



Creeping Buttercup

Ranunculus repens L.

L.C. Burrill

Creeping buttercup (*Ranunculus repens* L.) probably is the most troublesome of several members of the buttercup family that are weeds in the Pacific Northwest (Figure 1). There are many native species of buttercup in the Pacific Northwest, but the weedy species are of European origin (Figure 2). It's likely that they were introduced as ornamentals but escaped to become weeds throughout the United States.

Buttercups are found most often in lowland pastures and in wet areas. They're most common west of the Coast Range, but a few species are better adapted to conditions east of the Cascades.



Figure 1.—Creeping buttercup is a perennial that spreads by stems that root at nodes.



Figure 2.—The size and shape of individual fruits will help you identify buttercup species.



Figure 3.—Buttercup flowers commonly have 5 petals but may have up to 10.

Most species of buttercup spread by seed, so they continue to invade new fields and new regions. Movement with hay is a common means of dispersal. Creeping buttercup is especially good at crowding other plants because it also spreads by creeping stems.

The problem isn't simply that buttercups compete with more desirable forage plants—they're also toxic to livestock.

Toxicity

All buttercup species probably contain the same toxin called *protoanemonin*. The amount produced depends on the growth stage and species of buttercup.

Protoanemonin isn't highly toxic. Actual toxicity depends on amount ingested, stage of growth, species of buttercup,

conditions under which the buttercup grew, and susceptibility of the animal.

Protoanemonin is unstable and doesn't retain its toxicity in hay. Stability of the toxin in high-moisture hay and silage hasn't been determined. Buttercup sap irritates skin and mucous membranes.

Cattle usually avoid eating buttercup when adequate feed is available, but on poor pastures or on pastures heavily infested with buttercup, they may consume enough to taint milk or to cause cattle to become ill. Occasionally, cattle develop a taste for buttercup and consume fatal quantities.

Sheep seem to tolerate more protoanemonin than cattle, and to derive substantial early spring feed from native buttercups growing on hillside pastures.

Larry C. Burrill, Extension weed scientist emeritus, Oregon State University.

Table 1.—Characteristics of common buttercups in the Pacific Northwest.

Name	Life cycle	Distribution	Growth habit
Creeping buttercup (<i>R. repens</i> L.)	Perennial	West of the coast range and occasionally in wet areas elsewhere in the PNW	Often creeping, rooting at nodes
Crowfoot buttercup (<i>R. sceleratus</i> L.)	Annual	East of Cascades in semiaquatic, often brackish areas	Erect, up to 2 feet
Bur buttercup (<i>R. testiculatus</i> Crantz)	Annual	East of Cascades, roadsides, cropland	Erect, up to 7 inches
Corn buttercup (<i>R. arvensis</i> L.)	Annual	Sparingly distributed in region	Erect, up to 1½ feet
Western field buttercup (<i>R. occidentalis</i> Nutt.)	Perennial	Western OR, WA	Erect, 6 to 18 inches
Tall buttercup (<i>R. acris</i> L.)	Perennial	Pastures east and west of Cascades	Erect, up to 3 feet
Birdfoot buttercup (<i>R. orthorhynchus</i> Hook.)	Perennial	Wetland west of Cascades. One variety is found east of Cascades.	Erect, up to 2 feet
Roughseed buttercup (<i>R. muricatus</i> L.)	Annual, sometimes perennial	West of Cascades. One variety is found east of Cascades.	Erect, up to 1 feet

^aThe drawing of tall buttercup is reproduced, with permission, from C. Leo Hitchcock and Arthur Cronquist, *Vascular Plants of the Pacific Northwest, Part 2: Salicaceae to Saxifragaceae*, Publications in Biology vol. 17 (Seattle: University of Washington Press, 1990); © 1964 by University of Washington Press. The other drawings are

Identification









Buttercup flowers are mostly yellow, regular, and showy, commonly with 5 petals but occasionally with up to 10 (Figure 3). Leaves are commonly three- or five-parted or

deeply cut into long, narrow divisions. Individual fruits are small, usually horned, hooked, or beaked, and arranged in a head.

Creeping buttercup is a perennial that spreads by seeds and by stems that root at lower

nodes. Leaf blades are divided into three toothed lobes attached to long stalks, and they're hairy. Flowers have 5 or up to 10 shiny yellow petals on long stalks.

A second variety (*R. repens* var. *pleniflorus* Fern.) has double

Leaves	Fruit ^a	
Long stalks, blades lobed or divided into three segments.	1/8 inch long, flattened, rounded, with short backward-turned beak. Individual fruits shown for other species are arranged on a small head as shown here for creeping buttercup.	
Long stalks, cut into three to five toothed lobes.	1/10 inch, small, smooth, scarcely beaked.	
All basal, somewhat woolly to several parted, divisions narrow, all withered by time fruit is mature.	Elongated woolly head, fruits woolly; stiff, slightly curved beak.	
Basal and lower leaves have long stalks. Blade cut into narrow toothed divisions. Sometimes first leaves are scarcely divided.	Fruits spiny with stiff beak.	
From base of plant, long stalked, blade with three main lobes.	1/8 inch, curved beak, smooth.	
Lower leaves three to five deeply cut lobes, sharply toothed; upper leaves reduced to three to four narrow segments.	Flat with short, broad beak.	
Mostly basal, long stalked. Blades cut into narrow divisions that are toothed. Stem leaves are similar but smaller.	Beak on fruit is long, narrow, and straight.	
Leaves have three to five toothed lobes, but cuts aren't deep. Leaf stalks about same length as leaf. Leaves are often withered at flowering.	1/4 inch with smooth border, stout awned beak, and spiny surface.	

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flowers with 10 or more petals; it's less common in the Pacific Northwest. Table 1 offers help with buttercup identification.

Plants that resemble buttercups. Some plants in the rose family can be confused with the buttercups. However, when flowers are present, use the

sepals to distinguish the families (sepals are the outermost set of flower leaves). Members of the rose family have fused sepals; sepals of the buttercup family are free from each other.

Members of the *Potentilla* genus are most likely to be confused with buttercups because

both have showy yellow flowers and favor wet places. Silverweed or cinquefoil (*Potentilla anserina* L.) is found mainly east of the Cascades; Pacific silverweed (*P. pacifica* Howell) grows in coastal areas.

Control

Creeping buttercup is seen mostly as a problem in pastures, so this publication discusses controls only in a pasture environment.

- Most livestock owners seem unaware that buttercup is an undesirable plant. It's commonly allowed to increase until livestock become ill or die.
- Most pasture management techniques such as competitive planting, close mowing, or controlled grazing aren't effective against creeping buttercup.
- Because it's a creeping perennial, it grows low enough to escape control by mowing. The continual movement and rooting of stems allows buttercup to gradually invade even the densest pasture.
- Buttercup is so irritating that it's avoided by grazing animals; thus, it's given an advantage over pasture species that are closely grazed.

Mechanical. Creeping buttercup is easy to kill by cultivation if the ground can be worked up and tilled several times during a fallow period. New plants will appear from seed when the land is again used as a pasture.

Most of the pastures infested with creeping buttercup are in coastal areas where the land rarely gets dry enough to make repeated tillage an option.

Chemical. Creeping buttercup can be controlled in pastures containing grasses or clovers by using selective herbi-

Use herbicides safely!

- **Wear** protective clothing and safety devices as recommended on the label. **Bathe or shower** after each use.
- **Read** the herbicide label—even if you've used the herbicide before. **Follow closely** the instructions on the label (and any other directions you have).
- **Be cautious** when you apply herbicides. **Know** your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from herbicide use.

cides. Not all herbicide labels permit the same uses, even those with the same active ingredient. Be sure the label of the product you're considering permits use on the intended site.

No herbicide may be used on a site or crop for which it's not labeled. However, the absence of a particular weed from the label doesn't prevent use of the herbicide on that weed.

Herbicide registrations change frequently; therefore, this publication doesn't contain specific herbicide recommendations. Registered uses are summarized each year in the *Pacific Northwest Weed Control Handbook*.

In addition, detailed instructions for herbicide use are provided on herbicide container labels and in other literature provided by herbicide manufacturers.

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