Brown Knapweed; RMueller

Invasive Species Council of BC

FACTSHEET
MARCH 2017

Bighead Knapweed *Centaurea macrocephala*

About Bighead Knapweed

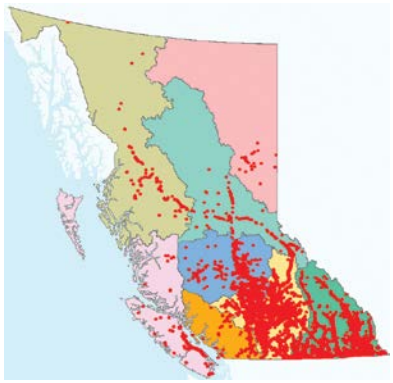
It is one of the many perennial knapweed species found in the Pacific Northwest region. It is found infrequently in BC and currently reported in the Salmon Arm area, Nelson area, and east of Hudson Hope. It likely occurs elsewhere in gardens as it is a regarded showy ornamental.

Legal Status

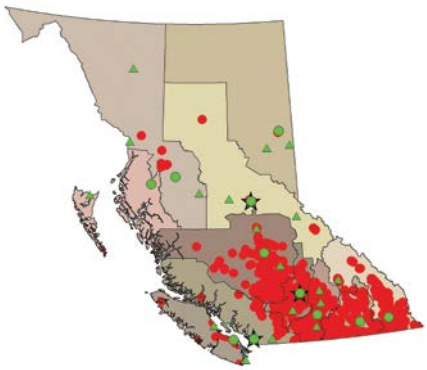
Not categorized (BC Early Detection Rapid Response Priority species)

Distribution

B.C. confirmed sites are limited to the regions of Columbia-Shuswap, Thompson Nicola and Central Kootenay. Bighead knapweed is actively traded as an ornamental.



Spotted Knapweed Distribution (2011)



Diffuse Knapweed Distribution (2011)

Identification

Flowers: Single, showy, bright yellow flowerhead at top of stems (2.5-8 cm diameter) with light green to tan fringed bracts.

Stems: Stems are several to many erect, upright, unbranched or sparingly branched near the tips, growing 50-170 cm tall.

Leaves: Leaves are broad lance shaped with sharp, pointed tips becoming smaller moving up the stem. The leaf texture is rough with short hairs.

Fruits: Seed are brown to golden brown and remain loosely contained within the head. The seeds are 7-8 mm long with flattened bristles 5-8 mm long.

Similar Native Species: none known

Diffuse Knapweed
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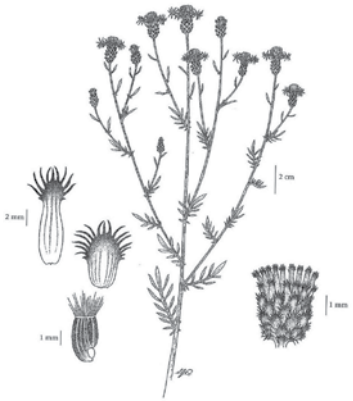

Spotted Knapweed
© Illustrated Flora of BC

Similar Non-Native Species: Bighead knapweed is the largest knapweed species *(Centaurea)* thus making identification relatively easy. A few plant species may be mistaken for a variety of yellow flowering plants. Yellow starthistle *(Centaurea solstitialis)* has smaller flowers but has spines on its head. Yellow Dahlia spp. are ornamental flowers with cup shaped petals rather than hair-like petals on the bighead knapweed. Safflower *(Carthamus tinctorius)*, grown for seed oil, has a very similar flower.

Bighead Knapweed. The yellow flowering heads are large, about 4 cm or more across; Wikipedia

Diffuse Knapweed; RMueller

Ecological Characteristics

Habitat: Bighead knapweed needs disturbance to establish and inhabits open, grassy areas, such as fields, pastures and roadsides.

Reproduction: Perennial species that reproduces by seed, flowering in the summer months (June–Sept). Each head can produce up to 200 seeds.

Dispersal: Seeds dislodged from plant by direct contact and can spread by livestock, farm equipment, vehicles, humans, but rarely wind. New sites can occur through human distribution as this plant is distributed as a garden ornamental.

Impact

Economic: Bighead knapweed will out-compete grasses and other forage species which can lead to a decrease in food sources for livestock. Once established, removal is difficult and costly.

Ecological: Large infestations of bighead knapweed will displace native vegetation and have an impact on biodiversity and wildlife habitat.

Integrated Pest Management

IPM is a decision-making process that includes identification and inventory of invasive plant populations, assessment of the risks that they pose development of well-informed control options that may include a number of methods, site treatment, and monitoring.

200 seeds

AMOUNT EACH HEAD CAN PRODUCE

A. Prevention

- Educate gardeners and horticulturists to prevent active distribution and trading.
- Remove plant seeds and parts from personal gear, equipment, vehicles and machinery at designated cleaning stations or area before leaving infested sites.
- Treat knapweed before seed set, monitor results, and re-treat to prevent seed dispersal.
- Monitor site annually until it is knapweed-free for several consecutive years. Length of time seeds are viable in the soil is unknown for this species.
- Avoid unloading, parking or storing equipment and vehicles in infested areas.

B. Mechanical control

- Hand pulling is mostly ineffective due to breakage and the remaining plant will re-sprout from the crown.
- Repeated pulling, cutting or mowing will reduce seed set if the plants have not yet flowered.
- Wherever possible, the root system should be removed to prevent re-sprouting and replant desirable native plants.

- If treatment is performed while flowers are present on stems, the plants must be bagged and removed from the site to prevent production of viable seeds.
- Tilling and cultivation that buries seeds and plant matter below a depth of 4cm can be effective, especially if the area is replanted with a healthy cover crop.
- Follow-up treatments will be required.

C. Biocontrol

- Currently none known.
- Several agents show promise for a variety of habitats.

D. Chemical Control

Herbicide recommendations and use must first consider site characteristics and be prescribed based on site goals and objectives. Herbicide labels and other sources of information must be reviewed before selecting and applying herbicides.

- Effective herbicides include: 2, 4-D, triclopyr and glyphosate.
- Dicamba, aminopyralid, clopyralid and picloram are effective herbicides on most of the other knapweeds.
- 2, 4-D and triclopyr are effective at time of stem elongation (usually May to June) before flowers open. These products are selective for broadleaf plants and will not harm grasses that help suppress new knapweed seedlings.
- Glyphosate is also effective but will kill grasses as well. When using glyphosate, follow by seeding or planting desirable native plants. Apply glyphosate when most plants are at bud stage.
- Application: The use of a wick or selective spot spraying is recommended to minimize non-target damage.

Application of pesticides on Crown land must be carried out following a confirmed Pest Management Plan (*Integrated Pest Management Act*) and under the supervision of a certified pesticide applicator. www.env.gov.bc.ca/epd/epdpa/ipmp/index.html

Disposal

Note: *Disposal of invasive plants varies by region. Contact your local government for specific information on how to dispose of your invasive plants.*

- Chemically treated plants can be left on site to compost.
- Tarp and bag removed plants, plant parts and seeds before transporting to a designated disposal site (e.g. landfill or transfer station).
- It is recommended that transfer stations provide disposal bins intended solely for invasive plants. This will ensure the plant matter within the container is transported in a sealed unit and properly disposed of at the landfill.
- Burning and composting at home is not recommended as extreme temperatures are required.

Common Names

Armenian basketflower; big yellow centaurea; bighead knapweed; big-headed knapweed; giant knapweed; globe centaurea; globe cornflower; golden thistle; great golden knapweed; lemon fluff knapweed; yellow bachelor's button; yellow bachelor's cornflower; yellow hardhat; yellow hard-head; yellow thistle


Brown Knapweed; RMueller


Spotted Knapweed; RMueller

Herbicide Control; CRD

Spotted Knapweed Infestation; BS

References/Links

Alberta Invasive Species Council Bighead knapweed Fact Sheets. https://www.abinvasives.ca/factsheets/140325-fs-bigheadknapweed.pdf?iframe=true&width=800&height=600

BC EDRR Candidate Species. https://www.for.gov.bc.ca/HRA/invasive-species/Publications/EDRR_web_Bighead_Knapweed_july2014.pdf

BC Proposed Prohibited Plants. https://www.for.gov.bc.ca/HRA/invasive-species/Publications/SpeciesAlerts/Bighead_Knapweed_july2014.pdf

Bighead Knapweed. King County Noxious weed control Program Weed Alert. http://your.kingcounty.gov/dnrp/library/water-and-land/weeds/Brochures/bighead-knapweed-fact-sheet.pdf

Centaurea macrocephala in Flora of North America. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242442288

Inter-Ministry Invasive Species Working Group website. Province of British Columbia. https://www.for.gov.bc.ca/HRA/invasive-species/Publications/SpeciesAlerts/Bighead_Knapweed_july2014.pdf

Invasive Species Compendium. http://www.cabi.org/isc/datasheet/12041

Invasive Species Council BC Knapweed TIPS. http://bcinvasives.ca/documents/Knapweed_TIPS_Final_08_06_2014.pdf

Washington State University. https://research.libraries.wsu.edu:8443/xmlui/bitstream/handle/2376/4844/pnw_386_1991_bighead_knapweed_centaurean_macrocephala_puschk.pdf;sequence=1

WRITTEN FINDINGS OF THE WASHINGTON STATE NOXIOUS WEED CONTROL BOARD (1998, updated May 2008)

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Thank you to the BC Ministry of Environment and the BC Ministry of Transportation and Infrastructure for providing project funding, and to those who advised the development of these management recommendations.

ADDITIONAL CONTACT INFO