

**Ash-grey (Indian) Paintbrush
(*Castilleja cinerea*)**

**5-Year Review:
Summary and Evaluation**



**U.S. Fish and Wildlife Service
Carlsbad Fish and Wildlife Office
Carlsbad, California**

March 2008

5-YEAR REVIEW
Ash-grey (Indian) Paintbrush/*Castilleja cinerea*

1. GENERAL INFORMATION

1.1. Reviewers

Lead Regional or Headquarters Office: Diane Elam and Jenness McBride, Region 8, California and Nevada, 916-414-6464

Lead Field Office: Karen A. Goebel and Jesse Bennett, Carlsbad Fish and Wildlife Office, 760-431-9440

1.2. Methodology used to complete the review

This review was compiled by Jesse Bennett of the Carlsbad Fish and Wildlife Office (CFWO), U.S. Fish and Wildlife Service (USFWS), and considered available literature, office files, and discussions with researchers or lands managers whose expertise includes the ash-grey (Indian) paintbrush.

1.3. Background

1.3.1. FR Notice citation announcing initiation of this review

The notice announcing the initiation of this and other 5-year reviews and opening of the comment period for 60 days was published on February 14, 2007 (72 FR 7064). We did not receive any information specific to ash-grey (Indian) paintbrush, but we did receive one general comment letter supporting continued protection under the Endangered Species Act of 1973 (Act), as amended, of all species noticed in this announcement.

1.3.2. Listing history

Original Listing

FR notice: 63 FR 49006

Date listed: September 14, 1998

Entity listed: species; Ash-grey (Indian) Paintbrush (*Castilleja cinerea*)

Classification: threatened

1.3.3. Associated rulemakings

Critical habitat has been designated for this species.

FR notice: 72 FR 73092

Date designated: December 26, 2007

1.3.4. Review History

No comprehensive status reviews have been conducted for this species.

1.3.5. Species' Recovery Priority Number at start of 5-year review

The species' Recovery Priority Number was reported as a value of "8" in the 2007 Recovery Data Call for the Carlsbad Fish and Wildlife Office. This number indicates that the species has a moderate degree of threat and a high potential for recovery.

1.3.6. Recovery Plan or Outline

No draft or final recovery plan has been developed.

2. REVIEW ANALYSIS

2.1. Application of the 1996 Distinct Population Segment (DPS) policy

2.1.1. Is the species under review a vertebrate?

No. The Endangered Species Act defines species as including any subspecies of fish or wildlife or plants and any distinct population segment of any species of vertebrate wildlife. This definition limits listings as distinct population segments (DPS) only to vertebrate species of fish and wildlife. Because the ash-grey (Indian) paintbrush is a plant and the DPS policy is not applicable, the application of the DPS policy to the species listing is not addressed further in this review.

2.2. Recovery Criteria

2.2.1. Does the species have a final, approved recovery plan containing objective, measurable criteria?

No, there is no recovery plan for this species.

2.3. Updated Information and Current Species Status

Ash-grey (Indian) paintbrush was federally listed as threatened in 1998. In 2002, the U.S. Forest Service (USFS) updated their Pebble Plain Habitat Management Guide (USFS 2002). In 2005, the USFS completed a species viability analysis and biological assessment for ash-grey (Indian) paintbrush (USFS 2005). These documents are the primary sources of new information for ash-grey (Indian) paintbrush relevant to this 5-year review.

2.3.1. Biology and Habitat

Life History

Ash-gray (Indian) paintbrush is a semi-parasitic perennial plant with several ascending to decumbent (reclining on the ground) grayish stems sprouting from the root-stem. These stems are 4-8 inches (in.) (10.2-20.3 centimeters (cm)) tall. The flower stalk is usually yellow-green (sometimes reddish-orange) with yellow hairs on the lower bracts. The calyx is almost equally divided into linear lobes; the corolla is yellowish (63 FR 49006). Ash-gray paintbrush is distinguished from other *Castilleja* in its range by short-haired stems and leaves, yellowish flowers, calyx lobes of equal length, and its perennial nature (63 FR 49006).

Ash-gray paintbrush is usually found on pebble plain habitat, but it can be found in other areas including upper montane coniferous forest, meadows, and pinyon/juniper woodlands (USFS 2002). Species associated with ash-gray paintbrush on pebble plain habitat include black sagebrush (*Artemisia nova*), southern mountain buckwheat (*Eriogonum kennedyi* var. *austromontanum*), fleabane daisy (*Erigeron aphanactis*), and pine bluegrass (*Poa secunda* ssp. *secunda*). Pebble plains are characteristically treeless openings within surrounding montane pinyon-juniper woodland or coniferous forest with clay soils covered with quartzite pebbles. They have extremely low infiltration rates and high runoff potentials (63 FR 49006). The surface of undisturbed pebble plain habitat is about 31-38 percent vegetation, 15 percent plant litter, 45-47 percent rock pavement, and 0.89-1.2 percent bare soil (USFS 2002). Most occurrences are at elevations between 6,000 to 9,500 feet (ft) (1,288.8 to 2,895.6 meters (m)) (63 FR 49006).

During 2001 surveys, the USFS documented 73 species associated with pebble plain habitat (USFS 2002). Many of the associated species found were narrowly distributed, while others were disjunct occurrences of species found north and south of the San Bernardino Mountains (USFS 2002).

Spatial Distribution

According to the final listing rule, ash-grey (Indian) paintbrush was known from fewer than 20 localities in San Bernardino County, mostly on pebble plains, but also from several localities in pine forest habitats near the Snow Valley Ski area, along Sugarloaf Ridge (part of the Sawmill Complex), and in the vicinity of Lost Creek (within the area now referred to as the Grinnell Ridge Complex) (63 FR 49006). These localities were discussed as generally encompassed by 13 pebble plain complexes and other areas that support ash-grey (Indian) paintbrush (63 FR 49006).

According to the rule proposing critical habitat for ash-grey (Indian) paintbrush and other pebble plains species, ash-grey (Indian) paintbrush was also known in the 1970s, prior to the time of listing, to occur on pebble plains within the area now referred to as the Fawnskin Complex and in non-pebble plain meadow margin habitat adjacent to Big Bear and Baldwin lakes (71 FR 67712). While these areas were not identified in the final

listing rule, we consider them to be occupied at the time of listing based on pre-listing occupancy records in our files (71 FR 67712) and included these areas in our final designation of critical habitat (72 FR 73092).

Currently, ash-grey (Indian) paintbrush is known to occur in 11 pebble plain complexes and several non-pebble plain habitat areas (Figure 1). The pebble plain complexes supporting ash-grey (Indian) paintbrush include Arrastre/Union Flat, Big Bear Lake, Broom Flat, Fawnskin, Gold Mountain, Holcomb Valley, North Baldwin Lake, Sawmill, Snow Valley, South Baldwin Ridge/Erwin Lake and Sugarloaf Ridge (72 FR 73092, USFWS 2005). While the pebble plain in the Grinnell Ridge Complex was thought to be occupied by ash-grey (Indian) paintbrush at the time of listing, the area was last surveyed in 1994, and we are unable to determine whether this area is currently occupied (71 FR 67712). Ash-grey (Indian) paintbrush occurs in non-pebble plain habitat in pine forests near the Snow Forest Ski Area, along Sugarloaf Ridge, and in the vicinity of Lost Creek (71 FR 67712).

Abundance

Ash-grey (Indian) paintbrush occurs in a mosaic distribution among the various pebble plain complexes. The distribution may change locally over time, but generally extends throughout a pebble plain complex. In the final rule listing ash-grey (Indian) paintbrush as a federally threatened species, it was estimated that there were 700 acres (ac) (283.3 hectares (ha)) of historical pebble plains habitat and 545 ac (220.6 ha) of remaining pebble plains habitat (63 FR 49006). These estimates of habitat were based on the work by Derby (1979 cited in USFS 2002), which characterized pebble plain habitat as having two indicator species, Bear Valley sandwort (*Arenaria ursina*) and southern mountain buckwheat.

However, since the listing of the species, USFS botanists have documented several new occurrences of habitat that have only one or none of these indicator species (USFS 2002). The 2002 Pebble Plain Habitat Management Guide (USFS 2002) uses the more recent work by the USFS to define pebble plain habitat using a point system based on plant indicator species and soils. Based on this system, the San Bernardino National Forest supports about 3,322 ac (1,344.4 ha) of pebble plain habitat and private land supports about 666 ac (269.5 ha) (USFS 2002). More specifically, recent data indicates that there are about 1,973 ac (798.5 ha) of ash-grey (Indian) paintbrush occupied habitat remaining, with 1,622 ac (656.4 ha), or about 82 percent, on San Bernardino National Forest lands; 290 ac (117.4 ha), or about 15 percent, on private lands; 48 ac (19.4 ha), or about 2 percent, on municipal lands and special districts; and 13 ac (5.3 ha), or less than 1 percent, on State lands (J. Bill pers. comm. 2007).

Due to this change in definition of what constitutes pebble plain habitat, it is not possible to determine quantitatively if there has been a change in the number of acres of pebble plain habitat known to be occupied by the ash-grey (Indian) paintbrush since the species was listed. However, the USFS indicates that populations are declining due to recreation,

existing roads and trails, mining, prospecting, cattle trespass, target shooting, unauthorized off-road driving, and urbanization (USFS 2005).

Taxonomy

At listing ash-grey (Indian) paintbrush was considered to be in the Scrophulariaceae (figwort) family. Recent taxonomic studies have placed the genus *Castilleja* and other plant genera formerly in the Scrophulariaceae into the Orobanchaceae (broomrape) family (Olmstead *et al.* 2001).

2.3.2. Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)

2.3.2.1. Present or threatened destruction, modification or curtailment of its habitat or range

The final rule listing the ash-grey (Indian) paintbrush (63 FR 49006) describes the major threats to this and other species confined to pebble plains habitats as habitat destruction, degradation, and fragmentation resulting from urbanization, off-road vehicle activity, alteration of hydrological conditions, fuelwood harvesting, and mining. While not identified in the final listing rule, fuelbreaks for fire suppression have also damaged pebble plain habitat (USFS 2002).

The most significant and persistent threat to pebble plains habitat identified in the final listing rule was off-road vehicle activity (63 FR 49006). Off-road vehicle activity and urbanization are the primary threats still affecting the ash-grey (Indian) paintbrush (S. Eliason *in litt.* 2006; USFWS 2005). Urbanization directly removes ash-grey (Indian) paintbrush and can also increase public access and off-road driving (S. Eliason *in litt.* 2006). Development is identified as an ongoing threat at the North Baldwin Lake, South Baldwin Ridge/Erwin Lake, Big Bear Lake, Fawnskin, Sawmill, and Gold Mountain complexes (USFS 2002).

The primary cause of habitat degradation on the San Bernardino National Forest is unauthorized off-road vehicle use (USFWS 2005). Additional lesser threats include road use and maintenance, mining, and dispersed recreation (S. Eliason *in litt.* 2006; USFWS 2005). Vehicles cause considerable damage to ash-grey (Indian) paintbrush habitat. All of the pebble plain complexes have some degree of impact associated with the authorized and unauthorized use of vehicles and associated maintenance and/or recreational activities (USFS 2002).

In the final rule to list the species, we noted that pebble plains are very susceptible to damage during spring thaw (63 FR 49006). During the wet season, vehicles both directly destroy plants and create deep ruts that change the water flow patterns over the pebble plains, potentially indirectly affecting plants (63 FR 49006). Vehicular activity also favors the establishment of species more tolerant of disturbance, potentially altering the composition of the plant community over time (Stephenson

and Calcarone 1999). Non-native species are specifically identified as a concern in the Fawnskin, Arrastre/Union Flat, Sawmill, North Baldwin Lake, South Baldwin Ridge/Erwin Lake, and Broom Flat complexes in the Pebble Plain Habitat Management Guide (USFS 2002). Finally, vehicular activity can result in soil compaction and can cover individuals with dust and mud that can impair physiological functions (USFWS 2005; USFS 2002).

The USFS has instituted numerous protective measures and land designations to increase protection of ash-grey (Indian) paintbrush since its listing. Some measures such as fencing, signage, and monitoring have been in place since listing. Barriers and signs are placed to direct recreational use away from this species (USFS 2002). In 1999, eight road segments that were affecting pebble plain habitat were decommissioned. The USFS has also been conducting monitoring to ensure that conservation measures are effective. Special use permit events have been relocated or modified to avoid effects to ash-grey (Indian) paintbrush. Further, the Mountaintop Ranger District has been closed to dispersed shooting, so the potential threat of trampling from shooters should be eliminated. Seeding and monitoring have occurred since the 1980's following unauthorized dozer use in the North Baldwin Pebble Plain. Erosion has been controlled and the habitat is slowly revegetating (USFS 2005). The USFS acquired about 23 ac (9.3 ha) of ash-grey (Indian) paintbrush habitat at Broom Flat (USFWS 2005).

To reduce the potential for fire suppression activities to impact pebble plain habitat, the San Bernardino National Forest has a fire suppression plan specific to this habitat. Fire personnel are trained to identify pebble plain habitat and to use suppression techniques that reduce or prevent soil disturbance. A notebook with habitat maps and suppression plans has been distributed to fire personnel annually (USFS 2005). However, in October of 2003, a 0.25 mi (0.4 km) portion of the Fawnskin Pebble Plain Habitat Complex was bulldozed by accident as an emergency fuelbreak for the Old Fire. Suppression rehabilitation was completed in December 2003. Long-term effects to habitat are unclear (USFS 2005).

In 2005, non-jeopardy biological and conference opinions (FWS-773.9) were issued that addressed the Revised Land Management Plans for the four southern California national forests. These plans included strategic direction in the form of land use zoning and standards. The land use zoning and standards indicated that for projects under the plans: 1) ongoing activities will be neutral or beneficial to certain areas with ash-grey (Indian) paintbrush, 2) new activities will be neutral or beneficial to ash-grey (Indian) paintbrush, and 3) expansion of existing facilities or new facilities will focus recreational use away from ash-grey (Indian) paintbrush. Exceptions were included in the plans for fuel treatments in wildland-urban interface areas and to allow for projects with short-term effects and long-term benefits (USFWS 2005).

In addition to the adoption of land use zoning and standards, the USFS also proposed the Arrastre and Wildhorse Research Natural Areas, which cover about 469 ac (189.8 ha) of ash-grey (Indian) paintbrush occupied habitat (USFS 2005). If designated,

these areas will be subject to the USFS policy for Research Natural Areas, which indicates that “Research Natural Areas may only be used for research, study, observation, monitoring, and those educational activities that maintain unmodified conditions” (USFWS 2005).

In summary, two primary threats identified at listing, urbanization and off-road vehicle use, continue to impact ash-grey (Indian) paintbrush. On private lands, development activities continue to threaten habitat and occurrences of the ash-grey (Indian) paintbrush. Likewise, on the San Bernardino National Forest off-road vehicle use is still negatively impacting pebble plain habitat supporting ash-grey (Indian) paintbrush. While these threats have not been eliminated since the listing of the species, impacts to pebble plain habitat on USFS lands has decreased due to significant efforts by this agency to implement habitat protection measures.

2.3.2.2. Overutilization for commercial, recreational, scientific, or educational purposes

The final rule listing ash-grey (Indian) paintbrush and six other plant taxa from the southern California mountains indicated that some of the taxa may have become vulnerable to collecting by curiosity seekers as a result of the increased publicity following publication of the proposed rule. A survey of the collections of a herbarium showed increases in the numbers of collections of ash-grey (Indian) paintbrush and other pebble plain taxa following publication of an article describing this new habitat type (63 FR 49006). However, we have no information on collection of this species since its listing.

2.3.2.3. Disease or predation

Disease and predation are not known to be factors affecting ash-grey (Indian) paintbrush.

2.3.2.4. Inadequacy of existing regulatory mechanisms

State Protections

Ash-grey (Indian) paintbrush is not listed under the California Endangered Species Act (CESA). Thus, the CESA and the Native Plant Protection Act (NPPA) provide no protection for this species. The only State law providing any potential protection to ash-grey (Indian) paintbrush is the California Environmental Quality Act (CEQA).

The CEQA is the principal statute mandating environmental assessment of projects in California. The purpose of the CEQA is to evaluate whether a proposed project may have an adverse effect on the environment and, if so, if that effect can be reduced or eliminated by pursuing an alternative course of action or through mitigation. The CEQA applies to projects proposed to be undertaken or requiring approval by State and local public agencies (<http://www.ca.gov/state/portal>).

Ash-grey (Indian) paintbrush is on the California Native Plant Society (CNPS) Inventory as List 1B. Under the CEQA, impacts to List 1B plants are considered significant and must be addressed. If significant effects are identified, the lead agency has the option of requiring mitigation through changes in the project or to decide that overriding considerations make mitigation infeasible (CEQA Sec. 21002). However, the CEQA does not guarantee that conservation projects will be implemented. Protection of listed species through the CEQA is dependent upon the discretion of the lead agency involved.

Federal Protections

The National Environmental Policy Act (NEPA) may provide some protection for ash-grey (Indian) paintbrush for projects with a Federal nexus. NEPA requires that the planning process for Federal actions be documented to ensure that effects on the environment are considered. The NEPA process is intended to help public officials make better decisions based on an understanding of the environmental consequences of their actions and to take actions to protect, restore, and enhance the environment (40 CFR 1500.1). Carrying out the NEPA process ensures that agency decision makers have information about the environmental effects of Federal actions and information on a range of alternatives that will accomplish the project purpose and need.

For environmental impacts that are significant, the Federal agency must identify means to mitigate these impacts (40 CFR 1502.16). For projects undertaken, funded, or authorized by Federal agencies, the NEPA would at least require that any significant adverse impacts to the human environment, including impacts to the natural and physical environment (40 CFR 1508.14), be considered. Projects that are mandated to comply with the NEPA may provide some consideration of impacts to ash-grey (Indian) paintbrush and its habitat.

The Endangered Species Act is the primary Federal law providing protection for the ash-grey (Indian) paintbrush. Beyond the actual listing of the species, these protections for ash-grey (Indian) paintbrush are afforded particularly through sections 7 and 9 of the Act. Section 7 of the Act requires Federal agencies to insure that any action authorized, funded, or carried out by them is not likely to jeopardize the continued existence of listed species or modify their critical habitat. Section 7 also encourages Federal agencies to use their authorities to carry out programs for the conservation of listed species. Section 9 of the Act also prohibits the removal, damage, or destruction of listed plants on Federal lands and on other areas in knowing violation of any State law or regulation or State criminal trespass law.

The USFWS has addressed some projects through section 7 consultations with the USFS. In 2001, non-jeopardy biological and conference opinions (1-6-99-F-25) were issued addressing the impacts of Land and Resource Management Plan program direction and activities that were occurring in ash-grey (Indian) paintbrush habitat

(USFWS 2001). The primary activities occurring included roads, utility corridors, and dispersed recreation. In 2005, non-jeopardy biological and conference opinions (FWS-773.9) were issued that addressed the Revised Land Management Plans for the four southern California national forests as described more fully above under factor A.

In summary, while both CEQA and NEPA may provide some discretionary conservation benefit to ash-grey (Indian) paintbrush, the Act is the primary regulatory mechanism mandating ash-grey (Indian) paintbrush conservation. With the majority of suitable and occupied habitat on USFS lands, the Act remains the primary regulatory mechanism for ensuring that the ash-grey (Indian) paintbrush is addressed during planning efforts for land management actions potentially affecting this species.

2.3.2.5. Other natural or manmade factors affecting its continued existence

Among the threats identified in the final listing rule for this species were non-native species, and this threat still exists. Introduced species of grasses and forbs can displace ash-grey (Indian) paintbrush by competing for nutrients, water, light, and space. Weedy plant invasions are facilitated by disturbances (71 FR 67712; Stephenson and Calcarone 1999) such as off-road vehicle use, urban and residential developments, and various recreational activities. In addition, fuels management activities, including vegetation removal and fire suppression activities, have the potential to facilitate non-native species introductions.

In addition, trampling by feral burros was also identified as a threat to ash-grey (Indian) paintbrush in the final listing rule. The final rule indicated that trampling by feral burros occurred at the North Baldwin Lake, Sawmill, Broom Flat (formerly Onyx), and Gold Mountain pebble plain complexes. However, the final listing rule anticipated that the threat from feral burros would be alleviated upon removal of burros from these areas under the provisions of the Big Bear Wild Burro Territory Management Plan (63 FR 49006). Under this plan, burros would only remain in about 45 ac (18 ha) of the Broom Flat (formerly Onyx) pebble plain complex (USFWS 1997). In 1998, burros were removed from the Big Bear City area, which includes the North Baldwin Lake, Sawmill, and Gold Mountain pebble plain complexes, but they still remain in the Broom Flat pebble plain complex (USFS 2005). Thus, as predicted, this threat to ash-grey (Indian) paintbrush has been addressed at all but the Broom Flat pebble plain complex.

2.4. Synthesis

Habitat destruction, degradation, and fragmentation resulting from urbanization and off-road vehicle activity were identified among other threats to ash-grey (Indian) paintbrush at the time of listing, and these activities remain the primary threats today. The regulatory protections for ash-grey (Indian) paintbrush on private lands are very limited, and urban development activities still threaten pebble plain and other habitats supporting ash-grey (Indian) paintbrush. While the majority (82 percent) of the habitat identified for ash-grey

(Indian) paintbrush occurs on USFS lands where monitoring and management actions are implemented, and the USFS has proposed additional land use designations to protect this species, unauthorized off-road vehicle use in occupied habitat and weedy plant invasions continue to negatively impact ash-grey (Indian) paintbrush on USFS lands (USFS 2005).

Quantitative data needed to determine occurrence, habitat, or population trends since the time of listing are compromised by the change in definition of what constitutes pebble plain habitat. Thus, further monitoring and evaluation using the habitat information and occurrence data initiated by the 2002 Pebble Plain Habitat Management Guide (USFS 2002) is needed prior to determining whether USFS management efforts are effective at reducing or eliminating the current threats sufficient to conserve remaining pebble plain habitat and to support recovery of the ash-grey (Indian) paintbrush.

As documented in the final rule listing ash-grey (Indian) paintbrush as threatened, this species is likely to become endangered within the foreseeable future if the threats described above are not reduced or eliminated. The final rule documents that due to management activities conducted by the USFS (including fencing, signing, and monitoring), ash-grey (Indian) paintbrush is not subject to imminent extinction; thus, the appropriate listing decision was a threatened designation.

Based on the current known distribution of the species and our expectation of continued USFS management, we have determined that the ash-grey (Indian) paintbrush, though still at risk from the primary threats of urban development and off-road vehicle use, is not subject to imminent extinction. Thus, this species should continue to remain a threatened species, and no change to the status of ash-grey (Indian) paintbrush is warranted at this time.

3. RESULTS

3.1. Recommended Classification

- Downlist to Threatened
- Uplist to Endangered
- Delist (Indicate reasons for delisting per 50 CFR 424.11):
 - Extinction
 - Recovery
 - Original data for classification in error
- No change is needed

3.2. New Recovery Priority Number

While protections for ash-grey (Indian) paintbrush have increased on national forest lands, occupied and restorable habitat for this species continues to be threatened by urban

development and off-road vehicle use. Therefore, the Recovery Priority Number remains 8, indicating that the taxon has a moderate degree of threat and a high potential for recovery.

3.3. Listing and Reclassification Priority Number, if reclassification is recommended

Not applicable

4. RECOMMENDATIONS FOR FUTURE ACTIONS

Develop Recovery Plan

Develop a recovery plan for ash-grey (Indian) paintbrush that identifies objectives and specific delisting criteria for this species and prioritizes recovery actions such as non-native species removals, surveys, habitat acquisitions, and habitat restoration. In the interim, follow the guidance provided in the Pebble Plain Habitat Management Guide (USFS 2002).

Monitor Existing Populations

Systematic monitoring of ash-grey (Indian) paintbrush throughout known and potentially occupied sites is necessary to track the status of the species and identify management priorities. There is a need to continue to obtain quantitative information regarding the status of this species to evaluate the effectiveness of conservation efforts over time.

Protection of Additional Ash-Grey (Indian) Paintbrush Habitat

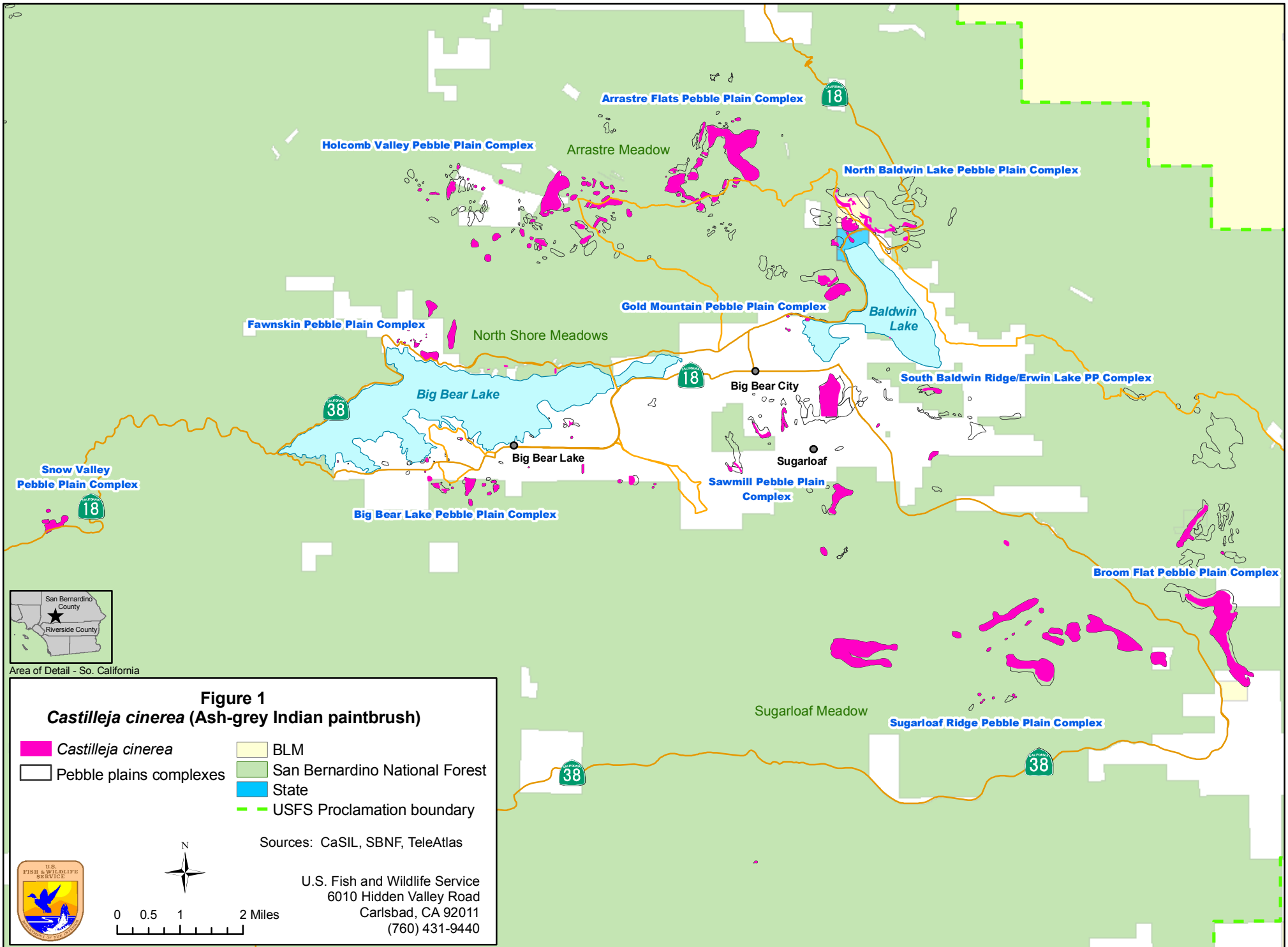
Seek opportunities to acquire non-federal portions of ash-grey (Indian) paintbrush habitat.

Management of Occupied Ash-Grey (Indian) Paintbrush Habitat

- a) Continue monitoring programs for the effectiveness of measures to protect ash-grey (Indian) paintbrush from recreational activities and make adjustments to signs, barriers, and roads as necessary.
- b) Avoid new developments in or near ash-grey (Indian) paintbrush habitat.
- c) Continue outreach to non-federal landowners regarding the presence of ash-grey (Indian) paintbrush and the importance of protecting this species.

5. REFERENCES

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- USFWS (U. S. Fish and Wildlife Service). 2001. Formal section 7 consultation for various and ongoing and related activities affecting pebble plains, San Bernardino County, California (1-6-99-F-25). February 14, 2001.
- USFWS (U. S. Fish and Wildlife Service). 2005. Biological and conference opinions on the Revised Land and Resource Management Plans for the Four Southern California National Forests, California (1-6-05-F-773.9). September 15, 2005.



**U.S. FISH AND WILDLIFE SERVICE
5-YEAR REVIEW OF ASH-GREY (INDIAN) PAINTBRUSH (*Castilleja cinerea*)**

Current Classification: Threatened

Recommendation resulting from the 5-Year Review:

Downlist to Threatened

Uplist to Endangered

Delist

No change needed

Appropriate Listing/Reclassification Priority Number, if applicable:

Not applicable

Review Conducted By: Karen A. Goebel and Jesse Bennett

FIELD OFFICE APPROVAL:

Lead Field Supervisor, Fish and Wildlife Service

Approve



Date 3-27-08

REGIONAL OFFICE APPROVAL:

Lead Regional Director, Fish and Wildlife Service

Approve



Date

3/31/08