

Lupinus L. LUPINE

Lupinus longifolius (S. Watson) Abrams, BUSH LUPINE, LONGLEAF BUSH LUPINE, WATSON'S BUSH LUPINE. Shrub or subshrub becoming woody after several years, with spreading to ascending herbaceous branches, during flowering forming new axillary shoots with tufts of leaves at each node, producing long, arching inflorescences, with inflorescences 50–215 cm tall; shoots with leaflets folded when initially expanding or water stressed (margins not touching), silvery and velveteen sericeous or foliage aging ± green with scattered ascending to spreading hairs. **Stems:** cylindrical or when young faintly ridged with ridges descending from each leaf, new growth moderately white-sericeous to grayish; hollow. **Leaves:** helically alternate, palmately-compound with (5–)7–9(–10) leaflets, long-petiolate, with stipules; stipules 2, attached to base of petiole = stiff, thick wings (2.5–)4–7 mm long clasping internode + free portion narrowly triangular and 4–7 mm long; petiole lacking pulvinus, in range 35–94 mm long, > and scaling with leaflets, ± hemicylindric above stipule wings to cylindric approaching blade, pale green and somewhat silvery, densely sericeous; petiolules of leaflets pulvinuslike, 1.3–2 mm long, greenish white; blades of leaflets broadly oblanceolate to narrowly obovate, (10–)25–58 × (4–)6–17 mm, terminal leaflet the longest and basal leaflet pair the shortest, long-tapered and strongly folded at base, entire, rounded to obtuse (acute) at tip with short point ending midrib oriented on lower surface, pinnately veined but only midrib conspicuous sunken on upper surface and strongly raised and pale green on lower surface, soft-hairy with appressed hairs denser on lower surface. **Inflorescence:** raceme, terminal on new shoots of rainy season, mostly > 60-flowered and > 400 mm long in fruit, flowers often in pseudowhorls of 4–7 flowers but individuals within a population also having flowers unevenly alternate, pseudowhorls 17–26 mm apart, bracteate, sericeous like shoot; rachis low-ridged, each ridge descending from bractlet; bractlet subtending pedicel awl-shaped, 5–6.7 mm long, keeled, densely hairy, early-deciduous (often before anthesis) but with persistent, truncated, shelflike base; pedicel at anthesis ascending and ± straight, 5.1–6.2 mm long increasing in fruit, purple-tinged. **Flower:** bisexual, bilateral, pealike (papilionaceous), ± 9 mm across; strongly fragrant; **calyx** 2-lipped, densely short-sericeous, green or tinged purple; tube cup-shaped compressed side-to-side, ca. 2 mm long; upper lip appressed to humped center of banner, broadly ovate and strongly cupped, ca. 7.5 mm long and 3–3.5 mm high, 2-toothed at tip, the teeth 0.6–1 mm long; lower lip triangular-ovate, 8–9 × 4 mm, acute at tip, 3-veined with midvein somewhat raised; appendages 2, ascending at sinuses, lanceolate, 0.7–2.5 mm long, greenish and hairy, easily detached in bud or during flowering; **petals** 5, appearing inflated with cupped wings mostly concealing keel; banner ascending with thinner wings flexed backward, roundish, 15–16 mm, glabrous, central region from base humped forward with a narrow midfurrow (sulcus), cream to yellowish white or yellow along midfurrow with or without subtle dots, wings light lavender to shades intermediate or dark red-purple or light to intermediate or dark violet (white); wings 2, clawed, 14.5–16 mm long, claw obovate in outline, ca. 2 mm long, same basic color as banner, fused along outer margin with or with tip of keel protruding between wings and above fused area; keel of 2 petals fused on lower edge from midpoint to tip, to 16 mm long, clawed, claw relatively narrow, ca. 3 mm long, white to pale green, limb wide sickle-shaped, very pale purple to whitish or pale green at base changing to mostly purple (pale purple) with fine longitudinal veins to deep purple or maroon at tip, ciliate with short-pilose hairs along upper margin from midpoint almost to tip, glabrous along lower keel margin; **stamens** 10, monadelphous (10 filaments fused); filament column ± 7 mm long, whitish, free filament portions alternating long and shorter, 7.5–9 mm (long stamens) and 3–4.5 mm (short stamens), orangish white, glabrous; anthers dorsifixed, dithecal, ca. 1 mm long (long stamens) and 3–4 mm long and dehiscent in bud (short stamens), light orange, longitudinally dehiscent; pollen light orange; **pistil** 1, 14–16 mm long; ovary superior, lanceoloid compressed side-to-side, ca. 7 × 2 mm, green, densely short-sericeous, 1-chambered with 6–7 ovules; style arcuate, 8–10 mm long,

whitish, with an asymmetric ring of short hairs just below stigma; stigma 1, \pm conic, papillate.

Fruit: pod (legume), large fruits dehiscent via 2 valves twisting to 720° , \pm oblong or fusiform to lanceoloid or oblanceoloid, 1–6-seeded, (15–)30–50 \times 8–11 \times 6–6.5 mm + with glabrous, persistent beak to 3 mm long and sometimes remainder of upward-curved style, bulging at mature seeds and unexpanded where ovules aborted, obtuse to acute at tip, densely appressed-villous with hairs mostly oriented toward tip. **Seed:** broad-elliptic compressed side-to-side with projection beside a deep hilum, 4.2–5 \times 3.2–4 \times 2.2–3 mm, dull to patchy-glossy brown mottled dark brown often a face with a dark diagonal line of dots. Late January–late July.

Native. Deciduous shrub encountered in chaparral, coastal sage scrub, and breaks in southern oak woodland, frequently growing with shrubs of *Salvia*, *Mimulus aurantiacus*, and *Eriophyllum confertiflorum*. *Lupinus longifolius* tends to have silvery, velveteen leaves, and individuals tend to be taller when growing on moister and more shady, north-facing slopes. The flower-bearing portion of the inflorescence may be more than forty centimeters long; flowers are either in pseudowhorls with five to seven flowers per whorl or otherwise not in distinct whorls, and when not whorled fruits, which are velveteen when green, tend to become secondarily oriented to one side. In range the typical population has intermediate violet to red-purple flowers, but occasionally can be found variants, so that along a short stretch of hiking trail individuals will be observed with various lighter shades or pale to whitish petals having dark purple-red on the banner and keel. Fruit size and shape varies along a single inflorescence, influenced by which seeds mature base to tip, so that where seeds abort the fruits are collapsed, and a fruit containing only a couple seeds may not split open.

B. A. Prigge & A. C. Gibson