

90-DAY FINDING PETITION REVIEW FORM

DELISTING, DOWNLISTING, REVISION TO LISTED ENTITY

Federal Docket No. FWS-R4-ES-2021-0064

90-DAY FINDING ON A PETITION TO DOWNLIST THE FLORIDA TORREYA (*Torreya taxifolia*) FROM AN ENDANGERED TO A THREATENED SPECIES UNDER THE ENDANGERED SPECIES ACT

Petitioned action being requested:

- Downlist from an endangered species to a threatened species
- Remove from the List of Endangered and Threatened Wildlife (or Plants) (i.e., “Delist”)
 - The species is extinct
 - The species does not meet the definition of an endangered species or a threatened species
 - The listed entity does not meet the definition of a species
- Revise listed entity (split listing, apply different statuses to each entity; revise boundaries of DPS; conform listing to new taxonomic info, etc.)

Petitioned entity:

- Species
- Subspecies
- DPS of vertebrates
- Subset of listed entity (species, subspecies, DPS, etc)

Background

Section 4(b)(3)(A) of the Endangered Species Act (Act) requires that we make a finding on whether a petition to list, delist, uplist (reclassify the species from a threatened species to an endangered species), or downlist (reclassify the species from an endangered species to a threatened species) a species presents substantial scientific or commercial information indicating that the petitioned action may be warranted. Our standard for substantial scientific or commercial information within the Code of Federal Regulations (CFR) with regard to a 90-day petition finding is “that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted” (50 CFR 424.14(h)(i)).

Petition History

On December 12, 2019, we received a petition dated September 9, 2018, from Connie Barlow, requesting that the Florida torreya (*Torreya taxifolia*) be downlisted to threatened because the species does not meet the definition of endangered under the Act. The petition clearly identified itself as such and included the requisite identification information for the petitioner, required at 50 CFR 424.14(c). This finding addresses the petition.

Evaluation of a Petition to Downlist the Florida Torrey Under the Act

Species and Range

Does the petition identify an entity for downlisting that is currently listed under the Act (i.e., the petitioned entity is identical to the entity currently listed)?

- Yes
 No

Florida torrey (*Torreya taxifolia*) is a conifer tree endemic of ravine slopes on the eastern bank of the Apalachicola River in northern Florida and in Georgia.

The historical distribution of *T. taxifolia* included the ravine slopes of the Apalachicola River in Gadsden, Jackson, and Liberty Counties, Florida, and Decatur County, Georgia. The current range of *T. taxifolia* has declined to Gadsden and Liberty Counties, Florida, and Decatur County, Georgia (Schwartz et al. 2000a).

Does the petition identify a **portion** of a listed entity that may be eligible for downlisting (i.e., is the petitioned entity, or resulting new entity(ies), a species, subspecies or potential DPS)?

- Yes
 No

Statutory and Regulatory Standards for Evaluation of the Petition

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 is an “endangered species” or a “threatened species.” 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 at the petition review stage, 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.

In reviewing the petition, we use the term “threat” to refer in general to actions or conditions that *may* be, 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 may meet the statutory definition of an “endangered species” or a “threatened species.” In determining whether a species may meet 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. For currently listed species, we use the same evaluations and considerations in determining whether a species continues to meet either definition and should remain listed or should be delisted, downlisted, or uplisted.

Below we present the information from the petition, our analysis of that information, and our conclusion and petition finding relative to our substantial information standard which is “that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted.”

Information in the Petition

When evaluating a petition at the 90-day finding stage, we evaluate the information in the petition and use any readily available information (e.g., in our files or published literature that we are aware of) to verify the credibility of the information presented in the petition. At this stage we do not conduct research or solicit additional information to complete the evaluation of the petition. Our implementing regulations at 50 CFR 424.14(h)(i) state conclusions drawn in the petition without the support of credible scientific or commercial information will not be considered “substantial information.” Therefore, below we identify those claims in the petition that are supported by credible scientific or commercial information and those claims that are not supported by credible scientific or commercial information. Any claims that are not supported by credible scientific or commercial information will not be further evaluated.

Petitioner claims of threats under Factor D will not be included in this table because claims under Factor D are considered in the context of other threats, rather than in isolation. We will include consideration of existing regulatory mechanisms or conservation efforts identified in the petition or from other readily available information that may ameliorate the threats in our evaluation of the credible information presented in the petition below in “Evaluation of Information”.

4(a)(1) Factor	Threat, Activity or Claim	Is the Claim in the Petition Supported by Credible Scientific and Commercial Information? If No, Explain. If Yes, Include Citations to the Credible Information.	For the Claims That Are Supported by Credible Information: Do the Claims and the Supporting Information Indicate that the Threat Previously Identified as Negatively Affecting Individuals has been Reduced or Removed?
A	Habitat	<p>No.</p> <p>The petition does not present any information to support the claim that the destruction, modification, or curtailment of Florida torreya’s habitat or range has been ameliorated.</p>	NA
A	Habitat	<p>Yes.</p> <p>The petition presents an argument that the species is a “glacial relic” and that the extent of the species’ current range is a result of glacial retreat that occurred during the Pleistocene geological epoch.</p> <p>The petition references the species’ 1984 Final Listing Rule as support for the status of the species as a glacial relic (49 FR 2783).</p> <p>The petition includes a quote from the species’ 1986 Recovery Plan that suggests multiple species from the <i>Torreya</i> genus may have had a wide distribution during the “Tertiary” period (USFWS 1986).</p> <p>The species’ 2010 5-year review was referenced to support the claim that the species’ range previously extended as far north as North Carolina (USFWS 2010).</p> <p>Cowles (1905) was cited to corroborate the claim that Florida torreya is a glacial relic.</p>	<p>No.</p> <p>The 1984 Final Listing Rule for the Florida torreya described the range of the species as the ravines along the eastern side of the Apalachicola River from Lake Seminole in Georgia to Bristol, Florida, and on the margin of Dog Pond (Florida) west of the Apalachicola River. The Service’s 2010 5-year review further specified the historical range of the species as the ravine slopes of the Apalachicola River in Gadson, Jackson, and Liberty Counties, Florida, and Decatur County, Georgia (USFWS 2010).</p> <p>The petition has not provided substantial evidence that would lead a reasonable person to believe that the native range of <i>T. taxifolia</i> is larger than described at the time the species was listed. We acknowledge that the 1986 species Recovery Plan and the Service’s 2010 5-year review speculate that the geographical range of <i>T. taxifolia</i>, or presumably an ancestor species (i.e. <i>T. antiqua</i>), may have, in past geological times, included localities as far north as North Carolina. However, no native trees have been documented outside of the species’ defined current or historical range, and both the Service’s 2010 5-year review and the 1986 Recovery Plan confirm that all known native populations occur within four counties in Florida and Georgia.</p> <p>Cowles (1905) notes that presumably Florida torreya “failed to follow up the last retreat of the Pleistocene ice” (p. 599). However, the loss of an ancestral species’ habitat from glaciation is out of the temporal scope of the analyzed historical or current threats acting on the species and is not considered as a criterion that would influence a downlisting decision.</p>
C	Disease	<p>Yes.</p> <p>Information provided in the petition and the associated links to the Torreya Guardians (TG) website describe Florida torreya as having a decreased susceptibility to the novel pathogen, <i>Fusarium torreyae</i>, at northern outplantings</p>	<p>No.</p> <p>The petition claims that the pathogen, <i>Fusarium torreyae</i>, is only a serious threat to the species “in a climate zone as warm as Florida became by mid-20th-Century.” While some natural reproduction was noted at several northern localities,</p>

		<p>(http://www.torreyguardians.org/historic-groves.html, http://www.torreyguardians.org/biltmore.html, http://www.torreyguardians.org/highlands.html, http://www.torreyguardians.org/extinction.html).</p> <p>The descriptions, which include photos and written accounts of growth rate, reproductive status, and effects of disease, appear to be credible, and in some cases (i.e. Biltmore Gardens and Smithgall Woods) are corroborated by the species' most recent 5-year review (USFWS 2010).</p> <p>Sheffers et al. (2016) and associated link to the TG website are cited as examples of climate-induced stress to native populations that result in a diminished capacity to fight off disease (http://www.torreyguardians.org/extinction.html).</p>	<p>information cited in the petition confirmed pathogen infection in an outplanted population (http://www.torreyguardians.org/historic-groves.html, http://www.torreyguardians.org/biltmore.html, http://www.torreyguardians.org/highlands.html, http://www.torreyguardians.org/extinction.html).</p> <p>Additionally, references within the petition state that the effects of the pathogen at northern localities have not been adequately researched (Smith 2010), and that the translocation of infected trees to northern localities may risk exposing native populations to novel pathogens (Trulock 2012).</p> <p>Neither Sheffers et al. (2016) or the associated link to the TG website provide any specific information indicating that climate change has resulted in an increased threat of disease for Florida torreyia within its native range (http://www.torreyguardians.org/extinction.html).</p>
C	Disease	<p>No.</p> <p>It is the petitioner's opinion that genetic engineering of the Florida torreyia's genome is not a reasonable response to protect the species from the novel pathogen, <i>Fusarium torreyae</i>. However, the petitioner does not provide credible scientific or commercial information to support the claim that genetic engineering towards pathogen resistance will be an ineffective strategy to mitigate the effects of the disease.</p>	NA
E	Improvements in Propagation Practices	<p>Yes.</p> <p>The petition provides a link to TG website that documents findings and best propagation practices from various "free-plantings" performed by citizen groups (http://www.torreyguardians.org/freeplanting.html, http://www.torreyguardians.org/learnings.html, http://www.torreyguardians.org/propagate.html).</p>	<p>No.</p> <p>No specific information was provided in the petition to link the cited work to how the increase in the knowledge of natural history and best propagation practices has resulted in the reduction or removal of threats to Florida torreyia within its historical range.</p>
E	Documentation of Historical Groves	<p>Yes.</p> <p>The petition includes the localities and conditions of recent and historical outplantings by TG and various botanical gardens, and addresses the status of seed sources and seed distributions (Map A1, http://www.torreyguardians.org/historic-groves.html, http://www.torreyguardians.org/historic-list.pdf, http://www.torreyguardians.org/save.html#citizens, http://www.torreyguardians.org/tn-cumberland.html, http://www.torreyguardians.org/guardians.html#seeds).</p> <p>The petitioner references a self-authored chapter of the book <i>Gaia in Turmoil</i> (Crist 2010) as support for selecting planting locations within the Southern Appalachians.</p>	<p>No.</p> <p>The petition provides and cites credible information to corroborate the claim that recent and historical outplantings of Florida torreyia have been documented at localities outside of the native range of the species. The petition claims that the documentation of the species' ability to survive and reproduce in the Southern Appalachians could be considered the completion of Action Item 5 of the species 1986 Recovery Plan, which states the need to "establish experimental collections of torreyia outside of its native habitat." However, the petition further explains that the majority of the documented outplantings are not in locations that would "give rise to new and expanding</p>

		Petition states that the TG actions of documenting historical northern groves can be regarded as fulfillment of Action 5 of the 1986 Recovery Plan (USFWS 1986).	populations.” Ultimately, the relative reproductive success of the outplanted groves do not ameliorate the threats currently affecting the species in its native range (i.e. low population number, rarity of habitat, and disease, USFWS 2010)
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Evaluation of Information

In this section we evaluate conclusions from the petition that we found to be based on credible information. Those conclusions that we did not find to be based on credible information do not constitute substantial information, and therefore, will not be further evaluated. When evaluating a petition at the 90-day finding stage, we evaluate the information in the petition and use any readily available information (e.g., in our files or published literature that we are aware of) to verify the credibility of the information presented in the petition. Conclusions in the petition based on credible information are then evaluated to determine if there is substantial information presented indicating the petitioned action may be warranted. The substantial information standard is “that amount of information that would lead a reasonable person to believe that the measure proposed in the petition may be warranted.”

Below we discuss our evaluation of each of the claims found to be based *on credible information* from the petition and consider any regulatory mechanisms or conservation efforts that may ameliorate the threats to the species identified in the petition. When evaluating each of the factors in section 4(a)(1) of the Act, factor D is considered in light of the other factors, not independently. The discussion of the conclusions under each factor above included a summary of information provided in the petition and contained other readily available information regarding how activities identified in the petition negatively affect the status of the entity. Below, we evaluate claims based on credible information along with the extent to which existing regulatory mechanisms may ameliorate the threats such that the petitioned entity may or may not warrant delisting or downlisting.

Overall, the petition presented limited credible information to support the claim that threats have been reduced or are no longer present, or that any identified existing regulatory mechanisms or conservation efforts have ameliorated threats such that the species may no longer meet the definition of an endangered species. Many of the references cited in the petition were links to a website, *TorreyaGuardians.org*. In general, the website qualifies as “supporting materials” as defined in the regulations at 50 CFR 424.14(c)(6), which requires the petition to provide electronic or hard copies of supporting materials. However, this website is actively managed and updated, and a reviewer would not be able to identify what information was posted on the website at the time the petition was submitted and what was added subsequently. Additionally, the website itself contained multiple links to other websites, and it was not often clear what specific information the petitioner was citing to support their claims. Therefore, we considered links in the petition to the *Torreya Guardians* website to be supporting material for the petition if the link directed the reviewer to specific information relevant to a claim made in the petition. These references are included in the table, above. However, we did not consider the links to be supporting information if the information was not readily located (required clicking on multiple links or was not clear on the webpage what specific information the petitioner was referencing) or otherwise was not explicitly contained in the petition. This approach to assessing supporting information conforms with the regulations (50 CFR 424.14) to clarify that the Service will only evaluate those claims in

a petition for which the Service can readily locate the information cited in the petition. In the preamble to the petition regulations (September 27, 2016; 81 FR 66462), on page 66479 we state, “[T]he petition should itself present [the substantial] information. The Services need not resort to supplemental information to bolster, plug gaps in, or otherwise supplement a petition that is inadequate on its face.” Furthermore, on page 66476 we state the reviewer “should not have to search through reference material to locate specific information; the petition should provide clear, specific citations that allow the supporting information to be located readily.” Therefore, we assessed the extent to which each claim, explicitly contained in the petition and supported by materials that could be readily located, indicated that the threats currently impacting the Florida torreyea have been reduced or removed.

After considering the information contained in the petition and supporting information, we determined the petition did not present credible scientific and commercial information to support the claim that the destruction, modification, or curtailment of Florida torreyea’s habitat or range have been ameliorated (Factor A). Additionally, the petition has not provided substantial evidence that would lead a reasonable person to believe that the historical range of *T. taxifolia* is larger than described at the time the species was listed (Factor A). The petition cited our 1986 Recovery Plan and 2010 5-year review in support of the position that the historical range is larger than described at the time of listing. However, while we acknowledge that the 1986 Recovery Plan and the Service’s 2010 5-year review speculate that the geographical range of *T. taxifolia*, or presumably an ancestral species (i.e. *T. antiqua*), may have, in past geological times, included localities as far north as North Carolina, no native trees have been documented outside of the species’ defined current or historical range, and both the Service’s 2010 5-year review and the 1986 Recovery Plan confirm that all known native populations occur within four counties in Florida and Georgia.

The petition made no claims regarding the overutilization for commercial, recreational, scientific, or educational purposes (Factor B). Information in the petition indicated that there has been additional documentation on the effects of disease at localities outside of Florida torreyea’s native range (Factor C); however, the information cited in the petition confirmed pathogen infection in an outplanted population and references within the petition state that the effects of the pathogen at these northern localities have not been adequately researched (Smith 2010, Turlock 2012). Additionally, there is some evidence to suggest that the translocation of infected trees to northern localities may risk exposing native populations to novel pathogens (Trulock 2012). The petition, therefore, does not present credible information indicating the threat of disease to the Florida torreyea has been reduced or removed.

The petition and the supporting documentation on the Torreyea Guardians webpages provide substantial information regarding the best propagation practices and natural history of the species (Factor E), but the petition did not explain how this information resulted in the reduction or removal of threats to Florida torreyea within its native range. The petition also included the locations and conditions of many northern outplantings of Florida torreyea; however, the petition further explains that the majority of the documented outplantings are not in locations that would “give rise to new and expanding populations.” Ultimately, the relative reproductive success of the outplanted groves does not ameliorate the threats currently affecting the species in its historical range (i.e. low population number, rarity of habitat, and disease, USFWS 2010).

The petitioner does not appear to assert that existing regulatory mechanisms are adequate to support downlisting. Regardless, because we have concluded that the petition does not provide

substantial information regarding Factors A, B, C, or E, to indicate the status of the species has improved such that downlisting may be warranted, the consideration of whether the petition presents substantial information to indicate the species does not warrant listing as endangered because of the adequacy of regulatory mechanisms under Factor D would not provide an independent basis for downlisting.

Summary

We found that the petition presented credible scientific and commercial information regarding the species' range (Factor A), impacts of disease (Factor C), locations of historical outplantings, and also included information regarding best propagation practices (Factor E). Therefore, we assessed the extent to which each claim, explicitly contained in the petition and supported by materials that could be readily located, indicated that the threats currently impacting the Florida torreyia have been reduced or removed. Based on our review of the petition, sources cited in the petition, and other information in our files, we find that the petition does not provide substantial scientific or commercial information indicating that the petitioned action may be warranted.

Petition Finding

We reviewed the petition, sources cited in the petition, and other readily available information. We considered the factors under section 4(a)(1) and assessed the cumulative effects of reductions in threats, including conservation measures or regulatory mechanisms that may ameliorate the threats identified within the factors on the species now and in the foreseeable future. We considered a "threat" as any action or condition that may be known to or is reasonably likely to negatively affect individuals of a species. This includes those actions or conditions that may have a direct impact on individuals, as well as those that may affect individuals through alteration of their habitat or required resources. The mere identification of, or reduction in, "threats" is not sufficient to compel a change in species' status. Based on our review of the petition, sources cited in the petition, and other readily available information, we find that the petition does not provide substantial scientific or commercial information indicating that downlisting Florida torreyia (*Torreya taxifolia*) may be warranted. Based on the Service's 2010 5-year review, the species is considered extremely vulnerable due to its limited range, low population number, and rarity of habitat. The primary decline in species abundance is thought to have resulted from fungal pathogens during the 1950s and 1960s, and/or a combination of environmental stress and native pathogens, but studies have yet to provide an explanation. As a result, the main threat for this species' decline is still not well understood, even though considerable research and management activities have been and are presently conducted on this species.

We found that the petition did not present credible scientific and commercial information to support the claim that the destruction, modification, or curtailment of Florida torreyia's habitat or range have been ameliorated (Factor A). Additionally, the petition has not provided substantial evidence that would lead a reasonable person to believe that the native range of *T. taxifolia* is larger than described at the time the species was listed (Factor A). We acknowledge that the petition provided additional documentation on the effects of disease at localities outside of Florida torreyia's native range (Factor C), included the locations and conditions of many northern outplantings, and provided new information regarding the species' natural history and best

propagation practices (Factor E); however, the petition did not present information indicating that the primary threats to the species have been reduced or removed. Based on our review of the petition, sources cited in the petition, and other information in our files, we find that the petition does not provide substantial scientific or commercial information indicating that the petitioned action may be warranted.

Author

The primary authors of this notice are staff members of the Species Assessment Team, U.S. Fish and Wildlife Service.

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