

**Yreka Phlox**  
*(Phlox hirsuta)*

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

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

**September 2007**

**5-YEAR REVIEW**  
**Species reviewed: Yreka phlox (*Phlox hirsuta*)**

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**5-YEAR REVIEW**  
**Yreka phlox/*Phlox hirsuta***

**I. GENERAL INFORMATION**

**I.A. Methodology used to complete the review:**

The Recovery Plan for *Phlox hirsuta* (Yreka Phlox) (Recovery Plan) is the basis for this review. The Draft Recovery Plan for *Phlox hirsuta* (Yreka Phlox) (U.S. Fish and Wildlife Service 2004) was written and reviewed by the 12-member Yreka Phlox Recovery Team (Recovery Team) and the Recovery Plan incorporates comments submitted by one peer reviewer, two members of the public, the Recovery Team, and staff from the Fish and Wildlife Service's Pacific Region and Washington Offices. The Recovery Plan also incorporates the most recent information available on ongoing threats and conservation measures that are being implemented.

**I.B. Reviewers**

**Lead Regional or Headquarters Office – California/Nevada Operations Office,  
Mary Grim (916) 414-6464**

**Lead Field Office – Yreka Fish and Wildlife Office, Nadine R. Kanim  
(530) 842-5763**

**I.C. Background**

**I.C.1. Federal Register Notice citation announcing initiation of this review:**  
70 FR 39327 and 70 FR 66842

**I.C.2. Species Status:** decreasing (annual data call - 10/05/05)

**I.C.3. Recovery Achieved:** 1 (0-25% recovery objectives completed, annual data call – 10/05/05)

**I.C.4. Listing History**

Original Listing

FR notice: 65 FR 5268

Date listed: 2/3/00

Entity listed: species

Classification: endangered

**I.C.5. Associated Rulemakings:** none

**I.C.6. Review History:**

No reviews have been conducted for this species.

**I.C.7. Species' Recovery Priority Number at start of review: 2C.**

The priority is based on designation as a full species with a high degree of threat, high potential for recovery, and existing conflict between development and the species' conservation.

**I.C.8. Recovery Plan or Outline**

Name of plan: Recovery Plan for *Phlox hirsuta* (Yreka Phlox)

Date issued: 7/27/06

Dates of previous revisions: none

**II. REVIEW ANALYSIS**

**II.A. Application of the 1996 Distinct Population Segment (DPS) Policy**

**II.A.1. Is the species under review listed as a DPS?**

No. The 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 species under review 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.

**II.B. Recovery Criteria**

**II.B.1. Does the species have a final, approved recovery plan containing objective, measurable criteria?**

*Yes*

*No*

The recovery plan includes specific recovery criteria that, when met, will permit consideration of (1) reclassifying the listing status of *P. hirsuta* from endangered to threatened, and (2) removal of *P. hirsuta* from the list of endangered and threatened species. To reclassify *P. hirsuta* from endangered to threatened status, the following criteria must have been met: (a) the China Hill, Soap Creek Ridge, Jackson Street, and Cracker Gulch occurrences must have secure permanent protection, or alternatively, the China Hill and Soap Creek Ridge occurrences must have been protected and substitutes representing the Jackson Street and/or Cracker Gulch occurrences must be protected; and (b) a *P. hirsuta* seed bank and effective propagation techniques must have been established. The recovery plan places conditions on suitable substitutes for the Jackson Street and Cracker Gulch

occurrences. To delist *P. hirsuta*, the following criteria must have been accomplished: (a) the reclassification criteria have been met; and (b) two additional occurrences must have been located and permanently protected, or 10 years of demographic research and/or quantitative monitoring at four protected occurrences must have demonstrated that plant population size has not declined more than 10 percent at any occurrence (total change between year 0 and year 10). The recovery plan was approved on July 27, 2006, and its availability was published in the Federal Register on September 18, 2006 (71 FR 54681). Therefore, the recovery criteria have not yet been accomplished. However, progress to date on implementation of recovery actions that have been initiated to accomplish these criteria are discussed in the Five-Factor Analysis section below.

## **II.C. Updated Information and Current Species Status**

### **II.C.1. Biology and Habitat:**

*Phlox hirsuta* is a perennial, low-growing, bright rose-pink to white-flowered plant in the Family Polemoniaceae. This species is known to occur at only five locations in the vicinity of Yreka, Siskiyou County, California (California Natural Diversity Database 2006; personal observations by Recovery Team Members between 2001 and 2005; Lenz 2004, 2005, 2006; Nelson 2004, 2005, 2006; U.S. Fish and Wildlife Service 2006). *Phlox hirsuta* has received little scientific study and its biology is poorly known.

#### Distribution

*Phlox hirsuta* is known to occur at five locations, which are referred to as the “China Hill,” “Soap Creek Ridge,” “Cracker Gulch,” “Greenhorn Creek,” and “Jackson Street” occurrences. In addition, the locality information from a single 1930 collection indicates a possible historical location in the vicinity of Etna or in the vicinity of Echo Mill, near Soap Creek Ridge (California Department of Fish and Game 1986; J. Molter *in litt.* 2001; Appendix 1, prepared by F. Lang in U.S. Fish and Wildlife Service 2006). A *P. hirsuta* location or occurrence is defined as a group of at least 200 individual plants that is separated from any other *P. hirsuta* locality by at least 0.40 kilometer (0.25 mile).

The China Hill occurrence is located on an open ridge and adjacent slopes approximately 1.6 kilometers (1 mile) northeast of downtown Yreka. An estimated 1,000 to 3,000 plants are scattered over approximately 19 hectares (47 acres). The Soap Creek Ridge occurrence includes at least 14 discrete suboccurrences and is located adjacent to California State Highway 3, approximately 8 to 10 kilometers (5 to 6 miles) southwest of Yreka. The entire occurrence was estimated to contain as many as 5,000 to 10,000 plants over a 236-hectare (584-acre) area (Adams 1987, California Natural Diversity Database 2006). The Cracker Gulch occurrence is located in the Yreka Creek drainage, on the south side of State Highway 3. The occurrence occupies approximately 5.83 hectares (14.4 acres) (California Natural Diversity Database 2006) and is

estimated to contain 500 *P. hirsuta* plants (J. Filipski, Southern Oregon University, pers. comm. 2005). Plants comprising the Greenhorn Creek occurrence are found in several discrete suboccurrences on the north and south sides of Greenhorn Creek, west of the Yreka City limits. It is estimated that the total occurrence occupies approximately 8.1 hectares (20 acres) and contains approximately 1,315 to 2,065 *P. hirsuta* plants (P. Figura *in litt.* 2005a, 2005b; L. Nelson *in litt.* 2005). The Jackson Street occurrence is located near the west-central edge of Yreka, in the Little Humbug Gulch drainage. This occurrence is thought to contain at least 200 to 300 *P. hirsuta* plants (California Natural Diversity Database 2006). The five known *P. hirsuta* occurrences are spatially separated by a minimum of 0.88 kilometer (0.55 mile) (Soap Creek Ridge suboccurrences to Cracker Gulch occurrence) and a maximum of about 3.4 kilometers (2.1 miles) (China Hill to Jackson Street occurrence).

#### Habitat

*Phlox hirsuta* is a serpentine endemic (a species found only on soils derived from ultramafic parent rocks). Serpentine soils have high concentrations of magnesium and iron, and often have high concentrations of chromium and nickel, as well.

*Phlox hirsuta* is known to occur only on the following five soil types (Soil Conservation Service 1983): 178 (Lithic Xerorthents-Rock Outcrop Complex, zero to 65 percent slopes); 237 (Weitchpec Variant-Rock Outcrop Complex, 5 to 65 percent slopes); 143 (Dubakella-Ipish Complex, 5 to 30 percent slopes); 144 (Dubakella-Ipish Complex, 30 to 50 percent slopes); and 213 (Rock Outcrop-Dubakella Complex, 30 to 50 percent slopes). *Phlox hirsuta* occurs at elevations ranging from 880 to 1,340 meters (2,800 to 4,400 feet). This species is found on lands that are owned and managed by industrial timber companies, other private landowners, the U.S. Forest Service, California Department of Transportation, and the City of Yreka.

#### Abundance

Systematic surveys to determine the size of *P. hirsuta* occurrences have not been conducted. Therefore, abundance and population trends are not known with certainty.

*Phlox hirsuta* flowers are bisexual but no data exist on their mating system. Preliminary data from research undertaken over two field seasons indicated that *P. hirsuta* does not self-pollinate and relies on insects to vector pollen to set fruit and produce seed (Ferguson 2004, C. Ferguson *in litt.* 2005). Little or no information exists on seed dispersal, seed germination, or seedling establishment in the wild, or even how long *P. hirsuta* plants typically live (R. Patterson *in litt.* 2001). Although population trends within *P. hirsuta* occurrences are unknown, field observations by Recovery Team members between 2000 and 2005 suggest that populations at the China Hill and Soap Creek Ridge sites are relatively stable, that individual plants may be long-lived, and that seedling establishment is infrequent (U.S. Fish and Wildlife Service 2006).

### Taxonomy

Elias Nelson (1899) described *P. hirsuta* based on a collection made by Edward L. Greene in 1876. A complete nomenclatural history can be found in Appendix 1 of the Recovery Plan for *Phlox hirsuta* (Yreka Phlox) (U.S. Fish and Wildlife Service 2006). No changes in taxonomy have occurred since the time of listing.

## **II.C.2. Five-Factor Analysis (threats, conservation measures, and regulatory mechanisms)**

### **II.C.2.a. Present or threatened destruction, modification or curtailment of its habitat or range:**

This factor is organized by occurrence, as it is in the recovery plan.

#### China Hill:

Threats to *P. hirsuta* at this site are destruction of plants and habitat as a result of residential development, competition with exotic plants, off-road vehicle use, garbage dumping, vandalism, and illegal collection. City of Yreka and Siskiyou County records and aerial photographs indicate that until 1974, there was virtually no disturbance of *P. hirsuta* habitat at China Hill (L. Bacon, City of Yreka, pers. comm. 2001). However, construction of a mining ditch in 1879 may have removed plants and permanently altered *P. hirsuta* habitat.

In 1974, the northern portion of the China Hill site was subdivided into eight parcels ranging in size from 4 to 7.3 hectares (10 to 18 acres). This subdivision resulted in a total of nine properties on China Hill, eight of which support *P. hirsuta*. Two of the eight are privately owned and six are now owned by the City of Yreka (L. Bacon, pers. comm. 2002; California Department of Fish and Game 2003; M.F. McHugh, pers. comm. 2006; R. Nelson *in litt.* 2006, 2007). One privately owned property that was created by the 1974 parcel map division is not known to support *P. hirsuta* plants. However, the City of Yreka has recently acquired this property to help control access to the other City-owned land on China Hill. Although no residences or buildings have been constructed on any of the private parcels, several owners have attempted to sell the lots as home sites in recent years. Future home building and associated residential landscaping on these sites could permanently destroy *P. hirsuta* habitat. In 1992, *P. hirsuta* plants were destroyed on one lot when a property owner graded an area for a house pad and installed underground electrical and water lines (L. Bacon, pers. comm. 2001).

At the time of subdivision, an access road bisecting this *P. hirsuta* occurrence was constructed. This unmaintained private roadway is not gated or locked and, as long as it continues to be used for access to this site, likely represents permanent destruction of some *P. hirsuta* habitat. However, Recovery Team members (2002) and others (Knorr 1995, C. Brown, Fruit Growers Supply Company, pers.

comm. 2001; Knight 2001; P. Figura *in litt.* 2005c) have observed that *P. hirsuta* is able to recolonize areas that are not continually disturbed (e.g., the center portion of rarely used dirt roads, road cuts).

Adverse impacts from competition with noxious weeds are not currently apparent at the China Hill site. However, scattered populations of two noxious weeds, *Isatis tinctoria* (dyer's woad) and *Centaurea solstitialis* (star thistle) have been observed in areas of occupied habitat on the road that bisects the China Hill site (personal observations by Recovery Team members 2002, 2003).

The China Hill site is a popular location for local use because it affords easy access to interesting plant diversity and views of the surrounding area, and is relatively isolated. General public use of the access road has resulted in the creation of several off-road tracks through areas of occupied habitat that may have destroyed plants. Garbage litters portions of the site. Although currently the extent and volume of the garbage is limited, its presence combined with ease of access to the site, may have the effect of encouraging larger-scale trash dumping in areas of occupied habitat.

On an April 26, 2001, field trip, Recovery Team members noted that several trenches had been dug, filled with potting soil, and planted with ornamental bulbs within occupied phlox habitat on a private parcel. It is not known whether individual *P. hirsuta* plants were destroyed or removed during this action.

Conservation measures that have had a direct and immediate effect on reducing the threats to the China Hill occurrence are acquisition of occupied *P. hirsuta* habitat and removal of exotic invasive plants. Since 1996, the City of Yreka has acquired seven properties on China Hill; three through donation and four through coordination with the State of California's Wildlife Conservation Board and Department of Fish and Game (L. Bacon, pers. comm. 2002; California Department of Fish and Game 2003; M. F. McHugh, City of Yreka, pers. comm. 2006; R. Nelson *in litt.* 2006, 2007; U.S. Fish and Wildlife Service 2006). The City of Yreka now owns approximately 74 percent of the China Hill occurrence and manages these properties for the conservation of *P. hirsuta*. On July 14, 2003, the California Department of Fish and Game (Department of Fish and Game) was awarded a grant, through section 6 of the Endangered Species Act of 1973, as amended, to fund willing-seller acquisition of three of the four remaining privately owned parcels on China Hill. Recently, the California Wildlife Conservation Board was successful in acquiring two additional properties and conveying them to the City of Yreka for the purpose of *P. hirsuta* conservation.

In 2005, during a cursory inventory of China Hill, Patrick Griffin, Siskiyou County Agricultural Commissioner, located four distinct areas where noxious weeds were becoming established in close proximity to *P. hirsuta* plants. He removed 47 *Isatis tinctoria* plants from within occupied *P. hirsuta* habitat in one location and 80 *I. tinctoria* plants from the road and roadsides in two other



locations on China Hill (P. Griffin *in litt.* 2005, M. Knight *in litt.* 2005). In 2006, through a formal participation agreement with the Klamath National Forest, Siskiyou County Department of Agriculture staff chemically treated an isolated group of *Centaurea solstitialis* plants that were located on the roadside, but not near any *P. hirsuta* plants (M. Knight, Klamath National Forest, pers. comm. 2006). In addition, *I. tinctoria* plants were removed by hand for a second year. However, control of *I. tinctoria* and *C. solstitialis* will require a dedicated and continuing effort.

#### Soap Creek Ridge:

Soap Creek Ridge *P. hirsuta* habitat has been disturbed in the past by logging, a small chromium mine, fire suppression activities, domestic animal grazing, and road construction and maintenance (Bowen 1991; J. Davidson, pers. comm. 2001; Knight 2001; K. Garrett *in litt.* 2004, 2005). More recently identified threats include herbicide application along road rights-of-way and competition with exotic and introduced plants.

The primary threats related to logging are road and landing construction as well as the use of heavy equipment within occupied habitat during logging or skidding operations. Although the low density of merchantable trees limits logging opportunities in areas where *P. hirsuta* occurs at Soap Creek Ridge, *P. hirsuta* has been observed in areas that have been selectively logged (Knight 2001, P. Figura *in litt.* 2005c). Therefore, it is likely that some plants were destroyed during past logging efforts.

Although the effects of fire on *P. hirsuta* are not known at this time, fire suppression activities may directly affect this species. One year after a fire had burned through *P. hirsuta* habitat, Forest Service staff noted that fire suppression activities may have destroyed plants and removed habitat when fire lines were constructed by tractor blading. However, plants had not been destroyed in places where the tractor had merely driven over them. Because plants had not been marked before the fire, effects of the fire itself on *P. hirsuta* were impossible to measure (Knorr 1995).

Thirty years ago, the realignment of Highway 3 affected part of the Soap Creek Ridge occurrence (S. Stacey, Caltrans, pers. comm. 1996). Currently, Caltrans requires the acknowledgment of sensitive and listed species occurrences during the project planning and implementation process. However, despite the fact that road maintenance crews are to be made aware that no new ground is to be disturbed along this stretch of highway (B. Sheffield, Caltrans, pers. comm. 1997), the portion of the occurrence within the Caltrans right-of-way could be disturbed by road maintenance or construction activities (Bowen 1991; K. Garrett *in litt.* 2004, 2005). Caltrans has erected markers along the highway shoulder so that crews are aware of occupied *P. hirsuta* habitat and can avoid disturbance to these areas during routine road maintenance (R. Irvin, Caltrans, pers. comm. 2006).

Domestic animals may affect *P. hirsuta* by grazing and trampling, although the serpentinized rock and poor soils on which this species occurs generally support limited forage values. Nonetheless, much of the land in the vicinity of Soap Creek Ridge is utilized to some extent for grazing. Forest Service inventory notes mention that many plants appeared to have been heavily grazed and cropped back (Barker 1982). However, a 1987 Forest Service inventory found no observable damage from livestock, although it was clear that cattle had used the area in the past (Knight 2001).

Other threats to the Soap Creek Ridge occurrence include herbicide application and competition with exotic and introduced plants. Adverse impacts from herbicide application are most likely to occur along State Highway 3 in the Soap Creek Ridge area, where Siskiyou County or other local agencies could potentially spray plants during weed control activities. Siskiyou County staff occasionally spot spray for *Centaurea diffusa* (diffuse knapweed), *Centaurea maculosa* (spotted knapweed), *Isatis tinctoria*, and *Tribulus terrestris* (puncture vine) along the shoulder of Highway 3 in the vicinity of *P. hirsuta*. However, spraying crews are aware of *P. hirsuta* and do not spray phlox plants (J. DePree *in litt.* 2002). Caltrans does not spray herbicide in this area (K. Garrett *in litt.* 2002). Herbicides may also be applied on private lands following timber harvest or stand-replacing fires to aid in reforestation.

*Isatis tinctoria* has been observed in areas of occupied habitat at Soap Creek Ridge (personal observations by Recovery Team members 2002). While no adverse effects to *P. hirsuta* are currently apparent, substantial infestation by *I. tinctoria* would represent a significant threat.

In recent years, Timber Harvest Plans for timber operations conducted on private land in the Soap Creek Ridge occurrence have included pre-project *P. hirsuta* surveys. When appropriate, site-specific mitigation measures developed in conjunction with the Department of Fish and Game have been implemented to avoid project-related impacts to *P. hirsuta* plants (P. Figura, California Department of Fish and Game, pers. comm. 2002).

#### Cracker Gulch:

The Cracker Gulch occurrence is bisected by a logging road. Although it is unknown whether the construction of the road directly affected any *P. hirsuta* plants, plants do occur on both sides of the road. The road is privately owned and is gated, so little public use or off-road vehicle use occurs in the vicinity of the *P. hirsuta* occurrence. The primary threat to this occurrence is ground disturbance associated with timber harvesting. Although there is little merchantable timber within the occurrence boundary, larger trees do occur slightly downhill from the phlox plants (California Natural Diversity Database 2006). As with the Soap Creek Ridge occurrence, timber harvest reviews

conducted by Department of Fish and Game staff have a direct effect in reducing the threats to *P. hirsuta* in the Cracker Gulch occurrence.

Greenhorn Creek:

The land supporting the Greenhorn Creek occurrence has been subdivided into numerous parcels, many of which are as small as 4 hectares (10 acres). Greenhorn Creek and Greenhorn Road run through the largest parcel (30 hectares [73 acres]) (Nelson 2004), which is owned by the City of Yreka. Threats to *P. hirsuta* in this occurrence include grading of suitable habitat for new homes, road construction and landscaping associated with the building of new homes, grazing and trampling by domestic animals within fenced enclosures, off-road vehicle use, and invasion by competitive nonnative plants, including *Isatis tinctoria*, *Centaurea solstitialis*, *Taeniatherum caput-medusae* (medusahead), *Cardaria draba* (heart-podded hoary cress), and *Hypericum perforatum* (Klamathweed) (J. Silveira *in litt.* 2005a). In 2004, vehicles were driven across City of Yreka property to access a parcel listed for sale. Once these tracks were created, they were used for off-road vehicle recreation. In the process, the original tracks were lengthened, so that they extend beyond city land and into occupied *P. hirsuta* habitat (J. Silveira *in litt.* 2005b). In response to this newly created threat to *P. hirsuta* plants, City of Yreka employees erected a high earthen berm to discourage the off-road vehicle activity. In addition, earthen berms have been constructed in two other areas adjacent to Greenhorn Road to protect *P. hirsuta* on City of Yreka property from off-road vehicle and other types of recreational access (J. Silveira *in litt.* 2005a, J. Silveira, Fish and Wildlife Service, pers. comm. 2005). In 2005, a botanist observed that grading of *P. hirsuta* plants had taken place on one property in a subdivision (L. Nelson *in litt.* 2005).

Jackson Street:

Little information is known about the threats to the Jackson Street occurrence, except that it occurs within a rural residential area. Future construction of homes and driveways and residential landscaping would threaten this occurrence, as would invasion by invasive nonnative plants. Because little is known about the current extent and condition of the Jackson Street occurrence, other threats cannot be identified at this time.

**II.C.2.b. Overutilization for commercial, recreational, scientific, or educational purposes:**

*Phlox hirsuta* may be of interest to rock garden enthusiasts (California Native Plant Society 1977). The North American Rock Garden Society (2004) listed wild-collected *P. hirsuta* seeds on their 1999 seed exchange web page. The China Hill occurrence is popular with local gardening groups because of its easy access (M. Knight, pers. comm. 2005). However, the number and frequency with which seeds or plants may be illegally collected is unknown. Therefore, the impact of this threat on the species is not known.

**II.C.2.c. Disease or predation:**

Threats to the species as a result of disease or predation are poorly understood. Researchers have noted herbivory of flowers within the China Hill and Cracker Gulch occurrences, although the degree to which reproduction is affected has not been determined (C. Ferguson, Southern Oregon University, pers. comm. 2005).

**II.C.2.d. Inadequacy of existing regulatory mechanisms:**

The final Federal rule listing *P. hirsuta* as an endangered species indicated that inadequate existing regulatory mechanisms posed a threat to the species (U.S. Fish and Wildlife Service 2000). The inadequacies described were primarily based on uncertainties related to protection measures and/or mitigation requirements pursuant to the species' listing status as endangered under the California Endangered Species Act (CESA) and its protection under the California Environmental Quality Act (CEQA).

CESA prohibits the import, export, take, purchase, sale, or possession of any threatened or endangered species or any part or product thereof (section 2080, California Fish and Game Code). It is generally not legal to "take" (destroy or kill) State-listed plants on private lands. However, some activities are specifically exempted from the general take prohibitions in CESA (sections 2080 to 2087 and section 1913, California Fish and Game Code). These activities include certain timber operations, certain mining assessment work and surface mining operations, the removal of listed plants from certain areas (such as ditches, roads, and rights-of-way), and accidental taking that occurs as the result of routine and ongoing agricultural activities that occur on a farm or ranch.

It is also possible for individuals and/or agencies to obtain specific permits from the Department of Fish and Game allowing endangered plants to be taken. Permits may be issued to individuals, agencies, universities, and other scientific or educational institutions for scientific, educational, and management purposes. Permits may also be issued by the Department of Fish and Game for the take of listed species where the taking is incidental to otherwise lawful activities, such as for permitted development projects. In these cases, the impacts of such taking must be "minimized and fully mitigated" and must not jeopardize the continued existence of the species (section 2081, California Fish and Game Code).

In California, activities that meet the definition of a project under CEQA and require discretionary approval by public agencies are subject to CEQA. The final Federal rule listing *P. hirsuta* indicated that mitigation and protection requirements for CEQA projects are dependent on the discretion of the particular lead agency approving a given project. Both the City of Yreka and Siskiyou County Planning Departments are required to prepare an "initial study" to determine whether discretionary project proposals (e.g., new subdivision or parcel map approval, use permits, zone changes, and for the City of Yreka, some grading projects) should be reviewed for effects to State- and federally listed species (M. F. McHugh, pers. comm. 2006; R. LaTourelle, Siskiyou County Planning Department, pers. comm. 2006). A project review is sent to regulatory agencies

seeking information regarding the potential impacts on resources under that agency's jurisdiction. If the initial study determines that there may be some concern for effects to listed species, botanical surveys may be required. CEQA requires analysis of a project's environmental impacts, disclosure of those impacts, and, where feasible, mitigation of those adverse impacts that are determined to be significant. As adverse impacts to species listed pursuant to CESA are generally considered to be significant under CEQA (section 15065, title 14, California Code of Regulations), projects usually contain protection, and/or mitigation measures to avoid or minimize impacts to listed plants (even in those cases where project activities may be exempt from the take prohibitions of CESA, as described above).

CEQA does not apply to projects where the State governmental agency is required by law to act in a set way without being allowed to use its own judgement ("ministerial" projects) (section 21080, division 13, California Public Resources Code and section 15002 (i), title 14, California Code of Regulations). Examples of such "ministerial" projects include issuance of building permits and approval of final subdivision maps (section 15268, article 18, State CEQA Guidelines). Grading of *Phlox hirsuta* plants on one private property in a subdivision located in the Greenhorn Creek occurrence is one case where CEQA and CESA provisions are known to have failed to protect plants from destruction.

**II.C.2.e. Other natural or manmade factors affecting its continued existence:**

*Phlox hirsuta* is known from only five sites. These sites occupy approximately 269 hectares (665 acres) in a restricted habitat type (serpentine soils) and occur over a very small range (approximately 65 square kilometers [25 square miles]). As stated in the Final Rule determining the endangered status for this species, "The combination of only two [now five] populations, small range, and restricted habitat makes the species highly susceptible to extinction or extirpation from a significant portion of its range due to random events such as fire, drought, disease, or other occurrences (Shaffer 1981, 1987; Meffe and Carroll 1994)."

**II.D. Synthesis:**

The final rule listing *P. hirsuta* as an endangered species (U.S. Fish and Wildlife Service 2000) identified the primary threats as the present or threatened destruction, modification, or curtailment of its habitat or range; urbanization; inadequate State regulatory mechanisms; and potential extirpation as a result of random events. This first 5-year review confirms that these limiting factors continue to pose a threat to this species six years after listing as an endangered species. Current and potential threats are alteration or destruction of habitat resulting from residential development, logging, fire suppression activities, ongoing highway maintenance or construction activities, off-road vehicle use, illegal collection, and vandalism (U.S. Fish and Wildlife Service 2006). Other threats include competition with exotic plants, herbicide application, grazing by domestic

animals, inadequate existing regulatory mechanisms, and potential extirpation as a result of random events.

The Recovery Plan notes that five occurrences are now known, that limited steps to protect the species from the effects of urbanization, timber harvest, and invasive species competition have been initiated, and that these efforts are ongoing. However, the overall conclusion of the final rule (U.S. Fish and Wildlife Service 2000) remains true today: the combination of five occurrences, small range, and restricted habitat makes the species highly susceptible to extinction or extirpation from a significant portion of its range due to random events. In addition, current and potential threats are a limiting factor at all five known occurrences. Implementation of the conservation actions recommended in the Recovery Plan will be necessary to improve the status of this species.

### III. RESULTS

#### III.A. Recommended Classification:

- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change is needed

#### III.B. New Recovery Priority Number 2C

The priority is based on designation as a full species with a high degree of threat, high potential for recovery, and existing conflict between development and the species' conservation.

### IV. RECOMMENDATIONS FOR FUTURE ACTIONS:

The following are the highest priority recovery actions identified in the Recovery Plan:

1. Protect and secure the China Hill occurrence (Action 1.1).
2. Protect and secure the Soap Creek Ridge, Cracker Gulch, and Jackson Street occurrences. Alternatively protect the Soap Creek Ridge occurrence and substitutes representing the Jackson Street and Cracker Gulch occurrences (Action 1.2).
3. Write and implement a plan for seed storage (Action 3.1).
4. Write and implement a plan to develop propagation techniques. If future evidence indicates that collection for horticultural purposes occurs frequently and is not controlled by outreach about *P. hirsuta*, then consider developing guidelines which would allow legal nursery acquisition and sale of *P. hirsuta* plants without threatening native populations (Action 3.2)
5. Prepare a monitoring plan that will identify threats and adverse impacts to *P. hirsuta* occurrences (Action 2.1).

- V. **REFERENCES** – All references are on file at the Yreka Fish and Wildlife Office, U.S. Fish and Wildlife Service, Yreka, California.

### **Literature Cited**

- Adams, O. 1987. *Phlox hirsuta* habitat and species viability inventory. Unpublished report prepared for the Klamath National Forest. October 1, 1987.
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**U.S. FISH AND WILDLIFE SERVICE**  
**5-YEAR REVIEW of *Phlox hirsuta***

Current Classification 2C

Recommendation resulting from the 5-Year Review:

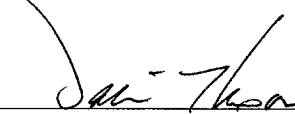
- Downlist to Threatened
- Uplist to Endangered
- Delist
- No change is needed

Review Conducted By: Nadine R. Kanim, Yreka Fish and Wildlife Office

FIELD OFFICE APPROVAL:  
Lead Field Supervisor, Fish and Wildlife Service

Approve  Date 7/25/07

Active REGIONAL OFFICE APPROVAL:  
Lead Regional Director, Fish and Wildlife Service

Approve  Date 8/24/07