

SULFUR CINQUEFOIL: Options for Control

Sulfur cinquefoil (*Potentilla recta*), a class B perennial noxious weed in Lincoln County, Washington. A native of the Eastern Mediterranean, a member of the rose family, is a close relative to strawberries. However, because of its invasive nature, it is very undesirable economically and ecologically. By the late 1930's, it had spread throughout the northwestern U.S. and has since spread to many states where it is classified as a noxious weed.

Sulfur cinquefoil is often confused with many North American native cinquefoils. It is best identified and separated from the rest by three very distinct features: (1) it has quarter inch-long hairs that grow perpendicularly on the leaf stalks and stems, (2) there are very few basal leaves, and (3) its seed coat has a net-like pattern on it. Be cautious when identifying older plants, the perpendicular hairs may be lost over time

from exposure to the elements, can be mistaken for marijuana because its compound leaves are similarly shaped.

Sulfur cinquefoil's aggressiveness is very alarming to property owners, land managers and environmentalists. It is aggressive enough to out compete and displace spotted knapweed and yellow starthistle. Sulfur cinquefoil reproduces by seed and roots. Caution should be taken. Be sure to positively identify sulfur cinquefoil before treating it. There are many native cinquefoils that should not be treated.

Sulfur cinquefoil's rapid spread is a result of its adaptability to climate, soils and elevation, and because humans unknowingly distribute its seed to new areas. It grows very well in semiarid to moist climates, (except very silty soil) and at elevations up to 6,600 feet. It is very competitive in semiarid sites, grasslands and forest



Five pale, "sulfur" yellow, heart-shaped petals per flower, in flat-topped clusters.



Palmate toothed leaves resembling Marijuana, has 5-7 leaflets, and coarse stiff hair on upper and lower surfaces.



Cinquefoil produce flowers all growing season long and can produce over 1600 seeds per plant.

An adult plant grows 1 to 2 1/2 feet tall, with one or many stems from the crown, and the stems have few (if any) branches. Before it flowers, sulfur cinquefoil

takes advantage of the increased sunlight, eliminating many native species.

Key identifying traits

- **Flowers** are pale yellow or sulfur color, with **5 heart shaped** petals, in flat-top clusters.
- Each compound **leaf** has **5 to 7** toothed leaflets and **appear green** on the **underside**, not silvery as with the native cinquefoil.
- Palmate toothed **leaves** appear to look Marijuana.



Sulfur cinquefoil can self-pollinate, and seedlings quickly mature into blooming plants.



Stems are round with long white hairs, that can reach 1 to 3 feet in height.

Biology and ecology

- **Perennial** plant, **highly invasive**, grows 1 to 2 feet tall.
- Invasive in grass fields or shrub-dominated areas, disturbed or undisturbed areas.
- Extensive woody root system.
- **Spreads** by seeds and vegetatively via new shoots emerging from the edges of its **woody root crown**.
- The kidney or bean shaped **seeds** are brown and purple colored, almost flat, and they have a net-pattered seed coat.
- **Flowering** generally occurs from May to July.
- Fine **hairs** cover all of the plant except the flower itself.
- Unpalatable to livestock and wildlife.
- There are many native cinquefoils in our area



Sulfur cinquefoil is capable of forming monocultures, as seen here.

CONTROL MEASURES:

Prevention:

- Monitor your land, identify weeds, eradicating before they establish and spread. Constant monitoring and follow-up treatments will ensure cost effective control of this and other invasive weeds. **Early detection** is vital to prevent invasion.

Biological:

- No biological control agent is approved for Sulfur cinquefoil as of yet. Because it is related to strawberries, its biological controls are strawberries pests.

Cultural:

- Repeated cultivation can be effective over time, if care is taken to remove the root crown.
- Because of its high tannin content, sulfur cinquefoil is unpalatable to all grazers except goats, overgrazing will allow infestations to rapidly spread.

Mechanical:

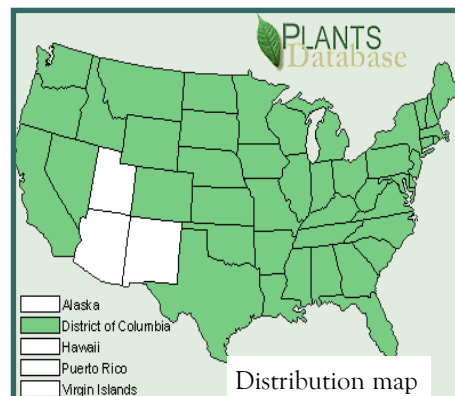
- Hand pulling or chopping is effective if care is taken to remove the root crown.
- Because the massive, woody root system stores extensive food reserves, **mowing is not an effective** control measure, the roots send up new shoots after mowing.
- Does not tolerate frequent plowing.

Chemical:

- Chemical control is the most effective approach (next to prevention) in controlling Sulfur cinquefoil.
- Selective broadleaf herbicides with the active ingredient triclopyr, 2,4-D, picloram, clorsulfuron, aminopyralid or metsulfuron work well for lawn or grasslands as they won't harm most grasses.
- **Read the label** instructions before applying.



For small sites with few plants, pull or dig up plants and remove as much root as possible so the plant will not re-sprout. This method can be highly labor-intensive and to be fully effective, all mature plants need to be removed so no new seeds are produced. The best time to dig up plants is in the spring or early summer when the soil is still moist and before the seeds mature. Roots are deep and extensive. If the plant is in seed, carefully bag and cut off the seed heads before digging up the rest of the plant.



The hairy leaves appear green on the underside, not silvery as with native cinquefoils. There is a saying to help identify native from non-native: "green & green = mean"; "green & white = it's all right".

Sulfur cinquefoil can be confused with many desirable *Potentilla* species. It may be necessary to confirm plant specimen identity by consulting your local weed board.