WRITTEN FINDINGS OF THE
WASHINGTON STATE NOXIOUS WEED CONTROL BOARD
(Updated December 1997; 1987)

Scientific Name: *Senecio jacobaea* L.

Common Name: tansy ragwort

Family: Asteraceae

Legal Status: Class B
(a) regions 3,4,6,7,9,10
(b) region 5, that portion of Pierce County lying south or east of a boundary beginning at the White River and State Highway 410, then west along State Highway 410 to intersection with State Highway 162 (Orting) to intersection with Orville Road, then south along Orville Rd. to intersection with Kapowsin Highway (304th Street East), then west following Kapowsin Highway to intersection with State Route 7, then south along state Route 7 to intersection with state Route 702, then west along State Route 702 to intersection with State Route 507, then southwest along State Route 507 to intersection with the Nisqually River.

Description and Variation: Classified as a biennial herb, it can complete it's life cycle as a winter annual and occasionally as a perennial, depending on environmental conditions. As a biennial, tansy ragwort spends the first year in the rosette stage, with petiolate (stalked) dark green, basal leaves. The leaf underside is somewhat hairy, and appears whitish. The overall rosette has a ruffled appearance, due to deeply indented and blunt toothed lobes of the leaves. The basal leaves are often deciduous. The size of the rosette may indicate the potential for flowering, with larger rosettes producing more flowers. During the second year, one or several flowering stems bolt, with the overall plant being 1 - 4 feet high. The leaves found on the flowering stem are alternate, and sessile. The flower heads are in flat topped clusters. Each flower head is composed of yellow, daisy-like flowers. Each flower head is a composite of many disc flowers surrounded by (usually) 13 ray flowers. A distinguishing characteristic is the 13 'petals', which are ray flowers. Tansy ragwort has a taproot, and often a large woody rootstock. Initial infestation is by seed.

The estimated number of species in the genus *Senecio* range from 1,000 to 3,000. The USDA lists 112 species of this genus in the US. Only seven of these species are toxic to livestock, and *Sencio jacobaea* is responsible for the majority of livestock poisoning (Hitchcock et al. 1969; Correll and Johnston 1970, USDA 1982 as cited in Sharrow et al.1988).

Economic Importance:

Detrimental: Tansy ragwort is toxic, and can be lethal to cattle and horses, to a lesser extent goats, and seldom sheep. Toxic properties remain in cut plants found in hay. These toxic properties are also a threat to humans, as a possible contaminant to the human food chain (Howatt 1989). Herbal remedies, contaminated flour, milk or honey are potential sources, with long term consumption being a concern (Watt 1987 as cited in Howatt 1989). All plant parts are toxic, with the highest amount of alkaloids in the flowers, followed by the leaves, roots and stems.

Tansy ragwort contains several alkaloids, which themselves are not toxic. However, these alkaloids are broken down by liver enzymes during metabolism, they are then considered to be toxic and potentially carcinogenic (Turner and Szczawinski 1991). Chronic, cumulative poisoning, and irreversible liver damage, including cirrhosis of the liver are the results of ragwort poisoning.

Beneficial: None known.

Habitat: Tansy ragwort will establish in disturbed sites that include roadsides, pastures and in forested areas recently harvested for timber (Sweeney et al. 1992). Tansy ragwort does not show a preference for soil texture or acidity. Soil moisture may play a role in the distribution of this species. (Harper 1958 as cited in Sharrow et al. 1988).

In Britain and western Europe tansy ragwort is considered a climax species in coastal sand dune communities. However, the major distribution of tansy ragwort is as a pioneer to mid seral species to newly disturbed sites. (Harper and Wood 1957 as cited in Sharrow et al. 1988).

Geographic Distribution: Tansy ragwort is native to Europe and western Asia, ranging from Norway through Asia Minor, and from Great Britain to Siberia. (McEvoy, 1985 as cited in Sweeney et al. 1992).

Tansy ragwort is found throughout Europe, with worldwide distribution following European settlement to new areas. Tansy ragwort is now found on the east and west coasts of the United States, and it is also found in Canada, New Zealand, Australia, Argentina and South Africa (Sharrow et al. 1988).

History: The first recorded site of tansy ragwort in western North America was on Vancouver Island in 1913, and in Oregon in 1922. Tansy ragwort is now found from northwestern California to British Columbia, from coastal areas continuing east of the Cascade Mountains (Sweeney et al. 1991). The economic impact of tansy ragwort in Oregon during the 1970's included: more than $4 million a year lost in livestock poisoning; the loss of 5 to 10% of cattle herds; and dairies were forced to close (Rees et al. 1996).

Growth and Development: As a biennial, most tansy ragwort seeds germinate in the fall. The first year is spent in the rosette stage with dark green and ruffled basal leaves. The flowering stalk bolts during the second year. Flowers are produced from late summer into the fall. After seed production, individual plants generally die. However, the crown and the root system from a flowering plant can produce new rosettes (Forbes 1977, McEvoy 1984c as cited in Sharrow et al. 1988).

While a biennial life cycle is typical, tansy ragwort will behave as a perennial if the flowering stalk is cut, mowed, trampled or mechanically injured in any way while flowering. Vegetative regeneration can then occur from crown buds, root fragments or intact roots (Baker-Kratz and Macquire 1984; Black 1976). When flowers are removed prior to seed set, the plant is able to reflower later in the same season. Defoliated rosettes will continue to grow indefinitely as vegetative perennials (Forbes 1977 and McEvoy 1984c; Harper 1958 as cited in Sharrow et al. 1988).

Seeds require light for germination, but they can remain viable in soils for 10 - 16 years (Thompson and Makepeace 1983 as cited in Sharrow et al. 1988).

Reproduction: The number of seeds per plant can range from 5,000 to 200,000 (Cameron 1935 as cited in Sharrow et al. 1988). Tansy ragwort flowers from July through September, and the seed matures and disperses during the flowering season. Pioneer invasion is by seed. Tansy ragwort patches can establish when root and crown sprouts vegetatively produce new rosettes.

Response to Herbicide: Chemical control is effective against tansy ragwort. 2,4-D is effective when applied to rosettes in the spring, or applied to the new growth initiated after fall rains. Dicamba is effective on plants with large rosettes or flowering stalks. Tordon controls scattered populations. Glyphosate is also used for effective control (Sweeney et al. 1992).

Response to Cultural Methods: Tansy ragwort requires sunlight and a disturbed site to establish. Pasture management will minimize potential infestations (Bedell et al. 1981 as cited in Sweeney et al. 1992). Tansy ragwort seedling mortality may be high where there is competition from established or vigorous grass stands (Sharrow et al. 1988).

Sheep are resistant to the toxic properties of tansy ragwort, and they prefer tansy ragwort over forage material that has dried out during the summer. Grazing sheep will prevent the production of flowers and seeds. However, overgrazing that creates disturbed soils and a loss of native vegetation will cause reinfestation when the sheep are removed. (Bedell et al. 1981 and Macdonald 1983 as cited in Sweeney et al. 1992).

Heavily infested sites that support all growth stages of tansy ragwort, as well as a seed bank, make control impossible when only one stage of the plant is targeted (Black 1976).

Response to Mechanical Methods: Hand pulling is effective on small infestation sites. Pulling when the soil is moist will help to remove the whole root, as tansy ragwort will resprout from root fragments. Covering the site with mulch will help prevent new germination from the disturbed site. (Sweeney et al. 1992).

Mowing is not recommended. Mowing will prevent seed production, however, any damage to the flowering stalk will force tansy ragwort to keep growing as a perennial (Harper 1958 as cited in Black 1976). Established vegetative plants remain as low growing rosettes which can prevent desirable vegetation from establishing on a site. (McEvoy 1984c and cited in Sharrow et al. 1988).

Biocontrol Potentials: In it's native habitat, tansy ragwort is controlled by over 60 species of natural enemies that feed on this species. (Cameron 1935 as cited in Sweeney et al. 1992).

Three natural enemies of tansy ragwort were introduced in California between 1959 and 1966. The ragwort flea beetle (*Longitarsus jacobaeae*), the ragwort seed fly (*Pegohylemyia seneciella*) and the cinnabar moth (*Tyria jacobaeae*) are the biological agents effectively used to control tansy ragwort in Oregon, California and Washington. The cinnabar moth and the ragwort flea beetle are unable to establish east of the Cascade Mountains (Rees et al. 1996).

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** References available from the Washington State Noxious Weed Control Board Office in Kent.*

Rationale for Listing:

The impacts caused by tansy ragwort infestations include loss of livestock and loss of desirable vegetation in pastures and rangelands. Tansy ragwort is toxic, and can be fatal to cattle and horses. It has the potential to cause human poisonings. The toxic properties are not lost when this plant is cut and left to dry in a pasture, or when it is baled in hay. Tansy ragwort is invasive and aggressive, and will quickly establish in newly disturbed sites, which include poorly managed pastures and recently logged forest areas. Tansy ragwort is also a prolific seed producer. It is often found on roadsides, contributing to the spread of new infestations. Control is difficult, since tansy ragwort has the ability to live as an annual, biennial or perennial, depending on environmental conditions. As a Class B noxious weed in Washington state, control is required where populations are limited or non-existent, preventing the spread to new locations.