



## Invasive Plants

Nonnative species are also referred to as introduced, exotic, or alien species. The National Park Service defines nonnative as species that occur in a given place as a result of direct, indirect, deliberate, or accidental actions by humans. Plant species that are brought into an area as food, fiber, or ornamental landscape plantings can "jump the fence" and become established in the wild. In extreme cases, invasive nonnative species can displace native species, thereby degrading the integrity and diversity of native communities.

### Purple Loosestrife



NPS photo

Purple loosestrife (*Lythrum salicaria*) appears to be a pretty flower but is actually an invasive European weed that thrives in wetlands. It was introduced in the 1800s to the northeastern United States as an ornamental flower. This perennial weed, 1-2 meters tall, chokes out native plants and forms dense stands that are unsuitable as cover, food or nesting sites for most native wetland animals.

Long flower spikes turn infested wetlands into a sea of purple during July and August, but this beauty is deceptive. The display of color scatters wetlands with enormous quantities of tiny seeds that remain viable for years.

Eradicating an established stand is difficult

because of an enormous number of seeds in the soil. One mature plant can disperse 2 million seeds annually. The plant is able to re-sprout from roots and from broken stems that fall to the ground or into the water.

One area within the park where purple loosestrife can easily be seen is to the immediate west of Nebraska Highway 14 along Verdigre Creek between Niobrara and Verdigre.

Purple loosestrife can be managed by chemical and manual removal but lately many conservationists have been using a biological control approach. Three insect species from Europe—a weevil and two beetles—have been introduced to control this exotic weed. So far, results have been promising.

### Salt cedar / Tamarisk



BLM photo

Most salt cedars, or tamarisks, (*Tamarix aphylla*) are deciduous shrubs or small trees growing to 12-15 feet in height and forming dense thickets. They are characterized by slender branches and gray-green foliage.

The bark of young branches is smooth and reddish-brown. As the plants age, the bark becomes brownish-purple, ridged and furrowed. These alien plants were introduced to the western U.S. in the early 1800s as ornamental shrubs, and were planted extensively in the 1930s for erosion control.

Salt cedars are a fire-adapted species and have long tap roots that allow them to intercept deep water tables and interfere with

natural aquatic systems. A mature plant can consume up to 200 gallons of water per day, and its fallen leaves add salt to the surface soil. Both of these effects can be detrimental to native species.

Its aggressive growth and ability to survive fires, droughts, flooding, cold temperatures and cutting makes this plant difficult to eradicate. A variety of methods have been used in the management of salt cedar, including mechanical, chemical and biological, with the most effective management being a combination of the three. The National Park Service treats and eradicates salt cedars as soon as they are discovered within the park.

### Leafy Spurge



NPS photo

Leafy spurge (*Euphorbia esula*) is a creeping perennial that reproduces from seed and vegetative root buds. Accidentally introduced in the early 1800s from Eurasia, this noxious weed, from 1 to 3 feet tall, can be found in prairies, pastures and roadsides.

Leafy spurge is taking over prairies and pastures throughout most of the Missouri River Basin. It has depleted many native species by usurping nutrients, shading native plants, and producing its own toxins. The plant is not eaten by cattle except when all other forage is absent; in these cases, digestive distress or even death has been reported. Contact with the milky sap can cause temporary blindness. Sheep and

goats will eat spurge with no ill effects, and can even develop a preference for it.

Leafy Spurge is capable of reproducing quickly; it has small clusters of yellow flowers along a smooth vertical stem. It is difficult to control due to its extensive root system, 15 to 25 feet deep. The root system has vast nutrient stores that enable it to recover from almost any control effort. Managing leafy spurge is best done using a combination of control methods over a period of years. Biological methods like root-boring beetles and grazing sheep can deter spurge although not as fast as herbicides. Several types of herbicides can be sprayed for spurge.

## Canada Thistle



University of South Dakota photo

Canada thistle (*Cirsium arvense*) is a creeping perennial that reproduces from vegetative buds in its root system and from seed. Long recognized as an agricultural pest, it has become an ever-increasing problem in natural areas—along river banks, on sand dunes, and in wetlands up and down the river.

A relative of the sunflower, it was introduced to the U.S., probably by accident, in the early 1600s. It reduces habitat for native species by diminishing shade, along with sucking up vital nutrients from the soil. Canada thistle is capable of producing a three-foot long rhizome (lateral roots)

which can regenerate more sprouts.

This “noxious weed” is identified by a lavender flower pod, prickly leaves, and a spiny stem that can reach up to four feet. It produces an abundance of bristly-plumed seeds which are easily dispersed by the wind.

Control can be achieved over a number of years through a variety of methods, including hand-cutting and mowing. The application of herbicides is more effective than mowing and burning when eradicating the weed. Due to its perennial nature and extensive root system, entire plants must be killed in order to prevent re-growth from rootstock

## Musk Thistle



NPS photo

Musk, or nodding thistle (*Carduus nutans*) is an aggressive, biennial herb with showy red-purple flowers and painful spiny stems and leaves. Mature plants range in height from 1 ½ to 6 feet tall, and have multi-branched stems. Leaves are dark green, coarsely lobed, with a smooth waxy surface and a yellowish to white spine at the tip. The spiky flower buds are distinctive. Each plant may produce thousands of straw-colored seeds adorned with plume-like bristles that are then spread by the wind.

Wildlife and livestock don’t eat this plant; therefore, selective grazing leads to severe degradation of native meadows and grasslands as animals focus foraging on native plants, giving musk thistle a competitive advantage. In its first-year rosette stage, the plants may reach up to four feet in diame-

ter, crowding out prairie and pasture plants. Musk thistle easily spreads rapidly in areas subjected to frequent natural disturbances such as landslides and flooding.

A native of western Europe, musk thistle was introduced into the eastern US in the early 1800s and has been declared a noxious weed in many states. Musk thistle is threatening lands along the river’s banks and flood plains with its ability to overrun native grasses. Control of this plant is very difficult as its seed remain viable in the soil for over ten years.

Hand pulling is most effective on small populations and can be done year-around, though it is most effective before the development of seeds. Chemical and biological control options can be applied but each method has its drawbacks.

## Russian Olive



NPS photo

Russian olive (*Elaeagnus angustifolia*), also known as oleaster, is a shrub or small tree that can grow to 30 feet in height. Six feet of growth per year is not unusual. First cultivated in Germany in 1736, Russian olive was introduced into the U.S. in the late 1800s, and was planted as an ornamental and for wind breaks. It subsequently escaped into the wild. One can easily recognize Russian olive by its dense covering of small silvery leaves.

Many birds eat the small cherry-like fruit and drop the seeds to the ground, which

assists in the spread of the shrub. This invasive plant can be found along streams and in open fields. Many native areas have been dominated by the shrub’s ability to reproduce and deplete soil nutrients.

Once established, Russian olive is difficult to control and nearly impossible to eradicate. Most efforts to control it have been met with limited success. Cutting trees and then spraying or burning the stumps has proven to be an effective means of control. Total removal with heavy equipment has also proved successful.

## Other Invasives



Russian Thistle

Many other imported plants have become invasive, or are potentially invasive. One is the Spiny Plumeless Thistle, recognized by the spiny ribs on the bloom stalk and reported to hybridize with Musk Thistle. Russian Thistle first appeared in Bon Homme County, South Dakota mixed with crop seed. The dried plants became the tumbleweeds that were symbolic of the drought of the 1930s.

Other nonnative invasives include hoary cress, yellow starthistle, common bindweed, Eurasian water milfoil, and various varieties of toadflax and knapweed.

All of these species can have a negative impact on natural areas, as well as on crop and pasture land.

A native plant, Eastern Red Cedar, has also become invasive. Since today’s pastures are seldom, if ever, burned as the native prairie was, these trees often take over grazing land.



Eastern Red Cedar USFWS photo



Spiny Plumeless Thistle  
Univ. of Wisconsin photo - E. J. Judziewicz

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To learn more about invasive species visit: <http://www.nps.gov/plants/alien>

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