

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

**Plant Abstract**

**Element Code:** PDBRA1N290

**Data Sensitivity:** No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Physaria navajoensis* (O’Kane) O’Kane & Al-Shehbaz

**COMMON NAME:** Navajo bladderpod

**SYNONYMS:** *Lesquerella navajoensis* O’Kane

**FAMILY:** Brassicaceae

**AUTHOR, PLACE OF PUBLICATION:** *Lesquerella navajoensis* O’Kane, Madroño 46(2): 88-91, f. 1-2. 1999. *Physaria navajoensis* (O’Kane) O’Kane & Al-Shehbaz, Novon 12(3): 325. 2002.

**TYPE LOCALITY:** USA, New Mexico, McKinley County, ca. 2 air miles NE of Thoreau on bench below and SE of Mt. Powell, 7600 feet (2316 m) elevation.

**TYPE SPECIMEN:** HT: MO-5161840. S.L. O’Kane, Jr. & D. Roth 4232, 23 May 1998. IT: BRY, COLO, GH, ISTC, NMC, NY, RM, UNM.

**TAXONOMIC UNIQUENESS:** *Physaria* is a genus with 35 species and 22 varieties or subspecies found mostly in the western United States (NatureServe 2018). Many species of *Physaria* were formerly included in the now-defunct genus *Lesquerella*.

**DESCRIPTION:** Low cushion forming, herbaceous perennial, from a thick taproot. The herbage is silvery-gray, and densely covered with overlapping stellate trichomes; the hair usually with 5 main rays, each twice bifurcate into 20 tips, rays somewhat fused near the center by a thin, narrow webbing; stems crowded, buried among and not exceeding the leaves. Leaves entire, linear-oblongate, tapering to base, 3-8(-13) x 0.7-1.4 mm. The flowers and fruit are in dense few-flowered subcorymbose racemes at the apex of the flowering stems, barely (or not) exceeding the leaves; pedicels straight to slightly sigmoid. Sepals 4, yellow-green, 3.7-4.8 mm long; petals 4, 5.2-6.5 mm long, spatulate, deep yellow, and faintly orange at the junction of the blade and claw. Fruits slightly inflated silicles, ovate, glabrous, becoming reddish to copper colored at maturity; styles 1.8-3 mm long in fruit. Seeds suborbicular-ovoid, 1.5-2.4 x 1.3-1.9 mm, strongly mucilaginous when wetted. (Roth 2001, Sivinski 2002).

**AIDS TO IDENTIFICATION:** *Physaria fendleri* (Fendler bladderpod) has a deep orange “eye” (the veins of the petals near the eye are also orange), the petals are much larger, the stellate trichomes are webbed for at least half the length of the rays, and the stems and leaves are longer. (Roth 2001, Sivinski 2002). *P. navajoensis* has a faint orange eye and no orange veins, the

flowers are much smaller and the trichomes are not webbed. Additionally, *P. navajoensis* flowers and forms fruits earlier than does *P. fendleri*. (Roth 2001). *Physaria arizonica* (Arizona bladderpod) is allopatric and has strongly pubescent rather than glabrous fruits. The rare *P. tumulosa* (Kodachrome bladderpod) of south-central Utah is very similar to *P. navajoensis*, except that its seed are not mucilaginous and its petals are uniformly yellow. (Sivinski 2002).

**ILLUSTRATIONS:** Color photos of plant and habitat (S. O’Kane, *in* Sivinski 2002 at <http://nmrareplants.unm.edu/reports/lesnav.htm>)  
B&W silhouette (O’Kane 1999, *in* Sivinski 2002 at <http://nmrareplants.unm.edu/drawings/lesnav.htm>)  
Color photo of Holotype (MO-5161840, MBG, *in* [http://mobot.mobot.org/cgi-bin/search\\_vast](http://mobot.mobot.org/cgi-bin/search_vast))  
Color photo of Isotype (NY-335773, NYBG, *in* <http://207.156.243.8/emu/vh/specimen.php?irn=450069>)

**TOTAL RANGE:** In New Mexico on mesa rims NW of Thoreau and Continental Divide, and Chuska Mts, at Todilto Park, McKinley County. In Arizona, from the Red Valley area (N of Navajo, NM) to Wheatfields Lake, Apache County. Sivinski (2002) also includes Kane County, Utah, in its range.

**RANGE WITHIN ARIZONA:** In Arizona, from the Red Valley area (N of Navajo, NM) to Wheatfields Lake, Apache County. Possibly in the Chuska and Carrizo mountains, Apache County.

## **SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Perennial.

**PHENOLOGY:** Flowering from mid May to early June. Positive identification is only possible during this flowering period.

### **BIOLOGY:**

**HABITAT:** Typically occurs on windward, windswept mesa rims and nearby habitat with little vegetative cover and high insolation. Typically only found on the nearly white Todilto Limestone Member of the Morrison Formation overlaying Entrada Sandstone or Chinle outcrops. (Roth 2001).

**ELEVATION:** 7,213 – 7,607 feet (2200–2320 m) (Sivinski 2002).

**EXPOSURE:** Isotype (NY-335773) collected on WSW-facing edge of mesa.

**SUBSTRATE:** Todilto Limestone.

**PLANT COMMUNITY:** In sparse pinyon-juniper woodland. In New Mexico, associated with *Astragalus micromerius* (Chaco milk-vetch) on the Todilto limestone northeast of Thoreau. The adjacent Estrada sandstone stratum supports *Erigeron acomanus* (Acoma fleabane), and the next lower stratum of Chinle shale has *Erigeron sivinskii* (Sivinski's fleabane). (Sivinski 2002).

**POPULATION HISTORY AND TRENDS:** Unknown.

### **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None  
**STATE STATUS:** None  
**OTHER STATUS:** Group 4 (NNDFW, NESL 2005)

**MANAGEMENT FACTORS:** According to Sivinski (2002), in New Mexico, "mining is a serious current and foreseeable threat to this species. Outcrops of Todilto limestone are not abundant in this region and are actively mined for road base material and also frequently trucked to the Portland cement plant at Tijeras, New Mexico. Habitat at one of the populations has been extensively quarried and the *P. navajoensis* there exist on only a narrow remnant of the mesa rim. This species has not been found on the Todilto limestone outcrops east of Thoreau, some of which have been completely mined out."

**PROTECTIVE MEASURES TAKEN:**

**SUGGESTED PROJECTS:**

**LAND MANAGEMENT/OWNERSHIP:** BIA – Navajo Nation.

### **SOURCES OF FURTHER INFORMATION**

**REFERENCES:**

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**ADDITIONAL INFORMATION:**

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