

Dasiphora fruticosa Shrubby Cinquefoil

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July 6, 1806 was a busy day for Meriwether Lewis, and hence for Montana history. On that day Lewis collected six or seven plant specimens that still exist and can be seen in the Lewis & Clark Herbarium in Philadelphia. One of them is shrubby cinquefoil. Lewis and Clark had split the expedition into two groups at Traveler's Rest in present-day Missoula County and on July 6th Lewis's group was traveling along the Blackfoot River in what is now Powell County. Several collections were made in the "prairie of knobs", as Lewis referred to the kettle-knob glacial moraine topography of the Ovando Valley. Lewis's journal entry for July 6th says, "the southern wood and two other species of shrub are common in the prairie of knobs. preserved specimens of them." Frederick Pursh, a botanist who studied the Lewis and Clark plant collections, put a note on the specimen that reads, "Prairie of the Knobs. Jul. 6th 1806." It looks like Pursh began to write "Prairie" but changed the "ie" to "y." Spelling was much more creative in the early 1800s.

Shrubby cinquefoil has gone by many scientific names. Many know it as *Potentilla fruticosa*. Others remember *Pentaphylloides floribunda*. Recent Lewis and Clark botany scholars have used *Dasiphora fruticosa*, as we do here. Shrubby cinquefoil is a member of the rose family (Rosaceae), and at least that hasn't changed yet!

Shrubby cinquefoil is widely distributed throughout the northern hemisphere. It is found in Europe, Asia, and North America. In North America, shrubby cinquefoil ranges from Alaska and the Northwest Territories east through Canada to Labrador, Newfoundland, and Greenland. Shrubby cinquefoil's distribution extends south to California and Arizona and can be found across the Great Plains to the east coast in Maryland, Delaware, and New Jersey. It is considered rare in North Dakota, Iowa, and Pennsylvania.



Photo: Drake Barton

Dasiphora fruticosa (Shrubby Cinquefoil)

Lewis and Clark would have seen shrubby cinquefoil frequently as they traversed what is now Montana. When Lewis collected the plant in July it would have been in flower. He would have noticed that shrubby cinquefoil flowers are bright yellow and about $\frac{3}{4}$ inch across. They are single in the leaf axils or sometimes many flowers appear in close clusters on the branch tips. The shrub is multi-stemmed and many-branched and can reach a height of from one to six feet, although in alpine areas it can be very small. The reddish-brown bark on the branches of older shrubby cinquefoil plants is fibrous and peels off in long strips. Shrubby cinquefoil has numerous leaves with three to nine leaflets. Mature plants have both erect and prostrate branches, the latter able to form roots. Shrubby cinquefoil has a shallow to moderately deep, spreading root system with thin, woody roots.

Shrubby cinquefoil is a codominant in the montane grasslands of north-central Montana, where it occurs

with Idaho fescue (*Festuca idahoensis*) and rough fescue (*Festuca scabrella*). In some areas shrubby cinquefoil has become established in large continuous stands. Shrubby cinquefoil commonly occurs with creeping juniper (*Juniperus horizontalis*). It may also occur with big sagebrush (*Artemisia tridentata*) or silver sagebrush (*Artemisia cana*) in eastern and southwestern Montana and with willow (*Salix* spp.), onespoke danthonia (*Danthonia unispicata*), and mountain brome (*Bromus carinatus*) in southwestern Montana. Shrubby cinquefoil is also a major component of riparian and wetland areas in Montana, and is common in Douglas-fir and lodgepole pine forests.

Though it has low forage value, shrubby cinquefoil's widespread distribution, persistent leaves, and low spreading growth form make it an important source of forage for ungulates and it is lightly browsed by mule deer, elk, mountain goats, and bighorn sheep throughout its range. Winter use of shrubby cinquefoil by deer and elk is also typically light. It is a low preference shrub for bighorn sheep, though it receives moderate to heavy use when new growth begins. Small birds and mammals consume shrubby cinquefoil seeds as part of their diet. The spread of continuous stands of shrubby cinquefoil in western grasslands may be associated with excessive grazing and its use by livestock may indicate improper grazing management, but more research is needed before definite conclusions can be reached.

Stands of shrubby cinquefoil provide fair cover for mule deer and the shrubs offer good cover for upland game birds and small mammals. They are also an important source of nesting and hiding cover for numerous songbirds.

Today we use shrubby cinquefoil to revegetate disturbed lands. It establishes very well if transplanted onto the desired site and is especially useful to help meet long-term revegetation goals. It is recommended for revegetating dry, disturbed sites, roadsides, mining-disturbed lands, disturbed streambanks and moist meadow sites. Shrubby cinquefoil is also useful for erosion control and soil stabilization.

Shrubby cinquefoil is commonly used as a landscape ornamental and is a favorite in native plant landscaping designs. The shrub will bloom continuously throughout the summer and will provide a touch of color into the fall. Since deer seldom browse the plants, it is appropriate for use in areas frequented by deer. Shrubby cinquefoil is also cold-tolerant and winter hardy, making it particularly use-

ful in Montana, but it is rated as only moderately drought-tolerant in the western United States. Shrubby cinquefoil prefers open sites but will grow under light shade. Though it is moderately shade-tolerant, shrubby cinquefoil flowers more abundantly in nearly full sun.

Native Americans used the dried leaves of shrubby cinquefoil to make a good tasting tea that is high in calcium. The Cheyenne used the plant in the contrary dance by rubbing the hands with an infusion of shrubby cinquefoil and then plunging the hands into a pot of boiling soup. The infusion was said to protect the hands from severe, temporary heat. The Cheyenne also used the leaves as an arrow poison that was thought to go directly to the heart, but the poison could be used only by holy people.

As you travel throughout Montana, take time to appreciate the diversity of native plants found here, and remember that Lewis and Clark were the first white men to see many of the plants we enjoy today.