Recovery Plan for the Endangered Rough Hornsnail (*Pleurocera foremani*)
https://ecos.fws.gov/docs/recovery_plan/2014%2010%2031%20%20Three%20Mollusks%20final%20recovery%20plan.pdf

Original Approved: November 6, 2014
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Amendment 1

We have identified the best available information that indicates the need to amend recovery criteria for the rough hornsnail (*Pleurocera foremani*) since the recovery plan was completed. In this proposed modification, we synthesize the adequacy of the existing recovery criteria, show amended recovery criteria, and the rationale supporting the proposed recovery plan modification. The proposed modification is shown as an addendum that supplements the recovery plan, superseding only Part II, pages 26-27, of the recovery plan. Recovery plans are a non-regulatory document that provides guidance on how best to help recover species.

For
U.S. Fish and Wildlife Service
Atlanta, Georgia

Approved: Franklin D. Arnold III
Acting **Regional Director, U.S. Fish and Wildlife Service**

Date: 9/26/19

METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

The proposed amendments to the recovery criteria were developed using the most recent and best available information for the species. The lead biologist gathered the information and notified conservation partners of the Service's process to complete this amendment.

ADEQUACY OF RECOVERY CRITERIA

Section 4(f)(1)(B)(ii) of the Endangered Species Act (Act) requires that each recovery plan

shall incorporate, to the maximum extent practicable, "objective, measurable criteria which, when met, would result in a determination...that the species be removed from the list." Legal challenges to recovery plans (see Fund for Animals v. Babbitt, 903 F. Supp. 96 (D.D.C. 1995)) and a Government Accountability Audit (GAO 2006) also have affirmed the need to frame recovery criteria in terms of threats assessed under the five listing factors.

Existing Recovery Criteria

The current recovery plan (*https://ecos.fws.gov/docs/recovery_plan/2014 10 31 Three Mollusks final recovery plan.pdf*) (USFWS 2014) does not provide recovery criteria, but it does outline recovery objectives, see page 26-27.

Synthesis

The rough hornsnail was listed as endangered on November 2, 2010 (75 FR 67512). Critical habitat was designated at the time of listing and includes two units: the Coosa River below Jordan Dam, Elmore County, Alabama and Yellowleaf Creek from the confluence with Morgan Creek downstream to the Alabama Highway 25 bridge crossing, Shelby County, Alabama.

Endemic to the Coosa River system in Alabama, it was known to occur from only two locations at the time of listing: lower Yellowleaf Creek in Shelby County, Alabama; and the lower Coosa River below Wetumpka Shoals in Elmore County, Alabama. While the species still occurs at these two locations, an additional population has been discovered since listing in Mitchell Reservoir, Coosa and Chilton counties, Alabama (Garner 2013, Grunewald *et al.* 2015, Johnson 2018, C. Fitch pers. comm. 2018). A resilient population for the rough hornsnail is defined as maintaining a stable or increasing population trend, evidenced by natural recruitment and multiple age classes.

The rough hornsnail is currently affected by present or threatened destruction, modification or curtailment of the species habitat or range (Factor A) and other natural or manmade factors (Factor E; *e.g.,* water quality). The rough hornsnail persists in reservoirs but these impoundments have left fragmented and isolated habitats that may be more susceptible to runoff or discharges and the species is presumed to have low levels of genetic exchange.

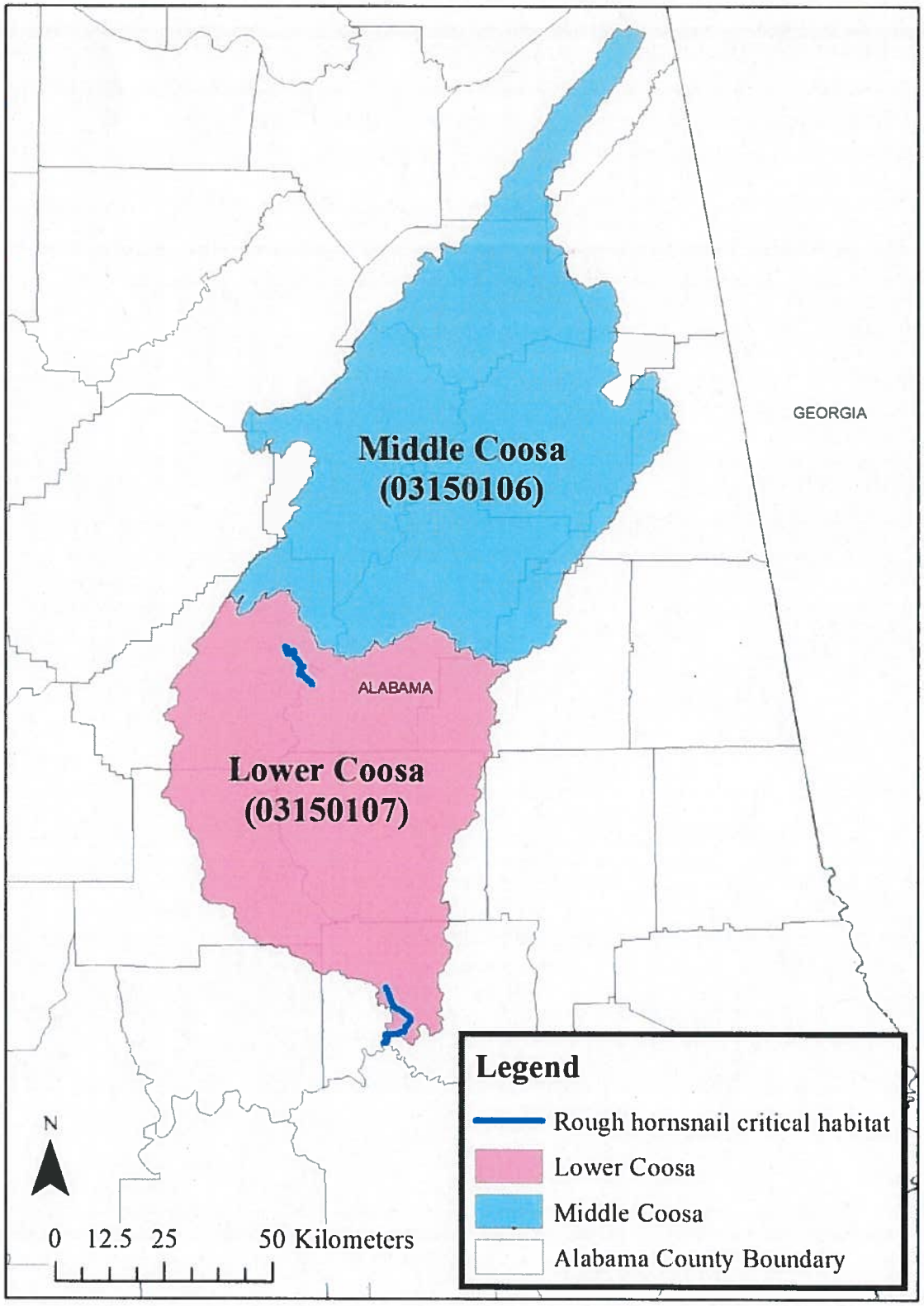

Figure 1. Critical habitat units for the rough hornsnail and HUC8 watersheds in the Coosa River basin.

AMENDED RECOVERY CRITERIA

Recovery criteria serve as objective, measurable guidelines to assist in determining when an endangered species has recovered to the point that protections afforded by the Act are no longer necessary and the rough hornsnail may be delisted. Delisting is the removal of a species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Downlisting is the reclassification of a species from an endangered species to a threatened species. The term "endangered species" means any species (species, sub-species, or DPS) which is in danger of extinction throughout all or a significant portion of its range. The term "threatened species" means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Revisions to the Lists, including delisting or downlisting a species, must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is an endangered species or threatened species (or not) because of threats to the species. Section 4(b) of the Act requires that the determination be made "solely on the basis of the best scientific and commercial data available." Thus, while recovery plans provide important guidance to the Service, States, and other partners on methods of minimizing threats to listed species and measurable objectives against which to measure progress towards recovery, they are guidance and not regulatory documents.

Recovery criteria should help indicate when we would anticipate that an analysis of the species' status under section 4(a)(1) would result in a determination that the species is no longer an endangered species or threatened species. A decision to revise the status of or remove a species from the Federal Lists of Endangered and Threatened Wildlife and Plants, however, is ultimately based on an analysis of the best scientific and commercial data then available, regardless of whether that information differs from the recovery plan, which triggers rulemaking. When changing the status of a species, we first propose the action in the *Federal Register* to seek public comment and peer review, followed by a final decision announced in the *Federal Register*.

Amended Recovery Criteria

We are providing recovery criteria for the rough hornsnail recovery plan (USFWS 2014), which will supersede (replace) the existing downlisting criteria (refer to pages 1-2 above or pages 26-27 of the species Recovery Plan). The below recovery criteria describes a recovered species, or a species that should be considered for removal from the Federal Lists of Endangered and Threatened Wildlife (50 CFR 17).

1. At least four (4) populations exhibit a stable or increasing trend, natural recruitment, and multiple age classes (addresses Factors A and E).

2. At least one (1) population (as defined in Criteria 1) must occur within the Lower Coosa River (HUC8: 03150107) and one (1) population (as defined in Criteria 1) must occur within the Middle Coosa River (HUC8: 03150106) (addresses Factors A and E).

3. Threats have been addressed and/or managed to the extent that the species will remain viable into the foreseeable future (addresses factors A, D, and E).

a. A long-term agreement with hydropower operators is established that provides assurances dams will be operated such that water quality and flow regimes provide suitable habitat in areas influenced by dam operations (addresses factors A, D, and E).

Justification for Amended Recovery Criteria

Criterion 1: Populations that exhibit a stable or increasing trend, natural recruitment, and multiple age classes demonstrate that the population is secure and will be resilient to stochastic events (Factor A). For the rough hornsnail it is believed that four populations exhibiting these traits are necessary to provide sufficient redundancy to ensure the species will no longer require protection under the Act.

Criterion 2: To ensure that the species will not become threatened with extinction in the future a sufficient number of populations should be distributed throughout its historical range, therefore we believe it is necessary for the species to occur in both representative units provided in Criterion 2. Expanding the species' range into historically occupied river reaches will increase its resiliency, representation, and redundancy, and reduce threats due to curtailment of range (Factor A) and stochastic events (Factor E).

Criterion 3: Abatement of the threats to the rough hornsnail will allow populations to become stable and contribute to the viability of the species. The rough hornsnail persists in reservoirs but these impoundments have left habitats fragmented and isolated. Active management of the Coosa dams with assurances for suitable habitat and flows will contribute to the conservation of the species into the foreseeable future.

Rationale for Amended Recovery Criteria

The proposed recovery criteria reflect the best available and most up-to-date information on the

rough hornsnail. The Service adopted analysis of Resiliency, Redundancy, and Representation (3Rs) as a means to determine species viability in regards to listing and other regulatory decisions. The amended criteria follow a similar analysis process. All criteria must address and meet the species needs to accomplish the standards under the 3Rs.

Resiliency (as defined in Smith *et al.*, 2018) is met through Criteria 1 listed above. The Service believes the establishment of a stable or increasing trend in population numbers, and determining successful recruitment through multiple age classes, that the species will withstand any stochastic disturbance that may occur into the future.

Redundancy (as defined in Smith *et al.*, 2018) is addressed in Criteria 1 and 2. The requirement of four resilient populations across the range with one of those in each representative unit (Figure 1) will provide the distribution necessary to avoid extinction following any catastrophic event. These variances will protect populations from catastrophic events.

Representation (as defined in Smith *et al.*, 2018) will be accomplished when the criteria listed above is accomplished. This should allow for preservation of genetic differences into the future, distribution across multiple natural variances in habitat types, and allow for future adaptations to changing environmental conditions.

Specifically, since the rough hornsnail's range is impacted by impoundments and their activities, the establishment of a minimum of four self-sustaining populations in the Coosa River drainage area is a crucial step towards the recovery of this species. The only way to ensure that the species will not become threatened with extinction in the foreseeable future is to create a sufficient number of populations distributed throughout its historical range. This provides that the loss of any one population due to unforeseen circumstances does not threaten the continued existence of the species. For this reason, we believe that a robust and well developed propagation and reintroduction strategy is necessary for delisting this species. Additionally, the development of a successful reintroduction strategy will demonstrate that future threats are likely to be addressed through active management of the species without resorting to future re-listing of the species, ensuring it no longer meet the definition of an endangered species.

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