# narrowleaf hawksbeard
## *Crepis tectorum* L.

Synonyms: None
Other common names: None
Family: Asteraceae

**Invasiveness Rank:** **56** The invasiveness rank is calculated based on a species' ecological impacts, biological attributes, distribution, and response to control measures. The ranks are scaled from 0 to 100, with 0 representing a plant that poses no threat to native ecosystems and 100 representing a plant that poses a major threat to native ecosystems.

**Description**
Narrowleaf hawksbeard is an annual or winter annual plant that grows 10 to 100 cm tall from a shallow taproot. All parts of the plant exude a milky sap when broken. Stems are branched, erect, slightly hairy, and leafy. Basal leaves are petiolated, lanceolate to oblanceolate, glabrous or short-hairy, 5 to 15 cm long, and 1 to 4 cm wide with entire to toothed or pinnately lobed margins. Stem leaves are reduced in size, alternate, sessile, clasping, and linear with entire margins. Leaf margins often roll under towards the midrib. Flower heads are arranged in groups of 5 to 20 or more at the ends of stems and are composed of 30 to 70 ray florets. Florets are yellow and 10 to 13 mm long. Involucres are 6 to 9 mm tall and 7 to 8 mm wide. Involucral bracts are arranged in two rows and are covered with soft-hairy pubescence. Seeds are spindle-shaped, 3 to 4 mm long, and dark red or purple-brown. Each seed has a pappus composed of numerous white bristles (Hultén 1968, Bogler 2006).

*Crepis tectorum* L.

*Similar species:* Many similar yellow-flowered members of the Asteraceae family grow in Alaska. Narrowleaf hawksbeard can be distinguished from them by the presence of taproots, clasping stem leaves, petiolated basal leaves arranged in rosettes, multiple flower heads composed of yellow ray florets, and involucral bracts arranged in two rows. Narrowleaf hawksbeard is often confused with non-native narrowleaf hawkweed (*Hieracium umbellatum*); however, narrowleaf hawkweed has involucral bracts of many different lengths.

Flower head of *Crepis tectorum* L.

**Ecological Impact**
*Impact on community composition, structure, and interactions:* Narrowleaf hawksbeard has established along the Knik River, where it changes the density of vegetation (Shephard pers. comm.). Plants growing in a stand of red fescue (*Festuca rubra*) in British Columbia reached a density of 300 plants per square meter (Najda et al. 1982). In Alaska, 7% of recorded infestations occur at or above 50% ground cover (AKEPIC 2011), suggesting that this species can significantly increase the density of forb layers. Dense stands of narrowleaf hawksbeard in Denali National Park and Healy have displaced native colonizers (Densmore pers. comm.).

This species invaded native vegetation in lightly burned areas along the Dalton Highway in interior Alaska (Cortés-Burns et al. 2008). It was observed growing in native fireweed (*Chamerion angustifolium*) – bluejoint reedgrass (*Calamagrostis canadensis*) meadows surrounding Rohn Cabin (Flagstad and Cortés-Burns 2010). Some populations appear to be highly aggressive in Alaska (AKEPIC 2011). Narrowleaf hawksbeard is pollinated by flies, butterflies, and insects in the Hymenoptera order (NatureGate 2011); the presence of this species may therefore alter native plant-pollinator interactions. This species is associated with many insect pests, parasites, fungi, and diseases (Najda et al. 1982).
*Impact on ecosystem processes:* Narrowleaf hawksbeard likely reduces the availability of soil moisture. It may delay the establishment of native species on naturally disturbed soil such as erosion and fire (Conn pers.comm., Cortés-Burns et al. 2008). This species is associated with white Sweetclover (*Melilotus alba*) along the Matanuska and Stikine Rivers (Conn and Seefeldt 2009).

Two rows of involucral bracts on *Crepis tectorum* L.

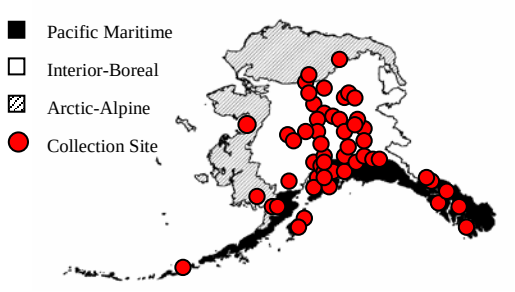
**Biology and Invasive Potential**
*Reproductive potential*: Narrowleaf hawksbeard reproduces by seeds only. Plants in Canada produced from 3,360 to 49,420 seeds per plant (Najda et al. 1982).
*Role of disturbance in establishment*: Narrowleaf hawksbeard readily colonizes disturbed sites and open areas (Najda et al. 1982). It is often associated with anthropogenic disturbances (Najda et al. 1982, Klinkenberg 2010, AKEPIC 2011); however, it also establishes in naturally disturbed areas (Shephard pers. obs.), including areas disturbed by wild animals, rivers or streams, and fires (Bogler 2006, Cortés-Burns et al. 2008, AKEPIC 2011, UAM 2011). It has been found on river bars in Southeast Alaska (Conn and Seefeldt 2009, Shephard pers. obs.), often associated with white sweetclover (*Melilotus alba*) (Conn and Seefeldt 2009). In interior Alaska, this species has invaded native vegetation in lightly burned areas along the Dalton Highway (Cortés-Burns et al. 2008) and in meadows surrounding Rohn Cabin (Flagstad and Cortés-Burns 2010). It can germinate in established hay fields (Conn pers. obs.) and can occur at high densities in poor stands of forage crops (Najda et al. 1982).
*Potential for long-distance dispersal:* Seeds are relatively light and has extensive pappus that enables them to disperse long distances with wind and moving water. They rapidly colonize disturbed and open areas. Seeds adhere to fur and feathers (Najda et al. 1982).
*Potential to be spread by human activity:* Narrowleaf hawksbeard is a contaminant in alfalfa seed (Najda et al. 1982). It spreads along roadsides in Alaska (Densmore et al. 2001). Seeds have been associated with imported and locally produced straw (Conn et al. 2010) and soil from container-grown ornamental plants (Conn et al. 2008). Seeds adhere to shoes, clothing, fur, and feathers (Najda et al. 1982).
*Germination requirement*: Over 90% of seeds are non-dormant (Cici and Van Acker 2009). In northern Alberta and British Columbia, seeds germinate throughout the growing season with peaks in germination occurring from mid-May to mid-June and August to September (Najda et al. 1982). Seeds can germinate at temperatures as low as 2°C, but the optimal temperature range for germination is 20°C to 22°C (Nadtochii 2009). Few seeds germinate when buried 4 cm deep or more in the soil (Najda et al. 1982, Nadtochii 2009).
*Growth requirements:* Narrowleaf hawksbeard is adapted to a wide range of climate and soil conditions. Plants often overwinter as basal rosettes. Flowering shoots develop rapidly in spring. Seeds mature from mid-July to the end of the growing season (Najda et al. 1982).
*Congeneric weeds:* Smooth hawksbeard (*Crepis capillaris*) is considered a noxious weed in Minnesota (Invaders 2011).

**Legal Listings**
☐ Has not been declared noxious
☐ Listed noxious in Alaska
☒ Listed noxious by other states (MN)
☐ Federal noxious weed
☒ Listed noxious in Canada or other countries (AB, MB)

**Distribution and Abundance**
Narrowleaf hawksbeard is a serious agricultural weed in western Canada (Najda et al. 1982) and Russia (Nadtochii 2009). Narrowleaf hawksbeard grows in pine woods, dry streambeds, wooded slopes, forest clearings,

abandoned fields, agricultural fields, pastures, disturbed places, and roadsides in North America (Najda et al. 1982, Bogler 2006, Klinkenberg 2010). It has established along the Knik (Shephard pers. comm.), Matanuska, and Stikine Rivers in Alaska (Conn and Seefeldt 2009). This species degrades a number of habitat types in the Pacific Northwest; it persists in dispersed populations in disturbed headlands, grasslands, and clearcuts (Carlson pers. obs.). It invades native prairies in Canada (Najda et al. 1982).

*Native and current distribution*: Narrowleaf hawksbeard is native to Siberia. It was introduced to eastern North America before 1890. This species grows in 26 states of the U.S., mainly in the northern half, and most of Canada (USDA 2011). It has also been introduced to Europe, parts of Asia, and Australia. It grows as far north as 70°N in Scandinavia (Najda et al. 1982) and is known to occur in arctic regions in western and central Russia (Nadtochii and Budrevskaya 2003).




Distribution of narrowleaf hawksbeard in Alaska

**Management**

Small populations of narrowleaf hawksbeard in natural areas as well as small infestations in anthropogenically disturbed areas can be removed by repeated cycles of hand pulling within the same season. The entire plant, including the caudex, must be removed prior to seed set. All plants should be bagged and removed from the site to prevent seeds from dispersing after treatment. Hand pulling can be inefficient because seedlings are hard to find and are not easily removed. Herbicides should be applied for large or persistent (those not reduced after one year of hand pulling) populations of narrowleaf hawksbeard. Glyphosate or metsulfuron-methyl provide effective control of narrowleaf hawksbeard without harming native grass species. Populations should be treated when plants are in the cotyledon stage of growth; this appears to be the only stage at which the plants can be killed. Control during stem elongation, flowering, and seed set appears only to weaken the plants. Metsulfuron-methyl applied early in the spring when narrowleaf hawksbeard is in the cotyledon stage is the most effective method of control for this species. Because narrowleaf hawksbeard is able to overwinter as a rosette, it typically develops cotyledons before most of the native broadleaf vegetation has sprouted. The short soil residence time of metsulfuron-methyl makes a second application in the fall necessary to weaken rosettes prior to overwintering. Metsulfuron-methyl should be applied to the infested area, plus a 15 m buffer, at a rate of 70 grams per hectare. The area within at least a 200-meter radius and any disturbed areas within 0.8 km should be scouted for new plants. Annual monitoring for at least three years following treatment is necessary to confirm that no new plants have established (Seefeldt 2007).

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