

# Invasive/Nuisance Plant Species Removal

## A DOI Nature-Based Solutions Roadmap Fact Sheet



**Invasive or nuisance pests** are species that cause harm to humans or the environment.<sup>1</sup> Invasive species are non-native; nuisance species may be native or non-native. This fact sheet focuses on invasive and nuisance plant species. There were an estimated 5,000 non-native plant species in the U.S. as of 2012<sup>2</sup>; while not all of these are invasive, many have potential to harm ecosystems and the economy. Management of invasive and nuisance plant species aims at minimizing these harms.<sup>3</sup>

### TECHNICAL APPROACH

Integrated pest management, the primary approach to pest management using environmentally sound methods<sup>5</sup>, focuses on nonchemical treatments first but uses chemical control as a last resort:

- Preventing introduction of invasive plants to new areas is the most cost-effective management strategy.<sup>4</sup> Techniques include education on firewood, regulations on ornamental plant imports, reducing soil disturbance, and cleaning equipment before it is transported between watersheds.<sup>5-6</sup>
- Monitoring so early invasions can be detected and responded to rapidly; for example, by sampling vegetation along roads, trails, and power line corridors.<sup>7</sup>
- Eradicating pests via mechanical removal<sup>8</sup>, grazing<sup>9</sup>, prescribed burns<sup>10</sup>, biological control (e.g., using native insects or pathogens), or chemical controls (pesticide use is only recommended when absolutely necessary).<sup>11</sup>
- Continuing to monitor and treat affected areas.<sup>11</sup>

### BENEFITS

#### Climate Threat Reduction

- Reduced wildfire risk
- Drought mitigation

#### Social and Economic

- Agriculture and timber yields
- Food security

#### Ecological

- Enhanced biodiversity
- Supports wildlife



Removing invasive Russian olives in North Dakota. Photo credit: [US Fish & Wildlife Service](#).

## SITE SUITABILITY FACTORS

- ✓ Heavily trafficked areas
- ✓ High-risk invasive species detected
- ✓ Area at high risk of invasion
- ✓ Riparian areas
- ✓ Areas with high biodiversity

## EXAMPLE PROJECT

Great Meadow is a large wetland complex in Acadia National Park threatened by invasive plants including glossy buckthorn shrubs. Ongoing integrated pest management to control glossy buckthorn includes manually cutting shrubs and covering stumps with bags or applying herbicides to reduce regrowth.<sup>12</sup> Herbicide application is carefully timed to minimize adverse effects on native plants. Replanting native species to prevent invasive plants from recolonizing areas is also part of the management strategy; National Park Service is testing different methods of native plant restoration to assess which is most effective at managing invasive plants.



National Park Service staff surveying for invasive plants in the Great Meadow at Acadia National Park. Photo credit: [NPS](#).

## REFERENCES

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## CITATION

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## KEY RESOURCES

Title and Link	Site Suitability	Design and Construction	Monitoring Guidance	Example Projects
<a href="#">Land Manager's Guide to Developing an Invasive Plant and Management Plan (USFWS, CA Invasive Plant Council)</a>	✓	✓	✓	✓
<a href="#">Invasive Species Strategic Plan 2021-2025 (DOI)</a>	✓	✓	✓	✓

## LEARN MORE

Visit the DOI Nature-Based Solutions Roadmap for more information on invasive and nuisance plant removal, other nature-based solutions, and principles and considerations broadly relevant for nature-based solutions projects. The invasive and nuisance plant removal summary includes additional details on each section included in this fact sheet, plus information on operations and maintenance, common barriers, and more resources and example projects.

### Explore the Roadmap



Full Roadmap Document



Invasive and Nuisance Plant Removal Section

[www.nicholasinstitute.duke.edu/roadmap](http://www.nicholasinstitute.duke.edu/roadmap)