Juncus spp., primarily *Juncus patens* E. Mey (spreading rush) and *Juncus effusus* L. (soft rush)

Rushes


Juncus patens


Juncus effusus

Family: Juncaceae
Range: Rush species vary in their range but they occur throughout the U.S. *J. patens* is found in California, Oregon and Washington. *J. effusus* is native to nearly all western states except South Dakota, Wyoming and Utah.
Habitat: Pastures, meadows, roadsides, ditches, and disturbed areas. They are often observed along the margins around lakes, ponds, streams, and canals. They can grow in full or partial sun but require moist to wet conditions.
Origin: Both species are native to North America, including the western United States.
Impact: Rushes are often considered beneficial in wildland ecosystems. They provide food for birds and small mammals and cover for waterfowl, songbirds and several small mammals. Because of their extensive root system they help prevent soil erosion. However, rushes are usually considered detrimental in pastures and grazed rangeland because cattle avoid grazing rushes.

Rushes can be both annuals and perennials but most are perennials. The two species that are most commonly considered weedy in California and other western states are soft rush (*J. effusus*) and spreading rush (*J. patens*). They are both clump-forming erect perennial plants with pale-green stems; they grow 2 to 5 ft tall but 3 ft is more common. Their stems are cylindrical and about 1.5 to 3.5 mm in diameter at the base. The stems of soft rush are weakly grooved, whereas those of spreading rush are distinctively grooved. The plant has only basal leaves that wrap the stems at the base. The sheath is brown with a threadlike blade at the tip. Both species have branched rhizomes with thick scaly roots.

These rushes flower from May through August. The inflorescence is open and branched and appears to be coming out of the side of the stem rather than the end. Each branch has 30 to 100 small greenish-brown flowers. These rushes spread both by seed and vegetatively by rhizomes. Most seed fall to the ground below the parent plant, but can also disperse longer distances with water.

NON-CHEMICAL CONTROL

Mechanical (pulling, cutting, disking)	Hand pulling or digging is not practical to control rushes except for extremely small populations. Mowing is usually only a temporary solution because rushes recover quickly. Repeated mowing may be more effective, but repeated mowing can be difficult or impossible to achieve because most of the sites where rushes are present are wet for most of the year. Disking or other tillage operations are not generally feasible at sites infested with rushes because they are typically too wet. Cultivation followed by reseeding can be effective provided excessively wet conditions are ameliorated.
Cultural	Grazing is not usually an effective control measure. Most rushes actually increase in abundance when livestock preferentially graze other species, which allows rush plants to proliferate. Burning is not an effective control measure for rushes. The plant is only top-killed and rapidly regenerates by rhizomes. Some rushes have been observed to have a faster growth rate and grow taller on burned than unburned sites.

	Fertilization and good water management help maximize the competitive ability of desirable grasses in pastures and help shift the competitive advantage away from rushes.
Biological	There are no established biological control efforts because rushes are native species and considered beneficial in most settings.

CHEMICAL CONTROL

The following specific use information is based on reports by researchers and land managers. Other trade names may be available, and other compounds also are labeled for this weed. Directions for use may vary between brands; see label before use. Herbicides are listed by mode of action and then alphabetically. The order of herbicide listing is not reflective of the order of efficacy or preference.

GROWTH REGULATORS	
2,4-D Several names	**Rate:** 4 pt product/acre (1.9 lb a.e./acre) **Timing:** Postemergence to rush plants in mid- to late spring, generally April to May. **Remarks:** 2,4-D is broadleaf-selective and has no soil activity. It is preferable not to graze for 6 months after herbicide application to enhance competitiveness of desirable grasses and to prevent regrowth of existing rush plants or germination of rush seeds. Effective control may require repeat applications. Use a surfactant. Do not apply ester formulations when outside temperatures exceed 80°F. 2,4-D can be mixed with various other compounds (e.g., dicamba or triclopyr), either in tank mixes or in commercial combinations.
BRANCHED-CHAIN AMINO ACID INHIBITORS	
Imazapic *Plateau*	**Rate:** 8 to 12 oz product/acre (2 to 3 oz a.e./acre) **Timing:** Preemergence or postemergence. **Remarks:** Imazapic typically only suppresses rushes, and at the rates required for suppression can injure desirable grasses as well. Imazapic has mixed selectivity and tends to favor species in the Asteraceae, as well as some grasses. In postemergence applications, use a methylated seed oil surfactant at 0.25%. It has some soil residual activity. Imazapic is not registered for use in California.

RECOMMENDED CITATION: DiTomaso, J.M., G.B. Kyser et al. 2013. *Weed Control in Natural Areas in the Western United States*. Weed Research and Information Center, University of California. 544 pp.