

Invasive Plants

RESOURCE BRIEF

Importance

The spread of non-native plants is a serious issue because once land becomes seriously infested, restoring the native plant community is extremely difficult. Native plants, including species endemic to a few of the park’s geothermal habitats, can be displaced by exotic species. Non-native species also affect the distribution, foraging activity, and abundance of wildlife, and have altered the viewsheds of the park’s cultural landscapes and historic districts. Seeds may be spread by people and their vehicles, wild and domestic animals, and sand and gravel used for construction and maintenance work. Areas where the ground has been disturbed along roads and other developed areas are most vulnerable to infestation.



Leafy spurge, spotted knapweed

Status in Yellowstone

The full extent of non-native plants in Yellowstone is not known, but the number of species that has been documented in the park has increased from 105 to 218 since 1986 (Fig. 1). (Yellowstone also has about 1,300 native plant species.) The increase in documented non-native species is primarily a result of ongoing survey efforts, but it includes an unknown number of species that have arrived in the park during the last two decades.

Non-native plant species in the park are prioritized according to the threat they pose to park resources and the prospects for successful treatment. Most of the 38 species targeted for treatment in 2008 (on about 1,700 acres) are listed by the states of Idaho, Montana, and/or Wyoming as “noxious weeds,” which means that they are considered

detrimental to agriculture, aquatic navigation, fish and wildlife, or public health. The 2008 priority list includes 10 species such as leafy spurge (*Euphorbia esula*) that infested less than one acre and can be eliminated if treated when the outbreak is still small. Some of the other targeted species such as spotted knapweed (*Centaurea maculosa*) appear so frequently that stopping them from spreading is the primary goal. This strategy has helped prevent high priority invasive species from moving into backcountry areas where control is more difficult.

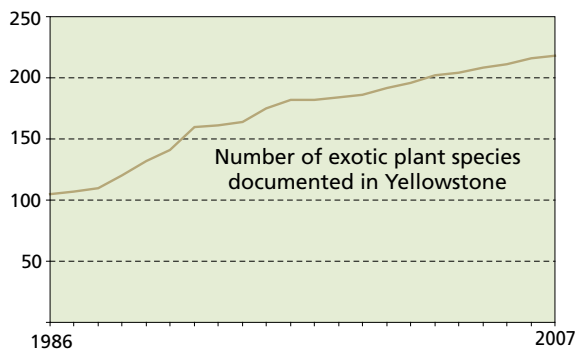


Figure 1. Exotic plant species documented in Yellowstone as of 1986 to 2007. Not all of the species recorded by 2007 are known to be present in the park now, but most are.



Figure 2. Areas on the north and west sides of the park treated with herbicide to control spotted knapweed in 2007. Most knapweed infestations are located along park roads. An estimated 947 acres were treated in the entire park.

Discussion

On some of the acres treated each year, the exotic plants are physically removed. This is the preferred method when feasible. However, pulling or cutting of some perennial species serves to stimulate growth, and the use of herbicides on individual plants is necessary to control certain aggressive species (Fig. 3).

Prevention efforts include minimizing land disturbance, inspection of gravel sources used in construction projects, requiring use of pressure-washed construction equipment, allowing only certified weed-free hay to be transported through the park, restrictions on the use of hay in the backcountry, planting native species where ground disturbance has occurred, and educating park visitors. To improve exotic plant management throughout the region, park staff work with land managers from other government agencies, the Greater Yellowstone Coordinating Committee’s Weed Subcommittee, and the National Park Service’s Rocky Mountain Exotic Plant Management Team.

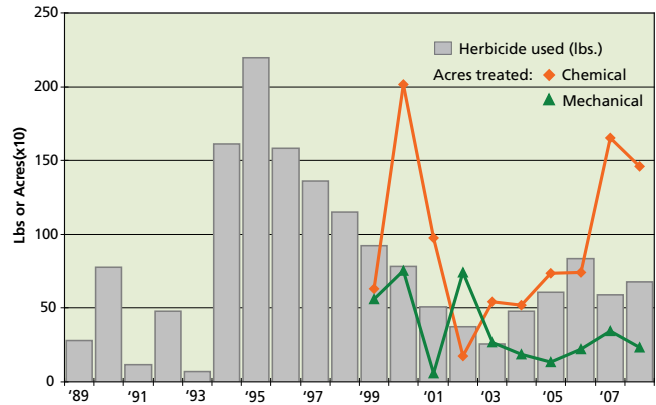


Figure 3. Pounds of herbicide used to treat exotic plants and acres of gross infested area receiving chemical and mechanical treatment. (Comparable data for acres treated before 1999 is not available.)



Dalmation toadflax, orange hawkweed, and oxeye daisy have been documented in the park; purple loosestrife (far right) is on the watch list as a potential new arrival.