



## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS-R4-ES-2022-0070; FF09E21000 FXES1111090FEDR 234]

RIN 1018-BE86

### Endangered and Threatened Wildlife and Plants; Endangered Species Status for Magnificent Ramshorn and Designation of Critical Habitat

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), determine endangered species status under the Endangered Species Act of 1973 (Act), as amended, for the magnificent ramshorn (*Planorbella magnifica*), a freshwater snail species from southeastern North Carolina. We also designate critical habitat for the species. In total, approximately 739 acres (299 hectares) in two ponds in Brunswick County, North Carolina, fall within the boundaries of the critical habitat designation. This rule applies the protections of the Act to this species and its designated critical habitat.

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

**ADDRESSES:** This final rule is available on the internet at <https://www.regulations.gov>.

Comments and materials we received are available for public inspection at

<https://www.regulations.gov> at Docket No. FWS-R4-ES-2022-0070.

Supporting materials we used in preparing this rule, such as the species status assessment report, are available on the Service's website at <https://www.fws.gov/office/eastern-north-carolina/library>, at <https://www.regulations.gov> at Docket No. FWS-R4-ES-2022-0070, or both. For the critical habitat designation,

the coordinates or plot points or both from which the maps are generated are included in the decision file for this critical habitat designation and are available at <https://www.regulations.gov> at Docket No. FWS-R4-ES-2022-0070 and on the Service's website at <https://www.fws.gov/office/eastern-north-carolina/library>.

**FOR FURTHER INFORMATION CONTACT:** Pete Benjamin, Field Supervisor, U.S. Fish and Wildlife Service, Raleigh Ecological Services Field Office, P.O. Box 33726, Raleigh, NC 27636-3726; telephone 919-856-4520. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

**SUPPLEMENTARY INFORMATION:**

**Executive Summary**

*Why we need to publish a rule.* Under the Act, a species warrants 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 endangered 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 magnificent ramshorn meets the definition of an endangered species; therefore, we are listing it as such and finalizing a designation of its critical habitat. Both listing a species as an endangered or threatened species and designating critical habitat 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 magnificent ramshorn (*Planorbella magnifica*) as an endangered species and designates critical habitat for this species under

the Act. We are designating 739 acres (299 hectares) in two ponds in Brunswick County, North Carolina, as critical habitat for the species.

*The basis for our action.* Under the Act, we may determine that a species is an endangered or threatened species because of any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined the species may no longer exist in the wild, as it has not been found in surveys over the past 40 years at the only known historical locations. While likely locally extirpated from the wild, it does persist in captive populations. The most significant stressor that likely led to the extirpation of magnificent ramshorn in the wild is the loss of suitable lentic (still or slow-flowing) habitat (Factor A) that individuals and populations need to complete their life history. The primary causes of historical habitat loss are related to anthropogenic activities coupled with extreme weather events that have altered water quality (Factor E) such that the breeding, feeding, sheltering, and dispersal needs of the snails cannot be met. There are no existing regulatory mechanisms that ameliorate or reduce these threats such that the species does not warrant listing (Factor D).

Section 4(a)(3) of the Act requires the Secretary of the Interior (Secretary) to designate critical habitat concurrent with listing to the maximum extent prudent and determinable. Section 3(5)(A) of the Act defines critical habitat as (i) the specific areas within the geographical area occupied by the species, at the time it is listed, on which are found those physical or biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protections; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination by the Secretary that such areas are essential for the conservation of

the species. Section 4(b)(2) of the Act states that the Secretary must make the designation on the basis of the best scientific data available and after taking into consideration the economic impact, the impact on national security, and any other relevant impacts of specifying any particular area as critical habitat.

### **Previous Federal Actions**

Please refer to the August 18, 2022, proposed rule (87 FR 50804) for a detailed description of previous Federal actions concerning the magnificent ramshorn.

### **Peer Review**

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

In accordance with our joint policy on peer review published in the *Federal Register* on July 1, 1994 (59 FR 34270), and our August 22, 2016, memorandum updating and clarifying the role of peer review of listing actions under the Act, we solicited independent scientific review of the information contained in the magnificent ramshorn SSA report. As discussed in the August 18, 2022, proposed rule (87 FR 50804), we sent the SSA report to five independent peer reviewers and received two responses. The peer reviews can be found at <https://regulations.gov>. We also received valuable partner review. In preparing the proposed rule, we incorporated the results of these reviews, as appropriate, into the SSA report, which was the foundation for the proposed rule and this final rule.

### **Summary of Changes from the Proposed Rule**

In preparing this final rule, we reviewed and fully considered all comments we

received from the public during the comment period on the August 18, 2022, proposed rule (87 FR 50804). We made minor, nonsubstantive changes and corrections to this document in response to comments we received; no edits were required for the SSA report. The information we received during the public comment period on the proposed rule did not change our analysis, rationale, or determination that the magnificent ramshorn warrants listing as an endangered species under the Act. It also did not substantively modify our critical habitat designation.

### **Summary of Comments and Recommendations**

In our August 18, 2022, proposed rule (87 FR 50804), we requested that all interested parties submit written comments on the proposal by October 17, 2022. We also contacted appropriate Federal and State agencies, scientific experts and organizations, and other interested parties and invited them to comment on the proposal. Newspaper notices inviting general public comment were published in *The News and Observer* and *The Herald Sun* on August 30, 2022. We did not receive any requests for a public hearing.

Nearly every public comment we received expressed support for the proposed rule, including 68 signatures collected and submitted by the Coastal Plain Conservation Group and 1,000 signatures collected via a petition of support and submitted by the North Carolina Conservation Network. No commenters stated that they were opposed to the proposed rule or any portions thereof, although one mentioned the potential for the listing of the species to affect the aquarium trade (see *(4) Comment*, below). One commenter provided literature and forestry best management practice information without expressing either support or opposition to the proposed rule; we address this comment under *(5) Comment*, below. Several public comments expressing support included reasons such as biodiversity conservation, the importance of snails as part of the ecosystem, and the snail as a provider of beneficial ecological functions (e.g., grazing) and ecosystem services that

benefit people (e.g., contributing to water quality). We address topics requiring our response below.

*Comments from States*

*(1) Comment:* The North Carolina Wildlife Resources Commission (NCWRC) stated that it was satisfied that data it provided to the Service were adequately incorporated into the SSA report for the magnificent ramshorn. The NCWRC requested that if the Service lists the magnificent ramshorn, the Service supports conservation and restoration efforts for the species under section 10 of the Act. The NCWRC also recommended against being overly prescriptive in identifying locations for the species' reintroduction.

*Our Response:* The Service appreciates confirmation that data provided to us were sufficiently considered. Adaptive strategies for reintroduction will be important as we continue to learn about the species' ecology and remaining adaptive capacity, and as we investigate the proximity of threats and the availability of suitable habitats within and near the species' known historical range. The Service intends to use the full breadth of its authorities and programs to support the species' recovery, including section 10 of the Act, as appropriate.

*Public Comments*

*(2) Comment:* Several commenters requested that the Service designate additional critical habitat or identify additional habitat, including places outside the species' native historical range. One commenter called the proposed critical habitat designation insufficient to ensure the survival and recovery of the species. Many of these comments included references to multiple threats relevant to the proposed designated critical habitats, including saltwater intrusion related to dredging and sea level rise, climate change, or other climate-related weather patterns (i.e., hurricanes, flooding, and drought). Multiple commenters requested that five unspecified additional sites be designated in

locations higher in the watershed and away from immediate saltwater intrusion threats, and one commenter suggested specific locations, including Greenfield Lake (a historical habitat location); Sutton, Spring, Patricia, and White Lakes and Pretty Pond (higher in the watershed); and Lake Waccamaw, which is located outside the Cape Fear River Basin.

*Our Response:* The Service recognizes that multiple locations beyond the two designated critical habitat sites will be necessary to support a full recovery of the magnificent ramshorn, but we currently cannot determine which other sites will have the best chance of success in supporting introduction of the species. Accordingly, we cannot determine that additional sites are essential for the conservation of the magnificent ramshorn and meet the Act's definition of critical habitat. We acknowledged this under *Conservation Strategy* in the August 18, 2022, proposed rule (i.e., occupied and self-sustaining populations at two known historical locations and at least two additional locations within the species' historical range) (see 87 FR 50804, August 18, 2022, at pp. 50814–50815). We further stated that these strategic efforts to promote at least four wild populations will be more thoroughly addressed in future recovery planning for the species (87 FR 50804, August 18, 2022, at p. 50814).

We appreciate the specific site suggestions for supporting the species; these may be helpful in future recovery planning and implementation efforts. However, the Service is required to use primary sources of information (e.g., SSA, peer-reviewed literature, or scientific studies) to determine areas that should be designated as critical habitat for listed species. Thus, for the magnificent ramshorn, for any additional sites, we would have to evaluate each site to determine whether it is essential for the conservation of the species in order to designate it as critical habitat for the species. Also, we would need to evaluate each unoccupied area to determine if the habitat can support the species' life history needs, such as ponds with permanent lentic flow conditions that have sufficient littoral depth to sustain large-leaved emergent aquatic vegetation, with a circumneutral pH, no

salinity, and natural water hardness to promote snail growth. As stated in the August 18, 2022, proposed rule, designated critical habitat will not limit or direct future conservation measures for the magnificent ramshorn (87 FR 50804, August 18, 2022, at p. 50813). We also note in the August 18, 2022, proposed rule that Greenfield Lake no longer has suitable habitat for the species (87 FR 50804, August 18, 2022, at p. 50815), which is why it does not meet the criteria for critical habitat designation. Finally, the magnificent ramshorn is one of many aquatic species covered under a new safe harbor agreement (SHA)/candidate conservation agreement with assurances (87 FR 51698; August 23, 2022) that will support conservation through reintroduction into suitable habitats. The Service issued an enhancement of survival permit under section 10 of the Act to the NCWRC in October 2022 (permit number ESPER0041144), which can be used to restore the magnificent ramshorn to future suitable sites through cooperation with landowners in North Carolina.

*(3) Comment:* Some commenters urged the Service to expand the captive breeding capacity for the magnificent ramshorn. At least two commenters called for the need to support a third captive breeding facility, specifically naming the Coastal Plain Conservation Group, to maintain the genetic health and adaptive capacity of the species, to support reintroduction into wild habitats, and to account for losses that could occur in the wild from predation or potential hybridization with another common *Planorbella* species, while magnificent ramshorn populations are becoming established.

*Our Response:* The Service is committed to fostering collaborative conservation partnerships with all stakeholders and partners involved in the species' survival, conservation, and recovery. We are actively coordinating with all facilities holding captive populations of this species, and we intend to continue involvement with species experts to support recovery planning and implementation, including captive propagation and reintroduction efforts. Beyond offering technical assistance and centralized recovery

coordination, the Service recognizes the ongoing need for propagation materials (such as tanks) and funding support to conserve species. We intend to support these efforts as priorities and funds allow.

*(4) Comment:* Commenters referenced the aquarium trade and ramshorn snails, stating that the aquarist community is a source of knowledge for captive culture techniques, commenting on the legal effects on the aquarium trade of listing ramshorn snails, and commenting on protecting ramshorn snails from the aquarium trade.

*Our Response:* This rule is specific to the magnificent ramshorn snail (i.e., *Planorbella magnifica*) and this imperiled and rarely encountered species, which is presumed extirpated in the wild, is not the typical ramshorn(s) in hobby collections. Other snails in the Planorbidae and Ampullariidae families are regularly called ramshorns by collectors. Common species in the aquarium trade include the Seminole ramshorn (*Planorbella duryi*), the great ramshorn (*Planorbis (Planorbarius) corneus*), and the giant ramshorn (*Marisa cornuarietis*) (Brand 2015, unpaginated; Doll 2020, unpaginated). These species and their trade are not affected by the listing of the magnificent ramshorn.

The fact that multiple people submitted comments related to the ramshorn aquarium trade does suggest that future conservation and recovery efforts should be mindful of the popularity of other planorbid species of interest to collectors and the potential for collection pressure on the magnificent ramshorn when it is reintroduced into the wild.

*(5) Comment:* Several commenters expressed concerns about habitat and water quality effects from the wood pellet biomass energy harvesting industry within the historical range of the magnificent ramshorn, citing increased pressure on swamp forests that could support the magnificent ramshorn. In addition, one commenter provided a comprehensive summary of literature largely relevant to the consideration of forestry best management practices (BMPs) on stream water quality and requested that it be referenced

in the final rule. The literature largely assesses whether the BMPs are being implemented and if the oversight by State agencies or certification programs is sufficient. The literature also addresses the extent to which adhering to these BMPs provides reassurance of water quality protection in forest harvesting and management activities.

*Our Response:* Forested landscapes provide many benefits to aquatic ecosystems, and forest management practices are currently not among the most pervasive stressors affecting the magnificent ramshorn. However, we acknowledge that forest management operations are not risk-free and emphasize that rare species with a narrow range, such as the magnificent ramshorn, are especially vulnerable to isolated water quality degradation events. We agree with one commenter's suggestion that it would be prudent to identify habitats that could be protected for future conservation of the snail, and have done so in our conservation strategy (see below).

Regarding the comments on biomass energy harvesting, a recent study compared conventional clearcut harvests and biomass harvests in Virginia's Coastal Plain region to address concerns about biomass harvesting, including any special considerations for the Coastal Plain region (i.e., comparable to North Carolina's southeastern Coastal Plain, which encompasses the historical range of the magnificent ramshorn). The researchers found no significant difference in erosion rates between biomass and conventional clearcut harvests, and they reported similar rates of compliance with forestry BMPs between the harvest types (Hawks et al. 2022, pp. 1, 5–8). They also found that BMP implementation scores were a significant predictor of erosion rates, meaning that implementing existing forestry BMPs is essential for minimizing erosion to protect against sediment input into nearby water bodies, and they noted their results suggest that developing new BMPs specific to biomass harvesting are not necessary (Hawks et al. 2022; pp. 1, 7–9). Another study reported similar findings in the Piedmont physiographic region of Virginia (Barrett et al. 2016, entire).

Development and refinement of BMPs have resulted in substantial improvements to forestry's impacts on water quality in recent decades and have created a culture of water stewardship in the forest landowner community, making this stakeholder group an important ally in the conservation of imperiled species. Properly implemented State-approved BMPs protect water quality and help conserve aquatic species and their habitats. Further, those forest landowners who are third-party-certified to a credible forest management standard are providing audited certainty that BMP implementation is taking place across the landscape. We encourage North Carolina's forestry practitioners to maximize implementation of BMPs to avoid take of the magnificent ramshorn.

Finally, in this rule, we have included references to literature reviews that provide helpful context relevant to the effects of forest management and harvesting on water quality in watersheds that may support future populations of the magnificent ramshorn. The remainder of the references provided by the commenter appear in the relevant comment, which is available at <https://www.regulations.gov> under Docket No. FWS-R4-ES-2022-0070.

## **I. Final Listing Determination**

### **Background**

A thorough review of the taxonomy, life history, and ecology of magnificent ramshorn (*Planorbella magnifica*) is presented in the SSA report (version 1.0; Service 2019, pp. 9–16).

Magnificent ramshorn is a species of air-breathing snail endemic to southeastern North Carolina. It is a freshwater snail in the family Planorbidae (Pilsbry 1903, pp. 75–76) and is the largest North American snail in this family. It has a discoidal, (i.e., coiling in one plane) relatively thin shell that reaches approximately 1.5 inches (38 millimeters) in diameter. The aperture of the shell is somewhat bell-shaped and very wide, extending beyond the sides of the shell. Like other members of the Planorbidae family, magnificent

ramshorn is primarily herbivorous, feeding on emergent and submerged aquatic plants, algae, and detritus (decomposing plant material). Available information indicates that suitable habitat for the species is restricted to relatively shallow, sheltered portions of still or sluggish freshwater (no salinity) bodies with an abundance and diversity of emergent and submerged aquatic vegetation and a circumneutral (nearly neutral) pH (see table 1, below).

**TABLE 1. Magnificent Ramshorn’s Habitat Needs.**

| <b>Waterbody Attribute</b> | <b>Description</b>  |
|----------------------------|---|
| pH                         | Ideal is 6.8 to 7.5; inactive below 6.5 and above 8.  |
| Salinity                   | Ideal is 0 parts per thousand (ppt); 1.0 ppt (1.0 grams per liter (g/L)) caused snails to withdraw.                             |
| Temperature                | 60 °F (16 °C) and above. Still able to feed at 93 °F (34 °C). Dormant below 60 °F.  |
| Hardness*                  | Ideal hardness is:<br>Lab: 30 ppm (30 mg/L);<br>Hatchery ponds: between 60 ppm (60 mg/L) and 220 ppm (200 mg/L).                |
| Emergent vegetation        | Aquatic vegetation in sufficient littoral depth (about 0.5 to 6 feet (ft) (0.15 to 2 meters (m))) used for feeding and shelter. |

\* “Hardness” is considered to be the sum of the calcium and magnesium ions in water, expressed as milligrams per liter (mg/L) or parts per million (ppm) as calcium carbonate. It affects snail survival, particularly shell shape.

Historically, magnificent ramshorn was documented from only four sites in the lower Cape Fear River Basin in North Carolina: (1) Greenfield Lake, a millpond located on a tributary to the Cape Fear River within the present city limits of Wilmington, New Hanover County; (2) Orton Pond (also known as Sprunt’s Pond), a millpond located on Orton Creek in Brunswick County; (3) Big Pond (also known as Pleasant Oaks Pond or Sand Hill Creek Pond), a millpond on Sand Hill Creek in Brunswick County; and (4) McKinzie Pond, a millpond on McKinzie Creek, in Brunswick County. Species-specific surveys of more than 100 potential sites (including most historical locations) over the last few decades have not documented any magnificent ramshorn snails, and the species is currently likely extirpated in the wild.

## **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. In 2019, 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 the criteria for designating listed species' critical habitat (84 FR 45020; August 27, 2019). On the same day, the Service also issued final regulations that, for species listed as threatened species after September 26, 2019, eliminated the Service's general protective regulations automatically applying to threatened species the prohibitions that section 9 of the Act applies to endangered species (84 FR 44753; August 27, 2019).

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

- (A) The present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) Overutilization for commercial, recreational, scientific, or educational purposes;
- (C) Disease or predation;
- (D) The inadequacy of existing regulatory mechanisms; or

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

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

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

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

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

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

#### *Analytical Framework*

The SSA report documents the results of our comprehensive biological review of the best scientific and commercial data regarding the status of the species, including an assessment of the potential threats to the species. The SSA report does not represent 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 magnificent ramshorn’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, pathogen). 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 No. FWS-R4-ES-2022-0070 at <https://www.regulations.gov> and on the Service's website at <https://www.fws.gov/office/eastern-north-carolina/library>.

### **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. Although magnificent ramshorn is considered a large snail, its shell is thin and fragile, indicating that it is adapted to lentic (still or slow-flowing) aquatic habitats. Available information indicates that suitable habitat for the species is restricted to relatively shallow, sheltered portions of still or sluggish, freshwater bodies with an abundance and diversity of emergent and submerged aquatic vegetation and a circumneutral pH (pH within the range of 6 to 8) (Jones 2020, pers. comm.). The species is not able to survive in flowing water, nor is it able to tolerate any amount of salinity, thus restricting it to inland, freshwater, pond-like habitats.

#### *Loss of Lentic (Pond) Habitats*

Although the complete historical range of magnificent ramshorn is unknown, available information indicates that the species was likely once an inhabitant of beaver ponds on tributaries in the lower Cape Fear River basin; the species may also have once inhabited backwater and other sluggish portions of tributaries and the main channel of lower Cape Fear River. Beaver pond habitat was eliminated throughout much of the lower Cape Fear River as a result of the extirpation of the beaver from trapping and hunting during the 19th and early 20th centuries. This, together with draining and destruction of beaver ponds for development, agriculture, and other purposes, is believed to have led to a significant decline in the snails' habitat and significant reduction in its abundance (Wood 2010, pp. 6, 7). Surveys in the 1990s also noted the loss of ponds due to hurricanes (Adams 1993, p. 26). Several ponds that were created or maintained by old mill dams have structures that will fail, or have failed, during catastrophic events. Catastrophic rainfall can overtop old mill dam structures and cause portions of them to wash out, thus draining the ponds behind them. This is likely what happened at McKinzie Pond. The four known historical sites where magnificent ramshorn were found are, or were, ponds likely created by old mill dams.

## *Saltwater Intrusion*

Dredging and deepening of the Cape Fear River channel, which began as early as 1822, and opening of the Atlantic Intracoastal Waterway (through Snow's Cut) in 1930 for navigational purposes have caused saltwater intrusion, altered the diversity and abundance of aquatic vegetation, and changed flows and current patterns far up the river channel and its lower tributaries (Adams 1993, p. 22; Wood 2010, p. 7). Under these circumstances, magnificent ramshorn could have survived only in lentic areas of tributary streams not affected by saltwater intrusion and other changes, such as the millponds protected from saltwater intrusion by their dams (Adams 1993, p. 22).

Climate change and sea level rise pose a significant long-term threat to the survival of magnificent ramshorn. As previously noted, magnificent ramshorn is salt-intolerant (Wood 2002, p. 3), and saltwater intrusion into its habitat is one of the primary factors that contributed to its extirpation in the wild. During the past century, sea level has risen by 8+ inches (20+ centimeters (cm)), and available information indicates the rate of sea level rise is increasing (U.S. Global Change Research Program (USGCRP) 2009, p. 18; Kopp et al. 2015, p. 700). Sea levels are rising at a rate of about an inch (2.5 cm) per year (5 inches (12.7 cm) from 2011–2015) in some areas along the east coast of North Carolina (Valle-Levinson et al. 2017, p. 7876). While future rates of sea level change are uncertain, continued sea level rise threatens the southeastern U.S. coastal zone with retreat of shorelines, inundation of coastal wetlands and streams, and increased salinity of estuaries, coastal wetlands, and tidal rivers and creeks, pushing freshwater coastal ecosystems farther inland. In addition, in the future, the southeastern United States faces potential higher average temperatures (resulting in increased evaporation rates), less frequent rainfall (resulting in potentially more frequent and longer dry periods), and an increase in intensity of storm events, including hurricanes; all of which are likely to increase the rate and upstream distance of saltwater intrusion into coastal

streams. Also, higher average temperatures and longer periods between rainfall events, together with increased development and human population levels in Brunswick and New Hanover Counties, will result in an increased demand on freshwater systems for drinking, irrigation, and other water needs, exacerbating the effects of sea level changes on streams in the lower Cape Fear River basin, which encompass the entire known historical range of magnificent ramshorn (adapted from USGCRP and references therein 2009, pp. 1111–1116).

#### *Disrupted Nutrient Cycles—Pollution and Nutrient Inputs*

The human residential population of Brunswick and New Hanover Counties is rapidly increasing; both counties are popular vacationing and retirement areas (see section 5-6 of the SSA report (Service 2019, pp. 31–35)). Both counties are among the most rapidly developing counties in the State, with population growth greater than 25 percent during the period of 2000–2010 (WRAL-News 2019, unpaginated). Typically, as development increases, the input of nutrients (through both surface and groundwater), silt, and other pollutants into the aquatic system increases. Increased input of these pollutants into streams from point and non-point sources may result in eutrophication, decreased dissolved oxygen concentration, increased acidity and conductivity, and other changes in water chemistry. Impacts from development within the areas that formerly harbored magnificent ramshorn, or within areas that may provide potential habitat for the species, have the potential to reduce groundwater levels, which could have a serious adverse effect on pH, water hardness, and salinity levels.

#### *Altered Aquatic Vegetation Communities*

Aquatic vegetation is common in pond systems, but sometimes the vegetation can be invasive and overwhelm the aquatic system, such as in Greenfield Lake, formerly occupied snail habitat in Wilmington. Managing vegetation in ponds takes many forms; some practices are compatible with molluscan pond inhabitants (like magnificent

ramshorn), such as aeration or mechanical cutting/removal, but some practices can significantly impact snails, such as using grass carp (*Ctenopharyngodon idella*), using copper-based herbicides, or drawing water out of the pond and subsequently drying out vegetation for complete removal, as was once done in Big Pond, formerly occupied by the ramshorn. The latter practices result in snail mortality, either from complete elimination of aquatic vegetation on which the snails depend, exposure to toxic metals like copper, lethal temperatures, predation, or desiccation from no access to water (Adams 1993, p. 12).

### *Extreme Weather Events*

Changes in climate and weather patterns may affect ecosystem processes and communities by altering the abiotic conditions experienced by biotic assemblages, resulting in potential effects on community composition and individual species interactions (DeWan et al. 2010, p. 7). This is especially true for aquatic systems where increases in droughts or severe storm events resulting from climate change can trigger a cascade of ecological effects. For example, increases in air temperatures can lead to subsequent increases in water temperatures that, in turn, may lower water quality parameters (like pH), ultimately influencing overall habitat suitability for species like magnificent ramshorn.

Impacts from climate change affect sea levels; alter precipitation patterns and subsequent delivery of freshwater, nutrients, and sediment; and change the frequency and intensity of coastal storms (Michener et al. 1997, p. 770; Scavia et al. 2002, p. 149; Neumann et al. 2015, p. 97). During the time when magnificent ramshorn became extremely rare in the wild (1990s–2000s), three of the top five strongest/most intense storms experienced in Wilmington, North Carolina, occurred (1996, 1998, and 1999) and caused massive flooding and saltwater intrusion into the ponds where magnificent ramshorn occurred (Service 2019, p. 24).

The North Carolina Wildlife Action Plan (NCWRC 2015, pp. 5–48) identifies climate change as a “very high” threat to magnificent ramshorn. In addition, in an assessment of ecosystem response to climate change, factors associated with climate change ranked high with other factors that were deemed imminent risks to magnificent ramshorn’s historical population locations (e.g., development, pollution, flood regime alteration, etc.; (North Carolina Natural Heritage Program (NCNHP) 2010, entire). Furthermore, it should be recognized that the greatest threat from climate change to magnificent ramshorn habitat may come from synergistic effects. That is, factors associated with a changing climate may act as risk multipliers by increasing the risk and severity of more imminent threats (Arabshahi and Raines 2012, p. 8). As a result, impacts from rapid urbanization in the region might be exacerbated under even a mild-to-moderate climate future.

### *Summary*

Based on the results of repeated surveys from the 1980s to 2010s by qualified species experts in the species’ historical habitat and suitable habitat in surrounding areas, there appear to be no extant populations of magnificent ramshorn in the wild. While several factors have likely contributed to the extirpation of magnificent ramshorn in the wild, the primary factors include loss of lentic habitats, perhaps associated with the extirpation of beavers (and their impoundments) between the early and late 20th century; increased salinity and alteration of flow patterns in the lower Cape Fear River Basin; and increased input of nutrients and other pollutants that may have altered the pH of pond waters beyond what the species can tolerate.

The extirpation of magnificent ramshorn from Greenfield Lake is likely attributable to the alteration of the lake’s water quality and chemistry resulting from past events such as breaks in sewer lines on the bottom of the lake; sewage overflows during storm events; runoff of fertilizers, sediment, toxic chemicals, and other pollutants from

heavy development in the watershed; and efforts by the city of Wilmington to control aquatic plants and algae within the lake. All of these changes to Greenfield Lake likely led to salinization of the waters to levels beyond what the species could tolerate. Additionally, application of herbicides (usually containing copper) to control aquatic plants would not only have eliminated the snail's food source but could have also directly killed individual snails.

The Big Pond population of magnificent ramshorn was likely extirpated in 1996, when the dam on the pond was breached during flooding associated with Hurricane Fran. This resulted in the subsequent drawdown of the pond due to failure of the dam, and saltwater intrusion into the pond from upstream movement of the saltwater wedge in the Cape Fear River, which killed the aquatic vegetation and eliminated the salt-intolerant magnificent ramshorn.

Magnificent ramshorn was last observed in McKenzie Pond in 2004, but was likely extirpated due to saltwater intrusion resulting from prolonged drought conditions that allowed tidal flow of saltwater to extend into the areas harboring the snail.

Magnificent ramshorn may have been eliminated from Orton Pond by the previous attempts to control aquatic vegetation by drawing down the pond for extended periods of time, thus eliminating essential habitat components of water and vegetation, causing snail extirpation.

The ongoing anthropogenic activities described above, coupled with the effects of climate change, such as extreme weather events (e.g., storms/hurricanes) that may blow out dams and cause saltwater intrusion, have the potential to continue to alter habitat and water quality such that the breeding, feeding, sheltering, and dispersal needs of magnificent ramshorn cannot be met.

While efforts have been made to restore habitat for magnificent ramshorn at one of the sites known to have previously supported the species, all of the sites continue to be

affected by many of the same factors (i.e., saltwater intrusion and other water quality degradation, nuisance aquatic plant control, storms, sea level rise, etc.) thought to have resulted in extirpation of the species from the wild. Currently, only three captive populations exist, with approximately 1,000 snails in existence. Although captive populations have been maintained since 1993, a catastrophic event, such as a severe storm, disease, or predator infestation, affecting one or more of the captive populations, could result in the near extinction of the species.

Magnificent ramshorn lacks the resiliency, redundancy, and representation necessary for viability in the wild. Magnificent ramshorn populations were not able to survive habitat degradation resulting from impacts including saltwater intrusion, pollutant influx, and human alteration of aquatic vegetation communities, thus eliminating the species' resiliency. Based on knowledge of the snail and the systems on which it depends, the loss of habitat, and the lack of finding any magnificent ramshorns despite surveying dozens of possible locations, magnificent ramshorn has no redundancy in the wild. Furthermore, the historical range of the species is narrow and limited to lentic habitats within the Coastal Plain of southeastern North Carolina. We do not know the level of genetic diversity of the captive animals; however, we do know that the individuals in captivity are all descendants of adult snails from two distinct populations: Pleasant Oaks Pond and McKinzie Pond. The captive ramshorns have extremely limited representation, and because no magnificent ramshorns are known to exist in the wild, the species has no representation in the wild. We cannot project future conditions because there are no known extant populations on which we can project those conditions. While magnificent ramshorn is likely extirpated from the wild, recovering the species means re-establishing self-sustaining populations in the wild.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have not only analyzed individual effects

on the species, but we have also analyzed their potential cumulative effects. We incorporate the cumulative effects into our SSA analysis when we characterize the current and future condition of the species. To assess the current and future condition of the species, we undertake an iterative analysis that encompasses and incorporates the threats individually and then accumulates and evaluates the effects of all the 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.

### *Conservation Efforts and Regulatory Mechanisms*

Magnificent ramshorn is currently listed by the State of North Carolina as an endangered species. However, this designation does not protect the species from “incidental” harm, injury, or death (that is, harm, injury, or death resulting from activities not specifically intended to harm the species) or provide any protection to the species’ habitat except on State-owned lands.

Captive holding of magnificent ramshorn began in the early 1990s, when individuals were collected to learn about their life-history requirements (Adams 1993, entire). In the mid-1990s, snails were held in captivity at the North Carolina Aquarium at Fort Fisher, but they were later moved to a private residence due to the influence of salt-laden air at the aquarium. There is a well-maintained snail sanctuary at the private residence, kept since the mid-1990s with approximately 100 breeding ramshorn snails.

In early 2012, a small captive population (35 individuals) was established at North Carolina State University’s College of Veterinary Medicine’s (CVM) Aquatic Epidemiology Conservation Laboratory in Raleigh, North Carolina. These captive snails have reproduced successfully, and there are currently approximately 100 snails at the facility (which had to scale back operations temporarily due to Covid-19 restrictions).

Additional facilities for holding and propagating magnificent ramshorn at the NCWRC's hatchery in Watha, North Carolina, were established in 2011. In 2018, NCWRC hired a snail technician to focus on magnificent ramshorn husbandry at the Watha hatchery. The NCWRC subsequently moved the snail technician and all snails to their Conservation Aquaculture Center in Marion, North Carolina; there are currently approximately 775 breeding snails at this location.

In 2012–2013, several potentially suitable locations, including portions of Orton Pond, McKinzie Pond, Big Pond (Sand Hill Creek/Pleasant Oaks Pond), and nearby Pretty Pond, were all brought under single ownership. In 2014, the landowner approached the Service to determine the possibility of restoring the snail to Big Pond at the Pleasant Oaks Plantation. A proposal to assess snail restoration potential under a candidate conservation agreement with assurances (CCAA) has been formulated but not finalized or implemented.

The North Carolina Division of Water Resources and the Service are working with the city of Wilmington, North Carolina, to improve the water quality of Greenfield Lake, which formerly supported the species. Greenfield Lake is currently on the State's list of impaired water bodies due to excessive nutrient inputs.

In 2018, Service staff performed an analysis to determine the suitability of potential habitats within the former range to support introduction of magnificent ramshorn. The results are being used by staff, as well as State and Federal partners, to field-verify the suitability of potential locations. In preparation for potential reintroduction, the Service has drafted experimental protocols to detail necessary steps for possible introduction of the species into the wild. Further, the Service has a SHA/CCAA for landowners interested in contributing to the conservation of the State's aquatic species; this agreement broadly covers aquatic species and is in addition to the draft CCAA with the owner of three ponds in the species' historical range.

In 2019 and 2020, Service staff met with Department of Defense (DoD) and the North Carolina Plant Conservation Program (NCPCP), both landowners with several ponds on their properties within the historical range of magnificent ramshorn. The DoD's Military Ocean Terminal Sunny Point is immediately adjacent to the private property where the species was last known to occur in the wild. The NCPCP and DoD own ponds in the same watershed as the historical locations. Both are amenable to having water quality analyzed to determine whether their ponds could be suitable habitat for snail introduction, and that habitat assessment work began in 2021 under the lead of NCWRC.

Further, in a 2019 legal settlement involving a major highway project, the North Carolina Department of Transportation committed \$250,000 for magnificent ramshorn propagation into the future while both the Service and partners work on reintroduction site assessment and landowner agreements.

### **Determination of Magnificent Ramshorn's Status**

Section 4 of the Act (16 U.S.C. 1533) and its implementing regulations (50 CFR part 424) set forth the procedures for determining whether a species meets the definition of an endangered species or a threatened species. The Act defines 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*

We have determined that magnificent ramshorn is likely extirpated in the wild predominantly as a result of the loss of suitable lentic (still or slow-flowing) habitat that individuals and populations need to complete their life history (Factor A). The primary causes of historical habitat loss are related to anthropogenic activities that removed aquatic vegetation, coupled with extreme weather events (e.g., hurricanes that breach dams) that have altered water quality via saltwater intrusion (Factor E) such that the breeding, feeding, sheltering, and dispersal needs of the snails cannot be met. Existing regulatory mechanisms are not adequate to ameliorate or address these threats (Factor D).

After evaluating threats to the species and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, magnificent ramshorn does not have sufficient resiliency, representation, and redundancy for viability. Based on decades of surveys attempting to locate the species, magnificent ramshorn is likely extirpated in the wild. The past loss of suitable pond habitat and the challenge of finding suitable introduction sites exacerbates the current situation for magnificent ramshorn. The only known surviving individuals of the species are being held as part of captive populations. Although captive populations have been maintained since 1993, a catastrophic event, such as a severe storm, disease, or predator infestation, affecting one or more of the captive populations could result in the near extinction of the species. Thus, after assessing the best available information, we conclude that magnificent ramshorn is in danger of extinction 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. We have determined that the magnificent ramshorn is in danger of extinction throughout all of its range and accordingly did not undertake an analysis of any significant portions of its range. Because

the magnificent ramshorn warrants listing as endangered throughout all of its range, our determination does not conflict with the decision in *Center for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020), which vacated the provision of the Final Policy on Interpretation of the Phrase “Significant Portion of Its Range” in the Endangered Species Act’s Definitions of “Endangered Species” and “Threatened Species” (Final Policy) (79 FR 37578, July 1, 2014) providing that if the Services determine that a species is threatened throughout all of its range, the Services will not analyze whether the species is endangered in a significant portion of its range.

#### *Determination of Status*

Our review of the best available scientific and commercial information indicates that the magnificent ramshorn meets the Act’s definition of an endangered species. Therefore, we are listing the magnificent ramshorn as an endangered species in accordance with sections 3(6) and 4(a)(1) of the Act.

#### **Available Conservation Measures**

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

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the

protective measures of the Act. Section 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning consists of preparing draft and final recovery plans, beginning with the development of a recovery outline and making it available to the public. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened (“downlisting”) or removal from protected status (“delisting”), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams (composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website

(<https://www.fws.gov/program/endangered-species>), or from our Raleigh 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 (e.g., restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily

or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

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 State of North Carolina will be eligible for Federal funds to implement management actions that promote the protection or recovery of the magnificent ramshorn. 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 magnificent ramshorn. Additionally, we invite you to submit any new information on this species whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

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

Federal agency actions within the species' habitat that may require conference, consultation, or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the U.S. Army

Corps of Engineers, and construction and maintenance of roads or highways by the Federal Highway Administration.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to endangered wildlife. The prohibitions of section 9(a)(1) of the Act, codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) endangered wildlife within the United States or on the high seas. In addition, it is unlawful to import; export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any species listed as an endangered species. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to employees of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies.

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

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

information, the following actions may potentially result in a violation of section 9 of the Act if they are not authorized in accordance with applicable law; this list is not comprehensive:

- (1) Unauthorized handling or collecting of the species;
- (2) Destruction or alteration of the species' habitat by draining, ditching, tiling, or diverting or altering surface or ground water flow into or out of ponds or other slack water areas;
- (3) Herbicide or other pesticide applications in violation of label restrictions in areas occupied by magnificent ramshorn;
- (4) Introduction of nonnative species that compete with or prey upon magnificent ramshorn;
- (5) Removal or destruction of emergent aquatic vegetation in areas designated as critical habitat or in any body of water in which magnificent ramshorn becomes established; and
- (6) Discharge of chemicals into any waters in which magnificent ramshorn becomes established.

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

## **II. 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. None of the situations identified at 50 CFR 424.12(a) for when designation of critical habitat would be not prudent or not determinable is present. We, therefore, are designating critical habitat for magnificent ramshorn concurrently with listing it.

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).

This critical habitat designation for the magnificent ramshorn was proposed when the regulations governing the Service's process for excluding areas of critical habitat under section 4(b)(2) of the Act (85 FR 82376; December 18, 2020) were in place and in effect. However, those regulations have been rescinded (87 FR 43433; July 21, 2022) and no longer apply to any designations of critical habitat. Therefore, for this final rule designating critical habitat for the magnificent ramshorn, we apply the regulations at 50 CFR 424.19 and the Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act (2016 Joint Policy; 81 FR 7226, February 11, 2016).

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. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the Federal agency would be required to consult with the Service under section 7(a)(2) of the Act. However, even if the Service were to conclude that the proposed activity would likely result in destruction or adverse modification of the critical habitat, the Federal action agency and the landowner are not required to abandon the proposed activity, or to restore or recover the species; instead, they must implement “reasonable and prudent alternatives” to avoid destruction or adverse modification of critical habitat.

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

biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat).

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

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

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

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include

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

### **Physical or Biological Features Essential to the Conservation of the Species**

In accordance with section 3(5)(A)(i) of the Act and regulations at 50 CFR 424.12(b), in determining which areas we will designate as critical habitat from within the geographical area occupied by the species at the time of listing, we consider the physical or biological features that are essential to the conservation of the species and which may require special management considerations or protection. The regulations at 50 CFR 424.02 define “physical or biological features essential to the conservation of the species” as the features that occur in specific areas and that are essential to support the life-history needs of the species, including, but not limited to, water characteristics, soil type, geological features, sites, prey, vegetation, symbiotic species, or other features. A

feature may be a single habitat characteristic or a more complex combination of habitat characteristics. Features may include habitat characteristics that support ephemeral or dynamic habitat conditions. Features may also be expressed in terms relating to principles of conservation biology, such as patch size, distribution distances, and connectivity. For example, physical features essential to the conservation of the species might include gravel of a particular size required for spawning, alkaline soil for seed germination, protective cover for migration, or susceptibility to flooding or fire that maintains necessary early-successional habitat characteristics. Biological features might include prey species, forage grasses, specific kinds or ages of trees for roosting or nesting, symbiotic fungi, or absence of a particular level of nonnative species consistent with conservation needs of the listed species. The features may also be combinations of habitat characteristics and may encompass the relationship between characteristics or the necessary amount of a characteristic essential to support the life history of the species.

In considering whether features are essential to the conservation of the species, we may consider an appropriate quality, quantity, and spatial and temporal arrangement of habitat characteristics in the context of the life-history needs, condition, and status of the species. These characteristics include, but are not limited to, space for individual and population growth and for normal behavior; food, water, air, light, minerals, or other nutritional or physiological requirements; cover or shelter; sites for breeding, reproduction, or rearing (or development) of offspring; and habitats that are protected from disturbance.

#### *Summary of Essential Physical or Biological Features*

We derive the specific physical or biological features essential to the conservation of magnificent ramshorn from studies of the species' habitat, ecology, and life history as described below. Additional information can be found in the SSA report (Service 2019, entire; available on <https://www.regulations.gov> under Docket No. FWS-R4-ES-2022-

0070). We have determined that the physical or biological features essential to the conservation of magnificent ramshorn consist of waterbodies within the species' historical range that:

1. Maintain permanent, lentic flow conditions;
2. Have sufficient littoral depth (approximately 0.5 to 6 feet) to sustain large-leaved emergent aquatic vegetation (e.g., water lilies, spatterdock, etc.);
3. Maintain circumneutral pH (i.e., between pH 6 and 8);
4. Have no salinity (i.e., 0 parts per thousand (ppt) salinity); and
5. Maintain natural water hardness to promote shell growth (greater than 60 parts per million (ppm) calcium carbonate).

### **Criteria Used to Identify Critical Habitat**

#### *Conservation Strategy*

Future viability for magnificent ramshorn depends on maintaining multiple resilient populations over time. While the species is currently likely extirpated from the wild, species experts have identified several strategic efforts that will be important to build the future viability of the species. These could include:

1. Maintain at least two secure captive populations of magnificent ramshorn until such time as there are enough populations in the wild to no longer necessitate such an effort.
2. Reintroduce magnificent ramshorn snails to at least two known historical locations and establish monitoring to ensure reintroductions are successful; augment until populations are established and success criteria are met.
3. Introduce magnificent ramshorn snails to at least two other locations with suitable habitat within the historical range of the species. Monitor to ensure reintroductions are successful; augment until populations are established.

These strategic efforts to promote at least four wild populations (two historical locations occupied and self-sustaining, as well as two other locations within the historical range occupied and self-sustaining) will be more thoroughly addressed in future recovery planning for the species.

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. In accordance with the Act and our implementing regulations at 50 CFR 424.12(b), we review available information pertaining to the habitat requirements of the species and identify specific areas within the geographical area occupied by the species at the time of listing and any specific areas outside the geographical area occupied by the species to be considered for designation as critical habitat. Because the species is likely extirpated in the wild, we have determined that there are no occupied areas to ensure the conservation of the species. Accordingly, we are designating critical habitat in two unoccupied areas within the historical range for the species. In addition, these unoccupied areas are essential for the conservation of the species. Each of the two unoccupied units contains suitable habitat for the magnificent ramshorn—the ponds contain slow-moving waters, are of sufficient depth to sustain emergent aquatic vegetation, and are managed consistent with magnificent ramshorn's life requisites. Both ponds were previously occupied by magnificent ramshorn, and we determined the factors that led to the species' decline in these locations have been ameliorated or are manageable.

To delineate critical habitat units, we used the U.S. Geological Survey's high resolution National Hydrography Dataset (NHD) to determine the boundaries of each pond. We included all waters from the base of the dams upstream to the upper limits of the pond features that became more stream-like, as demarcated in the NHD data layer. For areas outside the geographic area occupied by the species at the time of listing, we identified the critical habitat units using the following considerations:

- a. Unoccupied habitats have historical records of species occurrence;
- b. Unoccupied areas exhibit suitable habitat availability, providing the physical or biological features necessary for survival, growth, and reproduction of the species;
- c. Unoccupied areas provide habitat for reintroduction, with potential to reduce the level of stochastic and human-induced threats, and decrease the risk of extinction because the areas currently contain the essential physical or biological features to support life-history functions of magnificent ramshorn; and
- d. Unoccupied habitat currently supports diverse aquatic pond communities, including the presence of closely related species requiring physical or biological features similar to magnificent ramshorn.

When determining critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack the physical or biological features necessary for magnificent ramshorn. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

We have determined that because there are no occupied areas at the time of listing, unoccupied areas are essential for the conservation of the species. Accordingly, we have identified two unoccupied units as critical habitat. As detailed above, additional units will be needed for recovery, but we cannot currently determine what other areas will have the best chance of successful species introduction. To consider for designation

areas not occupied by the species at the time of listing, we must demonstrate that these areas are essential for the conservation of magnificent ramshorn. Because the species is likely extirpated from the wild, the only way for the species to be conserved and have viable populations in the wild is via captive propagation and reintroduction to unoccupied areas.

Magnificent ramshorn is historically known from four locations, all of which are ponds/impoundments. Of these four historical locations, only two meet all of the criteria for designation as critical habitat. Both Greenfield Lake and McKinzie Pond no longer have suitable habitat for the species, and would require extensive restoration and threat abatement measures before potentially becoming suitable again. Based on our review, we determined that Orton Pond and Big Pond, the two other known historical locations for magnificent ramshorn, have the potential for future reintroduction and reoccupation by the species. Reestablishing viable populations in those two ponds will provide redundancy within the historical range and increase the species' ecological representation. Orton Pond and Big Pond represent habitat within the historical range with the best potential for recovery of the species due to current pond conditions, suitability for reintroductions, compatibility between the landowner's existing habitat management and the habitat needs of magnificent ramshorn, and landowner interest in recovery and access for monitoring.

Accordingly, we designate two units as critical habitat for magnificent ramshorn. Both units contain the identified physical or biological features, appear to be capable of supporting multiple life-history processes of the species, and are essential for the conservation of the species.

The critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document under **Regulation Promulgation**. We include more-detailed information on the boundaries of the critical

habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on <https://www.regulations.gov> at Docket No. FWS-R4-ES-2022-0070 and on the Service’s website at <https://www.fws.gov/office/eastern-north-carolina/library>.

**Final Critical Habitat Designation**

We are designating approximately 739 acres (ac) (299 hectares (ha)) in two units as critical habitat for magnificent ramshorn. The critical habitat areas we describe below constitute our current best assessment of areas that meet the definition of critical habitat for magnificent ramshorn. The two areas designated as critical habitat are: (1) Orton Pond and (2) Big Pond (Pleasant Oaks Pond). The table below shows the critical habitat units and the approximate area of each unit.

**TABLE 2. Critical habitat units for magnificent ramshorn.**

[Area estimates reflect all land within critical habitat unit boundaries.]

| <b>Critical Habitat Unit</b>     | <b>Land Ownership by Type</b> | <b>Size of Unit in Acres (Hectares)</b> | <b>Occupied?</b> |
|----------------------------------|-------------------------------|---|------------------|
| 1. Orton Pond                    | Private                       | 688 ac (278 ha)                         | No               |
| 2. Big Pond (Pleasant Oaks Pond) | Private                       | 51 ac (21 ha)                           | No               |
| <b>Total</b>                     |                               | <b>739 ac (299 ha)</b>                  |                  |

We present brief descriptions of each unit, and reasons why they meet the definition of critical habitat for magnificent ramshorn, below.

*Unit 1: Orton Pond*

Unit 1, Orton Pond, consists of 688 ac (278 ha) of unoccupied lentic habitat in an impounded section of Orton Creek in Brunswick County, North Carolina, approximately ½ mile upstream from its confluence with the Cape Fear River, located east of the town of Boiling Spring Lakes. This pond is privately owned and has a conservation easement along the entire southeastern shore and along the dam right-of-way. Access to Orton

Pond by researchers surveying for magnificent ramshorn has been restricted since the mid-1990s, and the species was last observed in this location in 1995. Orton Pond is one of four known historical locations for the species, and it currently has extensive suitable habitat for the ramshorn, including sluggish flows, sufficient littoral depth for emergent aquatic vegetation, and no salinity. Its management is consistent with magnificent ramshorn's life requisites. For these reasons, we find that the formerly occupied Orton Pond is essential for the conservation of the species.

#### *Unit 2: Big Pond (Pleasant Oaks Pond)*

Unit 2, Big Pond, consists of 51 ac (21 ha) of unoccupied lentic habitat in an impounded section of Sand Hill Creek in Brunswick County, North Carolina, just upstream of the confluence with the Cape Fear River across from Campbell Island. This pond is privately owned and has a conservation easement surrounding the entire pond. The species was last observed in this location in 1994. Big Pond is one of four known historical locations for the species, and it currently has suitable habitat for the ramshorn, including sluggish flows and sufficient littoral depth for emergent aquatic vegetation. Its management is consistent with magnificent ramshorn's life requisites. For these reasons, we find that the formerly occupied Big Pond is essential for the conservation of the species. Because of its proximity to the upstream saltwater wedge in the Cape Fear River, and the potential for dam failure during hurricanes, this pond will require permanent maintenance to prevent effects of saltwater intrusion, and the landowner has indicated that maintaining the dam to keep freshwater in the pond is a priority.

#### **Effects of Critical Habitat Designation**

##### *Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the

continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species.

We published a final rule revising the definition of destruction or adverse modification on August 27, 2019 (84 FR 44976). Destruction or adverse modification means a direct or indirect alteration that appreciably diminishes the value of critical habitat as a whole for the conservation of a listed species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, Tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 et seq.) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat—and actions on State, Tribal, local, or private lands that are not federally funded, authorized, or carried out by a Federal agency—do not require section 7 consultation.

Compliance with the requirements of section 7(a)(2) is documented through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we provide reasonable and prudent alternatives to the project, if any are

identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the action,
- (2) Can be implemented consistent with the scope of the Federal agency’s legal authority and jurisdiction,
- (3) Are economically and technologically feasible, and
- (4) Would, in the Service Director’s opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 set forth requirements for Federal agencies to reinitiate consultation on previously reviewed actions. These requirements apply when the Federal agency has retained discretionary involvement or control over the action (or the agency’s discretionary involvement or control is authorized by law) and, subsequent to the previous consultation: (a) if the amount or extent of taking specified in the incidental take statement is exceeded; (b) if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (c) if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the biological opinion or written concurrence; or (d) if a new species is listed or critical habitat designated that may be affected by the identified action. The reinitiation requirement applies only to actions that remain subject to some discretionary Federal involvement or

control. As provided in 50 CFR 402.16, the requirement to reinitiate consultations for new species listings or critical habitat designation does not apply to certain agency actions (e.g., land management plans issued by the Bureau of Land Management in certain circumstances).

*Application of the “Adverse Modification” Standard*

The key factor related to the destruction or adverse modification determination is whether implementation of the proposed Federal action directly or indirectly alters the designated critical habitat in a way that appreciably diminishes the value of the critical habitat as a whole for the conservation of the listed species. As discussed above, the role of critical habitat is to support physical or biological features essential to the conservation of a listed species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may violate section 7(a)(2) of the Act by destroying or adversely modifying such habitat, or that may be affected by such designation.

Activities that we may, during a consultation under section 7(a)(2) of the Act, consider likely to destroy or adversely modify critical habitat include, but are not limited to:

(1) Actions that would cause physical habitat disturbance. Such activities could include, but are not limited to, draining, dredging, channelization, placement of fill, or activities that modify or compromise the dam structure such that pond habitat quality is degraded. These activities could eliminate or reduce the habitat necessary for the conservation of magnificent ramshorn.

(2) Actions that would degrade water quality in tributaries or the main pond. Such activities could include, but are not limited to, nonpoint discharges, inputs of dissolved

solids or contaminants, erosion, and sedimentation. These activities could eliminate or greatly reduce the habitat necessary for the conservation of magnificent ramshorn.

## **Exemptions**

### *Application of Section 4(a)(3) of the Act*

Section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) provides that the Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense (DoD), or designated for its use, that are subject to an integrated natural resources management plan (INRMP) prepared under section 101 of the Sikes Act Improvement Act of 1997 (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation. There are no DoD lands with a completed INRMP within the critical habitat designation.

### **Consideration of Impacts under Section 4(b)(2) of the Act**

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat based on economic impacts, impacts on national security, or any other relevant impacts. Exclusion decisions are governed by the regulations at 50 CFR 424.19 and the Policy Regarding Implementation of Section 4(b)(2) of the Endangered Species Act (2016 Joint Policy; 81 FR 7226, February 11, 2016)—both of which were developed jointly with the National Marine Fisheries Service (NMFS). We also refer to a 2008 Department of the Interior Solicitor’s opinion entitled, “The Secretary’s Authority to Exclude Areas from a Critical Habitat Designation under Section 4(b)(2) of the Endangered Species Act” (M-37016). We explain each decision to exclude areas, as well as decisions not to exclude, to demonstrate that the decision is reasonable.

The Secretary may exclude any particular area if she determines that the benefits of such exclusion outweigh the benefits of including such area as part of the critical habitat, unless she determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making the determination to exclude a particular area, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor. In this final rule, we are not excluding any areas from critical habitat.

#### *Exclusions Based on Economic Impacts*

Section 4(b)(2) of the Act and its implementing regulations require that we consider the economic impact that may result from a designation of critical habitat. In order to consider economic impacts, we prepared an incremental effects memorandum (IEM) and screening analysis which, together with our narrative and interpretation of effects, we consider our economic analysis of the critical habitat designation and related factors (IEc 2020, entire). The analysis, dated February 25, 2020, was made available for public review from August 18 through October 17, 2022 (see 87 FR 50804, August 18, 2022). The economic analysis addressed probable economic impacts of critical habitat designation for magnificent ramshorn. Following the close of the comment period, we reviewed and evaluated all information submitted during the comment period that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. Additional information relevant to the probable incremental economic impacts of critical habitat designation for the magnificent ramshorn is summarized below and available in the screening analysis for the magnificent ramshorn (IEc 2020, entire), available at <https://www.regulations.gov>.

In our IEM, we attempted to clarify the distinction between the effects that will result from the species being listed and those attributable to the critical habitat

designation (i.e., difference between the jeopardy and adverse modification standards) for magnificent ramshorn's critical habitat. Because there are currently no occupied units, all consultations will be addressing adverse modification alone. At such time that the species is reintroduced, and as consultation under the jeopardy standard will focus on the effects of habitat degradation because threats to the species are habitat-related, critical habitat designation is not expected to result in additional consultation in occupied habitat. This evaluation of the incremental effects has been used as the basis to evaluate the probable incremental economic impacts of this critical habitat designation.

The critical habitat designation for magnificent ramshorn totals approximately 739 ac (299 ha), all of which are currently unoccupied by the species but are essential for the conservation of the species. In these unoccupied areas, any conservation efforts or associated probable impacts would be considered incremental effects attributed to the critical habitat designation. Within the unoccupied critical habitat, rarely are any actions expected to occur that will result in section 7 consultation or associated project modifications because both units are privately owned and subject to conservation easements. Therefore, future activities and associated economic impacts in critical habitat units are anticipated to be limited. Our analysis estimates that cost to private entities is expected to be relatively minor (administrative efforts will cost less than \$8,900 per year, and potential incremental project modifications may cost up to \$12,000 per year).

As discussed above, we considered the economic impacts of the critical habitat designation, and the Secretary is not exercising her discretion to exclude any areas from this designation of critical habitat for the magnificent ramshorn based on economic impacts.

#### *Exclusions Based on Other Relevant Impacts*

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security as discussed above. To

identify other relevant impacts that may affect the exclusion analysis, we consider a number of factors, including whether there are permitted conservation plans covering the species in the area such as HCPs, SHAs, or CCAAs, or whether there are non-permitted conservation agreements and partnerships that would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at whether Tribal conservation plans or partnerships, Tribal resources, or government-to-government relationships of the United States with Tribal entities may be affected by the designation. We also consider any State, local, social, or other impacts that might occur because of the designation.

We are not excluding any areas from critical habitat. In preparing this final rule, we have determined that there are currently no HCPs or other management plans for magnificent ramshorn, and the designation does not include any Tribal lands or trust resources. We anticipate no impact on Tribal lands, partnerships, or HCPs from this critical habitat designation. We did not receive any additional information during the public comment period for the August 18, 2022, proposed rule regarding other relevant impacts to support excluding any specific areas from the critical habitat designation under the authority of section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19, as well as the 2016 Joint Policy. Accordingly, the Secretary is not exercising her discretion to exclude any areas from this designation based on other relevant impacts.

### **Required Determinations**

#### *Regulatory Planning and Review (Executive Orders 12866, 13563, and 14094)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. OIRA has determined that this rule is not significant.

Executive Order 14094 reaffirms the principles of E.O. 12866 and E.O. 13563 and states that regulatory analysis should facilitate agency efforts to develop regulations that serve the public interest, advance statutory objectives, and are consistent with E.O.

12866, E.O. 13563, and the Presidential Memorandum of January 20, 2021 (Modernizing Regulatory Review). Regulatory analysis, as practicable and appropriate, shall recognize distributive impacts and equity, to the extent permitted by law. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

*Regulatory Flexibility Act (5 U.S.C. 601 et seq.)*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 et seq.), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C. 801 et seq.), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in

annual business, and agricultural businesses with annual sales less than \$750,000. To determine if potential economic impacts to these small entities are significant, we considered the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Under the RFA, as amended, and following recent court decisions, Federal agencies are required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself; in other words, the RFA does not require agencies to evaluate the potential impacts to indirectly regulated entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried out by the agency is not likely to destroy or adversely modify critical habitat. Therefore, under section 7, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Consequently, it is our position that only Federal action agencies will be directly regulated by this designation. There is no requirement under the RFA to evaluate the potential impacts to entities not directly regulated. Moreover, Federal agencies are not small entities. Therefore, because no small entities will be directly regulated by this rulemaking, we certify that this critical habitat designation will not have a significant economic impact on a substantial number of small entities.

During the development of this final rule, we reviewed and evaluated all information submitted during the comment period on the August 18, 2022, proposed rule (87 FR 50804) that may pertain to our consideration of the probable incremental economic impacts of this critical habitat designation. Based on this information, we

affirm our certification that this critical habitat designation will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

*Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. In our economic analysis, we did not find that this critical habitat designation will significantly affect energy supplies, distribution, or use because the designated ponds are privately owned. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

*Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.), we make the following finding:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or Tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)–(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or Tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and Tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or Tribal governments “lack authority” to adjust

accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions are not likely to destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because only private lands are involved with the designation. Therefore, a Small Government Agency Plan is not required.

#### *Takings—Executive Order 12630*

In accordance with E.O. 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential

takings implications of designating critical habitat for magnificent ramshorn in a takings implications assessment. The Act does not authorize us to regulate private actions on private lands or confiscate private property as a result of critical habitat designation. Designation of critical habitat does not affect land ownership, or establish any closures, or restrictions on use of or access to the designated areas. Furthermore, the designation of critical habitat does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. However, Federal agencies are prohibited from carrying out, funding, or authorizing actions that would destroy or adversely modify critical habitat. A takings implications assessment has been completed and concludes that this designation of critical habitat for the magnificent ramshorn does not pose significant takings implications for lands within or affected by the designation.

*Federalism—Executive Order 13132*

In accordance with E.O. 13132 (Federalism), this rule does not have significant Federalism effects. A federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of this critical habitat designation with, appropriate State resource agencies. From a federalism perspective, the designation of critical habitat directly affects only the responsibilities of Federal agencies. The Act imposes no other duties with respect to critical habitat, either for States and local governments, or for anyone else. As a result, this final rule does not have substantial direct effects either on the States, or on the relationship between the national government and the States, or on the distribution of powers and responsibilities among the various levels of government. The designation may have some benefit to these governments because the areas that contain the features essential to the conservation of the species are

more clearly defined, and the physical or biological features of the habitat necessary for the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist State and local governments in long-range planning because they no longer have to wait for case-by-case section 7 consultations to occur.

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) of the Act will be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform—Executive Order 12988*

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule will not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, this final rule identifies the physical or biological features essential to the conservation of the species. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

*Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)*

This rule does not contain information collection requirements, and a submission to the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) is not required. We may not conduct or sponsor and you

are not required to respond to a collection of information unless it displays a currently valid OMB control number.

*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. In a line of cases starting with *Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), the courts have upheld this position.

*Government-to-Government Relationship with Tribes*

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

**References Cited**

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

**Authors**

The primary authors of this final rule are the staff members of the Fish and Wildlife Service’s Species Assessment Team and the Raleigh 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 “Ramshorn, magnificent” in alphabetical order under SNAILS to read as follows:

**§ 17.11 Endangered and threatened wildlife.**

\* \* \* \* \*

(h) \* \* \*

| Common name | Scientific name | Where listed | Status | Listing citations and applicable rules |
|-------------|-----------------|--------------|--------|--|
| * * * * *   |                 |              |        |  |
| SNAILS      |                 |              |        |  |

|                          |                                  |                   |   |   |
|--------------------------|----------------------------------|-------------------|---|---|
| * * * * *                |                                  |                   |   |   |
| Ramshorn,<br>magnificent | <i>Planorbella<br/>magnifica</i> | Wherever<br>found | E | 88 [INSERT <i>FEDERAL REGISTER</i> PAGE WHERE DOCUMENT BEGINS], [INSERT DATE OF PUBLICATION IN THE <i>FEDERAL REGISTER</i> ];<br>50 CFR 17.95(f). <sup>CH</sup> |
| * * * * *                |                                  |                   |   |   |

3. In § 17.95, amend paragraph (f) by adding an entry for “Magnificent Ramshorn (*Planorbella magnifica*)” immediately following the entry for “Rough Hornsnail (*Pleurocera foremani*)” to read as follows:

**§ 17.95 Critical habitat—fish and wildlife.**

\* \* \* \* \*

(f) *Clams and Snails.*

\* \* \* \* \*

Magnificent Ramshorn (*Planorbella magnifica*)

(1) Critical habitat units are depicted for Brunswick County, North Carolina, on the map in this entry.

(2) Critical habitat does not include humanmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(3) Data layers defining map units were created in a Geographic Information System (GIS), and critical habitat units were mapped using the U.S. Geological Survey’s National Hydrography Dataset. The map in this entry, as modified by any accompanying regulatory text, establishes the boundaries of the critical habitat designation. The coordinates or plot points or both on which the map is based are available to the public at <https://www.regulations.gov> at Docket No. FWS-R4-ES-2022-0070, and at the field

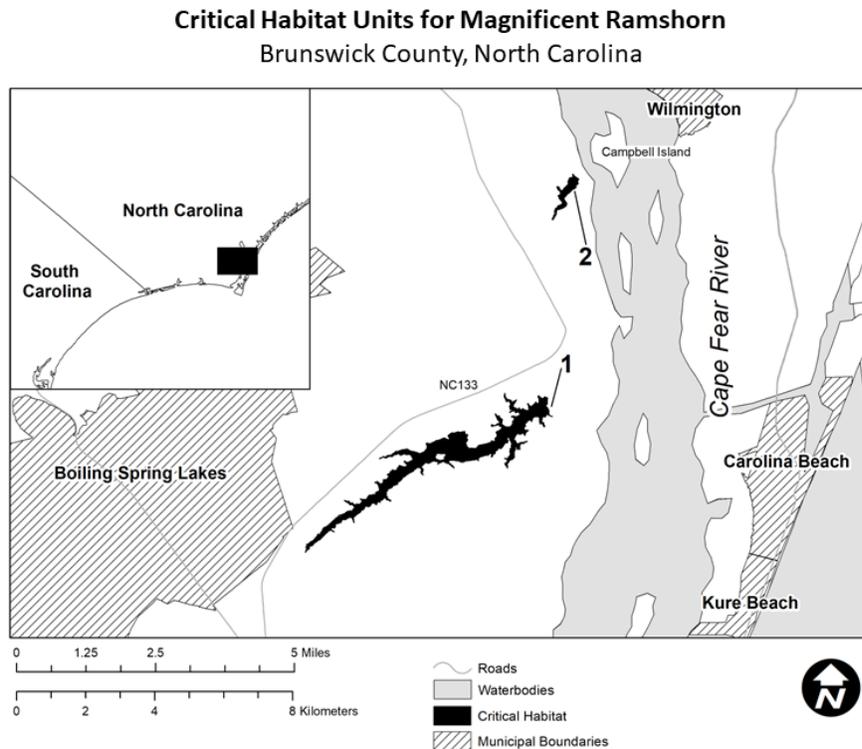
office responsible for this designation. You may obtain field office location information by contacting one of the Service regional offices, the addresses of which are listed at 50 CFR 2.2.

(4) Unit 1: Orton Pond; Brunswick County, North Carolina.

(i) Unit 1 consists of 688 acres (ac) (278 hectares (ha)) in an impounded section of Orton Creek in Brunswick County, North Carolina, approximately ½ mile upstream from the confluence with the Cape Fear River and east of the town of Boiling Spring Lakes. Unit 1 is composed of lands in private ownership.

(ii) Map of Units 1 and 2 follows:

Figure 1 for Magnificent Ramshorn (*Planorbella magnifica*) paragraph (4)(ii)



(5) Unit 2: Big Pond (Pleasant Oaks Pond); Brunswick County, North Carolina.

(i) Unit 2 consists of 51 ac (21 ha) in an impounded section of Sand Hill Creek in Brunswick County, North Carolina, near the confluence with the Cape Fear River across from Campbell Island. Unit 2 is composed of lands in private ownership.

(ii) Map of Unit 2 is provided at paragraph (4)(ii) of this entry.

\* \* \* \* \*

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**Wendi Weber,**  
*Acting Director,*  
*U.S. Fish and Wildlife Service.*

[FR Doc. 2023-17670 Filed: 8/17/2023 8:45 am; Publication Date: 8/18/2023]