



# Penstemon angustifolius

var. *dulcis*

## Penstemon angustifolius Pursh

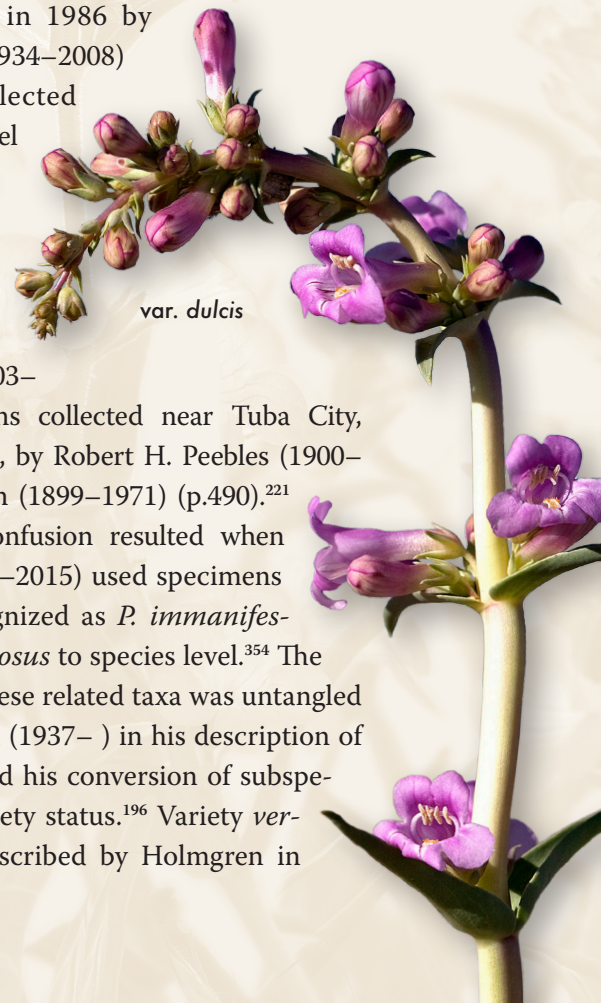
### COMMON NAME:

broadbeard beardtongue;<sup>49, 82, 159, 184</sup> broadbeard penstemon;<sup>159</sup> narrow beardtongue;<sup>407</sup> narrow-leaf beardtongue;<sup>10, 36, 82</sup> narrowleaf penstemon;<sup>254, 303, 407</sup> taperleaf beardtongue;<sup>82</sup> taperleaf penstemon;<sup>159, 184, 254</sup> Maeser penstemon [var. *vernalensis*];<sup>303</sup> sweet penstemon [var. *dulcis*];<sup>39, 155, 303</sup> veined penstemon [var. *venosus*];<sup>303</sup> Vernal beard-tongue [var. *vernalensis*];<sup>19</sup> Vernal narrow-leaf penstemon [var. *vernalensis*];<sup>36, 155</sup> Vernal penstemon [var. *vernalensis*]<sup>303</sup>

### Name and History:

The term *angustifolius* means “narrow-leaved” in Latin.<sup>264</sup> This species was first described as “*Pentstemon angustifolia*” in 1814 by Frederick Traugott Pursh (1774–1820) from specimens collected by John Bradbury (1768–1823) in North Dakota near the Minataree village (p. 738).<sup>347</sup> In 1821, Ernst Gottlieb von Steudel (1766–1833) classified it as *Chelone angustifolia*; however, this designation was not accepted (p. 186).<sup>394</sup> At various times, as many as seven botanical varieties of

*Penstemon angustifolius* have been recognized,<sup>256</sup> including the three Utah residents. Variety *dulcis* was first described in 1986 by Elizabeth C. Neese (1934–2008) from specimens collected May 19, 1981, by Sherel Goodrich (1943– ) near Oak City, Utah.<sup>298</sup> Variety *venosus* was first described in 1939 as a subspecies by David D. Keck (1903–1995) from specimens collected near Tuba City, Arizona, June 3, 1934, by Robert H. Peebles (1900–1956) and H. J. Fulton (1899–1971) (p.490).<sup>221</sup> Recent taxonomic confusion resulted when James L. Reveal (1941–2015) used specimens of what is now recognized as *P. immanifestus* to elevate var. *venosus* to species level.<sup>354</sup> The confusion between these related taxa was untangled by Noel H. Holmgren (1937– ) in his description of *P. immanifestus*<sup>193</sup> and his conversion of subspecies *venosus* to a variety status.<sup>196</sup> Variety *vernalensis* was first described by Holmgren in



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1979 from specimens collected near Maeser, Utah, by Noel Holmgren, Patricia K. Holmgren (1940– ), and Rupert C. Barneby (1911–2000), May 25, 1978 (p. 229).<sup>195</sup>

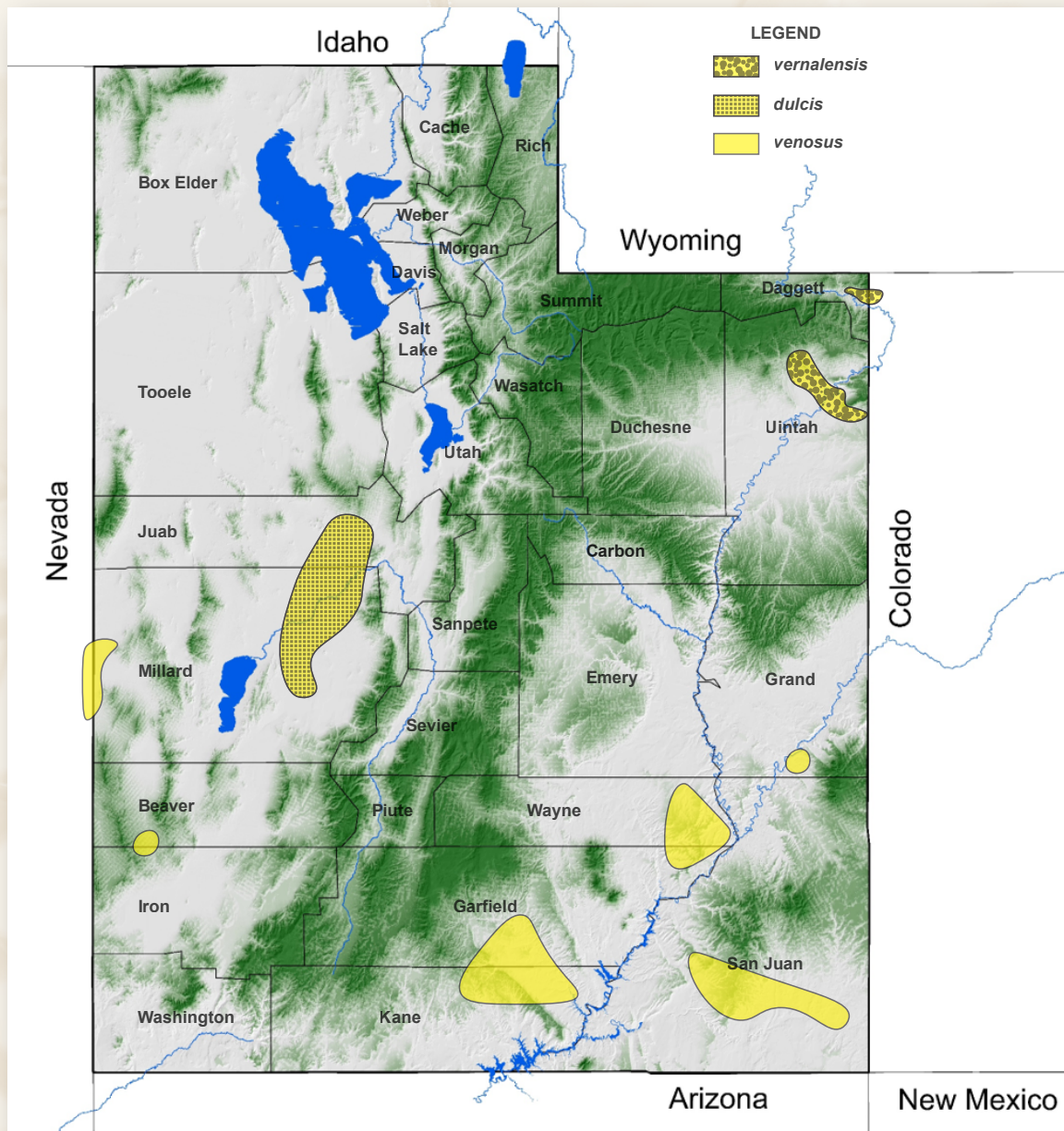
**Taxonomic Classification:**

Subgenus *Penstemon*; Section *Coerulei*.

**Morphologically Similar Species Found in Utah:**

*P. carnosus*, *P. flowersii*, *P. immanifestus*, *P. lentus*, *P. mucronatus*, and *P. pachyphyllus*. The three varieties of *P. angustifolius* found in Utah share common geographical distribution with other similar species. Variety *vernalensis* (northeast) shares a region with *P. flowersii*, *P. mucronatus*, and *P. pachyphyllus*. Variety *dulcis* (west-central) shares a region with

*P. immanifestus*. Variety *venosus* (southeast) shares common distribution with *P. carnosus*, *P. lentus*, and *P. pachyphyllus*. *P. angustifolius* var. *vernalensis* differs from *P. flowersii*, *P. mucronatus*, and *P. pachyphyllus* in having narrower leaves (almost linear, typically <8 mm wide) and a projected lower corolla lip. *P. angustifolius* var. *dulcis* shows poorly developed basal leaves and narrower leaves (typically <8 mm wide) in comparison to *P. immanifestus*. *P. angustifolius* var. *venosus* has a less developed basal leaf mat and somewhat narrower leaves that taper to a sharp tip in comparison to *P. carnosus*, *P. lentus*, and *P. pachyphyllus*. In general, all varieties of *P. angustifolius* are found in a sandy habitat compared to all other similar species, which generally will be found in heavier soils.





var. *dulcis*

**Range:**

*P. angustifolius* is common in the western Great Plains states, New Mexico, Colorado, Arizona, and Utah. The species is currently divided into five botanical varieties (USDA),<sup>49</sup> three of which reside in Utah. Variety *venosus* is present in southern Utah, New Mexico, and Arizona. Variety *dulcis* is endemic to Juab and Millard Counties in western Utah. Variety *vernalensis* is endemic to Daggett and Uintah Counties in northeastern Utah and in a small area of Moffat County of Colorado.<sup>197, 303</sup>

**Habitat:**

Variable, depending on geographical location, but typically found in sandy sites among plains and desert ecosystems. Variety *dulcis* grows among four-wing saltbush, sagebrush, and buckwheat at elevations of 4,600 to 5,400 feet (1,400–1,650 m). Variety *venosus* grows in blackbrush ecosystems among rabbitbrush and Indian ricegrass at 3,940 to 7,220 feet (1,200–2,000 m). Variety *vernalensis* can be found growing with ephedra, sagebrush, and juniper at 5,000 to 5,900 feet (1,525–1,800 m).<sup>197, 254, 303</sup>

**Bloom Period:**

Late April into June.<sup>197, 254</sup>

**General Description:**

*P. angustifolius* has the upright form and long flower spikes stereotypical of many *Penstemon* species. In bloom, the plants are typically 8 to 12 inches tall, but some forms may reach heights approaching 24 inches. The plants generally produce multiple stems and can produce as many as 20 whorls of flowers on each stem, giving the appearance of heavy bloom. The flowers come in a range of colors, from deep blue to azure to lavender and pink. The leaves are an attractive feature of the narrowleaf penstemon, being glaucous, gray-green, and somewhat fleshy.

**Technical Description:**<sup>197, 303</sup>

**PLANTS:** short-lived perennial; stems 2–6 dm tall, upright to spreading, few to several emerge from a thick crown.

**LEAVES:** entire, glabrous, glaucous; basal and lower cauline leaves petiolate, oblanceolate, 5–9 cm long, 2–16 mm wide; upper cauline leaves linear to lanceolate, acuminate, sessile, 3–10 cm long, 2–20 mm wide. Vars. *dulcis* and *vernalensis* have narrow leaves, seldom over 7.7 mm wide. Leaves of var. *venosus* are wider, over 8 mm.

**INFLORESCENCE:** aggregated, 6–16 verticillasters; cymes densely flowered; pedicels and peduncles short, glabrous.

**CALYX:** 5–7 mm long, expanding to 8 mm in fruit; segments lanceolate to narrowly ovate, acuminate, glabrous, ribbed with age; margins narrowly scarios.

**COROLLA:** lavender to blue (vars. *vernalensis* and *venosus*) or pink to rose (var. *dulcis*), 15–20 mm long, moderately ampliate, glandular, upper lip erect, lower lip projected, glabrous outside, glabrous inside or a few white hairs on the palate.

**FERTILE STAMENS:** included; anther cells 1.2–1.5 mm long, glabrous, papillate sutures, dehiscing full length, opposite but not explanate.





var. *venosus*

**STAMINODE:** reaching the orifice, expanded at the tip, recurved, bearded at the tip with yellow hairs.

**SEED CAPSULE:** 8–12 mm long.

**Conservation Status:**

As a species, *P. angustifolius* has a global conservation status of G5 and is considered secure. Varieties within the species are assigned individual conservation status ratings. Variety *venosus* is common and not considered rare.<sup>36</sup> Variety *dulcis* is ranked G5/S2 (globally secure; state imperiled), threatened at the state level and listed as a BLM sensitive species.<sup>19, 36, 39</sup> Variety *vernalensis* is ranked G5/S3 and is common within its limited range.<sup>19, 36</sup>

**Cultivation:**

Reportedly, *P. angustifolius* has been successfully cultivated in Great Britain, New York, Michigan, Minnesota, and Wisconsin.<sup>254</sup> The earliest reference of commercial seed sales of any penstemon were of this species,

and those were sold by John Fraser Jr. (1779–1852) from his London, England, address in 1813, from collections he and his father John Fraser (1750–1811) had helped procure in North America.<sup>277, 449</sup> *P. angustifolius* is short-lived (showy up to three years) and is not especially disease resistant. Growing conditions are optimized under full sun and well-drained sandy to gravelly soil with a neutral to alkaline pH.<sup>254, 437</sup> Growers having experience with this species report that the seeds of *P. angustifolius* require about 8 to 10 weeks of stratification followed by cool germination conditions.<sup>254, 258, 318</sup>

**Breeding and Cultivars:**

The USDA has released one cultivar from *P. angustifolius* for restoration uses under the name ‘San Juan.’<sup>159, 160, 253</sup> There is one report that *P. angustifolius* was used to develop a hybrid with *P. nitidus*<sup>374</sup> and was also successfully crossed with the cultivar ‘Flathead Lake.’<sup>437</sup> Furthermore, probable natural hybrids of *P. angustifolius* and *P. secundiflorus* were found in the Wildcat Hills area of Nebraska.<sup>426</sup>

**Ethnobotany:**

Records indicate that Native Americans used roots of *P. angustifolius* for medicine.<sup>95</sup> The Lakota also have used the blossoms of this species to make blue paint for moccasins (p. 59).<sup>360</sup>

var. *venosus*





var. *venosus*



var. *vernalensis*



var. *vernalensis*



var. *vernalensis*

