

Common Name: Spotted knapweed

Scientific Name: *Centaurea biebersteinii* DC. (Synonym: *Centaurea maculosa*)

Family: Sunflower family (Asteraceae)

Similar Species: Russian knapweed *Acroptilon repens* (L.) DC. (Hardheads)
Smaller flowers, lacks black tips on flower bracts.

Description: Plants to three feet tall from a stout taproot. Flower heads solitary at the ends of branches. Involucral bracts stiff and topped with dark comb-like fringe giving a spotted appearance. Flower heads pink-purple, consisting of ray florets only, solitary at the end of stem branches.

Life History: Biennial or short lived perennial. Plants spread only by seeds. Individual plants can produce up to 140,000 seeds. Adapted to well-drained, light- to coarse-textured soils. Spotted knapweed plants in North America generally live 3 to 7 years but can live up to nine years or longer. Plants regrow from buds on the root crown. Reproduction is by seed, and plants are capable of producing 500- 4,000 seeds per square foot per year. About 90% of the seeds are viable at the time of dispersal, and they can remain viable in the soil for 5-8 years. Most seeds are dispersed near the parent plant but can be transported by people, wildlife, livestock, vehicles, and in soil, crop seed, and contaminated hay. Gravel pits, soil stockpiles, powerlines, grain elevators, railroad and equipment yards are important seed distribution points.



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Where Found: Prince of Wales, Skagway, Valdez, roadside between Anchorage and Girdwood on Turnagain Arm.

Habitat: In temperate regions, 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. Spotted knapweed prefers well-drained, light-textured soils that receive summer rainfall. In the Rocky Mountains habitats include open forests dominated by ponderosa pine and Douglas fir, and prairie habitats dominated by Idaho fescue, bluebunch wheatgrass, and needle-and-thread grass. Disturbance allows for rapid establishment and spread; however, spotted knapweed is capable of invading well managed rangelands. Spotted knapweed does not compete well with vigorously growing grass in moist areas. In seasonally dry areas, spotted knapweed's taproot allows it to access water from deep in the soil, beyond the reach of more shallowly rooted species.

Impacts: Highly competitive weed that invades disturbed areas then spreads into adjacent undisturbed habitats. Can cause

skin irritation. Exposed skin should be washed with soap and water following contact. Knapweeds are among the worst weeds of agricultural lands in the western US. Spotted knapweed infests a variety of natural and semi-natural habitats including barrens, fields, forests, prairies, meadows, pastures, and rangelands. It outcompetes native plant species, reduces native plant and animal biodiversity, and decreases forage production for livestock and wildlife. Spotted knapweed may degrade soil and water resources by increasing erosion, surface runoff, and stream sedimentation. It has increased at an estimated rate of 27% per year since 1920 and has the potential to invade about half of all the rangeland (35 million acres) in Montana alone.

Fun Facts: Some evidence exists that knapweeds are *allelopathic*, producing chemicals from their roots that inhibit the growth of other plants. Spotted knapweed was introduced to North America from Eurasia as a contaminant in alfalfa and possibly clover seed, and through discarded soil used as ship ballast. It was first recorded in Victoria, British Columbia in 1883 and spread further in domestic alfalfa seeds and hay before it was recognized as a serious problem.

Control Options: Seeds remain dormant in soil for a period of over eight years. Plants will resprout from roots left in soil after pulling.

Herbicide Options: 2,4-D, clopyralid and glyphosate are moderately effective. Herbicides are most effective when applied prior to seed set. Use clopyralid cautiously as it is active in the soil and can be absorbed by the roots of desirable

vegetation. Count on a multi-year treatment program and have a revegetation plan in place. One recommended strategy would be planting a perennial grass and using 2,4-D, or clopyralid because these chemicals, unlike glyphosate, will not kill grass.



Illustration: NRCS Plants Database

Photo: Michael Shephard USDA Forest Service

