

T.I.P.S.

Targeted Invasive Plant Solutions

3 Invasive Hawkweeds



About Invasive Hawkweeds

There are 14 species of native hawkweeds in western North America, of which 8 have been recorded in BC. There are also 14 species of invasive, non-native hawkweeds in western North America, of which 13 have been recorded in BC. Twelve of the 13 invasive species have yellow flowers. Hawkweeds are readily hybridizing in BC, which can make identification very difficult. Most invasive hawkweed species have similar biology, ecological characteristics, impacts, distributions, and recommended management techniques; as a result, they are discussed as a complex in this document. Where necessary for identification purposes, the complex is divided into either 'orange' or 'yellow' invasive hawkweeds.

Legal Status

Orange hawkweed is currently the only invasive hawkweed species regulated by the *Weed Control Act*. Both meadow and orange hawkweed are identified in the *Forest and Range Practices Act*.

Distribution

Invasive hawkweeds are currently distributed throughout most forest regions and regional districts in BC. The regional districts east of the Rocky Mountains, Northern Rockies, and Peace River Regional Districts only have a few known invasive hawkweed sites and efforts to prevent further establishment and spread are actively underway. Orange hawkweed is regionally noxious in the East Kootenay, Central Kootenay, Columbia-Shuswap, Thompson-Nicola, Bulkley Nechako, and Cariboo Regional Districts.

Identification

Flowers: Bright orange, orange-red, or yellow ray flowers with several flower heads in clusters atop each stem.

Stems: Orange hawkweed stems are usually single and unbranched; leafless; contain a milky fluid; covered in black hairs; 0.3-1.2 m tall. Yellow hawkweed stems, like orange hawkweed, have short, stiff hairs with the upper portion of the stem often black and gland tipped.

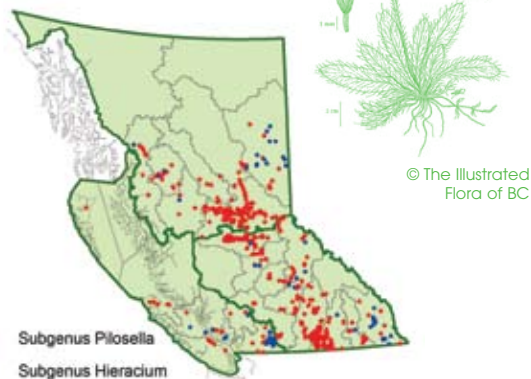
Leaves: Found at base of stem in rosette formation. Orange: 4-20cm long; hairy on both upper and lower surfaces. Yellow: no leaves or greatly reduced stem leaves, whereas native yellow species have true leaves all the way up their stems; some species have glabrous leaves (no hairs).

Fruits: Dark ribbed achenes; tiny, approximately 2 mm long.

Similar Species: Further information on hawkweed identification can be found at: www.for.gov.bc.ca/hra/Publications/invasive_plants/Hawkweed_key_PNW_2007.pdf



Current Distribution in BC



Dots indicate species presence as recorded in IAPP (accessed March 15, 2008).

Ecological Characteristics

Habitat: Flourishes in well-drained, coarse-textured soils. Can invade natural open areas and disturbed sites, including roadsides, pastures, and clearings.

Reproduction: Perennial species that reproduces through four mechanisms: (i) above-ground runners (called stolons), (ii) rhizomes, (iii) seed, and in some cases (iv) buds on the roots. Established populations expand in size primarily via stolons.

Dispersal: Spreads mainly by intentional and accidental human activities, wind, animals, and in contaminated hay and soil.

Impacts

Economic: Forms dense mats of rosettes; out-competes forage plants in hay fields and pastures. Main impact on forest industry is the risk of establishment and spread along roads or areas that are not reforested.

Ecological: Invasive hawkweed species can replace native vegetation in open, undisturbed natural areas, such as meadows, and in disturbed areas, such as roadsides, thereby reducing forage and threatening biodiversity.

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.

Prevention

- Fertilizer and soil fertility management.
- Minimize soil disturbance and promptly re-vegetate disturbed areas.
- Do not purchase wildflower seed mixes that contain invasive hawkweed species.

Mechanical Control

- Dig out rosettes and their shallow roots in new, small infestations.
- Take care not to spread any of the vegetative parts of the plant as re-growth from roots, stolons and rhizomes can occur.
- Although mowing removes flower stems and may prevent seed set, it should be used with caution as it encourages enhanced vegetative spread.

Biocontrol

- Currently no biocontrol agents are available for orange hawkweed; however, research is underway.

Chemical Control

Herbicide recommendations and use must 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.

- In soils with low nitrogen and sulphur levels (such as pastures and range areas), where grass species are growing amongst the hawkweed, the competitive ability of grasses can be increased through application of fertilizer with nitrogen and sulphur components.
- Spring treatments with both nitrogen fertilizer and herbicide are recommended, however fall herbicide treatments are also effective for control.
- Actively growing plants can be effectively controlled with clopyralid, picloram, picloram plus 2,4-D, aminopyralid, or aminopyralid plus 2,4-D.
- Clopyralid and glyphosate give short term control to suppression of orange hawkweed.
- Application of herbicides 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



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