to evaluating whether the 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 the Suwannee alligator snapping turtle, we choose to address the status question first. We consider information pertaining to the geographical distribution of both the

species and the threats that the species faces to identify any portions of the range where the species is endangered.

We evaluated the range of the Suwannee alligator snapping turtle 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 Act's definition of an endangered species. For the Suwannee alligator snapping turtle, we considered whether the threats to 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.

We examined the following threats: illegal harvest (poaching), bycatch, habitat alteration, nest predation, and climate change, including cumulative threats. We also considered the cumulative effects acting on the species with additional stressors such as disease, parasites, and contaminants. Due to the species' low population size due to historical overharvest and limited redundancy and representation, we find that additional stressors such as disease, parasites, and contaminants would add to the ongoing impacts to the species from ongoing threats further negatively affecting the species' viability.

In the current condition analysis, as described in the SSA report, expert elicitation values were provided to better understand the occurrence of the threats and the collective amount of the species' range affected (Service 2022, pp. 33–35). The impact of the threats was estimated as a proxy for the magnitude of the threats in terms of the amount of the entire species' range affected; these estimates do not indicate the spatial distribution of the threats. Rather, they estimate the percentages of the total amount of the species' range affected by each threat noted. Bycatch from incidental hooking affects 30–75 percent of the species' range, illegal harvest affects 20–55 percent of the species' range, and nest predation affects 5–10 percent of the species' range; however, the impact of each threat is spread out and not concentrated in a manner that is causing more significant declines in any particular portion such that any portion is likely to have a different status. Therefore, we found no portion of the Suwannee alligator snapping turtle's range where threats are impacting individuals differently from how they are affecting the species elsewhere in its range, or where the biological condition

of the species differs from its condition elsewhere in its range such that the status of the species in that portion differs from any other portion of the species' range.

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

Determination of Status

Our review of the best scientific and commercial data available indicates that the Suwannee alligator snapping turtle meets the Act's definition of a threatened species. Therefore, we are listing the Suwannee alligator snapping turtle as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

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

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of listed species, so that they no longer need the protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The goal of this

process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

The recovery planning process begins with development of a recovery outline made available to the public soon after a final listing determination. The recovery outline guides the immediate implementation of urgent recovery actions while a recovery plan is being developed. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) may be established to develop and implement recovery plans. The recovery planning process involves the identification of actions that are necessary to halt and reverse the species' decline by addressing the threats to its survival and recovery. The recovery plan identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened ("downlisting") or removal from protected status ("delisting"), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (<https://ecos.fws.gov/ecp/species/10891>), or from our Florida Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

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

Once this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In

addition, pursuant to section 6 of the Act, the States of Florida and Georgia will be eligible for Federal funds to implement management actions that promote the protection or recovery of the Suwannee alligator snapping turtle. Information on our grant programs that are available to aid species recovery can be found at <https://www.fws.gov/service/financial-assistance>.

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

Section 7 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 Suwannee alligator snapping turtle that may be subject to consultation procedures under section 7 are land management or other landscape-altering activities on Federal lands administered by the Service, U.S. Forest Service, and Department of Defense (Moody Air Force Base) as well as actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under

section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or 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.

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)(E) 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.

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

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

Background

Section 4(d) of the Act contains two sentences. The first sentence states that the Secretary shall issue such regulations as she deems necessary and advisable to provide for the conservation of species listed as

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

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

Section 7 consultation is required for Federal actions that “may affect” a listed species regardless of whether take caused by the activity is prohibited or excepted by a 4(d) rule (“blanket rule” or species-specific 4(d) rule). A 4(d) rule does not change the process and criteria for informal or formal consultations and does not alter the analytical process used for biological opinions or concurrence letters. For example, as with an endangered species, if a Federal agency determines that an action is “not likely to adversely affect” a threatened species, this will require the Service's written concurrence (50 CFR 402.13(c)). Similarly, if a Federal agency 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 (IPaC) effects determination keys, template language for biological opinions, or programmatic consultations.

Provisions of the 4(d) Rule

Exercising the Secretary's authority under section 4(d) of the Act, we have developed a rule that is designed to address the Suwannee alligator snapping turtle's conservation needs. As discussed previously in Summary of Biological Status and Threats, we have concluded that the Suwannee alligator snapping turtle is likely to become in danger of extinction within the foreseeable future primarily due to illegal harvest (poaching), nest predation, and bycatch-related incidents of hook ingestion and entanglement due to recreational fishing of freshwater fish. There are other activities that could affect the species and its habitat if they occur in areas occupied by the species, such as impacts to water quality and quantity.

Due to the life-history characteristics of the Suwannee alligator snapping turtle, specifically delayed maturity, long generation times, and relatively low reproductive output, this species cannot sustain significant collection from the wild, especially of adult females (Reed et al. 2002, pp. 8–12). An adult female harvest rate of more than 2 percent per year is considered unsustainable, and harvest of this magnitude or greater will result in significant local population declines (Reed et al. 2002, p. 9). Although both Florida and Georgia prohibit commercial and recreational harvest of Suwannee alligator snapping turtles, due to the species' demography, the overall population has not recovered from prior extensive loss of individuals due to past over-exploitation.

Habitat alteration is also a concern for the Suwannee alligator snapping turtle, as the species is endemic to the Suwannee River basin and its river ecosystems, including tributary waterbodies and associated wetland habitats (e.g., swamps, lakes, reservoirs, etc.), where structure (e.g., tree root masses, stumps, submerged trees, etc.) and a high percentage of canopy cover is more often selected over open water (Howey and Dinkelacker 2009, p. 589). Suwannee alligator snapping turtles spend the majority of their time in aquatic habitat; overland movements are generally restricted to nesting females and juveniles moving from the nest to water (Reed et al. 2002, p. 5). The primary causes for habitat alteration include actions that change hydrologic conditions to the extent that dispersal and genetic interchange are impeded.

Some examples of activities that may alter the habitat include dredging, deadhead logging, clearing and snagging, removal of riparian cover, channelization, in-stream activities that result in stream bank erosion and siltation (e.g., stream crossings, bridge replacements, flood control structures, etc.), and changes in land use within the riparian zone of waterbodies (e.g., clearing land for agriculture). Deadhead logs and fallen riparian woody debris provide refugia during low-water periods (Enge et al. 2014, p. 40), resting areas for all life stages (Ewert et al. 2006, p. 62), and important feeding areas for hatchlings and juveniles. The species' habitat needs concentrate around a freshwater ecosystem that supplies both shallower water for hatchlings and juveniles and deeper water for adults, with associated forested habitat that is free from inundation for nesting and that provides structure within the waterbody.

Regulating certain activities and take associated with other activities under this 4(d) rule will prevent continued declines in population abundance, and decrease synergistic, negative effects from other threats.

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 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 Suwannee alligator snapping turtle.

The protective regulations for Suwannee alligator snapping turtle 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 Suwannee alligator snapping turtle is at risk of extinction in

the foreseeable future and putting these prohibitions in place will help to prevent further declines, preserve the species' remaining population, slow its rate of decline, and decrease synergistic, negative effects from other ongoing or future threats.

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

Under the Act, "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Some of these provisions have been further defined in regulation at 50 CFR 17.3. Take can result knowingly or otherwise, by direct and indirect impacts, intentionally or incidentally. Regulating take of the species resulting from activities including, but not limited to, illegal harvest (poaching), hook ingestions and entanglement due to bycatch associated with irresponsible commercial and recreational fishing of some species of freshwater fish (particularly as a result of unlawful activities or abandonment of equipment), and habitat alteration will provide for the conservation of the species. Therefore, we are prohibiting take of the Suwannee alligator snapping turtle, except for take resulting from those actions and activities specifically excepted by the 4(d) rule. Exceptions to the prohibition on take include the general exceptions to the prohibition on take of endangered wildlife, as set forth in 50 CFR 17.21 and additional exceptions, as described below.

Despite these prohibitions regarding threatened species, we may under certain circumstances issue permits to carry out one or more otherwise prohibited activities, including those described above. The regulations that govern permits for threatened wildlife state that the Director may issue a permit authorizing any activity otherwise prohibited with regard to threatened species. These include permits issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for zoological exhibition, for educational purposes, for incidental taking, or for special purposes consistent with the purposes

of the Act (50 CFR 17.32). The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

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

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

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 Suwannee alligator snapping turtle, 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. The exceptions to these prohibitions include

take resulting from the following activities forest management practices that use State-approved best management practices (described below) that are expected to have negligible impacts to the Suwannee alligator snapping turtle and its habitat.

Pesticide and Herbicide Use: Pesticide and herbicide application was included as an exception in the proposed 4(d) rule and after further consideration, we are removing this exception. When considering pesticide use, we note that the EPA has not consulted on most pesticide registrations to date, so excepting take solely based on user compliance with label directions and State and local regulations is not appropriate in all situations. The Service will continue to coordinate with EPA on further pesticide consultation and registration efforts. We have reviewed comments provided during the public comment period on the exception to the prohibition of take related to pesticide use and the impact of pesticide use on the Suwannee alligator snapping turtle. We have determined that the exception for pesticide use described in the preamble of the proposed rule was not necessary and advisable for the conservation of the species and have therefore not included that exception in this final rule.

Forest Management Practices: Forest management practices that implement State-approved BMPs designed to protect water quality and stream and riparian habitat will avoid or minimize the effects of habitat alterations in areas that support Suwannee alligator snapping turtles. We considered that forest management activities may result in removal of riparian cover or forested habitat, changes in land use within the riparian zone, or stream bank erosion and/or siltation. We recognize that forest management practices are widely implemented in accordance with State-approved BMPs (as reviewed by Cristan et al. 2018, entire), and the adherence to these BMPs broadly protects water quality, particularly related to sedimentation (as reviewed by Cristan et al. 2016, entire; Warrington et al. 2017, entire; and Schilling et al. 2021, entire), to an extent that does not impair the species' conservation. Forest landowners who properly implement those BMPs are helping conserve the Suwannee alligator snapping turtle, and this 4(d) rule is an incentive for all landowners to properly implement applicable State-approved BMPs to avoid any take implications. Further, those forest landowners who are third-party-certified (attesting to the sustainable management of a working forest) to a credible forest management

standard are providing audited certainty that BMP implementation is taking place across the landscape.

Summary: Thus, under this final 4(d) rule, incidental take associated with forest management practices that use State-approved BMPs to protect water quality and stream and riparian habitat is excepted from the prohibitions.

III. Critical Habitat

Background

Section 4(a)(3) of the Act requires that, to the maximum extent prudent and determinable, we designate a species' critical habitat concurrently with listing the species. Critical habitat is defined in section 3 of the Act as:

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

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

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

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

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

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

Critical habitat receives protection under section 7 of the Act through the

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

Under the first prong of the Act’s definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat).

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

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

Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12) require that, to the maximum extent prudent and determinable, the Secretary shall designate critical habitat at the time the species is determined to be an endangered species or a threatened species. On April 5, 2024, we published a final rule that revised our regulations at 50 CFR part 424 to further clarify when designation of critical habitat may not be prudent (89 FR 24300). Our regulations (50 CFR 424.12(a)(1)) state that designation of critical habitat may not be prudent in circumstances such as, but not limited to, the following:

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

(ii) The present or threatened destruction, modification, or curtailment of a species’ habitat or range is not a threat to the species;

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

(iv) No areas meet the definition of critical habitat.

In the April 7, 2021, proposed rule (86 FR 18014), we determined that designation of critical habitat would not be prudent. However, we invited public comment and requested information on the factors that the regulations identify as reasons why designation of critical habitat may be not prudent, and the extent to which designation might increase threats to the species, as well as the possible benefits of critical

habitat designation to the Suwannee alligator snapping turtle.

During the comment period, we did not receive any comments that caused us to change the not-prudent determination or our rationale for it. The not-prudent determination for the proposed rule was based on increasing the threat of collection as described in 50 CFR 424.12(a)(1)(i). This component of the latest regulatory language has not changed from the regulatory language used in the proposed rule. The non-prudent determination for this final rule is the same as the proposed because the threat of collection is one of the factors in determining prudency that remained consistent in the previous regulations and the current regulations.

Therefore, after review and consideration of the comments we received, we now make a final determination that the designation of critical habitat is not prudent, in accordance with 50 CFR 424.12(a)(1), because the Suwannee alligator snapping turtle faces the threat of poaching, and designation can reasonably be expected to increase the degree of this threat to the species by making location information more readily available.

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), Executive Order 13175 (Consultation and Coordination with Indian Tribal

Governments), and the Department of the Interior’s manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes 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.

Upon the initiation of the SSA process, we contacted Tribes within the range of Suwannee alligator snapping turtle and additional Tribes of interest to inform them of our intent to complete an SSA for the species that would inform the species’ 12-month finding.

We did not receive any responses. In addition, no Tribes commented on our April 7, 2021, proposed rule to list the Suwannee alligator snapping turtle.

References Cited

A complete list of references cited in this rulemaking is available on the internet at https://www.regulations.gov under Docket No. FWS-R4-ES-2021-0007 and upon request from the Florida Ecological Services Field Office (see FOR FURTHER INFORMATION CONTACT).

Authors

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

List of Subjects in 50 CFR Part 17

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

Regulation Promulgation

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

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

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

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

■ 2. In § 17.11, in paragraph (h), amend the List of Endangered and Threatened Wildlife by adding an entry for “Turtle, Suwannee alligator snapping” in alphabetical order under REPTILES to read as follows:

§ 17.11 Endangered and threatened wildlife

* * * * *
(h) * * *

Table with 6 columns: Common name, Scientific name, Where listed, Status, Listing citations and applicable rules. Includes entry for Turtle, Suwannee alligator snapping with scientific name Macrochelys suwanniensis.

■ 3. Amend § 17.42 by adding paragraph (k) to read as follows:

§ 17.42 Species-specific rules—reptiles.

* * * * *

(k) Suwannee alligator snapping turtle (Macrochelys suwanniensis).

(1) Prohibitions. The following prohibitions that apply to endangered wildlife also apply to Suwannee alligator snapping turtle. Except as provided under paragraph (k)(2) of this section and §§ 17.4, 17.5, and 17.8 it is unlawful for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or cause to be committed, any of the following acts in regard to this species:

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

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

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

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

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

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

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

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

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

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

(3) Exception from prohibitions for specific types of incidental take. You may take this species incidental to an

otherwise lawful activity caused by forest management practices that use State-approved best management practices designed to protect water quality and stream and riparian habitat.

* * * * *

Martha Williams,

Director, U.S. Fish and Wildlife Service.

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