Red Hills Vervain
(Verbena californica)

5-Year Review:
Summary and Evaluation

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

December 2007

5-YEAR REVIEW
Red Hills Vervain (*Verbena californica*)

I. GENERAL INFORMATION

I.A. Methodology used to complete the review: This review was conducted by a staff biologist within the Sacramento Fish and Wildlife Office, U.S. Fish and Wildlife Service (Service), based on peer-reviewed journal articles; personal communications with California Department of Fish and Game and Bureau of Land Management personnel; our database that tracks section 7 consultations and other projects; and our files.

I.B. Contacts

Lead Regional or Headquarters Office – Contact name(s) and phone numbers: Region 8 (California and Nevada), Diane Elam, Deputy Division Chief for Listing, Recovery, and Habitat Conservation Planning, and Jenness McBride, Fish and Wildlife Biologist; 916-414-6464.

Lead Field Office – Contact name(s) and phone numbers: Sacramento Fish and Wildlife Office, Kirsten Tarp, Senior Biologist, Recovery Branch, 916-414-6600.

I.C. Background

I.C.1. FR Notice citation announcing initiation of this review: On July 7, 2005, we announced initiation of the 5-year review for *Verbena californica* and asked for information from the public regarding the species' status (70 FR 39327). We published a second notice announcing the 5-year review and extending the request for information on November 3, 2005 (70 FR 66842). We received no response to the request for information.

I.C.2. Listing History

Original Listing
FR notice: 63 FR 49022
Date listed: September 14, 1998
Entity listed: Species, *Verbena californica*
Classification: Threatened

I.C.3. Associated Rulemakings: None (e.g., no critical habitat has been designated for this species).

I.C.4. Review History: No status reviews have been conducted since the species was listed in 1998.

I.C.5. Species' Recovery Priority Number at start of review: The recovery priority for this species is 8C, indicating full species, moderate threats, high recovery potential, and potential conflict with development projects**.**

I.C.6. Recovery Plan or Outline

Draft Recovery Plan for Fifteen Plants from Southern Sierra Foothills, California (in development)

II. REVIEW ANALYSIS

Species Overview

Verbena californica is a narrowly distributed biennial or perennial herb belonging to the vervain family (Verbenaceae). *Verbena californica* was first discovered in 1938 in Tuolumne County, California (Moldenke 1942). It is now known from 11 occurrences, all of which are restricted to intermittent and perennial streams within serpentine areas of the Red Hills of Tuolumne County.

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

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

____ ***Yes***
_X__ ***No***

The Endangered Species Act (ESA) 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 listing as distinct population segments (DPS) 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***
_X__ ***No***

II.C. Updated Information and Current Species Status

II.C.1. Biology and Habitat

II.C.1.a. Abundance, population trends (e.g. increasing, decreasing, stable), demographic features (e.g., age structure, sex ratio, family size, birth rate, age at mortality, mortality rate, etc.), or demographic trends:

Population trends in *Verbena californica* are not well known due to a lack of consistent monitoring. Even though this species is a biennial or perennial, population sizes may vary somewhat among years. Considering the maximum population size reported for each occurrence, the total number of *V. californica* plants is between 9,000 and 10,000 (Bureau of Land Management [BLM] 1996; California Natural Diversity Database [CNDDB] 2006). Population sizes may have been underestimated, however, because clumps of plants were previously counted as a single individual under the assumption that they had originated from rhizomes, when in fact clumps consist of many separate individuals (BLM 1996; Knox 1998).

When the species was listed in 1998, there were 9 presumed extant occurrences(63 FR 49022); currently, we believe there are 11 presumed extant occurrences (CNDDB 2006; E. Cypher, pers. comm. 2006). No current information on this listed plant has been submitted to the California Natural Diversity Database (CNDDB 2006). Six occurrences have information that is older than 20 years old, and five occurrences have information that is from 10 to 20 years old. An occurrence, as defined by CNDDB, is comprised generally of populations, individuals, or colonies located within one-fourth of a mile of each other (CNDDB 2006). When last surveyed in 1992 and 1997, two occurrences (occurrence 11 and occurrence 12) of *Verbena californica* accounted for approximately three-fourths of the estimated total number of plants, with 4,000 and 3,000 plants, respectively. Only one other occurrence (occurrence 2) had more than 1,000 plants. Five populations were estimated to contain between 100 and 500 plants each, and three populations were estimated to contain fewer than 100 plants each (Knox 1998; A. Franklin, BLM, *in litt.* 2002; CNDDB 2006). Another occurrence is known only from a herbarium specimen collected in 1972 and no details on habitat, population size, or threats are available (CNDDB 2006); therefore, for the purposes of this 5-year review, we do not count this specimen as a known, extant occurrence.

Currently, there are 10 reported occurrences in the Tuolumne River watershed that contain approximately two-thirds of all individuals of *Verbena californica.* One occurrence (occurrence 11), which includes Big Creek and its tributaries, has the largest single population; it accounts for approximately 44 percent of the total number of plants. The six occurrences along Six-Bit Gulch and its tributaries in the Tuolumne River watershed collectively comprise approximately 19 percent of the total number of plants (calculated from figures in CNDDB 2006). The second-largest population of *V. californica* comprises approximately 33 percent of all plants; it is along Andrews Creek and its tributaries and is the sole occurrence in the Stanislaus River watershed (BLM 1996; CNDDB 2006). With the exception of one unreported occurrence, all 11 recently reported occurrences are

either on BLM lands or California Department of Transportation lands purchased for the protection of *V. californica* (A. Franklin, BLM, *in litt*. 2007).

In summary, the distribution of *Verbena californica* is the same today as it was when it was first described in 1942, and 11 occurrences are presumed to be extant (CNDDB 2006). However, other populations possibly may have been extirpated in the past without having been documented. We believe that current populations likely have been fragmented and reduced in size from those that existed historically.

II.C.1.b. Habitat or ecosystem conditions (e.g., amount, distribution, and suitability of the habitat or ecosystem); and spatial distribution:

The entire range of *Verbena californica* is an area of about 9.7 kilometers (6 miles) by 6.4 kilometers (4 miles), or 62 square kilometers (24 square miles). Within this narrow range, the total area occupied by the populations is estimated to be 36 hectares (90 acres) (California Natural Diversity Database [CNDDB] 1997). *Verbena californica* grows at elevations between 259 and 351 meters (850 to 1,150 feet). Most of the occurrences are within the Red Hills Area of Critical Environmental Concern (ACEC) that consists of 7,184 acres (slightly more than 11 square miles) of public land south of the historic town of Chinese Camp in Tuolumne County (BLM 2006). An ACEC is a designated area on BLM lands where special management attention is required (1) to protect and prevent irreparable damage to fish and wildlife; important historic, cultural, or scenic values; or other natural systems or processes or (2) to protect life and safety from natural hazards.

Placer gold mining in the 1850s and 1860s is suspected to have removed some of the *Verbena californica* substrate and buried colonies under rock debris, particularly in the Six-Bit Gulch watershed. Habitat destruction due to historical mining cannot be quantified because *V. californica* had not been discovered at the time of the mining. The effects have been inferred because existing occurrences end abruptly at tailings piles (Rogers 1983), and historical mining activities were documented in the habitat for the species in watersheds where *V. californica* currently occurs.

Verbena californica grows on the margins of perennial streams and in other moist habitats in serpentine areas of the Red Hills (CNDDB 2006). A crucial factor for the persistence of *V. californica* is that the habitat remain moist throughout the summer and autumn (Rogers 1983; BioSystems Analysis, Inc. 1984; Stone 1992; BLM 1996). Knox (1998) determined that soil moisture was the primary factor influencing the distribution and reproduction of this species. Underground springs were responsible for maintaining summer water flow in the stream reaches she studied. Nine of the total 11 *V. californica* occurrences are along streams in *Pinus sabiniana* (foothill pine) woodlands. Two, including Andrews Creek, are in oak woodlands (California Department of Fish and Game 1992;

California Department of Fish and Game 1993; Wilken 1993). According to Knox (1998), the Andrews Creek site also differs from the others in that *V. californica* is not confined to the stream channel, but grows in a moist habitat she described as a "meadow." All occurrences are found between 259 and 351 meters (850 and 1,150 feet) in elevation (CNDDB 2006).

Rhamnus tomentella ssp. *tomentella* (hoary coffeeberry) is the primary shrub species in the canopy of *Verbena californica* habitat (Moldenke 1972; Stone 1992; BLM 1996; Knox 1998). Although *Rhamnus tomentella* is much more widespread than *V. californica,* the former is a useful predictor of occurrence for *V. californica* because it indicates that the site remains moist year-round (A. Franklin, *in litt.* 2002). In general, *Verbena californica* grows where shrubs provide some shade, but Knox (1998) found that a completely closed canopy is detrimental to reproduction. Knox (1998) identified *Carex* species (sedges) and *Juncus* species (rushes) as the best indicators of suitable habitat for *V. californica*. She did not identify particular species in these genera, but others (BioSystems Analysis, Inc. 1984; BLM 1996) have mentioned *Carex nudata* (torrent sedge) as a dominant associate of *V. californica*. *Juncus* and *Carex* species play an important role as associates because their well-developed root systems help to stabilize the soil and prevent the more shallowly-rooted *V. californica* from washing away during flood events (Knox 1998).

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:

At the time of listing, the primary threat to the species was the loss of habitat to the two largest occurrences of *Verbena californica* by development projects, and the loss of habitat by other human activities (63 FR 49022). Currently *V. californica* is still threatened by recreational gold mining and also now is threatened by hydrological changes from adjacent development

Recently, the Red Hills have mostly been used for recreation. Until 1991,the main recreation uses were target-shooting, off-road vehicle driving, camping, hunting, hiking, horseback riding, nature study, wildflower viewing, and hobby prospecting. In 1991, to protect the fragile biological resources of the area, target shooting and off-road vehicle use were prohibited on public land in the Red Hills (BLM 2004). Presently the main recreational activity in the Red Hills is equestrian use. Hiking, mountain biking and spring wildflower viewing are other popular activities (BLM 2007a).

The *Proposed Sierra Resource Management Plan and Final Environmental Impact Statement* (BLM 2007b) limits equestrian and mountain bike use to designated trails. There has been a problem with a proliferation of trails in the

Red Hills, as some riders choose to travel cross country, and others follow the tracks that these riders create. Routes for designated trails are laid out to avoid listed species habitat, but defacto trails have no such safeguards. The provision limiting riders to designated trails should help reduce impacts to the listed plant species in the Red Hills, especially from horse hoof trampling (BLM 2007b).

Today, almost all of the extant occurrences are located on public land, where their habitat is protected from the direct effects of development.

Placer gold mining, which includes panning and dredging along streams, is still a threat to occurrences of *Verbena californica* on lands administered by the BLM (J. Willoughby, BLM, *in litt.* 1990; California Department of Fish and Game 1993; A. Franklin, *in litt.* 2007). In the course of gold panning, the plants themselves can be trampled or dislodged and soil can be compacted. Dredging can remove plants directly, bury others under debris, or change hydrology. Four main creeks drain the Red Hills. Two of these, Six Bit Gulch and tributaries, and Poor Man's Gulch main stem, have been closed to suction dredging year round by the State of California. The other two creeks, Big Creek and Andrew Creek, have no restrictions on suction dredging imposed by the State. All four drainages support *Verbena californica.*

Hydrological changes remain a threat to the Andrews Creek occurrence. Although the *Verbena californica* population is no longer threatened directly by residential development, runoff from the proposed houses and golf course on the table land above the drainage may affect the riparian area. Lowering of the water table that feeds springs in the riparian area is also a concern (California Department of Fish and Game 2005).

The direct threat from housing development has decreased since listing. The *Verbena californica* habitat that was formerly on private land within the Andrews Creek drainage became public land in 2000. The acquisition was a cooperative effort among the BLM, the Tuolumne County Land Trust, the Trust for Public Lands, the California Wildlife Conservation Board, the Packard Foundation, and the California Department of Transportation (A. Franklin, *in litt.* 2002). In 2004, the Tuolumne County Land Trust acquired part of the Big Creek population with funding from the California Department of Transportation (E. Cypher, California Department of Fish and Game, pers. comm. 2006, 2007).

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

Overutilization is not currently known to be a factor for *Verbena californica*.

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

In the final listing rule, we stated that virtually all the information that we received or located regarding beneficial and adverse livestock grazing effects on the species was anecdotal. However, repeated observations over time coupled with knowledge of historical land uses has validity even though that information was not scientifically collected. We further concluded that heavy grazing and trampling threatened *Verbena californica* (63 FR 49022)

Currently, grazing on the BLM lands in the Red Hills occur within two leases, one of which has *Verbena californica*. This lease is for 72 animal unit months over 1,178 acres within the Red Hills ACEC. Monitoring of *V. californica*, which began in 1998, uses a comparison of 2 grazed and 2 ungrazed (fenced) plots to evaluate grazing effects (BLM 2007a). No clear pattern of grazing effects has emerged from monitoring, i.e., it is not clear that the grazed or ungrazed plots are resulting in greater viability (BLM 2007a). However, grazing clearly does impact plants of *V. californica*. Clipped stems of *V. californica* have been observed both in the experimental plots and in other areas subjected to grazing. Trampling damage has been observed especially for the wet ground where *V. californica* occurs. The present grazing regime is being maintained and the populations appear stable. No new grazing leases will be authorized in the Red Hills (BLM 2007a, USFWS 2007).

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

Federal Laws

The Endangered Species Act (ESA) is the primary Federal law that provides protection for *Verbena californica* There are no completed regional or county-wide habitat conservation plans (HCPs) authorized under ESA section 10 or Natural Community Conservation Plans (NCCPs) authorized under State law (see below) in Tuolumne County, thereby leaving populations on private land without protection under these laws. .Section 7 in some circumstances provides greater protection to plants through its requirement for Federal agencies to consult with the Service regarding potential impacts of their projects (including permits and funding of non-Federal actions) to listed species. Almost all occurrences of this species are either on Federal lands or on California Department of Transportation lands that are slated to be transferred to the BLM in the future. However, at least one population is on non-Federal land that could be appropriate for an HCP, but none is currently being developed.

The National Environmental Policy Act (NEPA) (42 U.S.C. 4321 *et seq.*) may afford some protection to populations affected by Federal activities. The NEPA requires all Federal agencies to formally document, consider, and publicly disclose the environmental impacts of Federal actions and management decisions affecting the human environment, but NEPA does not require or guide mitigation for impacts.

Bureau of Land Management (BLM) policy includes special status plant management (BLM Manual Handbook 6840-1) and land use plans written for each resource area. Because prominent land transfers of occupied habitat to BLM-administration had not occurred when the species was listed in 1998, the final listing rule did not mention regulatory mechanisms protecting *Verbena californica* occurrences on BLM lands (63 FR 49022). Today, almost all of the occurrences of *Verbena californica* occur in the Red Hills in Tuolumne County, on BLM property (CNDDB 2006; A. Franklin, BLM, pers. comm. 2007). Occurrences of *V. californica* on BLM lands derive protection from land use plans that establish allowable resource uses, resource condition goals and objectives to be attained, program constraints and general management practices needed to attain the goals and objectives, general implementation sequences, and intervals and standards for monitoring and evaluating the plan to determine its effectiveness and the need for amendment or revision (43 CFR 1601.0-5(k)). In 1985, the BLM designated the southern 1,821 hectares (4,500 acres) of the Red Hills as an Area of Critical Environmental Concern (ACEC). In 1993, the BLM expanded the ACEC to the entire 2,873 hectares (7,100 acres) that was then public land in the Red Hills (Hastey 1993). The purpose of the designation is to protect the rare plant species found there, the unusual serpentine soils that provide habitat for unique flora of the area, habitat for the rare minnow known as the Red Hills roach (*Lavinia symmetricus*), and to wintering habitat for the threatened bald eagle (*Haliaeetus leucocephalus*) (BLM 2004).

The BLM's Sierra Proposed Resource Management Plan and Final Environmental Impact Statement includes actions for the Red Hills ACEC (BLM 2007b). The preferred alternative authorizes the addition of 1,143 hectares (2,824 acres) to the current Red Hills ACEC that has 2,907 hectares (7,184 acres), the withdrawal of mineral entry within the enlarged ACEC (including Andrews Creek), and the development of a new Red Hills ACEC Plan (BLM 2007b). Withdrawal from entry to mining stops exploration for "locatable" minerals, as defined in mining law, such as gold still in the original rock matrix.

It is quite unlikely for a mineral deposit to prove commercially viable (profitable under the "prudent man rule") in the Red Hills because of the local geology. Existing laws, however, allow individuals or companies to patent mining claims on public lands (i.e., take ownership of public land), so long as it remains "open to entry" for mining. Such laws supersede designations such as the Area of Critical Environmental Concern, which applies only to discretionary uses (Farve 1987). Withdrawal of lands from potential mining claims is possible only if action is taken by BLM administrators in Washington, D.C., and approved by the Department of Interior; it is beyond the authority of the Folsom Field Office, which oversees the ACEC (A. Franklin, BLM, pers. comm. 2001; A. Franklin, *in litt.* 2002). The request to have an area withdrawn from open entry for mining can be initiated at the Folsom Office, which has no record of such a request ever being made. The BLM does have oversight over any mechanized mining

operations on public lands within an Area of Critical Environmental Concern. Before conducting such activities, a plan of operations must be filed for any mechanized mining in the Red Hills ACEC (Hastey 1993), and the plan could be rejected if it adversely affected federally-listed or sensitive species.

Section 404 of the Clean Water Act may afford some protection to *Verbena californica.* The U.S. Army Corps of Engineers (Corps) issues permits for the discharge of dredged or fill material into navigable waters of the U.S. The Corps interprets "the waters of the United States" expansively to include not only traditional navigable waters, but also other defined waters that are adjacent to or hydrologically connected to traditional navigable waters. Before issuing a 404 permit to a project applicant that may affect federally-listed species, the Corps is required under section 7 of the Endangered Species Act to consult with the U.S. Fish and Wildlife Service. This protection would not continue if the species were delisted. However, recent Supreme Court rulings have called into question the Corps' definition of Waters of the U.S. On June 19, 2006, the Supreme Court vacated two district court judgments that upheld this interpretation as it involves two cases involving "isolated" wetlands. Currently, the Corps regulatory oversight of intermittent streams is in doubt because of their "isolated" nature.

California State Laws

The State's authority to conserve plants is comprised of four pieces of legislation: the California Endangered Species Act (CESA), the Native Plant Protection Act (NPPA), the California Environmental Quality Act (CEQA), and the Natural Community Conservation Planning Act (Morey and Ikeda 2001).

Verbena californica was State-listed as threatened in1994. The CESA (California Fish and Game Code, section 2080 *et seq*.) and NPPA (Division 2, Chapter 10, section 1908) prohibit the unauthorized take of State-listed threatened or endangered plant species. The State CESA take prohibition includes plants; however, landowners are exempt from this prohibition for plants taken through habitat modification. The landowner is 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 (NPPA Division 2, Chapter 10, section 1913). We do not consider salvage to provide adequate protection.

The California Environmental Quality Act (CEQA) (chapter 2, section 21050 *et seq.* of the California Public Resources Code) requires government agencies to consider and disclose environmental impacts of projects and to avoid or mitigate them where feasible. Under CEQA, public agencies must prepare environmental documents to disclose environmental impacts of a project and to identify conservation measures and project alternatives. Through this process, the public can review proposed project plans and influence the process through public comment. However, CEQA does not guarantee that such conservation measures will be implemented.

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

Other threats cited in the 1998 final rule included off-highway vehicle use, trash dumping, and susceptibility of populations to extirpation from random demographic, environmental, or genetic events (63 FR 49022). *Verbena californica* is still threatened by susceptibility of populations to extirpation from random demographic, environmental or genetic events. In addition, competition from nonnative plants is a new threat not included in the original listing.

We have no information to indicate that imminence or magnitude of the threat of extirpation from random demographic, environmental, or genetic events has changed since listing. As discussed in the final listing rule, small population size increases the susceptibility of a population to extirpation from random demographic, environmental and/or genetic events (Shaffer 1981, 1987; Lande 1988; Groom *et al.* 2006). When last surveyed in 1992 and 1997, two occurrences (occurrence 11 and occurrence 12) of *Verbena californica* accounted for approximately three-fourths of the estimated total number of plants, with 4,000 and 3,000 plants, respectively. Only one other occurrence (occurrence 2) had more than 1,000 plants. Five populations were estimated to contain between 100 and 500 plants each, and three populations were estimated to contain fewer than 100 plants each (Knox 1998; A. Franklin, BLM, *in litt.* 2002; CNDDB 2006). In this 5-year review, populations of 200 growing plants or less (not counting ungerminated seeds) are considered to be small, in keeping with Menges' (1992) calculation that populations of this size are especially vulnerable to even moderate levels of environmental uncertainty. *Verbena californica* has population sizes of 100 plants or fewer for at least 3 of the 11 recently-observed occurrences, with maximum populations of 70 plants or fewer. Another three occurrences range in size from 100 to 200 plants at their maximum (CNDDB 2006). The combination of few populations, small range, and restricted habitat still renders *Verbena californica* susceptible to extirpation due to random events, such as flood, drought, disease, or other factors (Shaffer 1981, 1987; Groom *et al.* 2006).

Small populations may also be subject to increased genetic drift and inbreeding (Menges 1991; Ellstrand and Elam 1993). Populations that are continually small in size are particularly susceptible to genetic changes due to drift. However, drift may also cause genetic changes with populations that occasionally fluctuate to small sizes (e.g., undergo population bottlenecks). Increased homozygosity (reduced genetic variation) resulting from genetic drift and inbreeding may lead to a loss of fitness (ability of individuals to survive and reproduce) in small populations. In addition, reduced genetic variation in small populations may make any species less able to successfully adapt to future environmental changes (Ellstrand and Elam 1993).

Competition from nonnative *Cynodon dactylon* (Bermuda grass) and *Panicum* species (panic grass) is a concern at Andrews Creek and at one other occurrence (Knox 1998, BLM 1998). The nonnative *Centaurea solstitialis* (star thistle) has become established near two *Verbena californica* occurrences in the Six-Bit Gulch watershed, although the differing habitat requirements of the two species may prevent any competition between them (A. Franklin, *in litt.* 2002).

II.D. Synthesis

Although almost all the presumed extant occurrences of *Verbena californica* are now on public land, hydrological changes due to impacts from adjacent development, recreational mining, grazing, trampling from livestock, competition from nonnative plants, and the risk of extirpation from random demographic, environmental, or genetic events still threaten the species. No recent survey information has been submitted to the California Natural Diversity Database for this species (CNDDB 2006). When last surveyed, two occurrences of *V. californica* accounted for approximately three-fourths of the estimated total, with 4,000 and 3,000 plants, respectively; only one other occurrence had more than 1,000 plants. Almost all of these occurrences are now located on public land, where their habitat is protected from the direct effects of development. When last surveyed in 1992 and 1997, two occurrences (occurrence 11 and occurrence 12) of *Verbena californica* accounted for approximately three-fourths of the estimated total number of plants, with 4,000 and 3,000 plants, respectively. Only one other occurrence (occurrence 2) had more than 1,000 plants. Five populations were estimated to contain between 100 and 500 plants each, and three populations were estimated to contain fewer than 100 plants each (Knox 1998; A. Franklin, BLM, *in litt.* 2002; CNDDB 2006) Therefore, based on continuing habitat threats and risks associated with small population size, we consider that *Verbena californica* still meets the definition of threatened and recommend no change in its ESA listing status at this time.

III. RESULTS

III.A. 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*
__X_ No change is needed

III.B. New Recovery Priority Number __14__

The current status of *Verbena californica* has improved since the time of listing in 1998. It is recommended that the recovery priority number be changed to 14. The direct threat from housing development has decreased due to cooperative efforts between public and private entities to acquire almost all of the occurrences that were on private land.

IV. RECOMMENDATIONS FOR FUTURE ACTIONS -

■ Complete and publish the draft recovery plan, and approve a final recovery plan.

■ Work with the BLM to revise the Red Hills ACEC management plan to include new data, new listings of species under the Endangered Species Act, newly acquired lands, other lands added to the ACEC because of newly developed resource information.

■ Encourage the BLM to withdraw habitat from mining patents.

■ Establish reliable baseline data for monitoring plant occurrences. Monitor the status and trend of *Verbena californica* in order to estimate current population sizes, the number and distribution of populations, and whether the species is stable, increasing, or declining.

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

Current Classification _Threatened_
Recommendation resulting from the 5-Year Review

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

Review Conducted By _Sacramento Fish and Wildlife Office staff_

FIELD OFFICE APPROVAL:

ACTING

Lead Field Supervisor, Fish and Wildlife Service

Approve _____ Date 1·8·08

REGIONAL OFFICE APPROVAL:

Lead Regional Director, Fish and Wildlife Service

Approve _____ Date 1/10/08