Recovery Plan for Interrupted Rocksnail (*Leptoxis foremani*)
U.S. Fish and Wildlife Service. 2014. Recovery Plan for Georgia Pigtoe Mussel (*Pleurobema hanleyianum*), Interrupted Rocksnail (*Leptoxis foremani*), and Rough Hornsnail (*Pleurocera foremani*). Atlanta, Georgia.

Original Approved: 2014
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DRAFT AMENDMENT 1

We have identified best available information that indicates the need to amend recovery criteria for the interrupted rocksnail (*Leptoxis 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, page 26, of the recovery plan. Recovery plans are a non-regulatory document that provide guidance on how best to help recover species.

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

September 2018
Insert Signature Lines (for final modification)

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. Ultimately, biologists and managers in the Alabama Ecological Services Field Office developed the amended recovery criteria for the interrupted rocksnail utilizing the best available information.

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 factors.

Recovery Criteria

The current recovery plan (*https://ecos.fws.gov/docs/recovery_plan/2014 10 31 Three Mollusks final recovery plan.pdf*) (USFWS 2014) only provides downlisting criteria for the interrupted rocksnail, see page 26.

Synthesis

The interrupted rocksnail was federally listed as endangered on November 2, 2010 (USFWS 2010, *see* 75 FR 67512). This species is endemic to the Coosa River drainage of the Mobile River Basin in Alabama and Georgia. Critical habitat was designated concurrently at the time of listing. Currently, the interrupted rocksnail is only found in a short reach (12 km (7.5 miles)) of the Oostanaula River, in Georgia. A resilient population for the interrupted rocksnail is defined as maintaining a stable or increasing population trend, as evidenced by natural recruitment and multiple age classes. A test population was reintroduced downstream of Jordan Dam, in the Coosa River in 2003, but was unsuccessful.

The interrupted rocksnail is currently affected by present or threatened destruction, modification or curtailment of the species habitat or range (Factor A), predation (Factor C), and other natural or manmade factors (Factor E; *e.g.,* water quality). Since the species was listed, the habitat (defined as bedrock, boulders, cobbles, and gravel in slowly moving water, USFWS 2014) and water quality for the interrupted rocksnail has not improved due to existing hydropower dams on the Coosa River. These impoundments have left fragmented and isolated habitats that may be more susceptible to runoff or dam discharges. Test reintroductions of the interrupted rocksnail in Alabama have not proven successful to date, possibly due to low fecundity, predation by freshwater drums (*Aplodinotus grunniens*), and the overall lack of suitable habitat. The Weiss Bypass, which is a 21-mile (34 km) bypass channel on the Coosa River created by the diversion of flows to the Weiss Dam powerhouse, has been identified as possibly having suitable habitat for the establishment of a reintroduced population; however, due to sediment movement, unstable flows, and temperature fluctuations, additional monitoring is needed before attempting to establish a population at this location (P. Johnson, pers. comm. 2018). The Service and others will continue working with the Alabama Power Company (APC) to reintroduce, protect, and manage the species and its habitat in the Coosa River.

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

1. The existing population in the Oostanaula River in Georgia maintains a stable or increasing trend, evidenced by natural recruitment and multiple age classes (addresses Factors A and E).

2. A minimum of five (5) new populations in the Coosa River drainage exhibit a stable or increasing trend, evidenced by natural recruitment and multiple age classes (addresses Factors A, C, and E).

3. A long-term agreement with hydropower operators is established that provides assurances that the flows in the Coosa and Oostanaula rivers will be operated such that water quality and flow regimes provide suitable habitat for the new populations within Federal Energy Regulatory Commission boundaries in the Coosa River drainage area (addresses Factor A).

Rationale for Amended Recovery Criteria

The proposed recovery criteria reflect the best available and most up-to-date information on the interrupted rocksnail. Since there are currently no populations of this species located in Alabama and only one known population in the Oostanaula River in Georgia, the establishment of a minimum of five (5) self-sustaining populations in the Coosa River drainage area (including

maintaining stability in the Georgia population) is a crucial step towards the recovery of this species. The largest threat this species faces in Alabama is water quality and flow due to the hydropower dams located throughout the Coosa River. APC has indicated that they are willing to implement water quality monitoring and a new flow regime at the Weiss Bypass in order to restore and enhance habitat to support reintroductions. As with any reintroduction plan, there are some uncertainties on how the species will respond, as well as unforeseen circumstances that may arise (*e.g.*, a new threat).

Even though the biggest threat facing the reintroduction of the interrupted rocksnail is related to the hydropower dams, the presence of freshwater drum, a species that feeds on mollusks and snails, may also be a threat. At present, there are no plans to manage freshwater drum; therefore, reintroduced populations should consist of enough members, across a range of age classes, to ensure a successful establishment.

LITERATURE CITED

USFWS (U.S. Fish and Wildlife Service). 2010. Endangered and threatened wildlife and plants; Determination of Endangered Status for the Georgia Pigtoe Mussel, Interrupted Rocksnail, and Rough Hornsnail and Designation of Critical Habitat. Federal Register 75 FR 67512.

USFWS. 2014. Recovery Plan for Georgia Pigtoe Mussel (*Pleurobema hanleyianum*), Interrupted Rocksnail (*Leptoxis foremani*), and Rough Hornsnail (*Pleurocera foremani*). Atlanta, Georgia. 55 pp. *https://ecos.fws.gov/docs/recovery_plan/2014 10 31 Three Mollusks final recovery plan.pdf*

Other Information Cited

Johnson, P. 2018. Email to Jeff Powell from Paul Johnson, Program Supervisor, Alabama Aquatic Biodiversity Center. August 31, 2018.