ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract **Element Code:** PDPGN0P0Z0
Data Sensitivity: YES

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Rumex orthoneurus*
COMMON NAME: Blumer's Dock, Chiricahua Dock
SYNONYMS:
FAMILY: Polygonaceae

AUTHOR, PLACE OF PUBLICATION: Rechinger, K.H. 1936. Repert. Spec. Nov. Regni Veg. 40:294.

TYPE LOCALITY: Barfoot Park, Chiricahua Mountains, Cochise County, Arizona. Blumer.

TYPE SPECIMEN: NY, Z, UT, MW. Blumer 1949.

TAXONOMIC UNIQUENESS: Lehr (1978) recognizes 15 species of *Rumex* occurring in Arizona.

Relationship to *Rumex occidentalis*: Fletcher suggested that *R. orthoneurus* is very closely related to *R. occidentalis*, a species distributed throughout North America. He believes the two taxa are commonly confused and that many specimens assigned to *R. occidentalis* are actually *R. orthoneurus*. See Fletcher (1982) for discussion.

Relationship to other *Rumex* species: In 1979, Dawson reviewed a total of 15 specimens of *R. orthoneurus* from seven locations. Because he based his description on only one specimen, he believed that his treatment should be accepted with the reservation that additional material is needed to be certain of the delimitation of the species from R. densiflorus, R. pycnanthus, and *R. praecox* and its relationships to them. For a description of the differences between *R. orthoneurus* and *R. densiflorus*, see Rechinger and Dahlgren (1937).

DESCRIPTION: A large, long-lived herbaceous perennial plant that can reach a height of 1.2 to 2 m (3.9 to 6.6 ft). The basal leaves are oblong, large (as much as 45 cm (18 in.) long and 18 cm (7.1 in.) wide) and clustered, are semi-succulent and bright green (with a tinge of yellow) with conspicuous secondary veins that leave the midvein at a right angle. The cauline (stem) leaves are alternate and become progressively thinner, shorter and acuminate (more sharply pointed) up the stem. A membranous stipular sheath wraps around the stem at the base of the leaf. Flowers lack petals (typical of the buckwheat family) and have a cup-like involucre; the inflorescence is a large, narrow panicle occupying the upper half of a tall stalk. The seeds (achenes) are ovate, brown, and 2.6-4.0 mm (0.1-0.16 in.) long. Capsule valves are grainless. Plants have a creeping rootstock (rhizomes).

AIDS TO IDENTIFICATION: Secondary leaf veins perpendicular (or nearly so) to the midvein; secondary veins nearly parallel. Leaves somewhat more succulent than other *Rumex*. For a discussion of the study of leaf venation in *Rumex* to determine the variation in leaf veins as pertaining to species distinction, see Malusa et al. 1992. *R. occidentalis* looks very similar to *orthoneurus* but *occidentalis* has a tap root compared to the rhizome creeping-like roots of *orthoneurus*.

ILLUSTRATIONS: Line drawing (Rechinger and Dahlgren 1937:97).

TOTAL RANGE: East-central to southeastern Arizona (depending on taxonomic interpretation). Huachuca Mountains in Santa Cruz County (historic); Chiricahua Mountains in Cochise County; Sierra Ancha Mountains in Gila County. Also reported from the Gila, Baldy and Pecos Wilderness Areas in New Mexico.

Populations "**in dispute**" include those in the White Mountains (Apache County) and Pinaleno Mountains (Graham County) in Arizona, and the Mogollon, Black and Gila Mountains in New Mexico.

Introduced populations occur on the Tonto National Forest in drainages below the Mogollon Rim and on the Coronado National Forest in several spring sites along the crest of the Chiricahua Mountains.

RANGE WITHIN ARIZONA: See "**Total Range**."

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous Perennial

PHENOLOGY: Flowers late July to mid-August; sets seed late August. May flower when 30-60 cm (12-24 in.) tall.

BIOLOGY:

HABITAT: Mid- to high-elevation wetlands with moist, organic soil adjacent to perennial springs or streams in canyons or meadow situations.

R. Fletcher has suggested that *R. orthoneurus* is intolerant of shading and is a poor competitor with other species in its habitat. However, at some sites, such as in the lower Rustler Park drainage and at Workman Creek, the plant seems to grow in deep, shaded canyons.

ELEVATION: 4,480 - 9,660 ft. (1,366 - 2,946 m).

EXPOSURE: Various.

SUBSTRATE: Moist, organic, loamy soil (parent material not important).

PLANT COMMUNITY: Madrean Subalpine Grassland meadows (within the Madrean Montane Conifer or Mixed Conifer forests) or Interior Southwestern Riparian Deciduous Forest. Associated species include *Helenium hoopesii*, sedges and rushes (*Carex* and *Juncus* species). Often sympatric with *R. occidentalis*.

POPULATION TRENDS: Species is declining. Extirpated from Rose Canyon in the Sierra Ancha Mountains by road construction. Extirpated from Barfoot Park (re-established from plants from Rustler Park) probably due to livestock grazing.

Workman Creek population has declined due to road maintenance activities, livestock grazing, and recreation. However, Gobar (1990) reports the population in Workman Creek is "doing very well" and is scattered throughout below the falls. Both large and small plants were observed, including seed stalks on most of the larger plants. The natural population in Reynolds Creek and the introduced populations in Canyon Creek Spring, and Pine Creek are "doing well." Introduced populations at Bray Creek, Ellison Creek, Dude Creek, Tonto Creek, Tonto Spring, and Weber Creek were damaged (eliminated?) by the flooding, erosion and mud slides that occurred after the Dude and Bray fires in 1990. Insects heavily impacted the introduced plants in See Canyon and Christopher Creek. Cattle grazing impacted the introduction sites in Chase Creek, Christopher Creek, Horton Spring, and Cold Springs Canyon.

Populations on the Coronado and Tonto National Forests in AZ are being monitored under a conservation strategy. Population trends in general are unknown due to lack of monitoring and threat assessment at other sites. (Brooks 1999).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1999)
[PT USDI, FWS 1998]
[C USDI, FWS 1996]
[C1 USDI, FWS 1980]
[PE USDI, FWS 1976]
[PTN-E USDI, FWS 1975]

STATE STATUS: Highly Safeguarded (ARS, ANPL 1993)

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

MANAGEMENT FACTORS: Species occurs in mid- to high-altitude wetlands known to be declining in the southwest. Habitat area is small. Degradation of habitat due to trampling and grazing by livestock; recreation (trails, campsites); spring developments; road

construction and maintenance; de-watering of habitat; mining; direct and indirect affects of fire (particularly flooding, erosion and mud slides).

Livestock grazing is the most common management conflict (Brooks 1999). This is a very palatable species to livestock and wildlife.

CONSERVATION MEASURES TAKEN: A wood pole fence was built around Barfoot Spring in 1983(?) after plants were re-established from plants from Rustler Park. During 1991, all of Barfoot Park was fenced excluding campers and livestock to enhance meadow habitats. Lower Rustler Spring site was fenced in the 1960s; and later, a barbed wire fence was built around Rustler Park campground area to exclude cattle. Erosion control structures were built at Rustler Park in 1991 to prevent down-cutting of the stream channel.

Transplant/introduction program begun by the Tonto and Coronado National Forests. All plants used in the introductions along the Mogollon Rim were grown at Desert Botanical Gardens (Phoenix) from seed obtained from Workman and Reynolds creeks, Sierra Ancha Mountains.

SUGGESTED PROJECTS: Taxonomic issues need to be resolved. Secure water rights. Re-survey historic drainages and associated springs; accurately map distribution and record negative searches. Set clear goals for transplanting. Summarize the site characteristics and site ecological setting of introduced populations and correlate with success.

Increase awareness of highway/road maintenance crews; develop livestock management plans and *Rumex* management plan for Tonto National Forest; monitor natural and introduced populations (See Coronado National Forest Recovery Plan).

LAND MANAGEMENT/OWNERSHIP: BLM - Tucson Field Office; USFS - Apache-Sitgreaves, Coconino, Coronado and Tonto National Forests; Private.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

Arizona Revised Statutes, Chapter 7. 1993. Arizona Native Plant Law. Appendix A:2.

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USDI, Fish and Wildlife Service. 1975. Threatened or Endangered Fauna or Flora. Federal Register 40(127):27828.

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USDI, Fish and Wildlife Service. 1999. Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Recycled Petitions; Annual Description of Progress on Listing Actions; Proposed Rule. Federal Register 64(205):57546.

Van Devender, T.R. 1980. Status report for *Rumex orthoneurus*. Prepared for Arizona Natural Heritage Program. Arizona Game and Fish Department files. Phoenix, Arizona.

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ADDITIONAL INFORMATION:

The taxonomic identity of the collections from the White Mountains (Phelps Cabin Research Natural Area, Sheeps Crossing and upper Little Colorado River), Pinaleno Mountains (Hospital Flat) and the Pat Scott area of the Huachuca Mountains remains unresolved. However, David Mount (University of Arizona) has conducted taxonomic studies of *Rumex* through molecular genetics (1991). He has found that all individuals within a mountain range are very similar genetically. However, differences among mountain ranges are readily discernible genetically; each having a unique DNA fingerprint. Though his conclusions are not finalized, his work suggests that the Chiricahua and Sierra Ancha mountain populations are certainly *orthoneurus*, the Pinaleno Mountain population is possibly *orthoneurus*, and the White Mountains populations is most likely *occidentalis*.

Revised: 1990-10-17 (SR)
1992-09-21 (BKP)
1992-10-19 (PLW)
1993-06-22 (SSS)
1997-11-12 (SMS)
1998-04-03 (SMS)
1999-12-20(DJG)
2002-01-04 (SMS)