

# *Lupinus westianus* var. *westianus*

## Gulf coast lupine

### Fabaceae



Credit: L. Scott Jackson, UF/IFAS.

Gulf coast lupine (*Lupinus westianus* var. *westianus*) is listed as threatened by the Plants in the Preservation of Native Flora of Florida Act, Chapter 5B-40, Florida Administrative Code, 1998, amended (Wunderlin et al. 2017). The species is endemic to coastal counties in the western Panhandle of Florida. Two disjunct populations are noted with *Lupinus westianus* var. *aridorum* occurring only in the central peninsula of Florida. Gulf coast lupine occurs in beach dunes, coastal grasslands, coastal scrub, sandhills, and

disturbed areas such as roadsides. Gulf coast lupine can be distinguished from a similar lupine (*L. diffusus*) by the lack of a petiole. Several pollinators are sustained by gulf coast lupine, and the inflorescences are remarkably showy. Lupines form symbiotic relationships with nitrogen-fixing microorganisms within the soil (Gutiérrez Mañero et al. 2003).

### General Description

Gulf coast lupine is a shrubby biennial or short lived perennial herb that grows up to 3 ft tall. It is most commonly found on exposed and active sand dunes and on sandy disturbed areas. *Leaves* are alternately arranged and superficially appear simple but are in fact a compound leaf with only one leaflet (unifoliate). *Stems* are herbaceous when young but become woody with age. Inflorescences are terminal spikes that occur in the spring. *Flowers* have purple to blue corollas with red to purple spots on the standard, are densely arranged on the stalk, and resemble the flowers of peas. *Fruits* are hairy legumes.

### Propagation

No published propagation information is available for gulf coast lupine. However seed germination of related lupine species has been studied. Lupine seeds exhibit physical dormancy and need to be scarified in order to germinate. Seeds of sky blue lupine (*Lupinus diffusus*), a related scrub species, achieved 70% germination following 20 seconds scarification in an electric seed scarifier (Forsbergs, Inc.) after one year in dry storage at room temperature (Campbell 2016). The authors were able to germinate sky blue lupine seed and grew seedlings in a climate-controlled greenhouse to a 3-inch height before all seedlings became chlorotic and died. We speculate the plants lacked the soil mycorrhiza in the production substrate and were unable to form symbiotic relationships with the nitrogen-fixing microorganisms required for their survival.

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## Outplanting

No published outplanting information exists for gulf coast lupine. Other species of lupine have specific mycorrhizal associations and are notorious for poor survival rates during transplantation.

## Literature cited

Campbell, G. 2016. "Dormancy and germination characteristics of two Florida native forbs, *Asclepias humistrata* and *Lupinus diffusus*." Masters thesis. University of Florida.

Gutiérrez Mañero, F.J., A. Probanza, B. Ramos, J.J. Colón Flores, and J.A. Lucas García. 2003. "Effects of culture filtrates of rhizobacteria isolated from wild lupine on germination, growth, and biological nitrogen fixation of lupine seedlings." *Journal of Plant Nutrition*. 26(5):1101–1115.

Wunderlin, R.P., B.F. Hansen, A.R. Franck, and F. B. Essig. 2017. *Atlas of Florida Plants*. [S. M. Landry and K. N. Campbell (application development), USF Water Institute.] Institute for Systematic Botany, University of South Florida, Tampa. <http://florida.plantatlas.usf.edu/>

