Missouri River

Missouri National Recreational River

Invasive Plants along the Missouri National Recreational River

Purple loosestrife

Purple loosestrife (*Lythrum salicaria*) is not a pretty flower but rather 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, forms dense stands that are unsuitable as cover, food or nesting sites for a wide range of native wetland animals.

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

Eradicating an established stand is difficult because of an enormous number of seeds in the soil. One adult can disperse 2 million seeds annually. The plant is able to re-sprout from roots and 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 manipulation 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.

Saltcedar

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.

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. Its aggressive growth and ability to survive fires, droughts, flooding, cold temperatures and cutting makes it 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

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

Leafy Spurge is capable of reproducing quickly; it has small clusters of yellow flowers along a smooth vertical stem. It is difficult to control, with its extensive root system, 15 feet or more deep, having vast nutrient

stores that let it 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. Leafy spurge is taking over prairies and pastures along the “rec river.”

Canada thistle

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 "rec river."

A relative of the sunflower, it was introduced to the U.S., probably by accident, in the early 1600s. It reduces ideal 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, entire plants must be killed in order to prevent re-growth from rootstock.

Russian olive

Russian olive (*Elaegnus 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 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 along the "rec river" 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 have proven to be the most effective means of control.

Musk thistle

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. 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. 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 "rec 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.

To learn more about invasive species visit:

http://www.nps.gov/plants/alien