

ARIZONA GAME AND FISH DEPARTMENT  
HERITAGE DATA MANAGEMENT SYSTEM

Plant Abstract

Element Code: PDBRA22010

Data Sensitivity: No

**CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE**

**NAME:** *Physaria acutifolia*  
**COMMON NAME:** Sharpleaf Twinpod, Rydberg's Twinpod  
**SYNONYMS:** *Physaria acutifolia* var. *acutifolia*, *P. a.* var. *stylosa*, *P. australis*,  
*P. didymocarpa* var. *australis*, *P. stylosa*  
**FAMILY:** Brassicaceae

**AUTHOR, PLACE OF PUBLICATION:** Rydberg, Per Axel. Bulletin of the Torrey Botanical Club 28(5): 279-280. 1901.

**TYPE LOCALITY:** Colorado: Grand Junction.

**TYPE SPECIMEN:** NY 185605 (holotype). A. Eastwood, #s.n. June 1892.

**TAXONOMIC UNIQUENESS:** Although there are some differences in opinion on the taxonomy of *Physaria*, NatureServe lists 34 species with an additional 22 varieties. Four species are found in Arizona, including *P. acutifolia*.

Welsh et al 1993 believes that this taxon (*P. acutifolia*) might best be regarded at the infraspecific level, along with *P. chambersii*, in an expanded *P. newberryi* (these are two of the species also found in Arizona). They state that the taxa differ in about the same magnitude as do the varieties in other genera in this family.

Welsh et al 1993 also recognize three weakly differentiated and intergrading morphological subunits at the varietal level: *P. a. purpurea*, *P. a. stylosa*, and *P. a. acutifolia*.

**DESCRIPTION:** **Perennials;** caudex branched, (sometimes forming a thick crown, cespitose); (silvery) pubescent throughout, trichomes several-rayed, rays furcate, (moderately tuberculate, rays weakly so). **Stems** several from base, usually somewhat decumbent, (unbranched), (0.4-)0.5-2 dm. **Basal leaves:** (petiole slender, often narrowly winged); blade obovate to orbicular or rhombic-orbicular, 2-9 cm, (base abruptly narrowed to petiole), margins usually entire, rarely with few scattered teeth, (apex rounded or obtuse, sometimes with apical mucro). **Cauline leaves:** blade spatulate to oblanceolate, 1-3 cm, margins entire, (apex usually obtuse). **Racemes** loose, (elongated in fruit). **Fruiting pedicels** (divaricate, slightly sigmoid or nearly straight), 6-12 mm. **Flowers:** sepals linear-oblong, 4-7.5 mm; petals spatulate, 6-11 mm. **Fruits** (erect), didymous, suborbicular, inflated, (4-)6-15 × (4-)8-20 mm, (papery, basal and apical sinuses similar, basal rarely shallower, apical deep, narrow and

closed or nearly so); valves retaining seeds after dehiscence, pubescent, trichomes appressed; replum oblong, constricted, 2-3.5 mm, narrower than fruit, apex obtuse; ovules (2 or) 4 per ovary; style 4-6(-9) mm. Seeds (dark brown), flattened, (2-3 mm).  $2n = 10, 16, 24$ . (Flora of North America 2016).

**AIDS TO IDENTIFICATION:** Taken from Welsh et al 1993:

*P. newberryi* has styles 2-3(4) mm long; valves of silicles sharply angled at maturity.

*P. acutifolia* and *P. chambersii* have styles 4-8 mm long or more; valves of silicles obtusely angled to rounded at maturity.

*P. acutifolia* has sinuses of silicles indented above and below, when immature equally rounded to apex and base; valves rounded, not angled at maturity.

*P. chambersii* has sinuses of silicles only slightly indented to rounded below, deeply indented above, when immature tapering to base and obcordate in outline; valves obtusely angled at maturity.

**ILLUSTRATIONS:**

Photos, Herbarium Mounts:

<http://swbiodiversity.org/seinet/taxa/index.php?taxon=Physaria%20acutifolia>.

<http://eol.org/pages/486230/media>.

**TOTAL RANGE:** Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, South Dakota, Utah, Wyoming.

**RANGE WITHIN ARIZONA:** Across northern part of State: Mohave, Coconino and Apache Counties.

**SPECIES BIOLOGY AND POPULATION TRENDS**

**GROWTH FORM:** Perennial herbaceous plant.

**PHENOLOGY:** Flowering: May-June(-July).

**BIOLOGY:**

**HABITAT:** Hillsides, road-cuts, sagebrush, pinyon-juniper, Gambel's oak, Ponderosa pine communities. The plants are usually found in open soil patches, rarely into the subalpine or alpine tundra.

**ELEVATION:** 4900 – 11480 feet (1500-3500 m) range-wide according to Flora of North America 2016). Actual collections in Arizona range from 6175 – 7500 feet (1880-2287m).

**EXPOSURE:** Not specified.

**SUBSTRATE:** Two of the Arizona collection sites noted “gravelly sediment” and “rocky talus.”

**PLANT COMMUNITY:** Sagebrush, pinyon-juniper, Gambel’s oak, Ponderosa pine.

**POPULATION HISTORY AND TRENDS:** Unknown for Arizona. There are only five known collection sites stretching across northern Arizona and collection dates range from 1938 – 2010. No data on population numbers or trends are available.

### **SPECIES PROTECTION AND CONSERVATION**

**ENDANGERED SPECIES ACT STATUS:** None.

**STATE STATUS:** None.

**OTHER STATUS:** None.

**MANAGEMENT FACTORS:** None specified.

**PROTECTIVE MEASURES TAKEN:** None.

**SUGGESTED PROJECTS:** None.

**LAND MANAGEMENT/OWNERSHIP:** USDI Bureau of Indian Affairs (Navajo Nation and Kaibab-Paiute Indian Reservation); USDI Bureau of Land Management, Arizona Strip Field Office; and a private land holding.

### **SOURCES OF FURTHER INFORMATION**

#### **REFERENCES:**

Flora of North America (eFloras.org), accessed 1/13/2016,  
[http://www.efloras.org/florataxon.aspx?flora\\_id=1&taxon\\_id=250095109](http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=250095109).

JStor| Global Plants, accessed 1/13/2016,  
<http://plants.jstor.org/stable/10.5555/al.ap.specimen.ny00185605>.

Tropicos, accessed 1/13/2016, <http://www.tropicos.org/Name/4100591>.

Welsh, Stanley L., N. Duane Atwood, Sherel Goodrich, and Larry C. Higgins, eds. 1993. A Utah Flora. 2<sup>nd</sup> edition, revised. Brigham Young University, Provo, UT. p. 314-316.

#### **MAJOR KNOWLEDGEABLE INDIVIDUALS:**

**ADDITIONAL INFORMATION:** *Physaria acutifolia* tends to be somewhat dwarfed, with a branched caudex and especially long styles (var. *stylosa*), where it grows at high elevations,

especially at the western end of the Uinta Mountains in Utah. Intermediates form an uninterrupted cline and no infraspecific taxa are here recognized. In R. C. Rollins (1939), the discussion of *P. acutifolia* actually pertains to *P. rollinsii*. The discussion of *P. australis* pertains to what is now known as *P. acutifolia*. The plants are usually found in open soil patches, rarely into the subalpine or alpine tundra Flora of North America 2016).

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