

**KEYS TO THE FLORA OF FLORIDA - 30,
LIATRIS (COMPOSITAE)**

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ABSTRACT

Liatis (Compositae) is represented in Florida by 14 species, four of which are treated as of two varieties, with *L. spicata* var. *savannensis* and *L. gracilis* var. *gholsonii* recognized as new combinations. Four species and two varieties are endemic, and two of the endemic species are rated as endangered. One species is excluded. An amplified key is given to the Florida taxa. *Phytologia* 94(1): 139-146 (April 2, 2012).

KEY WORDS: *Liatis*, Compositae, Florida flora.

For two-thirds of a century the painstakingly detailed monograph of *Liatis* (Compositae) by Lulu O. Gaiser (Rhodora 48: 165-183, 216-263, 273-326, 331-382, 393-412. 1946) has been the accepted standard. Gaiser reported 13 species for Florida, all well-defined and with adequately discrete ranges. Though the names may have been changed, the taxa she recognized were not far dissimilar from those of J. K. Small (1933).

But time, further observations, and especially a willingness to recognize at specific rank obscure taxa that might once have been disregarded or ranked as varieties, have put Gaiser's work in need of subtle revisions. Guy L. Nesom (Fl. N. Amer. 23: 512-535. 2006) has produced a synopsis of *Liatis* across the continent, and Richard P. Wunderlin (Guide Vasc. Plants Fla. 1998, et seq.) has briefly summarized the Florida species. Still, there is room for further interpretation, to bring the treatment of *Liatis* into line with other genera of the present series.

Here, 14 species are recognized as native to Florida. The peculiar *Liatris ohlingerae*, endemic to the mid-peninsula scrub and separated by Small as *Ammopursus ohlingerae* (Bull. Torrey Bot. Club 51: 392-393. 1924), is retained in *Liatris*, in agreement with Nesom and Wunderlin, and with R. M. King & H. Robinson (Taxon 19: 6-11. 1970) who reported setae on the achene to be of a distinctive type in common with other *Liatris*. Its morphology and life history have been closely examined by Olga Lakela (Sida 1: 240-247. 1964) -- who retained the Sand-torch in *Ammopursus* -- and Alan Herndon (Fla. Fish and Wildl. Conserv. Comm., Tallahassee. 1999).

Other adjustments involve more recently recognized taxa, one worthy of specific rank, others less well defined. *Liatris provincialis*, an endemic of the Florida panhandle well documented by R. K. Godfrey (Amer. Midl. Nat. 66: 466-470. 1961), seems adequately separated from the more widespread *L. chapmanii*. Its range coincides quite exactly with that of other endemics of the mid-panhandle coastal lowlands (*Cuphea aspera*, *Harperocallis flava*, *Hypericum chapmanii*, *Pinguicula ionantha*, etc.). *Liatris elegans* var. *kralii* of the western panhandle, Alabama, and Georgia, was prudently reported by Mark H. Mayfield (Sida 20: 597-603. 2001) as a variety. The similar *Liatris pauciflora* and *L. secunda* have elsewhere been combined at varietal level (D. B. Ward, Novon 14: 365-371. 2004).

Two other recent novelties are believed also to merit only infraspecific rank. *Liatris gholsonii*, of the Apalachicola River bluffs in the central panhandle, differs from *L. gracilis* in several quantitative but intergrading characters, making identification uncertain if knowledge of the source is unknown. Though the Apalachicola bluffs are the home of several impressive endemics (*Torreya taxifolia*, *Taxus floridana*, *Croonia pauciflora*, etc.), these are of relic status, ancient species far removed in both geography and morphology from their congeners, while the new *Liatris*, with its scant separation from typical *L. gracilis*, must be presumed to be of relatively recent origin. In age it is perhaps to be compared with the many, modestly differentiated endemics of the geologically recent, glacially immersed coastal lowlands of the central Florida panhandle.

Liatris savannensis of the southwestern peninsula may readily pass for the rather frequent and quite widespread *L. spicata*. The differentiating characters, though often apparent, intergrade to such an extent that judgment as to taxon is uncomfortably subjective.

Liatris gracilis Pursh var. ***gholsonii*** (L. C. Anderson) D. B. Ward, comb. et stat. nov. Basionym: *Liatris gholsonii* L. C. Anderson, Sida 20: 98. 2002. TYPE: U.S.A. Florida: Liberty Co., shaded upper slopes of No Name Ravine on the Nature Conservancy's Apalachicola Bluffs and Ravines Preserve, 13 Sept 2001, L. C. Anderson 19932 (holotype, BRIT; isotypes, FSU, MO, NY).

Liatris spicata (Linnaeus) Willdenow var. ***savannensis*** (Kral & Nesom) D. B. Ward, comb. et stat. nov. Basionym: *Liatris savannensis* R. Kral & G. L. Nesom, Sida 20: 1574. 2003. TYPE: U.S.A. Florida: Charlotte Co., wet pine/cabbage palm flats, ca. 3 mi. S of Punta Gorda, 7 Oct 1979, R. Kral 64559 (holotype, US; isotypes, FSU, NY, VDB, VSC).

The name of one species has been poorly understood and is often incorrectly reported as *Liatris graminifolia*. Thomas Walter (1788; 197) reported a Carolina plant as *Anonymos graminifolia*. His name is of course illegitimate (Walter named 28 of his genera "*Anonymos*") and he left no type, but his epithet is often assumed to have been legitimized by Willdenow (1803), as "*L. graminifolia* (Walt.) Willd." But Walter's *Anonymos graminifolia* was surely *Vernonia angustifolia*, not a *Liatris* (Ward, 2007: 409). And Willdenow's *L. graminifolia* was original, not a transfer, and is now considered a synonym of *L. pilosa* (Ait.) Willd., a northern species (G. L. Nesom & J. M. Stucky, Sida 21: 815-826. 2004). The Florida (and Georgia) plant, otherwise without a name, thus becomes *Liatris elegantula* (Greene) K. Schum.

LIATRIS Gaertn. ex Schreb. Blazing-stars¹

1. Inner phyllaries with tips expanded and petal-like (purple, mauve, or sometimes white), far more prominent than the florets; pappus bristles plumose; rootstock globose. Perennial herb, to 1 m. Dry pinelands. Summer-fall. [*Lacinaria elegans* (Walt.) Kuntze]
Liatris elegans (Walt.) Michx.
 - a. Heads sessile or nearly so; tips of phyllaries recurved.
Panhandle and north peninsula (s. to Pasco Co.); frequent (infrequent to rare in peninsula). var. **elegans**
 - a. Heads on short peduncles; tips of phyllaries ascending.
Panhandle (Okaloosa, Santa Rosa, Washington cos.); rare.
var. **kralii** M. H. Mayfield
1. Inner phyllaries firm and non-petaloid, less prominent than the florets.
 2. Pappus bristles plumose, the lateral cilia many times longer than diameter of the shaft; heads large, to 2.5 cm. high, few (often only 3-4 per stem); phyllaries acute, squarrose, fringed with white hairs; florets purple; rootstock globose. Perennial herb, to 0.8 m. Grassy pinelands. Panhandle (e. to Gadsden Co.); infrequent. Summer. [*Lacinaria squarrosa* (L.) Hill]
Liatris squarrosa (L.) Michx.
 2. Pappus bristles barbellate, the lateral cilia less than 3 times longer than diameter of the shaft.
 3. Rootstock (true roots) elongated and jointed; heads large (2.5 cm. high), borne erect on 2-5 cm. peduncles; phyllaries loosely appressed; florets pale purple. Perennial herb, to 0.6 m. White sand scrub. Central peninsula (Highlands, Polk cos.); rare. Summer-fall. Endemic. ENDANGERED (Federal, State listings). [*Ammopursus Ohlingeri* (Blake) Small]
SAND-TORCH. **Liatris ohlingerae** (Blake) B. L. Robinson
 3. Rootstock globose (in *L. garberi*, elongate and branched, but heads 1.0 cm. high); heads sessile or on short ascending or spreading peduncles.
 4. Heads as broad as long, 15-40 flowered; phyllaries loosely erect or partly recurved, rounded at the tips.

5. Phyllaries entirely green or with very narrow membranous margins; heads 15-25 flowered. Perennial herb, to 1.5 m. Open sandy banks. West and central panhandle (Okaloosa, Gadsden, Wakulla cos.); rare. Summer-fall. [*Lacinaria Tracyi* Alex. in Small] ***Liatris earlei*** (Greene) K. Schum.

5. Phyllaries with broad scarious usually pigmented margins; heads 20-40 flowered. Perennial herb, to 1.5 m. Open mixed woods. North Florida (s. to Alachua Co.); rare. Summer-fall. [*Lacinaria scariosa*, misapplied]

Liatris aspera Michx.

var. ***intermedia*** (Lunell) Gaiser

4. Heads longer than broad, 3-18 flowered; phyllaries erect, rounded to acute.

6. Lower leaves long, abruptly changing into much shorter setaceous, closely appressed cauline leaves.

7. Leaves filiform, or a few basal ones markedly wider (to 3 mm.), usually sparsely ciliate near base. Perennial herb, to 1.8 m. Dry pinelands, clearings, flatwoods. Panhandle, south to mid-peninsula (Highlands), disjunct to south peninsula (pine islands of Dade Co.); frequent (rare in s. peninsula). Fall. [*Lacinaria tenuifolia* (Nutt.) Kuntze]

Liatris tenuifolia Nutt.

7. Leaves linear, 2-8 mm. wide, glabrous. Perennial herb. Moist to dry pinewoods. Perennial herb, to 1.8 m.

Peninsula (Dade, n. to Columbia, Baker cos.), westward on coastal dunes (to Bay, Franklin cos.); frequent. Fall. A southern vicariad of *L. tenuifolia*, now overlapping and intergrading. [*Liatris tenuifolia* var. *quadriflora* Chapm.; *Lacinaria tenuifolia*, misapplied] ***Liatris laevigata*** Nutt.

6. Lower leaves gradually reduced upward, or if abruptly reduced, the cauline leaves foliaceous and spreading.

8. Phyllaries broad, rounded at apex, often with scarious margins.

9. Heads pedunculate (to 2 cm.) and widely spreading, or rarely sub-sessile; stem lightly hoary-pubescent; leaves glabrous or ciliate toward the base. Perennial herb, to 1.0 m. Fall. ***Liatris gracilis*** Pursh

a. Lower cauline leaves lanceolate, mostly <12 mm. wide; lower floral bracts <2 mm. wide; phyllaries usually obtuse. Dry longleaf-pine forests, flatwoods, occasionally persisting on roadsides. Throughout; frequent to common (rare in Keys). [*Lacinaria gracilis* (Pursh) Kuntze; *Lacinaria laxa* Small]

var. **gracilis**

a. Lower cauline leaves elliptic, mostly >12 mm. wide; lower floral bracts >2 mm. wide; phyllaries usually acuminate. Dry deciduous woodlands on upper slopes of bayhead ravines and crest of bluffs. Central panhandle (Liberty Co.); rare. Endemic. [*Liatris gholsonii* L. C. Anderson]

var. **gholsonii** (L. C. Anderson) D. B. Ward

9. Heads sessile, or sometimes short-pedunculate; stem and leaves essentially glabrous.

10. Heads sessile or on short peduncles; inflorescence a loose spike, the interval between heads often equal their length; lower leaves narrowly lanceolate. Perennial herb, to 1.0 m. Rocky hammocks. Central panhandle, south along west coast (to Manatee Co.); infrequent. Fall. [*Lacinaria graminifolia* (Willd.) Kuntze; *Liatris graminifolia*, misapplied]

Liatris elegantula (Greene) K. Schum.

10. Heads uniformly sessile; inflorescence a dense spike, the interval between the heads much shorter than their length; lower leaves linear, scarcely tapering for most of length. Perennial herb, to 1.8 m. Wet to dry pinelands and savannas. Summer-fall.

Liatris spicata (L.) Willd.

a. Stems eglandular; leaves inconspicuously or not punctate; margins eciliate or with short hairs (<0.8 mm.); corolla tubes glabrous within. Nearly throughout (excl. Keys); frequent. [*Lacinaria spicata* (L.) Kuntze]

var. **spicata**

- a. Stems minutely glandular; leaves prominently punctate; margins with long hairs (>1.0 mm.); corolla tubes pilose within. Southwest peninsula (Hillsborough to Lee Co.); infrequent. Endemic. [*Liatris savannensis* Nesom & Kral]

var. **savannensis** (Nesom & Kral) D. B. Ward

8. Phyllaries narrow, acute, without scarious margins.
11. Heads stout, with 6-7 florets; phyllaries hirsute along midrib; rootstock (true roots) forked, elongate. Perennial herb, to 0.6 m. Low pinelands and wet prairies. South peninsula (excl. Keys), north to mid-peninsula (Hillsborough, Orange, Brevard cos.); frequent. Summer-fall. Endemic. [*Lacinaria chlorolepis* Small; *Lacinaria Garberi* (Gray) Kuntze]

Liatris garberi Gray

11. Heads slender, with 3-6 florets; phyllaries glabrous or with minute marginal cilia; rootstock (lower stem) globose.
12. Heads sessile or sub-sessile, forming an erect symmetrical spicate inflorescence.
13. Heads rigidly ascending, crowded and overlapping; involucre 18-20 mm. high; leaves with short stiff pubescence. Perennial herb, to 1.2 m. Well drained sand of scrub and longleaf pinelands. Panhandle (e. to Leon Co.), disjunct to peninsula (Putnam to Dade cos.); frequent. Summer-fall. Endemic. [*Lacinaria Chapmanii* (Torr. & Gray) Kuntze]

Liatris chapmanii Torr. & Gray

13. Heads strongly divergent from the rachis, often loosely spaced; involucre 12-15 mm. high; leaves glabrous. Perennial herb, to 0.8 m. Coastal dunes and islands, longleaf-pine ridges. Central panhandle (Franklin, Wakulla cos.); rare (locally abundant). Summer-fall. Endemic. ENDANGERED (State listing).

Liatris provincialis Godfrey

12. Heads pedunculate, often shortly so, all rotated to upper side of the curving rachis, forming a loose arching racemose inflorescence. Perennial herb, to 0.8 m. Dry longleaf-pine sandhills. Frequent. Summer-fall.

Liatris pauciflora Pursh

- a. Stem and rachis glabrous. Eastern panhandle (Taylor, Madison cos.), south to central peninsula (Hillsborough, Polk cos.). [*Lacinaria pauciflora* (Pursh) Kuntze] var. ***pauciflora***
- a. Stem and rachis densely short-pubescent. Western panhandle (e. to Washington Co.). [*Lacinaria secunda* (Ell.) Small] var. ***secunda*** (Ell.) D. B. Ward

Excluded names:

Liatris squarrulosa Michx.

Northern, to mid Georgia. Reported for Florida (Cronquist, 1980), for Wakulla Co. (Clewell, 1985), and for Gadsden and Okaloosa cos. (Wunderlin, 1998). R. K. Godfrey (pers. comm., Feb 1987) suggested that all are *L. aspera*. More probably, plants so named are best assigned to *L. earlei*.

¹ This paper is a continuation of a series begun in 1977. The "amplified key" format employed here is designed to present in compact form the basic morphological framework of a conventional dichotomous key, as well as data on habitat, range, and frequency. Amplified keys are being prepared for all genera of the Florida vascular flora; the present series is restricted to genera where a new combination is required or a special situation merits extended discussion.

This key to *Liatris* was begun in October 1966 and has undergone numerous revisions as further wisdom has been obtained over the years. I am grateful to Robert K. Godfrey and Lorán C. Anderson, to John Beckner, to Arthur Cronquist, to Robert L. Wilbur, and especially to Erdman West, for their willingness to assist me in deciphering the taxonomy, distribution, and nomenclature of the Florida Blazing-stars. Sadly, I must note that more than half of these good people are now gone. I must daily no longer lest those remaining not know of my gratitude.