

50 CFR Part 17

Endangered and Threatened Wildlife and Plants; Determination That *Amsinckia Grandiflora* is an Endangered Species and Designation of Critical Habitat

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Final rule.

SUMMARY: The Service determines endangered status and designates critical habitat for *Amsinckia grandiflora* (large-flowered fiddleneck). This action is being taken because population numbers have declined since historic times, possibly as a result of modification of habitat for agricultural use, intensive livestock grazing, urban development, and other land use activities that have altered the natural plant communities within the large-flowered fiddleneck's historic range. Weedy exotic plants and aggressive *Amsinckia* species are presently invading the grassland habitat at the one site it now occupies. The species

has an extremely restricted range, reduced gene pool, and low reproductive potential. The single known population, found in southwestern San Joaquin County, California, on Department of Energy land, has been observed from 1980 to 1984 and found to vary in size from 30 to 70 individuals for those years. There is the possibility that controlled burning and the testing of chemical explosives (both activities occur near its present environment) may be affecting the species. A determination that *Amsinckia grandiflora* is an endangered species and designation of its critical habitat will implement the protection provided by the Endangered Species Act of 1973, as amended.

DATES: The effective date of this rule is June 7, 1985.

ADDRESSES: The complete file for this rule is available for inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Lloyd 500 Building, 500 NE. Multnomah Street, Suite 1692, Portland, Oregon 97232.

FOR FURTHER INFORMATION CONTACT: Mr. Wayne S. White, Chief, Division of Endangered Species, at the above address or 503/231-6131 or FTS 429-6131.

SUPPLEMENTARY INFORMATION:
Background

Amsinckia grandiflora was first

collected in 1869 by Kellogg and Harford and was described in 1876 by Asa Gray. This annual species has red-orange flowers arranged in a fiddleneck-shaped inflorescence. Its bright green foliage is covered with coarse, stiff hairs. Historically, the species was found in Alameda, Contra Costa, and San Joaquin Counties, California. Today, it is known to survive only at a 1/2-acre site on Department of Energy (DOE) land, near Livermore, San Joaquin, California. The site is a grassy, steep, west- and south-facing slope of a small ravine with light-textured clay soil.

The reasons for the species' decline are not known, but two factors have been suggested. The reproductive system of *Amsinckia grandiflora* is considered "primitive." The species has two flower morphs, a condition that encourages outcrossing and may lead to lowered fecundity. The displacement of the large-flowered fiddleneck by aggressive fiddleneck species may be due to its inability to compete with species having higher fecundity (Ray and Chisaki, 1957; Ornduff, 1976). Also, the introduction of grazing animals into the Livermore area and the development of lands for agricultural and urban uses are believed to have been responsible for the extirpation of some populations. At this time fewer than 50 individuals are known to exist.

The Secretary of the Smithsonian Institution, as directed by section 12 of the Endangered Species Act of 1973, prepared a report on those plants considered to be endangered, threatened, or extinct in the United States. This report (House Document No. 94-51) was presented to Congress on January 9, 1975. On July 1, 1975, the Fish and Wildlife Service published a notice in the *Federal Register* (40 FR 27823) accepting the report as a petition within the context of section 4(c)(2) of the Endangered Species Act (petition acceptance provisions are now contained in section 4(b)(3)(A)), and giving notice of its intention to review the status of the plant taxa named therein, including the large-flowered fiddleneck. As a result of this review, on June 16, 1976, the Service published a proposed rule in the *Federal Register* (41 FR 24523) to determine approximately 1,700 vascular plant species, including the large-flowered fiddleneck, to be endangered pursuant to Section 4 of the Act. In 1978, amendments to the Act required that all proposals over 2 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) of the withdrawal of that 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 82480), including *Amsinckia grandiflora*. On February 15, 1983, the Service published a notice (48 FR 6752) announcing its finding that the listing of this species, as petitioned by the Smithsonian Institution, may be warranted in accordance with section 4(b)(3)(A) of the Endangered Species Act as amended in 1982. On October 13, 1983, a further finding was made that listing of *Amsinckia grandiflora* 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 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. On May 8, 1984, a proposed rule to list the large-flowered fiddleneck as endangered and designate its critical habitat was published (49 FR 19534), constituting a finding that the petitioned listing of the species was warranted.

Summary of Comments and Recommendations

In the May 8, 1984, proposed rule (49 FR 19534) and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. Newspaper notices that invited general public comment were published in the *Oakland Tribune* on June 12 and in the *San Francisco Chronicle* on June 13. Five substantive comments were received from four sources and are discussed below. Also received was a comment from Bureau of Land Management that provided no information or recommendation.

All substantive comments received were favorable to the proposed rule. These comments were received from the Defenders of Wildlife, Dr. A.Q. Howard, Dr. T.O. Duncan, and the California Native Plant Society. Additional information was supplied in three letters of comment. The California Native Plant Society suggested that fire in the habitat might reduce competition from introduced grasses and weedy species of *Amsinckia* and should be studied as a tool for recovery actions. Dr. A.Q.

Howard, of the University of California, Berkeley, discussed the establishment of *Amsinckia grandiflora* on the newly purchased Antioch Dunes National Wildlife Refuge, a site considered by her to be the probable "Antioch" site in historical collections. On the basis of studies by Dr. R. Ornduff, Dr. Duncan suggested that the present Corral Hollow site may be a natural site (it has been suggested that the site may be composed of displaced soil) and that construction of a road to the drop-tower may have altered natural drainages, thus affecting the species. He also reported the successful storage of seed by Dr. Ornduff in a home-type freezer. It was pointed out that "media events" held within the critical habitat may be as threatening to the species' survival as is scientific research. Scientific research was discussed under the Summary of Factors Affecting the Species, "Factor B," in the proposed rule.

In response to the above comments, most of the new information received applies to recovery actions to be initiated by the Service after listing of the *Amsinckia* and will be useful in implementing such actions. In response to Dr. Duncan, the discussion in "Factor B" of the proposed rule was not intended as a criticism of research studies on the *Amsinckia*. Such studies have been valuable both in our efforts at protection of the species and also in the field of population biology and evolution. The discussion was included in the proposed rule because such studies are seen as a *potential* threat and because of the need for careful monitoring of studies involving removal of plant material, in order to prevent adverse impacts. No impacts to the large-flowered fiddleneck from public visits are presently known. However, upon listing of the species, DOE will be required to ensure that visits granted to enter the critical habitat will not cause adverse effects to the *Amsinckia*. In addition, any removal and reduction to possession of individuals or parts of this species from the area under DOE jurisdiction will require a permit.

Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that *Amsinckia grandiflora* should be listed as an endangered species. Procedures found at section 4(a)(1) of the Endangered Species Act (16 U.S.C. 1531 *et seq.*) and regulations promulgated to implement the listing provisions of the Act (to be codified at 50 CFR Part 424, see 49 FR 38900, October 1, 1984) 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). These factors and their application to *Amsinckia grandiflora* Gray (large-flowered fiddleneck) are as follows:

A. *The present or threatened destruction, modification, or curtailment of its habitat or range.* The large-flowered fiddleneck is presently threatened by the invasion of aggressive *Amsinckia* species and weedy exotic plants into the grassland habitat it occupies. The small population occurs next to a drop-tower on DOE land. According to DOE, testing of the integrity of canisters and shipping containers is performed at the drop-tower; however, such tests are infrequent and detonation is not expected. Testing of explosives does not occur in the immediate vicinity of the population. Tests conducted nearby have the potential to start grass fires that could enter the species' habitat and affect the long-term survival of the species. In addition, DOE has authorized laboratory personnel to perform controlled burning in some test areas. Such burns, if conducted in or near the proposed critical habitat, may adversely affect the species and its habitat.

B. *Overutilization for commercial, recreational, scientific, or educational purposes.* The large-flowered fiddleneck has an unusual flower morphology and highly restricted distribution, both of which contrast sharply with most other members of the genus. As a consequence, the species has been the subject of a number of studies concerning the reproductive biology and evolution of the genus *Amsinckia*. Such studies often require the use of plant materials, usually reproductive parts or occasionally whole plants. Such studies are potential threats to the species should population numbers continue to decline and collection of plant material not be monitored or managed to reduce impacts.

C. *Disease or predation.* Grazing may have been responsible, at least in part, for extirpation of some populations of this species. *Amsinckia grandiflora* is part of a remnant native grassland flora at the site it now occupies. The introduction of grazing animals into the Livermore area is thought to have degraded native grasslands that once existed there.

D. *The inadequacy of existing regulatory mechanisms.* Although the State of California lists the large-flowered fiddleneck as endangered, State law does not provide adequate protection for this species in its natural

habitat. The law provides that a landowner who has been notified by the State Fish and Game Commission that a State-listed plant is growing on her or his property must notify the Department of Fish and Game "at least 10 days in advance of changing the land use to allow for salvage of such plant." Although State law also provides for such measures as research, land acquisition, and trade restrictions, provisions of the Endangered Species Act would offer additional protection to this species and its habitat.

E. *Other natural or manmade factors affecting its continued existence.* Although very little is known about the ecology of *Amsinckia grandiflora*, recent pollination studies suggest that its reproductive system is primitive and relatively inefficient in comparison with related species (Ray and Chisaki, 1957; Ornduff 1976). Consequently, its inherently low reproductive potential places it at a distinct disadvantage in competition with other more aggressive or "weedy" species of *Amsinckia*. Furthermore, declines in population numbers could place this annual species below the reproductive level needed for replacement and recovery.

The Service has carefully assessed the best scientific information available, regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Amsinckia grandiflora* as endangered with critical habitat. In view of its demonstrated contraction of range and low population numbers, endangered status is considered most appropriate. The designation of critical habitat is discussed below.

Critical Habitat

Critical habitat, as defined by section 3 of the Act, means: (i) The specific areas 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 is being designated for *Amsinckia grandiflora* to include one

area of approximately 160 acres in San Joaquin County, California. This area includes the known primary constituent elements of a steep, west- and south-facing slope with light-textured but stable soils. The metes and bounds of the critical habitat can be found in the "Regulations Promulgation" section.

The Service is required to consider in determining what areas are critical habitat those physiological, behavioral, ecological, and evolutionary requirements essential to the conservation of the species and which may require special management considerations or protection. These requirements include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological requirements;
- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, rearing of offspring, germination, or seed dispersal; and generally,
- (5) Habitats that are protected from disturbance or are representative of the historic geographical and ecological distribution of listed species.

With respect to the large-flowered fiddleneck, although little is known of its biology and ecology, it is the Fish and Wildlife Service's best judgment that the area designated as critical habitat will satisfy most of the plant's requirements on a long-term basis and is essential for its conservation. Thus it appears that the proposed critical habitat, with a steep west- and south-facing slope and light-textured but stable soil, satisfies the fiddleneck's most immediate physiological needs. The area designated may not include the entire suitable habitat of this plant, and revision of critical habitat may be warranted in the future.

The critical habitat designated exceeds the current range of the fiddleneck. The fiddleneck's range is now limited to a ½-acre area. Stabilization of the small population present within that area would likely not constitute recovery for the species, since a single grass fire or other local threat could render it extinct. The area designated as critical habitat is believed to contain places suitable for expansion or relocation; unless such areas are available, recovery would not be likely. Accordingly, the Service believes protection of this area is essential to the conservation of this species.

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) which may adversely modify such habitat or may be affected by such designation. Any activity that would result in a disturbance of the soil or the hydrological regime where the large-flowered fiddleneck occurs would probably adversely modify the critical habitat. Also, any activity that may increase the frequency of grass fires in the area may adversely affect the population and modify the critical habitat. The University of California's Lawrence Livemore Laboratory has been given funding and authorization by DOE to conduct various activities in the vicinity of the large-flowered fiddleneck population and its critical habitat. The principal concerns are with construction activities, testing of chemical high explosives, and controlled burns. It is believed that these activities could have an adverse impact on the large-flowered fiddleneck and its habitat unless they are undertaken carefully.

Designation of critical habitat may affect Federal activities and actions in the vicinity of the population by prohibiting or requiring modifications to, test activities, controlled burns, and construction activities. If appropriate, the impacts will be addressed during consultation with the Service as required by section 7 of the Act.

Section 4(b)(2) of the Act requires the Service to consider economic and other impacts of designating a particular area as critical habitat. No additional information has been obtained as a result of the proposed rule on economic or other impacts that might result in a change to the designation of the proposed critical habitat. The species occurs within a research facility on lands owned by DOE. DOE has informed the Service that designation of critical habitat is compatible with present and proposed activities occurring on its land.

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 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)(2) requires Federal agencies to ensure that any activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed 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. DOE funds various activities such as construction, testing of chemical high explosives and controlled burning on its lands. Consultation with the Service will be necessary to ensure that such activities do not adversely affect *Amsinckia grandiflora* or its critical habitat.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general trade prohibitions and exceptions that apply to all endangered plant species. With respect to *Amsinckia grandiflora*, all trade prohibitions of section 9(a)(2) of the Act, implemented by 50 CFR 17.61, apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, or sell or offer for sale this species in interstate or foreign commerce. Certain exceptions can 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 species under certain circumstances. No trade is known for this species. It is anticipated that few trade permits will be sought or issued for the large-flowered fiddleneck.

Section 9(a)(2)(B) of the Act, as amended in 1982, prohibits the removal and reduction to possession of endangered plant species from areas under Federal jurisdiction. This prohibition now applies to *Amsinckia grandiflora*. Permits for exceptions to this prohibition are available through

section 10(a) of the Act, until revised regulations are promulgated to incorporate the 1982 Amendments. Proposed regulations implementing this prohibition were published on July 8, 1983 (48 FR 31417), and it is anticipated that these will be made final following public comment. *Amsinckia grandiflora* occurs on Federal lands. A few collecting permits for scientific research are anticipated. Requests for copies of the regulations on plants and inquiries regarding them may be addressed to the Federal Wildlife Permit Office, U.S. Fish and Wildlife Service, Washington, D.C. 20240 (703/235-1903).

National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined by 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).

Regulatory Flexibility Act and Executive Order 12291

The Department of the Interior has determined that designation of critical habitat for this species will not constitute a major action under Executive Order 12291 and certifies that this designation will not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*).

The critical habitat designation, as defined in the proposed rule, for *Amsinckia grandiflora* did not bring forth economic or other impacts to warrant consideration of revising the critical habitat designation. The critical habitat area is located entirely on DOE lands. No significant changes in DOE management of the proposed critical habitat area are envisioned. DOE management of the area is compatible with the present and foreseeable uses of

the area. The designation of critical habitat is not expected to result in any significant economic impact or significant changes in the research activities occurring within the critical habitat or on adjacent lands. No direct costs, enforcement costs, or information collection or record-keeping requirements are imposed on small entities by this designation. These determinations are based on a Determination of Effects that is available at the Regional Office, U.S. Fish and Wildlife Service, at the address found in the "ADDRESSES" section.

Literature Cited

Ornduff, R. 1976. The reproductive system of *Amsinckia grandiflora*, a distylous species. *Syst. Bot.* 1:57-66.
 Ornduff, R. 1977. Status report on *Amsinckia grandiflora*. California Native Plant Society. 4 pp. Unpublished.
 Ray, P.M., and H.F. Chisaki. 1957. Studies on *Amsinckia*. I and II. *Amer. J. Bot.* 44:529-544.

Author

The primary author of this rule is Carol Wilson, U.S. Fish and Wildlife Service, at the address found in the "ADDRESSES" section.

List of Subjects in 50 CFR Part 17

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

Regulations 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 reads 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. Amend § 17.12(h) by adding the following, in alphabetical order under the family Boraginaceae, to the List of Endangered and Threatened Plants:

§ 17.12 Endangered and threatened plants

(h) * * *

Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Boraginaceae—Borage family:						
<i>Amsinckia grandiflora</i>	Large-flowered fiddleneck	U.S.A. (CA)	E	179	17.96(a)	NA

3. Amend § 17.96(a) by adding critical habitat of the large-flowered fiddleneck as follows: The position of this entry under § 17.96(a) will follow the same sequence as the species occurs in 17.12(h).

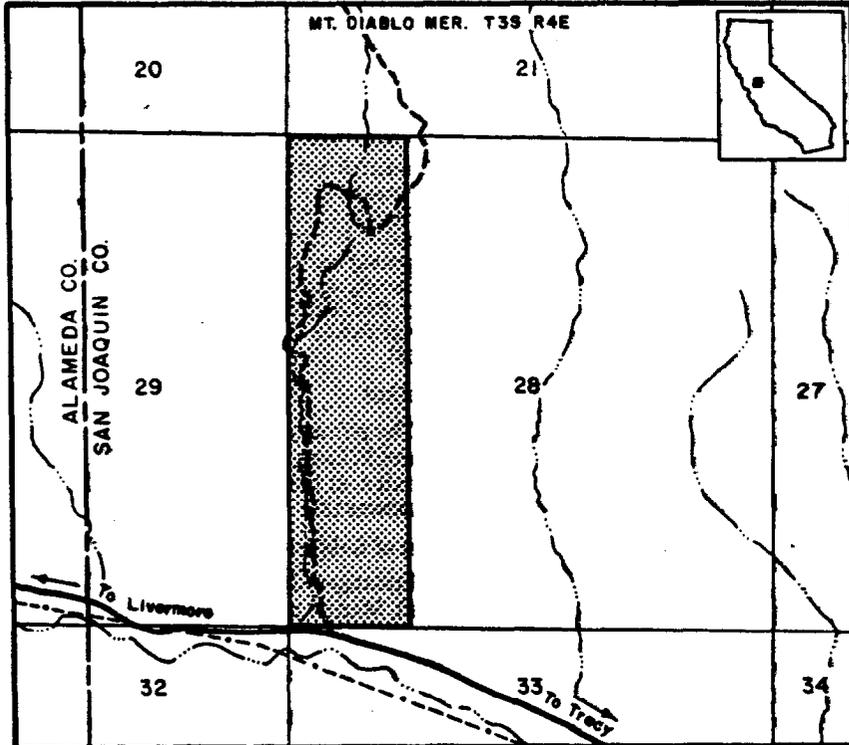
Boraginaceae: *Amsinckia grandiflora* (large-flowered fiddleneck)

California, San Joaquin County, Mount Diablo Meridian, T3S R4E Section 28 W½ NW¼ and W½ SW¼.

This includes the known primary constituent elements of a steep, west- and south-facing slope with light textured but stable soils.

§ 17.96 Critical habitat—plants.

(a) * * *



Dated: March 21, 1985.

Susan Reece,

Acting Assistant Secretary for Fish and Wildlife and Parks.

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