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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS-R4-ES-2017-0082; FXES1113090000C2-178-FF09E42000]

RIN 1018-BB76

Endangered and Threatened Wildlife and Plants; Removal of the Monito Gecko

(*Sphaerodactylus micropithecus*) From the Federal List of Endangered and Threatened Wildlife

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; availability of draft post-delisting monitoring plan.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), propose to remove the Monito gecko (*Sphaerodactylus micropithecus*) from the Federal List of Endangered and Threatened Wildlife due to recovery. This determination is based on a thorough review of the best available scientific and commercial information, which indicates that this species has recovered, and the threats to this species have been eliminated or reduced to the point that the species no longer meets the definition of an endangered species or a threatened species under the Endangered Species Act of 1973, as amended. We seek information, data, and comments from the public regarding this proposal to delist the Monito gecko, and on the draft post-delisting monitoring plan.

DATES: To allow us adequate time to consider your comments on this proposed rule, we must receive your comments on or before [INSERT DATE 60 DAYS FROM DATE OF *FEDERAL REGISTER* PUBLICATION]. We must receive requests for public hearings in writing, at the

address shown in **FOR FURTHER INFORMATION CONTACT**, by [INSERT DATE 45 DAYS FROM DATE OF *FEDERAL REGISTER* PUBLICATION].

ADDRESSES: You may submit comments on this proposed rule and draft post-delisting monitoring plan by one of the following methods:

- *Electronically:* Go to the Federal eRulemaking Portal: [http:// www.regulations.gov](http://www.regulations.gov). In the Search box, enter the Docket Number for this proposed rule, which is FWS–R4–ES–2017–0082. You may submit a comment by clicking on “Comment now!” Please ensure that you have found the correct rulemaking before submitting your comment.

- *By hard copy:* By U.S. mail or hand-delivery: Public Comments Processing, Attn: Docket No. FWS–R4–ES–2017–0082; U.S. Fish and Wildlife Service Headquarters, MS BPHC, 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 [http:// www.regulations.gov](http://www.regulations.gov). This generally means that we will post any personal information you provide us (see **Public Comments** below for more information).

Document availability: A copy of the draft post-delisting monitoring plan can be viewed at <http://www.regulations.gov> under Docket No. FWS–R4–ES–2017–0082, or at the Caribbean Ecological Services Field Office web site at <https://www.fws.gov/caribbean/es>.

FOR FURTHER INFORMATION CONTACT: Edwin Muñiz, Field Supervisor, U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office, Road 301, Km. 5.1, Boquerón, Puerto Rico 00622; P.O. Box 491, Boquerón, Puerto Rico 00622; or by telephone (787) 851–7297 or by facsimile (787) 851–7441. If you use a telecommunications device for the deaf (TDD), please call the Federal Relay Service at (800) 877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Purpose of Regulatory Action

The purpose of this proposed action is to remove the Monito gecko from the Federal List of Endangered and Threatened Wildlife in title 50 of the Code of Federal Regulations (50 CFR 17.11(h)) based on its recovery.

Basis for Action

We may delist a species if the best scientific and commercial data indicate the species is neither a threatened species nor an endangered species for one or more of the following reasons: (1) The species is extinct; (2) the species has recovered; or (3) the original data used at the time the species was classified were in error (50 CFR 424.11). Here, we have determined that the species may be delisted based on recovery. A species may be delisted based on recovery only if the best scientific and commercial data indicate that it is no longer threatened or endangered.

- Rat predation, the threat suspected to be the main cause of an apparent population decline for the Monito gecko (factor C), was eliminated by August 1999 when the last rat eradication campaign was completed by the Puerto Rico Department of Natural and Environmental Resources (PRDNER). From August 1999 to May 2016, no rats or other potential exotic predators have been detected on Monito Island.
- The species' apparent small population size (factor E), noted as a threat at the time of listing, may have been an artifact of bias as surveys were conducted under conditions when the species was not easily detectable. The Monito gecko is currently considered abundant and widely distributed on Monito Island.

- The Monito gecko and its habitat have been and will continue to be protected under Commonwealth laws and regulations (factor D). These existing regulatory mechanisms are adequate to protect the Monito gecko now and in the future.
- There is no indication that other potential remaining threats such as natural predation significantly affect the gecko's survival. There are no known potential climate change effects (i.e., sea level rise) (factor E) that negatively affect the Monito gecko.

Public Comments

We intend that any final action resulting from this proposed rule will be as accurate and effective as possible. Therefore, we request data, comments, and new information from other concerned governmental agencies, the scientific community, industry, or other interested parties concerning this proposed rule. The comments that will be most useful and likely to influence our decisions are those that are supported by data or peer-reviewed studies and those that include citations to, and analyses of, applicable laws and regulations. Please make your comments as specific as possible and explain the basis for them. In addition, please include sufficient information with your comments to allow us to authenticate any scientific or commercial data you reference or provide. In particular, we seek comments concerning the following:

- (1) Information concerning the biology and ecology of the Monito gecko;
- (2) Relevant data concerning any threats (or lack thereof) to the Monito gecko particularly any data on the possible effects of climate change to this reptile as it relates to its habitat type, the extent of State protection and management that would be provided to this reptile as a delisted species, and evidence of illegal disembarking from boats onto the island or other illegal activities on Monito Island that may affect the species;
- (3) Current or planned activities within the geographic range of the Monito gecko that

may impact or benefit the species; and

(4) The draft post-delisting monitoring plan and the methods and approach detailed in it.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although they will be noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that a determination as to whether any species is a threatened or endangered species must be made “solely on the basis of the best scientific and commercial data available.”

In issuing a final determination on this proposed action, we will take into consideration all comments and any additional information we receive. Such information may lead to a final rule that differs from this proposal. All comments and recommendations, including names and addresses, will become part of the administrative record.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time.

If you submit information via [http:// www.regulations.gov](http://www.regulations.gov), your entire comment—including any personal identifying information—will be posted on the Web site. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so. Please note that comments posted to this Web site are not immediately viewable. When you submit a comment, the system receives it immediately. However, the comment will not be publically viewable until we post it, which

might not occur until several days after submission.

Similarly, if you mail or hand-deliver a hardcopy comment that includes personal identifying information, you may request at the top of your document that we withhold this information from public review, but we cannot guarantee that we will be able to do so. To ensure that the electronic docket for this rulemaking is complete and all comments we receive are publicly available, we will post all hardcopy submissions on [http:// www.regulations.gov](http://www.regulations.gov).

Comments and materials we receive, as well as supporting documentation used in preparing this proposed rule will be available for public inspection in two ways:

(1) You can view them on [http:// www.regulations.gov](http://www.regulations.gov). In the Search Documents box, enter FWS-R4-ES-2017-0082, which is the docket number for this rulemaking. Then, in the Search panel on the left side of the screen, select the type of documents you want to view under the Document Type heading.

(2) You can make an appointment, during normal business hours, to view the comments and materials in person at the U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Public Hearing

Section 4(b)(5)(E) of the Act provides for one or more public hearings on this proposal, if requested. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by the date shown in the **DATES** section of this document. We will schedule at least one public hearing on this proposal, if any are requested, and announce the dates, times, and locations, as well as how to obtain reasonable accommodations, in the *Federal Register* at least 15 days before any hearing.

Previous Federal Actions

On October 15, 1982, we published a final rule in the *Federal Register* (47 FR 46090) listing the Monito gecko as an endangered species and designating the entire island of Monito as critical habitat. The final rule identified the following threats to the Monito gecko: Extremely small population size coupled with suspected predation by rats. On March 27, 1986, we published the Monito Gecko Recovery Plan (USFWS 1986, 18 pp.). The 5-year review, which was completed on August 8, 2016 (USFWS 2016, 25 pp.), recommended delisting the species due to recovery.

For additional details on previous Federal actions, see discussion under the **Recovery** section below. Also see <http://www.fws.gov/endangered/species/us-species.html> for the species profile for this reptile.

Species Information

Biology and Life History

The Monito gecko, *Sphaerodactylus micropithecus*, (Schwartz 1977, entire) is a small lizard (approximately 36 millimeters (1.42 inches) snout-vent length) with an overall pale tan body and dark-brown mottling on the dorsal surface. It is closely related to the *Sphaerodactylus macrolepis* complex of the Puerto Rican Bank, but variation in dorsal pattern and scale counts confirm the distinctiveness of the species; probably resulting from a single invasion to Monito Island and its subsequent isolation (Schwartz 1977, p. 990, Dodd and Ortiz 1984, p. 768).

Little is known about the biology of this species, including its diet, reproduction, or potential predators. A study of the diet of other more common *Sphaerodactylus* species in Puerto Rico found a diverse content of small invertebrates, such as mites, springtails, and spiders (Thomas and Gaa Kessler 1996, pp. 347–362). Out of the 18 individuals counted by Dodd and

Ortiz (1983, p. 120), they found juveniles and gravid females suggesting that the species is reproducing. Dodd and Ortiz (1983, p. 121) suspected reproduction occurs from at least March through November as suggested by the egg found by Campbell in May 1974, by the gravid females found by Dodd and Ortiz (1982, p. 121) on August 1982, and the fact that Monito gecko eggs take 2 to 3 months to hatch (Rivero 1998, p. 89). During a plot survey on May 2016, two gravid females and several juveniles were found (USFWS 2016, p. 13). Potential natural predators of the Monito gecko may include the other native lizard *Anolis monensis* and/or the skink (*Spondilurus monitae*).

Distribution and Habitat

The Monito gecko is restricted to Monito Island, an isolated island located in the Mona Passage, about 68 km (42.3 mi) west of the island of Puerto Rico, 60 km (37.3 mi) east of Hispaniola and about 5 km (3.1 mi) northwest of Mona Island (USFWS 1986, p. 2). Monito Island is a flat plateau surrounded by vertical cliffs rising about 66 m (217 ft) with no beach, and considered the most inaccessible island within the Puerto Rican archipelago (García et al. 2002, p. 116). With an approximate area of 40 acres (c.a. 16 hectares) (Woodbury et al. 1977, p. 1), Monito Island is part of the Mona Island Reserve, managed for conservation by the PRDNER (no date, p. 2). The remoteness and difficulty of access to Monito Island make studying the Monito gecko difficult (Dodd 1985, p. 2).

The only life zone present on Monito Island is subtropical dry forest (Ewel and Whitmore 1973, p. 10). In this life zone, the Monito gecko has been found in areas characterized by loose rock sheets or small piles of rocks, exposed to the sun, and with little or no vegetation cover. Vegetation may or may not be associated with these areas. On Monito Island, such areas include small groves of *Guapira discolor* (barreño), *Pithecellobium unguis-cati* (escambrón

colorado), or *Capparis flexuosa* (palo de burro) where some leaf litter is present; areas with loose rocks on the ground; or rock sheets that provide shady refuges, and numerous regions where large pieces of metal (remnant ordnance) lay on the ground (Ortiz 1982, p. 2). Being a small, ground-dwelling lizard, the Monito gecko, like other members of its genus, is usually found under rocks, logs, leaf litter (and trash) (Rivero 1998, p. 89).

Population Size and Trends

When the species' Recovery Plan was completed in 1986, only two island-wide surveys had been completed (Dodd and Ortiz 1983, entire; Hammerson 1984, entire), with the higher count from Dodd and Ortiz (1983, p. 120) reporting a total of 18 geckos during a 2-day survey. During both of these surveys all geckos were found during the day and under rocks. Subsequent surveys of variable length and area covered detected from 0 to 13 geckos during the day as well (PRDNER 1993, pp. 3–4; USFWS 2016, p. 9).

These previous attempts to survey for the Monito gecko are considered underestimates, because the surveys were done during the day when the species is more difficult to detect: It seems to be less active and mostly hiding under rocks, debris, crevices, or other substrates. Although geckos in the *Sphaerodactylinae* group are considered mostly diurnal or crepuscular (Rivero, p. 89; Pianka and Vitt 2003, p. 185), we suspect that the Monito gecko is more active at night and thus easier to detect during night surveys. This nocturnal behavior was confirmed during a May 2014 rapid assessment and a May 2016 systematic survey. During the May 2014 rapid assessment, at least one gecko was seen during each of the three nights of the trip; some encounters were opportunistic and others occurred while actively searching for the species (USFWS 2016, p. 9). In fact, no geckos were seen during daylight hours. Geckos were seen on exposed substrates and not hidden under rocks or litter, although some were seen within leaf

litter mixed with rocks under a *Ficus citrifolia* tree. Geckos were observed escaping into the cracks and solution holes of the limestone rock.

The May 2016 systematic gecko survey involved setting up of 40 random plots on Monito Island (USFWS 2016, p. 10). Each plot was 20 m × 20 m (400 m²), so that the survey covered a total of 16,000 m² or approximately 11 percent of Monito Island. Four two-person teams visited 10 plots each. Each observer surveyed each plot independently. All sites were surveyed at least twice, and all took place during the night. A total of 84 geckos was observed during 96 surveys among the 40 plots, most on exposed rock. Only 8 out of the 84 counted were found under a rock or other substrate; all others were out during the night. Only two geckos were opportunistically found during the day while observers were turning rocks and dry logs.

Gecko occupancy and abundance was estimated using a standard mathematical population model accounting for the abundance and detection bias that allow individuals to go unseen during surveys (Island Conservation (IC) 2016, p. 5). Occupancy of the geckos on Monito Island was determined to be 27.8 percent (11.3–68.6 percent). The estimated number of geckos per plot from the best fit model was 73.3 geckos (Range: 1–101). The abundance model indicates a total of 1,112 geckos present within the surveyed plots (95 percent confidence interval: 362–2,281). Extrapolated across the entire island, Monito Island hosts approximately 7,661 geckos (50 percent confidence interval: 5,344–10,590).

Recovery and Recovery Plan Implementation

Section 4(f) of the Act directs us to develop and implement recovery plans for the conservation and survival of threatened and endangered species unless we determine that such a plan will not promote the conservation of the species. Recovery plans are not regulatory documents and are instead intended to establish goals for long-term conservation of a listed

species, define criteria that are designed to indicate when the threats facing a species have been removed or reduced to such an extent that the species may no longer need the protections of the Act, and provide guidance to our Federal, State, and other governmental and nongovernmental partners on methods to minimize threats to listed species. There are many paths to accomplishing recovery of a species, and recovery may be achieved without all recovery criteria being fully met. For example, one or more criteria may have been exceeded while other criteria may not have been accomplished or become obsolete, yet the Service may judge that, overall, the threats have been minimized sufficiently, and the species is robust enough, to reclassify the species from endangered to threatened or perhaps delist the species. In other cases, recovery opportunities may have been recognized that were not known at the time the Recovery Plan was finalized. These opportunities may be used instead of methods identified in the Recovery Plan.

Likewise, information on the species may subsequently become available that was not known at the time the Recovery Plan was finalized. The new information may change the extent that criteria need to be met for recognizing recovery of the species. Recovery of species is a dynamic process requiring adaptive management that may, or may not, fully follow the guidance provided in a Recovery Plan.

The following discussion provides a brief review of recovery planning and implementation for the Monito gecko, as well as an analysis of the recovery criteria and goals as they relate to evaluating the status of the taxon.

The Monito Gecko Recovery Plan (Plan) was approved on March 27, 1986 (USFWS 1986, entire). The objective of the Plan was to conduct a systematic status survey and ecological study of the species, and to reevaluate the species' status and formulate a quantitative recovery level and specific recovery actions (USFWS 1986, p. 7). This Plan is considered outdated and

does not contain recovery criteria that could lead to delisting the Monito gecko. However, the Plan does provide recovery objectives that, when accomplished, would aid in developing such criteria. No quantitative recovery level was defined due to the lack of data on historical population levels, population trends, and apparent historical population size. The objectives were accomplished as follows:

Recovery Actions

The Plan identifies five primary recovery actions:

- (1) Determine the status of the present population;
- (2) Conduct basic ecological studies;
- (3) Determine extent, if any, of predation and competition by rats and other native lizards (see Factor C);
- (4) Update the Plan; and
- (5) Continue protection of the present population.

The following discussion provides specific details for each of these actions.

Recovery action 1: Determine the status of the species.

From 1982 to 1993, several Monito gecko surveys were conducted (USFWS 2016, p. 9). However, some of these surveys were either done before the Plan was completed (USFWS 1986) or did not provide enough information to answer the population objectives of the Plan, and current information (see Population Size and Trends above) suggests that surveys underestimated the number of geckos. Data from the 2014 rapid assessment and the 2016 systematic plot survey show that, overall, the Monito gecko is abundant across the whole island and numbers in the thousands, indicating a large healthy population, as specified in the **Species Information** section above.

Recovery action 2: Conduct basic ecological studies.

Besides the population survey efforts, no basic ecological studies have been conducted for the Monito gecko. The Service believes that conducting ecological studies, as described in the Plan (USFWS 1986, pp. 7–8), is not crucial to further assess the species' listing status. There is no indication that ecological factors such as habitat preferences (species occurs throughout the island) and fluctuations in reproductive biology or activity patterns (both unknown), are critical for the species' listing status. The adjustment of surveys from diurnal to nocturnal was a key ecological (behavior) trait for researchers to consider in order to obtain reliable data and provide optimal population information. We will further discuss any possible needs of ecological evaluations in relation to post-delisting monitoring with our partners, but we will likely not need detailed research on the gecko's ecology based on the status of threats in its native habitat on Monito Island.

Recovery action 3: Determine the extent, if any, of predation and competition by rats and native reptiles.

At the time of listing, the presence of rats on Monito Island was identified as the main threat to the Monito gecko. This threat was suspected to be the main cause of an apparent population decline for the Monito gecko, since rats are predaceous and are known to feed on both lizards and lizard eggs (Dodd and Ortiz 1983, 120; Case and Bolger 1991, pp. 273–278). However, the net effect, if any, of the potential rat predation on the geckos is debatable. For example, in comments quoted in the final listing rule (47 FR 46091, October 15, 1982), Dr. H. Campbell indicated that the scarcity of the Monito geckos was an artifact of the intense predation by black rats (*Rattus rattus*), while Dr. A. Schwartz expressed doubts that rats could have any

effect on the gecko or its eggs. Dodd and Ortíz (1983, p. 121) also explained that during their surveys, predator pressure on the gecko could not be proven and that more studies were needed to determine if rats or other predators do affect the Monito gecko. The potential effect of rats on two other relatively common small geckos (*Sphaerodactylus monensis* and *Sphaerodactylus levinsi*) on nearby Mona and Desecheo Islands (respectively) is also unknown. Nevertheless, there is ample evidence that the Monito gecko would fare better without rats (Case and Bolger 1991, entire; Towns et al. 2006, entire; Jones et al. 2016, entire; Thibault et al. 2017, entire).

In October 1992, the PRDNER began a black rat eradication and survey project on Monito Island to benefit native and endemic species on that Island (García et al. 2002, p. 116). The eradication campaign continued in March 1993 with poisoning (rodenticide) and snap traps to assess changes in the rat population. A second eradication campaign started in October 1998, with three eradication events at 4-month intervals, and again using, in addition to snap traps, chew blocks (i.e., soft wood pieces soaked in canola oil) as a monitoring tool.

García et al. (2002, pp. 117–118) evaluated the status of the rat population seven times during the first campaign and five times during the second campaign. Since the completion of the second eradication campaign (August 1999), no rats have been detected on Monito Island. García et al. (2002, p. 118) concluded that in order to be certain that eradication had been achieved, it was essential to continue an appropriate rat monitoring program on the island, and recommended using chew blocks. However, no systematic rat monitoring has been implemented on the island since September 1999. Nonetheless, during a seabird blood sampling trip in August 2000, Anderson and Steeves (2000, p. 1) reported not seeing any rats on Monito Island, as did subsequent PRDNER bird survey trips in 2003.

On May 2014, the Service organized an expedition to Monito Island with the PRDNER

in order to confirm the eradication of black rats from the island, and to evaluate the status of and threats to the Monito gecko. The Service and the PRDNER placed 27 snap traps and 70 chew blocks distributed along transects covering 870 meters in length (USFWS 2016, p. 7). In addition, some food items (i.e., watermelon, left-over canned food) were intentionally left exposed and available for rats. No signs of rats were detected on these available sources during this 4-day/3-night trip. During surveys conducted in May 2016, the Service and the PRDNER also placed 80 chew blocks, two within each gecko sampling plot (USFWS 2016, p. 10). No rats were seen or detected with the chew blocks during this 5-day/4-night trip. This is a marked contrast from when the species was listed in 1982, when rats were observed island-wide at all times during a 2-day expedition (47 FR 46090, October 15, 1982).

In short, although it cannot be ascertained when the last rat died, the Service believes Monito Island has been rat free since August–September 1999. Thus, the main threat to the species has not been present for at least the past 18 years.

Other lizards (i.e., *Anolis monensis* and *Spondilurus monitae*, formerly *Mabuya mabouya sloani*) that naturally occur on the Island may also prey on the Monito gecko. These other species are considered diurnal (active during the day), while the Monito gecko is considered nocturnal (active during the night). Determining the extent of these potential predator-prey interactions would be challenging. However, this should no longer be necessary, as the species has persisted despite potential predatory threats.

Recovery action 4: Update Recovery Plan.

Because of the information on threats and recovery progress that is provided in the Monito gecko 5-year review (USFWS 2016) and this proposed rule, we believe the Monito gecko no longer meets the definition of an endangered or threatened species. Therefore, a formal

update of the 1986 Plan is not needed.

Recovery action 5: Continue protection of the present population.

Monito Island has been protected by the PRDNER as a nature reserve since 1986 (PRDNER, no date, p. 2). There are no permanent residents on Monito Island and access is allowed only under special permits issued by the PRDNER, which also maintains a ranger detachment and biologist on nearby Mona Island. Monito Island is also visited by illegal immigrants. The frequency of these events varies from year to year, and illegal immigrants are evacuated fairly quickly by the U.S. Coast Guard. Furthermore, the impacts of these visitations seem to be minimal (see discussion below).

Summary of Factors Affecting the Species

Section 4 of the Act and its implementing regulations (50 CFR part 424) set forth the procedures for listing, reclassifying, or removing species from the Federal List of Endangered and Threatened Species. "Species" is defined by the Act as including any species or subspecies of fish or wildlife or plants, and any distinct vertebrate population segment of fish or wildlife that interbreeds when mature (16 U.S.C. 1532(16)). Once the species is determined, we then evaluate whether that species may be an endangered species or a threatened species because of any of one or a combination of the five factors described in section 4(a)(1) of the Act:

- (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.

We must consider these same five factors in reclassifying or delisting a species. In other

words, for species that are already listed as endangered or threatened, the analysis for a delisting due to recovery must include an evaluation of the threats that existed at the time of listing, the threats currently facing the species, and the threats that are reasonably likely to affect the species in the foreseeable future following the delisting or downlisting and the removal of the Act's protections.

The following discussion examines the factors that were believed to affect the Monito gecko at the time of its listing, are currently affecting it, or are likely to affect the Monito gecko within the foreseeable future.

Factor A. The Present or Threatened Destruction, Modification, or Curtailment of Its Habitat or Range

At the time of listing (47 FR 46090, October 15, 1982), the destruction, modification, or curtailment of its habitat (Factor A from the Act) was not considered a threat to the Monito gecko. In 1940, the U.S. Government acquired Monito Island, and the entire island was used by the Air Corps/U.S. Air Force as a high-level radar bombing and gunnery range (Parsons Corp. 2010, pp. 2–5). In 1961, Monito Island was declared surplus and was returned to the Commonwealth of Puerto Rico in September 1965 (Parsons Corp. 2010, pp. 2–5). Monito Island is managed by the PRDNER for conservation as part of the Mona Island Reserve (PRDNER, no date, p. 2). The final listing rule indicated that there were no plans to continue to use Monito Island for bombing practices at the time, and any major alteration of the island could be detrimental to the continued survival of the Monito gecko. In fact, the large amount of scattered debris on Monito Island suggests significant historical habitat modification from bombing activities (USFWS 1986, p. 5).

A Monito Island site inspection was conducted in August 2009 (Parsons Corp. 2010,

entire). A qualitative reconnaissance and munitions constituents sampling was performed to confirm the range location and to evaluate the potential presence of munitions and explosives of concern (Parsons Corp. 2010, p. ES-1). Although unexploded ordnance (UXO) and munitions debris was found on Monito Island, immediate munitions removal actions were not warranted.

The potential for future UXO detonation activities may have an effect on the Monito gecko and its critical habitat. Since Monito Island is a natural reserve, all activities must be coordinated with the PRDNER. The Service has been conducting informal consultations with the U.S. Army Corps of Engineers in order to develop species-specific standard operating procedures (SOPs) for the Monito gecko and other federally listed species that occur on Monito Island. These site-specific SOPs would be considered the appropriate conservation measures required to avoid and minimize potential adverse effects on the species or its critical habitat. Based on the current consultation, the magnitude of threat of these future U.S. Army Corps of Engineers actions on the Monito gecko is considered minimal and non-imminent.

Monito Island receives illegal immigrants usually from the western islands of Cuba and Hispaniola while trying to enter U.S. territory. The PRDNER has stated that illegal immigrants sometimes light fires on Monito Island in order to be detected and rescued. This information was documented during the May 2016 trip, where two recent fire pits were found, along with a small pile of firewood cuttings, on the south-southeast side of the island on exposed rock with no vegetation in the immediate vicinity. The presence of fire pits on Monito Island had not been documented in the past. At least for the two fire pits found in May 2016, their placement and construction demonstrates these were controlled fires and their intention was not of criminal nature. Although there is no information available on the frequency and damage these fires may be causing, based on what was documented in May 2016, the potential effects of such fires may

also be considered minimal. To date, there is no indication that any potential fires have spread throughout the Island.

Factor B. Overutilization for Commercial, Recreational, Scientific, or Educational Purposes

The final listing rule (47 FR 46091, October 15, 1982) mentioned that because of the rarity of the Monito gecko, removal of specimens could be detrimental. At present, we are not aware of any individuals taken after listing for commercial, recreational, scientific, or educational purposes (Factor B from the Act). The remoteness and difficult access of Monito Island limits any collecting efforts. In addition, access is only allowed under special permits issued by the PRDNER, mostly for research, security, or management purposes. Furthermore, the Monito gecko's apparent rarity may have been an artifact of sampling bias, because surveys from 1982 to 1993 were done during daylight hours when the species is mostly hiding and the species has a low detection probability (see **Species Information** section).

Factor C. Disease or Predation

The final listing rule (47 FR 46091, October 15, 1982) indicates that the presence of large numbers of introduced black rats was thought to be the major factor in the precarious state of the Monito gecko because, although predation by black rats on this species has not been confirmed, rats are predaceous and are known to feed on both lizards and lizard eggs (Dodd and Ortiz 1983, p. 120; Case and Bolger 1991, pp. 273–278) (Factor C from the Act). Thus, predation by rats was considered a possible cause of population decline for the Monito gecko (USFWS 1986, p. 5). As previously explained under the Recovery Action 3 section of this proposed rule, Monito Island has been rat free since August–September 1999. Thus, the main threat to the species has

not been present for at least the past 18 years.

Although Monito Island is currently rat free, there is still the possibility that rats could reach the island again. Rats may be transferred from Mona Island by floating debris or more likely by human means. In addition to illegal immigrants, as discussed above, there is limited evidence of public use of Monito Island for recreational or unknown purposes. Although it is logistically difficult to disembark on the island and prohibited because of unexploded ordinances from the previous military activities, these disembarking events could increase the chance of invasion and establishment of rats or other exotics species. However, this possibility is considered very low. The rat eradication campaign was completed in 1999, and 18 years later, no rats have been found.

Ortiz (1982, p. 7) included the endemic Monito skink *Spondilurus monitae* (formerly *Mabuya mabouya sloani*) as a potential predator of the Monito gecko (Factor C from the Act). Other species of *Mabuya* feed primarily on small invertebrates, but the diversity of prey types in stomach contents, including small vertebrates, indicates that some skink species (such as *M. bistriata*) most likely feed on any moving animal of the appropriate size (Vitt and Blackburn 1991, p. 920). Rivero (1998, p. 106) states that *M. mabouya* live in places where *Sphaerodactylus* abound, and it is probable that geckos constitute an important food item for this skink. In fact, during the 2016 trip, biologists observed one adult skink active at night within the same exposed rock habitat used by the Monito gecko (i.e., exposed karst rock with lots of crevices and holes). It is also highly probable that another native lizard, *Anolis monensis*, will prey on the Monito gecko as well, except that *Anolis* are considered diurnal. The Monito gecko's trait of tail autotomy (tail loss) is certainly an effective predator defense mechanism (Pianka and Vitt 2003, p. 76). During our May 2014 site visit, 2 out of the 8 geckos captured for

measurements were missing the tips of their tails, and during May 2016, only 5 geckos out of the 84 seen had missing tail parts. Although difficult to determine, this suggests natural predation pressure from the two other native lizard species mentioned above is low.

Factor D. The Inadequacy of Existing Regulatory Mechanisms

When the Monito gecko was listed (1982), the species did not have any other statutory or regulatory protections. Currently, in addition to the Act, territorial laws and regulations protect the Monito gecko (Factor D from the Act). In 1999, the Commonwealth of Puerto Rico enacted Law No. 241-1999, known as the New Wildlife Law of Puerto Rico (*Nueva Ley de Vida Silvestre de Puerto Rico*). The purpose of this law is to protect, conserve, and enhance both native and migratory wildlife species; declare property of Puerto Rico all wildlife species within its jurisdiction; provide provisions to issue permits; regulate hunting activities; and regulate exotic species, among other actions. In 2004, the PRDNER approved Regulation 6766—to regulate the management of threatened and endangered species in Puerto Rico (*Reglamento 6766—Reglamento para Regir el Manejo de las Especies Vulnerables y en Peligro de Extinción en el Estado Libre Asociado de Puerto Rico*), including the Monito gecko, which was listed as endangered. Article 2.06 of this regulation prohibits collecting, cutting, removing, among other activities, listed animals within the jurisdiction of Puerto Rico. There is no evidence that either the law or the regulation is not being adequately implemented.

Additionally, the PRDNER has managed Monito Island as a natural reserve since 1986, protecting its wildlife and vegetation. Monito Island is managed for conservation because it harbors one of the largest seabird nesting colonies in the Caribbean, in addition to other endemic and federally listed species like the Higo chumbo cactus (*Harrisia portoricensis*) and the yellow-shouldered blackbird (*Agelaius xanthomus*). There are no human permanent residents on the

island, and public access is prohibited. The best available information indicates that Monito Island will remain permanently protected as a nature reserve and managed for conservation.

Factor E. Other Natural or Manmade Factors Affecting Its Continued Existence

In listing the Monito gecko, we considered as a factor the species' extremely small population size (47 FR 46090, October 15, 1982) (Factor E from the Act). As previously explained in the **Species Information** and **Recovery** sections of this proposed rule, the Monito gecko is a small and cryptic species and difficult to detect, especially during the day. However, all of the historical surveys documented (USFWS 2016, p. 9) were done during daylight hours, when the species is apparently less active, safely hiding from diurnal native reptile predators, and/or exhibiting behavioral adaptations to avoid the hot temperatures within its xeric dry forest environment. As discussed above (see Population Size and Trends), these and other biases cause us to question the validity of these historical surveys. In contrast, as also discussed above (see Population Size and Trends), the best available population estimate for the species, completed during the May 2016 systematic plot survey, shows that the Monito gecko is widely distributed throughout Monito Island and gecko abundance appears to number in the thousands, indicating a large well-represented population (IC 2016, pp. 5–6). Our post-delisting monitoring will demonstrate the continued recovery of this species. In general, lizard populations remain fairly stable and are influenced by predation and amount of resources available, and predation and competition usually result in populations existing below their carrying capacity (Pianka and Vitt 2003, p. 64). Based on the May 2014 and 2016 observations and results, there is no indication that limited resources are acting on the population to warrant listing under the Act.

Potential sea level rise (Factor A from the Act) as a result of climate change is not a threat to this species or its habitat, because the Monito gecko is found only on Monito Island, which is 66 m (217 ft) above sea level and has no beach areas. The current rate of sea level rise in the Caribbean is 10 cm (3.9 inches) per century, with more specific sea level rise estimates for Puerto Rico ranging from 0.07 to 0.57 meters (m) (0.20 to 1.87 feet) above current sea level by the year 2060 and between 0.14 to 1.70 m (0.40 to 5.59 feet) by the year 2110 (Puerto Rico Climate Change Council 2013, p. 64). Hurricanes, such as the recent Hurricanes Irma and Maria are not considered a threat to the Monito gecko in part because the island is 66 m above sea level (Factor E from the Act). The vegetation on the island is short and therefore hurricane impacts are expected to be minimal. Additionally, the Monito gecko is under rocks most of the time. We have no information indicating rising temperatures will impact the gecko directly or indirectly.

Proposed Determination of Species Status

Under section 4(a)(1) of the Act, we determine whether a species is an endangered species or threatened species because of any one or a combination of the following: (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.

The Act defines an endangered species as any species that is “in danger of extinction throughout all or a significant portion of its range” and a threatened species as any species “which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” On July 1, 2014, we published a final policy interpreting the phrase “significant portion of its range” (SPR) (79 FR 37578). In our policy, we interpret the

phrase “significant portion of its range” in the Act’s definitions of “endangered species” and “threatened species” to provide an independent basis for listing a species in its entirety; thus there are two situations (or factual bases) under which a species would qualify for listing: A species may be in danger of extinction or likely to become so in the foreseeable future throughout all of its range; or a species may be in danger of extinction or likely to become so throughout a significant portion of its range. If a species is in danger of extinction throughout an SPR, it, the species, is an “endangered species.” The same analysis applies to “threatened species.”

The SPR policy is applied to all status determinations, including analyses for the purposes of making listing, delisting, and reclassification determinations. The procedure for analyzing whether any portion is an SPR is similar, regardless of the type of status determination we are making. The first step in our assessment of the status of a species is to determine its status throughout all of its range. Depending on the status throughout all of its range, we will subsequently examine whether it is necessary to determine its status throughout a significant portion of its range. If we determine that the species is in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range, we list the species as an endangered (or threatened) species and no SPR analysis will be required. The same factors apply whether we are analyzing the species’ status throughout all of its range or throughout a significant portion of its range.

Monito gecko —Determination of Status throughout All of its Range

As required by section 4(a)(1) of the Act, we conducted a review of the status of this species and assessed the five factors to evaluate whether it is in danger of extinction currently or likely to become so in the foreseeable future throughout all of its range. We conducted a review

of the status of Monito gecko and assessed the five factors to evaluate whether Monito gecko is in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range. In considering delisting the Monito gecko, we evaluated the range of this reptile to determine if any areas could be considered a significant portion of its range. The Monito gecko is endemic to Monito Island, a small island (approx. 40 acres; 16.2 hectares) off the west coast of Puerto Rico, and it has not been introduced elsewhere. There are no landscape barriers within Monito Island that might be of biological or conservation importance. The most recent survey found that the species occurs across most of the Island. Hence, the basic ecological components required for the species to complete its life cycle are considered present throughout Monito Island. We found that, Monito gecko populations are persistent with an estimate of approximately 7,661 geckos (50 percent confidence interval: 5,344 – 10,590). During our analysis, we found that impacts believed to be threats at the time of listing (primarily predation by rats, factor C) are either not as significant as originally anticipated or have been eliminated or reduced since listing, and we do not expect any of these conditions to substantially change post-delisting and into the foreseeable future, nor do we expect climate change to affect this species. We conclude that the previously recognized impacts to the Monito gecko no longer are a threat to the species, such that the species is no longer in danger of extinction throughout all of its range now or in the foreseeable future. In order to make this conclusion, we analyzed the five threat factors used in making Endangered Species Act listing (and delisting) decisions. This analysis indicates that the Monito gecko is not in danger of extinction throughout all of its range, nor is it likely to become so in the foreseeable future.

Monito gecko—Determination of Status throughout a Significant Portion of its Range

Consistent with our interpretation that there are two independent bases for listing species

as described above, after examining the species' status throughout all of its range, we now examine whether it is necessary to determine its status throughout a significant portion of its range. Per our final SPR policy, we must give operational effect to both the "throughout all of its range" language and the SPR phrase in the definitions of "endangered species" and "threatened species." Because we determined that Monito gecko is not in danger of extinction or likely to become so in the foreseeable future throughout all of its range, we will consider whether there are any significant portions of its range in which the species is in danger of extinction or likely to become so.

We evaluated the range of the Monito gecko to determine if any area may be significant. The Monito gecko is endemic to Monito Island where they are under formal protection and management in the State owned nature reserve and the only life zone present on Monito Island is subtropical dry forest (Ewel and Whitmore 1973, p. 10). In this life zone, the Monito gecko has been found in areas characterized by loose rock sheets or small piles of rocks, exposed to the sun, and with little or no vegetation cover. These areas include small groves where some leaf litter is present; areas with loose rocks on the ground; or rock sheets that provide shady refuges, and numerous regions where large pieces of metal (remnant ordnance) lay on the ground. Because its range is limited to Monito Island and the only life zone present on Monito Island is subtropical dry forest, we find that the species is comprised of is a single, contiguous population and there are no logical biological divisions delineating portions of the range. For this reason, we did not identify any portions that may be significant because of natural or biological divisions indicating biological or conservation importance.

We also examined whether any threats are geographically concentrated in some way that would indicate the species may be in danger of extinction, or likely to become so, in a particular

area. We conclude that none of them are concentrated in any particular area of the species' range; all factors act uniformly throughout its range. The factors affecting the Monito gecko occur at similarly low levels throughout its range and would affect all individuals of the population. Because the species acts as a single population, no portion is likely to have a different status or be differently affected by threats than any other portion or than that of the species throughout all of its range. Therefore, no threats or their effects are sufficiently concentrated to indicate the species may be in danger of extinction, or likely to become so in any area of the species' range. We did not identify any portions where the species may be in danger of extinction or likely to become so in the foreseeable future. Therefore, no portions warrant a detailed SPR analysis because there cannot be any portion, including a significant portion, of the species' range where the species is in danger of extinction or likely to become so in the foreseeable future. For these reasons, we conclude that the species is not in danger of extinction, or likely to become so, throughout a significant portion of its range.

Conclusion and Determination

The Monito gecko has demonstrated the ability to adapt to changing environmental conditions over time from both anthropogenic and natural disturbances. And although there is no genetic information available for the Monito gecko, there are no indications of a decreased fitness or that a lack of representation is causing species mortality or limiting the species' ability to adapt. Although the Monito gecko population is considered to have low redundancy (i.e., one population endemic to Monito Island), no immediate risk of extirpation was identified and no other populations outside of Monito Island are needed for its recovery. In addition, the fact that the species was found throughout the Island and gecko abundance is in the thousands, indicates a large well-represented population with demonstrated abilities to recover and adapt from

disturbances.

Because the Monito gecko population is considered self-sustaining, contains a relatively large number of individuals, and has demonstrated high resilience and viability, we expect this population to persist into the future. The species is considered abundant within its habitat, which consists of adequate area and quality to maintain survival and reproduction in spite of disturbances. Thus, the Monito gecko appears to have highly resilient population attributes (e.g., habitat generalist, potential high adult survival rate) that allow at least some degree of disturbance within a harsh xeric environment.

We have carefully assessed the best scientific and commercial information available regarding the threats faced by the Monito gecko in developing this proposed rule. The Service finds that the present or threatened destruction, modification, or curtailment of its habitat (factor A) is not a threat to the continued existence of the Monito gecko, and we do not expect it to be a threat in the future. We also conclude that overutilization (factor B) and disease (factor C) are not a threat to the Monito gecko. Natural predation by other native lizards may occur, but this activity is considered a low-magnitude threat because the Monito gecko has persisted despite potential predation and there is no indication that the magnitude of an undetermined natural predation pressure significantly affects the gecko's survival. No rats have been detected on Monito Island since August 1999. Therefore, we conclude that predation (factor C) is not a threat to the Monito gecko.

The species' apparent small population size (factor E), noted at the time of listing, may have been an artifact of bias as surveys were conducted under conditions when the species was not easily detectable. There are no known potential climate change effects (i.e., sea level rise or changes in air temperature) (factor A) that negatively affect the Monito gecko. No other natural

or manmade factors are considered threats (factor E). The Monito gecko and its habitat have been and will continue to be protected under Commonwealth laws and regulations (factor D), and these existing regulatory mechanisms are adequate to protect the Monito gecko now and in the future. The information indicates that this species is no longer at immediate risk of extinction, nor is it likely to experience reemergence of threats and associated population declines in the future. Based on the analysis above and after considering the best available scientific and commercial information, we conclude that the Monito gecko does not currently meet the Act's definition of an endangered or threatened species throughout its range.

Effects of This Proposed Rule

If this proposed rule is finalized, it would revise 50 CFR 17.11(h) to remove the Monito gecko from the Federal List of Endangered and Threatened Wildlife. If this proposed rule is finalized, the prohibitions and conservation measures provided by the Act would no longer apply to the Monito gecko. Federal agencies would no longer be required to consult with us under section 7 of the Act to ensure that any action authorized, funded, or carried out by them is not likely to jeopardize the gecko's continued existence. The prohibitions under section 9(a)(1) of the Act would no longer make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce, or take, possess, sell, deliver, carry, transport, or ship Monito geckos. Finally, this rule would also remove the Federal regulations related to the Monito gecko listing: The critical habitat designation at 50 CFR 17.95(c).

Post-Delisting Monitoring

Section 4(g) (1) of the Act requires us to implement a system in cooperation with the States to monitor effectively for not less than 5 years the status of all species that are delisted due

to recovery. Post-delisting monitoring (PDM) refers to activities undertaken to verify that a species delisted due to recovery remains secure from the risk of extinction after the protections of the Act no longer apply. The primary goal of PDM is to ensure that the species' status does not deteriorate, and if a decline is detected, to take measures to halt the decline so that proposing it as threatened or endangered is not again needed. If at any time during the PDM period, data indicate that protective status under the Act should be reinstated, we can initiate listing procedures, including, if appropriate, emergency listing. At the conclusion of the PDM period, we will review all available information to determine if re-listing, the continuation of monitoring, or the termination of monitoring is appropriate.

Section 4(g) of the Act explicitly requires cooperation with the States (which includes Territories such as Puerto Rico) in development and implementation of PDM programs. However, we remain responsible for compliance with section 4(g) and, therefore, must remain actively engaged in all phases of PDM. We also seek active participation of other entities that are expected to assume responsibilities for the species' conservation after delisting. In April 2017, the PRDNER and the Service agreed to be cooperators in the PDM for the Monito gecko.

We have prepared a Draft PDM Plan for the Monito gecko (USFWS 2017). The plan is designed to detect significant declines in the Monito gecko with reasonable certainty and precision, and detect possible new or reoccurring threats (i.e., presence of rats). The plan:

- (1) Summarizes the species' status at the time of delisting;
- (2) Defines thresholds or triggers for potential monitoring outcomes and conclusions;
- (3) Lays out frequency and duration of monitoring;
- (4) Articulates monitoring methods including sampling considerations;
- (5) Outlines data compilation and reporting procedures and responsibilities; and

(6) Proposes a PDM implementation schedule including timing and responsible parties.

Concurrent with this proposed delisting rule, we announce the draft PDM plan's availability for public review. The plan can be viewed in its entirety at <http://www.fws.gov/caribbean/es> or at [http:// www.regulations.gov](http://www.regulations.gov) under Docket No. FWS-R4-ES-2017-0082. Copies can also be obtained from the U.S. Fish and Wildlife Service, Caribbean Ecological Services Field Office, Boquerón, Puerto Rico (see **FOR FURTHER INFORMATION CONTACT**). We seek information, data, and comments from the public regarding the Monito gecko and the PDM strategy. We are also seeking peer review of this draft PDM plan concurrently with this comment period. We anticipate finalizing this plan, considering all public and peer review comments, prior to making a final determination on the proposed delisting rule.

Peer Review

In accordance with our policy published in the *Federal Register* on July 1, 1994 (59 FR 34270), and the Office of Management and Budget's Final Information Quality Bulletin for Peer Review, dated December 16, 2004, we will solicit the expert opinions of at least five appropriate and independent specialists regarding the science in this proposed rule and the draft PDM plan. The purpose of such review is to ensure that we base our decisions on scientifically sound data, assumptions, and analyses. We will send peer reviewers copies of this proposed rule and the draft PDM plan immediately following publication of the proposed rule in the *Federal Register*. We will invite peer reviewers to comment, during the public comment period, on the specific assumptions and conclusions regarding the proposed delisting rule and draft PDM plan. We will summarize the opinions of these reviewers in the final decision documents, and we will consider their input and any additional information we receive as part of our process of making a final

decision on this proposal and the draft PDM plan. Such communication may lead to a final decision that differs from this proposal.

Clarity of This Proposed 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:

- (a) Be logically organized;
- (b) Use the active voice to address readers directly;
- (c) Use clear language rather than jargon;
- (d) Be divided into short sections and sentences; and
- (e) 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.

Required Determinations

National Environmental Policy Act

We have determined that we do not need to prepare an Environmental Assessment or Environmental Impact Statement, as defined in the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), in connection with regulations adopted pursuant to section 4(a) of 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).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951), Executive Order 13175, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. We have determined that no tribal lands are affected by this proposal.

References Cited

A complete list of references cited is available on <http://www.regulations.gov> under Docket Number FWS-R4-ES-2017-0082.

Author

The primary author of this document is Jan P. Zegarra, Caribbean Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

List of Subjects in 50 CFR Part 17

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

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.

§ 17.11 [Amended]

2. Amend § 17.11(h) by removing the entry “Gecko, Monito” under “REPTILES” from the List of Endangered and Threatened Wildlife.

§ 17.95 [Amended]

3. Amend § 17.95(c) by removing the entry for the “Monito gecko (*Sphaerodactylus micropithecus*)”.

Dated: December 1, 2017

Signed

James W. Kurth
Deputy Director
U.S. Fish and Wildlife Service
Exercising the Authority of the Director
U.S. Fish and Wildlife Service

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