

Vascular Plants of Williamson County

Cirsium undulatum – PLUMED THISTLE, PASTURE THISTLE, WAVELEAF THISTLE
[Asteraceae]

Cirsium undulatum (Nutt.) Spreng., PLUMED THISTLE, PASTURE THISTLE, WAVELEAF THISTLE. Annual or biennial herb, spinescent, thick-taprooted, rosetted, 1-stemmed at base, mostly unbranched, in range to 80 cm tall; shoots having basal leaves with some later becoming cauline leaves during shoot elongation (before flowering), densely woolly-tomentose, foliage generally silvery and bicolored with upper surfaces more gray-green or individuals overall gray-green with less dense tomentum or aging less dense; spines along leaf margins and at tips sharp-tipped, cylindrical, the longer ones 2–5 mm long. **Stems:** ridged (beneath tomentum), to 12 mm diameter, 3-ridged from each cauline leaf, with fine, silvery white, longitudinally oriented, woolly-tomentose hairs. **Leaves:** helically alternate, pinnately lobed with spinose margins, petiolate (leaves of basal rosette) and sessile (cauline leaves), without stipules; petiole broadly channeled, to 90 mm long decreasing upward, tough with ascending, winglike margins approaching stem, gray and densely woolly-tomentose; blade of rosette leaf obovate, 200–300 × 70–120 mm, long-tapered at base, lobes and principal sublobes spine-tipped, the largest blades with overlapping lobes, principal lobes 2× sinus and > 1/2 to midrib, pinnately veined with principal veins somewhat sunken on upper surface and raised on lower surface, on lower surface the thick midrib 3-ridged and having longitudinal woolly hairs; blade of cauline leaf ascending, without petiole and < 100 × < 50 mm decreasing upward (diminutive approaching terminal inflorescence). **Inflorescence:** head, terminal, solitary, many-flowered, head discoid, at anthesis shaving brushlike, to 60 mm long with flowers exerted 25 mm from involucre, flowers helically alternate, bracteate; peduncle stemlike, densely white woolly-tomentose and cobwebby; **involucre** bell-shaped truncate at base and in bud protected by erect spines (phyllaries) blocking entrance, at anthesis ca. 35 × 30 mm with lower portion 22–24 mm long and having spine-tipped phyllaries spreading 75–90° from vertical, phyllaries 200+ in 8–12 series, outer series tightly appressed to involucre, narrowly triangular, 7.5–8 × 1.5 mm including terminal 2 mm spine, light green with midvein enlarged, raised, and white-resinous aging black, woolly-ciliate on margins with hairs 1+ mm long (absent on spine tip), green tissue with woolly hairs; next several series spine-tipped, 5–6 mm long bent abruptly outward 4–4.5 mm, lower portion white-resinous and woolly-ciliate on margins; next several series narrowly triangular, ca. 10 × 3 mm + tip, whitish to midblade and green above midblade with a narrower midvein, tough, tomentose; inner phyllaries to 30 × 1.5 mm long, green with colorless margins but purplish stripes approaching white-scarious, acuminate tip, to 5-veined at base mostly 3-veined, woolly-ciliate on 1 margin; receptacle convex, lacking bractlets (paleae), with many white capillary hairs between ovaries, the hairs initially 5–11 mm long increasing in fruit. **Disc flower:** bisexual, ± radial, ca. 8 mm across (corolla lobes); **calyx (pappus)** of 60+ bristles with fine, featherlike branches (plumose), 35–40 mm long, silky white, in 3 tight series with flattened axes of bristles touching; **corolla** 5-lobed, ca. 4.5 mm long; tube and throat cylindrical, white below lobes, 0.2 mm diameter at base gradually increasing upward, ca. 30 mm from base saclike and expanded to 2 mm diameter, above sac 1 mm diameter approaching lobes; lobes ascending, unequal, 3 long lobes 9.5–10 × 0.4 mm and 2 shorter lobes diverging 2 mm higher ca. 7 ×

0.5 mm, pale pink to pinkish at base to darker and light lavender at tips; **stamens** 5, attached to top of corolla tube; filaments ca. 11 mm long, white, papillate; anthers exserted, fused into cylinder surrounding ovary, basifixed, dithecal, ca. 14 mm long including pointed appendages 1.5 mm long and slender tails 3–3.5 mm long, white but pinkish approaching pink appendages, longitudinally dehiscent; pollen white; **pistil** 1; ovary inferior, wedge-shaped, ca. $3 \times 1.2\text{--}1.5$ mm, white, glabrous, 1-chambered with 1 ovule; **nectary chamber** surrounding base of style; style exserted to 7 mm above corolla lobes, cylindric, $\pm 54 \times 0.2$ mm, glabrous, 2-branched, white below fork, the stigmatic branches appressed, 4 mm long, exserted portion pink to pinkish. **Fruits:** cypselae (achenes), oblong-obovate compressed side-to-side truncate with conspicuous collar at top, $5.2\text{--}7 \times 2.2\text{--}2.6 \times 1.3\text{--}1.6$ mm, glossy light brown to tan and finely striped with many parallel fine lines, smooth, oblique at base, on top having an exserted, stout central post (where pappus attached); pappus of many fine bristles with featherlike branches (plumose) in 3 series, 35–40 mm long, whitish, silky, the series fused by basal tissue.

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