

tansy ragwort

Senecio jacobaea L.

Synonyms: *Jacobaea vulgaris* Gaertner

Other common name: ragwort, stinking willie

Family: Asteraceae

Invasiveness Rank: 63 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

Tansy ragwort is a biennial or short-lived perennial herb that grows 30 ½ to 183 cm tall from a taproot. Stems are solitary or several and unbranched to the inflorescence. Young leaves and stems are sparsely and unevenly hairy. Leaves are 5 to 20 ¼ cm long, alternate, equally distributed, and two to three times pinnately lobed with the terminal lobes generally larger than the lateral lobes. Flower heads are arranged in terminal clusters of 20 to 60. They are small and are composed of yellow ray and disk flowers. Ray flowers are 10 to 13 in number and 6 to 12 ½ mm long. Seeds produced by disk flowers are minutely pubescent, bear two rows of pappus bristles, and retain their pappi; those produced by ray flowers are smooth and shed their reduced pappi early in development (Whitson et al. 2000). Ray flower seeds and disk flower seeds differ in their size, weight, dispersal mechanisms, germination requirements, and germination rates (Harper and Wood 1957).



Flower heads of *Senecio jacobaea* L. Photo by M. Shephard.

Similar species: Tansy ragwort can be distinguished from the other 17 *Senecio* species that grow in Alaska by the presence of leaves that are two to three times pinnatifid (rather than triangular, narrowly linear, or divided into linear segments). Many other *Senecio* species have a single, large flower head rather than numerous, small flower heads. Tansy ragwort can resemble common tansy (*Tanacetum vulgare*). Unlike common tansy, however, tansy ragwort has ray flowers and a pappus on each disk flower seed (Macdonald and Russo 1989, Royer and Dickinson 1999).



Senecio jacobaea L. Photo by R. Old.

Ecological Impact

Impact on community composition, structure, and interactions: Tansy ragwort easily outcompetes native grasses and forbs. It is highly toxic to animals, including

humans (Harris 2000, CUPPID 2004). Large numbers of pollinating insects visit the flowers. Over sixty insect species from five different orders are associated with tansy ragwort (Cameron 1935, Harper and Wood 1957). Tansy ragwort hybridizes with other *Senecio* species in Britain (Harper and Wood 1957).

Impact on ecosystem processes: As a pioneer of disturbed areas, tansy ragwort is likely to hinder the colonization of disturbed areas by native plant species.

Biology and Invasive Potential

Reproductive potential: Tansy ragwort can reproduce sexually by seeds and vegetatively from root buds and pieces of rootstocks. This species produces from 4,760 to 174,230 seeds per plant in a range of habitats (Cameron 1935). Seeds can remain viable in the soil for several years. Vegetative regeneration mainly occurs in damaged plants (Macdonald and Russo 1989, Harris 2000).

Role of disturbance in establishment: Tansy ragwort requires disturbances to establish (Cameron 1935, Harper and Wood 1957, van der Meijden and van der Waals-kooi 1979, Harris 2000). Several types of disturbances are known to increase the abundance of tansy ragwort, including the activities of moles, gophers, ants, rabbits, livestock, and people. Disturbances that damage the plants, such as plowing, mowing, and trampling, stimulate vegetative regeneration from root buds and intensify infestations (Harper and Wood 1957, Harris 2000).

Potential for long-distance dispersal: Tansy ragwort seeds are tipped by hair-like plumes and are dispersed by wind (Harris 2000). Up to 60% of seeds land within 4.6 m of the parent plant. An additional 39% land between 4.6 and 9 m from the parent plant (Macdonald and Russo 1989, Harris 2000). The movement of water, animals, and birds also disperse seeds of tansy ragwort. Seeds eaten by sheep pass through the digestive system undamaged (Green 1937, Harper and Wood 1957).

Potential to be spread by human activity: Tansy ragwort is often spread in contaminated hay, grain seeds, and top soil (Hodkinson and Thompson 1997, Harris 2000, USDA, ARS 2004). The plant can be transported in mud or soil adhering to vehicles (Harris 2000).

Germination requirement: Seeds do not possess innate dormancy (van der Meijden and van der Waals-kooi 1979). Germination occurs year-round; however, most seeds germinate in either fall or spring (Harper and Wood 1957). Soil moisture, soil surface humidity, and light are important factors in the germination of tansy ragwort seeds. Germination is greatest when the soil moisture level is between 15% and 29% and the relative humidity at the soil surface is 100%. A covering of more than 4 mm of sand leads to enforced dormancy due to lack of light (Van der Meijden and van der Waals-kooi 1979).

Growth requirements: Tansy ragwort grows well on

lightly disturbed calcareous soils, organic-rich alluvium, light loam, and clay-with-flints with pH between 4 and 8.2. It is absent where the water table is high (Harper and Wood 1957, Harris 2000).

Congeneric weeds: Madagascar ragwort (*Senecio madagascariensis*), Ridell's ragwort (*S. riddellii*), Oxford ragwort (*S. squalidus*), and common groundsel (*S. vulgaris*) are each listed as a noxious weed in one U.S. state (Whitson et al. 2000, USDA 2002).

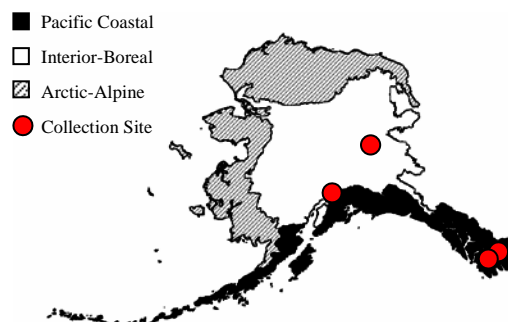
Legal Listings

- Has not been declared noxious
- Listed noxious in Alaska
- Listed noxious by other states (AZ, CA, CO, CT, ID, MA, MT, OR, WA)
- Federal noxious weed
- Listed noxious in Canada or other countries (BC, MB, NS)

Distribution and Abundance

Tansy ragwort is commonly found in pastures, forest clearcuts, and roadsides. This species occupies natural communities such as sand dunes and beech woodlands (Harper and Wood 1957, Harris 2000).

Native and current distribution: Tansy ragwort is native to Europe and western Asia. It has become a serious pest in New Zealand, Tasmania, Australia, South Africa, North America, and South America. It grows in millions of acres of rangelands and pastures in the Pacific Northwest (Harris 2000). This species has been recorded from the Pacific Maritime and Interior-Boreal ecogeographic regions of Alaska (AKEPIC 2010).



Distribution of tansy ragwort in Alaska

Management

Hand pulling has been the most common method of control during the early stages of infestation. Plowing, mowing, and burning often intensify infestations. Sodium chlorate has been used to control tansy ragwort in New Zealand, but it may seriously damage other plants as well. The high cost of sodium chlorate prevents its use as a widespread control agent. Other herbicides do not effectively kill this plant. Biological control agents have proven to be effective for long-term

control of extensive infestations (Cameron 1935, Macdonald and Russo 1989, Harris 2000).

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