

**ACTION:** Proposed rule.

**SUMMARY:** The Fish and Wildlife Service (Service) proposes to list two plants, *Pseudobahia bahiifolia* (Hartweg's golden sunburst) and *Pseudobahia peirsonii* (San Joaquin adobe sunburst) as endangered species pursuant to the Endangered Species Act of 1973, as amended (Act). The two plants occur primarily in nonnative grasslands in the eastern and southeastern portions of the San Joaquin Valley, but at a few sites they occur at the ecotone between the nonnative grassland and blue oak woodland communities. Both plants have been variously affected and are threatened by one or more of the following: conversion of native habitat

for agriculture (ag-land development), urbanization, overgrazing, competition from alien plants, transmission line maintenance, recreational activities, water projects, mining, highway projects, and other anthropogenic actions. Potential threats include herbicide application to control herbaceous and weedy taxa. This proposal, if made final, would implement the Federal protection and recovery provisions provided by the Act for both plants. The Service seeks data and comments from the public on this proposal.

**DATES:** Comments from all interested parties must be received by January 29, 1993. Public hearing requests must be received by January 14, 1993.

50 CFR Part 17

RIN 1018-AB68

**Endangered and Threatened Wildlife and Plants; Proposed Endangered Status for Two Grassland Plants From the Central Valley of California**

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

**ADDRESSES:** Comments and materials concerning this proposal should be sent to the U.S. Fish and Wildlife Service, Sacramento Field Office, Field Supervisor, Wayne S. White, 2800 Cottage Way, room E-1803, Sacramento, California 95825-1846. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

**FOR FURTHER INFORMATION CONTACT:** Ian Knight (See **ADDRESSES**) at 916/978-4866.

**SUPPLEMENTARY INFORMATION:**

**Background**

*Pseudobahia bahiifolia* (Hartweg's golden sunburst) and *Pseudobahia peirsonii* (San Joaquin adobe sunburst) are endemic to nonnative grassland and grassland-blue oak woodland community ecotone of the southern Sacramento Valley and San Joaquin Valley of California. These two valleys together comprise the Central Valley. The prehistoric composition of the native grasslands and adjoining plant communities likely will remain a mystery (Brown 1982), although numerous authors have speculated as to the composition of the "pristine" flora of the Central Valley (Clements 1934, Munz and Keck 1950, Biswell 1956, Twisselmann 1956, White 1967, McNaughton 1968, Bakker 1971, Ornduff 1974, Heady 1977, Bartolome and Gremmill 1981, Wester 1981). Alien annual grasses and forbs invaded the low elevation plant communities of California during the days of the Franciscan missionaries in the 1700's. These alien grasses now account for up to 80 percent or more of the floral composition of the grasslands of California (Heady 1956). The alien grasses have outcompeted the native flora throughout much of California because these exotics germinate in late fall prior to the germination of the native forbs, including the two sunflower species discussed herein, *P. bahiifolia* and *P. peirsonii*. Each species, however, occurs in a distinctive microhabitat within the larger matrix of alien annual grassland. *P. bahiifolia* prefers the top of "Mima" mound topography where the grass cover is minimal (Stebbins 1991). Vernal pools, an increasingly rare California landform, are often interspersed with the Mima mounds (Stebbins 1991). *P. peirsonii* prefers heavy adobe clay soils where the water retention properties are high.

Karl Hartweg, a German botanist, first collected *Pseudobahia bahiifolia* on Cordua's farm near the junction of the Yuba and Feather Rivers in Yuba

County, California, in April of 1847. George Bentham described the species as *Monolopia bahiaefolia* in 1849. Edward L. Greene placed the species in the genus *Eriophyllum* in 1897. In 1915, Per Rydberg split out the genus *Pseudobahia* on the basis of leaf and floral morphology and formed the new combination *Pseudobahia bahiaefolia*. Dale Johnson (1978) recognized an orthographic error in the specific epithet *bahiaefolia* and used *P. bahiifolia* in his doctoral dissertation. For further clarification on this orthographic issue, see Article 73.8 of The International Code of Botanical Nomenclature.

*Pseudobahia bahiifolia*, a member of the sunflower or aster family (Asteraceae), is one of three species of *Pseudobahia* in the subtribe Eriophyllinae of the tribe Helenieae (Johnson 1978). The species is a few-branched annual about 6-15 centimeters (cm) (2-6 inches) tall covered throughout with white, wooly hairs. Its leaves are narrow, alternate, three-lobed or entire with three blunt teeth at apex, and about 1-2 cm (0.4-0.8 inches) long. The bright yellow flower heads, produced in March or April, are solitary at the ends of the branches. The ray flowers are equal in number to the sub-floral bracts (phyllaries), and there is no pappus. *P. bahiifolia* is distinguished from other members of the genus by having the largest leaves entire or three-lobed versus once- or twice-pinnatifid as in *P. heermanii* and *P. peirsonii*. The range of *P. bahiifolia* is strongly correlated with the distribution of the Amador and Rocklin soil series (Stebbins 1991). Both series generally consist of shallow, well-drained, medium-textured soils that exhibit strong Mima mound microrelief (Stebbins 1991). Such topography is characterized by a series of mounds that may range from 30 cm to 2 meters (1.0-6.6 feet) in height and 3-30 meters (10-98 feet) in basal diameter interspersed with shallow basins that may pond water during the rainy season (Bates and Jackson 1987). *P. bahiifolia* nearly always occurs on the north- or northeast-facing slopes of the mounds, with the highest plant densities on upper slopes with minimal grass cover (Stebbins 1991). A variant of one of the two series is concentrated near Friant in Madera County and contains large quantities of pumice, which is mined for use as an industrial binder and in making concrete blocks (Chesterman and Schmidt 1956). According to a status survey by John Stebbins (1991), *P. bahiifolia* may have existed throughout the Central Valley of California from Yuba County in the north to Fresno County in the south, a range of

approximately 322 kilometers (km) (200 miles). The plant presently occurs only in the eastern San Joaquin Valley in Stanislaus, Madera, and Fresno Counties, a range of approximately 153 km (95 miles). Although population numbers of annual species are highly variable from year to year, 11 of 16 extant populations are very small, and numbered fewer than 200 plants during the 1990 field season (Stebbins 1991). Conversion of native habitat for agriculture (ag-land development), competition from alien plants, overgrazing, mining, urbanization, and other anthropogenic actions threaten the existence of *P. bahiifolia*.

In March 1925, Philip Munz first collected specimens of *Pseudobahia peirsonii* in a grassy flat near Ducor in Tulare County, California. Until Munz described *P. peirsonii* as a species in 1949, specimens had been referred to *Monolopia heermanii*, *Eriophyllum heermanii*, or *Pseudobahia heermanii*, depending on the prevailing generic treatment of the time (Stebbins 1991). Sherwin Carlquist (1956) and Johnson (1978) supported Munz's taxonomic position with additional morphological and cytological evidence.

*Pseudobahia peirsonii*, like its congener, is a member of the Asteraceae and is an erect annual herb about 1-6 decimeters (dm) (4-18 inches) tall loosely covered with white, wooly hairs. Its alternate leaves are twice divided into smaller divisions (bipinnatifid), triangular in outline, and 2-6 cm (1-3 inches) in length. Flower heads, which appear in March or April, are solitary at the ends of the branches. The ray flowers are bright yellow and equal in number to the sub-floral bracts (phyllaries) and about 3 mm (0.1 inches) long; the disk flowers are numerous and there is no pappus. The dry fruits, called achenes, are black. *P. peirsonii* is distinguished from *P. heermanii* by its phyllaries, which are united only at the base versus united to half their length in the latter species. *P. peirsonii* occurs only on heavy adobe clay soils over a range of approximately 193 km (120 miles) through Madera, Fresno, and Kern Counties. Stebbins (1991) speculates that the edaphic restriction is associated with the ability of these clay soils to retain moisture longer into the summer dry season, as average annual precipitation in that region of the San Joaquin Valley is less than 25 cm (10 inches). These soils are mainly distributed in the valleys and flats near the foothills of the southeastern San Joaquin Valley (Stebbins 1991). *Avena fatua*, *Brassica kaber*, *Bromus mollis*, *Bromus rubens*, and *Erodium cicutarium*

by urbanization, road widening, pumicite mining, and off-highway vehicle use (Stebbins 1991). The largest population, containing approximately 20,000 plants, is located near a quarry owned by the California Industrial Minerals Company. Quarry expansion and off-road vehicle use associated with quarry operations may eliminate or damage this population, which likely represents a fragment of an even larger population that once occurred west of Cottonwood Creek and east of State Route 145, north of the San Joaquin River at Friant Bridge (Stebbins 1991). In Stanislaus County, three of the remaining 12 occurrences are variously threatened by off-highway vehicle use, overgrazing, potential quarry expansion, urbanization, potential road-widening, potential development of the site for a new University of California (UC) campus, and ag-land development (Stebbins 1991). Urbanization and ag-land development eliminated the type locality in Yuba County, the only documented occurrence of this plant in the Sacramento Valley. The species likely was extirpated in the area between Stanislaus and Yuba Counties before other collections were documented, as valley soils in this area were rapidly cultivated in the late 1800's (Stebbins 1991).

*Pseudobahia peirsonii* is known from 17 sites in Fresno, Tulare, and Kern Counties according to Stebbins (1991). Habitat alteration from one or more of the following factors threatens *P. peirsonii*: Urbanization, transmission line maintenance, ag-land development, and water projects. These activities have reduced the species to a small number of isolated colonies that occur in three areas in three counties in the southeastern portion of the San Joaquin Valley: Round Mountain-Wahtoke region in Fresno County, Porterville-Visalia region in Tulare County, and Pine Mountain-Woody region in Kern County. Ag-land development, urbanization, overgrazing, flooding and shore erosion by Lake Success, recreational activities, and water projects have extirpated 13 historical occurrences, 11 of which were in Tulare County and 2 of which were in Kern County. The two largest extant population sites are found in Fresno County. The largest, containing approximately 5,000 plants spread over 1.2 hectares (3 acres), is threatened by a large, residential project (Quail Lakes) and an adjacent, recreational water park (Clovis Lakes). The project plans consist of a golf course, lakes, and about 400 housing units spread over 121 hectares (300 acres) (Stebbins 1991). The

second largest population site, containing nearly 4,500 plants spread over 17 hectares (42 acres), is located in the Fancher Creek Reservoir Project Area in Fresno County. The Fancher Creek Reservoir Project, managed by the Fresno Metropolitan Flood Control District, would impact approximately 40 percent of the population by temporarily inundating it during flood periods (Jones and Stokes 1990). Two other sites are variously threatened by the potential development of a site for a new UC campus and the residential expansion of the Fresno-Clovis and Porterville-Visalia areas. Fancher Creek flood control, ag-land development, overgrazing, highway widening, competition from alien plants, and livestock trampling (Stebbins 1991). The maintenance and repair of the Southern California Edison transmission lines could threaten two Tulare County populations located under the transmission line right-of-way. At Lake Success in Tulare County, one population site is endangered by inundation from increased water storage in the lake. In Kern County, five sites are variously threatened by highway projects, overgrazing, soil erosion, and livestock trampling (Stebbins 1991).

Numerous other anthropogenic actions threaten both plants. In Fresno County, the widening of State Route 180 threatens a *Pseudobahia peirsonii* population growing on both sides of the highway on the soft shoulder (Stebbins 1991). Four populations in Kern County, one in Tulare County, and one in Fresno County are threatened by the road stabilization work (Stebbins 1991). Off-highway vehicle use and hiking threaten one population of approximately 200 plants spread over 1.2 hectares (3 acres) in Tulare County. A potential recreational water park (Clovis Lakes) threatens another population of approximately 5,000 plants in Fresno County (Stebbins 1991).

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

There are no known significant existing or potential threats to *Pseudobahia bahiifolia* and *Pseudobahia peirsonii* as a result of these activities. However, the increased publicity associated with proposing these species may make them attractive to researchers and collectors of rare plants.

#### *C. Disease or Predation*

*Pseudobahia bahiifolia* and *Pseudobahia peirsonii* have been subjected to various degrees of livestock grazing. Stebbins (1991) speculated that moderate levels of grazing may help

control the aggressive alien forbs and grasses in their respective habitat areas but that both species may benefit from reduction of the grazing levels during flowering and fruiting in March and April. In addition, heavy trampling may be detrimental to both plants because of direct and indirect effects of soil compaction on soil-water relations and erosion. One historical occurrence in Kern County and another historical occurrence in Tulare County of *P. peirsonii* are thought to have been extirpated by overgrazing (Stebbins 1991). Three populations in Stanislaus County are threatened by overgrazing, while an additional nine sites in the county could be threatened if existing grazing practices are changed (Stebbins 1991). An additional four occurrences of *P. peirsonii* in Tulare County, two sites in Fresno County, and four sites in Kern County are currently threatened by overgrazing. One site in Tulare County and one in Kern County would be threatened by a change in grazing practices toward more intense or prolonged grazing (Stebbins 1991).

#### *D. The Inadequacy of Existing Regulatory Mechanisms*

Nearly all populations of both plants occur entirely on private land. State and Federal laws are limited in their ability to regulate potentially detrimental human activities on private property (Clausen 1989). For example, local zoning ordinances typically do not regulate the conversion of open rangeland to ag-land. Under the Native Plant Protection Act of 1977 (Chapter 10 section 1900 *et seq.* of the California Fish and Game Code) and California Endangered Species Act of 1984 (Chapter 1.5 section 2050 *et seq.*), the California Fish and Game Commission has listed both *Pseudobahia bahiifolia* and *Pseudobahia peirsonii* as endangered (14 California Code of Regulations § 670.2). Though both statutes prohibit the "take" of State-listed plants (Chapter 10 section 1908 and Chapter 1.5 section 2080), State law appears to exempt the taking of such plants via habitat modification or land use change by the landowner. After the California Department of Fish and Game notifies a landowner that a State-listed plant grows on his or her property, State law evidently requires only that the landowner notify the agency "at least 10 days in advance of changing the land use to allow salvage of such plant" (Chapter 10 section 1913).

The California Environmental Quality Act (CEQA) requires a full public disclosure of the potential environmental impacts of proposed

projects. The public agency with primary authority or jurisdiction over the project is designated as the lead agency, and is responsible for conducting a review of the project and consulting with other agencies concerned with resources affected by the project. Section 15065 of the CEQA Guidelines requires a finding of significance if a project has the potential to "reduce the number or restrict the range of a rare or endangered plant or animal." Species that are eligible for listing as rare, threatened, or endangered but are not listed are given the same protection as those species that are officially listed with the State. Once significant impacts are identified, the lead agency has the option to require mitigation for effects through changes in the project or to decide that overriding considerations make mitigation infeasible. In the latter case, projects may be approved that cause significant environmental damage, such as destruction of endangered species. Protection of listed species through CEQA is therefore at the discretion of the lead agency involved.

#### *E. Other Natural or Manmade Factors Affecting Its Continued Existence*

The typical variation in rainfall characteristic of the regional climate very likely will subject populations of both species to periodic drought, which may threaten the remaining small, marginal populations of both species. Marginal habitat conditions and past disturbances contribute to the critically low population sizes and stored seed banks for both species. Typically, annuals and other monocarpic plants (individuals that die after flowering and fruiting), like both plants proposed herein, are vulnerable to random fluctuations or variation (stochasticity) in annual weather patterns and other environmental factors (Huenneke *et al.* 1986). Moreover, the alien species germinate in late fall and likely outcompete *Pseudobahia bahiifolia* and *P. peirsonii* for sunlight, nutrients, and water. Competition from alien plants threatens the *P. bahiifolia* population at the botanical preserve in Fresno County (Rosalie Faubion, U.S. Bureau of Reclamation, pers. comm., 1992). Competition from alien plants also threatens three occurrences of *P. peirsonii* in Tulare County (Stebbins 1991). The invasion of the alien plants has likely been a significant factor in the degradation of the habitat of both plants throughout their respective ranges.

The Service has carefully assessed the best scientific and commercial information available regarding the past, present, and future threats faced by both

species in determining to propose this rule. Based on this evaluation, the preferred action is to list *Pseudobahia bahiifolia* and *Pseudobahia peirsonii* as endangered. Both species occupy specific habitat within a restricted geographic area. This habitat is highly fragmented and many remaining populations are quite small. A significant portion of the remaining range of both species is under pressure from urbanization, ag-land development, mining, water projects, overgrazing, and other anthropogenic actions. In addition, anthropogenic actions have degraded the habitat of some existing populations and reduced them to the point that may be vulnerable to stochastic extirpation. As a result, because *P. bahiifolia* and *P. peirsonii* are in danger of extinction throughout all or a significant portion of their ranges, both plants fit the definition of endangered in the Act.

#### Critical Habitat

Section 4(a)(3) of the Act requires that, to the maximum extent prudent and determinable, the Secretary designate critical habitat concurrently with determining a species to be endangered or threatened. The Service finds that the determination of critical habitat is not prudent for either species at this time. Because the two species face numerous anthropogenic threats (see Factor A, Factor C, and Factor E in the "Summary of Factors Affecting the Species") and occur predominantly on private land, the publication of precise maps and descriptions of critical habitat in the **Federal Register** would make both plants more vulnerable to incidents of vandalism and, therefore, could contribute to the decline of the two plants. The listing of both species as endangered also publicizes the rarity of the plants and, thus, can make them attractive to researchers or collectors of rare plants. The proper agencies will be notified of the location and importance of protecting the habitat of both species. Protection of both species' habitat will be addressed through the recovery process and the application of the jeopardy standard through the section 7 consultation process. The Service believes that Federal involvement in the areas where the plants occur can be identified without the designation of critical habitat. Therefore, the Service finds that the designation of critical habitat for both plants is not prudent at this time, because such a designation likely would increase the degree of the threat from vandalism, collection, or other human activities.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain activities. Recognition through listing encourages and results in conservation actions by Federal, State, and private agencies, groups, and individuals. The Act provides for land acquisition and cooperation with the State 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 certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act 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. Section 7(a)(4) of the Act requires Federal agencies to confer 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. The U.S. Bureau of Reclamation operates the Friant-Kern canal system (i.e., Central Valley Project) located within a 0.4 km (0.25 mile) of six *P. bahiifolia* colonies. In addition, the U.S. Army Corps of Engineers operates the facilities at Lake Success located within 0.8 km (0.50 miles) of three *P. peirsonii* colonies and sponsors the Redbank and Fancher Creek Flood Control Project, which will impact another *P. peirsonii* colony near Round Mountain. Any future construction or maintenance activities on these government projects that may affect the plant populations would require section 7 consultation with the Service.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 for endangered plant species

set forth a series of general prohibitions and exceptions that apply to all endangered plants. With respect to *Pseudobahia bahiifolia* and *Pseudobahia peirsonii* all prohibitions of sections 9(a)(2) of the Act, implemented by 50 CFR 17.61, would 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, sell or offer for sale in interstate or foreign commerce, or remove and reduce to possession these species from areas under Federal jurisdiction. Other prohibitions of section 9(a)(2) of the Act make it illegal to maliciously damage or destroy an endangered plant on areas under Federal jurisdiction; or to remove, cut, dig up, damage, or destroy any such endangered plant species 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 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 plant species under certain circumstances. The Service anticipates few trade permits would ever be sought or issued for the two species because the plants are 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, Arlington, VA 22203-3507 [703/358-2093].

#### 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 or suggestions from the public, other concerned governmental agencies, the scientific community, industry, or any other interested party concerning this proposed rule are hereby solicited. Comments particularly are sought concerning:

- (1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to *Pseudobahia bahiifolia* and *Pseudobahia peirsonii*;
- (2) The location of any additional populations of these 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 range, distribution, and population

size of *Pseudobahia bahiifolia* and *Pseudobahia peirsonii*; and

(4) Current or planned activities in the subject area and their possible impacts on *Pseudobahia bahiifolia* and *Pseudobahia peirsonii*.

Any final decision on this proposal to list *Pseudobahia bahiifolia* and *Pseudobahia peirsonii* 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 Act provides for a public hearing on this proposal, if requested. Requests must be received within 45 days of the date of publication of the proposal. Such requests must be made in writing and addressed to the Field Supervisor of the Sacramento Field Office (see **ADDRESSES** section).

#### National Environmental Policy Act

The Fish and Wildlife 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 Act. A notice outlining the Service's reasons for this determination was published in the **Federal Register** on October 25, 1983 (48 FR 49244).

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#### Author

The primary author of this proposed rule is Derek G. Williams, U.S. Fish and Wildlife Service, Sacramento Field Office (see **ADDRESSES** section).

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

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

#### Proposed Regulation 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:** 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. It is proposed to amend § 17.12(h) by adding the following, in alphabetical

order under the families indicated, 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					
Asteraceae—Aster family						
<i>Pseudobahia bahifolia</i>	Hartweg's golden sunburst	U.S.A. (CA)	E		NA	NA
<i>Pseudobahia personii</i>	San Joaquin adobe sunburst	U.S.A. (CA)	E		NA	NA

Dated: October 26, 1992.

Richard N. Smith,

Acting Director, U.S. Fish and Wildlife Service.

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