

fall dandelion

Leontodon autumnalis L.

Synonyms: *Apargia autumnalis* (L.) Hoffm., *Leontodon autumnalis* ssp. *autumnalis* L., *L. autumnalis* ssp. *pratensis* (Link) Arcang., *L. autumnalis* var. *pratensis* (Link) W.D.J. Koch, *Oporinia autumnalis* D. Don., *Scorzoneroides autumnalis* Moench

Other common names: autumn hawkbit

Family: Asteraceae

Invasiveness Rank: 51 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

Fall dandelion is a decumbent, winter annual or perennial herb that grows 10 to 80 cm tall with short rhizomes. Stems are single or few, branched above, glabrous towards the base, and slightly hairy towards the flower heads. Leaves are basal, oblanceolate, 4 to 35 cm long, 5 to 40 mm wide, and deeply lobed with glabrous or hairy surfaces. Flower stalks have scale-like bracts near the flower heads. Flower heads are surrounded by two or three whorls of involucre bracts and are borne in clusters of two to five. Involucre bracts are glabrous or hairy, narrow, and 10 to 12 mm long. Flowers are yellow, ligulate, and 10 to 18 mm long with five teeth at the tips. Each seed is 4 to 7 mm long with a pappus of feathery, 5 to 8 mm long bristles (Hultén 1968, Bogler 2006, Kravchenko 2009, Klinkenberg 2010, NatureGate 2010).



Basal rosette of *Leontodon autumnalis* L. Photo by T. Heutte.

Similar species: Fall dandelion is similar to other yellow-flowered taxa in the Asteraceae family, including the native and non-native subspecies of common dandelion (*Taraxacum officinale*) and the non-native hairy cat's ear (*Hypochaeris radicata*). Fall dandelion can be distinguished from similar species by the presence of branched stems with two to five flower

heads, scale-like bracts on the flower stalks near the flower heads, acute lobes on the leaves, non-beaked seeds, and a pappus on each seed composed wholly of feathery bristles (Bogler 2006, eFloras 2008).



Flower head of *Leontodon autumnalis* L. Photo by K. Peters.

Ecological Impact

Impact on community composition, structure, and interactions: Fall dandelion is often a ruderal species in its native range, commonly colonizing disturbed, mesic grasslands (Hofmann and Isselstein 2004, Wellstein et al. 2007, Kravchenko 2009). In North America, this species grows primarily in disturbed areas, pastures, cultivated areas, roadsides, and open fields (Bogler 2006, Klinkenberg 2010). It appears to increase the density of ruderal species growing in disturbed areas in Alaska. Fall dandelion appears to be strongly competitive in hayfields in Alaska (Spellman, pers. comm.) and may affect the population sizes of native species. Rabbits, insects, and mollusks feed on fall dandelion (Edwards and Crawley 1999). The presence of fall dandelion likely affects native plant-pollinator interactions (Conn pers. obs.).

Impact on ecosystem processes: While little literature is available on the ecological impacts of fall dandelion, this species reduces resources available to co-occurring species when growing in repeatedly disturbed sites (see

Kravchenko 2009). Fall dandelion can achieve high densities in hayfields and roadsides in Alaska and thus presumably reduces available nutrients and moisture (Carlson pers. obs.).



Extensive infestation of *Leontodon autumnalis* L. in an open field in Homer, Alaska. Photo by B. Maupin.

Biology and Invasive Potential

Reproductive potential: Fall dandelion reproduces by seeds; vegetative reproduction is rare (Kravchenko 2009, Emorsgate Seeds 2010). This species produces an average of 779 seeds per plant (Sheldon and Burrows 1973). In a mesic grassland in Germany, the average seed density in the soil was 778 seeds per square meter with a maximum seed density of 5,106 seeds per square meter (Wellstein et al. 2007). The amount of time for which seeds remain viable in soil is unknown.

Role of disturbance in establishment: A study conducted in a German grassland showed that: seeds germinate best when competition from surrounding species is low; seedling emergence improves with increasing disturbance; and seedling survival is favored by the removal of surrounding vegetation, frequent cutting of surrounding vegetation, or frequent disturbance (Hofmann and Isselstein 2004). The frequency of occurrence of fall dandelion was found to be much higher in grazed coastal meadows than in ungrazed coastal meadows in Finland (Jutila 1999). Fall dandelion can establish in naturally disturbed beaches and commonly grows in waste places, fallow land, gardens, roadsides, and pastures in subarctic regions (NatureGate 2010, Kravchenko 2009). In North America, it grows in pastures, open fields, and roadsides (Bogler 2006, Klinkenberg 2010). In Alaska, 81% of recorded populations are associated with fill importation. All other infestations are associated with other types of disturbances or are located near towns or along roads (Hultén 1968, AKEPIC 2010, UAM 2010). Fall dandelion spreads aggressively in hay fields in Homer, Alaska (Spellman, pers. comm.).

Potential for long-distance dispersal: Each seed has a pappus composed of feathery bristles, which facilitate

wind dispersal (Bogler 2006). Despite this adaptation for wind dispersal, mean dispersal of seeds was estimated at only 1.64 m in a 16.41 km/h wind (Sheldon and Burrows 1973); however, less common long-distance dispersal is still expected for this species.

Potential to be spread by human activity: Fall dandelion has been germinated from both locally-produced and imported straw, which is sometimes used by mushers as dog bedding in Alaska (Conn et al. 2006). Infestations in Alaska have primarily spread along roadways (AKEPIC 2010).

Germination requirements: Information on the germination requirements of fall dandelion is not available.

Growth requirements: Fall dandelion grows best in mesic soils. In Russia, the plants bloom from late summer until November. They overwinter as rosettes. Fall dandelion is tolerant of saline soils but is not tolerant of shade (Kravchenko 2009, Klinkenberg 2010).

Congeneric weeds: Bristly hawkbit (*Leontodon hispidus*) and hairy hawkbit (*L. saxatilis* ssp. *saxatilis*) are both known or suspected to occur as non-native species in Alaska (AKEPIC 2010). Hairy hawkbit is a weed in California (DiTomaso and Healy 2007).

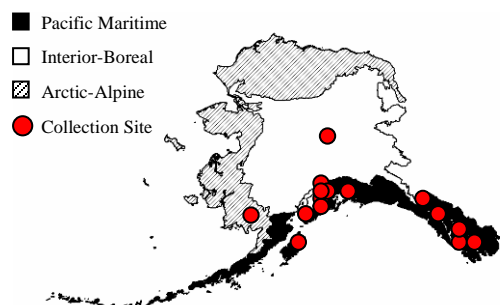
Legal Listings

- Has not been declared noxious
- Listed noxious in Alaska
- Listed noxious by other states
- Federal noxious weed
- Listed noxious in Canada or other countries

Distribution and Abundance

Fall dandelion is an occasional agricultural weed in grain fields in Russia and pastures in Russia, Finland, and North America. It has been documented as a weed in forage crops in Alaska (Jutila 1999, Bogler 2006, Kravchenko 2009, Quarberg et al. 2009, Klinkenberg 2010). Fall dandelion grows in disturbed areas, roadsides, and open fields in North America (Bogler 2006, Klinkenberg 2010).

Native and current distribution: Fall dandelion is native to Eurasia (Bogler 2006) and has been introduced to New Zealand and North America (GBIF New Zealand 2010, USDA 2010). This species grows in the arctic regions of Russia and Norway (Kravchenko and Budrevskaya 2005, Vascular Plant Herbarium Oslo 2010). It has been documented in 27 states of the U.S. (USDA 2010). Fall dandelion grows in all three ecogeographic regions of Alaska (Hultén 1968, AKEPIC 2010, UAM 2010).



Distribution of fall dandelion in Alaska

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Management

Herbicide applications combined with manual methods have successfully controlled infestations in agricultural fields in Russia. Mowing or cutting the stems before they fruit can prevent the spread of populations (Kravchenko 2009). If mown or cut, infestations should be revisited during the same growing season to control resprouting plants (Jantunen et al. 2007).

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