

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

Plant Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Marina diffusa* (Moric.) Barneby

COMMON NAME: Escoba, Escobilla, Escopeta, Arenilla, Hipechila, Popatillo, Spreading
False Prairie-Clover

SYNONYMS: *Dalea diffusa* Moric.

FAMILY: Leguminosae

AUTHOR, PLACE OF PUBLICATION: Moricand, M. E. 1833. Mem. Soc. Geneve 6:536.

TYPE LOCALITY: Nouvelle Espagne ("New Spain," somewhere in Mexico).

TYPE SPECIMEN: G!. M. Pavon s. n. 1827.

TAXONOMIC UNIQUENESS: There are approximately 40 species in the genus *Marina*, with 3 of these occurring in Arizona. This genus is distributed from the southwestern United States to Guatemala, but most species of *Marina* are found in Mexico (Barneby 1977, Isely 1998).

DESCRIPTION: Shrub or suffrutescent perennial from 1-2.5 m tall, with a few to several black-purple, glabrous, wiry stems that branch widely, 0.5-1.0 m long; with one to several trunks 1-3 cm in diameter. Main leaves 1.5-3.5 cm long, deciduous during dry periods, with 6-12 pairs of oblong leaflets 3-6.5 mm. long. Leaves of inflorescence smaller. Inflorescence a loose raceme, 1-10 flowered, the first of each primary division of the panicle ca. 6-10 flowered, the terminal and distal ones (1) 2-5 flowered. Calyx 2.5-3.6 mm long, ribbed, with orange glands. Banner petal white with purple lobes, 2.5-3.5 mm long, the inner petals magenta or rose-purple, 3.5-4.7 mm long, the keel petal 4.4-6.0 mm long. Pods plump, widest toward tip about 3 mm long and 2.5 mm wide, green or purplish, with many small glands (Barneby 1977, Isely 1998).

AIDS TO IDENTIFICATION: *Marina* spp. differ from *Dalea* spp. by having a single ovule and consistently racemose flowers. *Marina calycosa* and *M. parryi* both occur in southern Arizona as well. Of these two species, *M. calycosa* is most likely to occur in the same area as *M. diffusa*, as *M. parryi* is a Sonoran and Mohave desert species that occurs below 4,000 feet. *M. diffusa* is an ascending/erect plant while *M. calycosa* is a decumbent plant. *M. diffusa* generally has remotely and few-flowered inflorescences and glabrous stems. *M. calycosa* has faintly glandular stems and compact inflorescences with several to numerous soon reflexed flowers (Isely 1998).

ILLUSTRATIONS: Line drawing (Barneby 1977).

TOTAL RANGE: “This species is widely dispersed along the Neovolcanic Belt in Mexico from southeastern Mexico to Nayarit, thence north along the Pacific slope to Sonora and just into extreme southern Arizona, and southeast, becoming rarer, along the Sierra Madre del Sur to Oaxaca and Guatemala” (Barneby 1977).

RANGE WITHIN ARIZONA: Santa Cruz County: Patagonia Mountains.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Woody shrub or suffrutescent perennial.

PHENOLOGY: Flowering September - February, rarely from mid-August northward (Barneby 1977).

BIOLOGY: This species loses its frondose cauline leaves, developed during the summer growth period, in the fall and as the flowers mature, the plant is commonly naked except for the minute paucifoliolate leaves in the panicle. The flowers of *M. diffusa* do not last long, with the petals falling a few hours after expanding. It is rare to find two flowers open at once on the same raceme (Barneby 1977). The tough, pliant stems of this specie are sometimes cut, tied together, and used as a broom by people in Mexico (Martin et al. 1998, Barneby 1977).

HABITAT: Slopes, streambeds, brushy hillsides, hedgerows, and openings in oak woodland, pine-oak forest, and tropical deciduous forest. In Arizona, this species is known only from a rocky hillside in oak woodland.

ELEVATION: Approximately 5,000 ft. (1500 m) in Arizona; approximately 650 - 6,000 ft. overall (195-1800 m).

EXPOSURE: Various, but often southern.

SUBSTRATE: Various.

PLANT COMMUNITY: This species occurs in an oak dominated Madrean evergreen woodland community, as defined by Brown (1994), in Arizona. Throughout the rest of its range, this species occurs in pine-oak forest (Madrean evergreen woodland), tropical deciduous forest (Sinaloan deciduous forest), and other communities (Martin et al. 1998).

POPULATION TRENDS: Jack Kaiser’s population censuses: 10/67- 6 adults + many seedlings; 1972- 12 adults; 1977- only 2 plants; 1978- last 2 plants were dead. 1979- no live plants found, planted seeds from summer before in more protected area; 1982- one adult; 1984- 20 adults; 1986- 16 adults; 1988- 11 adults+ 17 seedlings; Dave Gori’s population censuses: 9/1989- 19 adults+ 16 seedlings with no live plants left inside the exclosures. In 1985, all plants within the Patagonia Mountains population of Arizona were tagged, marked, and mapped by University of Toronto

researchers. At that time, the population consisted of about 50 individuals. This species is very widespread and locally common in Mexico, even occurring in areas such as along fences of cultivated land (Barneby 1977).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None
STATE LIST STATUS: None
OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)

MANAGEMENT FACTORS: The only two plants in the Arizona population were apparently killed by frost in 1978 and no live plants were found in the Patagonia Mountains population in 1979. At this time Jack Kaiser planted seeds from the previous summer in a more protected area. The current population in Arizona apparently exists now near the fenced exclosures where Kaiser planted seed in 1979.

CONSERVATION MEASURES TAKEN: The Arizona population has been monitored, off and on, to some extent. Some plants may currently be protected by the fenced exclosures.

SUGGESTED PROJECTS: Monitoring of the Arizona population should continue to some extent.

LAND MANAGEMENT/OWNERSHIP: USFS Coronado National Forest (Nogales Ranger District).

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

- Barneby, R. C. 1977. Daleae Imagines. Memoirs of the New York Botanical Garden, Vol. 27, p. 123-127, 640-641.
- Brown, D. E. ed. 1994. Biotic communities: southwestern United States and northwestern Mexico. University of Utah Press. Salt Lake City. 342 pp.
- Isely, D. 1998. Native and naturalized Leguminosae (Fabaceae) of the United States (exclusive of Alaska and Hawaii). Monte L. Bean Life Science Museum, Brigham Young University, Provo, UT. p. 736-738.
- Martin, P. S., Yetman, D., Fishbein, M., Jenkins, P., Van Devender, T. R., and R. K. Wilson. 1998. Gentry's Rio Mayo plants: the tropical deciduous forest and environs of northwest Mexico. The University of Arizona Press. Stanford. p. 354.
- USDA, Forest Service Region 3. 1999. Regional Forester's Sensitive Species List.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

R.C. Barneby - NY Botanical Garden, Bronx, NY.

Dave Gori - The Nature Conservancy, Tucson, AZ.

ADDITIONAL INFORMATION:

The Arizona population of this species is apparently about 250 km north of the nearest known population in Mexico. The top growth of this species in Arizona is killed back each year by frost, whereas in Mexico and Central America this species is a colony-forming shrub (Isely 1998).

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