

50 CFR Part 17

RIN 1018-AB52

Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for *Geranium Arboreum* (Hawaiian Red-Flowered Geranium)

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The U.S. Fish and Wildlife Service (Service) determines a plant, *Geranium arboreum* (Hawaiian red-flowered-geranium), to be endangered pursuant to the Endangered Species Act of 1973, as amended (Act). This species grows primarily in gulches between 5,000 to 7,000 feet (R) [1,525 to 2,135 meters (m)] in elevation on the northern and western slopes of Haleakala, east Maui, Hawaiian Islands. The greatest immediate threats to the survival of this species are habitat disturbance by domestic and feral cattle and feral pigs, and competition from naturalized, exotic vegetation. This rule implements the protection and recovery provisions provided by the Act for this species.

EFFECTIVE DATE: June 12, 1992.

ADDRESSES: The complete file for this rule is available for public inspection, by appointment, during normal business hours at the U.S. Fish and Wildlife Service, 380 Ala Moana Boulevard, room 6307, Honolulu, Hawaii 96813.

FOR FURTHER INFORMATION CONTACT: Derral R. Herbst, at the above address (808/541-2749 or FTS 551-2749).

SUPPLEMENTARY INFORMATION:

Background

Geranium arboreum was first collected by Charles Pickering and William Brackenridge of the U.S.

Exploring Expedition on Haleakala, Maui, on February 26, 1841 (Funk 1988a, 1988b). Asa Gray was given the task to prepare a report on all of the foreign plants collected by the expedition. Of the two volumes he produced concerning these specimens, only one was published, and in it *Geranium arboreum* was described as a new species (Gray 1854). In 1958, Degener and Greenwell changed the plant's name to *Neurophyllodes arboreum*; however, Gray's placement of the plant in *Geranium* is accepted by other botanists (Funk 1988b). Today about 300 individuals are known (Funk 1988b); these are found chiefly in the Polipoli Springs and Hosmer Grove—Puu Nianiau areas on the western and northwestern slopes, respectively, of Haleakala. About 250 plants occur on State-owned land within the Xula Forest Reserve, the remainder are mostly in Haleakala National Park, The Nature Conservancy's Waikamoi Preserve, or on Haleakala, Kaanoulu, or Erehwon Ranch lands (Funk 1982, 1988b; Hawaiian Heritage Program 1991).

Geranium arboreum, in the Geranium family, is a much branched, spreading, woody shrub about 6 to 12 ft (1.8 to 3.7 m) tall. The leaves are thin, bright green, broad and rounded at the base, tapering toward the end, and about 1 to 1.5 inches (in) [2.5 to 3.8 centimeters (cm)] long. Each leaf has five to nine main veins, and has edges notched with tooth-like projections. The flower petals are red, about 1 to 1.5 in (2.5 to 3.8 cm) long; the upper three petals are erect, the lower two reflexed, causing the flower to appear curved (Wagner *et al.* 1990). Due to this flower shape, this species is the only one in the genus which appears to be adapted to bird pollination (Funk 1982, 1988b).

The original range and abundance of the species is unknown; however, late 19th and early 20th century collections indicate that it once grew on the southern slopes of Haleakala, and that its distribution on the northern slopes extended beyond its presently known range. Today, isolated populations of *Geranium arboreum* grow in steep, narrow canyons on the north and west outer slopes of Haleakala between 5,000

and 7,000 ft (1,525 to 2,135 m) in elevation in an area that is roughly 9 miles (mi) (14 kilometers (km)) in length, and 0.15 mi (0.25 km) in width. The environment of these gulches is damp, shaded part of the day, and protected, contrasting with the generally drier climate of the surrounding area. The moist habitat apparently is due to fog drip and run-off. The plants appear to obtain a significant amount of their water requirements by "combing" moisture out of the drifting fog (Funk 1982). Vegetation in the ravines is often quite dense, and consists of mostly medium-sized woody shrubs, introduced grasses and weeds, and mixed ferns (Funk 1982). *Geranium arboreum* occurs in small isolated populations in the gulches and is a minor component of the vegetation. The habitat of nearby and surrounding areas is subalpine dry forest or mesic scrub land; a few *Geranium arboreum* individuals grow near areas that have been converted to agricultural uses such as pasture land or experimental tree plots.

The greatest immediate threat to the survival of this species is the encroachment and competition from naturalized, exotic vegetation, chiefly grasses and trees. Soil disturbances, caused by trampling of cattle and rooting by feral pigs, also are a major threat as they destroy plants and facilitate the encroachment of competing species of naturalized plants. Other less important threats include browsing by cattle, fires, and, in the Polipoli Springs area, pollen from exotic pine trees. At certain times of the year, pine pollen completely cover the stigmas of the geraniums, precluding any fertilization by its own species (Funk 1982, 1988b). The small number of individual plants increases the potential for extinction from stochastic events, and the limited gene pool may depress reproductive vigor.

Federal action on this plant began as a result of section 12 of the Act, which directed the Secretary of the Smithsonian Institution to prepare a report on plants considered to be endangered, threatened, or extinct in the United States. This report, designated as

House Document No. 94-51, was presented to Congress on January 9, 1975. In that document, *Geranium arboreum* was considered endangered. On July 1, 1975, the Service published a notice in the *Federal Register* (40 FR 27823) of its acceptance of the Smithsonian report as a petition within the context of section 4(c)(2) (now section 4(b)(3)) of the Act, and giving notice of its intention to review the status of the plant taxa named therein. As a result of that review, on June 16, 1976, the Service published a proposed rule in the *Federal Register* (41 FR 24523) to determine endangered status pursuant to section 4 of the Act for approximately 1,700 vascular plant species, including *Geranium arboreum*. The list of 1,700 plant taxa was assembled on the basis of comments and data received by the Smithsonian Institution and the Service in response to House Document No. 94-51 and the July 1, 1975, *Federal Register* publication.

General comments received in response to the 1976 proposal are summarized in an April 26, 1978, *Federal Register* publication (43 FR 17909). In 1978, amendments to the Act required all proposals over two years old be withdrawn. A 1-year grace period was given to proposals already over 2 years old. On December 10, 1979, the Service published a notice in the *Federal Register* (44 FR 70796) withdrawing the portion of the June 16, 1976, proposal that had not been made final, along with four other proposals that had expired. The Service published an updated notice of review for plants on December 15, 1980 (45 FR 82479), September 27, 1985 (50 FR 39525), and February 21, 1990 (55 FR 6183). In these notices, *Geranium arboreum* was treated as a category 1 candidate for Federal listing. Category 1 taxa are those for which the Service has on file substantial information on biological vulnerability and threats to support preparation of listing proposals.

Section 4(b)(3)(B) of the Act requires the Secretary to make findings on certain pending petitions within 12 months of their receipt. Section 2(b)(1) of the 1982 amendments further requires all petitions pending on October 13, 1982, be treated as having been newly submitted on that date. The latter was the case of *Geranium arboreum* because the Service had accepted the 1975 Smithsonian report as a petition. On October 13, 1983, the Service found that the petitioned listing of *Geranium arboreum* was warranted, but precluded by other pending listing actions, in accordance with section 4(b)(3)(B)(iii) of the Act; notification of this finding was

published in the *Federal Register* on January 20, 1984 (49 FR 2485). Such a finding requires the petition to be recycled, pursuant to section 4(b)(3)(C)(i) of the Act. The finding was reviewed in October of 1984, 1985, 1986, 1987, 1988, 1989, and 1990.

On January 23, 1991, the Service published in the *Federal Register* (56 FR 2490) a proposal to list *Geranium arboreum* as endangered. This proposal was based primarily on information supplied by a status report and a doctoral dissertation by Evangeline Funk, and observations by botanists. The Service now determines *Geranium arboreum* to be endangered with the publication of this rule.

Summary of Comments and Recommendations

In the January 23, 1991, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information relevant to a final decision on the listing proposal. The public comment period ended on March 25, 1991. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice inviting general public comment was published in the "Maui News" on February 1, 1991. Two letters of comment were received, one from The Nature Conservancy, the other from the National Park Service; both supported listing the species. Additional information included in the Park Service's letter has been incorporated into this rule.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Geranium arboreum* should be classified as an endangered species. Procedures found at section 4 of the Endangered Species Act (16 U.S.C. 1533 *et seq.*) and regulations (50 CFR part 424) promulgated to implement the listing provisions of the Act were followed. 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). The five factors and their application to *Geranium arboreum* A. Gray (Hawaiian red-flowered geranium) are as follows:

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

It is likely that the entire area supporting *Geranium arboreum* has been grazed by domestic or feral cattle.

Ground disturbing activities associated with grazing by cattle or rooting by pigs have degraded the habitat that supports *Geranium arboreum* and may be responsible for some of the reduction in the species' range. When pigs forage, their rooting activity disrupts several inches of the soil surface and uproots plants, especially seedlings. The ground disturbance associated with the activities of cattle and pigs results in the increased erosion of the *Geranium* habitat, and favors the rapid invasion by exotic species. Probably the single greatest threat to the remaining *Geranium arboreum* is competition from naturalized, exotic plants, particularly grasses such as Yorkshire fog (*Holcus lanatus*) and, to a lesser extent, naturalized trees such as wattle (*Acacia mearnsii*) and firetree (*Myrica faya*); these exotic species invade and become established in disturbed areas. Introduced grasses occupy sites where *Geranium arboreum* seedlings normally would grow; the grasses form dense sod-like mats, and prevent seedlings of other species from becoming established (Funk 1988b). Fires represent an additional potential threat to the species and its habitat; a fire in the Polipoli Springs area in 1984 destroyed four *Geranium* plants.

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

Not known to be a factor; however, unrestricted scientific collecting or excessive visits resulting from increased publicity could seriously affect the species. *Geranium arboreum* is attractive and could become the subject of increased collection in the future.

C. Disease or Predation

Occasional browsing by cattle has been observed, but it is infrequent and is not considered a major threat. Recently, a naturalized population of rabbits was discovered in the northwest corner of Haleakala National Park, approximately 1 mi (2 km) from a population of *Geranium arboreum*. Although at present the rabbits are selective in their foraging, favoring the shoots and bark of mamane (*Sophora chrysophylla*) and grasses, in the predator-poor upper elevations of Haleakala, a rapid increase in the rabbit population could adversely impact the entire vegetation of the area.

D. The Inadequacy of Existing Regulatory Mechanisms

Most of the known extant *Geranium arboreum* plants grow in the Polipoli Springs area which is within the

United States to import or export; transport in interstate or foreign commerce in the course of a commercial activity; sell or offer for sale this species in interstate or foreign commerce; or to remove and reduce to possession any such species from areas under Federal jurisdiction; maliciously damage or destroy any such species on any area under Federal jurisdiction; or remove, cut, dig up, damage or destroy endangered plants on any other area in knowing violation of any State law or regulation or in the course of any violation of a State criminal trespass law. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered plant species under certain circumstances. It is anticipated that few trade permits would ever be sought or issued because the species is not common in cultivation or in the wild. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 North Fairfax Drive, room 432-ARLSQ, Arlington, Virginia 22203-3507 (703/358-2104 or FTS 921-2104; FAX 703/358-2281).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment or Environmental Impact

Statement, 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** on October 25, 1983 (48 FR 49244).

References Cited

Funk, E.J. 1982. Unpublished status survey of *Geranium arboreum* A. Gray (Hawaiian red-flowered geranium). U.S. Fish and Wildlife Service. 34 pp.
 Funk, E.J. 1988a. The notes of William Brackenridge made during his Sandwich Islands sojourn 1840-1841. Hawaiian Botanical Society Newsletter 27(1): 3-35.
 Funk, E.J. 1988b. Distribution, population structure and reproductive biology of a narrow endemic species: *Geranium arboreum* A. Gray. Doctoral dissertation, University of Hawaii. 200 pp.
 Gray, A. 1854. United States Exploring Expedition during the years 1838, 1839, 1840, 1841, 1842, under the command of Charles Wilkes. U.S.N. Botany, vol. 15. Phanerogamia, part 1. C. Sherman, Philadelphia. 315 pp.
 Hawaii Heritage Program. 1991. Element Occurrence Record for *Geranium arboreum*. PDGER02010.006, dated June 5, 1991, Honolulu. Unpubl. 2 pp.
 Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawaii. Bishop Mus. Spec. Publ. 83. University of Hawaii Press and Bishop Museum Press, Honolulu. 1853 pp.

Author

The primary author of this final rule is Dr. Derral R. Herbst, Fish and Wildlife Enhancement, Pacific Islands Office, U.S. Fish and Wildlife Service, 300 Ala Moana Boulevard, room 6307, P.O. Box 50167, Honolulu, Hawaii 96850 (808/541-2749 or FTS 551-2749).

List of Subjects in 50 CFR part 17

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

Regulation Promulgation

PART 17—[AMENDED]

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

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

Authority: 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.12(h) by adding a new family "Geraniaceae—Geranium family," in alphabetical order, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants.

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Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Geraniaceae—Geranium family:						
<i>Geranium arboreum</i>	Hawaiian red-flowered geranium.	U.S.A. (HI).....	E	465	NA	NA

Dated: May 1, 1992.
Bruce Blanchard,
 Acting Director, Fish and Wildlife Service.
 [FR Doc. 92-10985 Filed 5-12-92; 8:45 am]
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