

## alsike clover

### *Trifolium hybridum* L.

Synonyms: *Trifolium elegans* Savi, *T. hybridum* ssp. *elegans* (Savi) Aschers. & Graebn., *T. hybridum* var. *elegans* (Savi) Boiss., *T. hybridum* var. *pratense* Rabenh.

Other common names: none

Family: Fabaceae

**Invasiveness Rank:** 57 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

Alsike clover is a perennial forb that grows up to ½ m tall with decumbent to erect, vertically-ridged stems that do not root at the nodes. Plants are glabrous. Leaves are palmately trifoliate with long petioles on the lower leaves and reduced petioles on the upper leaves. Leaflets are obovate to elliptic with oblong, narrow-tipped stipules. Flower stalks are longer than the adjacent leaves. Flower heads are borne in leaf axils and at the ends of stems. They are composed of 10 to 50 pink, red, or white flowers (Hultén 1968, Welsh 1974, eFloras 2008).



Infestation of *Trifolium hybridum* L. Photo by R. Old.

**Similar species:** Alsike clover can be confused with eight other *Trifolium* species that are known or suspected to occur as non-native species in Alaska: golden clover (*Trifolium aureum*), field clover (*T. campestre*), suckling clover (*T. dubium*), lupine clover (*T. lupinaster*), smallhead clover (*T. microcephalum*),

red clover (*T. pratense*), white clover (*T. repens*), and whitetip clover (*T. variegatum*). Unlike alsike clover, golden clover, field clover, and suckling clover have yellow flowers. White clover can be distinguished from alsike clover by its primarily white flowers and creeping stems that root at the nodes. Red clover can be distinguished from alsike clover by the presence of primarily red flowers, hairs on the stems, foliage, and calyxes, and sessile flower heads that are subtended by pairs of leaves. Lupine clover can be distinguished from alsike clover by the presence of five leaflets per leaf and blue-purple flowers. Unlike alsike clover, whitetip clover has purple flowers with white tips and flower heads that are less than 1 cm in diameter. Smallhead clover can be distinguished from alsike clover by the presence of hairs on the stems and foliage and flower heads that are less than 1 cm in diameter (Hultén 1968).



Flower head of *Trifolium hybridum* L.

#### Ecological Impact

**Impact on community composition, structure, and interactions:** Alsike clover forms dominant stands and may delay the establishment of native species in disturbed areas. It has a symbiotic relationship with nitrogen-fixing cyanobacteria. This species is highly palatable to grazing animals. It serves as a host for multiple crop diseases.

**Impact on ecosystem processes:** Alsike clover alters soil

conditions by fixing nitrogen (USDA 2002).

### Biology and Invasive Potential

*Reproductive potential:* Alsike clover reproduces by seeds only, and each plant produces an abundance of seeds. Seeds remain viable for more than three years.

*Role of disturbance in establishment:* In Alaska, alsike clover has been observed only in disturbed sites (Densmore et al. 2001).

*Potential for long-distance dispersal:* Alsike clover has no innate adaptations for long-distance dispersal.

*Potential to be spread by human activity:* Alsike clover is widely cultivated as a forage and cover crop. Additionally, it is seeded for erosion control.

*Germination requirements:* Seeds do not germinate until the seed coat has broken down enough by decay or scarification to admit moisture. They do not require cold-stratification. Seeds can germinate in vegetated areas.

*Growth requirements:* Alsike clover is adapted to fine- and medium-textured soils with pH between 6 and 7.5. It is shade intolerant. This species can withstand temperatures down to -39°C. It requires 110 frost-free days for successful reproduction (USDA 2002).

*Congeneric weeds:* Eight other *Trifolium* species are known or suspected to occur as non-native species in Alaska: golden clover (*Trifolium aureum*), field clover (*T. campestre*), suckling clover (*T. dubium*), lupine clover (*T. lupinaster*), smallhead clover (*T. microcephalum*), red clover (*T. pratense*), white clover (*T. repens*), and whitetip clover (*T. variegatum*) (AKEPIC 2010). No *Trifolium* species are considered noxious weeds in the U.S. or Canada (USDA, NRCS 2006, Invaders 2010).

### Legal Listings

- Has not been declared noxious
- Listed noxious in Alaska

### References:

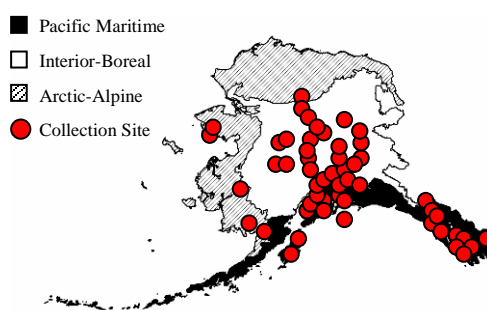
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- USDA (United States Department of Agriculture), NRCS (Natural Resource Conservation Service). 2002. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). National

- Listed noxious by other states
- Federal noxious weed
- Listed noxious in Canada or other countries

### Distribution and Abundance

Alsike clover has been planted in lawns and used to revegetate roadsides and other disturbed areas (Kubanis 1982). It has escaped from cultivation and established in disturbed sites throughout Alaska (Welsh 1974).

*Native and current distribution:* Alsike clover is native to Europe, western Asia, and northern Africa. It has been introduced and naturalized throughout much of the world (Hultén 1968). This species is known from all states of the U.S. except for Texas (USDA 2002). It has been found in all three ecogeographic regions of Alaska (Hultén 1968, AKEPIC 2010, UAM 2010).



Distribution of alsike clover in Alaska

### Management

Populations of alsike clover are widespread and dense along roadsides in Alaska. Plants should be prevented from establishing in recently disturbed sites if possible. Several herbicides can be used to control alsike clover.

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4490 USA.

Welsh, S.L. 1974. Anderson's flora of Alaska and

adjacent parts of Canada. Brigham University  
Press. 724 pp.