

## sheep sorrel

### *Rumex acetosella* L.

Synonyms: *Acetosella acetosella* (L.) Small, *A. hastata* Moench, *A. tenuifolia* (Wallr.) A. Löve, *A. vulgaris* (Koch) Fourr., *Rumex acetosella* ssp. *angiocarpus* (Murb.) Murb., *R. acetosella* var. *pyrenaeus* (Pourret) Timbal-Lagrave, *R. acetosella* var. *tenuifolius* Wallr., *R. acetosella* var. *vulgaris* W. D. J. Koch, *R. angiocarpus* Murb., *R. tenuifolius* (Wallr.) A. Löve

Other common names: field sorrel, red sorrel, common sheep sorrel

Family: Polygonaceae

**Invasiveness Rank:** 51 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

Sheep sorrel is an annual or sometimes perennial herb that grows from 15 to 61 cm tall with slender, creeping rhizomes. Lower leaves are arrow-shaped with 2 conspicuous basal lobes pointing outward. Leaf blades are 1 ¼ to 7 ½ cm long. Basal leaves are long stalked. Stem leaves are more slender, sometimes lack basal lobes, and are short-stalked or sessile. Membranous sheaths surround the stems at the nodes. Leaves and stems have a sour taste. Flowers are arranged in branched, loose, leafless, terminal panicles. Each flower consists of three scale-like sepals and three petals. Male and female flowers are born on separate plants. Male flowers are orange-yellow and female flowers are red-orange. The fruits are small, three-angled, and enclosed in three persistent flower scales (Pojar and MacKinnon 1994, Whitson et al. 2000).



*Rumex acetosella* L. Photo by R. Old.

**Similar species:** The native grassleaf sorrel (*Rumex graminifolius*) can be found in a few locations north of the Brooks Range, and the native Bering Sea dock (*R. beringensis*) grows from the Alaska Peninsula north to the arctic slope along the Bering Sea. Both species are similar to sheep sorrel but can be distinguished by their

narrowly linear leaves, which sometimes lack basal lobes (Hultén 1968, FNA 1993+). The non-native garden sorrel (*R. acetosa*) has been recorded from Kodiak and Unalaska (Hultén 1968, UAM 2006). It is a stout, perennial plant that grows up to 91 cm tall. Unlike *R. acetosella*, *R. acetosa* has oblong-lanceolate leaves that grow up to 10 cm long with downward-pointing lobes. *R. acetosa* can be distinguished from native garden sorrel (*R. lapponicus*), which is widespread in all ecogeographic regions of Alaska (UAM 2006), by its short, broad, strongly fringed sheaths (Douglas and MacKinnon 1999).



Leaf of *Rumex acetosella* L. Photo by J. Cardina.

#### Ecological Impact

**Impact on community composition, structure, and interactions:** Sheep sorrel can form dense stands and displace native grasses and forbs. This plant contains oxalic acid which can be poisonous to livestock and may be toxic to wildlife species (Cal-IPC 2005). Sheep sorrel is grazed by mule deer (Nixon et al. 1970, Kruger and Donart 1974). Seeds are a rich source of food for birds (Schmidt 1936, Swenson 1985, Wilson et al. 1999).

**Impact on ecosystem processes:** Sheep sorrel is documented as a common colonizer of burned areas (Hall 1955, Fonda 1974, Weaver et al. 1990). This species may impede the reestablishment of native

species and affect natural successional processes.

### Biology and Invasive Potential

*Reproductive potential:* Sheep sorrel reproduces by seeds and from creeping roots and rhizomes (Kiltz 1930). Plants can produce up to 1,600 seeds per season (Stevens 1932, Escarre and Thompson 1991).

*Role of disturbance in establishment:* Sheep sorrel rapidly colonizes clearcuts, burned areas, and flood-disturbed sites (Hall 1955, Fonda 1974, Weaver et al. 1990). Disturbances caused by the activities of animals, such as mole hills or cattle tracks, can provide sufficient opportunities for sheep sorrel to establish in natural communities (Putwain et al. 1968).

*Potential for long-distance dispersal:* Seeds can be dispersed by wind, water, and ants (Houssard and Escarre 1991).

*Potential to be spread by human activity:* Seeds of sheep sorrel can be transported on vehicle tires and agricultural equipment. They can be dispersed in nursery stock, contaminated commercial seed, and hay (Gooch 1963). Seeds remain viable after passing through the digestive tracts of domesticated birds and mammals (Evershed and Warburton 1918, Dorph-Peterson 1925).

*Germination requirements:* Sheep sorrel requires open soil for germination (Putwain et al. 1968).

*Growth requirements:* Sheep sorrel can grow in a wide range of soil types, including sandy loam, sand, silt, and gravel. It grows best in nutrient-poor, acidic soils.

*Congeneric weeds:* Curly dock (*Rumex crispus*) is considered a noxious weed in Indiana, Iowa, Michigan, and Minnesota. All *Rumex* species are considered noxious in Oklahoma (USDA, NRCS 2006, Invaders 2010).

### Legal Listings

- Has not been declared noxious
- Listed noxious in Alaska
- Listed noxious by other states (*Rumex acetosella*: AL, CT, IA, KY, LA; all *Rumex* species: OK)
- Federal noxious weed
- Listed noxious in Canada or other countries

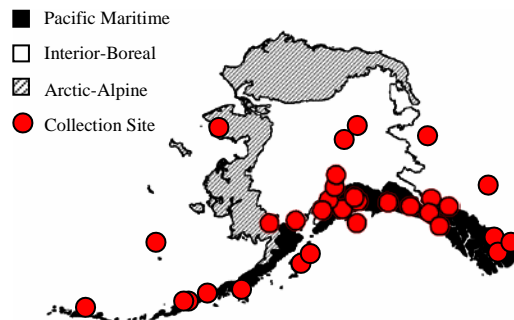
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### Distribution and abundance

Sheep sorrel commonly grows in disturbed sites, roadsides, abandoned fields, gardens, lawns, and pastures (Welsh 1974, Pojar and MacKinnon 1994, Whitson et al. 2000). It can also become established in grasslands (Swenson 1985), montane meadows (Leege et al. 1981, Boyd et al. 1993), and undisturbed, open forests (Fyles 1989). Sheep sorrel can be found on river bars, beaches (Fonda 1974, Pojar and MacKinnon 1994), freshwater marshes, and brine marshes (Fiedler and Leidy 1987). It has been used for revegetation in mining regions.

*Native and current distribution:* Sheep sorrel is a forb of European origin. It has naturalized throughout temperate North America and has been introduced into South America, Africa, and Hawaii (Hultén 1968). This species has been documented from all three ecogeographic regions of Alaska (Hultén 1968, AKEPIC 2010).



Distribution of sheep sorrel in Alaska

### Management

Control of sheep sorrel can be difficult because of its creeping rhizomes and long-lived seeds. Plants are too short to be affected by mowing or grazing, and they usually survive prescribed burns. Repeated cultivation or frequent removal of resprouting plants will eventually exhaust the population. Several herbicides are available for use in pastures and lawns. Liming the soil may also help eradicate sheep sorrel (Rutledge and McLendon 1996).

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