

SULPHUR CINQUEFOIL *(Potentilla recta)*

INTRODUCTION

Sulphur cinquefoil, a native of Europe, Asia and northern Africa, was introduced into North America before 1900. It is established across much of the United States and southern Canada. It occurs from British Columbia east to Newfoundland and Nova Scotia, south to Florida, and west to eastern Texas.

This long-lived perennial infests disturbed areas, meadows, pastures and rangelands and can dominate a site within two to three years of first appearance. It's seeds are spread by grazing ungulates, specially deer and elk, as well as human activities, including ATV and off-road recreation. Recent increases in sulphur cinquefoil density may also be associated with density reductions in knapweed due to stress resulting from attack by knapweed biological control agents.

In British Columbia, sulphur cinquefoil is most common in the Southern Interior, where it has become rapidly abundant in the last decade. Sulphur cinquefoil is now so widespread that eradication from the region is now impractical.

The insidious nature of sulphur cinquefoil poses both a significant environmental and economic threat. Once established, this weed can produce dense populations that reduce or eliminate forage production and biodiversity. It is unpalatable to most livestock and wildlife due to a high concentration of bitter tasting compounds.



IDENTIFICATION

Sulphur cinquefoil is a member of the rose family (Rosaceae), and is one of over 20 herbaceous cinquefoils in BC.

- Plants are erect, 15-70 cm tall,
- One or more hairy stems
- Leaves are divided into 5-7 hairy toothed leaflets, each 5-10 cm long
- Flowers are pale yellow with five heart-shaped petals around a bright yellow centre
- Large woody taproot

Sulphur cinquefoil most closely resembles graceful cinquefoil (Potentilla gracilis), a native plant which is shorter; has white woolly hair on the undersurface of the leaves; more basal leaves; deeper, less uniform leaf serrations; bright yellow flowers; and a smooth seed coat.

BIOLOGY

Sulphur cinquefoil grows very early in the spring from a woody root. The plant begins blooming in mid-June and produces flowers throughout the summer if growing conditions are favourable, until setting seed in late July. Above-ground portions of the plant completely desiccate by late August. Fall re-growth of basal leaves is possible and rapid under moist, mild conditions.

Although sulphur cinquefoil reproduces primarily by seed, it also has an unusual method of vegetative reproduction.

Annual re-growth each spring causes individual plants to become several closely spaced, independent plants. Each year new shoots appear on the outer edge of the woody roots. The old, central root eventually rots away and can completely disintegrate within 6 to 8 years. The remaining living portions form a ring-shaped clump composed of several new individuals.

INTEGRATED MANAGEMENT

The best overall method of control for sulphur cinquefoil is an integrated program. Management should focus on prevention of new infestations through grazing management and maintaining vigorous perennial plant communities. This includes minimizing soil disturbances and re-vegetating exposed areas to provide competition. Hand-pulling, with regular follow up, can be effective on new and small infestations. For large infestations, herbicides should be used in combination with other techniques.

PREVENTION

- Maintain your land in a healthy, vigorous condition to ensure a productive plant community; competitive perennial grasses and forbs utilize water and nutrients that would otherwise be readily available to cinquefoil.
- Follow a well-designed grazing plan; excessive livestock grazing reduces competition and favours weeds.
- Regularly patrol your property for sulphur cinquefoil plants and immediately treat new infestations.
- Cooperate with adjacent landowners and encourage them to control sulphur cinquefoil.
- Immediately re-vegetate disturbed, bare soils with a suitable seed mix that provides dense, early colonization to prevent weed invasion.
- Clean your vehicles and machinery of plant material and soil before leaving a cinquefoil infestation.

PHYSICAL CONTROL

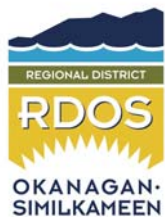
Individual plants and small patches of sulphur cinquefoil can be hand-pulled. This treatment is effective only when the upper portion or crown of the root system is removed. Sulphur cinquefoil is not controlled by mowing. Although seed production may be reduced, plants develop low, bulky, spreading roots when mowed and are able to send up new shoots. Sulphur cinquefoil is not a serious weed in cropland because it does not tolerate frequent cultivation. However, a single cultivation may increase sulphur cinquefoil cover.



BIOLOGICAL CONTROL

No biological controls have been approved for sulphur cinquefoil in North America, but surveys for agents have begun in Europe. Acceptable agents are difficult to find because insects and diseases damaging to this weed may also attack closely related native or ornamental potentillas.

For further information on weeds in BC check out the provincial websites at: www.weedsbc.ca or www.agf.gov.bc.ca/cropprot/weeds.htm. For more information about the Regional District of Okanagan-Similkameen Noxious Weed Education Program please contact the Regional District at 250-492-0237 or toll free at 1-877-610-0237. Information is also available on our website at www.rdos.bc.ca.



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