

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

Plant Abstract

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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Pediomelum verdiensis*
COMMON NAME: Verde Breadroot
SYNONYMS: *Pediomelum verdiense*
FAMILY: Fabaceae

AUTHOR, PLACE OF PUBLICATION: Welsh, Stanley Larson and Max Howard
Licher. Western North American Naturalist 70(1): 9-18, f. 1 [map], 2. 2010.

TYPE LOCALITY: Arizona: N of Camp Verde: White Hills, elevation 3445 feet.

TYPE SPECIMEN: BRY (SN), holotype, M. Licher (#1911). April 18, 2008.

TAXONOMIC UNIQUENESS: The genus *Pediomelum* was created in 1919 by P.A. Rydberg to accommodate those North American plants that were previously assigned to *Psoralea* L, which was originally described from South Africa (Welsh and Licher 2010). NatureServe (2015) presents 24 species and another eight varieties of *Pediomelum* that occur in the U.S. and Canada. Eight of the species and three varieties are found in Arizona. Three of the species: *P. ockendonii*, *pauperitense* and *verdiensis* are of limited geographical distribution and are found only in Arizona. Welsh and Licher (2010) identify ten species within the State and there are some different taxonomic assignments at the species level between these two treatments.

DESCRIPTION: Acaulescent to short caulescent, 4.5–9 (15) cm tall, from slender, subterranean caudex branches arising from deep-seated ellipsoid to narrowly tapering tuberous roots; aboveground stems lacking or with very short internodes and more or less obscured by leaf bases and stipules, less commonly with internodes elongated (pseudo-peduncles) 0.5–6.5 cm long, spreading white-hairy; leaves (3) 5-foliolate; petioles 2–7.5 (10) cm long, with hairs appressed-ascending; leaflets 8–23.5 mm long, 7–16.5 mm wide, obovate to broadly so, gray green, densely strigose, and obscurely punctate beneath; green to yellow green, thinly strigose overall (more densely canescent along veins above and on the lower surface), obviously punctate above; stipules scarious, 4–16 mm long, connate and without leaf otherwise on lowermost nodes of caudex, adnate to petiole base and bilobed on foliage leaves above, the upper ones densely white strigose; peduncles 0.5–2 (6) cm long, spreading or spreading-ascending white-hairy; inflorescences (cymose) with branches mainly 5–7-flowered, 1.5–2.5 cm long; pedicels 3–3.5 (5) mm long, filiform; bracts elliptic, 5–8 mm long; flowers (9.8) 10–11.3 mm long, the banner purple or suffused with pale purple, the wings and

keel dark purple; calyx (9) 10–11 mm long (11.7 mm in fruit), the tube (3) 3.5–4.8 mm long (from end of strongly gibbous-saccate base to the sinus between the 2 lateral teeth), the lower tooth elliptic, (4.5) 6.0–8.2 (9.2 in fruit) mm long and 2.0–3.5 mm wide, the upper teeth lance-elliptic to lance-subulate or oblanceolate, 4.2–6.5 (7.3) mm long and 1.5–2.3 mm wide; pods included in the calyx; seed 4.2–4.8 mm × 2.8–3 mm, gray brown with purple mottling (Welsh and Licher 2010).

AIDS TO IDENTIFICATION: The following summary was taken from Welsh and Licher (2010):

- Leaflets mainly greenish on both sides, or if contrasting, pale beneath and green above, the upper surface also strigose to pilose;
- Plants acaulescent or short-caulescent; leaflets typically pale beneath; flowers mostly >10 mm long; plants variously distributed;
- Calyx lobes subequal to moderately unequal, the lower one not-much enlarged; seeds smooth;
- Calyx tube mainly 2.5–4.5 mm long; flowers 7.3–13.5 mm long; plants of north central Arizona and SW Utah;
- Petioles with hairs appressed ascending or ascending; peduncles ascending- to spreading-hairy; lateral and upper calyx teeth lance-elliptic to lance-subulate or narrowly oblanceolate to oblong-attenuate;
- Pedicels 3–3.5 (5) mm long; bracts 5–8 mm long; seed 4.2–4.8 mm long, flowers (9.8) 10–11.3 mm long, banner purple or suffused with purple, not strongly contrasting with wings and keel; plants known from Tertiary Verde Limestone Formation in Yavapai Co., Arizona.....*P. verdiense*

ILLUSTRATIONS:

Photos: <http://swbiodiversity.org/seinet/taxa/index.php?taxon=Pediomelum%20verdiense>.

TOTAL RANGE: see Range within Arizona

RANGE WITHIN ARIZONA: Centered around vicinity of Camp Verde, but one collection occurs more than 30 miles upstream along the Verde River; all within Yavapai County.

SPECIES BIOLOGY AND POPULATION TRENDS

GROWTH FORM: Perennial herb, with caudex and tuberous root.

PHENOLOGY: Flowers collected in May in Arizona.

BIOLOGY:

HABITAT: High desert scrub on Verde limestone substrate, also compacted roadsides.

ELEVATION: Based on Arizona collections: 3200 – 4350 feet (975-1325m).

EXPOSURE: Open and sunny; low angle south facing slope.

SUBSTRATE: Verde formation limestone, sandy ridges.

PLANT COMMUNITY: Desert scrub with widely scattered Juniper. Associated plants: *Yucca elata*, *Psoralea mephitica*, *Lotus mearnsii*, *Polygala rusbyi*, *Lepidium thurberi*, *Opuntia phaeocantha major* (?), *Ephedra torreyana*, *Gutierrezia sarothrae*, *Juniperus*, *Baileya multiradiata*, *Sphaeralcea*, *Coryphantha vivipara*, *Delphinium scaposum*, *Dichelostemma capitatum*, *Gaillardia pinnatifida*, *Gilia ophthalmoides*, *Heliomeris longifolia* var. *annua*, *Hilaria mutica*, *Larrea tridentate*, *Melanpodium leucanthum*, *Plantago Patagonia*, *Prosopis velutina*.

POPULATION HISTORY AND TRENDS: Unknown for Arizona. There are five known collection sites for this endemic Arizona species which was only described in 2010. The earliest collection was 1961. Although NatureServe ranks *P. verdiensis* critically imperiled due to the very limited, known distribution, two of the collections noted that the plant was locally frequent. This may suggest that at least some populations have a good estimated viability and might be stable.

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None.

STATE STATUS: None.

OTHER STATUS: Forest Service Sensitive (USDA FS Region 3 2013)

MANAGEMENT FACTORS: None specified.

PROTECTIVE MEASURES TAKEN: Only the recent (2013) inclusion of this species as a USDA Forest Service Sensitive species in Prescott, Coconino and Tonto National Forests in Arizona.

SUGGESTED PROJECTS: None specified.

LAND MANAGEMENT/OWNERSHIP: USDA Forest Service, both Coconino and Prescott National Forests; USDI BIA Camp Verde Indian Reservation; private land.

SOURCES OF FURTHER INFORMATION

REFERENCES:

NatureServe Explorer, and Online Encyclopedia of Life, accessed 05/05/2015, <http://explorer.natureserve.org/index.htm>.

Tropicos, accessed 05/05/2015, <http://www.tropicos.org/Name/100397688>.

Welsh, Stanley L. and Max Licher. 2010. *Pediomelum* Rydberg (Leguminosae) in Arizona and two previously undescribed species. *Western North American Naturalist* 70(1): 9-18.

MAJOR KNOWLEDGEABLE INDIVIDUALS:

Max Licher, Architect Associate Curator, Deaver Herbarium, Northern Arizona University, Flagstaff.

ADDITIONAL INFORMATION:

Revised: 2015-05-05 (BDT)

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