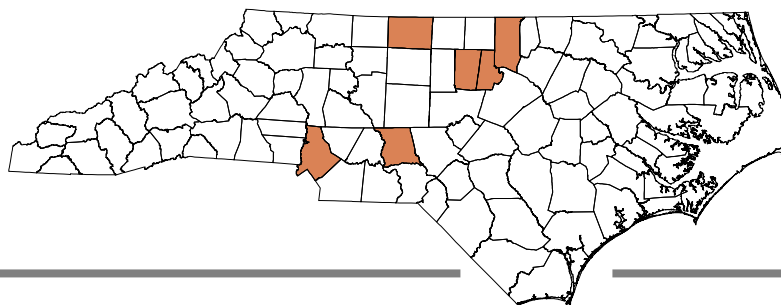


Smooth coneflower

Echinacea laevigata

(Smooth echinacea, smooth purple coneflower, purple coneflower)

Endangered (October 8, 1992)



Description: Smooth coneflower is a perennial herb of the aster family with fleshy roots, hairless stems, and few leaves, 20-59 inches (0.5-1.0 m) tall. The simple leaves are alternate, smooth with toothed edges, range in shape from lance-shaped basal leaves with rounded bases to smaller, elliptic mid-stem leaves, 4-8 inches (10-20 cm) long, and 1-3 inches (3-8 cm) wide. Flowers are composite, single, and similar to black-eyed susans, with purple centers and deep to pale pink, occasionally white, drooping ray flowers (which resemble petals).

Life History: Flowering occurs May-July, fruiting occurs June-October. The fruit is a gray-brown, oblong achene, usually four-angled and 4-4.5 mm long and with seeds 0.5 cm long. Reproduction is predominately sexual, but asexual vegetative reproduction has been reported. Shade-intolerant. Requires bare soil for germination of seeds. Pollinators are speculated to be butterflies and bees. Seed dispersal is accomplished through seed-eating birds and small mammals.

Habitat: Basic or circumneutral soils of meadows, open woodlands, and border areas in between. Requires abundant sunlight, with little competition from other herbaceous plants. Known to occur in cedar barrens, open woods, dry limestone bluffs, and along roadsides and powerline rights-of-way. May prefer calcium- and magnesium-rich soils associated with gabbro and diabase parent material in xeric hardpan forests and diabase glades. Grows best where there is disturbance such as natural fires which serve to reduce shade and competition from woody plants

Distribution: Only ten populations in North Carolina (all in the piedmont), in Durham, Granville, Mecklenburg, Montgomery*,

Orange*, and Rockingham counties. Most populations contain less than 100 plants.

Threats: Only 60 populations have been reported historically from 24 counties in 8 states. Over 2/3 of these have been eliminated. The most serious threats remaining are overcollection, habitat degradation by residential and commercial development, agricultural and silviculture practice, roadway construction and improvement, certain types of roadside and power line right-of-way maintenance, and encroachment of woody vegetation. Difficulty in enforcement of protection laws persists, especially with overcollection.

Recommendations: Periodic disturbance such as regular fire regime, well-timed mowing, and careful clearing is necessary for preventing encroachment of habitat by shade-producing woody shrubs and trees. Prescribed burns and canopy-thinning are being initiated in some sites. Protection from over collection. Collection and storage of seed and plant material for propagation purposes.

* No record has been reported in this county in the past 20 years.

Sources: Hardin 1977, Murdock pers. com., Murdock 1992, Radford et al. 1964, USFWS 1995d.

