

ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Psorothamnus scoparius*
COMMON NAME: Broom Dalea, Broom Smokebush
SYNONYMS: *Dalea scoparia*, *Parosela scoparia*
FAMILY: Fabaceae

AUTHOR, PLACE OF PUBLICATION: Rydberg, Per Axel. North American Flora
24(1): 48. 1919.

TYPE LOCALITY: Jornada del Muerto (between Santa Fe and El Paso del Norte).

TYPE SPECIMEN: Gray Herbarium: GH 53619 (holotype of *Dalea scoparia*) and Missouri Botanical Garden: MO 2196399 (isotype of *Psorothamnus scoparius*). F.A. Wislizenus, #86. August 6, 1846.

TAXONOMIC UNIQUENESS: There are nine species and ten varieties of *Psorothamnus* in the United States. Seven of these species and five of the varieties of found within Arizona. None are restricted only to the State.

DESCRIPTION: **Plant:** Broom-like subshrubs up to 1 m tall; stems yellow-green, canescent, prominently dotted with pale yellow glands. **Leaves:** simple (rarely 3-foliate), linear, 70-110 mm long, 0.8-1.2 mm wide; glands in two rows along the margin. **Flowers:** in a short, dense raceme; calyx teeth 0.3-1.8 mm long, much shorter than tube. **Fruit:** ca. 4 mm long, pilose, with glands near apex (Rhodes et al 2011).

AIDS TO IDENTIFICATION: *Psorothamnus* can be distinguished from other genera (*Amorpha*, *Errazurizia*, *Parryella*, *Eysenhardtia*, *Marina* and *Dalea*) in the Amorpheae tribe of the Papilionoideae subfamily from its corolla with 5 petals, corolla not white in color and petals inserted on the calyx at the base of stamen tube. *P. scoparius* can be separated from the other six species of *Psorothamnus* in Arizona because its leaves are simple (rarely trifoliate) and its growth form is a broom-like subshrub up to 1 meter in height (Rhodes et al 2011).

ILLUSTRATIONS:

Photos, Herbarium Mounts: <http://swbiodiversity.org/seinet/taxa/index.php?taxon=Psorothamnus scoparius>.

Photos:

https://www.google.com/search?q=psorothamnus+scoparius&biw=1209&bih=891&tbm=isch&tbo=u&source=univ&sa=X&ei=A-Y_VPrKFNPhoAT55oDwAw&ved=0CC8Q7Ak.

TOTAL RANGE: Disjunct populations in northern and southern Arizona, throughout central and southern New Mexico, far western Texas and into Mexico (Chihuahua and Coahuila). Individual outlying collections have been reported from SE Utah and central Baja, Mexico.

RANGE WITHIN ARIZONA: *P. scoparius* was first collected in SE Arizona near Willcox Playa in 1914. There have been several other collections from the general vicinity and one further west near Benson (Cochise County). The other collections have been from northern Arizona north of Winslow around Ives Mesa (Navajo and Coconino Counties).

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial, broom-like sub-shrubs.

PHENOLOGY: Flowers: July-September (Rhodes et al 2011). Plant appears dormant most of the year until the summer monsoon rains, and then rapidly enters the blooming stage (Nellessen n.d.). Flowers have been collected in Arizona in both August and September.

BIOLOGY: The fragment blooms attract numerous species of bees and become focal points for bee foraging activities. The species grows relatively quickly and reaches a height of one meter in 4-7 years depending on local conditions; reproductive capability can be attained in 3-6 years. The species is an important natural stabilizer of dunes and other sandy soils. It is not substantially browsed, probably due to oils contained within the glands. (Nellessen, n.d.)

HABITAT: Sandy dunes and washes, sandy roadsides.

ELEVATION: Range-wide: 3600-5000 feet (1100-1550 m), Rhodes et al 2011. Collections in Arizona range from 4000 to 5460 feet (1220-1665m), extending the reported range by nearly 500 feet.

EXPOSURE: Not specified.

SUBSTRATE: Sandy soils and adapted to deep sands, both quartz and gypsum derived.

PLANT COMMUNITY: Mixed shrub communities in association with *Artemisia filifolia* and *Atriplex canescens*; also reported from desert grasslands. Other species associated with Arizona collection sites include: *Prosopis* and *Opuntia*, *Poliomintha incana*, *Gutierrezia sarothrae*, *Isocoma*, *Chrysothamnus*, *Sporobolus airoides*, *Dicoria brandegeei*, *Salsola kali*, *Mentzelia*, *Ephedra viridis*, *Boerhavia spicata*, *Pomaria jamesii*.

POPULATION HISTORY AND TRENDS: Unknown for Arizona. *P. scoparius* has been collected from the general vicinity of Willcox Playa for 80 years. Since about 1980 and from several collections after 2000, the locations around Ives Mesa north of Winslow have been identified. When noted from some collection records, the species is either occasional or common. It is a species that seems well adapted to its preferred sandy habitats, and

apparently readily produces seeds after the summer rains. Although it is considered critically imperiled in Arizona by NatureServe, this designation results primarily due to the limited known sites (seven now, but only one at the time of designation).

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.

STATE STATUS: None.

OTHER STATUS: None.

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: None specified.

SUGGESTED PROJECTS: Survey the Willcox Playa localities around the end of August-early September to determine whether the species is still extant, and its extent.

LAND MANAGEMENT/OWNERSHIP: Known collection sites are on BIA – Navajo Nation, Arizona State Trust, or private lands.

SOURCES OF FURTHER INFORMATION

REFERENCES:

JStor| Global Plants, accessed 10/15/2014,

<http://plants.jstor.org/search?plantName=%22Psorothamnus+scoparius%22&syn=1&>.

Nellessen, James E. (no date). *Psorothamnus scoparius*. Accessed online 10/16/2014:

<http://www.fs.fed.us/global/iitf/pdf/shrubs/Psorothamnus%20scoparius.pdf>.

Rhodes, Suzanne, June Beasley and Tina Ayers. 2011. Vascular Plants of Arizona: Fabaceae, Part One. *Canotia* 7:1-13.

Tropicos, accessed 10/15/2014, <http://www.tropicos.org/Name/13015481>.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

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ADDITIONAL INFORMATION:

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