

Invasive/Nuisance Wildlife Removal

A DOI Nature-Based Solutions Roadmap Fact Sheet



Invasive or nuisance pests are species that cause harm to humans or the environment.¹ Invasive species are non-native; nuisance species may be native or non-native. This fact sheet focuses on invasive and nuisance animal (wildlife) species. Invasive and nuisance wildlife can alter ecosystems and kill, suppress with, compete with, or displace native species, adversely impacting biodiversity.² Invasive and nuisance wildlife management aims to prevent or control these species to avoid ecological and economic damage.

TECHNICAL APPROACH

Specific management techniques vary by the invasive wildlife species being targeted, but the overall approach is as follows:

- Preventing introduction of invasive wildlife to new areas is the most cost-effective management strategy. Techniques include import regulation, border control, and equipment inspection.³
- Monitoring so early invasions can be detected and responded to rapidly; for example, by surveying at-risk lands and using citizen scientists to expand detection capabilities.⁴ Rapid response when an invasive species is detected is key to minimize long-term costs.³
- Eradicating invasive wildlife once present may not be possible; long-term management is often required. Removal techniques include traps, hunting, toxins, dogs, introduced predators, and habitat manipulation (including barriers to movement).⁵

BENEFITS

Social and Economic

- Public health and safety
- Food security
- Jobs
- Reduced or avoided costs
- Recreational opportunities

Ecological

- Enhanced biodiversity



Inspecting a recreational boat encrusted with quagga mussels.
Photo credit: [Oregon State University](#). CC BY-SA 2.0 DEED.

SITE SUITABILITY FACTORS

- ✓ High-risk invasive species detected
- ✓ Area at high risk of invasion
- ✓ Areas with high biodiversity
- ✓ Management options available for invasive species present on the site
- ✗ Limited access for management

EXAMPLE PROJECT

The Chesapeake Bay Nutria Eradication Project, a partnership between US Fish & Wildlife Service, US Department of Agriculture, and Maryland Department of Natural Resources, successfully eradicated nutria – a large semiaquatic, invasive rodent – from Maryland after 20 years of work.⁶ Nutria in the Chesapeake Bay damaged coastal marshes already vulnerable to sea level rise, in the process degrading habitat for commercially harvested and at-risk species and reducing resilience for coastal communities. Key techniques used to eradicate nutria included detection dogs, traps, hunting, and chemical controls. The successful eradication of nutria has created opportunities for additional coastal marsh restoration that would not be possible with nutria present.



A US Department of Agriculture nutria detection dog with its handler. Photo credit: U.S. Department of Agriculture.

REFERENCES

- 1 USGS. "What Is an Invasive Species and Why Are They a Problem? | U.S. Geological Survey." Accessed July 14, 2023. <https://www.usgs.gov/faqs/what-invasive-species-and-why-are-they-problem>.
- 2 Tu, M. "Assessing and Managing Invasive Species within Protected Areas." Edited by J. Ervin. *The Nature Conservancy*, no. Protected Area Quick Guide Series (2009). <https://www.cbd.int/invasive/doc/ias-tnc-guide-2009-en.pdf>.
- 3 NPS. "Managing Invasive Animals - Invasive & Non-Native Species (U.S. National Park Service)," 2021. <https://www.nps.gov/subjects/invasive/managing-invasive-animals.htm>.
- 4 DOI. "U.S. Department of the Interior Invasive Species Strategic Plan, Fiscal Years 2021-2025," 2021, 54. <https://www.doi.gov/sites/doi.gov/files/doi-invasive-species-strategic-plan-2021-2025-508.pdf>.
- 5 Witmer, Gary, Patrick Burke, Will Pitt, and Michael Avery. "Management of Invasive Vertebrates: An Overview." *Managing Vertebrate Invasive Species*, August 1, 2007. <https://digitalcommons.unl.edu/nwrcinvasive/56>.
- 6 "Decades-Long Partnership Eradicates Destructive Nutria Rodents from Maryland | U.S. Fish & Wildlife Service." 2022. <https://www.fws.gov/press-release/2022-09/decades-long-partnership-eradicates-destructive-nutria-rodents-maryland>.

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KEY RESOURCES

Title and Link	Site Suitability	Design and Construction	Monitoring Guidance	Example Projects
Safeguarding America's Lands and Waters from Invasive Species (DOI)	✓	✓	✓	✓
Invasive Species Strategic Plan 2021-2025 (DOI)	✓	✓	✓	✓

LEARN MORE

Visit the DOI Nature-Based Solutions Roadmap for more information on invasive and nuisance wildlife removal, other nature-based solutions, and principles and considerations broadly relevant for nature-based solutions projects. The invasive and nuisance wildlife 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 Wildlife Removal Section

www.nicholasinstitute.duke.edu/roadmap