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Palmetto



By Amy Jenkins

A PANHANDLE SPRING SPECIALTY

IMAGINE A SHOWY FRINGED-PETALED
PINK GRACING THE FOREST FLOOR
ALONG GRADUAL TO STEEP SLOPES
ABOVE THE APALACHICOLA RIVER...

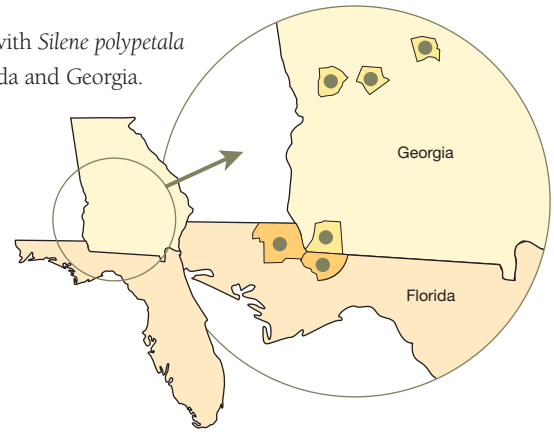


Silene polypetala photo by Gary Knight.



Drawing by Jean Putnam. Printed with permission of FNAI.

Figure 1. Counties with *Silene polypetala* populations in Florida and Georgia.



Silene polypetala

One of the spring specialties of the Florida panhandle is a small but spectacular wildflower, the fringed campion (*Silene polypetala*). One of the rarest plants in Florida, *Silene polypetala* is a perennial herb with showy pink flowers that blooms profusely from mid-March to early May. Imagine a showy fringed-petaled pink gracing the forest floor along gradual to steep slopes above the Apalachicola River. *Silene* is a member of the pink family (*Caryophyllaceae*) whose representatives include chickweed and sand squares. It inhabits mature mesic hardwood forests on slopes and stream terraces over low-acidity soils.

Silene polypetala is considered by the Florida Natural Areas Inventory to be imperiled globally (G2) and critically imperiled (S1) in Florida. It is listed as endangered by the US Fish and Wildlife Service and the State of Florida due to threats posed by logging and residential development of its habitat, predation by deer, inadequacy of existing protections, encroachment by invasive exotic species, and the small number of populations (Moranz et al. 2001). It is currently only known from the Florida panhandle near the Apalachicola River in Jackson and Gadsden Counties, along the Flint and Chattahoochee Rivers in central and southern Georgia, and in the lower piedmont plateau of west central Georgia. [Fig. 1] A recent Florida survey confirmed only 12 populations of *Silene polypetala* (Jenkins and Baker 2006) in addition to the 19 occurrences previously reported from central and southwest Georgia (USFWS 1996).

Silene polypetala is an evergreen perennial herb about 10 inches tall with opposite hairy leaves 1-4 inches long (Chafin 2000). It has a distinctively light green (almost chlorotic looking) color that to the trained eye is relatively easy to pick out from among the many other herbs around it. It spreads by runners that root at the nodes and in some situations can form dense mats but it usually occurs in scattered small clusters or individual plants. The flowering stalks arise from the tips of the runners and stand erect showing off their brilliant pale pink flowers (Chafin 2000). The flowers have five deeply fringed petals and are commonly about 2 inches across.


The rich slope forests in which *Silene polypetala* occurs are mostly associated with the bluff and ravine systems along the Apalachicola River. These are well-developed, closed-canopy forests of upland hardwoods on steep slopes, bluffs,

and ravines (Florida Natural Areas Inventory and Florida Department of Natural Resources 1990). Soils are generally sands, sandy-clays, or clayey-sands with substantial organics and occasional limestone outcrops. Slope forests exhibit one of the highest species diversities in the state, largely because of their mixture of cold temperate (e.g., beech (*Fagus grandifolia*), white oak (*Quercus alba*)) and warm temperate (e.g., southern magnolia (*Magnolia grandiflora*)) species. Tree density is relatively high. Such forests are very sensitive communities whose delicate microclimate can be easily disturbed by timber harvests which open the canopy, or by hydrological manipulations which affect seepage and surface water sources. Their steep slopes quickly erode when unvegetated.



Slope forests exhibit one of the highest species diversities in Florida largely due to their mix of cold temperate and warm temperate species. Photo by Ann F. Johnson.

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Silene polypetala

The canopy, rather than having one or two dominant species, is characterized by a mixture of several trees including Florida maple (*Acer saccharum* subsp. *floridanum*), southern magnolia, tulip poplar (*Liriodendron tulipifera*), and American beech. An open subcanopy may be present and usually consists of witch hazel (*Hamamelis virginiana*), redbud (*Cercis canadensis*), eastern hophornbeam (*Ostrya virginiana*), and American buckeye (*Aesculus pavia*). A shrub layer is usually present but rarely dense and the herbaceous layer is scattered to dense and commonly is comprised of vines, graminoids and forbs. These include Indian pink (*Spigelia marilandica*), poison ivy (*Toxicodendron radicans*), wild blue phlox (*Phlox divaricata*), Ohio spiderwort (*Tradescantia ohiensis*), Christmas fern (*Polystichum acrostichoides*), Florida yam (*Dioscorea floridana*), several Trillium species (*Trillium underwoodii*, *T. lancifolium*, and *T. decipiens*), bloodroot (*Sanguinaria canadensis*), prostrate blue violet (*Viola walteri*), heartleaf noseburn (*Tragia cordata*), and switchcane (*Arundinaria gigantea*).

Little variation exists in the habitat among the twelve *Silene polypetala* populations. Populations are found on all heights along the slope but are more commonly on upper to middle, rather than lower parts of the slope and on very steep and gentle slopes. Several sites have moderate to heavy invasion by exotic species that change the structure of the forest by increasing the density of the shrub or herbaceous layer.

Silene polypetala occurs in a hotspot for rare species, many at their southern range limits, such as croomia (*Croomia pauciflora*), burning bush (*Euonymus atropurpureus*), bay starvine (*Schisandra glabra*), Baldwyn's spiny pod (*Matelea baldwyniana*), pyramid Magnolia (*Magnolia pyramidata*), eastern leatherwood (*Dirca palustris*), narrow-leaved Trillium (*Trillium lancifolium*), liverleaf (*Anemone americana*), wood spurge (*Euphorbia commutata*), Godfrey's privet (*Forestiera godfreyi*), American bladdernut (*Staphylea trifolia*), common pricklyash (*Zanthoxylum americanum*), Florida flame azalea (*Rhododendron austrinum*), and green violet (*Hybanthus concolor*).

A status survey for *Silene* was conducted in the spring of 2006 by the Florida Natural Areas Inventory to relocate all known populations and survey for any new populations (Jenkins and Baker 2006). All previously known populations were relocated, their

locations mapped using Geographic Information System (GIS) technology, and their population and habitat characteristics recorded. Three new occurrences for *Silene polypetala* were documented during this status survey, extending the Florida range for *Silene* slightly to the north and south of the previous range known for this species. In general, populations of *Silene* tend to be either clumped or scattered in distribution. The larger populations are often made up of widely to densely scattered plants whereas the smaller populations are usually clumped together. Population sizes range from several vegetative plants to hundreds of flowering plants at any given site. The best estimate according to this most recent survey for total population size in Florida is 1500-2000 individuals making this a very rare species indeed.

Six of the twelve populations occur on publicly-owned property; the remaining six are on private property owned by large forestry companies. All of these properties are included within the boundaries of the Apalachicola River Florida Forever Project identified for public acquisition through the Florida Forever Program (Department of Environmental Protection 2005). In fact, the largest population of *Silene polypetala* with the largest blooming display occurs on private forestry property. This extensive population is approximately 600 x 250 feet in size and is located on a very steep slope with robust plants scattered throughout.

The greatest threat to *Silene polypetala* is habitat destruction via logging. Although *Silene* occurs on steeper slopes that are not as attractive to logging interests as the surrounding pine forests, many of the slope forests where it occurs are occupied by large mature hardwood trees that may be desirable for logging interests. Invasive exotic plant species are also a direct and growing threat to *Silene* populations. Seven of the twelve populations have exotic plant species growing in the immediate vicinity including species such as *Ardisia crenata*, *Lygodium japonicum*, *Lonicera japonica*, *Nandina domestica*, *Ligustrum lucidum*, *Ligustrum sinense*, and *Phyllostachys aurea*. Several of the sites that are protected on public property need careful exotic plant removal. However, before any exotic removal treatments begin, all *Silene* (and other rare plant) populations should be clearly flagged and no foliar herbicides should be used within such flagged areas. Botanical experts should be on-site when

contractors are applying herbicides to educate them in identification of *Silene* and other rare species to ensure they are not damaged.

Educating forestry companies on the rarity, threats, and management needs of *Silene polypetala* may be a reasonable approach to preserving private sites containing the species. Encouraging them to preserve habitat where *Silene* exists is imperative. Alternatively, no-cut buffers should be used around the populations if the slope forests are to be logged. Conservation easements could be a useful tool for willing landowners.

This rare species is a beautiful example of the rich flora in the slope forests of the Florida panhandle. Its restricted range, habitat, and threats all contribute to its extreme rarity. If you ever have the privilege of seeing the fringed campion you will most certainly be delighted. Hopefully these bright pink flowers will dot the spring slope forests in the Florida panhandle for generations to come. ⚙️

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