



## **DEPARTMENT OF THE INTERIOR**

### **Fish and Wildlife Service**

#### **50 CFR Part 17**

**[Docket No. FWS-R9-ES-2011-0003; FXES111309F2460-145-FF09E22000]**

**RIN 1018-AY42**

### **Endangered and Threatened Wildlife and Plants; Listing the Straight-Horned Markhor as Threatened With a Rule Under Section 4(d) of the ESA**

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

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), determine threatened status for the straight-horned markhor (*Capra falconeri megaceros*), under the Endangered Species Act of 1973, as amended (Act). We are also publishing a concurrent rule under section 4(d) of the Act. This rule protects and conserves the straight-horned markhor, while encouraging local communities to conserve additional populations of the straight-horned markhor through sustainable-use management programs.

**DATES:** This rule becomes effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** This final rule is available on the Internet at <http://www.regulations.gov> and comments and materials received, as well as supporting documentation used in the preparation of this rule, will be available for public inspection, by appointment, during normal business hours at: U.S. Fish and Wildlife Service; 5275 Leesburg Pike; Falls Church, VA 22041.

**FOR FURTHER INFORMATION CONTACT:** Janine Van Norman, Chief, Branch of Foreign Species, Ecological Services Program, U.S. Fish and Wildlife Service; telephone 703-358-2171; facsimile 703-358-1735. If you use a telecommunications device for the deaf (TDD), please call the Federal Information Relay Service (FIRS) at 800-877-8339.

**SUPPLEMENTARY INFORMATION:**

**Executive Summary**

**I. Purpose of the Regulatory Action**

We are combining two subspecies of markhor currently listed under the Endangered Species Act of 1973, as amended (Act), the straight-horned markhor (*Capra falconeri jerdoni*) and Kabul markhor (*C. f. megaceros*), into one subspecies, the straight-horned markhor (*C. f. megaceros*), based on a taxonomic change. We are listing the

straight-horned markhor (*C. f. megaceros*) as threatened under the Act.

We are also finalizing a rule under section 4(d) of the Act that allows the import of sport-hunted straight-horned markhor trophies under certain conditions. This regulation supports and encourages conservation actions for the straight-horned markhor.

## **II. Major Provision of the Regulatory Action**

This action eliminates the separate listing of the straight-horned markhor and Kabul markhor as endangered and adds the combined straight-horned markhor subspecies as threatened on the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h), and allows the import of sport-hunted straight-horned markhor trophies under certain conditions at 50 CFR 17.40(d). This action is authorized by the Act.

## **Background**

The Endangered Species Act of 1973, as amended (ESA or Act) (16 U.S.C. 1531 *et seq.*), is a law that was passed to prevent extinction of species by providing measures to help alleviate the loss of species and their habitats. Before a plant or animal species can receive the protection provided by the Act, it must first be added to the Federal List of Endangered and Threatened Wildlife or the Federal List of Endangered and Threatened Plants; section 4 of the Act and its implementing regulations at 50 CFR part 424 set forth the procedures for adding species to these lists.

### *Previous Federal Actions*

On June 14, 1976, we published in the **Federal Register** a rule listing the straight-horned markhor, or the Suleiman markhor (*Capra falconeri jerdoni*), and the Kabul markhor (*C. f. megaceros*), as well as 157 other U.S. and foreign vertebrates and invertebrates, as endangered under the Act (41 FR 24062). All species were found to have declining numbers due to the present or threatened destruction, modification, or curtailment of their habitats or ranges; overutilization for commercial, sporting, scientific, or educational purposes; the inadequacy of existing regulatory mechanisms; or some combination of the three. However, the main concerns were the high commercial importance and the inadequacy of existing regulatory mechanisms to control international trade.

Subsequent to the listing in 1976, the Suleiman markhor and the Kabul markhor were later considered by some authorities to be the single subspecies *C. f. megaceros* (straight-horned markhor). However, the Suleiman markhor and the Kabul markhor remained listed as separate subspecies under the Act.

On March 4, 1999, we received a petition from Sardar Naseer A. Tareen, on behalf of the Society for Torghar Environmental Protection and the International Union for Conservation of Nature (IUCN) Central Asia Sustainable Use Specialist Group, requesting that the Suleiman markhor (*C. f. jerdoni* or *C. f. megaceros*) population of the Torghar Hills region of the Balochistan Province, Pakistan, be reclassified from

endangered to threatened under the Act. On September 23, 1999 (64 FR 51499), we published in the **Federal Register** a finding, in accordance with section 4(b)(3)(A) of the Act, that the petition had presented substantial information indicating that the requested reclassification may be warranted, and we initiated a status review. We opened a comment period, which closed January 21, 2000, to allow all interested parties to submit comments and information. A 12-month finding was never completed.

On August 18, 2010, we received a petition dated August 17, 2010, from Conservation Force, on behalf of Dallas Safari Club, Houston Safari Club, African Safari Club of Florida, The Conklin Foundation, Grand Slam Club/Ovis, Wild Sheep Foundation, Jerry Brenner, Steve Hornaday, Alan Sackman, and Barbara Lee Sackman, requesting the Service downlist the Torghar Hills population of the Suleiman markhor (*Capra falconeri jerdoni* or *C. f. megaceros*), in the Balochistan Province of Pakistan, from endangered to threatened under the Act. On June 2, 2011, we published in the **Federal Register** a finding that the petition had presented substantial information indicating that the requested reclassification may be warranted, and we initiated a status review (76 FR 31903).

On February 1, 2012, Conservation Force, Dallas Safari Club, and other organizations and individuals filed suit against the Service for failure to conduct a 5-year status review pursuant to section 4(c)(2)(A) under the Act (*Conservation Force, et al. v. Salazar*, Case No. 11 CV 02008 D. D. C.). On March 30, 2012, a settlement agreement was approved by the Court (11-CV-02008, D. D. C.), in which the Service agreed to

submit to the **Federal Register** by July 31, 2012, a 12-month finding on the August 2010 petition. In fulfillment of the court-ordered settlement agreement and the requirement to conduct a 5-year status review under section 4(c)(2)(A) of the Act, the Service published in the **Federal Register** a 12-month finding and proposed rule to reclassify the straight-horned markhor (*C. f. jerdoni*) from endangered to threatened with a rule issued under section 4(d) of the Act (known as a 4(d) rule) (77 FR 47011) on August 7, 2012.

On December 5, 2013, the Service published in the **Federal Register** a revised proposed rule to combine the straight-horned markhor and Kabul markhor into one subspecies and reclassify the new subspecies as threatened under the Act with a 4(d) rule (78 FR 73173).

### **Summary of Comments and Recommendations**

We based this action on a review of the best scientific and commercial information available, including all information received during the public comment period. In the December 5, 2013, revised proposed rule, we requested that all interested parties submit information that might contribute to development of a final rule. We also contacted appropriate scientific experts and organizations and invited them to comment on these proposed rules. We received comments from nine individuals and organizations.

We reviewed all comments we received from the public and peer reviewers for substantive issues and new information regarding the proposed reclassification of this

subspecies, and we address those comments below. Six of the commenters, including peer reviewers, supported the revised proposed rule and 4(d) rule. Three commenters opposed the reclassification and 4(d) rule; two commenters believed more genetic studies and a better consensus among scientists was needed before combining the two subspecies into one.

### **Peer Review**

In accordance with our policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from five individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. We received responses from three of the peer reviewers from whom we requested comments. The peer reviewers stated that the revised proposed rule was accurate and our conclusions were logical; no substantive comments were provided. Technical corrections suggested by the peer reviewers have been incorporated into this final rule. In some cases, a technical correction is indicated in the citations by “personal communication” (pers. comm.), which could indicate either an email or telephone conversation; in other cases, the research citation is provided.

### *Public Comments*

(1) *Comment:* We received updated information on the population of straight-horned markhor in Sheikh Buddin Hills, Khyber Pakhtunkhwa Province, Pakistan. A

2011 field survey found that the straight-horned markhor has been extirpated from this area.

*Our Response:* We included this updated information under the *Range and Population* section below.

(2) *Comment:* The Service has not put forth sufficient population information, especially for populations outside of the Torghar Hills, to support a finding that the subspecies qualifies as a threatened species.

*Our Response:* Our finding that the straight-horned markhor meets the definition of a threatened species, as defined under the Act, is not based solely on population numbers. Although most remaining populations of straight-horned markhor are critically low, continue to face threats, and will likely continue to decline, the population in Torghar Hills has continued to increase and is the stronghold of the species. Because of the protective measures provided to the Torghar Hills population, we believe the subspecies as a whole is not presently in danger of extinction, and, therefore, does not meet the definition of endangered under the Act. As explained in more detail in our status determination, the Torghar Hills population is considered to be currently stable and increasing; based upon 2011 population surveys in the Torghar Conservation Project (TCP), the markhor population and domestic livestock have minimal range-use overlap, and the markhor's habitat is secure under current management. However, the straight-horned markhor occupies a narrow geographic range, and threats acting on critically low



populations outside Torghar Hills are likely to continue in the foreseeable future.

Moreover, within the foreseeable future, pressures on habitat in the Torghar Hills and interactions between livestock and markhor are likely to increase with the growth of domestic livestock herds, the biannual migration of local tribes, and the expansion of markhor populations in the TCP, resulting in the subspecies as a whole being at risk of extinction due to the strong likelihood of a catastrophic or stochastic event (e.g., disease) impacting the Torghar Hills population. Should a catastrophic or stochastic event (e.g., disease) impact the Torghar Hills population, this single, stable population would likely not provide a sufficient margin of safety for the subspecies. Thus, these factors indicate that the straight-horned markhor, while not at risk of extinction now, will likely become in danger of extinction in the foreseeable future. Therefore, we find that this subspecies of markhor qualifies as a threatened species.

(3) *Comment:* The Service states that the subspecies in Torghar Hills is likely to interact with domestic goats and could be catastrophically impacted by disease. A recent study (Ostrowski *et al.* 2013), not considered by the Service, describes a pneumonia outbreak that killed approximately 20 percent of the markhor population in Tajikistan, concludes that domestic goats can carry a pathogen that poses an insidious risk for cross-species transmission with sympatric wild caprinae, and shows that straight-horned markhor could go extinct due to an outbreak of pneumonia. Therefore, the straight-horned markhor is currently in danger of extinction due to disease.

*Our Response:* The findings by Ostrowski *et al.* (2013, p. 3) indicate that the outbreak that killed 20 percent of the markhor population of a separate subspecies in Tajikistan was caused by a pathogen, *Mycoplasma capricolum capricolum*. The source of the *Mycoplasma* infection in markhor is unknown, although domestic goats may have been responsible. The findings of the study conclude that the markhor is vulnerable to *M. c. capricolum* infections and may be at risk of future outbreaks in light of increasing encroachment of livestock into wild habitat. However, we have found no information, in this study or elsewhere, to support the commenter's opinion that this subspecies is currently in danger of extinction due to disease. As noted in the final rule, the Torghar Hills population is considered stable and the overlap of range use with domestic livestock is minimal.

(4) *Comment:* The 4(d) rule is troubling because the Service recognizes overhunting contributed to the imperiled status and continues to be a threat.

*Our Response:* Overhunting was a major factor in diminishing the straight-horned markhor population to critical levels. Even today, hunting remains a threat to most remaining populations. However, increases in populations of ungulates, including markhor, have occurred in conservation areas managed specifically for trophy hunting. The 4(d) rule supports and encourages the development of this type of conservation program that addresses the threat of overhunting. A well-managed sport-hunting program that encourages sustainable use can significantly contribute to the conservation of wildlife and improve wildlife populations by providing an economic incentive for local

communities to protect these species. Monies received for a hunting permit may be used to build and fund schools and health clinics, improve access to drinking water, and improve sanitation and roads. Local communities see a direct connection between protecting species and improvements to their communities.

(5) *Comment:* The Service premises the 4d rule upon the purported benefits of the proceeds from selling markhor trophies. This approach will only serve to further commercialize endangered and threatened wildlife and sends a message that the United States encourages exchange of imperiled wildlife for cash. This concept runs counter to the intent of the Act to protect and recover species.

*Our Response:* We are not allowing for the commercialization of the straight-horned markhor. Under this final 4(d) rule, the Director may authorize the importation of noncommercial specimens for personal use, provided the sport-hunted trophy is taken from a conservation program that meets certain criteria. Consistent with the Act, the criteria of the 4(d) rule ensures that imported markhor trophies are only from scientifically-based management programs that provide for the conservation of this subspecies.

(6) *Comment:* The 4(d) rule does not provide for the conservation of the species because the definition of the term “conservation” under the ESA limits take of a threatened species to “the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved.”

*Our Response:* The 4(d) rule does not authorize take of straight-horned markhor, rather it authorizes the import of trophy-hunted straight-horned markhor from established conservation programs that meet certain criteria.

(7) *Comment:* A 4(d) rule authorizing trophy imports must also conserve the species and is, therefore, limited to a finding that overpopulation necessitates the need for regulated take.

*Our Response:* Take of a wholly foreign species in its native country is not regulated by the Act because the action is not subject to the jurisdiction of the United States. Furthermore, as previously mentioned, the 4(d) rule authorizes the importation, not the taking, of markhor, provided the Director finds that the sport-hunted trophy is from a management program meeting certain criteria. Therefore, we would not make a finding on whether overpopulation necessitates regulated take before authorizing the import of markhor sport-hunted trophies. The criteria of the 4(d) rule ensures that imported markhor trophies are only from scientifically based management programs that provide for the conservation of this subspecies.

(8) *Comment:* The import of trophies is not carried out for the purpose of promoting conservation; rather the action is undertaken solely for the benefit of the individual hunter.

*Our Response:* Permitting the import of trophies from scientifically based conservation programs allows the revenue derived from U.S. hunters to be used for markhor conservation, as well as to support the communities that are protecting them.

(9) *Comment:* The 4(d) rule allows import of sport-hunted trophies from conservation programs that benefit the community and species. Benefits to the community are irrelevant unless they also confer a benefit to the species.

*Our Response:* We agree. Our 4(d) rule states “the conservation program can demonstrate a benefit to both the communities surrounding or within the area managed by the conservation program and the species, and the funds derived from sport hunting are applied toward benefits to the community and the species.” Involvement of the local community in conservation of a species results in better conservation, especially if it creates sustainable benefits for the community (Damm and Franco in press a, p. 29). Revenue and economic benefits generated for the community from the use of wildlife provide incentives for people to conserve the species and its habitat, thus removing the risk of resource degradation, depletion, and habitat conversion (IUCN SSC 2012, pp. 2–5; Shackleton 2001, pp. 7, 10).

(10) *Comment:* Allowing the import of hunted trophies based in part on funding communities living near a hunting reserve does not provide for conservation of the species.

*Our Response:* We disagree. By setting criteria in the 4(d) rule that programs must also benefit the local community to be eligible, we are ensuring that U.S. hunters are participating in conservation programs that truly benefit the species by providing economic incentives that promote community-based conservation of markhor. In essence, the 4(d) rule, provided the criteria is met, ensures that local communities will have sufficient reasons, or incentives, to conserve the species in preference to their domestic livestock and to protect species against poaching.

(11) *Comment:* The Service inappropriately uses the Conference Resolution 10.15 as a justification for the 4(d) rule by indicating that the rule is necessary to implement the resolution. A CITES Resolution in-and-of-itself is not a proper basis for a 4(d) rule, and the Service must independently determine that the 4(d) rule is “necessary and advisable.”

*Our Response:* It was not our intent to indicate that the 4(d) rule was necessary to implement or comply with the Conference Resolution, nor did we intend to use the Conference Resolution as a justification for the 4(d) rule. The Conference Resolution recommends that CITES Authorities (authorities under the Convention on International Trade in Endangered Species of Wild Fauna and Flora) in the State of import approve

permits of sport-hunted markhor trophies from Pakistan if they meet the terms of the Resolution. Because the Service will take into account the recommendations in the Conference Resolution when determining whether the criteria under the 4(d) are met, we intended to refer to the consideration of these recommendations as an additional benefit. Thus, for clarification, we removed any language suggesting that compliance with the Resolution was a justification for the 4(d) rule.

*(12) Comment:* Several commenters raised concerns that the 4(d) rule does not ensure revenue generated through sport hunting would benefit the species and that the Service has not established any guidelines for evaluating or monitoring trophy programs or determining whether funds derived from sport hunting are sufficiently applied towards the community or species.

Our Response: Under the 4(d) rule, before a sport-hunted trophy may be imported without a permit issued under 50 CFR 17.32, the Service must publish notice of the authorization in the **Federal Register**. In that notice, the Service will explain the basis of a decision to exempt the import of markhor trophies from the permitting requirements. The Service does not believe that we need to codify specific guidelines on evaluating and monitoring scientifically based management programs that include sport hunting or how funds generated by sport hunting must be used in relation to enhancing the conservation of the species. Establishing prescriptive guidelines may, in fact, limit or constrain innovative management efforts, grassroots conservation initiatives, or community development programs. The Service believes that the criteria established in

the 4(d) rule sufficiently outline the factors that must be considered in order to exempt imports from the requirement for import permits under the Act.

*(13) Comment:* The 4(d) rule will be difficult to implement as there is no information on who submits the information on the program, how the Service will determine if the local regulatory authorities are capable of obtaining sound data on populations, and whether and how the Service will decide if regulatory authority can determine where the trophy was hunted.

*Our Response:* Although information submitted and considered under the 4(d) rule will likely be submitted by the exporting country, it is not a requirement. Information made available to the Service relative to the five criteria established in the 4(d) rule will be evaluated to determine its validity. After a thorough evaluation of the information, the Service will publish a **Federal Register** notice explaining the basis of any decision to exempt the import of markhor trophies from the permitting requirements under the Act.

*(14) Comment:* Two commenters expressed concern that the 4(d) rule would encourage poaching, create a demand for straight-horned markhor, and facilitate illegal trade or a black market for markhor.

*Our Response:* It is unclear to the Service how allowing the importation of legally hunted trophies, taken as part of a scientifically based conservation program, would



stimulate illegal trade or create an unsustainable demand for straight-horned markhor.

While it may be possible to exempt importations from the requirements of a permit issued under the Act at 50 CFR 17.32 if the criteria under the 4(d) rule are met, we must still adhere to CITES requirements. As an Appendix-I species under CITES, straight-horned markhor imports must meet the criteria under 50 CFR 23. Namely, there is still a requirement that the exporting country make the required findings that the export would not be detrimental to the species and that trophies were legally taken. Moreover, as the authority for the importing country, we would still need to make a finding that the import would be for purposes not detrimental to the survival of the species, and that the specimen will not be used for primarily commercial purposes. Thus, if the Director determines that the conservation program meets the 4(d) criteria, the Service finds that additional authorizations under the Act for importation of sport-hunted trophies would not be necessary and advisable for the conservation of the species, nor appropriate, because such importation already requires compliance with CITES' most stringent international trade controls for this subspecies listed under Appendix I.

*(15) Comment:* The 4(d) rule is broader than Conference Resolution 10.15 (Establishment of quotas for markhor hunting trophies) and could authorize import of trophies beyond the quota granted to Pakistan under Conference Resolution 10.15. The 4(d) rule should be modified to match Conference Resolution 10.15, including limiting the import of trophies to only those exports from Pakistan.

*Our Response:* The purpose of the Act is to protect and recover imperiled species and the ecosystems upon which they depend. The 4(d) rule is meant to encourage conservation of straight-horned markhor across its range. Limiting the 4(d) rule to only those trophies exported from Pakistan under the Conference Resolution 10.15 would diminish the conservation benefit to markhor range-wide, since conservation programs established in countries such as Afghanistan would not be eligible. In addition, because the Service will consider the provisions of the Conference Resolution 10.15 when evaluating whether the subject conservation program meets the criteria under the 4(d) rule, incorporating the specific provisions of the Resolution into the 4(d) rule would be impracticable. In the event any future changes to the Resolution are adopted by the Parties to the Convention, the regulatory process for amending the 4(d) rule would take time. During the time taken to amend the 4(d) rule, inconsistencies between the Resolution and our regulations would exist, resulting in possible confusion among the regulated community and potential enforcement difficulties.

*(16) Comment:* The 4(d) rule eliminates the requirement for a threatened species permit under the Act, thereby also eliminating the public notice and comment requirements typically applicable to CITES and ESA permits. The public should be provided with notice and opportunity for comment on markhor import permits even if they are covered by the 4(d) rule.

*Our Response:* The Service does not publish notices for receipt of applications for threatened species permits in the **Federal Register**; therefore, there is no requirement

for public notice and comment. However, under the 4(d) rule, the Service will publish a **Federal Register** notice explaining the basis of a decision to exempt the import of markhor trophies from the Act's permitting requirements.

*(17) Comment:* The Service has failed to show how the 4(d) rule is necessary and advisable for the conservation of the species.

*Our Response:* We have revised the preamble of this final rule to clarify how the 4(d) rule is necessary and advisable. Because the success of markhor conservation is directly related to support from the local community, it is imperative that the 4(d) rule support community-based conservation programs. We set criteria in the 4(d) rule to ensure that U.S. hunters are participating in conservation programs that benefit the species by providing economic incentives that promote community-based conservation of markhor.

*(18) Comment:* Afghanistan's Ministry of Agriculture, Irrigation, and Livestock (MAIL) stressed that it is imperative that export of markhor trophies be documented as taken from established conservation programs in Torghar Hills only, and not from areas in Afghanistan.

*Our Response:* Our 4(d) rule establishes that "regulating authorities can determine that the trophies have in fact been legally taken from the populations under an established conservation program." If the country of export, in this case Pakistan, cannot

provide that information to the Service, or if there is a proven indication that animals are being taken from outside approved conservation programs, the import would not meet the enhancement criteria set forth in the 4(d) rule. Further, CITES provides additional protections because markhor are listed under CITES Appendix I. Appendix-I specimens require an export permit to be issued by the Management Authority of the state of export, in this case Pakistan. Prior to issuing the CITES export permit, Pakistan must determine that the specimen was *legally* obtained, that the trade will not be detrimental to the survival of the species, and that a CITES import permit has already been issued by the importing country (in this case, the United States). We feel that the protections put in place under this 4(d) rule and CITES are sufficient to ensure that animals will not be taken from outside approved conservation programs. However, we would appreciate notification of any such incidences where markhor are taken in violation of CITES or the Act.

(19) *Comment:* The Service did not adequately address or consider the impacts of the 4(d) rule to endangered snow leopards (*Panthera uncia*), whose range overlaps with the straight-horned markhor in northern Pakistan.

*Our Response:* The range of the snow leopard overlaps only with the flare-horned markhor (*Capra falconeri falconeri*) and Heptner's markhor (*C. f. heptneri*), not the straight-horned markhor. The 4(d) rule applies only to the straight-horned markhor and has no bearing on the snow leopard.

(20) *Comment:* The Service has failed to comply with the National Environmental Policy Act (NEPA). The 4(d) rule allows controversial sport-hunting and import under a vague program for conservation and must be fully analyzed.

*Our Response:* As stated above, the 4(d) rule does not authorize take of straight-horned markhor. Because this subspecies is wholly foreign, the United States and the Act do not have jurisdiction to prohibit or allow take of a listed species. Furthermore, under our 1983 policy, we determined that we do not need to prepare an environmental assessment in connection with regulations adopted under section 4(a) of the Act, including 4(d) rules that accompany listings of threatened species.

(21) *Comment:* One commenter expressed concerns about the Service's draft Significant Portion of the Range (SPR) policy. Specifically, the commenter disagreed with our analysis of populations of straight-horned markhor outside of Torghar Hills and our conclusion that it did not meet our definition of "significant" as defined in our SPR policy.

*Our Response:* Since we published our revised proposed rule, the Service and National Marine Fisheries Service published a final rule interpreting the phrase "significant portion of the range" (79 FR 37578, July 1, 2014). The final policy states that, if a species is found to be endangered or threatened throughout a significant portion of its range, the entire species is listed as endangered or threatened, respectively, and the

Act's protections apply to all individuals of the species wherever found. Consistent with the final policy, because we found the straight-horned markhor to be threatened throughout its entire range, we did not conduct an additional analysis as to whether any portion of the subspecies' range is "significant."

(22) *Comment:* The Service should confirm that the Torghar Hills population meets the criteria set forth in the 4(d) rule and that sport-hunted trophies taken from this population may be imported without a threatened species permit under 50 CFR 17.32.

*Our Response:* We will review all conservation programs to determine whether they meet the enhancement criteria set forth in the 4(d) rule. We will publish those enhancement findings in a separate **Federal Register** document.

### **Summary of Changes from the Proposed Rule**

We fully considered comments from the public and peer reviewers to develop this final reclassification of the straight-horned markhor. We made some technical corrections and incorporated changes to our proposed rule as described above. In addition, we made some non-substantive changes to our analysis under the *Significant Portion of the Range* section of this rule to reflect the final version of the SPR policy. In the proposed listing rule, after determining the species was threatened throughout its range, we conducted an additional analyses to determine that no portion of the species

range was “significant.” Under the final SPR policy, however, once it is determined that a species is threatened or endangered throughout its range, the Service need not analyze whether any portion of its range is “significant.” Accordingly, we revised the text of the *Significant Portion of the Range* section of this rule to reflect the final version of the SPR policy. Despite this modification, the proposed status determination that the subspecies is threatened throughout its range did not change in this final listing rule.

### **Subspecies Information**

#### *Taxonomic Classification*

The markhor (*Capra falconeri*) is a species of wild goat belonging to the Family Bovidae and Subfamily Caprinae (sheep and goats) (Valdez 2008, unpaginated). When the markhor was first listed under the Act in 1975, seven subspecies of markhor were generally recognized: *Capra falconeri jerdoni* (straight-horned or Suleiman markhor), *C. f. megaceros* (Kabul markhor), *C. f. cashmirensis* (Kashmir markhor), *C. f. falconeri* (Astor markhor), *C. f. ognevi* (Uzbek markhor), *C. f. heptneri* (Tajik markhor), and *C. f. chialtanensis* (Chiltan markhor) (64 FR 51499, September 23, 1999; Roberts 1977, p. 196). In 1975, Schaller and Khan (1975, pp. 188, 191) recognized three subspecies of markhor based on horn shape and body characteristics: *C. f. jerdoni* and *C. f. megaceros* were combined into *C. f. megaceros* (straight-horned markhor); *C. f. cashmirensis* and *C. f. falconeri* were combined into *C. f. falconeri* (flare-horned markhor); and *C. f. ognevi* and *C. f. heptneri* were combined into *C. f. heptneri* (Heptner’s markhor). Many

authorities consider *C. f. chialtanensis* to be *Capra aegagrus chialtanensis* (Chiltan wild goat) (64 FR 51500, September 23, 1999).

In our June 2, 2011, 90-day petition finding, August 7, 2012, proposed rule, and December 5, 2013, revised proposed rule to reclassify the straight-horned markhor (*C. f. jerdoni*), we requested information on the taxonomy of *C. f. jerdoni* and *C. f. megaceros* to determine if these constitute a single subspecies. We have reviewed the available information, including information submitted by the public. While scientists have not reached a consensus on the correct classification of markhor (Zahler 2013, pers. comm.; Frisina 2012, pers. comm.) and genetic studies are needed (Rafique 2014, pers. comm.), the Integrated Taxonomic Information System (ITIS), International Union for Conservation of Nature (IUCN), the IUCN Species Survival Commission (IUCN SSC) Caprinae Specialist Group, and CITES all follow Grubb 2005 (p. 701) and Schaller and Khan (1975 pp. 188, 191), which recognizes three subspecies of markhor (Damm and Franco in press, pp. 4–5; ITIS 2013a, unpaginated; ITIS 2013b, unpaginated; Smithsonian National Museum of Natural History 2011, unpaginated; CITES Resolution Conf. 12.11. (Rev. CoP15) 2010, p. 3; Valdez 2008, unpaginated; CITES 10.84 (Rev.) 1997, p. 894; Shackleton 1997, p. 12).

Currently, the straight-horned markhor (*C.f. jerdoni*) and Kabul markhor (*C.f. megaceros*) are listed as separate subspecies under the Act. Based on the information available and our present understanding of taxonomic relationships, we are revising the List of Endangered and Threatened Wildlife at 50 CFR 17.11(h) to maintain consistency



with ITIS, IUCN, and CITES to reflect the current scientifically accepted taxonomy and nomenclature. In the **Regulation Promulgation** section of this document, we implement a taxonomic change to reflect the combining of the straight-horned markhor (*C. f. jerdoni*) and Kabul markhor (*C. f. megaceros*) into one subspecies, the straight-horned markhor (*C. f. megaceros*). We will also refer to the straight-horned markhor as “markhor” in this final rule.

### *Species Description*

Markhor are sturdy animals with strong, relatively short, thick legs and broad hooves. They are a reddish-grey color, with more buff tones in the summer and grey in the winter. The legs and belly are a cream color with a conspicuous dark-brown pattern on the forepart of the shank interrupted by a white carpal patch. They also have a dark brown mid-dorsal stripe that extends from the shoulders to the base of the tail. The tail is short and sparsely covered with long black hairs, but is naked underneath. Adult males have an extensive black beard followed by a long, shaggy mane extending down the chest and from the fore part of the neck. There is also a crest of long black and dark brown hair that hangs like a mane down either side of the spine from the shoulders to the croup (Roberts 1977, p. 197). Horns are straight with an open, tight spiral resembling a corkscrew (Schaller and Khan 1975, p. 189).

### *Life History*

Markhor are associated with extremely rugged terrain with precipitous cliffs, rocky caves, and bare rock surfaces interspersed with patches of arid, steppe vegetation. They can be found from 600 meters (m) (1,969 feet (ft)) up to 3,300 m (10,827 ft) in elevation (Woodford *et al.* 2004, p. 181; Mitchell 1989, p. 8; Johnson 1994b, p. 5).

Markhor are diurnal in feeding activity. They are most active in the early morning and late evening (Mitchell 1989, p. 8). Wild pistachios are a preferred food for straight-horned markhor (Johnson 1994, p. 12; Roberts 1977, p. 198), although in general they are known to feed on grasses and leaves, and twigs of bushes. Markhor seek water in the late afternoon; they may need to descend to valley bottoms for water, but only after darkness (Roberts 1977, p. 198).

Markhor are gregarious, with females, their young, and immature males associating in small herds, but competition with domestic goat flocks may drive markhor populations to higher terrain and result in larger herds. Adult males live solitary lives, taking shelter under rock overhangs or natural caves. They join the females and young only during the rut, which for the straight-horned markhor peaks around mid-November and lasts about 2 weeks. Males may attach themselves to one particular territory or herd. Fighting between rival males also occurs during this time. Markhor reach sexual maturity around 3 years of age. Females usually give birth to one young, but twins are not uncommon. A young markhor will remain with its mother until the rutting season or until the next young is born. After this, the female will drive the older young away if it approaches too closely. In the wild, it is possible that markhor can live up to 18 years of

age, but few males are estimated to live beyond 11 or 12 years (Ali 2008, p. 16; Mitchell 1989, p. 9; Roberts 1977, pp. 198–199).

### *Range and Population*

For most of the straight-horned markhor populations, there is no detailed information on distribution, population estimates, or threats to the subspecies; most information that is available predates the onset of hostilities in the region in 1979. However, the Torghar Hills population of the straight-horned markhor has been extensively studied since the mid-1980s due to the implementation of a conservation plan in this area. Therefore, this status review mainly consists of information related to this population. When possible, we have included general information on the status of the populations outside of the Torghar Hills.

Historically, the straight-horned markhor inhabited a wide range in the mountains of eastern Afghanistan and Pakistan. In Afghanistan, it has been reported that this subspecies survives only in the Kabul Gorge and the Kohe Safi area of Kapissa Province, and in some isolated pockets in between (Ali 2008, pp. 17–18; Valdez 2008, unpaginated; Habibi 1997, p. 208; Schaller and Khan 1975, pp. 195–196). However, no surveys have been conducted in the area, and it is likely that this subspecies has been extirpated from Afghanistan (Zahler 2013, pers. comm.). In Pakistan, the straight-horned markhor is found in the mountains of Balochistan and Khyber Pakhtunkhwa provinces. There is one unconfirmed report of the subspecies in Punjab Province (Valdez 2008, unpaginated;

CITES 10.84 (Rev.) 1997, p. 894). For a species range map, please see the IUCN Red List species account for *Capra falconeri* (<http://maps.iucnredlist.org/map.html?id=3787>); zooming in on populations will reveal subspecies labels.

Within Balochistan, the straight-horned markhor has been reduced to small, scattered populations on all the mountain ranges immediately to the north and east of Quetta, including Murdar, Takhatu, Zarghun, Kaliphat, Phil Garh, and Suleiman. It is reported that the straight-horned markhor still survives in the Shingar Range on the border of Balochistan and South Waziristan. However, surveys are needed to confirm these localities. The greatest concentration is in the Torghar Hills of the Toba Kakar Range on the border with Afghanistan, within a community-based management program, the Torghar Conservation Project (Rafique 2014, pers. comm.; Frisina and Tareen 2009, pp. 142–143; Johnson 1994b, p. 16; Roberts 1977, p. 198; Schaller and Khan 1975, p. 196).

Within Khyber Pakhtunkhwa, the subspecies is reported to still survive in the Sakra Range, Murghazar Hills, Khanori Hills, and Safed Koh Range. Surveys are needed to confirm these localities; the occurrence in Safed Koh has been questioned due to a lack of information. A 2011 survey found that the straight-horned markhor has been extirpated from the Sheikh Buddin Hills (Rafique 2014, pers. comm.; Ali 2008, p. 18; Valdez 2008, unpaginated; Hess *et al.* 1997, p. 255; Roberts 1977, p. 198).

Limited information is available for populations throughout most of the straight-

horned markhor's range. Many historical populations were extirpated due to overhunting (Johnson 1994b, p. 5; Johnson 1994, p. 10). In Afghanistan, very few straight-horned markhor survive; perhaps as few as 50–80 occur in the Kohe Safi region, with few in other isolated pockets (Valdez 2008, unpaginated; Habibi 1997, pp. 205, 208; Schaller and Khan 1975, p. 195). However, as stated above, this subspecies may be extirpated from Afghanistan (Zahler 2013, pers. comm.). In Pakistan, Schaller and Khan (1975, pp. 195–196) estimated 150 in Takhatu, 20 to 30 in Kalifat, 20 in Zarghum, 20 in Shinghar, 20 around Sheikh Buddin, 50 in the Sakra Range, and at least 100 in Safed Koh. Few were estimated to survive in the Murdar Range, and a remnant population may have existed near Lorelei in the Gadabar Range. Roberts (1969 in Valdez, 2008, unpaginated) believed the number of markhor in the Toba Kakar range was fewer than 500. In 1984, Tareen estimated fewer than 200 remained in the Torghar Hills (Mitchell, 1989, p. 9). Overall, Schaller and Khan (1975, pp. 195–196) estimated fewer than 2,000 straight-horned markhor survived throughout the subspecies' range.

In general, markhor populations are reported as declining (Kanderian *et al.* 2011, p. 287; Valdez 2008, unpaginated). Hess *et al.* (1997, p. 255) and Habibi (1997, p. 208) concluded that the straight-horned markhor had likely not increased in recent years. Current estimates for populations of straight-horned markhor are lacking, with the exception of the population in the Torghar Hills of the Toba Kakar Range. This population has been extensively studied due to the implementation of a community-based management program. In addition, as part of the use of annual export quotas for markhor sport-hunted trophies granted to Pakistan at the 10th meeting of the Conference of the

Parties to CITES, Pakistan submits annual surveys of markhor populations, including populations within the Torghar Conservation Area (Resolution Conf. 10.15 (Rev. CoP 14); see discussion below under **Summary of Threats**). Based on surveys conducted from 1985 through 1988, Mitchell (1989, p. 9) estimated 450 to 600 markhor inhabited the Torghar Hills. Regular surveys of the managed area have taken place since 1994, when Johnson (1994b, p. 12) estimated the population of markhor to be 695. Later surveys estimated the population to be 1,296 in 1997; 1,684 in 1999; 2,541 in 2005; 3,158 in 2008; and 3,518 in 2011 (Frisina and Rasheed 2012, p. 5; Arshad and Khan 2009, p. 9; Shafique 2006, p. 6; Frisina 2000, p. 8; Frisina *et al.* 1998, p. 6). Although most of the mountain ranges in Balochistan have not been formally surveyed, Johnson (1994b, p. 16) concluded that Torghar was the last remaining stronghold for the subspecies.

### **Summary of Threats**

Throughout the range of the straight-horned markhor, overhunting, keeping of large herds of livestock for subsistence, deforestation, and the lack of effective federal and provincial laws have devastated populations of straight-horned markhor and destroyed vital habitat (Valdez 2008, unpaginated; Habibi 1997, pp. 205, 208; Hess *et al.* 1997, p. 255).

Small-scale hunting has been a long-standing tradition of the people of Afghanistan and Pakistan (Zahler 2013, pers. comm.; Kanderian *et al.* 2011, p. 283;

Frisina and Tareen 2009, p. 146; Ahmed *et al.* 2001, p. 2). However, prior to the beginning of the Soviet-Afghan War in 1979, few animals were hunted, as weapons were primitive and ammunition scarce and expensive. After the beginning of the war, there was an influx of more sophisticated weapons, such as semi- and fully-automatic rifles, and cheap ammunition was more accessible. This proliferation of arms and increased likelihood of a successful kill, combined with millions of displaced people dependent on wild meat for subsistence, led to excessive hunting of wildlife and critically low populations of straight-horned markhor (Zahler 2013, pers. comm.; Kanderian *et al.* 2011, p. 284; Frisina and Tareen 2009, p. 145; MAIL 2009, p. 4; Woodford *et al.* 2004, p. 181; Ahmed *et al.* 2001, pp. 2, 4; CITES 10.84 (Rev.) 1997, p. 895; Habibi 1997, pp. 205, 208; Hess *et al.* 1997, p. 255; Johnson 1994b, p. 1).

In an effort to manage diminishing wildlife populations, national bans on hunting were implemented in Pakistan in 1988, 1991, and 2000. However, the ban had little impact on the recovery of wildlife populations (Ahmed *et al.* 2001, p. 5). In 2005, Afghanistan banned hunting for 5 years, but there was no enforcement and most Afghans were either unaware of the decree or ignored it (Kanderian *et al.* 2011, p. 291; MAIL 2009, pp. 4, 23, 24). Additionally, the markhor (*Capra falconeri*) is a protected species under Afghanistan's Environmental Law of 2007, the Balochistan Wildlife Protection Act of 1974 (BWPA), and the North-West Frontier Province Wild-life (Protection, Preservation, Conservation, and Management) Act (NWFPWA) of 1975, which extends to all of the Khyber Pakhtunkhwa Province. Under these laws, hunting, killing, or capturing of markhor is prohibited (MAIL 2009, p. 23; Aurangzaib and Pastakia 2008, p.

58; Official Gazette No. 912, dated 25 January 2007, Article 49; BWPA 1977, p. 15; NWFPWA 1975, Third Schedule).

Today, the straight-horned markhor has been extirpated from much of its former range due to overhunting, and they survive only in the most inaccessible regions of its range (Habibi 1997, p. 205; Johnson 1994b, p. 5; Johnson 1994, p. 10), despite laws intended to provide protection from hunting. We have no information on the extent of poaching currently taking place in most of the subspecies' range, but information suggests that uncontrolled hunting remains a threat to most remaining populations of this subspecies (United Nations Environment Programme (UNEP) 2009, p. 10; NEPA and UNEP 2008, p. 17; Valdez 2008, unpaginated; CITES 10.84 (Rev.) 1997, p. 895; Hess *et al.* 1997, p. 255). However, increases in populations of ungulates, including markhor, have occurred in conservation areas managed specifically for trophy hunting (University of Montana 2013, unpaginated; Frisina and Rasheed 2012, p. 5; Wildlife Conservation Society 2012, unpaginated; Arshad and Khan 2009, p. 9; Government of Pakistan 2009, p. viii; Ali 2008, pp. 21, 38, 64; Shafique 2006, p. 6; Frisina 2000, p. 8; Virk 1999, p. 142; Frisina *et al.* 1998, p. 6). Currently, only one conservation plan is being implemented for the straight-horned markhor, the Torghar Conservation Project (TCP) in Torghar Hills, Pakistan.

In the early 1980s, local tribal leaders became alarmed at the significant decline in the markhor population in the Torghar Hills (Frisina and Tareen 2009, p. 145; Ahmed *et al.* 2001, p. 4; Johnson 1994b, p. 1). The population had dropped to a critical level,



estimated at fewer than 200 animals (Ahmed *et al.* 2001, p. 4; Johnson 1994b, p. 14; Mitchell, 1989, p. 9). Tribal leaders attributed the decline to an increase in poaching due to the significant increase in weapons in the area during the Soviet-Afghan War (Frisina and Tareen 2009, p. 145; Johnson 1994b, p. 1). After unsuccessful attempts to receive assistance from the Balochistan Forest Department, they turned to wildlife biologists in the United States, including the U.S. Fish and Wildlife Service. Together, they developed the TCP, an innovative, community-based conservation program that allows for limited trophy hunting to conserve local populations of markhor, improve habitat for both markhor and domestic livestock, and improve the economic conditions for local tribes in Torghar (Frisina and Tareen 2009, p. 146; Woodford *et al.* 2004, p. 182; Ahmed *et al.* 2001, p. 4 Johnson 1994b, pp. 1–2).

In 1985, the TCP was launched and covered most of the Torghar area (approximately 1,000 square kilometers (386 square miles)). First, tribal leaders implemented a ban on all hunting activities by tribesmen in the Torghar Hills. Then, local tribesmen were hired as game guards to assist in population surveys and prevent poachers from entering the Torghar Hills. Guards were placed at points of entry into the protected area to inform migrating tribesmen of the hunting ban, who, in turn, agreed to the ban so as not to jeopardize their passage through the Torghar Hills. Support for the program, including salaries for the game guards, is raised through fees for limited trophy hunting of markhor within the TCP, mostly by foreign game hunters. Currently, markhor fees are \$35,000 U.S. dollars, 80 percent of which goes to the TCP and the other 20 percent goes to the Pakistani Government. In the beginning, 7 game guards were hired;

currently, 90 game guards are employed. The number of markhor allowed to be hunted each year is based on surveys conducted by game guards and wildlife biologists (Bellon, 2010, p. 117; Frisina and Tareen 2009, pp. 142, 146–147; Ahmed *et al.* 2001, p. 5; Johnson 1994b, p. 3). Numbers of animals taken have ranged from 1 to 5 animals per hunting season, or less than the 2 percent of the total population recommended by Harris (Harris 2012, pers. comm.; 1993 in Woodford *et al.* 2004, p. 182) annually for trophy hunting (Frisina and Tareen 2009, pp. 146–147, 149; Ali 2008, p. 20; Woodford *et al.* 2004, p. 182; Johnson 1997, pp. 403–404). Because markhor have a polygynous mating system, reproduction rates have not been affected by the removal of a limited number of adult males (Woodford *et al.* 2004, p. 182), as evidenced by the continuing increase in the Torghar Hills population.

As a result of the TCP, poaching has been eliminated in the Torghar Hills (Woodford *et al.* 2004, p. 182; Johnson 1994b, p. 3). Johnson (1994b, p. 15) attributed the markhor population growth to the substantial reduction in mortality when uncontrolled hunting was stopped.

The markhor (*Capra falconeri*) is protected under CITES, an international agreement between governments to ensure that the international trade of CITES-listed plant and animal species does not threaten species' survival in the wild. Under this treaty, CITES Parties (member countries or signatories) regulate the import, export, and reexport of specimens, parts, and products of CITES-listed plant and animal species. Trade must be authorized through a system of permits and certificates that are provided

by the designated CITES Management Authority of each CITES Party. Both Afghanistan and Pakistan are Parties to CITES.

The straight-horned markhor was listed in CITES Appendix I, effective July 1, 1975. An Appendix-I listing includes species threatened with extinction whose trade is permitted only under exceptional circumstances, which generally precludes commercial trade. The import of an Appendix-I species generally requires the issuance of both an import and export permit. Import permits for Appendix-I species are issued only if findings are made that the import would be for purposes that are not detrimental to the survival of the species and that the specimen will not be used for primarily commercial purposes (CITES Article III(3)). Export permits for Appendix-I species are issued only if findings are made that the specimen was legally acquired and trade is not detrimental to the survival of the species, and if the issuing authority is satisfied that an import permit has been granted for the specimen (CITES Article III(2)).

Straight-horned markhor in the Torghar Hills, and other subspecies of markhor within community-managed conservation areas in Pakistan, may be legally hunted and exported. In 1997, at the 10<sup>th</sup> meeting of the Conference of the Parties to CITES, the Government of Pakistan submitted a proposal for approval of an annual export quota for sport-hunted markhor trophies to act as an incentive to communities to conserve markhor. During that same meeting, the Conference of the Parties approved an annual export quota of six sport-hunted markhor trophies for Pakistan (Resolution Conf. 10.15). Due to the success of conservation programs in Pakistan, CITES increased the annual export quota

to 12 markhor in 2002, to further encourage community-based conservation; four were allotted to the TCP (Bellon 2010, p. 117; Ali 2008, p. 24; Resolution Conf. 10.15 (Rev. CoP 14)).

Furthermore, because the straight-horned markhor is listed as an Appendix-I species under CITES, legal international trade is very limited; most of the international trade in straight-horned markhor specimens consists of trophies and live animals. Data obtained from the United Nations Environment Programme—World Conservation Monitoring Center (UNEP–WCMC) CITES Trade Database show that, from July 1975, when the straight-horned markhor was listed in Appendix I, through 2012, a total of 136 specimens were reported to UNEP–WCMC as (gross) exports. Of those 136 specimens, 55 were trophies, 80 were live animals, and 1 was a body. In analyzing these data, it appears that one record may be an overcount due to a slight difference in the manner in which the importing and exporting countries reported their trade. It is likely that the actual number of straight-horned markhor specimens in international trade during this period was 134, including 55 trophies, 78 live animals, and 1 body. Exports from range countries included: 48 trophies from Pakistan, 1 trophy from Afghanistan, and 1 body from Afghanistan. It should be noted that the straight-horned markhor trade data provided above are based on reported trade to UNEP–WCMC in both the subspecies *Capra falconeri jerdoni* and the subspecies *Capra falconeri megaceros*. It should also be noted that the markhor at the species level (*Capra falconeri*), except for *C. f. chialtanensis*, *C. f. megaceros*, and *C. f. jerdoni*, was listed in Appendix II in 1975, but was transferred Appendix I in 1992. Since then, international trade was likely in some

cases reported to UNEP–WCMC at the species level rather than the subspecies level. Therefore, it is possible that, between 1992 and 2012, some international trade in *Capra falconeri jerdoni* and *Capra falconeri megaceros* may have been reported to UNEP–WCMC at the species level. It was not possible to determine whether the trade reported at the species level represented trade in straight-horned markhor or trade in other markhor subspecies. Because there has been limited trade in straight-horned markhor, totaling 136 specimens over 38 years, we believe that international trade controlled via valid CITES permits is not a threat to the subspecies.

Habitat modification has also contributed to the decline of the straight-horned markhor. People living in rural areas heavily depend on natural resources; habitat throughout the range of the straight-horned markhor has been negatively impacted by domestic livestock overgrazing and deforestation (Kanderian *et al.* 2011, pp. 281, 284, 287; World Wildlife Fund (WWF) 2011, unpaginated; MAIL 2009, p. 5; UNEP 2009, p. 6; NEPA and UNEP 2008, p. 15; Valdez 2008, unpaginated; WWF 2008, unpaginated; Hess *et al.* 1997, p. 255; CITES 10.84 (Rev.) 1997, p. 895).

Much of the land where straight-horned markhor occur is owned by local tribes whose subsistence is largely dependent on keeping large herds of primarily sheep and goats. Livestock often exceed the carrying capacity of rangelands, leading to overgrazing, a halt to natural regeneration, and subsequent desertification of native vegetation. Overgrazing and competition with domestic livestock for forage is known to have resulted in the decline of wild ungulates and pushed their occurrence to range edges

(WWF 2011, unpaginated; Frisina and Tareen 2009, pp. 145, 154; UNEP 2009, p. 8; NEPA and UNEP 2008, pp. 15–17; Valdez 2008, unpaginated; WWF 2008, unpaginated; Woodford *et al.* 2004, p. 180; Tareen 1990, p. 4; Mitchell 1989, pp. 4–5; Schaller and Khan 1975, p. 197).

Throughout the markhor's range, millions of displaced people and a high human population growth rate have created a tremendous demand for natural resources. Straight-horned markhor habitat and food sources are suffering significant declines due to deforestation from illegal logging and collection of wood for building materials, fuel, and charcoal (Zahler 2013, pers. comm.; Smallwood *et al.* 2011, p. 507; WWF 2011, unpaginated; MAIL 2009, pp. 3, 5; UNEP 2009, p. 6; NEPA and UNEP 2008, pp. 15–16; Valdez 2008, unpaginated; WWF 2008, unpaginated; Hess *et al.* 1997, p. 255; Hasan and Ali 1992, pp. 8–9, 12–13).

Several Afghan and Pakistani laws protect wildlife and its habitat in these countries. Protected areas, such as national parks, sanctuaries, and game reserves may be designated under Afghanistan's Environmental Law, the BWPA, and the NWFPWA (MAIL 2009, pp. 22–23; Aurangzaib and Pastakia 2008, pp. 58, 65–67; Environmental Law 2007, Articles 38, 39, 40, and 41; NWFPWA 1975, sections 15, 16, and 17). However, no designated protected areas contain the straight-horned markhor.

Article 45 of Afghanistan's Environmental Law dictates that grazing of livestock shall be managed and controlled by the Ministry of Agriculture, Animal Husbandry, and

Food to minimize the impact on, and optimize use of, vegetation cover. Given that overgrazing of livestock is a wide-ranging threat to Afghanistan's environment (UNEP 2009, p. 8; NEPA and UNEP 2008, pp. 15–17; Valdez 2008, unpaginated), it appears that the Environmental Law has not yet been effectively implemented. Also, Presidential Decrees No. 405 and No. 736 prohibit the cutting of forests to preserve and maintain forests as a national asset. However, these decrees are unfamiliar to most Afghans or are ignored (MAIL 2009, pp. 5, 23).

In Balochistan, the Forest Act of 1927 allows for the creation of various classes of forests, the reservation of state-owned forest land, and for the provincial government to assume control of privately owned forest land and declare government-owned land to be a protected area. It also prohibits grazing, hunting, quarrying, and clearing land for cultivation; removal of forest produce; and the felling or lopping of trees and branches in reserved and protected forests (Aurangzaib and Pastakia 2008, p. 46). However, this law does not provide for sustainable use, conservation, or the protection of endangered wildlife within forests. Other legislation related to forests in Balochistan restricts subsistence use, but focuses on maximizing commercial exploitation. This may be because these laws date back to the early 20<sup>th</sup> century and reflect priorities of that time. Provincial amendments have done little to alter the focus of these laws. Enforcement of forest laws is lacking, and where enforcement is possible, penalties are not severe enough to serve as a deterrent to violators. Furthermore, these laws may be overridden by other laws in favor of development and commercial uses (Aurangzaib and Pastakia 2008, pp. 42–43).

The Land Preservation Act of 1900 is a Punjab law that, by default, was applied to the Balochistan province shortly after its establishment in 1970. This law allows the government to prevent soil erosion and conserve subsoil water. Activities such as clearing, breaking up, and cultivating land not ordinarily under cultivation; quarrying stone and burning lime; cutting trees and removing forest produce; setting fire to trees, timber, and forest produce; and herding and pasturing goats and sheep are prohibited. However, the government may permit inhabitants to carry out such activities (Aurangzaib and Pastakia 2008, p. 39).

In Khyber Pakhtunkhwa, the North-West Frontier Province Forest, Ordinance, 2002 (No. XIX of 2002) consolidates and amends the laws relating to protection, conservation, management, and sustainable development of the forests and natural resources of the province. It allows the government to declare forest land as a reserved forest (Forest Ordinance 2002, section 4). Within a reserved forest, it is illegal for a person to cultivate, clear, break up, or occupy any land; construct a building, road, enclosure, or any infrastructure, or alter or enlarge any such existing structures; trespass, graze, browse, or drive cattle; set fire, cut, fell, uproot, lop, tap, or burn any tree listed in Schedule I; quarry stone, burn lime or charcoal, or collect or remove forest produce; pollute; or hunt, shoot, fish, or set snares or traps (Forest Ordinance 2002, section 26). Given that deforestation is a widespread problem in Pakistan, it appears that this provincial law has not been effectively implemented.



Despite federal and provincial laws, declines in markhor populations and significant degradation of habitat have continued. Enforcement is lacking and very difficult to achieve due to the remoteness of many areas, the political situation in remote areas, conflicting policies, lack of understanding of the need and importance of conservation, and economic constraints (MAIL 2009, pp. 5, 23; UNEP 2009, pp. 4, 29; Aurangzaib and Pastakia 2008, pp. 39, 42–43; Hess *et al.* 1997, p. 243). Additionally, many of the areas where the straight-horned markhor occurs are on tribal lands, which are generally governed by tribal law, and Provincially Administered Tribal Areas where federal and provincial laws do not apply (Frisina and Tareen 2009, p. 144; Ahmed and Khazi 2008, pp. 13, 24; Aurangzaib and Pastakia 2008, p. 23; CITES 10.84 (Rev.) 1997, p. 895; Johnson 1994a, p. 1). In areas where existing laws are applicable, it does not appear that they have provided adequate protection given the severe declines in straight-horned markhor and threats the markhor continues to face from habitat loss and poaching.

Afghanistan and Pakistan are Parties to major multilateral treaties that address natural resource conservation and management (MAIL 2009, p. 32; Ahmed and Khazi 2008, p. 31). Among these are the Convention on Biological Diversity and the Convention on Combating Desertification (MAIL 2009, p. 34; Ahmed and Khazi 2008, pp. 14, 31). In becoming a Party to these treaties, both countries assumed obligations to implement the treaties' provisions, which in many cases require legislation. However, participation in treaty activities or laws to implement obligations is lacking (MAIL 2009, pp. 32–33; Ahmed and Khazi 2008, pp. 14, 31; Aurangzaib and Pastakia 2008, pp. 65, 58). Therefore, these treaties do not provide adequate protections to ameliorate threats

faced by the straight-horned markhor.

Although international, federal, and provincial laws do not appear to effectively provide protection to markhor habitat from overgrazing and deforestation, the TCP has taken steps to create better habitat for both markhor and domestic livestock.

In our August 7, 2012, proposed rule, we determined that key areas in the steeper, upland slopes and higher elevation of the Torghar Hills are not easily accessible and, therefore, are not impacted by human settlement or grazing pressure. However, we expressed concern that grazing pressure may increase in these upland areas due to a combination of drought conditions and the tradition of keeping large herds of domestic livestock. The lower slopes and valleys have been denuded of trees for livestock grazing and collection of fuel wood (Ahmed *et al.* 2001, pp. 3, 8; Frisina *et al.* 1998, pp. 9–10). Demand on these resources increases during the biannual migration of local and nearby tribes and their herds through the Torghar Hills (Woodford *et al.* 2004, p. 180; Ahmed *et al.* 2001, p. 4). As forage becomes limited in the lower slopes and valleys, due to drought conditions and grazing pressure, domestic herds are likely to move to higher elevations in search of forage (Frisina *et al.* 2002, p. 13).

Recognizing that protecting markhor and its habitat can generate greater income for the community than relying solely on traditional livestock production, tribesmen of the Torghar Hills requested that the Society for Torghar Environmental Protection (STEP), the community-based, nongovernmental organization established to administer

the TCP, integrate habitat management measures to protect markhor, and create better habitat for both markhor and domestic animals.

A habitat management plan was developed in 2001. The plan emphasizes range management, improved agriculture, and water storage projects to improve habitat conditions, and reduce grazing pressure, eliminate the need for domestic herds to utilize upper slope areas, and, therefore, reduce interactions between domestic livestock and markhor around forage and water resources (Frisina and Tareen 2009, p. 152; Woodford *et al.* 2004, pp. 180, 184; Frisina *et al.* 2002, pp. 3, 8, 16; Ahmed *et al.* 2001, pp. 7, 11). Agriculture is seen as an alternative to raising livestock, thus reducing grazing pressure (Frisina and Tareen 2009, p. 152; Ahmed *et al.* 2001, p. 11). Revenue raised by trophy hunting has been used to fund projects for community needs, including construction of water tanks, dams, and irrigation channels to water fruit trees, and to supply water for the community during times of drought (IUCN SSC 2012, p. 10). STEP plans to plant woodlots of indigenous trees to meet the fuel wood and timber requirements of the local tribes. STEP will also train locals in livestock management and agricultural practices (Bellon 2010, p. 117; Frisina and Tareen 2009, p. 152).

Although we do not know the extent to which the different stages of the management plans described above have been implemented, we have received new information on the markhor and its habitat in the TCP. Frisina and Rasheed (2012, p. 8) concluded from the 2011 population surveys in the TCP that the markhor population and its habitat are secure under the current management scenario.

Currently, there is no evidence of disease transmission between livestock and markhor in the Torghar Hills (Woodford *et al.* 2004, p. 184; Frisina *et al.* 2002, p. 13), although disease transmission was identified as a potential threat to the Torghar Hills straight-horned markhor in our August 7, 2012, proposed rule. The potential for disease transmission stems from livestock–wildlife interactions due to overgrazing by large herds of livestock, drought conditions, and the migration of flocks through the Torghar Hills. The risk of transmission was linked to future and continued habitat and livestock management. The risk of disease transmission is particularly severe if large numbers of domestic livestock are present during periods of drought. During these circumstances, resources are limited and interactions would be more frequent around available water sources and in the vegetated upper slopes. Additionally, researchers are concerned that interactions would likely increase in the TCP if domestic livestock herds grow and the markhor population expands (Woodford *et al.* 2004, p. 183).

In addition to implementing measures to improve habitat conditions at lower elevations, eliminating the need for domestic herds to utilize upper slope areas, and, thereby, reduce interactions between domestic livestock and markhor around forage and water resources, STEP has discussed the establishment of a community-based Animal Health Service. The herdsmen within the TCP have agreed to this measure. As it is not feasible to vaccinate markhor in mountainous terrain, STEP will train and equip tribesmen to act as “barefoot vets” with the responsibility of vaccinating domestic sheep and goats, and administering appropriate anthelmintics (drugs that expel parasitic worms)

as they travel through the TCP. Veterinary care will be effective only if range and livestock management plans are implemented, and have the potential to result in smaller, healthier domestic livestock herds (Woodford *et al.* 2004, p. 185).

The plans developed by STEP to improve habitat for markhor also lower the risk of disease transmission by addressing livestock management and minimizing interactions between domestic livestock and wildlife. With these actions, coupled with the planned Animal Health Service, the risk of diseases being transferred from domestic livestock to markhor is significantly reduced. Although we do not know the status of the habitat management plans or the Animal Health Service, Frisina and Rasheed (2012, p. 8) concluded from the 2011 population surveys in the TCP that the markhor population and domestic livestock have minimal range-use overlap, and the markhor's habitat is secure under the current management scenario. Therefore, we have no information that indicates that disease transmission is a current threat to the Torghar Hills markhor. However, because the larger Torghar Hills population is within an area that heavily relies on domestic livestock for subsistence, it is more likely to interact with domestic sheep and goats than the other populations. In the event of a disease outbreak, the Torghar Hills population would be particularly vulnerable. Because the other extant populations are critically low, declining, and continue to face threats from poaching and habitat loss, a reduction in the single population in the Torghar Hills will not provide a sufficient enough margin of safety for the subspecies to withstand this type of stochastic event.

In the rest of the straight-horned markhor's range, we have no information on the

occurrence of disease or the risk of disease transmission from domestic sheep and goats. Overgrazing of domestic livestock has contributed to habitat loss in other mountain ranges, suggesting large livestock herds have also been maintained in these areas, but we do not have information on herd size or the likelihood of livestock–wildlife interactions. Given the extremely small population estimates of straight-horned markhor outside of the Torghar Hills, interactions may be rare.

We found no information indicating that the current threats to the straight-horned markhor, as described above, are likely to improve in the future. Threats to this subspecies are driven by past and current conflict, the needs of millions of displaced people, and an expanding human population. Current regulatory mechanisms in place to protect the markhor and its habitat are not being implemented effectively in most of the range to reduce or remove threats to the subspecies. With the exception of the TCP in the Torghar Hills, no other management plans are in place to specifically address the straight-horned markhor. Therefore, the tremendous pressure put on natural resources, and the impacts to the straight-horned markhor and its habitat, will likely continue unless the natural resources of Afghanistan and Pakistan are effectively protected.

In the Torghar Hills, the TCP has eliminated poaching of straight-horned markhor and managed the habitat such that the population has steadily increased since the TCP's inception and both the population and its habitat are currently secure. Because the TCP has incorporated economic incentives for the local community and is supported by the community, we believe the protections and management provided by the TCP will

continue.

The narrow geographic range of the straight-horned markhor and the small, scattered, and declining populations make this subspecies particularly vulnerable to threats. Furthermore, small, scattered populations may experience decreased demographic viability and increased susceptibility to extinction from stochastic environmental factors (e.g., weather events, disease) and an increased threat of extinction from genetic isolation and subsequent inbreeding depression and genetic drift. Although the Torghar Hills population is subject to a management plan, and the protections provided by that management plan have led to an increasing population, a reduction in this single stable population would not provide a sufficient margin of safety for the subspecies to withstand effects from catastrophic or stochastic events.

### **Finding**

Section 4 of the Act (16 U.S.C. 1533) and implementing regulations (50 CFR part 424) set forth procedures for adding species to, removing species from, or reclassifying species on the Federal Lists of Endangered and Threatened Wildlife and Plants. Under section 4(a)(1) of the Act, a species may be determined to be endangered or threatened based on any of the following five 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.

In considering whether a species may warrant listing under any of the five factors, we look beyond the species' exposure to a potential threat or aggregation of threats under any of the factors, and evaluate whether the species responds to those potential threats in a way that causes actual impact to the species. The identification of threats that might impact a species negatively may not be sufficient to compel a finding that the species warrants listing. The information must include evidence indicating that the threats are operative and, either singly or in aggregation, affect the status of the species. Threats are significant if they drive, or contribute to, the risk of extinction of the species, such that the species warrants listing as endangered or threatened, as those terms are defined in the Act.

As required by the Act, we conducted a review of the status of the subspecies and considered the five factors in assessing whether the straight-horned markhor is endangered or threatened throughout all or a significant portion of its range. We examined the best scientific and commercial information available regarding the past, present, and future threats faced by the straight-horned markhor. We reviewed the 1999 petition submitted by the Society for Torghar Environmental Protection and IUCN, the 2010 petition submitted by Conservation Force, information available in our files, other



available published and unpublished information, and information received in response to the August 7, 2012, proposed rule and the December 5, 2013, revised proposed rule.

Today, the straight-horned markhor occurs in small, scattered populations in the mountains of Balochistan and Khyber Pakhtunkhwa provinces, Pakistan. Although we have found reports that this subspecies survives in Afghanistan, we believe it has likely been extirpated. In general, markhor populations are reported as declining and have likely not increased since 1975. However, one exception to this declining population trend is the Torghar Hills population in the Toba Kakar Range. Due to the implementation of a conservation plan, which includes revenues brought in from trophy hunting, the Torghar Hills population has increased from fewer than 200 in the mid-1980s to 3,518 currently.

Straight-horned markhor have been significantly impacted by years of conflict and the accompanying influx of sophisticated weapons. Easy access to accurate weapons and millions of displaced people dependent on wild meat for subsistence led to excessive hunting and the extirpation of the straight-horned markhor from much of its former range and a severe reduction in remaining populations. Additionally, tremendous pressure has been placed on natural resources from millions of displaced people and an expanding human population. Deforestation for livestock grazing, illegal logging, and collection of wood for building materials, fuel, and charcoal, to meet the needs of the growing population, continue to impact straight-horned markhor habitat.

Several federal and provincial laws are in place to provide some protection to natural resources, but they are subject to broad exemptions, allowing for overriding laws favoring development and commercial use, and enforcement is lacking. However, in the Torghar Hills, the population of straight-horned markhor and its habitat have been effectively managed by the TCP such that both are secure under the current management scenario. Due to the establishment of the TCP, the cessation of uncontrolled poaching, and the hunting of only a limited number of trophies in the Torghar Hills, the population has increased substantially since TCP's inception in 1985. Furthermore, due to the TCP, straight-horned markhor habitat is currently secure and is presently no longer impacted by overgrazing or collection of wood. Because the TCP has incorporated economic incentives derived from trophy hunting for the local community and is supported by the community, we believe the protections and management provided by the TCP will continue. We are not aware of other populations of straight-horned markhor under the same level of management. Information indicates that hunting and habitat loss remain as threats in the rest of the straight-horned markhor's range; without effective enforcement of federal and provincial laws, we believe these threats will continue into the foreseeable future.

Section 3 of the Act defines an "endangered species" as "any species which 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." Most of the straight-horned markhor populations are small and declining. Threats to this

subspecies from hunting and habitat loss still exist and will likely continue into the foreseeable future. Current regulatory mechanisms are inadequate to ameliorate the negative effects of these threats on the subspecies and will likely remain ineffective until changes in implementation are made. Therefore, we expect that most straight-horned populations will continue to decline into the foreseeable future.

However, although most remaining populations of straight-horned markhor are critically low, continue to face threats from overhunting and habitat loss, and will likely continue to decline, implementation of the TCP has eliminated threats from hunting and habitat loss in the Torghar Hills. This population has continued to increase since the inception of the TCP and, today, is the only stronghold of the species.

Furthermore, because of the protective measures provided to the Torghar Hills population by the TCP, we believe that the threats identified under Factors A, B, and D are not of sufficient imminence, intensity, or magnitude to indicate that the subspecies is presently in danger of extinction, and, therefore, does not meet the definition of endangered under the Act. The Torghar Hills population is considered to be currently stable and increasing; based upon 2011 population surveys in the TCP, the markhor population and domestic livestock have minimal range-use overlap, and the markhor's habitat is secure under current management. However, the straight-horned markhor occupies a narrow geographic range and threats acting on those critically low populations outside Torghar Hills are likely to continue in the foreseeable future. Moreover, within the foreseeable future, pressures on habitat in the Torghar Hills and interactions between

livestock and markhor are likely to increase with the growth of domestic livestock herds, the biannual migration of local tribes, and the expansion of markhor populations in the TCP, resulting in the subspecies as a whole being at risk of extinction due to the strong likelihood of a catastrophic or stochastic event (e.g., disease) impacting the Torghar Hills population. Should a catastrophic or stochastic event (e.g., disease) impact the Torghar Hills population, this single stable population would likely not provide a sufficient margin of safety for the subspecies. Thus, these factors indicate that the straight-horned markhor, while not at risk of extinction now, will likely become in danger of extinction in the foreseeable future due to those continuing threats. Therefore, on the basis of the best scientific and commercial information, we have determined that the straight-horned markhor meets the definition of a “threatened species” under the Act. Consequently, we are listing the straight-horned markhor as threatened in its entirety.

#### *Distinct Vertebrate Population Segment*

Section 3(16) of the Act defines “species” to include any species or subspecies of fish and wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature (16 U.S.C. 1532(16)). Under the Service’s “Policy Regarding the Recognition of Distinct Vertebrate Population Segments Under the Endangered Species Act” (61 FR 4722, February 7, 1996), three elements are considered in the decision concerning the establishment and classification of a possible distinct population segment (DPS). These elements, which are applied similarly for additions to or removals from the Federal List of Endangered and

Threatened Wildlife, include:

- (1) The discreteness of a population in relation to the remainder of the species to which it belongs;
- (2) The significance of the population segment to the species to which it belongs; and
- (3) The population segment's conservation status in relation to the Act's standards for listing, delisting, or reclassification (i.e., is the population segment endangered or threatened?).

#### Discreteness

Under the DPS policy, a population segment of a vertebrate taxon may be considered discrete if it satisfies either one of the following conditions:

(1) It is markedly separated from other populations of the same taxon as a consequence of physical, physiological, ecological, or behavioral factors. Quantitative measures of genetic or morphological discontinuity may provide evidence of this separation.

(2) It is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the Act.

We reviewed available information to determine whether any population, including the Torghar Hills population, of the straight-horned markhor meets the first discreteness condition of our 1996 DPS policy. We found no evidence that any population was markedly separated from other markhor populations as a consequence of

physical, physiological, ecological, or behavioral factors. Additionally, we are not aware of measures of genetic or morphological discontinuity that provide evidence of marked separation. With respect to Torghar Hills, the boundaries are unclear and appear to grade into other ranges within the Toba Kakar Mountains. Additionally, Johnson (1994b, p. 15) noted that, if the Torghar Hills population reaches carrying capacity, it could become a source of emigrants for other mountain ranges in the area and that intermountain movement is probably already taking place. Since that publication, the Torghar Hills population has increased from 695 markhor to 3,518, indicating a greater likelihood that intermountain movement of markhor will or is already taking place. We currently do not know the extent, if any, that markhor are moving from the Torghar Hills into other mountain ranges; however, it appears that they could. Movement may require markhor to cross unsuitable habitat (e.g., the TCP is surrounded by less severe topography and valleys typically not preferred by markhor), but there is no reason that they could not cross, especially if carrying capacity is met, thereby creating a need to emigrate to other suitable areas in adjacent ranges. Therefore, without evidence of marked separation, we determine that none of the populations of the straight-horned markhor meet the first discreteness condition of the 1996 DPS policy.

We next evaluated whether any of the straight-horned markhor populations meet the second discreteness condition of our 1996 DPS policy. A population segment may be considered discrete if it is delimited by international governmental boundaries within which differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms exist that are significant in light of section 4(a)(1)(D) of the

Act. Although the straight-horned markhor is reported to occur in Afghanistan, it has likely been extirpated. Additionally, we found no significant differences in control of exploitation, management of habitat, conservation status, or regulatory mechanisms in Afghanistan and Pakistan; therefore, none of the populations of the straight-horned markhor meet the second discreteness condition of the 1996 DPS policy.

We determine, based on a review of the best available information, that none of the populations of the straight-horned markhor, including the Torghar Hills population, meet the discreteness conditions of the 1996 DPS policy. Because we found that the straight-horned markhor populations do not meet the discreteness element under the Service's DPS policy, we need not conduct an evaluation of significance under that policy. We conclude that none of the straight-horned markhor populations qualify as a DPS under the Act.

#### *Significant Portion of the Range*

Under the Act and our implementing regulations, a species may warrant listing if it is endangered or threatened throughout all or a significant portion of its range. The term "species" includes "any subspecies of fish or wildlife or plants, and any distinct population segment [DPS] of any species of vertebrate fish or wildlife which interbreeds when mature." We published a final policy interpreting the phrase "Significant Portion of its Range" (SPR) (79 FR 37578, July 1, 2014). The final policy states that (1) if a species is found to be endangered or threatened throughout a significant portion of its

range, the entire species is listed as endangered or threatened, respectively, and the Act's protections apply to all individuals of the species wherever found; (2) a portion of the range of a species is "significant" if the species is not currently endangered or threatened throughout all of its range, but the portion's contribution to the viability of the species is so important that, without the members in that portion, the species would be in danger of extinction, or likely to become so in the foreseeable future, throughout all of its range; (3) the range of a species is considered to be the general geographical area within which that species can be found at the time FWS or NMFS makes any particular status determination; and (4) if a vertebrate species is endangered or threatened throughout an SPR, and the population in that significant portion is a valid DPS, we will list the DPS rather than the entire taxonomic species or subspecies.

The first step in our analysis of the status of a species is to determine its status throughout all 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 endangered (or threatened) and no additional SPR analysis is required. We found the straight-horned markhor to be threatened throughout its range. Therefore, no portions of the species' range are "significant" as defined in our SPR policy and no additional SPR analysis is required.

### **Available Conservation Measures**



Conservation measures provided to species listed as endangered or threatened under the Act include recognition, requirements for Federal protection in the United States, and prohibitions against certain practices. Recognition through listing results in public awareness, and encourages and results in conservation actions by Federal and State governments in the United States, foreign governments, private agencies and groups, and individuals.

Section 7(a) of the Act, as amended, and as implemented by regulations at 50 CFR part 402, requires Federal agencies to evaluate their actions within the United States or on the high seas with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. However, given that the straight-horned markhor is not native to the United States, we are not designating critical habitat for this species under section 4 of the Act.

Section 8(a) of the Act 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 and threatened species in foreign countries. Sections 8(b) and 8(c) of the Act authorize the Secretary to encourage conservation programs for foreign endangered species and to provide assistance for such programs in the form of personnel and the training of personnel.

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to all endangered and threatened wildlife. These prohibitions,

at 50 CFR 17.21 and 17.31, in part, make it illegal for any person subject to the jurisdiction of the United States to “take” (take includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt any of these) within the United States or upon the high seas; import or export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce any endangered or threatened wildlife species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken in violation of the Act. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered and threatened wildlife species under certain circumstances. Regulations governing permits are codified at 50 CFR 17.22 for endangered species and 17.32 for threatened species. For endangered wildlife, a permit may be issued for scientific purposes, to enhance the propagation or survival of the species, and for incidental take in connection with otherwise lawful activities. For threatened species, a permit may be issued for the same activities, as well as zoological exhibition, education, and special purposes consistent with the Act.

#### **4(d) Rule**

Section 4(d) of the Act states that the Secretary may, by regulation, extend to threatened species prohibitions provided for endangered species under section 9 of the

Act. Our implementing regulations for threatened wildlife (50 CFR 17.31) incorporate the section 9 prohibitions for endangered wildlife, except when a 4(d), or special, rule is promulgated. For threatened species, section 4(d) of the Act gives the Secretary discretion to specify the prohibitions and any exceptions to those prohibitions that are appropriate for the species, and provisions that are necessary and advisable to provide for the conservation of the species. A 4(d) rule allows us to include provisions that are tailored to the specific conservation needs of the threatened species and which may be more or less restrictive than the general provisions at 50 CFR 17.31.

Wildlife often competes with humans and land uses upon which human livelihoods depend (e.g., agriculture and pastoralism). In areas where wildlife does not provide any benefits to the local people or imposes substantial costs, it is often killed and its habitat degraded or lost to other, more beneficial land uses (IUCN SSC 2012, p. 5). Well-managed sport hunting programs that encourage sustainable use can contribute to the conservation of wildlife and improve wildlife populations. The primary objective of a well-managed trophy-hunting program is not hunting, but the conservation of large mammals (Shackleton 2001, p. 7). The IUCN SSC Caprinae Specialist Group specifically states that trophy hunting usually generates substantial funds that can be used for conservation activities, such as habitat protection, population monitoring, law enforcement, research, or management programs (IUCN SSC 2012, p. 3). Additionally, involvement of the local community in conservation of a species results in better conservation outcomes, which improve even more if those efforts generate sustainable benefits for the community (Damm and Franco in press a, p. 29). Revenue, employment,

improved livelihoods, and/or other benefits generated from the use of wildlife provide incentives for people to conserve the species and its habitat, thus removing the risk of resource degradation, depletion, and habitat conversion (IUCN SSC 2012, pp. 2–5; Shackleton 2001, pp. 7, 10).

Recognizing the potential of sport-hunting-based conservation programs to contribute to the conservation of straight-horned markhor, we are finalizing the following 4(d) rule to allow the import of sport-hunted markhor trophies taken from established conservation programs without a threatened species permit issued under 50 CFR 17.32, provided that certain criteria are met. Importation of a personal sport-hunted straight-horned markhor may be authorized by the Director of the U.S. Fish and Wildlife Service (Director) without a threatened species permit if the trophy is taken from a conservation program that meets the following criteria:

(1) Populations of straight-horned markhor within the conservation program's areas can be shown to be sufficiently large to sustain sport-hunting, and the populations are stable or increasing.

(2) Regulatory authorities have the capacity to obtain sound data on populations.

(3) The conservation program can demonstrate a benefit to both the communities surrounding or within the area managed by the conservation program and the species, and the funds derived from sport hunting are applied toward benefits to the community and the species.

(4) Regulatory authorities have the legal and practical capacity to provide for the long-term survival of the populations.

(5) Regulatory authorities can determine that the trophies have in fact been legally taken from the populations under an established conservation program.

The Director may, consistent with the purposes of the Act, authorize by publication of a notice in the **Federal Register** the importation of personal sport-hunted straight-horned markhor, taken legally from the established conservation program after the date of such notice, without a threatened species permit, provided that the applicable provisions of 50 CFR parts 13, 14, 17, and 23, which includes obtaining appropriate CITES export and import permits, have been met.

Many hunters are willing to pay relatively large fees for the privilege to hunt, but only if they are able to import their trophy. The United States is a major market country for trophy hunting (IUCN SCC 2012, p. 10). Authorizing the importation of personal sport-hunted straight-horned markhor according to the 4(d) rule without a threatened species permit under the Act facilitates the participation of U.S. hunters in scientifically based conservation programs that include hunting. In the case of the markhor, the revenue generated by hunters has directly supported a community-based conservation program and has resulted in measurable improvements in straight-horned markhor populations. Furthermore, the criteria of the 4(d) rule ensure that U.S. hunters participate in sustainable sport-hunting programs. Additionally, while it may be possible to exempt importations from the requirements of a permit issued under the Act at 50 CFR 17.32 if the criteria under the 4(d) rule are met, we must still adhere to CITES requirements. As an Appendix-I species under CITES, straight-horned markhor imports must meet the criteria under 50 CFR 23. Namely, there is still a requirement that the exporting country

make the required findings that the export would not be detrimental to the species and that trophies were legally taken. Moreover, as the authority for the importing country, we would still need to make a finding that the import would be for purposes not detrimental to the survival of the species, and that the specimen will not be used for primarily commercial purposes. Thus, if the Director determines that the conservation program meets the 4(d) criteria, the Service finds that additional authorizations under the Act for importation of sport-hunted trophies would not be necessary and advisable for the conservation of the species, nor appropriate, because such importation already requires compliance with CITES' most stringent international trade controls for this subspecies listed under Appendix I. Therefore, we find that this 4(d) rule contains appropriate provisions, as well as measures that are necessary and advisable for the conservation of the species.

### **Required Determinations**

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

We have determined that we do not need to prepare an environmental assessment, as defined under the authority of the National Environmental Policy Act of 1969, in connection with regulations adopted under section 4(a) of the 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 list of all references cited in this document is available at <http://www.regulations.gov> at Docket No. FWS–R9–ES–2011–0003, or upon request from the U.S. Fish and Wildlife Service, Endangered Species Program, Branch of Foreign Species (see **FOR FURTHER INFORMATION CONTACT**).

### **Authors**

The primary authors of this rule are staff members of the Branch of Foreign Species, Endangered Species Program, U.S. Fish and Wildlife Service.

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

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

### **Regulation Promulgation**

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

### **PART 17—[AMENDED]**

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. Amend § 17.11(h) by removing the entry for “Markhor, Kabul” and revising the entry for “Markhor, straight-horned” in the List of Endangered and Threatened Wildlife to read as follows:

**§ 17.11 Endangered and threatened wildlife.**

\* \* \* \* \*

(h) \* \* \*



Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
Mammals	*	*	*	*	*	*	
Markhor, straight-horned	<i>Capra falconeri megaceros</i>	Afghanistan, Pakistan	Entire	T	15, 841	NA	17.40(d)
*	*	*	*	*	*	*	

3. Amend § 17.40 by adding a new paragraph (d) to read as follows:

**§ 17.40 Special rules—mammals.**

\* \* \* \* \*

(d) Straight-horned markhor (*Capra falconeri megaceros*).

(1) *General requirements.* Except as noted in paragraph (d)(2) of this section, all prohibitions of §17.31 and exemptions of §17.32 apply to this subspecies.

(2) *What are the criteria under which a personal sport-hunted trophy may qualify for import without a permit under § 17.32?* The Director may, consistent with the purposes of the Act, authorize by publication of a notice in the **Federal Register** the importation, without a threatened species permit issued under § 17.32, of personal sport-hunted straight-horned markhor from an established conservation program that meets the following criteria:

(i) The markhor was taken legally from the established program after the date of the **Federal Register** notice;

(ii) The applicable provisions of 50 CFR parts 13, 14, 17, and 23 have been met;  
and

(iii) The Director has received the following information regarding the established conservation program for straight-horned markhor:

(A) Populations of straight-horned markhor within the conservation program's areas can be shown to be sufficiently large to sustain sport hunting and are stable or increasing.

(B) Regulatory authorities have the capacity to obtain sound data on populations.

(C) The conservation program can demonstrate a benefit to both the communities surrounding or within the area managed by the conservation program and the species, and the funds derived from sport hunting are applied toward benefits to the community and the species.

(D) Regulatory authorities have the legal and practical capacity to provide for the long-term survival of the populations.

(E) Regulatory authorities can determine that the sport-hunted trophies have in fact been legally taken from the populations under an established conservation program.

\* \* \* \* \*

Dated: September 22, 2014. \_\_\_\_\_

Stephen Guertin,

Acting Director, Fish and Wildlife Service

**Billing Code 4310-55-P**

