

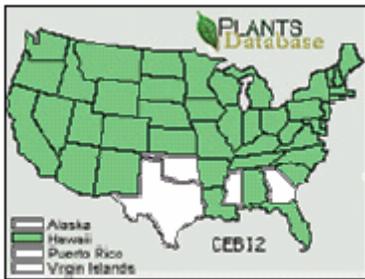
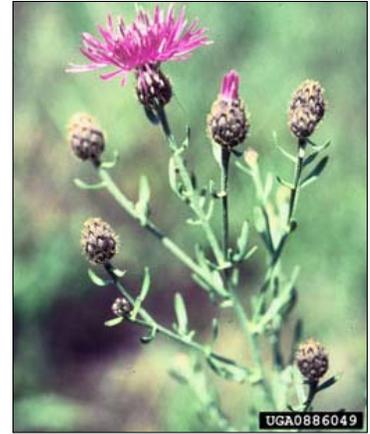


Spotted Knapweed

Centaurea biebersteinii DC syn. *Centaurea maculosa*

Native Origin: Eurasia; introduced in 1890's as a contaminant in alfalfa or hay seed

Description: A biennial or short-lived perennial member of the sunflower family (Asteraceae). Plants typically form a basal rosette of leaves in its first year and flowers in subsequent years. Rosette leaves are approximately 8 inches long by 2 inches wide, borne on short stalks, and deeply lobed once or twice on both sides of the center vein, with lobes oblong and wider toward the tip. Flowering stems are erect, 8 to 50 inches tall, branched above the middle, and sparsely to densely hairy. Stem leaves alternate along the stem, are unstalked, and may be slightly lobed, or linear and unlobed. Leaf size decreases towards the tip of the stem. Flowers are purple to pink, rarely white, with 25 to 35 flowers per head. Plants bloom from June to October, and flower heads usually remain on the plant. Flower heads are oblong or oval shaped, ¼ inch wide and ½ inch across, and are single or borne in clusters of two or three at the branch ends. Leaf like bracts surrounding the base of the flower head are oval and yellow green, becoming brown near the base. The brown, oval seeds are 1/16 to 1/8 inch long, with pale longitudinal lines and a short fringe on one end. The taproot is stout and deep. Reproduction is primarily by seed production and sprouting from lateral roots to a lesser extent.



Habitat: Spotted knapweed is found at elevations up to and over 10,000 feet and in precipitation zones receiving 8 to 80 inches of rain annually. It is most common in sunny habitats with well-drained or gravelly soils. It grows on heavily disturbed sites, roadsides, agricultural field margins, undisturbed dry prairies, oak and pine barrens, rangeland, lake dunes, and sandy ridges.

Distribution: This species is reported from states shaded on Plants Database map. It is reported invasive in AZ, CA, CO, CT, DE, KY, ID, IL, MA, MD, MI, MN, MT, NC, NJ, NY, OR, PA, SD, TN, UT, VA, WA, WI, WV, and WY.

Ecological Impacts: It releases a toxin into the soil that hinders or prevents the growth of neighboring species. This promotes its domination, reduces plant diversity and limits forage and crop production. As spotted knapweed populations rise and other plant species are excluded, surface runoff and sedimentation often increases. Water holding capacity of soil decreases as taproots replace the network of native plant root systems.

Control and Management:

- **Manual-** Hand-pull small infestations prior to seed set. Use gloves to prevent skin irritation. Remove entire crown and taproot to prevent re-growth.
- **Chemical-** It can be effectively controlled using any of several readily available general use herbicides such as clopyralid or picloram. Picloram will control spotted knapweed for three to five years. Clopyralid should be applied during bolt or bud growth stage Follow label and state requirements.
- **Biological control:** Two species of seed head flies, *Urophora affinis* and *U. quadrifasciata*, are well-established on spotted knapweed. The larvae of these species reduce seed production by as much as 50% by feeding on spotted knapweed seed heads and causing the plant to form galls. Three moth species (*Agapeta zoegana*, *Pelochrista medullana*, and *Pterolonche inspersa*) and a weevil (*Cyphocleonus achates*) that feed on spotted knapweed roots have also been released. Biological control agents may be more effective when combined with other control methods such as herbicides, grazing, and revegetation with desirable, competitive plants.
- **Other methods:** Long-term grazing by sheep and goats has been found to control spotted knapweed. Burning, cultivation, and fertilization typically are not effective on spotted knapweed unless combined with other methods of control.

References: www.forestimages.org, http://plants.usda.gov, www.nps.gov/plants/alien, www.invasivespecies.org, Czarapata, Elizabeth J. Invasive Plants of the Upper Midwest, An Illustrated Guide to their Identification and Control, 2005 p. 52-55