Introduction
These two species of buttercups share similar biological and ecological attributes. We treat the description, distribution and abundance separately, but combine the discussion of ecological impacts and control methods.

Creeping buttercup
Ranunculus repens L.

Synonyms: *Ranunculus repens* var. *degeneratus* Schur, *R. repens* var. *erectus* DC., *R. repens* var. *glabratus* DC., *R. repens* var. *linearilobus* DC., *R. repens* var. *pleniflorus* Fern., *R. repens* var. *typicus* G. Beck, *R. repens* var. *villosus* Lamotte.
Common name: none
Family: Ranunculaceae

Description

Creeping buttercup is a perennial herb with stems up to 3 feet long and slender fibrous roots. Decumbent stems root freely at their nodes and are often slightly hollow with long spreading hairs. Basal leaves are ½ to 3 ½ inches long and up to 4 inches wide, egg-shaped to triangular, and 3-foliolate with toothed margins. Light-colored spots are often present on the basal leaves. Stem leaves are alternate with the lower long-stalked form transitioning upward to the simple to 5-parted bracts. Flower stems are long and erect. Flowers are few and showy with 5 yellow petals; petal number may be 6 to 9. Globose seedheads contain about 12 flattened and rounded fruits with a short backward-turned beak (Douglas and Meindinger 1999, Welsh 1974, Whitson et al. 2000). The plant overwinters as a rosette with small green leaves (Harper 1957).

Infestation of creeping buttercup. Photo by Thomas Heutte, USDA Forest Service

Tall buttercup
Ranunculus acris L.

Synonyms: none
Common names: meadow buttercup
Family: Ranunculaceae

Description

Tall buttercup is a biennial or short-lived perennial herb growing from a cluster of fibrous roots. Erect stems are up to 3 feet tall, smooth and hollow, leafy below and branched above. Basal leaves are long-stalked, divided deeply into 3 to 7 coarsely lobed segments and persistent. Stem and basal leaves are soft-haired on both sides. The flowers are long-stalked with 5 shiny golden-yellow petals and 5 sepals. Seeds are disc-shaped, reddish brown with a short hook (Douglas and Meindinger 1999, Welsh 1974, Royer and Dickinson 1999).

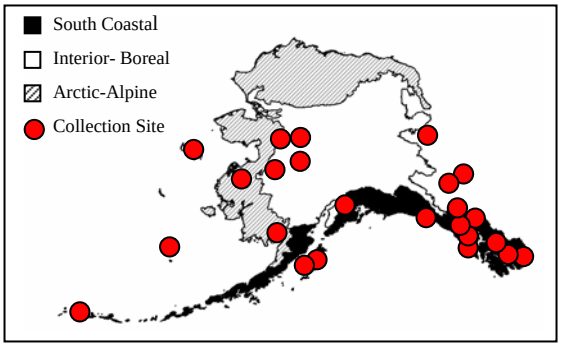
Photo by Kenneth J. Sytsma, University of Wisconsin-Madison, Wisconsin State Herbarium

Photo by Tom Heutte, USDA Forest Service

Creeping buttercup can be distinguished from other buttercup species by its horizontal growth habit, creeping stems that root at the nodes, spherical head of achenes and long (6-10 mm) petals (Douglas and Meidiger 1999, Hultén 1968).

Distribution and Abundance

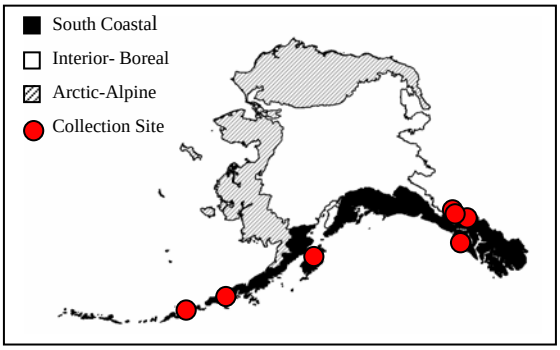
Creeping buttercup originated in Europe and extends northward to 72° N in Norway. It is now naturalized in many temperate regions of the globe including North, Central, and South America, Asia, Africa, Australia, and New Zealand (Harper 1975, Hultén 1968, NAPPO 2003). In Alaska this species has been documented from all ecogeographic regions (Hultén 1968). It occurs on disturbed soils including gardens, croplands, grasslands, woodlands, and semi-aquatic communities, such as swamps, margins of ponds, rivers, and ditches (Harper 1957, Lovett-Doust et al. 1990).



Tall buttercup can be distinguished from other buttercup species by its upright growth habit and deeply lobed and toothed leaves.

Distribution and Abundance

Tall buttercup is widely distributed across Europe, ranging north to 71° N in Norway. It has established in North America, South Africa, Asia, and New Zealand (Harper 1957, Hultén 1968). In Alaska this species has been documented from the South Coastal ecogeographic region. It is found in grassland, woodland, and occasionally sand dune communities.



Ecological Impact

Impact on community composition, structure, and interactions: The secondary compound protoanemonin released in the sap of creeping and tall buttercups is poisonous and can cause death to grazing animals if consumed. Geese and other birds readily eat leaves and seeds of buttercup (Lovett-Doust et al. 1990). The flowers are visited by honey bees, butterflies, moths, bugs, and beetles for pollen or nectar. Buttercups host microorganisms and viruses, insects, and nematodes (Harper 1957, Lovett-Doust et al. 1990, Royer and Dickinson 1999).

Hybridization has been documented between *Ranunculus acris* and *R. uncinatus* (Welsh 1974).
Impact on ecosystem process: Buttercup readily occupies open areas and may hinder colonization by native species.

Biology and Invasive Potential
Reproductive potential: Reproduction may be by seed, stolon, or rhizome (Harper 1957).
Role of disturbance in establishment: Seedlings establish readily in open ground and rapidly colonize bare areas in the year following germination (Harper 1957).
Potential for long-distance dispersal: Although most seeds are dropped near the parent plant, some seeds are dispersed farther by wind or in the dung of birds, farm animals, and small rodents (Harper 1957, Lovett-Doust et al. 1990).
Potential to be spread by human activity: Seeds can be dispersed by attachment to clothes and tires. Creeping buttercup may have been introduced as an ornamental plant into North America (Lovett-Doust et al. 1990).
Germination requirements: Seed germination usually occurs in late spring. Successful germination and early establishment appears to require open soil.
Growth requirements: Buttercups are adapted to a very wide range of soil types. Because they can withstand waterlogging buttercups occur mainly in heavy wet clay soils but can also thrive in sand or gravel if adequate moisture is present. Buttercups do not establish on well-drained soils. They are able to tolerate some salinity and can be found on beaches and in salt marshes. They can tolerate frost, but not prolonged dry periods (Harper 1957, Lovett-Doust et al. 1990).
Congeneric weeds: *Ranunculus abortivus* L., *R. arvensis* L., *R. bulbosus* L., *R. sardous* Crantz are invasive in other areas of the United States (USDA 2002).
Listing: Ranunculus repens and *R. acris* are considered weeds in the United States and Canada (Royer and Dickinson 1999, Whitson et al. 2000).

Management
Herbicides are generally recommended for control of buttercups. Plants may be weakened by cultivation, but parts of the caudex and stolon may regenerate and cause population increases. Plowing provides ideal conditions for germination of seed and is therefore not recommended as an eradication technique (Harper 1957, Lovett-Doust et al. 1990).

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Alaska Natural Heritage Program
Environment and Natural Resources Institute
University of Alaska Anchorage
707 A Street, Anchorage, Alaska 99501
Phone (907) 257-2780 Fax (907) 257-2789

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