# *Eriophyllum latilobum*
# (San Mateo woolly sunflower)

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

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

**September 2011**

# 5-YEAR REVIEW

*Eriophyllum latilobum* (San Mateo woolly sunflower)

## I. GENERAL INFORMATION

### Purpose of 5-Year Reviews:

The U.S. Fish and Wildlife Service (Service) is required by section 4(c)(2) of the Endangered Species Act (Act) to conduct a status review of each listed species at least once every 5 years. The purpose of a 5-year review is to evaluate whether or not the species' status has changed since it was listed (or since the most recent 5-year review). Based on the 5-year review, we recommend whether the species should be removed from the list of endangered and threatened species, be changed in status from endangered to threatened, or be changed in status from threatened to endangered. Our original listing of a species as endangered or threatened is based on the existence of threats attributable to one or more of the five threat factors described in section 4(a)(1) of the Act, and we must consider these same five factors in any subsequent consideration of reclassification or delisting of a species. In the 5-year review, we consider the best available scientific and commercial data on the species, and focus on new information available since the species was listed or last reviewed. If we recommend a change in listing status based on the results of the 5-year review, we must propose to do so through a separate rule-making process defined in the Act that includes public review and comment.

### Species Overview:

As summarized from the Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (Service 1998), *Eriophyllum latilobum* (San Mateo woolly sunflower) is a herbaceous (nonwoody) perennial of the aster family (Asteraceae) with leafy stems 30 to 60, exceptionally 90, centimeters (12 to 16 inches) high (J. Mooring, *in litt.*1998). The upper surfaces of the deeply cleft leaves are a smooth dark green and the lower surfaces are covered with densely interwoven white hairs. The golden flower heads, which bloom from April to June, are borne in loose clusters (Munz and Keck 1959, McGuire and Morey 1992, J. Mooring, *in litt.,* 1998). It is found in shaded moist sites on steep grassy or sparsely wooded slopes (McGuire and Morey 1992) in San Mateo County.

### Methodology Used to Complete This Review:

This review was prepared by the Sacramento Fish and Wildlife Office (SFWO), following the Region 8 guidance issued in March 2008. We used information from the Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area (Service 1998), environmental impact reports, management plans, monitoring reports, survey information from experts who have been monitoring various localities of this species, and the California Natural Diversity Database (CNDDB) maintained by the California Department of Fish and Game (CDFG). Our primary sources of information used to update the species' status and threats were the following: the Recovery Plan; CNDDB reports; and personal communications with local biologists and species experts (Mooring, pers. comm. 2010; Sonya Foree, San Francisco Public Utilities Commission (SFPUC), pers. comm. 2010, Mary Ann Showers, CDFG, pers. comm., 2010). We received no

information from the public in response to our Federal Notice initiating this 5-year review. This 5-year review contains updated information on the species' biology and threats, and an assessment of that information compared to that known at the time of listing or since the last 5-year review. We focus on current threats to the species that are attributable to the Act's five listing factors. The review synthesizes all this information to evaluate the listing status of the species and provide an indication of its progress towards recovery. Finally, based on this synthesis and the threats identified in the five-factor analysis, we recommend a prioritized list of conservation actions to be completed or initiated within the next 5 years.

**Contact Information:**

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**Lead Field Office:** Josh Hull, Recovery Division Chief, Sacramento Fish and Wildlife Office; (916) 414-6600.

**Federal Register (FR) Notice Citation Announcing Initiation of This Review:** A notice announcing initiation of the 5-year review of this taxon and the opening of a 60-day period to receive information from the public was published in the Federal Register on March 25, 2009 (74 **FR** 12878-12883). No information was received.

**Listing History:**

**Original Listing**
**FR Notice:** 60 **FR** 6671
**Date of Final Listing Rule:** February 3, 1995
**Entity Listed:** *Eriophyllum latilobum*
**Classification:** Endangered

**State Listing**
*Eriophyllum latilobum* (San Mateo woolly sunflower) was listed by the State of California as endangered in June 1995.

**Review History:** Since the original listing in 1995, no 5-year reviews have been conducted for this species.

**Species' Recovery Priority Number at Start of 5-Year Review:** The recovery priority number for *Eriophyllum latilobum* is 11 according to the Service's 2010 Recovery Data Call for the Sacramento Fish and Wildlife Office, based on a 1-18 ranking system where 1 is the highest-ranked recovery priority and 18 is the lowest (Endangered and Threatened Species Listing and Recovery Priority Guidelines, 48 **FR** 43098, September 21, 1983). This number indicates that the taxon is a species that faces a high degree of threat and has a low potential for recovery.

**Recovery Plan or Outline**

**Name of Plan or Outline:** Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area
**Date Issued:** September 30, 1998

## II. REVIEW ANALYSIS

### Application of the 1996 Distinct Population Segment (DPS) Policy

The Endangered Species Act defines "species" as including any subspecies of fish or wildlife or plants, and any distinct population segment (DPS) of any species of vertebrate wildlife. This definition of species under the Act limits listing as distinct population segments to species of vertebrate fish or wildlife. Because the species under review is a plant, the DPS policy is not applicable, and the application of the DPS policy to the species' listing is not addressed further in this review.

### Information on the Species and its Status:

Species Biology and Life History

*Spatial Distribution*

As summarized from the Recovery Plan for this species (Service 1998), *Eriophyllum latilobum* is a tetraploid (having four sets of chromosomes) (Carlquist 1956, Mooring 1973) and is believed to have originated as a hybrid between *Eriophyllum confertiflorum* var. *confertiflorum* and *Eriophyllum lanatum* var. *arachnoideum* (Constance 1937, Munz and Keck 1959, Hickman 1993, Mooring 1994). This herbaceous perennial flowers from April to June (Munz and Keck 1959, J. Mooring, *in litt.,* 1998). Its pollinators include syrphid flies and bees. Seed dispersal is by gravity, so most seeds fall close to the parent plant (J. Mooring, pers. comm. as cited in McGuire and Morey 1992).

*Eriophyllum latilobum* is restricted to shaded moist sites on steep grassy or sparsely wooded slopes in San Mateo County. When the Recovery Plan for Serpentine Soils of the San Francisco Bay Area was published on September 30, 1998, only one occurrence, consisting of a few hundred plants was known to exist along Crystal Springs Road (CNDDB #1). This occurrence is on land which the City of Hillsborough, the County of San Mateo, and the San Francisco Water Department have varying jurisdictions. Since then there have been three new occurrences identified: 1) on cut and fill slopes between Sawyer Ridge and San Mateo Creek along San Mateo Road #2 in the Peninsula Watershed (CNDDB #4) (a.k.a. San Mateo Creek Population or Mud Dam); 2) along Outgoing Road also in the Peninsula Watershed; and 3) on private property near Half Moon Bay (pers. comm. J. Mooring, 2010).

*Abundance*

Some years the number of plants in some subpopulations ranges from zero to less than five; other years the same subpopulations contain 500 percent more plants. Some subpopulations consistently have higher numbers of plants (for example, 10 to 75 plants) (J. Mooring, *in lit.,* 1996). The CNDDB #1 had 221 plants in 1991, 315 in 1992, 60 in 1993, 163 in 1994, a few in 1997, 189 in 2001, 53 in 2002 (31 were killed by herbicide), 100 plants in 2009, not including the San Mateo County portion. According to Roman Gankin (pers. comm., 1997), especially large numbers were observed at this location in 1996. Gankin observed 100 or more plants scattered throughout the north facing cliff area along Crystal Springs Road, approximately 100 meters (328 feet) east of the junction of Polhemus and Crystal Springs Roads. CNDDB #4 had 207 plants in 2004, 200 in 2008, 300 in 2009. CNDDB # 3 is believed to be an erroneous report. The exact location of CNDDB # 2 is unknown. The only source of information on the CNDDB #2 occurrence is from a 1962 collection.

*Habitat or Ecosystem*

*Eriophyllum latilobum* is found in shaded moist sites on steep grassy or sparsely wooded slopes (McGuire and Morey 1992), apparently growing best under or very near coast live oak *(Quercus agrifolia)*(J. Mooring, *in litt.,* 1998). The species has been reported on serpentine soils (McGuire and Morey 1992). However, Mooring, who has studied the species for many years, has not found it on soils he considers serpentine (CDFG 1997, J. Mooring, *in litt.,* 1998). The Crystal Springs Road population occurs at an elevation of 46 meters (150 feet). The federally listed threatened Main dwarf-flax *(Hesperolinon congestum)* reportedly grows in association with *Eriophyllum latilobum* as do California bay *(Umbellaria californica)* (McGuire and Morey 1992), California broom *(Lotus scoparius)* (CNDDB 1996), California buckeye *(Aesculus californica),* California sagebrush *(Artemisia californica),* coast live oak *(Quercus agrifolia)* (McGuire and Morey 1992), purple needlegrass *(Nassella pulchra)* (CNDDB 1996), toyon *(Heterorneles arbutifolia)* (McGuire and Morey 1992), and white globe lily *(Calochortus alba)* (CNDDB 1996).

*Changes in Taxonomic Classification or Nomenclature*

The Service is not aware of any changes in the taxonomic classification or nomenclature of *Eriophyllum latilobum* since its listing. *The Jepson Manual: Higher Plants of California* is currently revising the Asteraceae Family, but according to their website and that of Flora of North America , *Eriophyllum* will remain in the family Asteraceae (Keil 2011, Flora of North America Editorial Committee 2006).

*Genetics*

The Service is not aware of any new genetic studies that have focused on *Eriophyllum latilobum.*

*Species-specific Research and/or Grant-supported Activities*

In 2009, 7,788 seeds were collected from CNDDB #4 and sent to the Rancho Santa Ana Botanical Garden in Claremont, California. A backup portion of this seed was also sent to the United States Department of Agriculture National Center for Genetic Resource Preservation in Ft. Collins, Colorado.

**Five-Factor Analysis**

The following five-factor analysis describes and evaluates the threats attributable to one or more of the five listing factors outlined in section 4(a)(1) of the Act.

**FACTOR A: Present or Threatened Destruction, Modification, or Curtailment of Habitat or Range**

At the time of listing (Service 1995), we stated the greatest threat facing *Eriophyllum latilobum* was destruction of habitat through residential or recreational development. Specifically, these Factor A threats were road maintenance activities and trail construction.

The steep slopes along Crystal Springs Road provide a very unstable habitat for *E. latilobum.* The slopes are subject to erosion and soil slippage. After soil slippage occurs, road maintenance crews remove the slumped soil, which may contain mature individuals, seedlings, and/or seeds of *E. latilobum*. The road cut is then reshaped, which may damage plants remaining on the banks. San Mateo County road maintenance crews were alerted to the existence of *E. latilobum* in 1990, and instructed to avoid the plants by the San Mateo County Planning Department; however, road maintenance activities are not monitored to ensure protection (Roman Gankin, San Mateo County Planning Division, pers. comm. to Teri McGuire, Botanist, California Department of Fish and Game, cited in McGuire and Morey 1992). San Mateo County Department of Public Works has eliminated the use of weed sprays along the section of road where the species occurs (Robert Sans, Director of Public Works, San Mateo Co., *in litt.,* 1993).

The San Mateo County Trails Plan (San Mateo County 1989), proposed construction of the San Mateo Creek Trail adjacent to Crystal Springs Road. This could damage or eliminate colonies of *E. latilobum*, alter site hydrology, accelerate soil erosion through increased pedestrian and bicycle traffic, and allow for the introduction of aggressive nonnative plant species. This trail was never constructed. Of the threats defined at the time of listing, road maintenance remains a threat.

Conservation efforts are being made to protect *Eriophyllum latilobum* habitat. Habitat is being protected through control of nonnative invasive species on SFPUC property. San Mateo County Department of Public Works has eliminated the use of weed sprays along the section of road where the species occurs (R. Sans, *in litt.,* 1993). In addition, roadside mowing by San Mateo County in the vicinity of *Eriophyllum latilobum* has been stopped.

**FACTOR B: Overutilization for Commercial, Recreational, Scientific, or Educational Purposes**

Overutilization for commercial purposes was not known to be a factor in the 1995 final listing rule (60 **FR** 6671). Overutilization for any purpose does not appear to be a threat at this time.

**FACTOR C: Disease or Predation**

Disease and predation were not known to be factors at the time of listing (Service 1995). Beetle larvae have been observed in seed heads of *Eriophyllum latilobum,* however, the extent of predation is unknown (McGuire and Morey 1992). Disease and predation are not known to be a threat at this time.

**FACTOR D: Inadequacy of Existing Regulatory Mechanisms**

At the time of listing (60 **FR** 6671), regulatory mechanisms thought to have some potential to protect *Eriophyllum latilobum* included: listing under the California Endangered Species Act (CESA) in 1995; and the Native Plant Protection Act (NPPA). In addition to those regulatory mechanisms, *E. latilobum* is protected by the California Environmental Quality Act (CEQA), the National Environmental Policy Act (NEPA), the Natural Community Conservation Planning Act, and the Federal Endangered Species Act. Inadequacy of regulatory mechanisms is not considered a threat at this time. The following is a summary of the regulatory mechanisms protecting *E. latilobum*.

**State Protections in California**

The State's authority to conserve rare wildlife and plants is comprised of four major pieces of legislation: the California Endangered Species Act, the Native Plant Protection Act, the California Environmental Quality Act, and the Natural Community Conservation Planning Act.

California Endangered Species Act (CESA) and Native Plant Protection Act (NPPA): The CESA (California Fish and Game Code, section 2080 *et seq*.) prohibits the unauthorized take of State-listed threatened or endangered species. The NPPA (Division 2, Chapter 10, section 1908) prohibits the unauthorized take of State-listed threatened or endangered plant species. The CESA requires State agencies to consult with the California Department of Fish and Game on activities that may affect a State-listed species and mitigate for any adverse impacts to the species or its habitat. Pursuant to CESA, it is unlawful to import or export, take, possess, purchase, or sell any species or part or product of any species listed as endangered or threatened. The State may authorize permits for scientific, educational, or management purposes, and to allow take that is incidental to otherwise lawful activities.

Furthermore, with regard to prohibitions of unauthorized take under NPPA, landowners are exempt from this prohibition for plants to be taken in the process of habitat modification. Where landowners have been notified by the State that a rare or endangered plant is growing on their land, the landowners are required to notify the California Department of Fish and Game 10 days

in advance of changing land use in order to allow salvage of listed plants. There is no evidence that salvage would be an effective method for this species.

California Environmental Quality Act: The CEQA requires review of any project that is undertaken, funded, or permitted by the State or a local governmental agency. 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 section 21002). Protection of listed species through CEQA is, therefore, dependent upon the discretion of the lead agency involved.

**Federal Protections**

National Environmental Policy Act: NEPA (42 U.S.C. 4371 *et seq*.) provides some protection for listed species that may be affected by activities undertaken, authorized, or funded by Federal agencies. Prior to implementation of such projects with a Federal nexus, NEPA requires the agency to analyze the project for potential impacts to the human environment, including natural resources. In cases where that analysis reveals significant environmental effects, the Federal agency must propose mitigation alternatives that would offset those effects (40 C.F.R. 1502.16). These mitigations usually provide some protection for listed species. However, NEPA does not require that adverse impacts be fully mitigated, only that impacts be assessed and the analysis disclosed to the public.

Endangered Species Act of 1973, as amended: The Act is the primary Federal law providing protection for this species. The Service's responsibilities include administering the Act, including sections 7, 9, and 10 that address take. Since listing, the Service has analyzed the potential effects of Federal projects under section 7(a)(2), which requires Federal agencies to consult with the Service prior to authorizing, funding, or carrying out activities that may affect listed species. A jeopardy determination is made for a project that is reasonably expected, either directly or indirectly, to appreciably reduce the likelihood of both the survival and recovery of a listed species in the wild by reducing its reproduction, numbers, or distribution (50 CFR 402.02). A non-jeopardy opinion may include reasonable and prudent measures that minimize the amount or extent of incidental take of listed species associated with a project.

Section 9 prohibits the taking of any federally listed endangered or threatened species. Section 3(18) defines "take" to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Service regulations (50 CFR 17.3) define "harm" to include significant habitat modification or degradation which actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. Harassment is defined by the Service as an intentional or negligent action that creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. The Act provides for civil and criminal penalties for the unlawful taking of listed species. Incidental take refers to taking of listed species that results from, but is not the purpose of, carrying out an otherwise lawful activity by a Federal agency or applicant (50 CFR 402.02). For projects without a Federal nexus that would likely result in incidental take of listed species, the Service may issue incidental take permits to non-Federal applicants pursuant to section

10(a)(1)(B). To qualify for an incidental take permit, applicants must develop, fund, and implement a Service-approved Habitat Conservation Plan (HCP) that details measures to minimize and mitigate the project's adverse impacts to listed species. Regional HCPs in some areas now provide an additional layer of regulatory protection for covered species, and most of these HCPs are coordinated with California's related Natural Community Conservation Planning program or other permits through the California Department of Fish and Game.

With regard to federally listed plant species, section 7(a)(2) requires Federal agencies to consult with the Service to ensure any project they fund, authorize, or carry out does not jeopardize a listed plant species. Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the "take" of federally endangered wildlife; however, the take prohibition does not apply to plants. Instead, plants are protected from harm in two particular circumstances. Section 9 prohibits (1) the removal and reduction to possession (i.e., collection) of endangered plants from lands under Federal jurisdiction, and (2) the removal, cutting, digging, damage, or destruction of endangered plants on any other area in knowing violation of a state law or regulation or in the course of any violation of a state criminal trespass law. Federally listed plants may be incidentally protected if they co-occur with federally listed wildlife species.

In summary, the Endangered Species Act is the primary Federal law that provides protection for this species since its listing as endangered in 1995. Other Federal and State regulatory mechanisms provide discretionary protections for the species based on current management direction, but do not guarantee protection for the species absent its status under the Act. Therefore, we continue to believe other laws and regulations have limited ability to protect the species in absence of the Act.

**FACTOR E: Other Natural or Manmade Factors Affecting Its Continued Existence**

At the time of listing, dumping of garden debris, downhill seepage of pesticides, competition with nonnative plants, and road maintenance (addressed under Factor A in this 5-year review), were defined as threats to *Eriophyllum latilobum*.

Dumping of garden debris and downhill seepage of pesticides from homeowners living above the population may have negative impacts on *Eriophyllum latilobum* habitat. The plant also is threatened by competition with nonnative plants; its habitat is more densely populated with *Carduus* sp. and *Bromus* sp. than it was 10 years ago (John Mooring, pers. comm., 1992). In a 2009 report prepared by Nomad Ecology for San Francisco Public Utilities Commission and M&E/WRE Joint Venture, the non-native invasive plants considered a threat to habitat along Crystal Springs Road included fennel, French broom, and jubata grass. Other non-native invasive plants teasel, poison hemlock, bull thistle, and milk thistle were also present in this area (Nomad 2009). In the natural population, competing species such as plumeless thistle *(Carduus* sp.) may affect germination and seedling establishment (J. Mooring, *in litt.,* 1998).

*Eriophyllum latilobum* is not a vigorous reproducer; low germination rates and low seedling survival have been observed under greenhouse conditions (John Mooring, *in litt.*, 1992; McGuire and Morey 1992). However, greenhouse conditions do not necessarily represent the situation in nature (N.McCarten, *in litt.,* 1998). Germination rates for *E. latilobum* are lower than for any

other sunflower, less than 10% (CDFG 1997). In the 2009 seed bank collection report from Rancho Santa Ana Botanic Garden, seed collected from CNDDB #4 had a germination rate of 28%.

The small number of populations and low numbers of individual plants are also a factor. Because of the existence of few populations exhibiting low viability and located in an unstable habitat, this species is extremely vulnerable to extinction from random catastrophic events (Menges 1991, Primack 1993, Meffe and Carroll 1994).

Impacts to this species as a result of climate change are unclear. A trend of warming in the mountains of western North America is expected to decrease snowpack, hasten spring runoff, and reduce summer stream flows, and increased summer heat may increase the frequency and intensity of wildfires (IPCC 2007). While it appears reasonable to assume that the species may be affected, we lack sufficient certainty on knowing how and when climate change will affect the species, the extent of average temperature increases in California/Nevada, or potential changes to the level of threat posed by drought, fire, etc. The most recent literature on climate change includes predictions of hydrological changes, higher temperatures, and expansion of drought areas, resulting in a northward and/or upward elevation shift in range for many species (IPCC 2007). We have no knowledge of more detailed climate change information specifically for this species' range.

A modeling study completed by Loarie *et al.* (2008) provides an evaluation of potential trends to California's floristic communities under climate change scenarios. In general, plant diversity will shift in two divergent directions: along the coast and northwards at higher elevations; and southwards at higher elevations of the Sierra Nevada. The models suggest that climate change has the potential to break up local floras, resulting in new species combinations, with new patterns of competition and biotic interactions (Loarie *et al*. 2008). Based on these models, *Eriophyllum latilobum* plants would likely be unable to shift their range because of their dependence on a rare soil type and their supposed limited ability for seed dispersal.

## III. RECOVERY CRITERIA

The recovery plan for *Eriophyllum latilobum* (Recovery Plan for Serpentine Soil Species of the San Francisco Bay Area) was approved in 1998 (Service 1998).

Recovery plans provide guidance to the Service, States, and other partners and interested parties on ways to minimize threats to listed species, and on criteria that may be used to determine when recovery goals are achieved. There are many paths to accomplishing the recovery of a species and recovery may be achieved without fully meeting all recovery plan criteria. For example, one or more criteria may have been exceeded while other criteria may not have been accomplished. In that instance, we may determine that, over all, the threats have been minimized sufficiently, and the species is robust enough, to downlist or delist the species. In other cases, new recovery approaches and/or opportunities unknown at the time the recovery plan was finalized may be more appropriate ways to achieve recovery. Likewise, new information may change the extent that criteria need to be met for recognizing recovery of the species. Overall, recovery is a dynamic process requiring adaptive management, and assessing a species' degree of recovery is

likewise an adaptive process that may, or may not, fully follow the guidance provided in a recovery plan. We focus our evaluation of species status in this 5-year review on progress that has been made toward recovery since the species was listed (or since the most recent 5-year review) by eliminating or reducing the threats discussed in the five-factor analysis. In that context, progress towards fulfilling recovery criteria serves to indicate the extent to which threat factors have been reduced or eliminated.

According to the recovery plan (Service 1998); the following are the downlisting criteria for *Eriophyllum latilobum*:

1. The Crystal Springs Road population of *Eriophyllum latilobum* is fully protected and managed with the primary intention of preserving the population in perpetuity.

Is criterion still valid: Yes.

Listing factors addressed: Listing Factor A and E.

Has criterion been met: No. Multiple populations of *Eriophyllum latilobum* now exist which are not secure with long-term commitments to fund conservation of the species.

2. The Crystal Springs Road population of *Eriophyllum latilobum* is shown to be stable or increasing over a minimum of 20 years that include the normal precipitation cycle (or longer if suggested by the results of demographic monitoring).

Is criterion still valid: Yes.

Listing factors addressed: Listing Factor E.

Has criterion been met: No. The Crystal Springs Road population of *Eriophyllum latilobum* has not been stable for the last 13 years.

3. *Eriophyllum latilobum* seed is stored at a minimum of two Center for Plant Conservation certified botanic gardens.

Is criterion still valid: Yes.

Listing factors addressed: Listing Factor E.

Has criterion been met: Yes. In December 2010, seeds were sent to the Rancho Santa Ana Botanic Garden and the USDA National Center for Genetic Resource Preservation in Ft. Collins, Colorado.

4. Reliable seed germination and propagation techniques for the species are understood.

Is criterion still valid: Yes.

Listing factors addressed: Listing Factor E.

Has criterion been met: No. Little is understood about seed germination and propagation techniques of this species.

According to the recovery plan (Service 1998), the development of delisting criteria for *Eriophyllum latilobum* should be considered if a significant number of new populations are discovered.

Is criterion still valid: N/A

Listing factors addressed: N/A

Has criterion been met: N/A

## IV. SYNTHESIS

At the time of listing, there was only one known population on Crystal Springs Road. Habitat destruction in the form of road maintenance activities and trail construction, and invasive species were cited as threats to the species. Since then, there have been three additional occurrences discovered. Current threats to the species still include road maintenance activities, invasive species, low numbers of individuals, and few populations, as well as climate change. Management actions to occur in 2011 that may reduce or alleviate these threats include nonnative invasive plant removal. Based on potential threats of road maintenance activities, climate change, competition by invasive plants, and very small population sizes restricted to four locations, we conclude that *Eriophyllum latilobum* still meets the Act's definition of endangered. No status change is recommended at this time.

## V. RESULTS

**Recommended Listing Action:**

____ Downlist to Threatened
____ Uplist to Endangered
____ Delist (indicate reason for delisting according to 50 CFR 424.11):
    ____ *Extinction*
    ____ *Recovery*
    ____ *Original data for classification in error*
_X__ No Change

**New Recovery Priority Number and Brief Rationale:** No change.

## VI. RECOMMENDATIONS FOR ACTIONS OVER THE NEXT 5 YEARS

The highest priority for the species should be to maintain and increase the size and extent of the population on SFPUC property. This includes establishing an encroachment threshold for invasive plants that triggers management action. Second, attempts should be made to increase understanding of its germination and propagation to determine the potential for reintroduction success.

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**U.S. FISH AND WILDLIFE SERVICE 5-YEAR REVIEW**

*Eriophyllum latilobum* (San Mateo woolly sunflower)

**Current Classification**: Endangered

**Recommendation Resulting from the 5-Year Review**:

____ Downlist to Threatened
____ Uplist to Endangered
____ Delist
_X_ No change needed

**Review Conducted By**: Andrew Raabe, Sacramento Fish and Wildlife Office

**FIELD OFFICE APPROVAL**:

**Lead Field Supervisor, U.S. Fish and Wildlife Service**

Approve _____ Date 8 Sept 2011