Senecio jacobaea & *vulgaris*

TANSY RAGWORT & COMMON GROUNDSEL

Photo Credit: © DAVE POLSTER

ENGLISH NAMES	Tansy ragwort[1] or stinking willie[1] and common groundsel[2] or old-man-in-the-spring[2]
SCIENTIFIC NAME	*Senecio jacobaea*[1] and *Senecio vulgaris*[2]
FAMILY	Asteraceae

Tansy ragwort and common groundsel are weeds of agricultural and disturbed areas and have yellow flowerheads and distinctive ruffled-looking leaves.

RANGE/KNOWN DISTRIBUTION

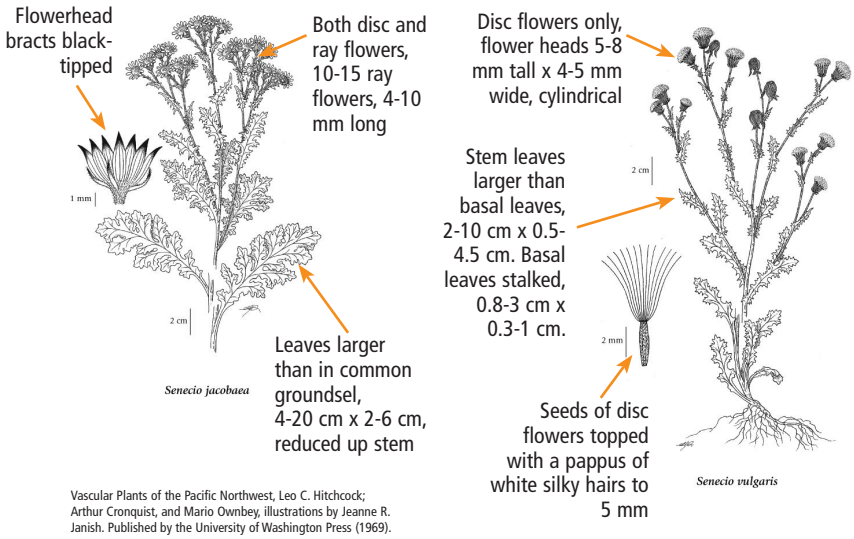
Tansy ragwort and common groundsel are native to Europe and western Asia and have spread around the globe since the 19th century. Tansy ragwort was likely first introduced to North America for its use as a medicinal herb and has since spread via contaminated hay. These species are now found in Canada and the United States, as well as Argentina, New Zealand, Australia, and South Africa (tansy ragwort), and Greenland (common groundsel). The Canadian range of these species includes eastern Canada and British Columbia, as well as Alberta and Manitoba for common groundsel. In BC, tansy ragwort is found in the Fraser and Okanagan Valleys, Vancouver Island, the Gulf Islands, and Haida Gwaii, while common groundsel is found throughout the province, but primarily on Vancouver Island, the Gulf Islands, Haida Gwaii, and the Lower Mainland.

IMPACTS ON GARRY OAK AND ASSOCIATED ECOSYSTEMS

Tansy ragwort and common groundsel invade woodlands and forests that have been disturbed and out-compete native species, hindering their colonization and decreasing biodiversity. They are agricultural pests (tansy ragwort is considered a noxious weed in BC) and can spread quickly and reduce forage production by up to 50%. They also contain alkaloids that are toxic when ingested by livestock; the alkaloids cause irreversible liver damage that can kill cattle and horses, as well as taint milk and honey. Tansy ragwort has been found to release chemicals toxic to other plants, increasing its competitive advantage. Bare patches remaining when the plant dies off in summer are susceptible to further invasion by this and other alien invasive species. Soil microbe diversity is reduced in areas infested by tansy ragwort.

FIELD DESCRIPTION

Both species have a fibrous taproot. Tansy ragwort and biennial common groundsel spend their first year as a rosette. Basal leaves are dark green with a whitish and finely hairy underside in tansy ragwort and purplish underside



Vascular Plants of the Pacific Northwest, Leo C. Hitchcock; Arthur Cronquist, and Mario Ownbey, illustrations by Jeanne R. Janish. Published by the University of Washington Press (1969).

in common groundsel. In subsequent years, one to a few flowering stems develop that can be purplish, hairy and are erect and branched near the top. Stems grow up to 1.2 and 0.6 m tall, respectively, in tansy ragwort and common groundsel. The stem leaves are larger than the basal leaves and are unstalked (sometimes clasping at the base in common groundsel) or short-stalked. Basal and stem leaves are deeply lobed with toothed margins, appearing ruffled; these are smaller in common groundsel. In tansy ragwort, yellow flowerheads up to 2.5 cm across consist of 10-15 petal-like ray (outer) flowers and disc (inner) flowers. Common groundsel flowerheads are also yellow but lack ray flowers and are cylindrical. The outer bracts of flowerheads are black-tipped. Flowerheads tend to cluster together at the same height. Seeds of ray flowers (tansy ragwort) are hairless, while the seeds of the disc flowers are tipped with a silky white tuft of hairs.

LIFE HISTORY

Tansy ragwort is a biennial or short-lived perennial herb. Reproduction is primarily by seed, although it can also occur vegetatively by sprouting root fragments in damaged plants. Germination usually occurs in the fall or spring but can occur year round. Tansy ragwort then spends the first year as a basal rosette. Flowering stalks are produced in subsequent years with flowering usually occurring July through September. Common groundsel is an annual that can complete its lifecycle in 5-6 weeks; it is sometimes biennial. Flowering can occur year-round, producing more than one generation per year. Both species produce seeds prolifically with a single large tansy ragwort plant producing up to 150,000 seeds. Seeds are wind-

dispersed to within a few metres of the parent plant or are dispersed via water, people and wildlife. Plants are self-fertilized.

HABITAT

Tansy ragwort and common groundsel occur primarily on disturbed lands including agricultural fields, clear cuts, roadsides, trails and waste areas. Tansy ragwort has also been known to invade woodlands and open meadows. It prefers full sun to partial shade and well-drained, dry to moist soil conditions; it is not greatly affected by soil acidity or texture. Common groundsel is shade-intolerant and prefers open sites having very moist to wet, nitrogen-rich soils.

MANAGEMENT

The control of tansy ragwort and common groundsel requires an integrated management approach using a combination of the following methods. It is important to act immediately to control new infestations and to prevent the plants from setting seed.

Develop a long-term, realistic program for invasive species removal before undertaking any work. Before taking action, obtain expert advice. Please refer to the introductory section of this manual.

PHYSICAL CONTROL: Hand pulling prior to seed set is the most common method of control. However, this is only feasible for small infestations and all the roots must be removed to avoid regrowth. This is best accomplished when soils are moist, aiding removal of the roots. If the plant has already begun to flower, flower heads should be carefully bagged and burned or disposed of as they are still capable of producing seeds.

BIOLOGICAL CONTROL: Biological control agents have been successful at reducing the severity of tansy ragwort infestations. Several agents have been released including the cinnabar moth (*Tyria jacobaeae*), tansy ragwort seed fly (*Pegohylemyia seneciella*) and tansy ragwort flea beetle (*Longitarsus jacobaea*). The cinnabar moth also attacks common groundsel, but is not effective on its own. The rust fungus *Puccinia lagenophora* can control common groundsel depending on the timing of infection; plants infected in the summer were more likely to die than those infected in the fall.

CHEMICAL CONTROL: The application of herbicides has resulted in a 95% reduction in the number of flowering stems of tansy ragwort the following year. Effective herbicides include dicamba, 2, 4-D, glyphosate and picloram. Chemicals should be spot sprayed to avoid damage to non-target vegetation

and are most effective when applied to basal rosettes, particularly during the growth phases in early spring or mid-fall. Common groundsel has developed a resistance to triazine herbicides including atrazine and simazine. *Herbicides should only be used with extreme caution, and under expert advice, in sensitive Garry oak ecosystems.*

OTHER TECHNIQUES: Mowing or grazing prior to flowering can be effective at reducing seed production in areas where this would not cause damage to desirable native species. These practices are only temporary solutions and can stimulate regrowth. Sheep are immune to the toxic effects of the alkaloids in tansy ragwort and it can be used for grazing. Burning can also stimulate growth and increase the severity of infestations although common groundsel seedlings have been found to be susceptible to flaming with a propane-fired torch. In highly disturbed sites, mulching can be used to prevent seeds from germinating due to lack of light and solarization, or soil steaming can kill seeds.

PREVENTATIVE MEASURES: Infestations should be quarantined to avoid further spread. Equipment, clothing and shoes should be thoroughly cleaned of plant materials when leaving an infested site. Surrounding areas should be monitored for new infestations so that these can be controlled immediately. Soil disturbance should be minimized and bare areas should be revegetated with native species.

PERSISTENCE: Neither species has an abundant soil seed bank as the majority of seeds germinate in the first year. However, viable seeds of tansy ragwort can persist in the soil seed bank for 15 years and possibly even up to 20 years when buried. Buried seed of common groundsel can last at least 6 years.

SELECT REFERENCES

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A comprehensive annotated bibliography of literature specific to tansy ragwort and common groundsel is available at www.goert.ca.

For more information contact the Garry Oak Ecosystems Recovery Team, or see the website at www.goert.ca