

50 CFR Part 17**Endangered and Threatened Wildlife and Plants; Proposed Determination of Endangered Status and Critical Habitat for the Mount Graham Red Squirrel**

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: The Service proposes to determine endangered status and critical habitat for the Mount Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*), a small mammal found only in the Pinaleno Mountains of southeastern Arizona. Its isolated habitat has declined over the last century and may face additional losses to logging, recreational development, and construction of an astrophysical observatory. The red squirrel may also be in jeopardy because of its reduced numbers, and through competition with

an introduced species of squirrel. This proposal, if made final, would extend the protection of the Endangered Species Act of 1973, as amended, to the Mount Graham red Squirrel and its critical habitat. The Service seeks data and comments from the public.

DATES: Comments must be received by July 21, 1986. Public hearing requests must be received by July 7, 1986.

ADDRESSES: Comments and materials concerning this proposal should be sent to the Regional Director, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103.

Comments and materials received will be available for public inspection, by appointment, during normal business hours at the Service's Regional Office of Endangered Species, 500 Gold Avenue, S.W., Room 4000, Albuquerque, New Mexico.

FOR FURTHER INFORMATION CONTACT: Alisa M. Shull, Endangered Species Staff, U.S. Fish and Wildlife Service, P.O. Box 1306, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972).

SUPPLEMENTARY INFORMATION:

Background

The red squirrel (*Tamiasciurus hudsonicus*) is found in most of Canada and Alaska, and in much of the western and northern parts of the conterminous United States (Hall 1981). It is an arboreal species, and, in the southern extremities of its range, is restricted mainly to montane forests. Its color is grayish brown, tinged with rusty or yellowish along the back. In summer, a dark lateral line separates the light colored underparts from the grayer or browner sides. The ears are slightly tufted in winter, and the tail is bushy (Spicer et al. 1985).

The two most southerly subspecies of the red squirrel are *T. h. mogollionensis*, which is found in much of the high country of Arizona and New Mexico, and *T. h. grahamensis*, the Mount Graham red squirrel, which is known only from the Pinaleno, or Graham, Mountains of Graham County, southeastern Arizona. The latter is slightly smaller than *T. h. mogollionensis*, has a relatively shorter tail, and differs in various skeletal characters. Ten adult specimens averaged 7¾ inches (196.0 millimeters) in head and body length, and 5¼ inches (135.5 millimeters) in tail length (Spicer et al. 1985).

The range of the Mount Graham red squirrel lies entirely within the Safford Ranger District of the Coronado National Forest. This squirrel is now found primarily in stands of dense Engelmann spruce (*Picea engelmannii*) and/or fir, especially corkback fir (*Abies lasiocarpa* var. *arizonica*). It now occurs mostly above an elevation of 10,000 feet (3,048 meters), but may also be present down to about 9,400 feet (2,865 meters) in drainages on north-facing slopes and in protected areas. Its diet consists largely of conifer seeds, and during the winter it depends on seed-bearing cones that it has stored at certain sites known as middens. These

caches, usually associated with logs, snags, stumps, or a large live tree, are the focal points of individual territories, and the number of midden complexes offers an approximation of the number of resident red squirrels in a particular area. In good spruce-fir habitat in the Pinaleno Mountains, there is a population density of about one red squirrel per 8 acres (3.2 hectares), which is somewhat lower than has been found in most other areas where the species has been studied (Spicer et al. 1985).

The Mount Graham red squirrel was described by Allen in 1894, based on three specimens taken that same year on Mount Graham in the Pinalenos. Subsequent reports indicate that the subspecies was common around the turn of the century, but was declining by the 1920's and rare by the 1950's (Hoffmeister 1956). This situation apparently was associated with loss and disruption of forest habitat, and perhaps with competition from an introduced population of the tassel-eared, or Abert's, squirrel (*Sciurus aberti*). From 1958 to 1967, there was only a single report, unconfirmed, of *T. h. grahamensis*, and there was concern that the subspecies had become extinct. Later, however, the continued existence of the Mount Graham red squirrel was verified, and a Service-funded status survey in 1984-1985 located this mammal or its fresh sign at 16 localities in the Pinalenos (Spicer et al. 1985).

In both its original Review of Vertebrate Wildlife, published in the Federal Register of December 30, 1982 (47 FR 58454-58460), and the revised version, published on September 18, 1985 (50 FR 37958-37967), the Service included the Mount Graham red squirrel in category 2, meaning that information then available indicated that a proposal to determine endangered or threatened status was possibly appropriate, but was not yet sufficiently substantial to biologically support such a proposal. Results of the recent survey have since become available, and provide a substantive basis for a proposed determination of endangered status. Although the squirrel does still survive, its range and numbers have been reduced, and its habitat is jeopardized by a number of factors, including proposed construction of an astrophysical observatory.

Summary of Factors Affecting the Species

Section 4(a)(1) of the Endangered

Species Act (16 U.S.C. 1531 et seq.) and regulations (50 CFR Part 424) promulgated to implement the listing provisions of the Act set forth the procedures for adding species to the Federal Lists. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in section 4(a)(1). These factors and their application to the Mount Graham red squirrel (*Tamiasciurus hudsonicus grahamensis*) are as follows (information taken from Spicer et al. 1985):

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

The Mount Graham red squirrel has always been naturally restricted to a relatively small area, and its range and numbers have evidently declined during the past century. In 1914 it was considered common above elevations of 8,500 feet (2,590 meters), and was found as low as 6,750 feet (2,057 meters). Feared extinct by the 1960's, it subsequently seemed to make a partial recovery, but probably has not reached its former numbers. It is now seldom found below 9,500 feet (2,900 meters), is nowhere abundant, and appears to be common only in small, scattered patches of the best habitat. Such habitat consists mainly of spruce-fir forest, of which there are 2,240 acres (906 hectares) in the Pinalenos. In this habitat, there is an estimated density of one red squirrel per 8 acres (3.2 hectares), though not all of the spruce-fir forest is uniformly occupied. The red squirrel also inhabits portions of the adjacent Douglas fir (*Pseudotsuga menziesii*)-white fir (*Abies concolor*) forest, of which there are 19,900 acres (8,055 hectares), but only at an estimated density of one individual per 124 acres (50 hectares). The total red squirrel population now in the Pinalenos may well number fewer than 500 individuals, possibly only 300.

Although not precisely documented, the apparent decline of the Mount Graham red squirrel seems to parallel the expansion of logging operations in the Pinalenos. Such activity began in the 1880's and was initially not widespread. By 1933, however, roads had been constructed to the crest of the mountains. By 1973, most of the accessible timber had been cut, thereby reducing the age structure and density of the red squirrel's forest habitat. The extent of future timber harvesting in the

Pinalenos will depend on which alternative in the proposed Coronado National Forest Plan is implemented. The alternatives vary from no harvest to clear cutting of the spruce-fir forest for conversion to livestock forage. The latter procedure could eliminate food sources, midden sites, and cover, and result in a substantial decline of the red squirrel population.

The construction of a major astrophysical facility on Mount Graham has been proposed by Steward Observatory University of Arizona. This facility would be located within a 3,500-acre (1,425-hectare) area encompassing most of the mountain above 9,400 feet (2,865 meters). It would include up to 18 telescopes, a visitor center, workshops, and other installations.

Additional losses to red squirrel habitat could result from forest fires, road construction and improvement, and recreational developments, and high elevation, including potential picnic areas, campgrounds, and ski facilities. It is not thought that any one of these, or the above, problems could by itself result in rapid extirpation of the Mount Graham red squirrel, but their cumulative effect could be severe over a period of time. Considering the squirrel's low numbers, restricted range, and past history of decline, new potential habitat disturbances may be cause for concern.

B. Overutilization of Commercial, Recreational, Scientific, or Educational Purposes

Tree squirrels (including the red squirrel) are legally hunted in the Pinalenos during October and November. Almost all hunters, however, seek the introduced tassel-eared squirrel. Investigations by the Arizona Game and Fish Department have found no substantial take of the red squirrel, and hunting is not now considered a threat to this species.

C. Disease or Predation

Nothing is known about diseases or parasites of the Mount Graham red squirrel. Other subspecies, however, are susceptible to a variety of diseases, including tularemia and those caused by infectious viruses. Predation is not known to have caused reductions in the red squirrel population of the Pinalenos, but a number of predatory mammals, birds, and reptiles are present in the area.

D. The Inadequacy of Existing Regulatory Mechanisms

Both the Arizona Game and Fish Department and the U.S. Forest Service, which manages the land inhabited by

aware of the presence of this mammal and the problems it may face. Both agencies have policies and agreements that give some consideration to the welfare of this squirrel. There are, however, of State or Federal laws or regulations that specifically require protection of the squirrel of its habitat.

E. Other Natural or Manmade Factors Affecting Its Continued Existence

The Mount Graham red squirrel may have suffered through competition with the tassel-eared squirrel, which was deliberately introduced in the Pinalenos from 1941 to 1943. The latter species now occupies nearly all coniferous forest in the area. Although little is known about interaction between these two kinds of squirrel, a number of authorities have suggested that competition has resulted in the exclusion of the red squirrel from habitat with ponderosa pine (*Pinus ponderosa*), to which the tassel-eared squirrel is particularly adapted. This process may have ultimately led to a substantial reduction in the range and numbers of the red squirrel.

The Mount Graham red squirrel has probably been isolated from other populations of *T. hudsonicus* for about 11,000 years. The nearest locality where the species is known to occur is 68 miles (110 kilometers) to the northeast, and is separated by a stretch of arid, unsuitable habitat. There is no possibility of natural immigration or genetic exchange. Because of these factors, and its restricted population size and distribution, the Mount Graham red squirrel is particularly vulnerable to any disturbance that might bring about further declines and weakening of genetic viability.

The decision to propose endangered status for the Mount Graham red squirrel was based on an assessment of the best available scientific information and of past, present, and probable future threats to the species. A decision to take no action would constitute failure to properly classify the Mount Graham red squirrel pursuant to the Endangered Species Act and would exclude this squirrel from protection provided by the Act. A decision to propose only threatened status would not adequately reflect the very small population size and distribution of this squirrel, its history of vulnerability and decline, and the multiplicity of problems that confront it. For the reasons given below, a critical habitat designation is included in this proposal.

Critical Habitat

Critical habitat, as defined by section

within the geographical area occupied by a species, at the time it is listed in accordance with the Act, on which are found those physical or biological features (I) essential to the conservation of the species and (II) that may require special management considerations or protection, and (ii) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Section 4(a) (3) of the Act requires that critical habitat be designated to the maximum extent prudent and determinable concurrently with the determination that a species is endangered or threatened. Critical habitat proposed for the Mount Graham red squirrel to include three areas in the Coronado National Forest, Graham County, Arizona. These areas are precisely delineated below in the "Proposed Regulations Promulgation" section. The names applied to the areas—Hawk Peak/Mount Graham, Heliograph Peak, and Webb Peak—refer to prominent mountains. The areas have irregular shapes, but cover a total approximately 2,000 acres (800 hectares).

The three designated areas the major known concentration of the Mount Graham red squirrel, and the habitat necessary to its survival, including cover, food sources, nest sites, and midden sites. The winter survival of the red squirrel depends primarily on the availability of seeds of cones stored in middens. Therefore, an environment in which the midden-cached ones will stay cool and moist, and be prevented from opening and losing their seeds, is of critical importance. Such an environment is most often found in dense, shady forest above 10,000 feet (3,048 meters), and at lower elevations on north-facing slopes or in protected pockets and small basins (Spicer *et al.* 1985).

Section 4(b)(8) requires, for any proposed or final regulation that designates critical habitat, a brief description and evaluation of those activities (public or private) that may adversely modify such habitat or may be affected by such designation. As the Mount Graham red squirrel requires dense spruce-fir forest, it would suffer through activities that destroy such habitat or substantially reduce forest density. Potential activities that could adversely affect the habitat include timber harvesting and recreational development that proceed without adequate consideration of the welfare of

proposed astrophysical facility on Mount Graham. Any such activities that take place on national forests would require authorization by the U.S. Forest Service. Since all of the proposed critical habitat of the Mount Graham red squirrel is within a national forest, the activities in question could require appropriate forest Service conferral and/or consultation as described below under "Available Conservation Measures."

Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. The Service will consider the critical habitat designation for the Mount Graham red squirrel in light of all additional relevant information obtained at the time of final rule.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. Such actions are initiated by the Service following listing. The protection required of Federal agencies and the prohibitions against taking and harm are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions 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. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR Part 402, and are now under revision (see proposal at 48 FR 29990; June 29, 1983). Section 7(a)(4) requires Federal agencies to confer informally with the service on any action that is likely to jeopardize the continued existence of a proposed species or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of such a species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical

habitat, the responsible Federal agency must enter into formal consultation with the Service. Federal activities that may be affected in this regard with respect to the listing of the Mount Graham red squirrel, are described above in the "Critical Habitat" section.

Section 9 of the Act, and implementing regulations found at 50 CFR 17.21, set forth a series of general prohibitions and exceptions that apply to all endangered wildlife. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to take, import or export, ship in interstate commerce in the course of commercial activity, or sell or offer for sale in interstate or foreign commerce any listed species. It also is illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. Certain exceptions apply to agents of the Service and State conservation agencies.

Permits may be issued to carry out otherwise prohibited activities involving endangered wildlife species under certain circumstances. Regulations governing permits are at 50 CFR 17.22 and 17.23. Such permits are available for scientific purposes, to enhance the propagation or survival of the species, and/or for incidental take in connection with otherwise lawful activities. In some instances, permits may be issued during a specified period of time to relieve undue economic hardship that would be suffered if such relief were not otherwise available.

Public Comments Solicited

The Service intends that any final action resulting from this proposal will be as accurate and as effective as possible. Therefore, comments and suggestions regarding any aspect of this proposal are hereby solicited from the public, concerned governmental agencies, the Scientific community, industry, and other interested parties. Comments particularly are sought concerning:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the subject species;

(2) the location of any additional populations of this species and the reasons why any habitat should or should not be determined to be critical habitat as provided by Section 4 of the Act;

(3) additional information concerning the distribution of this species;

(4) current or planned activities in the involved area and their possible impacts on the subject species; and

(5) any foreseeable economic or other impacts resulting from the proposed designation of the critical habitat.

Final promulgation of the regulations on this species will take into consideration the comments and any additional information received by the Service, and such communications may lead to adoption of final regulations that differ from this proposal.

The Endangered Species Act provides for a public hearing on this proposal, if requested. Requests must be filed within 45 days of the date of the proposal. Such requests must be made in writing and addressed to the Regional Director (see ADDRESSES).

National Environmental Policy Act

The Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* of October 25, 1983 (48 FR 49244).

References Cite

- Allen, J.A. 1894. Descriptions of ten new North American mammals, and remarks of others. *Bull. Amer. Mus. Nat. Hist.* 6:320-321.
- Hall, E.R. 1981. *The mammals of North America*. John Wiley & Sons. New York. 2 vols.
- Hoffmeister, D.F. 1956. *Mammals of the Graham (Pinaleno) Mountains, Arizona*. *Amer. Midl. Nat.* 55(2):257-288.
- Spicer, R.B., J.C. de Vos, Jr., and R.L. Glinski. 1985. Status of the Mount Graham red squirrel, *Tamiasciurus hudsonicus grahamensis* (Allen), of southeastern Arizona. Report to Office of Endangered Species, U.S. Fish and Wildlife Service, Albuquerque, New Mexico, 48 pp.

Author

The primary author of this proposed rule is Alisa M. Shull, Endangered Species Staff, U.S. Fish and Wildlife Service, Albuquerque, New Mexico 87103 (505/766-3972 or FTS 474-3972).

List of Subjects in 50 CFR Part 17

Endangered and threatened wildlife, Fish, Marine mammals, Plants (agriculture).

Proposed Regulations Promulgation

PART 17—[AMENDED]

Accordingly, it is hereby proposed to amend Part 17, Subchapter B of Chapter I, Title 50 of the Code of Federal Regulations, as set forth below:

1. The authority citation for Part 17 continues to read as follows:

Authority: Pub. L. 93-205, 87 Stat. 884; Pub. L. 94-359, 90 Stat. 911; Pub. L. 95-632, 92 Stat. 3751; Pub. L. 96-159, 93 Stat. 1225; Pub. L. 97-

304, 96 Stat. 1411 (16 U.S.C. 1531 *et seq.*).

2. It is proposed to amend § 17.11(h) by adding the following, in alphabetical order under "MAMMALS," to the List of Endangered and Threatened Wildlife:

§ 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							
Squirrel, Mount Graham red	<i>Tamiasciurus hudsonicus grahamensis</i>	U.S.A. (AZ)	Entire	E		17.95(a)	NA

3. It is further proposed to amend § 17.95(a) by adding critical habitat of the Mount Graham red squirrel, in the same alphabetical order as the species occurs in § 17.11(h).

§ 17.95 Critical habitat—fish and wildlife.

(a) * * *

Mount Graham Red Squirrel
(Tamiasciurus hudsonicus grahamensis)

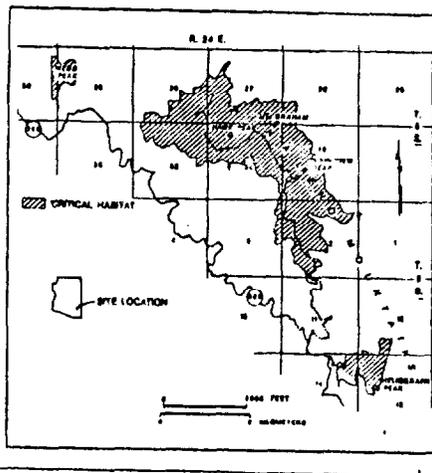
Arizona. Areas of land, water, and airspace in the Coronado National Forest, T8S R24E and T9S R24E (Gila and Salt River Meridian), Graham County, with the following components:

1. **Hawk Peak-Mount Graham Area.** The area above the 10,000-foot (3,048-meter) contour surrounding Hawk Peak and Plain View Peak, plus the area above the 9,800-foot (2,987-meter) contour that is south of lines extending from the highest point of Plain View Peak eastward at 90° (from true north) and southwestward at 225° (from true north).

2. **Heliograph Peak Area.** The area on the north-facing slope of Heliograph Peak that is above the 9,200-foot (2,804-meter) contour surrounding Heliograph Peak and that is between a line extending at 15° (from true north) from a point 160 feet (49 meters) due south of the horizontal control station on Heliograph Peak and a line extending northwestward at 300° (from true north) from that same point.

3. **Webb Peak Area.** The area on the east-facing slope of Webb Peak that is above the 9,700-foot (2,957-meter) contour surrounding Webb Peak and that is east of a line extending due north and south through a point 160 feet (49 meters) due west of the horizontal control station on Webb Peak.

The major constituent element is dense stands of mature spruce-fir forest.



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Dated: May 6, 1986.
Susan Recce,
Acting Assistant Secretary for Fish and
Wildlife and Parks.
[FR Doc. 86-11366 Filed 5-20-86; 8:45 am]
BILLING CODE 4310-55-M