

NOXIOUS WEEDS IN CLALLAM COUNTY

MEADOW KNAPWEED

(*Centaurea jacea* x *nigra*)

Because meadow knapweed is a hybrid its characteristics are highly variable. Intermediate forms between brown knapweed (*Centaurea jacea*) and black knapweed (*Centaurea nigra*) can occur and can retain their intermediate form for several generations.

Meadow knapweed grows 20 to 40 inches tall. The upright stem branches about half way up.



The leaves at the base of the plant are lance-shaped, up to six inches long and undivided. The stem leaves are smaller and stalkless.



The flower heads are solitary at the ends of branches. The flowers, which bloom from July to September, are rose-purple in color, but occasionally white.



The bracts, which occur at the base of the flower head, have a fringed margin. The fringe is about equal in width to the body of the bract, and is more apparent on the outer bracts.

Bracts are modified leaves, usually near a flower. In most knapweed species the bracts form a cup-like structure that supports the flower head. Some knapweeds are similar looking and differences in the bracts can be an important way of distinguishing species.

Threats:

Meadow knapweed is an aggressive and invasive species that invades pastures and meadows, displacing forage plants but having little value as forage itself.

**Meadow knapweed is a Class B designate weed in Clallam County.
Control is required county-wide.**

Lookalikes:

At least six other knapweed species occur in Clallam County; all of them could be mistaken for meadow knapweed. They are listed below, together with some key differences.

Brown knapweed (*Centaurea jacea*):



Because brown knapweed is one of the parents of meadow knapweed, and because intermediate forms exist, **distinguishing the plants can be difficult**. The bracts are the best identifying feature.

- Brown knapweed bracts are rounded and hairy with papery margins; the bracts of meadow knapweed are more elongated in shape, and have fringes all around, which are approximately equal in width to the body of the bract.



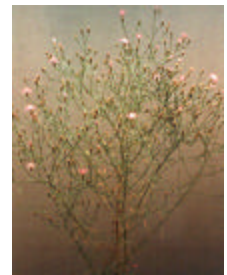
Brown knapweed bract

Diffuse knapweed (*Centaurea diffusa*)

- Diffuse knapweed has a branching stem and a ball-like appearance; meadow knapweed does not.
- The leaves of diffuse knapweed are divided; meadow knapweed leaves are not.



- The flowers of diffuse knapweed are usually white, occasionally pink to lavender; the flowers of meadow knapweed are usually rose-purple, occasionally white.



- The **bracts of diffuse knapweed have spines** at the edges and tip; the bracts of meadow knapweed have fringes, not spines.



Diffuse knapweed bract

Russian knapweed (*Acroptilon repens*):



- The basal leaves of Russian knapweed are about three inches long and are divided into lobes; the basal leaves of meadow knapweed are up to six inches long and are not divided.

- The flowers are lavender-blue to pink; meadow knapweed flowers are usually rose-purple, occasionally white.

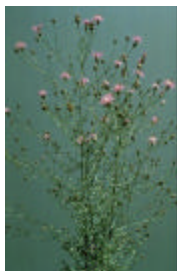


- The **bracts are green** and do not have fringes; meadow knapweed bract are brown and have fringes as wide as the body of the bract.



Russian knapweed bract

Spotted knapweed (*Centaurea biebersteinii*):



- The leaves of spotted knapweed are **divided into lobes**; meadow knapweed leaves are not divided.
- The bracts of spotted knapweed have a black spot on the tip, giving the plant its name. This spot is not present on meadow knapweed bracts.

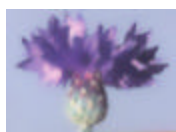


Spotted knapweed bract

The four lookalikes listed above are all weedy species and control of them is required by state law. The remaining two, although they are not native, are not listed as noxious weeds.

Montana knapweed (*Centaurea montana*):

- The leaves have an extension that looks like a wing growing down the stem; meadow knapweed does not have this.
- The flower heads are large—up to two and a half inches across; the flower heads of meadow knapweed are about an inch across.
- The **flowers of Montana knapweed are usually blue**; meadow knapweed are usually rose-purple, occasionally white.



Bachelor's button (*Centaurea cyanus*)

- The flowers of bachelor's button can be white, blue, pink, purple or red, and they are smaller than meadow knapweed flowers.

All of our thistles (Canada thistle, bull thistle and the native, edible thistle) look a little like meadow knapweed, but they all have prickly leaves; meadow knapweed does not.

History:

Meadow knapweed may have been introduced into British Columbia through contaminated alfalfa seed. Its earliest recorded sighting in Washington was in 1923, in San Juan County. There are several major infestations of meadow knapweed in Clallam County including areas around the Lyre River, the Elwha River (Olympic Hot Springs Road), and Burnt Hill (near Happy Valley Road). Hundreds of small clumps or single plants dot roadsides and mark its spread around the county. It prefers moist sites and is found mainly west of Port Angeles.

Ecology:

- Meadow knapweed grows mainly on moist sites—irrigated pastures, moist meadows and riparian areas, similar to those occupied by oxeye daisy
- It is a perennial plant, growing from a woody root crown.
- Reproduction is mostly by seed, but the crown can resprout.

CONTROL

Prevention and early detection are the best means of control!

- **Practice** good pasture management; avoid overgrazing, irrigate and fertilize as needed, and reseed bare ground. A healthy pasture will resist weed invasion.
- **Use** weed free hay and seed; avoid bringing in weed contaminated soil.
- **Clean** equipment that has been used in infested areas.
- **Revegetate** disturbed areas quickly to prevent infestation by meadow knapweed.
- **Remove** seedlings when young; newly established plants can usually be pulled without leaving root fragments in the ground.
- **Replant** newly weeded areas with desirable (preferably native) plant species, that will discourage reinfestation.
- **Dispose** of weeds properly, bag or burn seed heads or fragments that may resprout.
- **Monitor** the site for several years; promptly remove new seedlings.

HANDPULLING/DIGGING works best when the soil is moist. This method can be time consuming because the root system may be extensive; it may only be effective for new or small infestations.

MOWING will slow, but not stop the spread of knapweed. Plants that are periodically mowed continue to flower and produce seed on shorter plants, prolonging the season of growth and flowering.

BIOLOGICAL CONTROL: Two gall flies, *Urophora affinis* and *Urophora quadrifasciata*, a moth, *Metzneria paucipunctella*, and a beetle, *Shenoptera jugoslavica*, have been introduced into North America for biological control of knapweeds.

HERBICIDES can be effective, but should always be applied with care. Do not apply herbicides over or near water bodies. Read the label to check that you are applying an herbicide in the right place, to the right plant, at the right time, and in the right amount.

- Selective herbicides such as Curtail™ (2,4-D + clopyralid), Stinger™ (clopyralid) are effective, but consult the label for crop rotation restrictions before using either of these. Several crops may be injured up to four years after application of the herbicide.
- Roundup™ (glyphosate) is also effective on meadow knapweed, but it is non-selective and will kill other plants also, including grasses that might outcompete knapweed seedlings. Application of Roundup™ should be followed by revegetation.

None of these herbicides will prevent germination of weed seeds already in the soil, so monitoring and retreatment are necessary.

Warning: Meadow knapweed often grows close to water and any herbicide application near or over water requires a permit and a specially licensed applicator.