

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDBRA2M070
Data Sensitivity: No

CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Thelypodopsis purpusii*
COMMON NAME: Kearney mustard
SYNONYMS: *Sisymbrium kearneyi*, *Thelypodium vernale*
FAMILY: Cruciferae

AUTHOR, PLACE OF PUBLICATION: Brandegee, T.S., Zoe 5:232. 1906.

TYPE LOCALITY: South Coahuila, Mexico.

TYPE SPECIMEN: New Mexico, Socorro County. "low mountains west of San Antonio" April 14, 1908. Wooton #3847. (lost).

Isotype: Sierra de Parras, Coahuila, Mexico. March, 1905. C.A. Purpus #1329 (GH).

TAXONOMIC UNIQUENESS:

DESCRIPTION: Perennial herb with a single branching stem (each branch with an inflorescence), 30-50 cm tall. Basal leaves toothed to deeply lobed, 2-10 cm long, 8-20 mm wide, oblong, variable in size and shape. Upper stem leaves with bases clasping the stems, progressively smaller up the stem. Flowers with white petals with broad tips and narrow bases, 6-8 mm long, 2-2.5 mm wide. Fruits (siliques) round in cross section, long and narrow, 4.5-5.5 cm long and less than 1 mm wide.

AIDS TO IDENTIFICATION: This species can be recognized by its diminutive stature (when robust up to about 16 inches tall), glaucousness, clasping leaves, few, small white flowers with four petals, and arching slender pods. Species of *Arabis* are superficially similar, but in the region are obviously perennial and usually pubescent.

ILLUSTRATIONS:

TOTAL RANGE: Western Texas to southern Arizona, south to Coahuila, Mexico

RANGE WITHIN ARIZONA: Brady and Saddlehorse Canyons, Grand Canyon National Park, Coconino County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Herbaceous perennial

PHENOLOGY: April - May

BIOLOGY: Populations are isolated from one another, and fluctuate drastically in number from one year to another. The species with its short life cycle, the isolation the populations, and the annual variation in numbers in each population, might provide a good organism for studies of microevolution on the Chihuahuan Desert. It is quite possibly a relic from more mesic, cooler times that were present in the area 10,000 - 20,000 years ago. Local climatic conditions probably influence the distribution. Types of reproduction are unknown. It is suspected of being primarily inbreeding because of the small flowers and secluded habitat. The locality of the stamens to the anthers suggest self-pollination and the white flowers may attract flies. If so they may be the primary pollinators.

HABITAT: Occurring in slopes of moderate to pronounced steepness, generally of north aspect, or if not, then the plant in the protection and shade of boulders or trees. Average annual precipitation is estimated to be about 25-40 cm per year, with 140-230 frost-free days and an average annual temperature at 14°C with a range of about -20°C to 43°C.

ELEVATION: about 4,500 - 6,000 feet

EXPOSURE: Covered, this plant can not tolerate much sunlight.

SUBSTRATE: Granite and limestone soils

PLANT COMMUNITY: *Juniperus monosperma*, *Artemisia ludoviciana*, *Atriplex canescens*, *Dasyliirion wheeleri*, *Cyphomeris gypsophiloides*, *Bouteloua curtipendula*.

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS:

STATE STATUS:

OTHER STATUS:

MANAGEMENT FACTORS: Not known to be grazed by cattle. Does not compete well with established perennial vegetation without some sort of external disturbance that reduces cover of perennials.

CONSERVATION MEASURES TAKEN:

SUGGESTED PROJECTS: Survey to determine exact populations and ranges.

LAND MANAGEMENT/OWNERSHIP: National Park Service.

SOURCES OF FURTHER INFORMATION

LITERATURE CITATIONS:

- Al-Shehbaz, I.A. 1973. The biosystematics of the *Thelypodium* (Cruciferae). Contr. Gray Herb. #204. p.148.
- Brian, N. et al. 1982. Status report. U.S. Fish and Wildlife Service. Albuquerque, NM.
- Rollins, R.C. 1982. *Thelypodiopsis* and *Schoenocrambe* (Cruciferae) Contr. The Gray Herbarium of Harvard University (212):71-102.
- Leaflets of western botany. 7:15-16.
- Schulz, O.E. 1924. Pflanzenreich 86 (IV, 105).
- Spellenberg, R.W. 1981. Status report on *Thelypodium vernale*. Status report, U.S. Fish and Wildlife Service. Albuquerque, NM.
- Ward, D. and R. Spellenberg, 1981. Noteworthy collections. Madroño 28:185-186.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Thelypodium purpusii was described from Mexico and apparently includes *T. vernale* of New Mexico and *Sisymbrium kearneyi* of the Grand Canyon. It appears to be scattered and uncommon in this huge range.

Spellenberg. 1981: Type specimen of *T. vernale* from New Mexico is lost but new material from New Mexico is close to *T. purpusii*.

Spellenberg. 1981, and Brian et al. 1982: recommend dropping from consideration for federal listing.

Rollins. 1982: formally synonymized *Sisymbrium kearneyi* with *Thelypodiopsis purpusii*.

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