

**WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
(JULY 2007)**

Scientific name: *Hieracium sabaudum* L.

Synonyms: *Hieracium vagum* Jord.

Common name: European hawkweed, New England hawkweed, European king devil

Family: Compositae

Subgenus: *Hieracium* (Wilson, 2006; Gaskin and Wilson, 2007)

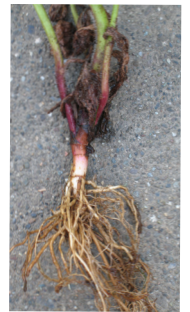
Legal Status: Class A Noxious Weed



Description and Variation:

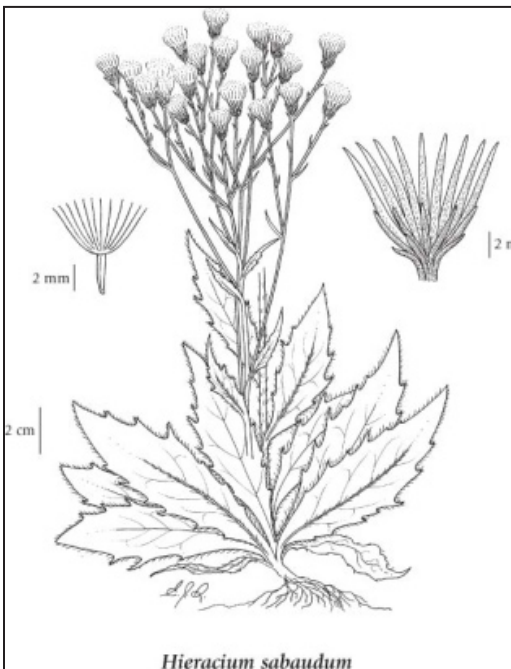
Overall Habit: Has typical hawkweed characteristics but without stolons. Between 40-130 tall.

Roots/Rhizomes: Roots are fibrous.

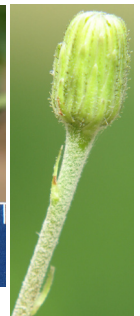


Stems: Stem is robust and exudes milky juice when broken. Lower portion of stem has dense arrangement of long, firm, bulbous-based, simple hairs; stellate hairs lacking. Multiple stems may arise from caudex (right).

Leaves: Lower surfaces of leaves contain hairs similar to those on the stem. Upper surfaces of leaves are either also similarly covered with hairs, or are glabrous. Leaves oblong and narrowly tapered to long petiole; leaf margins are flat, not rolled outward, and are smooth. About 50 stem leaves, mainly clustered at the base and getting smaller up the stem. Basal leaves absent or fall off during flowering period. Stem leaves are toothed and, in general, are oblong and narrowly tapered to a petiole. Specific leaf shape ranges from lanceolate to oblong-lanceolate, to ovate. Leaf size ranges from 2-18 cm long and 1-4 cm wide.



Flowers: Bloom time is between August and October, at least in the Northeast (Gleason and Cronquist, 1993), although flowering appears to begin earlier (e.g., late-July) here (A. Halpern, pers obs.). Involucral bracts covered with glandular, as well as long, simple hairs. 3-12 yellow flowerheads in open corymbiform. Stalks with non-glandular and stellate hairs. Involucral bracts lanceolate and graduated, covered with either glandular and non-glandular hairs or none at all.



Fruits and Seeds: Achenes 2.5-3.5 mm long; pappus tan to off-white

Habitat: Forest openings, roadsides and waste areas in lowland regions (Klinkenberg, 2006). In the urban/suburban landscape of Ellis Island (New York) flora found that *H. sabaudum* was frequently found in lawns and disturbed sites (Stalter and Scotto, 1999).

Geographic Distribution:

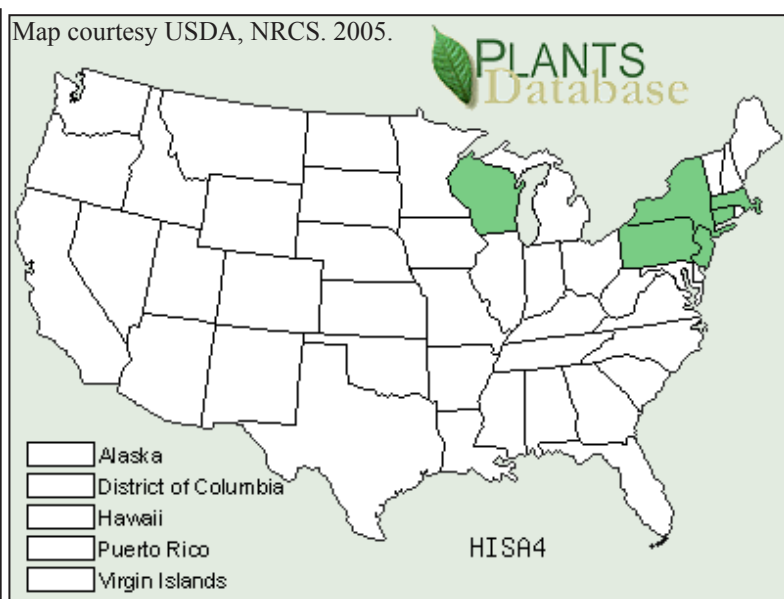
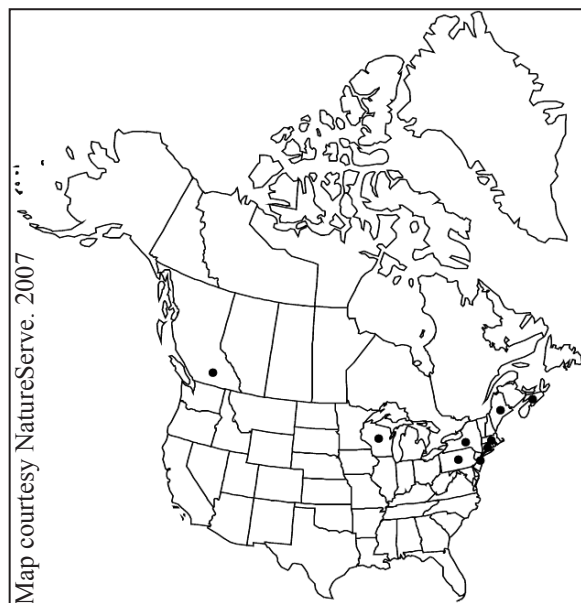
Native distribution: *Hieracium sabaudum* is native to much of Europe, including Ireland, the United Kingdom, Austria, Germany, Switzerland, Belarus, Lithuania, Moldova, Ukraine, Greece, Italy, Romania, Yugoslavia, and France. It is also native to temperate areas in Asia, such as Turkey, Azerbaijan, and Georgia (USDA, ARS, NGRP, 1007).

Distribution in North America: With the exception of the known populations in Washington State and Wisconsin, *Hieracium sabaudum* is generally restricted to the northeastern/Mid-Atlantic states of Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania (USDA/NRCS, NatureServe, 2007). It also occurs in Nova Scotia, Prince Edward Island, Quebec, as well as British Columbia (NatureServe, 2007), where its known distribution is limited to the southwestern region near Washington State (Klinkenberg, 2006).

History and Distribution in Washington: There are presently two known populations of *Hieracium sabaudum* in Washington State: near milepost 214 on Highway 101 in Clallam County (right) and along Highway 2 in King County (C. Lucero, pers. comm.). Pressed specimens originally labeled as *Hieracium laevigatum* in Whatcom County appear to be *H. sabaudum* as well (L. Wilson, pers. com.).



Courtesy Cathy Lucero



Biology:

Growth and development: Like other hawkweed species, *H. sabaudum* is a perennial plant. Because it does not produce vegetative clones, it does not form mats (L. Wilson, pers. comm.)

Reproduction: *Hieracium sabaudum* reproduces through seed production only and does not reproduce vegetatively via stolons or rhizomes (L. Wilson, pers. comm.). Seed production is accomplished through the typical pollination process, but *Hieracium* species are also apomictic, meaning they can produce seeds without pollen (Wilson and Callihan, 1999). Hawkweed species are animal-pollinated (Murphy, 2001), and seeds of *H. sabaudum* are wind-dispersed (Grime et al. (1988) in Honnay et al., 1999).

Control:

Response to herbicides: Nothing found specific to *Hieracium sabaudum*, although control for this *Hieracium* species is similar to that of others (T. Miller and L. Wilson, pers. comm.). *Hieracium aurantiacum* and *H. caespitosum* can be controlled with 2,4-D, clopyralid, and picloram, and appropriate surfactants are recommended (Rinella and Sheley, 2002). A study in Idaho comparing the effects of several herbicides on *H. caespitosum* also found that picloram was highly effective but that imazapic did not provide effective control on this *Hieracium* species (Shinn and Thill, 2003). Please note that label information may change, especially if this document is more than five years old. Please refer to the PNW Weed Management Handbook, available online at <http://weeds.ippc.orst.edu/pnw/weeds> for specific herbicide instructions.

Response to cultural methods: Nothing found specific to *Hieracium sabaudum*. For hawkweed control in general, low nutrient soils can be supplemented with fertilizer to encourage growth and competition of desirable grass species (Hanson, 1920; Rinella and Sheley, 2002). It has been suggested that it may be more profitable to convert poor quality pasture land, heavily infested with invasive *Hieracium* species, to into a tree farm as an alternative to eradication of the weeds (Hanson, 1920). However, timber is not the only crop option. Cultivation of annual crops also precludes the establishment or persistence of invasive *Hieracium* species (Rinella and Sheley, 2002).

Response to mechanical methods: Nothing found specific to *Hieracium sabaudum*. Mowing before seeds mature can prevent dispersal (Rinella and Sheley, 2002). Small infestations can be removed by thorough hand-digging, especially when the ground is moist, and plants should be properly disposed of (Taylor, 1920). However, it should be noted that soil disturbance can encourage growth of new plants (Rinella and Sheley, 2002). Tarping is also an effective control strategy, but it not practical for large infestations (Taylor, 1920).

Biological control potential: No known biological control agents for *H. sabaudum* at this time. Galls formed by the cynipid (*Aulacidea hieracii*) was documented on *H. sabaudum* at several sites, as were several species of parasitoids, in Northumberland, U.K. (Hewett, 2003). However, they do not appear to be host specific to this species of *Hieracium* and work on this species as biocontrol is unknown.

Economic Importance:

Detrimental: Nothing specific to *Hieracium sabaudum* found in literature. However, *H. sabaudum* is closely related to hawkweed species with documented detrimental impacts, some of which are described by Rinella and Sheley (2002). For example, *Hieracium* species compete with desirable pasture species, particular when grazing is heavy. They also compete with native species and are weedy in lawns. Although the *Hieracium* species can be nutritious and are digestible by cattle and sheep, it is not certain whether the species are actually palatable. Some species of *Hieracium* are thought to possess allelopathic pollen (Murphy, 2001), and studies have demonstrated that at least the *Hieracium* species *pilosella* may alter soil nutrient cycling (Ehrenfeld, 2003). It has been estimated that invasive *Hieracium* species could cause an annual loss of approximately \$58.2 in the western U.S. (Wilson, 2002 in Duncan and Clark, 2005).

Beneficial: Nothing found specific to *H. sabaudum*.

Rationale for listing: Like other nonnative *Hieracium* species on the Noxious Weed List, *Hieracium sabaudum* is an invasive weed that can aggressively compete with desirable pasture and rangeland species, and it also has the potential to displace native species. This species was only recently discovered in Washington State at two roadside sites, and because of its ability to spread quickly, there is concern that it could spread to other areas.

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