

## Taxonomy

Species identification of pyramid pigtoe and round pigtoe, as well as between other related taxa, is challenging due to morphological similarity and phenotypic plasticity. It is further exacerbated by the fact that many species are sympatric (overlapping in geographical distribution) (Olivera-Hyde et al. 2023, pp. 2–5). Recent genetic studies led researchers to suggest that the pyramid pigtoe and the round pigtoe may be conspecific (Inoue et al. 2018, p. 694; Olivera-Hyde et al. 2023, pp. 8–14), although species experts continued to support recognition of the pyramid pigtoe as a valid taxon due to morphological differences and a lack of comprehensive rangewide genetic information comparing the similar taxa (Olivera-Hyde et al. 2023, p. 15; Williams et al. 2017, p. 39). Because the pyramid pigtoe and round pigtoe are difficult to differentiate, there has been frequent misidentification by experts and lumping of the taxa together in the academic literature (Olivera-Hyde et al. 2023, pp. 2–5).

Both the SSA report for the pyramid pigtoe and the September 7, 2021, proposed rule to list the pyramid pigtoe as a threatened species (86 FR 49989) acknowledge the difficulty in identifying the pyramid pigtoe. After reviewing the best scientific information available at that time, we agreed with mussel experts and found that the pyramid pigtoe was a valid taxon (Service 2021, pp. 12–13; see also 86 FR 49989, September 7, 2021). Since that finding, however, a comprehensive, rangewide genetic analysis has been completed comparing pyramid pigtoe to round pigtoe, and this information now confirms that they are conspecific (Johnson et al., 2024, pp. 16–17).

## Review of New Genetic Information

Prior genetic analyses relied on results taken from individuals from portions of species' ranges, resulting in conclusions that were limited to only those areas where individuals were collected (Inoue et al. 2018, p. 698; Olivera-Hyde et al. 2023, p. 3). The new study uses data collected from throughout the ranges of both pyramid pigtoe and round pigtoe populations (Johnson et al., 2024, entire). Genetic data were successfully sampled from 200 individuals for mitochondrial DNA (mtDNA) analysis, 106 individuals for nuclear DNA (nDNA) analysis, and 176 individuals for genotype-by-sequencing (GBS) analysis across 11 populations and 22 waterbodies (Johnson et al., 2024, p. 33). Mitochondrial DNA and

nDNA were used in previous studies but were found to be problematic for supporting species delineations in *Pleurobema*, due to potential hybridization and backcrossing effects, resulting in a reliance on hard-to-distinguish morphological variation for species delineations (Olivera-Hyde et al. 2023, p. 14). The most recent analysis incorporated GBS methodologies to address uncertainty in assessing whether pyramid pigtoe is a valid taxon (Johnson et al., 2024, p. 6.).

The results of the study support the hypothesis that pyramid pigtoe and round pigtoe are conspecific based on mtDNA, nDNA, and GBS data (Johnson et al., 2024, pp. 13–17). The results of the GBS analysis cluster individuals based on geographic location and not by species identification based on morphology (Johnson et al., 2024, p. 16). This finding is also supported by the results of the mtDNA and nDNA analyses and is consistent with the results of prior published findings (Inoue et al. 2018, p. 694; Olivera-Hyde et al. 2023, pp. 8–14). The results do not support the current morphologically-based species delineations.

## Summary of Justification for Withdrawal

New rangewide genetic information has become available since the publication of our September 7, 2021, proposed rule (86 FR 49989) to list the pyramid pigtoe as a threatened species with an associated section 4(d) rule under the Act. The new information is based on mtDNA, nDNA, and GBS data, and concludes that pyramid pigtoe and round pigtoe are conspecific. These results support the findings of previous studies that were too narrow in scope to make definitive conclusions of species delineation. The resulting single species (round pigtoe; *P. sintoxia*) is wide-ranging and common throughout its current range. Because pyramid pigtoe (*P. rubrum*) is no longer considered a valid species, we withdraw the September 7, 2021, proposed rule (86 FR 49989) to list pyramid pigtoe as a threatened species with an associated section 4(d) rule.

## References Cited

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

## Authors

The primary authors of this document are the staff members of the Fish and Wildlife Service's Species Assessment

Team and the Asheville Ecological Services Field Office.

## Authority

The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

## Martha Williams,

Director, U.S. Fish and Wildlife Service.

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## DEPARTMENT OF THE INTERIOR

### Fish and Wildlife Service

#### 50 CFR Part 17

[Docket No. FWS–HQ–ES–2023–0151; FF09E21000 FXES1111090FEDR 234]

RIN 1018–BG53

### Endangered and Threatened Wildlife and Plants; Threatened Species Status With Section 4(d) Rule for Pygmy Three-Toed Sloth

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

**ACTION:** Proposed rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), propose to list the pygmy three-toed sloth (*Bradypus pygmaeus*; hereafter “pygmy sloth”), an arboreal mammal species from Panama, as a threatened species under the Endangered Species Act of 1973, as amended (Act). This determination also serves as our 12-month finding on a petition to list the pygmy sloth. After a review of the best available scientific and commercial information, we find that listing the species is warranted. Accordingly, we propose to list the pygmy sloth as a threatened species with a rule issued under section 4(d) of the Act (“4(d) rule”). If we finalize this rule as proposed, it will add this species to the List of Endangered and Threatened Wildlife and extend the Act's protections to the species.

**DATES:** We will accept comments received or postmarked on or before May 28, 2024. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. eastern time on the closing date. We must receive requests for a public hearing, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by May 10, 2024.

#### ADDRESSES:

*Written comments:* You may submit comments by one of the following methods:

(1) *Electronically*: Go to the Federal eRulemaking Portal: <https://www.regulations.gov>. In the Search box, enter FWS-HQ-ES-2023-0151, which is the docket number for this rulemaking. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, check the Proposed Rule box to locate this document. You may submit a comment by clicking on "Comment."

(2) *By hard copy*: Submit by U.S. mail to: Public Comments Processing, Attn: FWS-HQ-ES-2023-0151, U.S. Fish and Wildlife Service, MS: PRB/3W, 5275 Leesburg Pike, Falls Church, VA 22041-3803.

We request that you send comments only by the methods described above. We will post all comments on <https://www.regulations.gov>. This generally means that we will post any personal information you provide us (see Information Requested, below, for more information).

*Availability of supporting materials*: Supporting materials, such as the species status assessment report, are available at <https://www.regulations.gov> at Docket No. FWS-HQ-ES-2023-0151.

**FOR FURTHER INFORMATION CONTACT:**

Rachel London, Manager, Branch of Delisting and Foreign Species, Ecological Services Program, U.S. Fish and Wildlife Service, MS: ES, 5275 Leesburg Pike, Falls Church, VA 22041-3803; telephone 703-358-2171.

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. Please see Docket No. FWS-HQ-ES-2023-0151 on <https://www.regulations.gov> for a document that summarizes this proposed rule.

**SUPPLEMENTARY INFORMATION:**

**Information Requested**

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other governmental agencies, Native American Tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The species' biology, range, and population trends, including:

(a) Biological or ecological requirements of the species, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns and the locations of any additional populations of this species;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the species, its habitat, or both.

(2) Threats and conservation actions affecting the species, including:

(a) Factors that may be affecting the continued existence of the species, which may include habitat destruction, modification, or curtailment; overutilization; disease; predation; the inadequacy of existing regulatory mechanisms, or other natural or manmade factors;

(b) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to this species; and

(c) Existing regulations or conservation actions that may be addressing threats to this species.

(3) Additional information concerning the historical and current status of this species.

(4) Information on regulations that may be necessary and advisable to provide for the conservation of the pygmy sloth and that we can consider in developing a 4(d) rule for the species. In particular, we seek information concerning the extent to which we should include any of the section 9 prohibitions in the 4(d) rule or whether we should consider any additional exceptions from the prohibitions in the 4(d) rule.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for, or opposition to, the action under consideration without providing supporting information, although noted, do not provide substantial information necessary to support a determination. Section 4(b)(1)(A) of the Act (16 U.S.C. 1533(b)(1)(A)) directs that determinations as to whether any species is an endangered or a threatened species must be made solely on the basis of the best scientific and commercial data available.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in

**ADDRESSES.** We request that you send comments only by the methods described in **ADDRESSES.**

If you submit information via <https://www.regulations.gov>, your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on <https://www.regulations.gov>.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <https://www.regulations.gov>.

Our final determination may differ from this proposal because we will consider all comments we receive during the comment period as well as any information that may become available after this proposal. Based on the new information we receive (and, if relevant, any comments on that new information), we may conclude that the species is endangered instead of threatened, or we may conclude that the species does not warrant listing as either an endangered species or a threatened species. In addition, we may change the parameters of the prohibitions or the exceptions to those prohibitions in the 4(d) rule if we conclude it is appropriate considering comments and new information received. For example, we may expand the prohibitions to include prohibiting additional activities if we conclude that those additional activities are not compatible with conservation of the species. Conversely, we may establish additional exceptions to the prohibitions in the final rule if we conclude that the activities would facilitate or are compatible with the conservation and recovery of the species. In our final rule, we will clearly explain our rationale and the basis for our final decision, including why we made changes, if any, that differ from this proposal.

*Public Hearing*

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. Requests must be received by the date specified in **DATES**. Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of the hearing, as well as how to obtain reasonable accommodations, in the **Federal Register** at least 15 days before

the hearing. We may hold the public hearing in person or virtually via webinar. We will announce any public hearing on our website, in addition to the **Federal Register**. The use of virtual public hearings is consistent with our regulations at 50 CFR 424.16(c)(3).

#### Previous Federal Actions

On November 15, 2013, we received a petition from the Animal Welfare Institute to add the pygmy sloth to the List of Endangered and Threatened Wildlife. On June 9, 2014, we published in the **Federal Register** (79 FR 32900) a 90-day finding that the petition presented substantial scientific and commercial information indicating that the petitioned action may be warranted; that document initiated a status review for the pygmy sloth.

#### Peer Review

A species status assessment (SSA) team prepared an SSA report for the pygmy sloth. The SSA team was composed of Service biologists, in consultation with other species experts. 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 in listing actions under the Act, we solicited independent scientific review of the information contained in the pygmy sloth SSA report. We sent the SSA report to five independent peer reviewers and received three responses. Results of this structured peer review process can be found at <https://www.regulations.gov> at Docket No. FWS-HQ-ES-2023-0151. In preparing this proposed rule, we incorporated the results of these reviews, as appropriate, into the SSA report, which is the foundation for this proposed rule.

#### Summary of Peer Reviewer Comments

As discussed above in Peer Review, we received comments from three peer reviewers on the draft SSA report. We reviewed all comments we received from the peer reviewers for substantive issues and new information regarding the information contained in the SSA report. The peer reviewers generally concurred with our methods and conclusions, and provided additional information, clarifications, and suggestions, including clarifications on terminology, additional literature on

phylogeny and diet, information on generation time, clarifications on published correspondence, updates regarding the ongoing conservation efforts for the pygmy sloth, clarification on the pygmy sloth's inclusion in Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) (27 U.S.T. 1087), and other editorial suggestions. No substantive changes to our analysis and conclusions within the SSA report were deemed necessary, and peer reviewer comments are addressed in version 1.1 of the SSA report (Service 2023, entire).

#### I. Proposed Listing Determination

##### Background

The pygmy sloth, the smallest of the of four extant species of three-toed sloths, is a tan-colored arboreal mammal species with a near-white face and black stripes over the eyes. Adults weigh approximately 3 kilograms (kg) (6.6 pounds (lb)) and measure about 500 millimeters (mm) (1.6 feet (ft)) in length. The species is most closely related to the brown-throated three-toed sloth (*B. variegatus*; hereafter “brown-throated sloth”; Ruiz-Garcia et al. 2020, pp. 468–470; Anderson and Handley 2001, pp. 9–15). The pygmy sloth was originally separated taxonomically from the more widespread brown-throated sloth (native to central America including mainland Panama and northern South America) based on its consistently smaller size and distinct skeletal structures (Anderson and Handley 2001, pp. 9–18). Having only been described as a full species in 2001, there is little detail available on the species' life history and habitat requirements.

Pygmy sloths are found only on the small Panamanian island Isla Escudo de Veraguas (hereafter, “Escudo”), which is 4.3 square kilometers (km<sup>2</sup>) (1.7 square miles (mi<sup>2</sup>)) in area and lies about 18 kilometers (km) (11.2 miles (mi)) from the Panamanian mainland (Anderson and Handley 2001, p. 5). About 2.5 percent of the island is composed of red mangrove (*Rhizophora mangle*) thickets scattered along the north coast, and the remainder of the island is a mixed species tropical forest (Kaviar et al. 2012, pp. 1–3; Voirin 2015, p. 705; Zoological Society of London (ZSL) 2017, p. 11). It is uncertain whether sloths on Escudo are reliant on the mangroves or whether some live entirely within the interior forest (Voirin 2015, p. 705). All three-toed sloths are arboreal folivores; they consume leaves with relatively low nutritional quality, necessitating physiological and behavioral

adaptations including limited movements and low muscle mass (Anderson and Handley 2001, p. 2). Pygmy sloths have been observed using at least 15 plant species (including mangroves) for food and refuge, but it is not known which, if any, plant species they require (Smith et al. 2021, unpaginated; Smith 2022, pers. comm.; Superina 2022, pers. comm.).

Few data exist specific to pygmy sloth reproduction and population biology. Based on demographic data for three-toed sloths, it is reasonable to conclude that an average generation time (or time between birth of an individual and birth of its offspring) is approximately 6 to 10 years for pygmy sloths (Anderson and Handley 2002, p. 1051; Taube et al. 2001, p. 184; Superina 2022, pers. comm.). Other three-toed sloth species have only one offspring per pregnancy after gestation of 100–180 days (Benirschke 2008, p. 168; Taube 2001, p. 184). Longevity and survivorship are little-known for three-toed sloths. Both genetic data, although limited, and documentation of sloth movement into the interior forest suggest that there is only a single population of the species (ZSL 2017, p. 9; Voirin 2015, p. 705; Silva 2013, p. 138).

A thorough review of the taxonomy, life history, and ecology of the pygmy sloth is presented in the SSA report (version 1.1; Service 2023, pp. 1–8).

##### 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, we issued a final rule that revised 50 CFR 17.31 and 17.71 (84 FR 44753; hereinafter, “the 2019 4(d) rule”) and ended the “blanket rule” option for application of section 9 prohibitions to species newly listed as threatened after the effective date of those regulatory revisions (September 26, 2019). Blanket rules had extended the majority of the protections (all of the prohibitions that apply to endangered species under

section 9 and additional exceptions to the prohibitions) to threatened species, unless we issued an alternative rule under section 4(d) of the Act for a particular species (*i.e.*, a species-specific 4(d) rule). The blanket rule protections continued to apply to threatened species that were listed prior to September 26, 2019, without an associated species-specific rule. Under the 2019 4(d) rule, the only way to apply protections to a species newly listed as threatened is for us to issue a species-specific rule setting out the protective regulations that are appropriate for that species.

Our analysis for this decision applied the regulations that are currently in effect, which include the 2019 revisions. However, we proposed further revisions to these regulations on June 22, 2023 (88 FR 40742; 88 FR 40764). In case those revisions are finalized before we make a final status determination for this species, we have also undertaken an analysis of whether the decision would be different if we were to apply those proposed revisions. We concluded that the decision would have been the same if we had applied the proposed 2023 regulations. The analyses under both the regulations currently in effect and the regulations after incorporating the June 22, 2023, proposed revisions are included in our decision file.

The Act (16 U.S.C. 1531 *et seq.*) 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 species’ expected response 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 we 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.

We considered the threats of habitat loss and degradation and tourism and development, along with demographic factors of pygmy sloths, and determined the foreseeable future to be approximately 30 years. This timeline for the foreseeable future is based on several factors. The pygmy sloth generation time is estimated to be between 6 and 10 years, and similar species only have one offspring per pregnancy. Thus, the demographic responses of the species to the identified threats will materialize rapidly across just a few (<5) generations. This determination of foreseeable future being 30 years assumes enough time will pass for three to five generations of cohorts to represent the population’s resiliency to the identified threats. Thirty years will also include time for climate change and development to progress, as well as for conservation activities affecting Escudo to develop. We are very confident in the predictions from our climate models out to this time step. Although there is uncertainty in specific rates and strengths of the impacts from development and tourism over this time step, we are confident in the negative effects these threats will have on pygmy sloth. We have information showing that nearby coastal development plans are in place, roads providing access to the coastlines are being built, and conservation capacity within the area is limited. This information combined with demographics of this species gives us confidence that within a 30-year future, these threats will negatively impact the pygmy sloth. Therefore, based on the best scientific and commercial data available, we conclude that over a period of 30 years we can make reliable predictions that both the future threats to the species and the species’ response to those threats are likely.

#### 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 proposed

for listing 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 pygmy sloth 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, pathogens). In general, species viability will increase with increases in (or decrease with decreases 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, which we then used 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 FWS–HQ–ES–2023–0151 on <https://www.regulations.gov>.

#### *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.

Based on the species' biology described above and in the SSA report (version 1.1; Service 2023, pp. 1–8), the pygmy sloth requires food plants, intact and connected forest habitats, and sufficient conspecific individuals to find a mate. Threats to the sloth's viability include the small extent (4.3 km<sup>2</sup>) of Escudo (as noted above, pygmy sloths in the wild are found only on this one small island in Panama), the naturally limited size of the species' single population, direct and indirect impacts of tourism, habitat loss from small-scale timber harvest, and habitat loss from sea-level rise and erosion. Together, these threats make the pygmy sloth vulnerable to random declines due to demographic stochasticity, environmental catastrophes (e.g., storms), or both.

#### *Threats*

Small-scale but continuing harvest of red mangroves and interior forest trees occurs on Escudo for construction of temporary huts used by fishermen and for timber for tourism development in nearby regions (Feller 2022, pers. comm.; ZSL 2017, p. 16). Continued forest loss would eventually lead to a reduced pygmy sloth population, but the lack of good information on pygmy sloth movements and densities, and their relative reliance on mangrove versus interior forest, currently prohibits determination of that threshold. Evidence from urban populations of related species indicates three-toed sloth species may be relatively resilient to life in small forest fragments (Service 2023, p. 6; Pool et al. 2016, pp. 26–30), but it is not clear whether this extends to the pygmy sloth.

As the nearby coastal regions of the Bocas del Toro, Veraguas, and Ngobe-Bugle provinces grow in popularity with local and especially foreign tourists, so too has the volume of visits to Escudo and the demand for infrastructure there (ZSL 2017, pp. 3, 17). Both Panamanians and foreign investors are interested in developing the island and nearby region for greater tourism commercialization (Smith 2021, pers. comm.; Voirin 2021, pers. comm.; Voirin 2015, pp. 706–707). Although Panama has a mandatory environmental-impact-assessment process (Gonzalez 2008, pp. 320–327), reviews are sometimes diminished by demand for development (e.g., Gonzalez 2008, pp. 328–333) and often initiated too late in a project's progression to revise plans or prevent identified environmental harms (Jordan 2021, pers. comm.). Consultations

between government environmental authorities and developers can be rapid and leave little room for adjustment of project plans (Jordan 2021, pers. comm.).

Coastal development and construction of major roads and ports on the nearby mainland has improved and will continue to improve accessibility, making the trip to Escudo easier for many more people (Smith 2021, pers. comm.; Voirin 2021, pers. comm.; Oberle and Rodriguez 2020, entire; Bilbao 2017, unpaginated). While little is known of the impacts of increased human presence on the island to pygmy sloth behavior and ecology, increased tourism, particularly when combined with inadequate regulatory mechanisms and enforcement, is likely to lead to direct and indirect impacts on sloth viability through up-close encounters, deforestation, habitat degradation, increased litter and refuse, as well as the potential to increase the introduction of pests, invasive species, and disease.

Desire for up-close or in-hand photos of pygmy sloths will likely increase along with tourist visitation as global popularity of sloths and demand for pet and zoo-housed sloths has grown tremendously (Voirin 2015, p. 706). The risk of sloths being illegally taken and smuggled away from Escudo into domestic and international trade for personal and commercial purposes is greater as more unregulated visitors reach the island (Jordan 2021, pers. comm.; Voirin 2021, pers. comm.). This is despite three-toed sloths rarely surviving more than several months in captivity and a general lack of knowledge regarding husbandry techniques for three-toed sloths (Voirin et al. 2014a, p. 2; Espinoza and Cliffe 2013, p. 4; Raines 2005, p. 557).

While there is currently little legal international trade of the species, there are several examples of known trade or attempts to trade specimens of pygmy sloth. In 2013, 11 individuals were taken from the wild with the intent to export to the United States for zoological purposes, but the attempted export was stopped by protesters at the Bocas del Toro Airport (Espinoza and Cliffe 2013, p. 4). These individual pygmy sloths were soon after returned to Escudo, but at least two died after reintroduction to the island (Superina 2022, pers. comm.). Additionally, eight wild-sourced specimens of pygmy sloth originating from Panama were legally exported from the United States to Portugal for scientific purposes in 2015. In 2021, there was at least one trade transaction of a specimen from China to the Netherlands, but the involved specimen was recorded as a CITES pre-

Convention specimen, meaning the specimen was acquired (removed from the wild or born in a controlled environment) before the date the species was first included in the CITES Appendices (July 1, 1975), and therefore we presume it to be a non-living specimen.

In general, Escudo and its surroundings have very limited government presence or regulatory enforcement because of the remote location and Escudo's semi-autonomous nature as an Indigenous-inhabited territory that is administered by the Bocas del Toro province. While smaller scale, Indigenous-led pygmy sloth tourism has been less disruptive than the more industrial form (Voirin 2021, pers. comm.), the permit requirements for tourists to visit the island are not enforced (ZSL 2017, pp. 17–18). Small-scale tourist operations are also likely to be outcompeted by larger organizations entering the market. Although large-scale tourism has not yet reached Escudo as it has in the surrounding archipelago, tourism is steadily increasing and tourist boats arrive without notice and are reportedly damaging coral reefs and sea turtle nesting grounds (Smith 2021, pers. comm.), indicative of at least some operators' lack of concern for or knowledge about harm to the island's ecology.

Finally, as sea levels rise due to global climate change, the extent of the pygmy sloth's island habitats may be reduced (Intergovernmental Panel on Climate Change (IPCC) 2019, pp. 6–13). Any loss of habitat area on the already small island could reduce the number of sloths supported on Escudo. Anecdotally, erosion has been increasing on Escudo (Smith 2021, pers. comm.), although its extent is not quantified, and it is not known whether this is due to sea-level rise, storms, coastal deforestation, or other human-caused shoreline disturbance.

#### Conservation Efforts and Regulatory Mechanisms

The Pygmy Sloth Conservation Project, established in 2011 by ZSL's EDGE of Existence Program, is employing innovative and integrative activities to support pygmy sloth and Escudo conservation (ZSL 2017, entire). The project includes repeated population surveys, education of Indigenous communities and schoolchildren regarding Escudo ecology and the benefits of conservation, and cooperation with the Indigenous government and local fishermen's association to develop a community-based natural-resources-

management program (ZSL 2017, pp. 19–27).

In June 2022, a workshop was held in collaboration with the Ministry of Environment and the Ngäbe-Buglé indigenous authorities to develop a management plan for the conservation of the pygmy sloth (Smith 2022, pers. comm.). The information generated by this pygmy sloth conservation action plan is expected to also serve as the basis for a future comprehensive management plan for Escudo, but as of the publication of this proposed rule, that plan has not yet been developed (Smith 2022, pers. comm.).

As of 2017, the national Ministry of the Environment could not afford to visit Escudo independently (ZSL 2017, p. 18). Consequently, there is no evidence available to the Service of enforcement of tourism permit requirements or anti-littering and deforestation laws. Escudo is designated as a protected area with management shared between the national Ministry of the Environment and the local Indigenous council (Voirin et al. 2014a, p. 5), but in 2012, the island was classified as open to tourism, as well as scientific, entertainment, and cultural development, so the benefits of the protected-area designation are limited (Voirin 2015, pp. 706–707).

Pygmy sloths are included in CITES Appendix II, and international trade in any specimen of the species requires *inter alia* a valid CITES document that authorizes trade in the specimen to accompany the specimen. CITES export permits may only be issued by the exporting country's CITES Management Authority after a legal acquisition finding is made by the exporting country's CITES Management Authority and a non-detriment finding is made by the exporting country's CITES Scientific Authority (for additional information about CITES requirements, see 50 CFR part 23). On May 5, 2023, CITES Notification No. 2023/057 notified all Parties to CITES that Panama has suspended the issuance of all exports for specimens harvested from the wild for commercial purposes, including the pygmy sloth, until scientific non-detriment findings are completed (CITES 2023, unpaginated).

#### Current Condition

We assess the pygmy sloth's resiliency using two criteria: a population-abundance criterion and a forest-extent criterion. We incorporate the knowledge that the species has likely always been rare by basing the population abundance criterion on detection of a population decline in addition to considering absolute

abundance, as rarer species are at elevated risk of extinction even if the rarity is natural (Flather and Sieg 2007, entire; Johnson 1998, entire). The forest-extent criterion subsumes the pygmy sloth's requirements for shelter, connectivity, and native food plants.

Considering these two resiliency criteria to account for the species' demographic and habitat requirements, we determined thresholds for high, medium, and low resiliency for the pygmy sloth. High resiliency would indicate a high probability of population viability with minimal to no declines in population size. Moderate resiliency would indicate the species has experienced possible population declines. Low resiliency would indicate low probability of population viability with certain population decline.

While it is difficult to estimate the true size of the population due to the challenge of detecting (and therefore counting) pygmy sloths (Voirin 2015, p. 705), the most recent estimate of the total pygmy sloth population size is 2,000–2,500 individuals, and the population is estimated to be declining (Smith et al. 2022, unpaginated). The most recently available population trend data from mangrove surveys in 2014–2017 show no change in encounter rate of sloths, although the uncertainty in abundance is large (ZSL 2017, p. 13). All estimates indicate an extremely small number for an entire species (Smith et al. 2022, unpaginated).

Based on our assessment of deforestation from 2000–2020, only 0.11 percent of forested area in 2000 (totaling 3.95 km<sup>2</sup>) was deforested by 2020 (data from Hansen et al. 2013, unpaginated; Service 2023, pp. 14–16). This assessment, however, is based on satellite data (approximately 30 meters (m) resolution) and does not detect partial clearings. While ground-based mapping of deforestation events shows partial tree clearing has occurred on Escudo (ZSL 2017, p. 16) and a recently published assessment indicates habitat degradation has resulted in a continuing decline in the quality of pygmy sloth habitat (Smith et al. 2022, unpaginated), our assessment indicates the forest extent on Escudo remains mostly intact.

We assess that the pygmy sloth presently has moderate-to-high resiliency, because the best available data indicate that pygmy sloth abundance and the extent of habitat available on Escudo have not considerably declined, but there remains substantial uncertainty in these estimates.

With no captive individuals and only one wild population located on an island less than 5 km<sup>2</sup> in extent, the

pygmy sloth naturally has very low redundancy. Although very few large cyclones and storms reach Escudo, it is seismically active, and loss of the Escudo population would equate to global extinction.

With respect to representation, the isolation of a small number of founder individuals when the pygmy sloth separated from the mainland population of brown-throated sloths (likely around 9,000 years ago; Anderson and Handley 2001, p. 4) would have created a natural genetic bottleneck (a sharp decrease in a population's genetic diversity as a result of a reduction in population size; Silva 2013, p. 138). Today, genetic variation in the population is low (Silva et al. 2018, p. 1301), and because the pygmy sloth only inhabits Escudo, the habitats it uses have little ecological variation. For these reasons, we consider the pygmy sloth's ability to adapt to changing environments, and thus its representation, to be naturally low.

#### Future Scenarios

Based on our assessment, we concluded that two important potential threats to pygmy sloth viability in the future are: (1) increased development and tourism around—and visitation to—the island, together with the increased likelihood of illegal taking and trade in the species, and (2) increased habitat loss and degradation caused by deforestation and inundation of Escudo.

In the SSA report, we forecast the species' status under two alternative future scenarios and six climate-change projections (encompassing the uncertainty in sea-level-rise trajectories) to determine how deforestation, the demand for sloths in the pet and tourism market, and the potential for the already small extent of Escudo to be further reduced by rising sea level would affect the species. Specifically, our scenarios include “status quo” and “improved conservation capacity” alternatives to assess the potential impacts of growing development and tourism. For each of these two scenarios, we assessed six climate-change projections to help encompass the uncertainty in sea-level-rise trajectories for the year 2050. This is approximately 30 years from this proposed listing and would include time for climate change and development to progress, as well as for conservation activities affecting Escudo to grow. Based on studies from other three-toed sloth species, this 30-year timeframe will include around three to five generations of pygmy sloths (Anderson and Handley 2002, p. 1051).

#### Tourism and Development

A comprehensive understanding of the current and future conditions of tourism on Escudo is currently lacking due to uncertainty in plans for imminent coastal development and the inherent difficulty of monitoring and enforcing regulations because of the remote nature of the island and lack of funding for enforcement. Observational accounts indicate that although large tourism operations are not currently reaching Escudo, the amount of tourism arriving to the island is increasing, and, if the planned development of the nearby remote coastline occurs, tourism, including from large outfitters, will likely increase in volume (Jordan 2021, pers. comm.; Smith 2021, pers. comm.; Voirin 2021, pers. comm.).

International tourist visitation to Panama grew by 150 percent between 2000 and 2008, and nature-based tourism is an increasing portion of Panama's economy (Beaton and Hadzi-Vazkov 2017, pp. 23–29). Tourism grew fast in the coastal and island regions of Bocas Del Toro province (to which Escudo belongs) from the 1990s onwards, including growing accessibility to vast stretches of beach and rainforest. For instance, beginning in 2004 and continuing into at least 2017, a major road was under construction from Santa Fe to the coastal city of Calovebora in northern Veraguas province (Bilbao 2017, unpaginated). The road's route is a major new access point to undeveloped areas within easy boating distance of Escudo (Bilbao 2017, unpaginated). Additionally, developers have for several years been amassing land holdings in the regions near Escudo, and they may be planning for the resale of lots for future homes and hotels (Jordan 2021, pers. comm.).

As additional people move to and visit the region, the very strong demand for sloths taken from the wild for tourists' “sloth selfies” or for sale into the pet trade (Greenfield 2020, unpaginated) will likely impact pygmy sloths (Voirin 2021, pers. comm.; Jordan 2021, pers. comm.). For example, other sloth species are illegally collected from the wild in Colombia for hands-on tourism or illegal pet trade (Gorder 2021, unpaginated; Moreno and Plese 2006, p. 12).

The General Law on Environment of the Republic of Panama (Article 23 of Law No. 41 (1998)) requires that public or private projects, including tourism developments, be vetted through an environmental-impact-assessment (EIA) process administered by the national Ministry of the Environment (Gonzalez

2008, p. 324; Bethancourt 2000, unpaginated). In practice, however, developers often do not file for an EIA or do so very late in the project's progress, which makes substantive changes to the project challenging (Jordan 2021, pers. comm.). Consultations that do take place, particularly in remote locations, are frequently cursory (Jordan 2021, pers. comm.).

By 2050 under the status quo alternative, if the lack of environmental law enforcement capacity in the remote Escudo region (ZSL 2017, p. 18) continues, the limitations of Panama's EIA process are not rectified, and the unplanned nature of regional development (Jordan 2021, pers. comm.) persists, modest to large declines in the species' population are likely. These declines are likely due to the stresses of increased visitation to Escudo (including up-close encounters), habitat degradation, and illegal poaching to meet the demand for the pet and zoo trade domestically and internationally.

If, on the other hand, the ongoing conservation efforts (see *Conservation Efforts and Regulatory Mechanisms*, above) lead to improved conservation capacity around Escudo, pygmy sloth population declines would be less likely to occur. A future with improved conservation capacity would include the regular presence of well-equipped conservation officers from the national Ministry of the Environment or Indigenous governments or both, and only sustainable, well-regulated tourist visits to Escudo with no pygmy sloths captured or disturbed. A completed management plan would include enforcement of specific limitations on the volume and activities of tourists and others to avoid pygmy sloth collection and deforestation. While ongoing work to support pygmy sloth conservation (see *Conservation Efforts and Regulatory Mechanisms*, above) indicates this is a possible future scenario, given the historical and ongoing challenges of regulation and enforcement on Escudo, this outcome is less likely than the status quo scenario.

#### Loss of Habitat

Given its small island habitat, the pygmy sloth's viability is sensitive to the potential for further reduction in the available areas on Escudo, for example losses due to sea-level rise and deforestation. To assess the impacts of sea-level rise, we used climate models forecasting where land presently above water will be lost due to sea-level rise. We used these data to project the extent of pygmy sloth habitat expected to be lost under different climate-change

scenarios. Specifically, we included six alternative climate trajectories defined by the (1) degree of greenhouse-gas emissions reduction achieved (three representative concentration pathways (RCPs), RCPs 2.6, 4.5, and 8.5) by 2050, and (2) two different rates of Antarctic ice-sheet melting, an uncertain but potentially major contributor to global sea-level rise (Kulp and Strauss 2018, p. 2; Kopp et al. 2017, entire; Kopp et al. 2014, entire).

The RCPs are Intergovernmental Panel on Climate Change (IPCC) scenarios that describe alternative future trajectories of greenhouse gas emissions and that are used to drive climate-model projections in response to higher or lower future emission rates (IPCC 2014, p. 8). In the RCP names, the values 2.6, 4.5, and 8.5 refer to the rate at which energy is trapped by Earth's atmosphere in watts per square meter ( $m^2$ ) at the height of warming for the given scenario; thus, RCP 8.5 is a scenario indicating faster warming than RCP 4.5. RCP 8.5 is considered a "high-emission business as usual scenario," *i.e.*, towards the upper end of what might occur without climate-change mitigation policy (Riahi et al. 2011, p. 54). RCP 4.5 is based on a lower-emissions future in which renewable energy, greater energy efficiency, and carbon capture and storage are more widely implemented (Thomson et al. 2011, p. 77). RCP 2.6 represents stringent cuts to greenhouse gas emissions sufficient to limit warming to 2 degrees Celsius ( $^{\circ}C$ ) (van Vuuren et al. 2011, entire).

The extent of Escudo habitat inundated by 2050 ranged from 0.04 percent (RCP 2.6, no rapid West Antarctic melting) to 0.08 percent (RCP 8.5, rapid West Antarctic melting; Service 2023, p. 20). Even if we assumed for the most pessimistic scenario (0.08 percent of the entire island inundated) that the entirety of the inundated habitat was concentrated within the 2.5 percent of the island that is mangrove forests, only slightly more than 3 percent of the mangroves would be inundated. However, although inundation is focused on coastal edges of the island and includes some locations on the north coast where mangroves grow, part of the inundation will occur outside the mangroves, so the 3 percent figure is likely an overestimate. Moreover, red mangroves can possibly keep pace with sea-level rise by growing taller and accumulating peat beneath their stilt roots (Mckee et al. 2007, entire; Feller 2021, pers. comm.). The interior forest habitat is more extensive than mangroves (ZSL 2017, p. 11) and, when compared to estimates for mangrove forests, less

interior forest habitat is projected to be lost as a result of sea-level rise. Thus, we project that loss of habitat due to sea-level rise will be at most 3 percent across mangrove and interior forest habitats.

Deforestation presents a second potential cause of habitat loss and degradation. Forecasting future rates of deforestation is difficult due to the discrepancies between ground observations and satellite data of deforestation, as well as the unknown impact that, if implemented, development plans and potential subsequent tourism increases might have on deforestation. Under a status quo future, deforestation may continue as it occurs now, at low and consistent levels, or it may increase, given the interest expressed by some Indigenous people in living on Escudo and the expansion of tourism and associated infrastructure development on the island. With improved conservation capacity, including increased monitoring and enforcement of land use of the island, we project that deforestation levels would be low.

#### Overall Future Resiliency, Redundancy, and Representation

Regardless of the climate-change scenario, if the conservation capacity around Escudo does not improve (*i.e.*, if it remains at the status quo), the total resiliency of the pygmy sloth is projected to decline, likely falling into the moderate-to-low-resiliency category, and potentially falling into the low-resiliency category. If conservation capacity is improved around Escudo, we project that the pygmy sloth's resiliency could improve despite the species' natural rarity. However, high uncertainty exists in both current and future resiliency due to the limited data available on population abundance, rates of deforestation, and effects of tourism and development on the species. Additionally, given the historical and current lack of regulatory and enforcement capacity, outcomes under the improved-conservation-capacity scenario, although possible, are less likely than those under the status quo scenario.

Redundancy is not projected to change under any of the future scenarios; we expect there to remain only the single Escudo population. Representation may remain the same or may decrease if tourists arriving at the relatively accessible island edge and beaches stress pygmy sloths into retreating into the interior forest and reduce the habitat types pygmy sloths use, further limiting the species' adaptive potential.

We note that, by using the SSA framework to guide our analysis of the scientific information documented in the SSA report, we have analyzed the cumulative effects of identified threats and conservation actions on the species. To assess the current and future condition of the species, we evaluate 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.

#### Determination of Pygmy Sloth'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 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.

#### Status Throughout All of Its Range

After evaluating threats to the species and assessing the cumulative effect of the threats under the Act's section 4(a)(1) factors, we determined that the future viability of the pygmy sloth will be reduced as ongoing and future development on the mainland nearest Escudo increases accessibility to the island, likely reducing the pygmy sloth's resiliency, which along with its naturally low redundancy and representation will likely compromise the security of the species' continued existence within the foreseeable future.

The pygmy sloth is a narrow endemic species with a small population and very limited range. Given the pygmy sloth's rarity and low genetic diversity, the species has naturally low

representation and redundancy. While tourism and small-scale timber harvest are ongoing in the species' range, the pygmy sloth is not currently at risk of extinction because it maintains moderate-to-high resiliency with a variety of age classes and evidence of reproduction, and while it is naturally restricted to the very small island of Escudo, its habitat requirements do not currently appear to be limiting. Although the species currently is not at risk of extinction, threats to the species are expected to increase in the foreseeable future. Ongoing and anticipated development on the nearby mainland will facilitate increased access to Escudo, increasing disturbance to pygmy sloths through deforestation, up-close interactions, and illegal taking and smuggling into domestic and international trade for personal and commercial purposes. While there are regulatory mechanisms in place to protect against these threats, enforcement in the species' relatively remote range is limited and is likely inadequate to reduce the impacts of increased tourism and deforestation. The current population of the pygmy sloth is estimated to be declining, and the likely increase of threats in the foreseeable future will reduce the species' viability to a point that it is likely to lack sufficient resiliency, representation, and redundancy for its continued existence to be secure.

Thus, after assessing the best available information, we conclude that the pygmy sloth is not currently in danger of extinction but is likely to become in danger of extinction within the foreseeable future throughout all of its range due to increased threats from tourism and development that will likely lead to habitat loss and degradation (Factor A), overutilization in a variety of forms from increasing human interactions (Factor B), and the inadequacy of existing regulatory mechanisms (Factor D).

#### 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. The court in *Center for Biological Diversity v. Everson*, 435 F. Supp. 3d 69 (D.D.C. 2020) (*Everson*), 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" (hereafter "Final Policy"; 79 FR 37578, July 1,

2014) that provided if the Service determines that a species is threatened throughout all of its range, the Service will not analyze whether the species is endangered in a significant portion of its range.

Therefore, we proceed to evaluating whether the species is endangered in a significant portion of its range—that is, whether there is any portion of the species' range for which both (1) the portion is significant; and (2) the species is in danger of extinction in that portion. Depending on the case, it might be more efficient for us to address the "significance" question or the "status" question first. We can choose to address either question first. Regardless of which question we address first, if we reach a negative answer with respect to the first question that we address, we do not need to evaluate the other question for that portion of the species' range.

Following the court's holding in *Everson*, we now consider whether there are any significant portions of the species' range where the species is in danger of extinction now (*i.e.*, endangered). In undertaking this analysis for pygmy sloth, we choose to address the status question first—we consider information pertaining to the geographic distribution of both the species and the threats that the species faces to identify portions of the range where the species may be endangered.

We evaluated the range of the pygmy sloth to determine if the species is in danger of extinction now in any portion of its range. The pygmy sloth is a narrow endemic that functions as a single, contiguous population and occurs entirely within a 4.3 km<sup>2</sup> island. Thus, there is no biologically meaningful way to break this limited range into portions, and the threats that the species faces affect the species throughout its entire range. As a result, there are no portions of the species' range where the species has a different biological status from its rangewide biological status. Therefore, we conclude that there are no portions of the species' range that warrant further consideration, and the species is not in danger of extinction in any significant portion of its range, and we determine that the species is likely to become in danger of extinction within the foreseeable future throughout all of its range. This does not conflict with the courts' holdings in *Desert Survivors v. U.S. Department of the Interior*, 321 F. Supp. 3d 1011, 1070–74 (N.D. Cal. 2018), and *Center for Biological Diversity v. Jewell*, 248 F. Supp. 3d 946, 959 (D. Ariz. 2017), because, in reaching this conclusion, we did not apply the aspects of the Final Policy, including

the definition of "significant" that those court decisions held to be invalid.

#### Determination of Status

Our review of the best available scientific and commercial information indicates that the pygmy sloth meets the Act's definition of a threatened species. Therefore, we propose to list the pygmy sloth as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

#### Available Conservation Measures

The purposes of the Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in the Act. Under the Act, a number of steps are available to advance the conservation of species listed as endangered or threatened species. As explained further below, these conservation measures include: (1) recognition, (2) recovery actions, (3) requirements for Federal protection, (4) financial assistance for conservation programs, and (5) prohibitions against certain activities.

Recognition through listing results in public awareness, as well as in conservation by Federal, State, Tribal, and local agencies, foreign governments, 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.

Section 7 of the Act is titled, "Interagency Cooperation," and it mandates all Federal action agencies to use their existing authorities to further the conservation purposes of the Act and to ensure that their actions are not likely to jeopardize the continued existence of listed species or adversely modify critical habitat. Regulations implementing section 7 are codified at 50 CFR part 402.

Section 7(a)(2) states that each Federal action agency shall, in consultation with the Secretary, ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat.

A Federal "action" that is subject to the consultation provisions of section 7(a)(2) of the Act is defined in our implementing regulations at 50 CFR 402.02 as all activities or programs of any kind authorized, funded, or carried out, in whole or in part, by Federal

agencies in the United States or upon the high seas. With respect to pygmy sloth, no known actions require consultation under section 7(a)(2) of the Act. Given the regulatory definition of “action,” which clarifies that it applies to activities or programs “in the United States or upon the high seas,” the pygmy sloth is unlikely to be the subject of section 7 consultations, because the entire life cycle of the species occurs in terrestrial areas outside of the United States and the species is unlikely to be affected by U.S. Federal actions. Additionally, no critical habitat will be designated for the species because, under 50 CFR 424.12(g), we will not designate critical habitat within foreign countries or in other areas outside of the jurisdiction of the United States.

Section 8(a) of the Act (16 U.S.C. 1537(a)) authorizes the provision of limited financial assistance for the development and management of programs that the Secretary of the Interior determines to be necessary or useful for the conservation of endangered or threatened species in foreign countries. Sections 8(b) and 8(c) of the Act (16 U.S.C. 1537(b) and (c)) authorize the Secretary to encourage conservation programs for foreign listed species, and to provide assistance for such programs, in the form of personnel and the training of personnel.

It is our policy, as published in the **Federal Register** on July 1, 1994 (59 FR 34272), to identify to the extent known at the time a species is listed, specific activities that will not be considered likely to result in violation of section 9 of the Act. To the extent possible, activities that will be considered likely to result in violation will also be identified in as specific a manner as possible. The intent of this policy is to increase public awareness of the effect of a proposed listing on proposed and ongoing activities within the range of the species proposed for listing. Although most of the prohibitions in section 9 of the Act apply to endangered species, sections 9(a)(1)(G) and 9(a)(2)(E) of the Act also prohibit the violation of any regulation issued under section 4(d) of the Act pertaining to any threatened species of fish or wildlife, or threatened species of plant, respectively. Section 9(g) additionally makes it illegal to attempt to commit, to solicit another to commit, or to cause to be committed any act prohibited under Section 9, including violations of a 4(d) rule. Section 4(d) of the Act grants the Secretary broad discretion to prohibit with respect to any threatened species any act prohibited under Section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. Section

4(d) also directs the Secretary to promulgate protective regulations that are necessary and advisable for the conservation of threatened species. As a result, we interpret our policy to mean that, when we list a species as a threatened species, to the extent possible, we identify activities that will or will not be considered likely to result in violation of the protective regulations under section 4(d) for that species.

At this time, we are unable to identify specific activities that would or would not be considered likely to result in violation of section 9 of the Act beyond those included in the descriptions of proposed prohibitions and exceptions we would establish by protective regulation under section 4(d) of the Act (see II. Proposed Rule Issued Under Section 4(d) of the Act, below).

We may issue permits to carry out otherwise prohibited activities involving endangered and threatened wildlife species under certain circumstances. Regulations governing permits for threatened species are codified at 50 CFR 17.32, and general Service permitting regulations are codified at 50 CFR part 13. With regard to threatened wildlife, a permit may be issued for scientific purposes, to enhance the propagation or survival of the species, for incidental take in connection with otherwise lawful activities, for economic hardship, for zoological exhibition, for educational purposes, and for special purposes consistent with the purposes of the Act. The statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

The Service may also register persons subject to the jurisdiction of the United States through its captive-bred wildlife (CBW) program if certain established requirements are met under the CBW regulations (see 50 CFR 17.21(g)). Through a CBW registration, the Service may allow a registrant to conduct certain otherwise prohibited activities under certain circumstances to enhance the propagation or survival of the affected species, including take; export or re-import; delivery, receipt, carriage, transport, or shipment in interstate or foreign commerce in the course of a commercial activity; or sale or offer for sale in interstate or foreign commerce. A CBW registration may authorize interstate purchase and sale only between entities that both hold a registration for the taxon concerned. The CBW program is available for species having a natural geographic distribution not including any part of the United States and other species that the Service Director has determined to

be eligible by regulation. The individual specimens must have been born in captivity in the United States.

Separate from its proposed listing as a threatened species, as a CITES-listed species, all international trade of pygmy sloths by persons subject to the jurisdiction of the United States must also comply with CITES requirements pursuant to section 9, paragraphs (c) and (g), of the Act and to 50 CFR part 23. Applicable wildlife import/export requirements established under section 9, paragraphs (d), (e), and (f), of the Act; the Lacey Act Amendments of 1981 (16 U.S.C. 3371 *et seq.*); and 50 CFR part 14 must also be met for pygmy sloth imports and exports. Questions regarding whether specific activities with pygmy sloths would constitute a violation of section 9 of the Act should be directed to the Service’s Division of Management Authority ([managementauthority@fws.gov](mailto:managementauthority@fws.gov); 703–358–2104).

## II. Proposed Rule Issued Under Section 4(d) of the Act

### Background

Section 4(d) of the Act contains two sentences. The first sentence states that the Secretary shall issue such regulations as she deems necessary and advisable to provide for the conservation of species listed as threatened species. The U.S. Supreme Court has noted that statutory language similar to the language in section 4(d) of the Act authorizing the Secretary to take action that she “deems necessary and advisable” affords a large degree of deference to the agency (see *Webster v. Doe*, 486 U.S. 592, 600 (1988)). Conservation is defined in the Act to mean the use of all methods and procedures which are necessary to bring any endangered species or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Additionally, the second sentence of section 4(d) of the Act states that the Secretary may by regulation prohibit with respect to any threatened species any act prohibited under section 9(a)(1), in the case of fish or wildlife, or section 9(a)(2), in the case of plants. Thus, the combination of the two sentences of section 4(d) provides the Secretary with wide latitude of discretion to select and promulgate appropriate regulations tailored to the specific conservation needs of the threatened species. The second sentence grants particularly broad discretion to the Service when adopting one or more of the prohibitions under section 9.

The courts have recognized the extent of the Secretary’s discretion under this

standard to develop rules that are appropriate for the conservation of a species. For example, courts have upheld, as a valid exercise of agency authority, rules developed under section 4(d) that included limited prohibitions against takings (see *Alesea Valley Alliance v. Lautenbacher*, 2007 WL 2344927 (D. Or. 2007); *Washington Environmental Council v. National Marine Fisheries Service*, 2002 WL 511479 (W.D. Wash. 2002)). Courts have also upheld 4(d) rules that do not address all of the threats a species faces (see *State of Louisiana v. Verity*, 853 F.2d 322 (5th Cir. 1988)). As noted in the legislative history when the Act was initially enacted, “once an animal is on the threatened list, the Secretary has an almost infinite number of options available to [her] with regard to the permitted activities for those species. [She] may, for example, permit taking, but not importation of such species, or [she] may choose to forbid both taking and importation but allow the transportation of such species” (H.R. Rep. No. 412, 93rd Cong., 1st Sess. 1973).

The provisions of this proposed 4(d) rule would promote conservation of the pygmy sloth by ensuring that activities undertaken with the species by any person under the jurisdiction of the United States are also supportive of the conservation efforts undertaken for the species in Panama, as well as under the CITES Appendix-II listing. The provisions of this proposed rule are one of many tools that we would use to promote the conservation of the pygmy sloth. This proposed 4(d) rule would apply only if and when we make final the listing of the pygmy sloth as a threatened species.

As discussed above under Summary of Biological Status and Threats, we have concluded that the pygmy sloth is likely to become in danger of extinction within the foreseeable future primarily due to the impacts that nearby development and subsequent increased tourism will have on the species and its habitat. Under the proposed 4(d) rule, prohibitions and provisions that apply to endangered wildlife under section 9(a)(1) of the Act would help minimize threats that could cause further declines in the species’ status.

#### *Provisions of the Proposed 4(d) Rule*

Exercising the Secretary’s authority under section 4(d) of the Act, we have developed a proposed rule that is designed to address the pygmy sloth’s conservation needs. As discussed previously in Summary of Biological Status and Threats, we have concluded that the pygmy sloth is likely to become

in danger of extinction within the foreseeable future primarily due to the impacts that nearby development and subsequent increased tourism will have on the species and its habitat. Section 4(d) requires the Secretary to issue such regulations as she deems necessary and advisable to provide for the conservation of each threatened species and authorizes the Secretary to include among those protective regulations any of the prohibitions that section 9(a)(1) of the Act prescribes for endangered species. We find that, if finalized, the protections, prohibitions, and exceptions in this proposed rule as a whole satisfy the requirement in section 4(d) of the Act to issue regulations deemed necessary and advisable to provide for the conservation of the pygmy sloth.

The protective regulations we are proposing for the pygmy sloth incorporate prohibitions from section 9(a)(1) to address the threats to the species. The prohibitions of section 9(a)(1) of the Act, and implementing regulations codified at 50 CFR 17.21, make it illegal for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit or to cause to be committed any of the following acts with regard to any endangered wildlife, unless they are otherwise authorized or permitted: (1) import into, or export from, the United States; (2) take within the United States, within the territorial sea of the United States, or on the high seas; (3) possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any such wildlife that has been taken illegally; (4) deliver, receive, carry, transport, or ship in interstate or foreign commerce, by any means whatsoever and in the course of commercial activity; or (5) sell or offer for sale in interstate or foreign commerce. Certain exceptions to these prohibitions apply to employees or agents of the Service, the National Marine Fisheries Service, other Federal land management agencies, and State conservation agencies. Under the Act, “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. Some of these provisions have been further defined in regulations at 50 CFR 17.3. Take can result knowingly or otherwise, by direct and indirect impacts, intentionally or incidentally. This protective regulation would provide for the conservation of the pygmy sloth by including all of these prohibitions because the pygmy sloth is at risk of extinction within the foreseeable future and putting these

prohibitions in place would help to decrease synergistic, negative effects from other ongoing or future threats.

As discussed above under Summary of Biological Status and Threats, deforestation, tourism and development around Escudo, and collection for tourism, pet, and zoo demand are affecting the status of the pygmy sloth. Prohibiting take (which applies to take within the United States, within the territorial sea of the United States, or upon the high seas) would indirectly contribute to conservation of the species in its range country of Panama by helping to prevent attempts to captive-breed the species to establish a domestic market for trade of pygmy sloths. Collection of the species for tourism, zoo, and pet demand poses an ongoing threat to the species due to its limited range and small population size. Further regulating import and export to, from, and through the United States and foreign commerce by persons subject to the jurisdiction of the United States could deter breeding and demand for the species and help conserve the species by eliminating the United States as a potential market for illegally collected and traded pygmy sloths.

Despite these prohibitions regarding threatened species, we may under certain circumstances issue permits to carry out one or more otherwise-prohibited activities, including those described above. The regulations that govern permits for threatened wildlife state that the Director may issue a permit authorizing any activity otherwise prohibited with regard to threatened species. These include permits issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for zoological exhibition, for educational purposes, for incidental taking, or for special purposes consistent with the purposes of the Act (50 CFR 17.32).

There are other standard exceptions to the prohibitions included in the proposed 4(d) rule for the pygmy sloth (see Proposed Regulation Promulgation, below), and the statute also contains certain exemptions from the prohibitions, which are found in sections 9 and 10 of the Act. If the species-specific 4(d) rule is finalized as proposed, the import exemption for threatened wildlife listed in Appendix II of CITES (50 CFR 17.8; section 9(c)(2) of the Act) would not apply to this species. A threatened species import permit under 50 CFR 17.32 would be required for the importation of all specimens of pygmy sloth. Further, as noted above, we may also authorize certain activities associated with conservation breeding

under CBW registrations. We recognize that captive breeding of wildlife can support conservation, for example by producing animals that could be used for reintroductions. We are not aware of any captive-breeding programs of pygmy sloths for this purpose. The proposed 4(d) rule would apply to all live pygmy sloths and dead pygmy sloth parts and products and supports conservation management efforts for pygmy sloths in the wild in Panama.

**Required Determinations**

**Clarity of the Rule**

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your

comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

*National Environmental Policy Act (42 U.S.C. 4321 et seq.)*

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act (42 U.S.C. 4321 et seq.) need not be prepared in connection with listing a species as an endangered or threatened species under the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

**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 Branch of Delisting and Foreign Species (see **FOR FURTHER INFORMATION CONTACT**).

**Authors**

The primary authors of this proposed rule are the staff members of the Fish

and Wildlife Service’s Species Assessment Team and the Branch of Delisting and Foreign Species.

**List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Plants, Reporting and recordkeeping requirements, Transportation, Wildlife.

**Proposed Regulation Promulgation**

Accordingly, we propose to 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 “Sloth, pygmy three-toed” in alphabetical order under MAMMALS to read as follows:

**§ 17.11 Endangered and threatened wildlife.**

\* \* \* \* \*  
(h) \* \* \*

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
MAMMALS				
*	*	*	*	*
Sloth, pygmy three-toed .....	<i>Bradypus pygmaeus</i> .....	Wherever found .....	T	[ <b>Federal Register</b> citation when published as a final rule]; 50 CFR 17.40(v). <sup>4d</sup>
*	*	*	*	*

■ 3. Amend § 17.40 by adding paragraph (v) to read as follows:

**§ 17.40 Special rules—mammals.**

\* \* \* \* \*

(v) Pygmy three-toed sloth (*Bradypus pygmaeus*).

(1) *Prohibitions.* The following prohibitions that apply to endangered wildlife also apply to the pygmy three-toed sloth. Except as provided under paragraph (v)(2) of this section and §§ 17.4 and 17.5, it is unlawful for any person subject to the jurisdiction of the United States to commit, to attempt to commit, to solicit another to commit, or cause to be committed, any of the following acts in regard to this species:

- (i) Import or export, as set forth at § 17.21(b) for endangered wildlife.
  - (ii) Take, as set forth at § 17.21(c)(1) for endangered wildlife.
  - (iii) Possession and other acts with unlawfully taken specimens, as set forth at § 17.21(d)(1) for endangered wildlife.
  - (iv) Interstate or foreign commerce in the course of commercial activity, as set forth at § 17.21(e) for endangered wildlife.
  - (v) Sale or offer for sale, as set forth at § 17.21(f) for endangered wildlife.
- (2) *Exceptions from prohibitions.* In regard to this species, you may:
- (i) Conduct activities as authorized by a permit under § 17.32.

(ii) Take, as set forth at § 17.21(c)(2) through (c)(4) for endangered wildlife.

(iii) Possess and engage in other acts with unlawfully taken wildlife, as set forth at § 17.21(d)(2) for endangered wildlife.

(iv) Conduct activities as authorized by a captive-bred wildlife registration under § 17.21(g) for endangered wildlife.

**Martha Williams,**

*Director, U.S. Fish and Wildlife Service.*

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