

**ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM**

Plant Abstract

Element Code: PDPGN083Z0
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Eriogonum mortonianum*
COMMON NAME: Morton Wild Buckwheat
SYNONYMS: Fredonia Buckwheat
FAMILY: Polygonaceae

AUTHOR, PLACE OF PUBLICATION: Reveal, J.L. 1974. *Brittonia* 26 (1)90-94.

TYPE LOCALITY: Arizona: Mohave Co.: along Arizona Hwy 389, 4.5 – 5 mi SW of Fredonia along U.S. Hwy 89A.

TYPE SPECIMEN: MNA (sn). J.L. Reveal 2904. 16 August 1972. Holotype. Isotypes include NY 323400. Other isotypes at ARIZ, ASU, RENO, MICH, RM, UTC, and BRY.

TAXONOMIC UNIQUENESS: A distinct species in a genus of about 225 species mainly in western North America.

DESCRIPTION: Erect shrub up to 80.0 cm (32.0 in.) tall and 50.0-100.0 cm (20.0-40.0 in.) across. Leaves elliptic, 1.5-5.0 cm (0.6-2 in.) long and 0.6-1.5(-2.2) cm (0.24-0.87 in.) wide; leaf margins often inrolled, sometimes plane. Stems and branches yellowish-green; stems and leaves glabrous (hairless). Inflorescence branched, 15.0-25.0 cm (6.0-10.0 in.) long. Flowers vary in color from bright yellow to white, 2.5-3.0 mm (0.1-0.12 in.) long. Odor-free. This description has been revised from the descriptions given in both the *Flora of North America* (Reveal 2005) and the *Intermountain Flora* (Reveal 2012) based on specimens collected by Rink in September of 2015 and curated at ASC.

AIDS TO IDENTIFICATION: At least three species of shrubby *Eriogonum* occur together in the same habitat. The leaves of *E. t. atwoodii* are tomentose (matted hair) underneath, *E. mortonianum* has glabrous (unhaired) leaves underneath, and *E. corymbosum* is densely white tomentose beneath and variably tomentose above. *Eriogonum mortonianum* also differs from *Eriogonum thompsoniae* var. *atwoodii* in having woody stems well above ground, mostly yellow flowers, and leaves up to 2.2 cm broad. *Eriogonum mortonianum* differs from *Eriogonum corymbosum* with mostly yellow flowers and a more open inflorescence.

Reveal thought that *Eriogonum mortonianum*, is related to *E. smithii*, an edaphic endemic to sand in central Utah, however, Rink and Fertig believe it may be of recent hybrid origin from local parents. It differs from *E. smithii* in that it is much larger, has a more highly branched inflorescence, smaller flowers and involucre, and yellowish green stems and branches (Reveal 1974). The basic habitat of the two species is different. *Eriogonum mortonianum* is found on reddish clay hills where the entire plant is exposed, while, *E. smithii* is found in deep, moving "blow sand," which may cover much of the plant encouraging a much more diffuse growth habit than in *E. mortonianum* (Reveal 1974). Reveal noted that *Eriogonum mortonianum* was hybridizing with *E. thompsoniae* var. *atwoodiae* and took this as evidence that *E. t. var. atwoodii* was the result of hybridization between *E. mortonianum* and *E. t. var. albiflorum*. Rink and Fertig believe that this backcrossing may be evidence that *E. mortonianum* is the hybrid result of crossing between *Eriogonum thompsoniae* var. *atwoodii* and, perhaps, *Eriogonum corymbosum*.

ILLUSTRATIONS: Line drawing (Reveal 1974:91)
Line drawing (USFWS)

Color photos of plant, flowers, habitat ([see Rink and Fertig 2016](#))

TOTAL RANGE: Northwest Arizona; red clay hills 4 to 5 miles southwest of Fredonia along Highway 389, Mohave County, Arizona.

RANGE WITHIN ARIZONA: See "Total Range."

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Woody Perennial

PHENOLOGY: Flowers and sets seed July - October.

BIOLOGY: Reveal and Spellenberg 1976: chromosomes, n=20. Readily hybridizes with *E. thompsonae* var. *atwoodii*.

HABITAT: Red clay hills of very shallow gypseous soils on shale uplands.

ELEVATION: 4,650 - 4800 feet (1415 – 1465 m).

EXPOSURE: All

SUBSTRATE: Red gypseous clay of the middle red member of the Moenkopi Formation.

PLANT COMMUNITY: Great Basin Desertscrub with saltbush, sagebrush, and Mormon tea.

POPULATION TRENDS: Only one population is known, having thousands of plants. Appears to be stable with several size/age classes represented (Phillips et al. 1980, Rink and Fertig 2016).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[Category 2 USDI, FWS 1983]
[Category 1 USDI, FWS 1980]
[PE USDI, FWS 1976]
[PTN-E USDI, FWS 1975]

STATE STATUS: Salvage Restricted (ARS 1993)

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1990, 1999)

MANAGEMENT FACTORS: Right-of-way maintenance of Highway AZ 389; livestock use and associated developments. Highly restricted distribution (only one known population).

CONSERVATION MEASURES TAKEN: none

SUGGESTED PROJECTS: Monitor population. Establish an agreement with the Arizona Department of Transportation concerning road maintenance at this site. Establish a Conservation Agreement with the Kaibab Paiute Band. Studies concerning hybridization. Studies on habitat requirements. Demographic monitoring to determine longevity of plants and weak links in its life history (such as seedling establishment or survival from seedling to mature plant). Additional surveys needed to the south and west.

LAND MANAGEMENT/OWNERSHIP: BIA - Kaibab-Paiute Reservation; Arizona State Land Department (highway right-of-way).

SOURCES OF FURTHER INFORMATION**LITERATURE CITATIONS:**

- Arizona Revised Statutes, Chapter 7. 1993. Arizona Native Plant Law. Appendix A:11.
Federal Register / Vol. 74, No. 240 / Wednesday, December 16, 2009 / Proposed Rules
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- Rink, G.R. and W. Fertig. 2016. Survey for *Eriogonum mortonianum* (Fredonia buckwheat) Polygonaceae Winter, 2015 Final Section 6 Report Reference #: 2014-2016-06, unpublished report to the US Fish and Wildlife Service.
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- USDI, Fish and Wildlife Service. 1996. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species; Notice of Review; Proposed Rule. Federal Register 61(40):7596-7613.

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ADDITIONAL INFORMATION:

Phillips (1980) recommended listing as Endangered under the Endangered Species Act.

May/June 1992 many plants within the right-of-way of Highway AZ 389 were destroyed during road maintenance activities.

1992-05-21 (BGP)

1992-09-14 (BKP)

2001-12-20 (SMS)

2015-11-20 (Rink)

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