Recovery Plan revision for the threatened Finelined Pocketbook (*Hamiota altilis*)
https://ecos.fws.gov/docs/recovery_plan/001117.pdf

Original Approved: November 17, 2000
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We have identified the need to amend recovery criteria for the finelined pocketbook (*Hamiota altilis*) since the recovery plan was completed. This proposed modification will utilize the best available information and be published as an addendum that supplements the recovery plan by adding delisting criteria which were not developed at the time the initial recovery plan was completed. The addendum will supplement the Recovery Objective and Criteria section of the *Recovery Plan for Mobile River Basin Aquatic Ecosystem* (USFWS 2000, page 54). Recovery plans are a non-regulatory document that provide guidance on how best to help recover species.

For
U.S. Fish and Wildlife Service
Region 4
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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 finelined pocketbook.

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.

Recovery Criteria

The current recovery plan (**https://ecos.fws.gov/docs/recovery_plan/001117.pdf**) (USFWS 2000) does not provide recovery criteria, but it does outline recovery objectives, see page 54.

Synthesis

The finelined pocketbook was federally listed as threatened in 1993 (58 FR 14330). Currently, the species is threatened by habitat modification, sedimentation, degradation of water quality, impoundment by dams, operation of lock and dams, redirection of flow (Factor A); lack of adequate enforcement of existing Federal or State regulations prohibiting take (Factor D); and fragmentation of populations leading to genetic diversity loss (Factor E).

The finelined pocketbook continues to survive in the following sub-basins in the Mobile River Basin: Cahaba River (Alabama), Coosa River (Alabama, Georgia, and Tennessee), and Tallapoosa River (Alabama and Georgia). The species occupies the mainstem and multiple tributaries in each of these sub-basins, although populations remain generally small and fragmented (MRBMRC 2010). For more specific location information refer to the most recent 5-year review (ECOS https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=F02X).

The finelined pocketbook has been successfully reintroduced in the Little River, Cherokee County, Alabama, by the Alabama Department of Conservation and Natural Resources, Alabama Aquatic Biodiversity Center (AABC) (Johnson 2012, Johnson 2018). In 2012 and 2018, a total of 377 finelined pocketbook mussels from Shoal Creek (Coosa basin) progeny were released into Little River. These were monitored in July 2013, July 2015, August 2016, and in September 2018 and were found to be persisting at the site (Johnson 2018, P. Johnson pers. comm. 2018). Finelined pocketbook mussels from Cahaba River stock were also cultured in 2014, while a small number of these animals remain in pond culture at AABC, no stockings of these have taken place as of 2018 (Johnson 2018).

The finelined pocketbook remains threatened by extreme curtailment and fragmentation of its range, therefore habitat quality and many of the factors identified at the time of listing still threaten the species. Individual populations, especially those with low numbers of individuals, still remain vulnerable to stochastic threats that may reduce resiliency below a threshold where the population can recover. As such, we propose the following recovery criteria developed to ensure that finelined pocketbook has adequate resiliency, representation, and redundancy so that stochastic losses of individual populations no longer threaten the species with extinction.

AMENDED RECOVERY CRITERIA

Recovery criteria serve as objective, measurable guidelines to assist in determining when an endangered species has recovered to the point that it may be delisted and the protections afforded by the Act are no longer necessary. Delisting is the removal of a species from the Federal Lists of Endangered and Threatened Wildlife and Plants. 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. 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*.

Herein, we provide recovery criteria for the recovery plan (USFWS 2000) as the plan did not include measurable criteria at the time of publication.

Amended Recovery Criteria

We are providing recovery criteria for the finelined pocketbook recovery plan (USFWS 2000). 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 and Plants (50 CFR 17).

1) At least ten (10) populations exhibit a stable or increasing trend, evidenced by natural recruitment, and multiple age classes.

2) At least two (2) populations (as defined in Criteria 1) occupies each of the presently occupied sub-basins (Coosa, Cahaba, and Tallapoosa), and populations (as defined in Criteria 1) occupy both mainstem and tributary systems.

3) Threats have been addressed and/or managed to the extent that the species will remain viable into the foreseeable future.

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 finelined pocketbook it is believed that 10 populations exhibiting these traits are necessary to provide sufficient redundancy to ensure the species will no longer require protection under the Act.

Criterion 2: Sufficient redundancy and representation is necessary 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 Coosa, Cahaba, and Tallapoosa sub-basins as described in Criterion 2. Expanding the species' range into historically occupied river reaches, and in a variety of stream sizes, 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 finelined pocketbook will allow populations to become stable and contribute to the viability of the species (Factor A). The finelined pocketbook is only known to persist in free-flowing streams. Eliminating significant sources of sedimentation, avoiding channelization and further dam construction, and adhering to good land management practices that minimize non-point source pollution in these sub-basins, will contribute to the viability of the species into the foreseeable future.

Rationale for Recovery Criteria

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 that with data reflecting a robust population that demonstrates a stable or increasing trend in population numbers, and by demonstrating successful recruitment through multiple age classes, the finelined pocketbook 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 3. The requirement of 10 resilient populations across three occupied sub-basins, as well as, in multiple stream orders will provide the distribution necessary to avoid extinction following any catastrophic event. Each of the three sub-basins possess unique land characteristics, annual climate variations, and stream morphology. These variances will protect populations from catastrophic events.

Representation (as defined in Smith *et al*. 2018) will be accomplished when all three criteria listed above are accomplished. The species will be distributed across multiple states, physiographic provinces, and stream orders. This should allow for preservation of genetic exchange into the future between two or more populations, distribution across multiple natural variances in habitat types, and allow for future adaptations to changing environmental conditions.

Specifically, the proposed delisting recovery criteria reflect the best available and most up-to-date information for the finelined pocketbook. The stability of 10 populations reduces the probability of extinction. Due to the large number of threats to each population that cannot be mitigated, 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 historic range, such that the loss of any one population due to unforeseen circumstances does not limit 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. We

suggest the maintenance and improvement of the existing populations is continued in an effort to establish resiliency. This, along with the establishment of additional populations, will demonstrate that the combination of threats acknowledged in the initial listing are reduced to a degree that is manageable, and that resilient populations can be sustained despite remaining threats.

LITERATURE CITED

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