

# Theodore Roosevelt National Park Battles Invaders



Within the stunning badlands of North Dakota is Theodore Roosevelt National Park: home to bison, prairie dogs and elk, along with many other animals. Thousands of visitors enjoy the park each year; however, one uninvited guest – leafy spurge (*Euphorbia esula*) – is threatening the park's natural habitat.



Helicopters were used in Theodore Roosevelt National Park to apply herbicide on leafy spurge infested areas.

## Challenge:

If left unchecked, leafy spurge can crowd out native vegetation to the point that wildlife have little to eat. Park officials note that bison, elk, wild horses and deer won't eat the non-native, noxious weed because its sap is irritating and can cause mouth ulcers. If the plant did indeed take over the park, it would drive out all the remaining grass-eating and shrub-eating animals from the area.

For a park dedicated to preserving its natural state, controlling leafy spurge became the highest priority. The noxious plant can survive almost anywhere, growing in sun, shade, dry soil or moist soil. It degrades natural habitat and forms a monoculture that can reduce grass production by 75 percent in infested fields and prairies.

The weed is also easily spread through the park via waterways, bikeways, hiking trails and horse-back trails as moving objects unknowingly transport the seed within and outside the park.



By using aerial herbicide applications, park land managers were able to curb the spread of leafy spurge in Theodore Roosevelt National Park.

## Solution:

Treating leafy spurge requires a well-planned, integrated pest management (IPM) solution. For Theodore Roosevelt National Park, the IPM plan includes biological and chemical control, prescribed fire and reseeding with native grasses and forbs.

Flea beetles have proved a good biological tool for controlling leafy spurge in the park's remote areas. Adults eat the leaves, larvae feed on the root system and they are harmless to other plants and animals. In 2004, park staff released more than 8 million flea beetles at 790 sites throughout the park.

The IPM plan also includes herbicide applications, which control leafy spurge while releasing desirable grasses, forbs, wildflowers and legumes. The fall-applied herbicide penetrates deep into the roots when the plant is storing nutrients for the winter. In the spring, the herbicide inhibits the plant's ability to produce new foliage by slowly exhausting food reserves.

## Result:

Efforts to control leafy spurge have paid off. Each year as park officials return to treated areas, they find a reduced leafy spurge density and the next treatment involves less herbicide. Seeing other grasses flourish where leafy spurge once dominated is further proof that the IPM plan is working. Park officials say vigilance is necessary to keep the park as natural as possible.



### Learn More:

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