Managing Invasive Plants

Management Methods in Action

Slide 1: Collage of Management methods

When using an integrated pest management (IPM) approach, invasive plant managers combine a number of methods to control the target invasive plant, promote desirable plant communities, and minimize economic and environmental impacts.

Slide 2: Prescribed fire in progress at Prime Hook NWR, Delaware

At Prime Hook NWR (Delaware), prescribed fire is integrated with chemical methods to control the nonnative, invasive grass *Phragmites*. Management goals include reducing fire hazard, and restoring native vegetation and wetland habitat for migrating and wintering waterfowl.

Slide 3: Purple loosestrife plants and biological control insect (inset)

A number of refuges, including Rachel Carson NWR (Maine), have turned to biological control to suppress expansive infestations of purple loosestrife. Their goal is not to eradicate purple loosestrife, but rather to establish a competitive balance between native plant species and purple loosestrife while reducing the need for herbicide use.

Slide 4: Scenic view of Bosque del Apache NWR, New Mexico

At Bosque del Apache NWR (New Mexico), refuge staff and scientists are experimenting with various control and revegetation methods to restore saltcedar-infested sites to more desirable plant communities.

Slide 5: Physical and chemical methods in progress

The first step is removing or controlling the dense stands of saltcedar plants. This is done either by removing above- and below-ground portions of the plants using heavy machinery (physical method), or by treating the plants with herbicide delivered aerially or using a backpack sprayer (chemical method).

Slide 6: Prescribed fires in progress

Prescribed fires are then used to remove the piles of debris left by the mechanical treatments, or to remove the standing sprayed plants. These treatments (physical, chemical, and prescribed fire) may be applied in different sequences and are often repeated to control persistent saltcedar plants.

Slide 7: Management area after a prescribed fire

In addition to removing saltcedar plants, managers aim to restore native plant communities that provide important habitat in the refuge. In some cases, sites may revegetate naturally once saltcedar plants are removed.

Slide 8: Management area after flooding to promote desirable plant regeneration

Managed flooding and dry-down periods can be timed to reduce saltcedar seedling reestablishment and encourage natural seed regeneration from nearby plant communities.

Slide 9: Management area that was seeded with desirable plant species

However, if desirable vegetation and seeds are not available at the site, managers may need to provide a little help. One site in the refuge was aerially seeded to reestablish native saltgrass meadows. At another site, seedlings of cottonwood, willow, and shrubs were planted to restore the cottonwood-willow woodland that was present prior to saltcedar invasion.

Slide 10: Prescribed grazing and biological control insects for saltcedar

Other IPM methods such as prescribed grazing and a newly approved biological control agent also show promise in suppressing saltcedar infestations.

Slide 10: Summary

Refuge managers use an IPM approach to managing invasive plants. They often combine management methods for best results, and when selecting methods, they consider land management goals, site characteristics, costs, and economic and environmental impacts. Management methods include: Chemical, Physical, Biological, and Cultural (Prescribed Grazing and Prescribed Fire).