CANDIDATE ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Sedum eastwoodiae*

COMMON NAME: Red Mountain stonecrop

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: January 2003

STATUS/ACTION:
___ New candidate
_X_ Continuing candidate
- _X_ Non-petitioned
- ___ Petitioned - Date petition received: _____
  - ___ 90-day positive - FR date: _____
  - ___ 12-month warranted but precluded - FR date: _____
  - ___ Is the petition requesting a reclassification of a listed species?
- ___ Listing priority change
  - Former LP: ___
  - New LP: ___

Latest date species first became a Candidate: July 1, 1975
__ Candidate removal: Former LP: ___
- __ A - Taxon more abundant or widespread than previously believed or not subject to a degree of threats sufficient to warrant issuance of a proposed listing or continuance of candidate status.
- ___ F - Range is no longer a U.S. territory.
- ___ M - Taxon mistakenly included in past notice of review.
- ___ N - Taxon may not meet the Act=s definition of Aspecies.@
- ___ X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Crassulaceae (Stonecrop Family)

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE:
Mendocino County, California

CURRENT STATES/TERRITORIES/COUNTRIES OF OCCURRENCE:
Mendocino County, California

LEAD REGION CONTACT: Diane Elam (CNO), 916-414-6464; Scott McCarthy (RO), 503-231-6131

LEAD FIELD OFFICE CONTACT: Arcata Fish and Wildlife Office, David Solis, 707-822-7201

BIOLOGICAL INFORMATION:

Nathaniel Britton described this taxon as *Gormania eastwoodiae* in 1903 from specimens collected by Alice Eastwood from Red Mountain, Mendocino County, California (Britton 1903). Fredrick Feede changed the treatment to *Cotyledon mendocinoana* (Feede 1904). Alwin Berger changed the treatment to *Sedum eastwoodiae* (Berger 1930). Robert Clausen reduced the species, renaming the species *Sedum laxum* ssp. *eastwoodiae* (Clausen 1975) using the same type material as used by Britton. Melinda Denton returned the species to *Sedum eastwoodiae* (Denton 1993).

The species is known from very restrictive occurrences in almost barren, rocky openings in lower montane coniferous forest habitats associated with serpentine-derived soils on Red Mountain. The species has not been found anywhere other than on lands administered by the Bureau of Land Management on Red Mountain. This species is found between 1,128 to 1,219 meters (3,700 to 4,000 feet) in elevation (California Department of Fish and Game (CDFG) 1997), and the 1994 population estimate for *Sedum eastwoodiae* was less than 1,000 individuals (Dr. Michael Baad, California State University-Sacramento, in litt. 1994).

Dr. Baad (pers. comm., 2002) annually monitored eight 5 square meters (16 square feet) permanent plots on Red Mountain from 1987 to 1998. Canopy coverage in the plots decreased from a high of 630 square centimeters (cm^2) (98 square inches (in^2) 1988 to a low of 415 cm^2 (64 in^2) in 1993, rebounding to 627 cm^2 (97 in^2) in 1995 (Baad 1998). Dr. Baad concluded that no dramatic changes have occurred in the *Sedum eastwoodiae* populations on Red Mountain since 1987, and results showed no overall long-term trends. Fluctuations in population parameters have been caused largely by normal variation in the physical and biological environments of the plants. From 1987 through 1998, the plant=s populations have experienced little human impact (Baad 1998).

THREATS:

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

The primary threat to this species is the potential for future mining activities. Whether or not mining occurs depends on the future economic feasibility and demand for minerals. Although mining does not now occur in the species= habitat, potential future surface nickel and chromium mining threaten this species ((Dr. M. Baad, in litt. 1994; CDFG 1997; Finan 1994; Jennifer Wheeler, Bureau of Land Management (BLM), pers. comm., 2001)).

There are 60 mining claims on Red Mountain, which contains the majority of the *Eriogonum kelloggii* populations (BLM 2001), but a single claimant holds all of these claims. Most likely, any mining operation on Red Mountain or Little Red Mountain would be an open-face bench type that would involve removal and processing of the mineral-bearing ore which contains the nickel, chromium, and cobalt (BLM) 1988). All vegetation and habitat for *Sedum eastwoodiae* would be removed. Ore would be processed on public or adjacent private lands. Overburden and processed soil disposal areas would be needed, along with a transportation system, perhaps involving cable trams across Cedar Creek Canyon (BLM 1988). The holder of the mining claims could engage in a validation process of their mining claims and thereby be granted patent to the lands on Red Mountain. If the lands were to be patented into private ownership and mining commenced, neither the Service nor the BLM could offer any protection of the land

beyond elevating the profile and plight of the plant species in a proposed or final rule.

Although no scientific evidence is available to suggest such secondary effects, additional biological values of the habitat may be lost through habitat fragmentation, alteration of hydrology, and increases in airborne particulates that may depress pollinator success (Saunders et al. 1991; Meffe and Carroll 1997).

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

None known at this time.

C. Disease or predation.

None known at this time, but some unknown rodent species has been known to sever the flowering stems before the plant is able to set seed (Ken Fuller, Service, pers. obs. 1994).

D. The inadequacy of existing regulatory mechanisms.

This taxon is not listed by the State of California and receives little protection under existing State laws. This plant is not listed as a sensitive species by the BLM.

E. Other natural or manmade factors affecting its continued existence.

The small number of individual plants and the small number of populations make this species vulnerable to random environmental events.

FOR RECYCLED PETITIONS:

a. Is listing still warranted? _____

b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? _____

c. Is a proposal to list the species as threatened or endangered in preparation? _____

d. If the answer to c. above is no, provide an explanation of why the action is still precluded.

LAND OWNERSHIP: The three populations are found on lands administered by the BLM.

PRELISTING: There are no conservation agreements currently in place for this species. It is unlikely that the development of a conservation agreement would provide any protection against the future patenting of exiting mining claims. The BLM Arcata Field Office staff and manager support the Service listing the taxon.

REFERENCES:

Baad, Michael F. Ph.D. 1994. Species expert, California State University. Personal communication.

_____. 1994. Species expert, California State University. Letter to the Service dated November 28, 1994.

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Berger, A. 1930. In Engler=s Nat. Pflanzenam., ed. 2, 18a:45.

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Bureau of Land Management. 1988. Department of the Interior, Final Environmental Impact Statement, Wilderness Recommendations for the Arcata Resource Area, Red Mountain WSA (CA-050-132). 101 pp.

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California Department of Fish and Game. Natural Diversity Data Base, an electronic database. 1997. Sacramento, California.

Clausen, R. 1975. Sedum of North America. Pages 398-403.

Denton, M. 1993. The Jepson Manual of Higher Plants of California. James C. Hickman, ed. Pages 531-532.

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Fuller, Ken. 1994. Botanist, Fish and Wildlife Service, Sacramento, California. Personal communication.

Meffe, G.K. and C.R. Carroll. 1997. Principles of Conservation Biology, Second edition. Sinauer Associates, Inc. Sunderland, Massachusetss. 729 pp.

Saunders, D.A., R.J. Hobbs, and C.R. Margules. 1991. Biological consequences of ecosystem fragmentation: A review. Conservation Biology 5:18-32.

Wheeler, Jennifer. 2001. Botanist, Bureau of Land Management, Arcata Resource Area Office, California. Personal communication.

LISTING PRIORITY (* after number)

THREAT

Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3
	Non-imminent	Monotypic genus	4
		Species	5*
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude:

Imminence:

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Steve Thompson _____ March 6, 2003 ___
Acting Regional Director, Fish and Wildlife Service Date

Concur: _____ _____ _____
Director, Fish and Wildlife Service Date

Do not concur:_____ _____
Director, Fish and Wildlife Service Date

Director's Remarks: _____

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_____

Date of annual review: February 2003 _____
Conducted by:_____

Comments: _____

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