



Scotch Thistle

(*Onopordum acanthium* L.)

Scotch thistle is a native of Europe and Asia. In Scotland, the plant serves as the national emblem. The species was probably introduced to the United States as an ornamental plant that subsequently escaped cultivation. Scotch thistle has been widely introduced at mid-latitudes across much of North America. In Washington, it is found in most counties east of the Cascade Mountains, as well as scattered locations in western Washington. Scotch thistle is a Class B noxious weed in Washington. Control (prevention of all seed production) is required in designated areas.



Dense stands are a physical barrier to livestock and humans.

In the western U.S., Scotch thistle infests wet meadows and pastures, as well as more arid sites. It is often associated with waste places, rivers, streams, canals, or other waterways.

In particular, the plant thrives on light, well-drained, and sandy or stony soils.



Washington's largest thistle, Scotch thistle often grows 8 feet or more in height.

Infestations on western rangeland cause significant economic losses for ranchers. Scotch thistle reduces forage production and virtually prohibits land utilization for livestock. Dense stands of these large, spiny plants are a physical barrier to livestock movement, almost totally excluding animals from grazing and access to water. Infestations can also limit human access to recreational lands.

Scotch thistle can spread rapidly. It was first found in Utah in 1963. By 1989, it had covered more than 55,675 acres in 22 counties.

IDENTIFICATION

Scotch thistle, also called cotton thistle, often grows 8 feet or more in height, making it Washington's largest thistle. The plant has branched stems, with vertical rows of prominent, spiny, ribbon-like leaf material or "wings" that extend to the base of the flower heads. Leaves, which are armed with sharp, yellow spines, can be up to 2 feet long and 1 foot wide. Upper and lower leaf surfaces are covered with a mat of cotton-like or woolly hairs, which give the foliage a gray-green appearance.



Prominent, spiny "wings" extend along the stems to the base of the flower heads.

A member of the sunflower family (Asteraceae), Scotch thistle flowers grow in intensely spiny, globe-shaped heads that

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occur in groups of 2 or 3 on branch tips. Flower heads can be up to 2 inches in diameter, with long, stiff, needle-like bracts at the base. Flowers range from dark pink to lavender. Plants flower in mid-summer, producing smooth, slender, plumed seeds.

BIOLOGY AND ECOLOGY

Scotch thistle is usually a biennial, although it can behave as a winter or summer annual or a short-lived perennial. As a biennial, Scotch thistle lives for two growing seasons. Seeds usually germinate in the late fall, but germination can occur at other times. Seedlings that appear in late autumn behave as true biennials, but seedlings produced during late summer or early autumn may behave as annuals. During its first year, Scotch thistle produces a rosette with a taproot that may extend down 1 foot or more. The plant bolts early in its second year and flowers from July to September.

Scotch thistle spreads by seed. A Nevada study found that individual plants may produce from 8,400 to 40,600 seeds. Information on seed longevity varies, but some reports estimate that seeds may remain viable in the soil for 20+ years. Seeds are dispersed locally by wind. Humans, water, livestock and wildlife are involved in longer distance dispersal. While some seeds will

germinate in the dark, research indicates that most germination occurs with alternating light/dark cycles. Eight hours is the optimal day length for germination.

CONTROL

Prevent new Scotch thistle infestations. Do not allow Scotch thistle plants to go to seed. For small infestations, dig or grub out rosettes or older plants. Plants must be cut off below the soil surface, leaving no leaves attached. Remove all flowering heads to prevent seed production. Establishing and maintaining dense, vigorous, competitive pasture vegetation can effectively prevent Scotch thistle establishment. A healthy pasture is particularly important in the autumn, when most Scotch thistle seeds germinate.

Mowing has limited effectiveness for controlling Scotch thistle. It usually only prevents seed production if done immediately prior to flowering. When mowed too early, flowering is delayed but not always prevented. When plants are cut too late in the flowering process however, viable seed may still develop in the flower head after it is cut.

Herbicides may be used for controlling infestations. For chemical control recommendations, refer to the *Pacific Northwest Weed Control Handbook*, an annually revised publication available from

Washington State University Cooperative Extension.

Control of well-established infestations requires a carefully planned and integrated approach. Contact your local county noxious weed control board, weed district, or Washington State University Cooperative Extension office for assistance developing control strategies for specific sites.

According to the Pacific Northwest Weed Control Handbook, Scotch thistle can be controlled when the following herbicides are applied to young, actively growing plants: 2,4-D; dicamba (Banvel); chlorsulfuron (Telar); clopyralid + 2,4-D (Curtail); or triclopyr + clopyralid (Prescott).

Herbicide applications made in the fall will help overall results, chemicals that are recommended in the fall include: 2,4-D or picloram (Tordon).

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Reference material and
information are available
from the Washington State
Noxious Weed Control Board
in Kent, WA.

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