



# United States Department of the Interior Invasive Species Strategic Plan

2021 - 2025



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### **Invasive Species Cover Images**

Cheatgrass, *Bromus tectorum* (photo credit U.S. Fish and Wildlife Service)

Brazilian Elodea, *Egeria densa* (photo credit Barry Rice, [sarracenia.com](http://sarracenia.com), [Bugwood.org](http://Bugwood.org))

Grass Carp, *Ctenopharyngodon idella* (photo credit U.S. Fish and Wildlife Service)

Nutria, *Myocastor coypus* (photo credit U.S. Fish and Wildlife Service)

Zebra Mussel, *Dreissena polymorpha* (photo credit U.S. Fish and Wildlife Service)

Brown Treesnake, *Boiga irregularis* (photo credit U.S. Department of Agriculture, Animal and Plant Health Inspection Service-Wildlife Services, National Wildlife Research Center)

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## Key Terms

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**Invasive species:** With regard to a particular ecosystem, a non-native organism whose introduction causes or is likely to cause economic or environmental harm or harm to human, animal, or plant health.

**Invasive species management:** Activities including, but not limited to, planning (identification and inventory, prioritization, establishing action thresholds), monitoring, prevention, early detection, rapid response, eradication, control, restoration, research, and regulatory approaches used to minimize the threat of invasive species.

**United States:** The 50 States, the District of Columbia, the Territories of American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands, and U.S. insular possessions, including Midway Island, Wake Island, Palmyra Island, Howland Island, Johnston Island, Baker Island, Kingman Reef, Jarvis Island, and other U.S. islands, cays, and reefs that are not part of the 50 States.

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## Executive Summary

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Invasive species pose a significant threat to the ecological, economic, and cultural integrity of America's lands and waters and the communities they support. Controlling them can be complex, expensive, and often continues indefinitely. In some cases, invasive species cause harm which is potentially irreversible. Strategic solutions advanced in collaboration with partners can often successfully resolve or forestall invasive species impacts.

The Department of the Interior's (Interior) Invasive Species Strategic Plan (Plan), developed pursuant to the John D. Dingell, Jr. Conservation, Management, and Recreation Act (Public Law 116-9), provides an overarching framework for the broad spectrum of activities that are performed by ten of Interior's Bureaus and multiple offices. The Plan includes goals, objectives, strategies, and performance measures, as well as crosscutting principles that guide its implementation. The strategies reflect both work that is ongoing and opportunities to focus on emerging priorities. While Bureaus often have their own invasive species management plans, this Plan, for the first time, outlines a comprehensive approach across Interior that both builds upon existing plans and serves as an overarching strategy. This Plan provides higher level direction than Interior's more tactically oriented Departmental Manual chapter on invasive species policy. It is narrower in scope than the Department of the Interior Strategic Plan for Fiscal Years 2018-2022, developed pursuant to the Government Performance and Results Modernization Act of 2010, which does touch on invasive species in the broader context of Interior's multi-faceted mission.

Interior identified the following five goals to advance invasive species management:

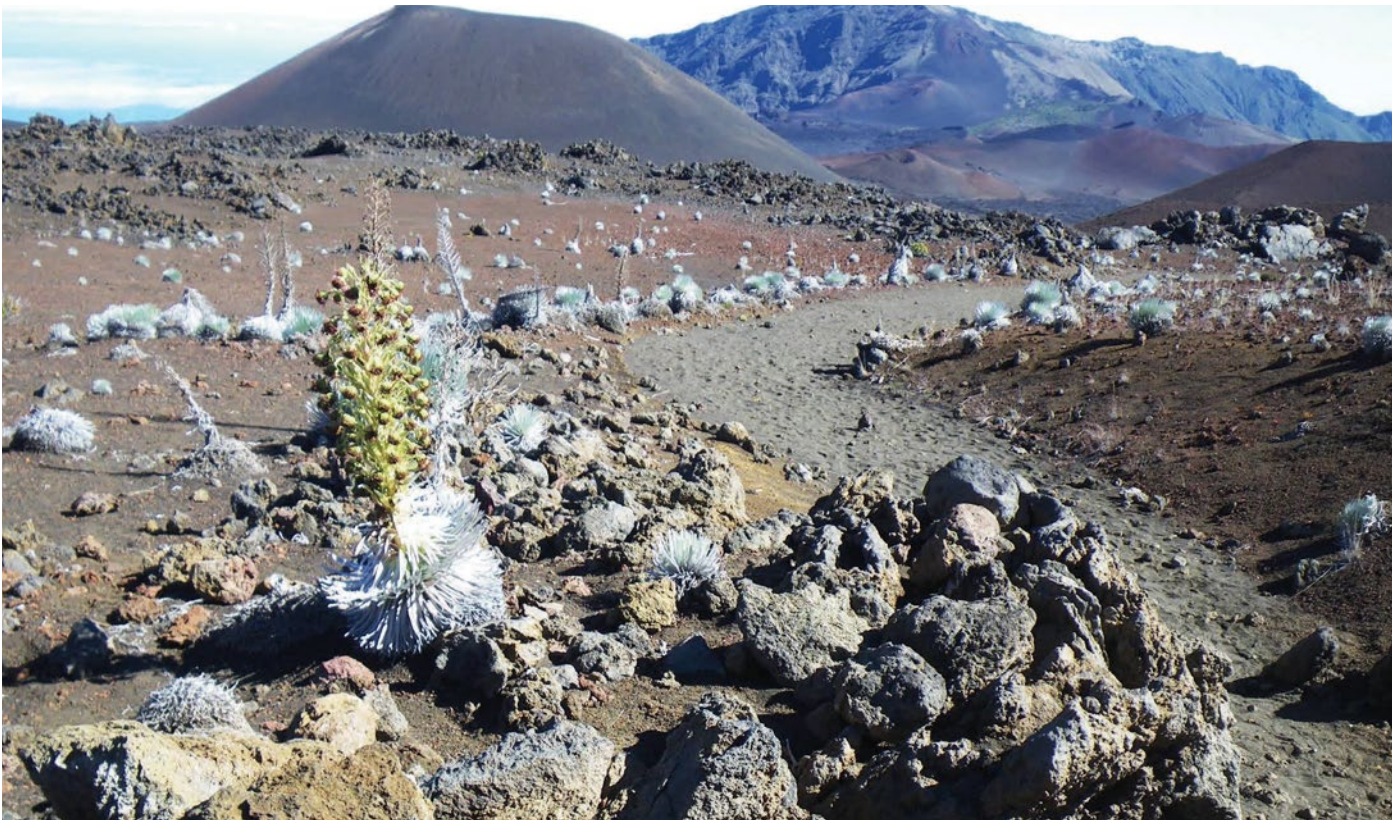
1. Collaborate across Interior and with others to optimize operations through leveraging partnerships, joint educational efforts, and shared funding.
2. Cost-effectively prevent the introduction and spread of invasive species into and within the United States.
3. Implement early detection and rapid response efforts in coordination with other Federal agencies, States, Tribes, Territories, and other partners to reduce potential damage and costs from new infestations becoming established.
4. Cost-effectively control or eradicate established invasive species populations to reduce impacts and help restore ecosystems.
5. Improve invasive species data management for decision-making at all levels of government.

Partnering is critical to success in managing invasive species; thus, collaborative conservation is central to the Plan and included as a crosscutting principle that applies to implementation of each of the Plan's goals. When the Plan refers to collaborating "with others," or "partners," this includes working with State, Tribal, Territorial, and local governments, other Federal agencies, academia, industry, non-profit organizations, land managers, landowners, and the public. Due to the evolving nature of partnerships and the extensive and varying collaborations in which Interior is engaged across the Nation, specific groups are rarely specified in this Plan; however, the importance of partnerships in invasive species management, and the need for Interior's active involvement in those partnerships, cannot be overstated.

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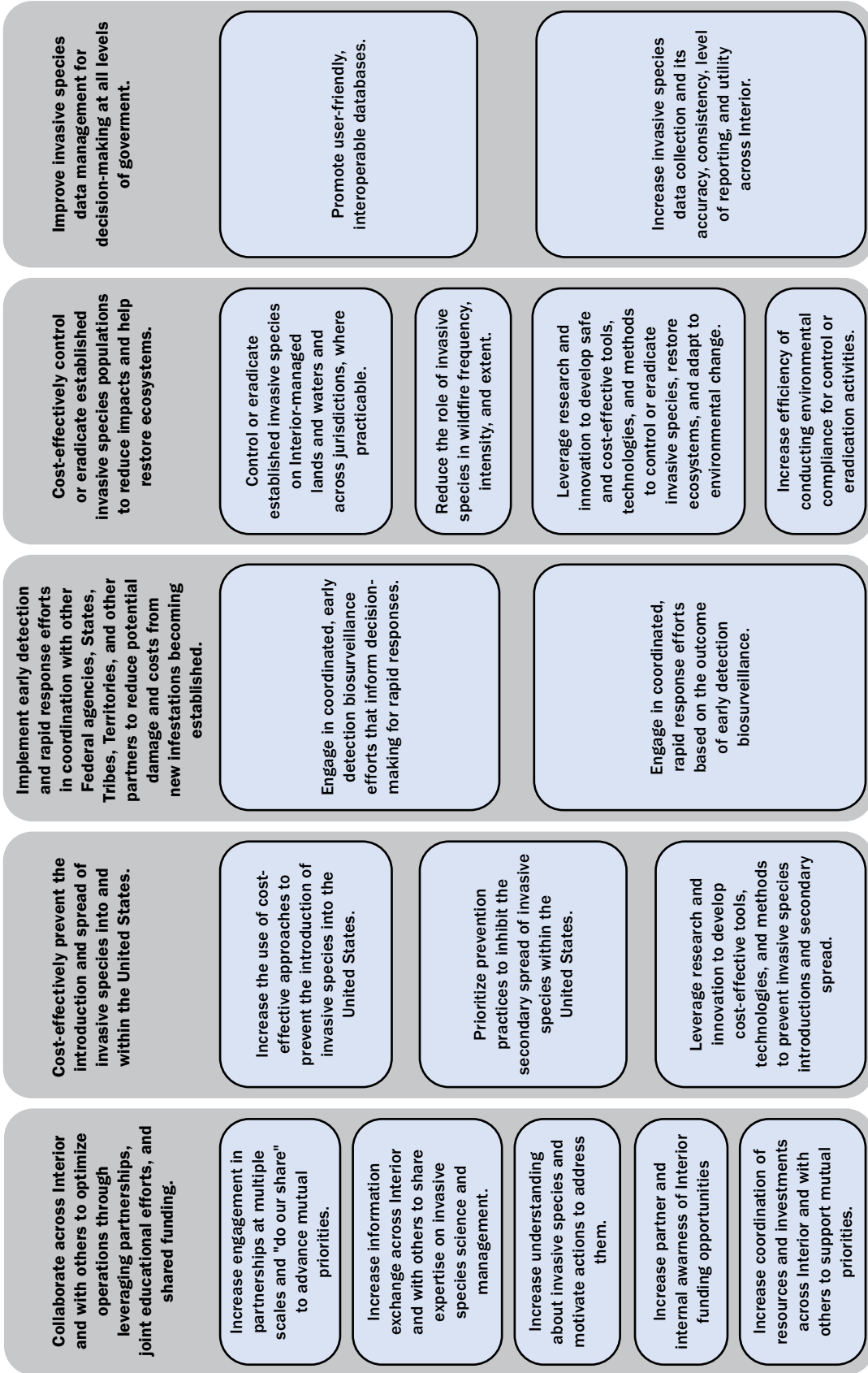
Interior’s invasive species priorities will vary regionally based on the priorities of its 12 standard regions and State Governors, Tribal leaders, local governments, and other partners, so that Interior remains as adaptable as possible to address current and emerging needs. The Plan underscores the importance of integrating efforts across a diverse array of stakeholders at multiple scales. It emphasizes coordination, communication,

partnering, science-based decision-making, planning, and strategic on-the-ground action to reduce the threat of invasive species. Implementation of the Plan will require effective and cost-efficient strategies to prevent the introduction and inhibit the spread of invasive species and help protect the Nation’s lands and waters, as well as the livelihoods that rely upon them.



Preventing the introduction of invasive species helps protect sensitive ecosystems, such as those in the Haleakalā Crater, which has endangered silversword plants, Haleakala National Park, HI. (NPS)

# Invasive Species Strategic Framework at a Glance



**Crosscutting Principles:** Promote and engage in collaborative conservation; Leverage science; Adaptively manage; Manage on a watershed or ecosystem scale, including islands and other isolated or contained geographies; Promote innovative solutions; Apply integrated pest management; Prioritize cost-effectiveness; Streamline regulatory and decision-making processes; and Demonstrate accountability.



Invasive *Phragmites australis*, Middle Ground Island, MI (USGS)



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# I. Introduction

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Invasive species are non-native organisms whose introduction to a particular ecosystem causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health (Executive Order 13751). They are a significant threat to the ecological, economic, and cultural integrity of America's lands and waters and the communities they support. While the scale of the problem is daunting, opportunities exist for the Department of the Interior (Interior) to take a more coordinated and effective approach to managing invasive species.

Interior's Invasive Species Strategic Plan (hereafter referred to as the Plan) recognizes invasive species management as an important endeavor and critical factor in Bureau missions to protect and manage natural, cultural, historic, and Tribal resources. The Plan outlines activities that Interior is currently undertaking and those that it will pursue to strengthen invasive species management efforts. It calls for promoting partnerships to bolster mutual priorities, raising awareness to motivate action, strengthening prevention practices to avoid invasive species introductions and spread, improving the coordination of early detection and rapid response efforts across jurisdictions, leveraging opportunities for targeted control and eradication, and improving data collection and data management to facilitate more effective decision-making. It also calls for a more strategic, coordinated approach to leverage resources and ensure that programs and policies are aligned and applicable to all invasive species taxonomic groups including plants, animals, and pathogens across aquatic and terrestrial ecosystems. Importantly, the Plan promotes flexibility to be responsive to priorities of Governors, Tribal leaders, local governments,

and other partners, as policy and program needs will vary across geographies. Those priorities are largely informed by the potential adverse impacts to human health, the economy, cultural heritage, and biodiversity, and the associated likelihood of invasive species establishment based on habitat suitability and pathways of introductions.

Managing invasive species facilitates Interior's ability to achieve its mission for the benefit of the American people and thereby advances a number of Interior's broader Government Performance and Results Modernization Act strategic plan goals.<sup>1</sup> These goals include utilizing science in land, water, species, and habitat management to support decisions and activities; fostering partnerships to achieve balanced stewardship and use of our public lands; managing grazing resources; expanding hunting, fishing, and other recreation on Interior-managed lands and waters; managing wildland fire to reduce risk and improve ecosystem and community resilience; and reducing administrative and regulatory burden.

It is worth noting that not all non-native species are invasive. Many non-native species have been intentionally introduced for beneficial uses such as food production or landscape restoration. Most species are benign in their native range, yet when introduced into a different ecosystem, some may become problematic when habitat and biological interactions, such as competition, predation, and disease, are no longer present to regulate their populations. In some cases, a non-native species may be viewed as beneficial by one sector of society yet considered invasive by another sector in the same geography. For instance, striped bass,

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<sup>1</sup> Interior's strategic plans are available online at <https://www.doi.gov/performance/strategic-planning>.

introduced from the East Coast in the 1800s by State and Federal fish and wildlife agencies, are a popular sport fish in the San Francisco Bay-Delta of California, yet their predation on the threatened Delta smelt and endangered and non-endangered salmonids marks them as invasive by California water managers and other interest groups. Conflicting management objectives require careful consideration of legal mandates and balancing jurisdictional priorities in addition to effective communication among affected entities to establish and pursue mutually satisfactory outcomes.

New invasive species continue to enter the United States, and some invasive species already present are expanding their ranges, increasing their populations, and in some cases hybridizing with native species. Management options for addressing invasive species can be thought of in terms of their relationship to the stages of the invasion process, with fewer and more costly management options available as an invasion progresses (Figs. 1, 2). Coordinated efforts are essential to protect natural and cultural resources. Many of Interior’s programs have made advances in invasive species management, and opportunities exist to expand this work to ensure the most effective and efficient use of available resources.

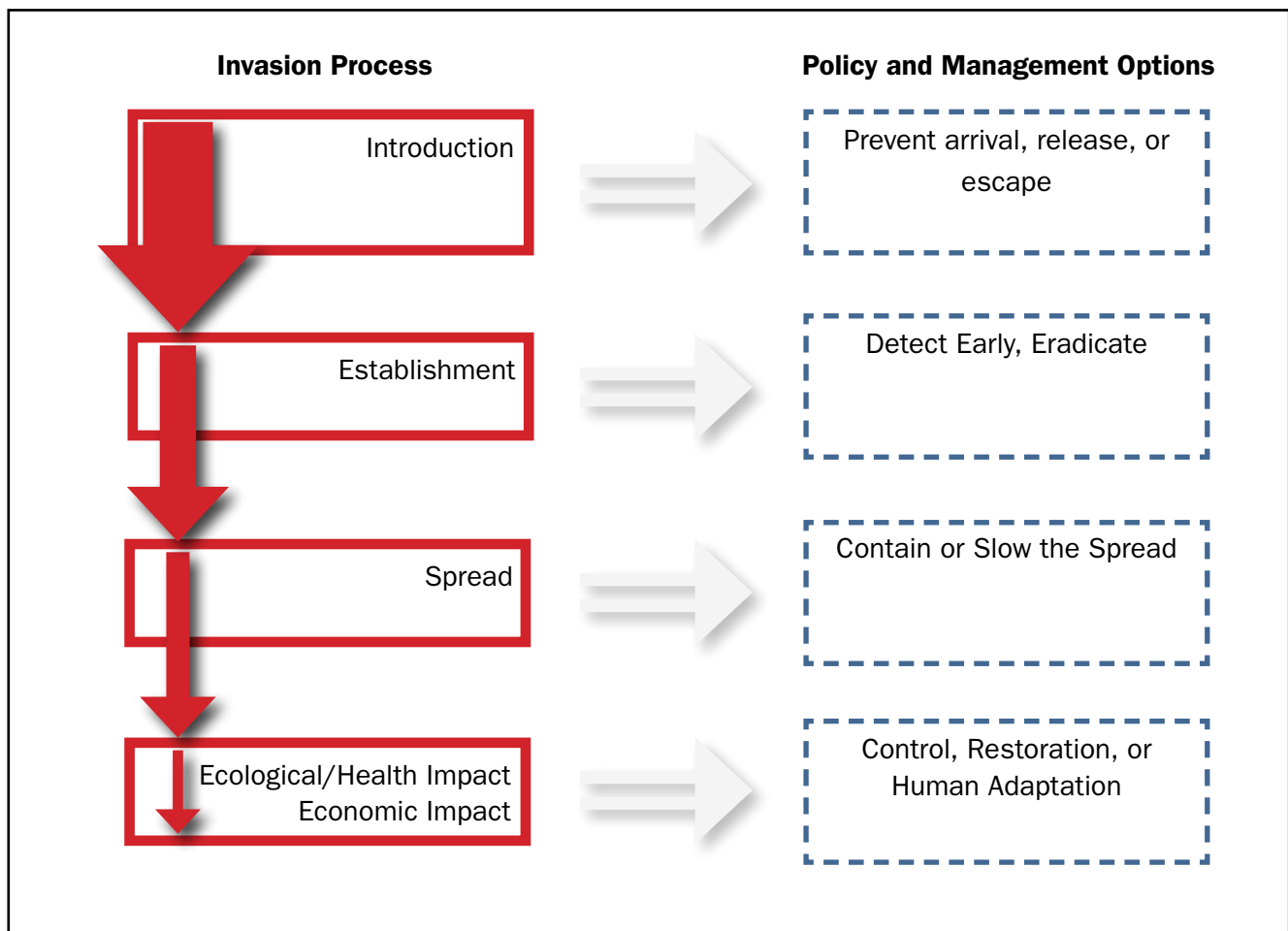


Figure 1. *Invasion Process and Policy and Management Options* (Adapted from Lodge et al. 2016. *Risk analysis and bioeconomics of invasive species to inform policy and management. Annual Review of Environment and Resources* 41:453-488). Stages common to all invasions by non-native species (left column) and general policy and management options (right column) that are most relevant to each stage of invasion. Arrow width reflects the declining number of species reaching each stage of invasion.

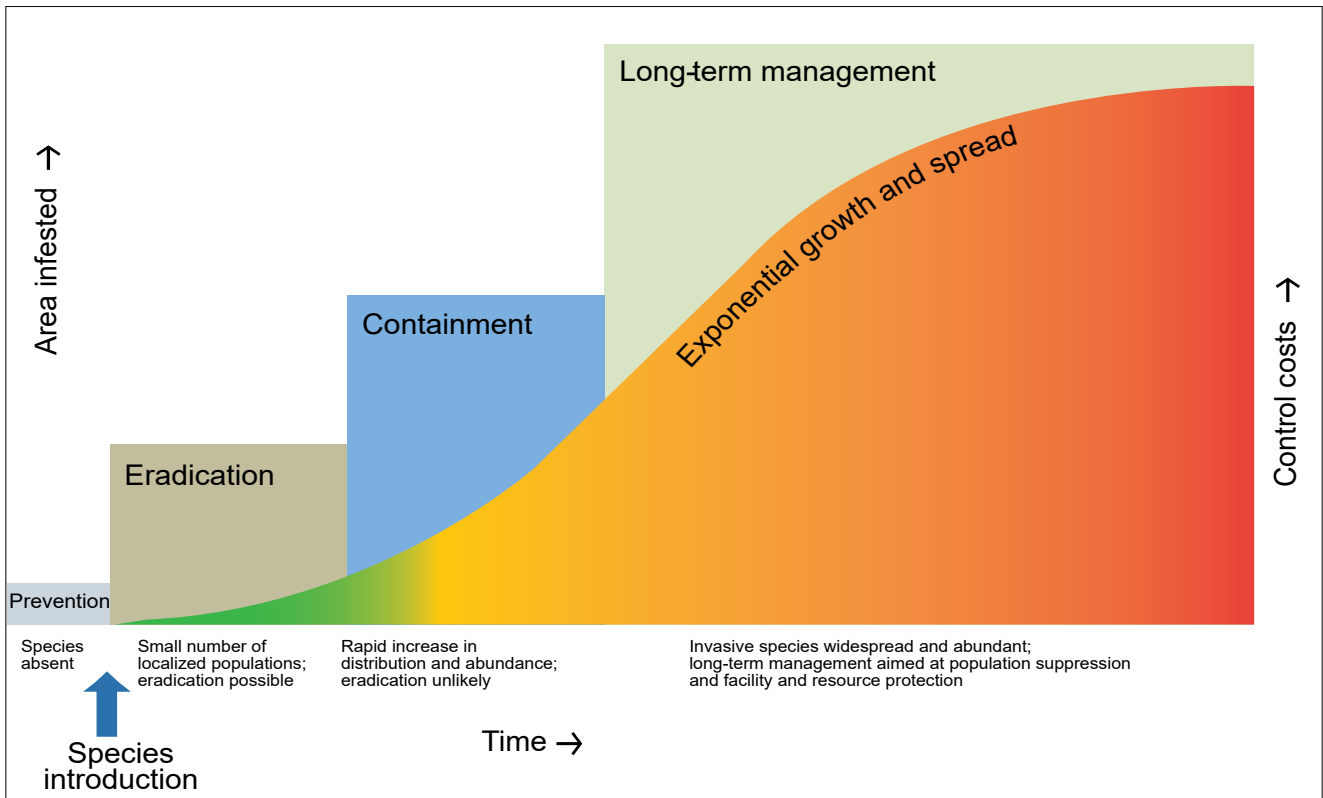


Figure 2. Phases of the Invasion Curve (Adapted from Rodgers. 2010. *Invasive Plants and Animals Policy Framework*. State of Victoria, Department of Primary Industries). Preventing the introduction and spread of invasive species first into and then within the United States is the most cost-effective defense against biological invasion. The second line of defense is eradication, where the approach is to eliminate founding populations of invasive species while doing so is feasible. Early detection and rapid response actions are generally necessary to achieve eradication. When eradication is infeasible with existing technologies, then containment or long-term control of an invasive species population is the remaining management option. These programs often require substantial, if not indefinite, financial investments. In some cases, eradication (such as in island ecosystems) or suppression of widespread established invasive species (such as by using integrated pest management) are possible and can be successful late in the invasion stages.

## Economic Impact of Invasive Species

Invasive species impose substantial costs on society. For example, they can drive native species onto the Endangered Species list, resulting in associated regulatory costs; exacerbate the threat of wildland fire that destroys property and threatens lives; increase the cost of delivering water and power; damage infrastructure; and degrade recreation opportunities and discourage tourism. They also disrupt ecosystem functions including pollination, water filtration, pest control, and protection from erosion, wildfires, and other natural hazards. Invasive species can also deplete resources important to cultural heritage and subsistence living. They cause damages that

impact the global economy, including an estimated \$120 billion in environmental damages and losses annually in the United States.<sup>2</sup> In Fiscal Year 2020, Interior invested an estimated \$143 million to manage invasive species.

Table 1 presents examples of economic impacts and management costs estimated for various high-profile invasive species. These estimates may not include certain losses resulting from the ecological degradation caused by invasive species. Ecological degradation includes losses that are difficult to quantify but that can negatively impact and ultimately impose costs on economic activities as well as on human health and property.<sup>3</sup>

Table 1. *Examples of estimated adverse economic impacts and management expenditures of selected invasive species. Estimates represent a wide range of regions, time periods, and types of adverse impacts and costs. Dollar values are presented in nominal terms and have not been adjusted to a constant dollar-year. For these reasons, it is not appropriate to sum these values. “Actual” estimates represent known or modeled adverse impacts or costs related to current infestations. “Projected” estimates represent anticipated adverse impacts or costs if an invasive species is unmanaged and spreads, or if an invasive species becomes established in an area where the species is not currently found.*









Invasive Species	Impacted Sectors	Estimated Adverse Economic Impacts	Estimated Management Expenditures
Asian Carps 	Fisheries, Recreation, Tourism	<b>Projected:</b> \$2.4 billion over ten years (Great Lakes recreational fishery); \$102 million over ten years (Great Lakes commercial fishery if grass carp become widespread) <sup>4</sup>	<b>Actual:</b> \$58 million in 2017 for Asian carps (Ohio and Upper Mississippi River Basins) <sup>5</sup>
Zebra, Quagga Mussels 	Agriculture, Electric Power, Fisheries, Recreation, Tourism, Water Infrastructure	<b>Projected:</b> \$500 million per year (to the Pacific Northwest region if invasive mussels become established) <sup>6</sup>	<b>Actual:</b> More than \$13.2 million per year (prevention efforts in the Pacific Northwest region) <sup>7</sup>

Table continues...

<sup>2</sup> Pimentel, D. et. al, 2005. Update on the environmental and economic costs associated with alien-invasive species in the United States. *Ecological Economics* 52:273-288.

<sup>3</sup> For example, cheatgrass or downy brome, an invasive annual grass, can significantly increase fire hazards. Fires in cheatgrass areas are more intense and frequent than rangelands with native vegetation resulting in increased hazards to structures and human health.

Invasive Species	Impacted Sectors	Estimated Adverse Economic Impacts	Estimated Management Expenditures
Elodea 	Fisheries, Recreation, Tourism	<b>Projected:</b> \$159 million per year (Alaskan commercial sockeye fisheries if elodea is unmanaged) <sup>8</sup>	<b>Actual:</b> \$1.3 million in 2020 <sup>9</sup>
Brown Treesnake 	Electric Power, Recreation, Tourism, National Security	<b>Actual:</b> \$4.5 million per year (Guam) <sup>10</sup> <b>Projected:</b> \$593 million to \$2.1 billion per year (to Hawaii if brown treesnakes become established) <sup>11</sup>	<b>Actual:</b> \$8.2 million in 2019 (Guam) <sup>12</sup>
Feral Swine 	Agriculture, Infrastructure, Livestock	<b>Actual:</b> \$190 million in 2014 (crop production losses across ten States); <sup>13</sup> \$40 million in 2017 (livestock damages across 13 States) <sup>14</sup>	<i>Not available</i>
Nutria 	Agriculture, Recreation	<b>Projected:</b> \$2.9 million per year (to Chesapeake Bay region of Maryland if nutria are not removed and marshes are lost) <sup>15</sup>	<i>Not available</i>
Cheatgrass 	Agriculture, Energy, Infrastructure, Healthcare	<b>Actual:</b> Smoke impact from wildfire; Regulatory impact from wildfire destruction of habitat for an Endangered Species Act-candidate-species	<b>Actual:</b> \$18 million from 2015-2019 (Interior-managed lands) <sup>16</sup>
Emerald Ash Borer 	Agriculture, Electric Power, Forestry	<b>Actual:</b> \$60 million per year (timber losses, nationwide); \$380 million per year (residential property value losses, nationwide), <sup>17</sup> especially in Midwestern States	<b>Projected:</b> \$10.7 billion over ten years (nationwide, given a projected expansion of emerald ash borer from its distribution in 2009) <sup>18</sup>

<sup>4</sup> Includes estimated impacts of grass carp only as a result of reduced catches, reduced quality, diversity, and population size of native fish species, increased operational costs from commercial harvesters needing to travel greater distances, and decreased demand for recreational fishing.

<sup>5</sup> Includes Federal and State agency expenditures related to prevention and control; research and development; monitoring, early detection and rapid response; interagency coordination; outreach; and law enforcement and regulatory actions. Although \$58 million is spent in the Ohio and Upper Mississippi River Basins, \$53 million is related to expenditures for Great Lakes protection primarily in the Chicago Area Waterway System and Illinois Waterway system.

<sup>6</sup> Represents the estimated annual economic impact if invasive mussels are introduced in the Pacific Northwest, where they are not found as of the writing of this Plan. This estimate is specific to the Pacific Northwest and does not include the economic impact that invasive mussels have on other waterways throughout the United States.

<sup>7</sup> Represents average annual State and Provincial invasive mussel prevention effort costs, including watercraft inspection and decontamination, outreach, and monitoring in the Pacific Northwest.

- <sup>8</sup> Represents the mean aggregate annual damages to commercial sockeye fisheries across Alaska if elodea is unmanaged.
- <sup>9</sup> Represents cumulative costs by various partners in Alaska to manage elodea in 2020, per personal communication with A. Martin, U.S. Fish and Wildlife Service.
- <sup>10</sup> Represents the annual costs to Guam's economy over a seven-year period due to electrical power outages caused by the brown treesnake. This estimate does not include repair costs, damage to electrical equipment, or lost revenues.
- <sup>11</sup> Represents the estimated potential annual damage from medical damages, power-outage costs, and the cost of a decrease in tourism in Hawaii if the brown treesnake becomes established. The brown treesnake is not established in Hawaii as of the writing of this Plan, although since 1981, at least eight brown treesnakes have been found on Oahu, transported on aircraft from Guam.
- <sup>12</sup> Represents expenditures by Interior's Office of Insular Affairs and Department of Defense to support the brown treesnake program in Fiscal Year 2019, per the Brown Treesnake Technical Working Group 2019 meeting and personal communication with M.J. Mazurek, U.S. Fish and Wildlife Service.
- <sup>13</sup> Represents crop production losses for corn, soybeans, wheat, rice, sorghum, and peanuts in AL, AR, CA, FL, GA, LA, MS, MO, NC, SC, and TX.
- <sup>14</sup> Represents the direct costs in terms of deaths and medical expenditures resulting from feral swine presence for livestock producers in AL, AK, CA, FL, GA, LA, MS, MO, NC, OK, SC, TN, and TX.
- <sup>15</sup> Represents losses to commercial fishing, sportfishing, hunting, and wildlife viewing in Maryland if marshes are lost at an increased rate due to the presence of nutria.
- <sup>16</sup> This estimate is based on a keyword search of the Interior fuels treatment database and associated planned costs of projects that involved the reduction, prevention, and monitoring of cheatgrass for the purposes of wildland fire management on Interior-managed lands. Thus, this likely represents a lower-bound estimate. In addition, planned costs may not reflect the actual costs and the accuracy of planned cost estimates is not known. Does not include non-fire cheatgrass expenditures.
- <sup>17</sup> Represents residential property value losses and timber value losses to forest landowners of dead and dying trees affected by emerald ash borers. Changes in property values due to changes in tree health were based on economic welfare estimates obtained from published non-market valuation studies. Changes in timber harvesting levels were based on estimates of timber mortality from non-native forest insects, and mortality induced harvest reductions were small enough to have no impact on timber prices. Economic impacts were estimated using spatial data and dynamic models of infestation extent.
- <sup>18</sup> Represents the mean discounted cost of treating, removing, and replacing 17 million ash trees across 25 States over ten years.

Sources in order of reference:

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## Interior Involvement in Addressing Invasive Species



USGS and NPS remove Burmese pythons from Big Cypress National Preserve, FL, as part of ongoing research and management efforts. (USGS)

Interior manages much of the Federal lands, waters, and minerals, including providing access to more than 480 million acres of land, 700 million acres of subsurface minerals, and 2.5 billion acres of the Outer Continental Shelf. It stewards about 20 percent of the Nation's land base, including national parks, national wildlife refuges, and other public and Tribal lands; manages resources that supply 18 percent of the Nation's energy; manages some of the water in the 17 Western States; and generates 15 percent of the Nation's hydropower energy;<sup>19</sup> and upholds Federal trust responsibilities to 574 federally-recognized Indian Tribes. The lands, waters, and facilities that Interior manages are vulnerable to biological invasions and can in turn be a source for invasive species introductions to other lands and waters.

Most of Interior's Bureaus have a role in invasive species management (Appendix A) and influence the introductions and spread of invasive species.

Activities by employees, contractors, partners, and visitors to Interior-managed lands and waters can unintentionally act as pathways, including the use and transport of vehicles, equipment, and materials. Coordination and collaboration across Bureaus and across jurisdictions with other Federal agencies, States, Tribes, Territories, local governments, and other landowners and land managers are crucial to strategically stem the spread of invasive species.

Interior has been actively engaged in managing invasive species for more than 60 years. Due in large part to Interior's action, sea lamprey populations in the Great Lakes have been reduced by more than 90 percent from peak levels observed during the 1960s. This contributed to the remarkable recovery of fisheries, including the restoration of self-sustaining lake trout stocks in Lake Superior and successful spawning of landlock Atlantic salmon in Lake Champlain tributaries for the first time since the 1800s. Other successful

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<sup>19</sup> U.S. Department of the Interior 2020/2021 Annual Performance Plan and 2019 Report (APP&R)

management efforts can be found on islands. Island ecosystems are especially vulnerable to biological invasion but also present favorable opportunities for invasive species prevention and eradication. Interior programs to eradicate invasive species such as feral swine and black rats from islands led to the recovery of seabird and lizard populations in Channel Islands National Park and the U.S. island Territories.

In addition, U.S. Geological Survey research on Burmese pythons, brown treesnakes, and other invasive species has helped inform solutions for reducing the spread of these species and has provided quantitative data on invasive species impacts on native ecosystems. The Bureau of Reclamation is leading research efforts to control quagga and zebra mussels in hydroelectric and irrigation facilities to ensure continued economical renewable power generation and water delivery to cities and farms. These examples are among numerous other efforts underway by Interior to combat invasive species.

Interior's invasive species management activities are extensive, and key among them is prevention. At the international level, a range of Nations are increasingly concerned about the impacts of invasive species on health, agriculture, and biodiversity. Interior exercises its authorities to manage pathways of introduction of invasive species into the United States. For example, the injurious wildlife provision of the Lacey Act, 18 U.S.C. § 42 provides authority to the Secretary of the Interior to prohibit importation and some transport of wild vertebrates and invertebrates specified to be injurious to humans or agriculture, horticulture, forestry, wildlife, and wildlife resources of the United

States. In addition, through its Department Manual Chapter on invasive species policy, Interior directed the use of best practices to prevent the spread of invasive species.<sup>20</sup>

Significant challenges remain in managing existing and newly introduced invasive species. Less than one percent of the acres infested by invasive plant populations and approximately 10 percent of invasive animal populations on Interior-managed lands and waters are currently under control,<sup>21</sup> and the number of new species introductions continues to rise.



USFWS and volunteers control kudzu at the Rappahannock River Valley National Wildlife Refuge, VA. (USFWS)

<sup>20</sup> The Departmental Manual Chapter on invasive species policy provides guidance to Interior Bureaus and offices on invasive species management approaches and associated practices, which will be instructive in the implementation of the strategies included in this Plan. The chapter is available online at <https://www.doi.gov/sites/doi.gov/files/elips/documents/524-dm-1-508.pdf>.

<sup>21</sup> U.S. Department of the Interior 2020/2021 Annual Performance Plan and 2019 Report (APP&R)



Invasive species and their impacts will likely increase in the coming decades as the global movement of people and materials and increased tourism and trade further disperse species around the world. In addition, the impact of climate change and associated alterations in weather patterns, precipitation, and extreme weather events disrupts ecosystems and makes them more susceptible to biological invasions.

Given these challenges, strategic action through this Plan will focus Interior's resources and activities on those efforts that position Interior and our partners for success. Sharing resources among Bureaus and with Federal, State, Tribal, Territorial, local governments, and other partners is needed, and Interior is responding accordingly. Between Fiscal Years 2016 and 2020, Interior spent an average of \$116 million annually to manage invasive species. These investments were largely directed to field-based programs and partners to address invasive species on the ground. Going forward, Interior will continue to leverage investments to maximize benefits. Interior's policy on invasive species provides guidance for applying a consistent and comprehensive management approach across Interior and emphasizes collaborative conservation.<sup>22</sup> In addition, Interior can contribute significantly to a coordinated intergovernmental approach by developing, maintaining, and sharing invasive species geospatial distribution information and decision-support tools. A concerted effort is underway by Interior and its partners to standardize data and promote common technology platforms for sharing information that aids in managing biological invasions. Furthermore, Interior's organization into 12 standard regions (Appendix B), each coordinated by a Field Special Assistant appointed by the

Secretary, facilitates joint action and resource-sharing across Bureaus and better serves partners, which will help achieve invasive species management goals across public and private lands at multiple scales.

Understanding biological invasions and the consequences of world-wide species movements is a rapidly evolving science and management discipline. These and other efforts underway are critical to successfully prevent the next invasion, and to more effectively manage established invasive species.



USFWS hangs panel traps to survey for coconut rhinoceros beetle, HI. (USFWS)

<sup>22</sup> The Department Manual Chapter on invasive species policy is available online at <https://www.doi.gov/sites/doi.gov/files/elips/documents/524-dm-1-508.pdf>.

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## II. Plan Development, Implementation, and Reporting

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Interior developed this Plan to implement the John D. Dingell, Jr. Conservation, Management, and Recreation Act [Act] of 2019 [Public Law 116-9, as amended by the America's Conservation Enhancement Act of 2020 [Public Law 116-188]]. Title VII section 7001, section 1, section 10 c) of the Act directed the Secretary of the Interior to, “develop a strategic plan that will achieve, to the maximum extent practicable, a substantive annual net reduction of invasive species populations or infested acreage on land or water managed by the Secretary.” It also directed that the plan be developed in coordination with relevant Federal agencies, States, political subdivisions of States, in consultation with stakeholders, including non-governmental organizations and industry, and federally-recognized Indian Tribes, and in accordance with the priorities of State Governors. Furthermore, the Act directed that the plan take into consideration the economic and ecological costs of action or inaction, as applicable.

While Interior's Bureaus have numerous invasive species management plans and other planning documents at multiple geographic and organizational levels, often developed with input from stakeholders, Interior did not have an organization-wide invasive species strategic plan prior to this Plan.

At the onset of planning, Interior conducted eight teleconference listening sessions with federally-recognized Indian Tribes and Tribal organizations, States, counties, Territories, the Commonwealth of Puerto Rico, Alaska Native Corporations, and the Native Hawaiian Community. The issues raised in those sessions and through written comments substantively influenced this Plan. For example, collectively, the Governors' representatives in their listening session asked Interior to have this Plan

be adaptable to varying regional needs, rather than be too prescriptive in identifying specific invasive species to address; in response, the Plan emphasizes strengthening partnerships, promoting cross-boundary collaborative conservation, and advancing mutual priorities. Prior to finalization, Interior requested public comment on the Plan through the Federal Register and conducted two consultations with Tribes and Alaska Native Corporations, two public listening sessions, a Congressional briefing, and presentations at various meetings. The input from this public comment period refined the content of the final Plan.

The Plan serves as Interior's overarching strategic direction for the next five years. It reflects both core activities that are in progress across Interior and emerging priority areas. It promotes coordination and collaboration among Bureaus and offices and their programs, in the allocation of resources, and with partners and stakeholders. The broad framework provided by the Plan also serves as a foundation for the development and implementation of more specific regional or issue-specific operational plans.

At the national level, Interior's Invasive Species Task Force (composed of Bureau national program leads), together with senior leaders, provides an institutional mechanism to coordinate across Bureaus and guide implementation of the Plan. At the regional level, Interior's Field Special Assistants provide a mechanism for inter-Bureau coordination to advance priorities (Appendix B). For example, in the Southwest, the Interior Field Special Assistant (Region 8) and the associated inter-Bureau executive team identified addressing aquatic invasive species as a priority. Subsequently, they are developing a strategy to manage quagga and zebra mussels in the Lower Colorado Region, in collaboration with

States, Tribes, and other partners. Their work will benefit stakeholders across the West by limiting the spread of these invasive species. In Alaska, where there are fewer invasive species established than in other States, the Interior Field Special Assistant (Region 11) and Bureaus are working closely with partners to bolster intergovernmental cooperation on prevention and early detection and rapid response. Through this work, the partnership is prioritizing which invasive species to direct resources towards and also prioritizing which pathways to address to best minimize invasive species introductions and spread. Taking a regional view—either by Interior’s regions or by geographical regions in which partners have mobilized (e.g., Great Lakes, Columbia River Basin, Pacific Islands)—enables identifying those priorities that are mutually beneficial to multiple entities and also cost-effective, especially those where there are opportunities to leverage Federal-State-Local-Tribal resources and share costs.

More broadly, the Plan will inform development of Interior’s Fiscal Years 2023-2027 Government Performance and Results Modernization Act

strategic plan, inform Interior’s budget formulation with respect to invasive species programs, and inform Interior’s position on related legislation.

Recognizing that efforts to manage invasive species span across the Federal government, Interior will work through established mechanisms to promote coordination. To optimize implementation, Interior’s Plan will inform priorities shared with the National Invasive Species Council, the Aquatic Nuisance Species Task Force, and other interagency coordinating bodies (Appendix C). Since this Plan stresses responsiveness to partners, the collective priorities of these and other interagency bodies will also inform Interior’s activities. Interior intends to revisit the Plan every five years, with stakeholder input, to ensure that it reflects any shifts in partner priorities or technological developments. Interior will track implementation of the Plan through performance reporting (Appendix D).

The Plan addresses only those activities authorized by Federal law as of its writing (Appendix E).



Spokane Tribal Fisheries staff suppress invasive populations of Northern pike by gillnetting in Lake Roosevelt, WA. (Spokane Tribe of Indians/BIA)

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## III. Invasive Species Management Mission and Vision

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### Mission

To manage resources and partner with others to cost-effectively protect the Nation's economy, environment, public health, infrastructure, natural resources, and cultural heritage from the harmful impacts of invasive species for the benefit of current and future generations.

### Vision

The Department of the Interior strives to fulfill a vision to:

- prevent invasive species from entering and spreading within the United States;
- collaborate with partners in establishing early detection and rapid response capabilities to eradicate newly detected species or small populations to prevent them from spreading;
- manage established invasive species to limit their spread and reduce negative impacts;
- support and use scientific and technological innovation that make the management of invasive species more feasible;
- avoid having Interior-managed lands and waters become a source of invasive species that damage the lands, waters, and resources of our neighbors;
- share information and raise awareness to mobilize action to address invasive species;
- manage Interior lands and waters so they are resistant to invasive species infestations and are resilient to disturbance;
- integrate invasive species work into other Interior activities on regional and national levels to promote effectiveness and efficiency;
- engage with partners to address mutual invasive species priorities, including those identified by State, Tribal, Territorial, and local governments and other Federal agencies; and
- incorporate cost-effectiveness in all actions we undertake to achieve Interior's invasive species management mission.

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## IV. Crosscutting Principles

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The following crosscutting principles are fundamental to successful invasive species management and are to be applied in the implementation of the Plan's activities where applicable.<sup>23</sup>

**Promote and engage in collaborative conservation:** Coordinate and cooperate across Interior and with other Federal agencies; the National Invasive Species Council, Aquatic Nuisance Species Task Force, and other interagency bodies; Tribal, State, local, and Territorial governments, Alaska Native Corporations, and the Native Hawaiian Community; and other entities such as academic institutions, the private sector, landowners, hunters and anglers, ranchers and farmers, local invasive species cooperatives, non-governmental organizations, and others. Leverage staff and funding across these groups to manage invasive species effectively and efficiently.

**Leverage science:** Use relevant and reliable science, including peer-reviewed and traditional knowledge, without bias, to inform and influence understanding of invasive species, their impacts, and how to manage them.

**Adaptively manage:** Use adaptive management, as appropriate, to improve invasive species management and policies. Use management outcomes, monitoring, evaluation, risk assessment, research, and innovation to inform adjustments to the strategies implemented in this Plan.

**Manage on a watershed or ecosystem scale, including islands and other isolated or contained geographies:** Use a systems approach that emphasizes the importance of maintaining ecological processes to restore or recover ecological communities previously invaded or to maintain the resistance and resilience of relatively intact ecological communities, while balancing economic, cultural, and environmental priorities.

**Promote innovative solutions:** Encourage innovative science and technologies to create new options to address difficult challenges where few or no viable or effective options currently exist.

**Apply integrated pest management:** Apply integrated pest management principles in a manner that balances risks to human health and the environment from invasive species management activities with the risks of failure to act expeditiously to control invasive species.

**Prioritize cost-effectiveness:** Apply a deliberate decision-making process to evaluate the full range of methods and tools available to achieve resource management objectives in a particular geography and select the one that achieves those objectives with the least expenditure of Interior funds.

**Streamline regulatory and decision-making processes:** Ensure appropriate management actions are taken that are commensurate with the potential to avoid harm, while maintaining appropriate and necessary consultations with State, Tribal, and local governments, and the public.

**Demonstrate accountability:** Develop and use specific, measurable, achievable, results-oriented, and time-fixed (SMART) performance metrics to evaluate invasive species management activities. Aim for substantive annual net reduction of invasive species populations or infested acreage on Interior-managed lands and waters. Report annually on performance results and share with Federal and non-Federal partners, other interested parties, and the public.

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<sup>23</sup> The full list of crosscutting principles that are included in the Departmental Manual Chapter on invasive species are available online at <https://www.doi.gov/sites/doi.gov/files/elips/documents/524-dm-1-508.pdf>

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## V. Goals, Objectives, and Strategies

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Each goal in the Plan has objectives that provide detail about how to accomplish that goal. Each objective has a list of strategies, or specific activities, to achieve that objective. The order of the goals, objectives, and strategies does not reflect relative priority. Partnering is critical to success in managing invasive species. When the Plan refers to collaborating “with others,” or “with partners,” this includes working with State, Tribal, Territorial, and local governments, other Federal agencies, academia, industry, non-profit organizations, land managers, landowners, and the public. Due to the evolving nature of partnerships and the extensive and varying collaborations in which Interior is engaged across the Nation, specific groups are rarely specific in this Plan; however, the importance of partnerships in invasive species management, and the need for Interior’s active involvement in those partnerships, cannot be overstated.

### **Goal 1: Collaborate across Interior and with others to optimize operations through leveraging partnerships, joint educational efforts, and shared funding.**

Invasive species are not constrained by jurisdictional boundaries. The most successful efforts to combat invasive species are those that enlist a broad coalition of partners working across jurisdictions toward mutual goals. Numerous interagency coordinating bodies and partnerships are operating at all levels—international to local—across the Nation to advance appropriately scaled strategies. Collectively, these interagency bodies and partnerships create a network of concerted action, information sharing, and planning that strengthens society’s ability to manage invasive species (Appendix C). It is through these and other networks that the identification of mutual priorities take place.

This goal emphasizes having effective coordination and communication mechanisms for identifying mutual priorities, sharing information across Interior and with others, promoting invasive species education campaigns, and working closely across Interior Bureaus and with our partners to leverage resources

### **Objective 1.1: Increase engagement in partnerships at multiple scales and “do our share” to advance mutual priorities and promote efficiency and cost-savings.**

#### **Strategies:**

- a. Leverage existing interagency bodies, partnerships, and networks and establish new collaborative efforts, as needed, to better manage invasive species (e.g., feral swine).
- b. Develop and implement interjurisdictional management plans, in collaboration with others, that advance mutual priorities.
- c. Use Memoranda of Understanding, cooperative agreements, and other instruments, to strengthen collaboration to advance efficient management activities.
- d. Incentivize partnerships among Interior Bureaus and with others that work across jurisdictions to address mutual priorities.

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**Objective 1.2: Increase information exchange across Interior and with others to share expertise on invasive species science and management and promote efficiency and cost-savings.**

**Strategies:**

- a. Use and enhance current mechanisms for coordination, communication, and reporting, including leveraging information technology for elements such as geospatial mapping and authoritative databases to expedite information-sharing.
- b. Enhance invasive species training opportunities.
- c. Share a nationwide network of Interior subject matter experts to provide training or technical assistance internally and to partners on invasive species management activities.
- d. Increase engagement with Tribes and indigenous communities to understand how culture, subsistence, and traditional ecological knowledge can be incorporated into management goals and activities.

**Objective 1.3: Increase understanding about invasive species and motivate actions to address them.**

**Strategies:**

- a. Leverage and enhance national invasive species education and outreach campaigns and websites to educate the public and provide informational resources for managers.
- b. Leverage Interior capabilities to inform target audiences about invasive species, including information on distribution, impacts, and management solutions.
- c. Promote coordination among State, Tribal, Territorial, Federal, non-governmental organizations, and other invasive species and communication experts to ensure the public receives accurate, actionable, and consistent messaging about invasive species.
- d. Undertake studies to assess the ecological, economic, or human health impacts of invasive species and their management to inform decision-making.



NPS's Southeast Coast Invasive Plant Management Team and partners hold a "Weed Wrangle" at Congaree National Park, SC. (NPS)



NPS partners with WA Department of Fish and Wildlife and Puddles, an invasive mussel sniffing dog, for aquatic invasive species watercraft inspections at Kettle Falls Marina, WA. (NPS)

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## **Objective 1.4: Increase partner and internal awareness of Interior funding opportunities.**

### **Strategies:**

- a. Ensure that Interior staff, partners, and stakeholders are aware of Interior financial assistance programs (e.g., grants) that may be available to fund invasive species management activities.
- b. Optimize financial assistance programs for invasive species management activities so that they are efficient, effective, and meet programmatic objectives.

## **Objective 1.5: Increase coordination of resources and investments across Interior and with others to support mutual priorities.**

### **Strategies:**

- a. Improve reporting and analysis of Interior's invasive species investments and other, related investments, particularly those allocated to high-impact species.
- b. Identify mutual priorities across Interior and with others and leverage investments and resources to address those priorities.
- c. Pursue possible synergies with programs with similar goals or activities, such as the wildland fire community, that are nontraditional partners in invasive species management.
- d. At the regional level, coordinate through Secretarial Field Special Assistants and their respective regional executive leadership teams in interagency priority-setting and budget execution on invasive species management activities of programmatic interest to more than one Bureau.
- e. At the national level, coordinate through Interior's Office of Policy Analysis to work with Bureaus to establish a select set of national invasive species program priorities, and advise the Assistant Secretary for Policy, Management and Budget on those issues.

**Goal Metrics:** *Appendix D*

**Goal Outcome:** *Effective partnerships use the best available information and leverage resources to address national and regional invasive species priorities efficiently and effectively.*



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## Goal 2: Cost-effectively prevent the introduction and spread of invasive species into and within the United States.

Preventing the introduction of invasive species is the first line of defense against biological invasion and is the most cost-effective approach. Prevention includes efforts to stop the introduction of invasive species *into* the United States and efforts to stop the secondary spread *within* the United States from an infested area to areas free of that invasive species. Science-based decision-support tools are essential to identify invasive species and their pathways of introduction, so that resources can be focused accordingly. Outcomes of these assessments inform both regulatory and nonregulatory approaches.

This goal emphasizes working with partners to identify mutual priorities for prevention, particularly at the regional level, and promotes the use of Interior's authorities for prevention, the implementation of best prevention practices, and the pursuit of research and innovation to develop new prevention measures.

### **Objective 2.1: Increase the use of cost-effective approaches to prevent the introduction of invasive species into the United States and reduce long-term economic impacts.**

#### **Strategies:**

- a. Use horizon-scanning, predictive modelling, and other tools to identify high-risk species and pathways of introduction into the United States.
- b. Leverage Interior's existing statutory authorities, such as the injurious provisions of the Lacey Act, 18 U.S.C § 42 and the wildlife trafficking provision of Lacey Act Amendments of 1981, 16 U.S.C § 3372, to manage pathways of invasive species introductions and prevent new invasive species from becoming established.
- c. Enhance the collection of trade importation data as it relates to invasive species so that it is electronically available and searchable for organisms (wildlife and plants) imported into the United States; ensure this data is correctly identified to species.
- d. Ensure Interior staff are aware of relevant authorities (e.g., consultation under Endangered Species Act 7(a)(2)) that can be used for prevention and encourage their implementation at all organizational levels.
- e. Support and work with other Federal agencies in their efforts to implement their own statutory authorities to reduce the risk of invasive species introductions through pathways not regulated by Interior.
- f. Work through the appropriate Executive Branch processes to identify gaps and opportunities within Interior authorities to enhance protection of the United States from invasive species threats.

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## **Objective 2.2: Prioritize prevention practices to inhibit the secondary spread of invasive species within the United States and reduce long-term economic impacts.**

### **Strategies:**

- a. Develop and implement site-specific prevention and containment practices for pathways that are likely to introduce or spread invasive species onto and from Interior-managed lands.
- b. Educate visitors to Interior-managed lands and waters of pertinent invasive species laws and regulations and cooperate closely with appropriate Federal and non-Federal law enforcement personnel to ensure compliance.
- c. Collaborate with partners to identify mechanisms to reduce interstate movement of invasive species.
- d. Leverage Interior's 12 standard regions to bolster coordination across Interior and with partners to address regional prevention priorities.

## **Objective 2.3: Leverage research and innovation to develop cost-effective tools, technologies, and methods to prevent invasive species introductions and secondary spread.**

### **Strategies:**

- a. Enhance decision-support tools to conduct risk analyses that identify high-risk species and high-risk pathways that are likely to negatively impact Interior-managed resources.
- b. Leverage Interior expertise and that of external partners to increase efficacy of tools, designs, or practices to prevent the introduction and spread of invasive species.

**Goal Metrics:** *Appendix D*

**Goal Outcome:** *Effective biosecurity measures reduce the number of invasive species that arrive, establish, and spread within the United States.*



A USFWS Inspector inspects a commercial wildlife shipment of tropical fish with lionfish imported into the United States for the pet trade at a designated Wildlife Port of Entry. (USFWS)



Reclamation conducts early detection sampling for invasive mussels using a plankton tow net at a Colorado Reservoir. (Reclamation)

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## **Goal 3: Implement early detection and rapid response efforts in coordination with other Federal agencies, States, Tribes, Territories, and other partners to reduce potential damage and costs from new infestations becoming established.**

For invasive species that fail to be excluded through prevention efforts, early detection and rapid response (EDRR)—a coordinated set of actions to find and eradicate initial invasive species infestations before they spread and cause harm—can avoid the long-term costs and economic burden that invasive species might otherwise cause. This goal emphasizes the importance of coordinating EDRR activities, including the identification of priority EDRR species, across Interior and with State, Tribal, and Territorial governments, which are often the lead agencies for response. It also promotes capabilities for early detection biosurveillance and rapid response. Early detection biosurveillance is the capability necessary to predict, prioritize, and detect new invasive species occurrences so they can be eradicated, ideally before they become successfully established. This goal also strives to streamline regulatory processes so responses occur in a timely manner, while maintaining appropriate and necessary consultations with State, Tribal, and local governments and satisfying applicable environmental compliance and other statutory obligations.

### **Objective 3.1: Engage in coordinated, early detection biosurveillance efforts that inform decision-making for rapid responses and promote efficiency and cost-savings.**

#### **Strategies:**

- a. Delineate Interior's roles, responsibilities, and contributions within the broader intergovernmental community in implementing coordinated early detection biosurveillance efforts.
- b. Develop and enhance early detection biosurveillance capacity, field expertise, tools, techniques, and technologies, including molecular methods.
- c. Prioritize early detection biosurveillance on Interior-managed lands and off Interior-managed lands where Interior has statutory authority, and where there is the greatest risk of introduction of high-impact invasive species.
- d. Selectively strengthen Interior taxonomic expertise and ability to verify species identification for programs where Interior has a statutory mandate (e.g., fish and wildlife health and wildlife inspection at designated wildlife ports of entry).
- e. Use existing inventory, monitoring, and citizen science programs, where appropriate, to assist with early detection biosurveillance.
- f. Inform rapid response actions to recent introductions by rapidly assessing risks, including using streamlined geospatial mapping and data from authoritative databases.

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### **Objective 3.2: Engage in coordinated, rapid response efforts based on the outcome of early detection biosurveillance to promote efficiency and cost-savings.**

#### **Strategies:**

- a. Delineate Interior’s roles, responsibilities, and contributions within the broader intergovernmental community in implementing coordinated rapid response efforts.
- b. Use or develop response frameworks to facilitate response actions, including coordination, information flow, analysis, decision-making, goal setting, resource-sharing, and implementation.
- c. Streamline regulatory processes (e.g., where appropriate under the National Environmental Policy Act, Endangered Species Act, National Historic Preservation Act, and injurious listing under 18 U.S.C § 42) so that rapid response actions occur in a timely manner.
- d. Promote and enhance the use and capacity of interjurisdictional teams to implement coordinated rapid response actions.
- e. Evaluate the effectiveness of rapid response actions and share results to improve subsequent actions.

**Goal Metrics:** *Appendix D*

**Goal Outcome:** *Invasive species are detected and eradicated early in the invasion process.*



USGS is developing tools for the detection and capture of black and white Argentine tegu lizards in the southeastern U.S. (USGS)

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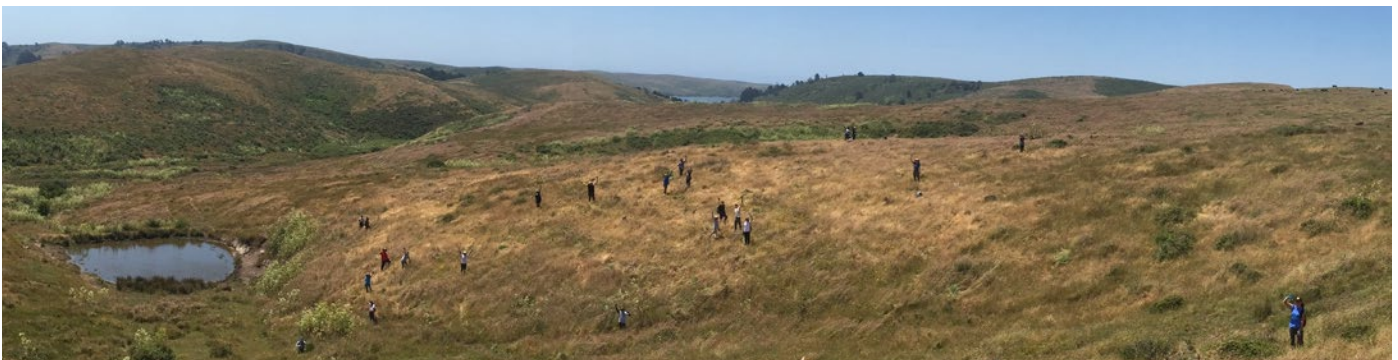
## Goal 4: Cost-effectively control or eradicate established invasive species populations to reduce impacts and help restore ecosystems.

Once invasive species are established, managers must determine which invasive species to control or eradicate, and where geographically to focus those efforts. Priorities can be set based on evaluating which species pose the greatest threat to human health, Interior’s resource management objectives, the economy, and ecosystem services and functions. Feasibility of control considers criteria such as available control techniques, cost-effectiveness, likelihood of successful control or eradication, likelihood of reinvasion, public support, complexity of environmental compliance, and availability of resources.

Interior promotes the use of integrated pest management, an approach that uses biological, cultural, physical, and chemical tools in a way that reduces risks to human health, the environment, and the economy. It is a science-based decision-making process that incorporates management goals, consensus building, biology, monitoring, environmental factors, and selection of the best available technology to achieve desired outcomes while managing effects on non-target species and the environment and preventing unacceptable levels of damage.

Because invasive species are not constrained by jurisdictional boundaries, working across those boundaries to control invasive species in collaboration with State, Tribal, and local governments, other Federal agencies, landowners, and other partners often is paramount for success. This goal emphasizes the importance of identifying mutual priorities for a coordinated approach to control invasive species in a given geographic area and increase effectiveness. It also stresses opportunities to focus on those areas where eradication—the complete removal of the invasive species—is most likely and sustainable in the long-term (e.g., on islands) or where suppression (e.g., biological control) can be achieved to sustain management objectives.

In addition, this goal leverages science and innovation to develop tools and methods to control or eradicate invasive species and help restore ecosystem form, function, and structure to enhance resilience to future disturbance and meet land management multi-use objectives. Similar to Goal 3, this goal also emphasizes the importance of streamlining regulatory processes, while maintaining appropriate and necessary consultations with State, Tribal, and local governments and meeting environmental compliance and other statutory obligations.



Volunteers from Linking Individuals to their Natural Community and Golden Gate National Parks Conservancy pull French broom seedlings at Point Reyes National Seashore, CA. (NPS)

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## **Objective 4.1: Control or eradicate established invasive species on Interior-managed lands and waters and across jurisdictions, where practicable.**

### **Strategies:**

- a. Develop and use decision-support tools in setting priorities for control or eradication, including prioritizing geographic areas (e.g., areas of high conservation value or that are culturally significant) and prioritizing particular invasive species, establishing goals for population suppression or eradication, and determining where success can be maintained long-term and when control or eradication is no longer practicable.
- b. Control or eradicate priority invasive species using integrated pest management approaches, particularly in those areas where eradication is feasible (e.g., on an island or specific geographic region where success can be maintained long-term).
- c. Promote practices (e.g., those included in the National Seed Strategy) and programs that restore ecosystems to enhance their resilience to disturbance and resistance to future invasive species infestations, and to meet resource management objectives (e.g., subsistence use).
- d. Coordinate with adjacent land managers or landowners to pursue a joint approach to control or eradicate invasive species that cross jurisdictional boundaries.
- e. Use social science tools to develop consensus around goals or approaches to control or eradicate invasive species.
- f. Evaluate the effectiveness of control or eradication actions and share results to improve subsequent efforts.

## **Objective 4.2: Reduce the role of invasive species in wildfire frequency, intensity, and extent.**

### **Strategies:**

- a. Coordinate between fire management and invasive species management programs across Interior and with the U.S. Department of Agriculture, Department of Defense, non-Federal partners such as State and Tribal fire management programs, and others.
- b. Promote community-based partnerships that coordinate actions and leverage resources to achieve regional goals, including reducing the introduction and spread of invasive plants that pose a wildfire risk and addressing their impacts on post-fire recovery and restoration efforts.
- c. Develop a shared wildfire and invasive species response strategy through the National Invasive Species Council and intergovernmental Wildland Fire Leadership Council to focus management on areas where mutual success is likely and resistance to invasive species and resilience to fire can be enhanced.
- d. Work with land management agencies in rural communities to leverage tools (e.g., outcome-based grazing using livestock) that manage invasive plants and reduce fuel loads.

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**Objective 4.3: Leverage research and innovation to develop safe and cost-effective tools, technologies, and methods to control or eradicate invasive species, restore ecosystems, and adapt to environmental change.**

**Strategies:**

- a. Develop and promote new tools and technologies to control or eradicate invasive species and to restore ecosystems.
- b. Use social science and other tools to cultivate awareness and understanding of the development and implementation of new technologies.
- c. Collaborate across Interior and with partners to meet or exceed regulatory requirements for application of new tools and technologies.
- d. Develop and promote decision-support tools and best practices to aid managers in planning for and responding to climate and other environmental change, including extreme weather events, that may increase the risk of introductions, spread, and impacts of invasive species introductions.

**Objective 4.4: Increase efficiency of conducting environmental compliance for control or eradication activities.**

**Strategies:**

- a. Develop templates and pursue other options to more efficiently and effectively comply with the National Environmental Policy Act, sections 7 and 10 of the Endangered Species Act (e.g., programmatic section 7 consultations), and other statutes.
- b. Streamline regulatory processes and use National Environmental Policy Act Categorical Exclusions, wherever applicable and appropriate, for implementing invasive species control or eradication activities.
- c. Strengthen Interior's capacity to maintain and register products for which Interior is responsible for invasive species control or eradication.
- d. Promote and enhance the ability of Interior employees to apply effective products and techniques within Federal standards.

**Goal Metrics:** *Appendix D*

**Goal Outcome:** *Control and eradication projects are implemented using management tools that substantively reduce the impact of priority invasive species on Interior resources and those of its neighbors and partners.*

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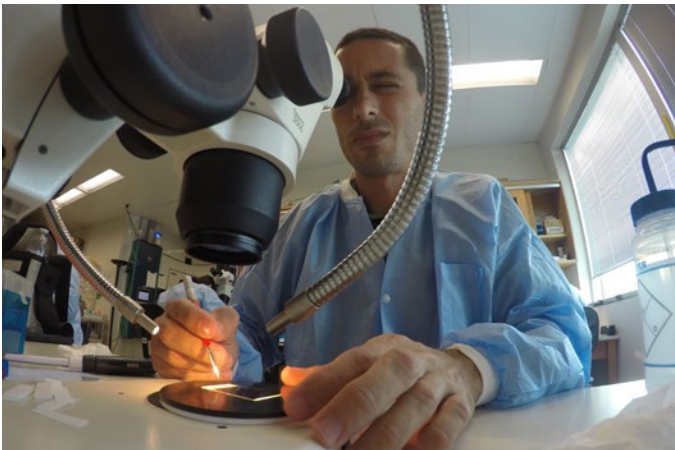
## Goal 5: Improve invasive species data management for decision-making at all levels of government.

Data is fundamental to effective decision-making. Whether it be recording the identification of an invasive species, the location or size of an infestation, the type of control being used, or the result of that control: information is crucial for geospatial mapping, modeling, and evaluating effectiveness of actions taken. This goal highlights the importance of data collection, data storage, data analysis, and data sharing. Consistent with the broader societal efforts at promoting open science and transparency of data, Interior and its partners are elevating awareness about the collection of relevant data and the value of having access to data and data analysis capabilities to aid in invasive species decision-making. This goal promotes equipping managers with the information and technological and analytic tools needed to make informed, science-based decisions in a timely manner.

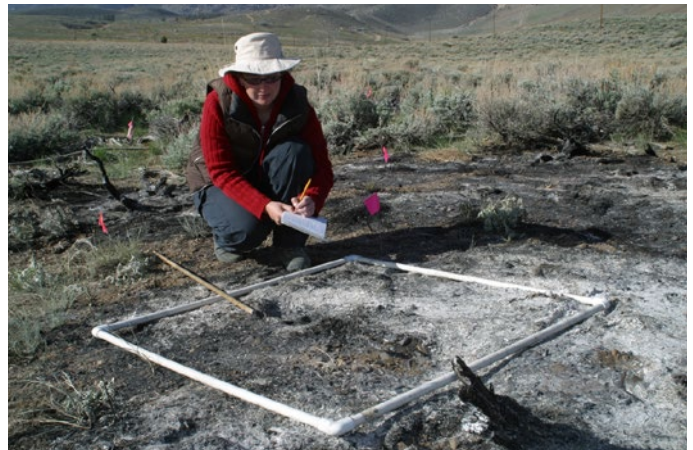
### Objective 5.1: Promote user-friendly, interoperable databases to increase efficiency and cost-savings.

#### Strategies:

- a. Enhance and promote the use of existing Federal and non-Federal databases that support invasive species information needs and maximize data sharing and availability.
- b. Improve the quantity and quality of data sharing, including legacy data (data that may be in obsolete formats), in authoritative databases across Interior, and with data integrators (databases combining data from multiple sources).
- c. Maintain and enhance invasive species database services and tools, such as providing geospatial occurrence data, mapping capabilities, risk analyses, early detection alert notifications, and tracking of management actions and their effectiveness, and ensure these data and tools remain accessible to Interior and others.
- d. Respond to feedback from managers on the tools and datasets that would aid managers in decision-making.



USFWS explores the use of advanced biotechnologies to control invasive insect species. (USFWS)



USGS evaluates the effects of wildland fire and cheatgrass, which fuels fire. (USGS)



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## **Objective 5.2: Increase invasive species data collection and its accuracy, consistency, level of reporting, and utility across Interior.**

### **Strategies:**

- a. Adopt and expand the use of the North American Invasive Species Management Association minimum mapping standards for invasive species across Interior, with the future aim of adopting Federal Geographic Data Committee geospatial standards.
- b. Enhance Interior’s capacity to collect data on management actions and to analyze patterns of success to increase effectiveness.
- c. Establish, in collaboration with others, guidance for use of environmental DNA and adhere to that guidance across Interior.
- d. Develop and use quality assurance and quality control practices and processes for accurate and precise data management for use in integrated authoritative databases.
- e. Define the role of citizen science in Interior’s invasive species data collection efforts and, where appropriate, promote consistent citizen science training, data collection, and online data submission.

**Goal Metrics:** *Appendix D*

**Goal Outcome:** *Managers and data users, including partners, have access to the data and decision-enabling tools necessary to manage invasive species effectively.*

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## **VI. Conclusion**

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As the largest land and water manager in the United States, Interior has a vital role in the management of invasive species. The coordinated approach outlined in the Plan will leverage resources more effectively and bolster programs, practices, and services necessary to reduce the negative impacts of invasive species. Interior is committed to working across the Federal family and with States, Tribes, Territories, local governments, and other partners to collectively manage invasive species to conserve the Nation’s resources for the benefit of current and future generations.



Interior is committed to working with partners to protect lands and waters from invasive species. (Jackson Lake, WY, Reclamation)

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# Appendix A. Bureau and Office Missions and Roles in Invasive Species Management

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## Bureau of Indian Affairs (BIA)

**Mission:** To enhance the quality of life, to promote economic opportunity, and to carry out the responsibility to protect and improve the trust assets of American Indians, Indian Tribes, and Alaska Natives.

### Responsibilities for Invasive Species:

- Oversees monitoring, compliance, and enforcement of grazing permits and agricultural leases with respect to invasive species on Tribal range and agricultural lands held in trust for Indian Tribes.
- Receives Federal allocation funds for invasive species (vegetative treatment of noxious weeds) on federally-recognized Tribal lands under the trust responsibility of the Secretary of the Interior, which are disbursed through a competitive project process.
- Supports Tribal participation in Interior's 12 standard regions for early detection and rapid response; local, State, and regional Cooperative Weed Management Areas; and collaborative restoration projects, including the Great Lakes Restoration Initiative, Missouri River Water Coalition, San Juan Woody Watershed Initiative, and the Southwest Tamarisk Coalition.

**Links:** <https://www.bia.gov>



## Bureau of Land Management (BLM)

**Mission:** To sustain the health, diversity, and productivity of America's public lands for the multiple use and enjoyment of present and future generations.

### Responsibilities for Invasive Species:

- Controls the introduction and spread of invasive plants and other taxa across public lands.
- Works cooperatively to manage invasive species across landscapes.
- Manages for preservation and restoration of native ecosystems.
- Manages public lands to provide for multiple uses, such as livestock grazing, energy and mineral development, recreation, and forestry and cultural activities, while minimizing the introduction and spread of invasive species.

**Links:** <https://www.blm.gov/weeds>,  
<https://www.blm.gov/programs/fish-and-wildlife/fisheries-and-aquatics/about-the-program>

**Mission:** BOEM manages development of renewable and conventional energy and mineral resources of the Outer Continental Shelf in an environmentally and economically responsible way.

**Responsibilities for Invasive Species:**

- Develops, funds, and manages rigorous scientific research through its Environmental Studies Program, specifically to inform policy decisions on the development of energy and mineral resources on the Outer Continental Shelf.
- Considers invasive species through its environmental program to ensure that environmental protection informed by science and law is an indispensable consideration in BOEM's decision-making.

**Links:** <https://www.boem.gov/environment>,  
<https://marinecadastre.gov/espis/#>

**Mission:** To manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

**Responsibilities for Invasive Species:**

- Conducts invasive zebra and quagga mussel monitoring at nearly 400 water bodies.
- Supports partners' watercraft inspection and decontamination efforts.
- Conducts research and develops methods and technologies to prevent, detect, and control invasive species, with a strong focus on zebra and quagga mussel impacts on Reclamation facilities.
- Utilizes site-specific Integrated Pest Management Plans for terrestrial and aquatic invasive species management.
- Creates tools to guide management of invasive species on Reclamation land and facilities, such as Reclamation's *Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species*, the *Integrated Pest Management Manual*, and *Facility Vulnerability Assessments*.

**Links:** <https://www.usbr.gov/mussels>



**Bureau of Safety and  
Environmental Enforcement  
(BSEE)**

**Mission:** To promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement.

**Responsibilities for Invasive Species:**

- Performs compliance and monitoring with environmental standards as assessed through environmental analysis.

**Links:** <https://www.bsee.gov>



**National Park Service (NPS)**

**Mission:** To preserve unimpaired the natural and cultural resources and values of the national park system for the enjoyment, education, and inspiration of this and future generations.

**Responsibilities for Invasive Species:**

- Conserves the scenery and the natural and historic objects and the wildlife therein and provides for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations, including the prevention and management of invasive species (NPS Organic Act of 1916, as amended, and Management Policies 2006).
- Cooperates with stakeholders and partners to control and manage invasive species in and around NPS units.

- Provides technical support and training in invasive species management methods to NPS staff, volunteers, and partners.
- Inventories and monitors the introduction, spread, management, and impact of invasive species in parks.
- Supports 17 Invasive Plant Management Teams that work to prevent, monitor, and control invasive plants and restore native plant communities in the National Park System.
- Provides relevant information to diverse public audiences about invasive species to enhance public knowledge, awareness, and stewardship.
- Serves on numerous invasive species task forces and working groups to increase coordination and information sharing.

**Links:** <https://www.nps.gov/subjects/invasive/index.htm>,  
<https://www.nps.gov/orgs/1103/epmt.htm>



## Office of Insular Affairs (OIA)

**Mission:** To carry out the administrative responsibilities of the Secretary of the Interior and the Assistant Secretary for Insular and International Affairs in coordinating Federal policy for the territories of American Samoa, Guam, the Commonwealth of the Northern Mariana Islands, and the U.S. Virgin Islands. The Office is also responsible for administering and overseeing U.S. Compact assistance to the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau. The office of the Assistant Secretary also manages Interior's Oceans, Great Lakes, and Coastal Program, which co-chairs the U.S. Coral Reef Task Force (USCRTF) with the National Oceanic and Atmospheric Administration. The USCRTF monitors and promotes eradication of invasive species that attack coral reefs.

### **Responsibilities for Invasive Species:**

- Provides financial assistance and award management for brown treesnake (BTS) research and eradication. The primary goals of OIA's BTS efforts are to: 1) prevent the establishment of BTS in other U.S.-affiliated insular areas and 2) support the development and implementation of techniques to control BTS populations on Guam. OIA also provides financial support to combat other invasive species, such as the coconut rhinoceros beetle, little fire ant, crown of thorns starfish, red tiled boa constrictors, and African tulip and rubber trees.

**Links:** <https://www.doi.gov/oia>



## Office of Surface Mining Reclamation and Enforcement (OSMRE)

**Mission:** To carry out the requirements of the Surface Mining Control and Reclamation Act (SMCRA) in cooperation with States and Tribes.

### **Responsibilities for Invasive Species:**

- Works in cooperation with partner States, industry, environmental groups, academia, and others to replant legacy or abandoned mine lands with native species and control or eradicate invasive plants as required by the site.
- Promotes and recommends the use of native hardwoods and succession species through the Appalachian Regional Reforestation Initiative Forestry Advisories.

**Links:** <https://www.osmre.gov>



## U.S. Fish and Wildlife Service (USFWS)

**Mission:** To work with others to conserve, protect and enhance fish, wildlife and plants and their habitats for the continuing benefit of the American people.

### Responsibilities for Invasive Species:

- Co-chairs and provides administrative support to the Aquatic Nuisance Species Task Force composed of 13 Federal and 13 non-Federal members, six regional panels, and issue specific committees.
- Oversees the national aquatic invasive species program.
- Enforces the Injurious provisions of 18 U.S.C. § 42 and the wildlife trafficking provision of 16 U.S.C. § 3372.
- Directs the inspection of wildlife shipments at staffed wildlife ports and enforces wildlife laws against trafficking in interstate and foreign commerce of injurious and invasive species.
- Addresses invasive species threats to the persistence of Trust resources.
- Incorporates invasive species management actions into section 7 Endangered Species Act consultations as well as conservation and species recovery plans.
- Supports Invasive Species Strike Teams that work across the National Wildlife Refuge System to carry out prevention and early detection and rapid response activities on and within the vicinity of refuge lands and waters; and individual refuges implement a variety of practices at the local level to manage invasive species.

- Implements an annual competitive \$1 million “Large Invasive Species Allocation” awarded to one refuge to eradicate one or more invasive species.
- Provides relevant information to diverse public audiences about invasive species to enhance public knowledge, awareness, and stewardship.
- Coordinates the Island Restoration and National Invasive Species Memorandum of Understanding Partner Groups.

**Links:** <https://www.fws.gov/invasives>,  
<https://www.fws.gov/injuriouswildlife/index.html>,  
<https://www.anstaskforce.gov/default.php>



**Mission:** To serve the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.

**Responsibilities for Invasive Species:**

- Conducts research and develops methods and technologies to prevent the introduction of invasive species.
- Identifies, reports, and develops new technologies to detect invasions and assess risk to natural areas and waters.
- Assesses change in populations and distribution of established invaders.
- Determines effects of invasive species and susceptibility of habitats to invasion.
- Provides approaches and control technologies to contain, reduce, and eliminate populations of invasive species and restore habitats and native species.
- Provides and coordinates collection, synthesis, and accessibility of invasive species information.

**Links:** <https://www.usgs.gov/ecosystems/invasive-species-program>

**Office of Policy Analysis**

- Provides crosscutting analysis and coordination to support decision-making and policies across Interior.
- Provides expertise and leadership to evaluate Interior programs, develop and coordinate new programs, conduct studies of policies and programs, and conduct relevant economic analyses.
- Coordinates and guides interagency and multi-Bureau program development and policy analysis tasks and undertakes issue analysis and decision documents on behalf of the Secretary, Deputy Secretary, and Assistant Secretary for Policy, Management and Budget.
- Serves as Interior’s point of contact on invasive species issues for Bureaus and other Federal and non-Federal entities.
- Coordinates Interior’s crosscutting plans and activities related to invasive species.

**Links:** <https://www.doi.gov/ppa/program-areas>

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## National Invasive Species Council

- Provides the vision and national leadership to coordinate, sustain, and expand efforts to safeguard the United States against invasive species through the prevention, eradication, and control of invasive species, and through the restoration of ecosystems and other assets impacted by invasive species.
- Established under Executive Orders 13112 and 13751.
- Composed of 12 Departments and four White House offices.
- Co-chaired by the Secretaries of the Interior, Agriculture, and Commerce.
- Implements priority activities in line with Annual Work Plans.
- Facilitates the institutional leadership and priority setting by Council members.
- Achieves effective interagency coordination and cost efficiency.
- Raises awareness and motivates action.
- Removes institutional and policy barriers.
- Assesses and strengthens capacities.
- Fosters scientific, technical, and programmatic innovation.

**Links:** <https://www.doi.gov/invasivespecies/guidance-documents>,  
<https://www.doi.gov/invasivespecies>

## Office of Wildland Fire

- Oversees Interior's Wildland Fire Management Program.
- Develops and executes budgets.
- Coordinates workloads across Interior.
- Establishes wildland fire management policy.
- Manages program oversight.
- Pursues technological innovation.
- Management of invasive species intersects with the wildland fire program through fuels management, wildlife response, and post-fire activities.

**Links:** <https://www.doi.gov/wildlandfire>



# Appendix B. Department of the Interior Regions

## 12 Interior Region Names Based on Watersheds



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## Appendix C. Examples of Invasive Species Plans, Agreements, and Federal Coordination

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Interior's Invasive Species Strategic Plan (Plan) aims to complement existing plans and promotes working through established networks, interagency bodies, and other coordinating mechanisms. The examples below are representative of the types of guiding documents (e.g., management plans), collaborative instruments (e.g., Memoranda of Understanding), and coordinating entities (e.g., interagency bodies) that are essential processes through which to identify mutual priorities, leverage capacity and resources, and optimize implementation of the Plan.

### Interior and Bureau Plans

This Plan complements other Interior and Bureau plans, which provide additional strategic or tactical direction on agency-specific activities related to invasive species, and which also help to achieve the goals of this Plan.

#### Department of the Interior

[Strategic Plan for Fiscal Years 2018-2022](#)

[Safeguarding the West from Invasive Species: Actions to Strengthen Federal, State, and Tribal Coordination to Address Invasive Mussels](#) (2017-2020)

#### National Park Service

[Invasive Plant Program Strategic Plan](#) (2016)

[Invasive Plant Management Planning: Technical Considerations](#) (2018)

[Quagga Zebra Mussel Strategic Plan for Western Parks](#) (2020)

#### U.S. Fish and Wildlife Service

[National Wildlife Refuge System National Strategy for the Management of Invasive Species](#) (2002)

[Strategic Plan for the U.S. Fish and Wildlife Service Fish and Aquatic Conservation Program: FY2016-2020](#)

[Office of Law Enforcement Strategic Plan 2016–2020](#)

An Ecological Biosecurity Plan to Prevent Spread of Non-Native Species on Alaska Maritime National Wildlife Refuge (2020)

[Rapid Response Plan for Invasive Rodents in Alaska](#) (2020)

### Interagency Plans

This Plan recognizes that Interior Bureaus have been involved in the development or implementation of other interagency and species-specific plans or other documents that provide additional strategic or tactical direction on invasive species management activities. Actions conducted under the auspices of these other plans help to achieve the goals of this Plan and provide opportunity for collaboration with Federal agencies outside Interior as well as with partners focused on particular taxa or pathways.

[National Invasive Species Council Guidance Documents](#)

[Aquatic Nuisance Species Task Force Strategic Plan \(2020-2025\)](#)

**Aquatic Nuisance Species Task Force Approved Plans**  
[Quagga-Zebra Mussel Action Plan for Western U.S. Waters](#)

[Management and Control Plan for Bighead, Black, Grass, and Silver Carps](#)

[Brown Treesnake Control Plan](#)

[National Management Plan for the Genus \*Calerpa\*](#)  
[Management Plan for the European Green Crab](#)

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[National Management Plan for the Genus \*Eriocheir\* \(Mitten Crabs\)](#)

[Ruffe Control Program](#)

[Snakehead Control and Management Plan](#)

[State and Interstate Aquatic Nuisance Species Management Plans](#)

[National Invasive Lionfish Prevention and Management Plan](#)

#### **Additional Interagency Plans**

[Pulling Together: National Strategy for Invasive Plant Management \(1998\)](#)

[A National Early Detection and Rapid Response System for Invasive Plants in the United States \(2003\)](#)

[Asian Carp Control Strategy Framework and Annual Action Plan \(2013, 2020\)](#)

[Regional Biosecurity Plan for Micronesia and Hawaii \(2015\)](#)

[National Seed Strategy \(2015\)](#)

[Safeguarding America's Lands and Waters from Invasive Species: A National Framework for Early Detection and Rapid Response \(2016\)](#)

[National Wildlife Coordinating Group Publication Management System 444, Guide to Preventing Aquatic Invasive Species Transport by Wildland Fire Operations \(2017\)](#)

[National Wildlife Coordinating Group Publication Management System 317, Resource Advisor Guide, Appendix K: Invasive Species Management \(2017\)](#)

[Arctic Invasive Alien Species Strategy and Action Plan \(2017\)](#)

[Western Weed Action Plan \(2019\)](#)

[Animal and Plant Health Inspection Service National Feral Swine Damage Management Program](#)

#### **Memoranda of Understanding**

This Plan promotes the use of Memoranda of Understanding (such as those below), cooperative agreements, and other instruments to strengthen collaboration to advance efficient management activities, and to help achieve the goals of this Plan.

[Memorandum of Understanding to Support Rapid Response Actions for Invasive Zebra and Quagga Mussels in Western Waters of the United States \(2020\)](#)

[The Island Restoration MOU with Island Conservation; American Bird Conservancy; U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services; The Nature Conservancy; National Park Service; and the U.S. Fish and Wildlife Service \(2015 as amended in 2020\)](#)

[The Nationally Coordinated Invasive Species Prevention MOU with North American Invasive Species Management Association, Inc., Wildlife Forever, National Park Service, and U.S. Fish and Wildlife Service \(2019\)](#)

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## National Federal Interagency Coordination

To optimize implementation of this Plan, Interior will work through established mechanisms and leverage existing interagency bodies, partnerships, and networks to promote coordination on issues of mutual interest. For more information on how the Federal government coordinates on invasive species issues at a national level, please see the list of Federal interagency bodies below and their associated websites.

[Aquatic Nuisance Species Task Force](#)

[Federal Integrated Pest Management Coordinating Committee](#)

[Federal Interagency Committee for the Management of Noxious and Exotic Weeds](#)

[Federal Interagency Committee on Invasive Terrestrial Animals and Pathogens](#)

[National Invasive Species Council](#)

[Technical Advisory Group for Biological Control Agents of Weeds](#)

The National Invasive Species Council (NISC) is responsible for coordinating a Federal government approach to invasive species and can direct interested persons to appropriate contacts within the NISC-member agencies for agency-specific program information.

In addition, the [National Invasive Species Information Center](#) managed by the U.S. Department of Agriculture provides informational resources covering Federal, State, local, and international sources.

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## Appendix D. Invasive Species Strategic Plan Metrics

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Interior's Invasive Species Strategic Plan (Plan) establishes performance goals, and progress in achieving those goals will be monitored and assessed. The Plan includes a manageable set of proposed metrics for each goal. Metrics are an important tool by which to monitor progress, assess if strategies are being implemented correctly, make adjustments as necessary, and help determine if approaches were successful. Metrics should be SMART (specific, measurable, achievable, results-oriented, and time-fixed).

Most of the performance metrics in this Plan are new. In some instances, Interior must implement them in stages, including establishing baselines against which progress can later be measured on an annual (or other regular) basis. Managers will use these performance indicators to fine tune programs or help identify when different tactics and strategies are needed. Program administrators will also periodically assess the rigor with which pilot studies and new approaches are implemented. These practices will help ensure that management strategies can be properly evaluated and that successful strategies can be applied in other areas.

As part of Interior's broader strategic planning effort associated with the Government Performance and Results Modernization Act, some of these metrics may be incorporated or modified as part of that planning process, while others may be selectively added during the Plan's implementation. For example, the Plan emphasizes the importance of prioritizing invasive species (e.g., high-impact invasive species), geographical areas (e.g., islands), and actions (e.g., prevention interventions,

surveillance, control, or eradication). As these priorities are identified at multiple scales, metrics could be added that enable an assessment of how well Interior is doing compared to a baseline, benchmark, or goal (e.g., number of invasion "hot spots" identified, percentage of hot spots where early detection surveillance is conducted in collaboration with partners, number of new invasive species in those hot spots, and the associated number of successful eradications).

It is important to note that the Plan serves as an overarching strategic framework for action. Interior has many management processes that advance the work included in this Plan (e.g., through Bureau work plans and through their involvement in interagency bodies, such as the Aquatic Nuisance Species Task Force, which also develops annual work plans). Other operational plans, with associated deliverables, will be developed as needed to advance the implementation of this Plan.

Interior recognizes the value of metrics and will continue to work with other Federal agencies, States, Tribes, and other partners to determine other useful measures to evaluate performance.

### **Goal 1: Collaborate across Interior and with others to optimize operations through leveraging partnerships, joint educational efforts, and shared funding.**

- Percentage of partners that are satisfied with the outcomes being leveraged through partnerships with Interior (Reporting Bureaus: BLM, NPS, Reclamation, USFWS, USGS)
- Percent of invasive species projects that involve cost-sharing from at least one other organization (Reporting Bureaus: BLM, NPS, Reclamation, USFWS, USGS)

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**Goal 2: Cost-effectively prevent the introduction and spread of invasive species into and within the United States.**

- Percent of species listed as injurious under the Injurious provisions of 18 U.S.C. § 42 not established in the United States at time of listing that remain not established (Reporting Bureau: USFWS)
- Number of injurious animals under 18 U.S.C. § 42 (Wildlife Ports of Entry) or injurious animals and invasive wildlife and plants under 16 U.S.C. § 3371-3378 (interstate and Wildlife Ports of Entry) interdicted by the USFWS (Reporting Bureau: USFWS)

**Goal 3: Implement early detection and rapid response efforts in coordination with other Federal agencies, States, Tribes, Territories, and other partners to reduce potential damage and costs from new infestations becoming established.**

- Number of new invasive plant species on Interior-managed lands and waters (Reporting Bureaus: BLM, NPS, USFWS)
- Number of new invasive animal species on Interior-managed lands and waters (Reporting Bureaus: NPS, USFWS)
- Number of Early Detection and Rapid Response preparedness exercises in which Interior engaged with partners (Reporting Bureaus: BLM, NPS, Reclamation, USFWS, USGS)

**Goal 4: Cost-effectively control or eradicate established invasive species populations to reduce impacts and help restore ecosystems.**

- Percent of baseline acres infested with target invasive plant species that are under control on Interior-managed lands and waters (current Governmental Performance and Results Act strategic plan measure) (Reporting Bureaus: BLM, NPS, Reclamation, USFWS)
- Percent of invasive animal species populations that are under control on Interior-managed lands and waters (current Governmental Performance and Results Act strategic plan measure) (Reporting Bureaus: NPS, USFWS)

**Goal 5: Improve invasive species data management for decision-making at all levels of government.**

- Percent of land management units or offices contributing data to Biodiversity Information Serving Our Nation (BISON), Nonindigenous Aquatic Species (NAS), EDDMaps, or iMapinvasives and using the North American Invasive Species Management Association standards (Reporting Bureaus: NPS, FWS, Reclamation, BLM)
- Number of unique users of the NAS and BISON websites and online tools (Reporting Bureau: USGS)

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## Appendix E. Laws and Policies Guiding Invasive Species Management at the Department of the Interior

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### Federal Laws

#### **Alien Species Prevention Enforcement Act of**

**1992** (Pub. L. No. 102-393) requires the Secretary of Agriculture to work with the Department of the Interior, the Postal Service, and the State of Hawaii to operate a program to protect the State of Hawaii from the introduction of prohibited plants, plant pests, and injurious animals that may be contained in the mail.

#### **Brown Tree Snake Control and Eradication Act**

**2004** (Pub. L. No. 108-384) provides for the control and eradication of the invasive brown treesnake on the Island of Guam and the prevention of the introduction of the brown treesnake to other areas of the United States.

#### **Carlson-Foley Act of 1968**

(Pub. L. No. 90-583) directs agency heads to enter upon lands under their jurisdiction with noxious plants and destroy noxious plants growing on such land.

#### **Clean Vessel Act of 1992**

(Pub. L. No. 102-587) allows the Secretary of the Interior to issue grants to coastal and inland States for pump out stations and waste reception facilities to dispose of recreational boater sewage.

#### **Consolidated Natural Resources Act of 2008**

(Pub. L. 110-229) provides the National Park Service with authority to use its resources and funds collaboratively on land outside park boundaries for activities benefiting park natural resources including control of invasive species.

#### **Endangered Species Act**

(Pub. L. No. 93-205) protects and recovers imperiled species and the ecosystems upon which they depend. Many listed species are listed in part due to the impact of invasive species on them.

#### **Federal Insecticide, Fungicide, and Rodenticide**

**Act** (Pub. L. No. 95-396) establishes procedures for the registration, classification, and regulation of all pesticides, some of which are used to control invasive species.

#### **Federal Land Policy Management Act**

(Pub. L. No. 94-579) directs the Bureau of Land Management to “take any action necessary to prevent unnecessary and or undue degradation of the public lands.”

#### **Federal Noxious Weed Act**

(Pub. L. No. 93-629) section 15 of the Federal Noxious Weed Act of 1974 (7 U.S.C. 2801 et seq.), the first section and section 15 of that Act (7 U.S.C. 2801 note and 7 U.S.C. 2814). Federal Noxious Weed Act of 1974, as amended by sec. 15 – Management of Undesirable Plants on Federal Lands, 1990, authorizes the Secretary “to cooperate with other Federal and State agencies, and others in carrying out operations or measures to eradicate, suppress, control, prevent, or retard the spread of any noxious weed.” Many noxious weeds are also considered invasive species.

#### **Fish and Wildlife Coordination Act**

(16 U.S.C. § 661 et seq., as amended by the **John D. Dingell, Jr. Conservation, Management, and Recreation Act**, sec. 7001(b)(2), Pub. L. No. 116-9, 133 Stat. 580, 779-784 (2019), as amended by the America’s Conservation Enhancement Act, Pub. L. No. 116-188 (2020)) makes recommendations to agencies to conserve trust resources including recommendations regarding invasive species.

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### **Hawaii Tropical Forest Recovery Act of 1992**

(Pub. L. No. 102-574) establishes the Hawaii Tropical Forest Recovery Task Force to draft a plan for rejuvenating Hawaii's tropical forests, which are threatened by invasive species.

### **Injurious provisions of the Lacey Act**

(18 U.S.C. § 42) prohibit importation of wild vertebrates and other animals listed in the Act or declared by the Secretary of the Interior to be injurious to humans or agriculture, horticulture, forestry, wildlife, and wildlife resources except under certain circumstances and pursuant to regulations.

### **Wildlife trafficking provision of the Lacey Act**

(16 U.S.C. § 3372) prohibits the import, export, transport, sale, receipt, acquisition, or purchase of any fish or wildlife or plant that was taken, possessed, transported, or sold in violation of any law or regulation of any State, Tribal, or foreign law; this includes invasive species laws.

### **National Invasive Species Act of 1996**

(Pub. L. No. 104-332) amends the Nonindigenous Aquatic Nuisance Prevention and Control Act to mandate regulations to prevent introduction and spread of aquatic nuisance species into the Great Lakes through ballast water; authorizes funding for research on aquatic nuisance species prevention and control (Chesapeake Bay, Gulf of Mexico, Pacific Coast, Atlantic Coast, and San Francisco Bay-Delta Estuary); requires ballast water management program to demonstrate technologies and practices to prevent nonindigenous species from being introduced; modifies composition of the Aquatic Nuisance Species Task Force; and requires the Task Force to develop and implement a comprehensive program to control the brown treesnake in Guam.

### **National Park Service Organic Act (16 U.S.C. 1 et seq [1988], August 25, 1916, sc. 408, 39 Stat.**

**535)** (Pub. L. 64-235) mandates parks to “conserve the scenery and the natural and historic objects and the wild life therein... [to] leave them unimpaired for the enjoyment of future generations.”

### **National Wildlife Refuge System Administration Act of 1966**

(Pub. L. No. 97-95) regulates through 50 C.F.R. and establishes the National Wildlife Refuge System. This act requires the agency to administer lands to provide for the conservation of fish, wildlife, plants, and their habitats and to ensure that biological integrity and diversity is maintained (16 U.S.C. 668dd).

### **National Wildlife Refuge System Improvement Act of 1997**

(Pub. L. 105-57) amends the National Wildlife Refuge System Administration Act of 1966 in a manner that provides an “Organic Act” for the Refuge System. Requires that the Secretary of the Interior maintain the biological integrity, diversity, and environmental health of the Refuge System.

### **Nonindigenous Aquatic Nuisance Prevention and Control Act**

(Pub. L. No. 101-646) assigns responsibilities to the U.S. Fish and Wildlife Service, the U.S. Coast Guard, the Environmental Protection Agency, the Army Corps of Engineers, and the National Oceanic and Atmospheric Administration to develop a program of prevention, monitoring, control, and study to prevent introduction of and to control the spread of introduced aquatic nuisance species and the brown treesnake, including membership on an Aquatic Nuisance Species Task Force.

### **Noxious Weed Control and Eradication Act of 2004**

(Pub. L. No. 108-412) establishes a program to provide assistance through States to eligible weed management entities to control or eradicate harmful, non-native weeds on public and private lands.



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### **Nutria Eradication and Control Act of 2003**

(Pub. L. No. 108-16, as amended by Pub. L. No. 116-186 (2020)) authorizes the Secretary of the Interior to provide financial assistance to a State that has demonstrated sufficient need for a program to implement measures to eradicate or control invasive nutria and restore marshland, public and private wetlands, and agricultural lands damaged by nutria.

**Plant Protection Act of 2000** (Pub. L. No. 106-224) includes management of undesirable plants on Federal lands and authorizes the Bureau of Land Management to manage noxious weeds and to coordinate with other Federal and State agencies in activities to eradicate, suppress, control, prevent, or retard the spread of any noxious weeds on Federal lands

**Public Rangelands Improvement Act** (Pub. L. No. 95-514) improves the range conditions of the public rangelands.

### **Surface Mining Reclamation and Control Act**

(Pub. L. No. 95-87) establishes minimum Federal environmental performance standards for the regulation of coal mining activities and reclamation. Requires the Secretary of the Interior to approve any State program that meets or exceeds the Federal standard, which grants those States primacy. Environmental protection performance standards require native species (except where introduced species are used to achieve an approved post-mining land use plan) be used to re-vegetate and reclaim areas affected by mining.

### **Title 25 U.S.C. 3701, et. seq. American Indian Agricultural Resource Management Act**

(Pub. L. No. 103-177) directs the Secretary of the Interior to provide for the management of Indian agricultural lands to achieve certain objectives.

### **Title 25 U.S.C. 466 Indian Forestry Units; rules**

**and regulations** directs the Secretary of the Interior to make rules and regulations for the operation and management of Indian forestry units on the principle of sustained-yield management, to restrict the number of livestock grazed on Indian range units to the estimated carrying capacity of such ranges, and to promulgate such other rules and regulations as may be necessary to protect the range from deterioration, to prevent soil erosion, to assure full utilization of the range, and like purposes.

**Wild Bird Conservation Act of 1992** (Pub. L. No. 102-440) regulates importation of foreign wild birds, some of which may become invasive species.

## **Administrative Policies**

### **Executive Order 13112, as amended by Executive**

**Order 13751** directs Federal agencies to prevent the introduction of invasive species and provide for their control, and to minimize the economic, plant, animal, ecological, and human health impacts that invasive species cause.

## **Department of the Interior Manual**

### **Chapter 524: Invasive Species Management** –

Provides policy to cost-effectively help prevent the introduction, establishment, and spread of invasive species; detect and rapidly respond to invasive species; eradicate or control populations of invasive species that are established; and implement these actions in collaboration with States, Tribes, Territories, and others as appropriate.

### **Chapter 517: Integrated Pest Management**

**Program** – Provides policy for the use of pesticides on the lands and waters under its jurisdiction, and for compliance with the Federal Insecticide, Fungicide, and Rodenticide Act, as amended.

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## **Bureau of Indian Affairs**

- Executive Order 13175 of November 6, 2000. Consultation and Coordination with Indian Tribal Governments. 65 Fed. Reg. 67249
- Secretary's Order 3175, Departmental Responsibilities for Indian Trust Resources
- Department of the Interior Policy on Consultation with Indian Tribes
- Department of the Interior Policy on Consultation with Alaska Native Claims Settlement Act Corporations
- Grazing Permit Regulations 25 C.F.R. § 166
- BIA Manual 54 Agricultural Resources: Chapter 5
- 30 BIA Manual, supplement 10 - Integrated Resources Management Plan

## **Bureau of Land Management**

**[BLM Manual 9011 and Handbook H-9011-1](#)** – Provides policy for conducting chemical pest control program under an integrated pest management approach.

**BLM Manual 9014** – Provides guidance and procedures for planning and implementing biological control in integrated pest management programs.

**[BLM Manual 9015](#)** – Provides policy relating to the management and coordination of noxious weeds activities among BLM, organizations, and individuals.

**[BLM Manual 1626](#)** – Travel and Transportation Manual. Provides policy, direction, and guidance to establish a comprehensive program for travel and transportation planning within the BLM process citing the Executive Order 13112 (Invasive Species)

not to authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species on transportation corridors.

**[BLM Manual 1601](#)** – Land Use Planning. Provides policy to the BLM to not authorize, fund, or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species based under Executive Order 13112 (Invasive Species) unless, pursuant to guidelines that the BLM has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk or harm will be taken in conjunction with the actions.

**[BLM Manual 1740](#)** – Renewable Resource Improvements and Treatments. Provides policy to identify objectives, policies, and standards that are common and apply to planning, analyzing, constructing, maintaining, replacing, and/or modifying renewable resource improvements and treatments for BLM's renewable resource programs including invasive species.

**[Manual Section 1745](#)** – Introduction, Transplant, Augmentation and Reestablishment of Fish, Wildlife, and Plants. Provides policy for invasive species management when introducing, transplanting, augmenting fish, wildlife, and plants, and provides policy for the use of native plant materials.

**[BLM Manual 6100](#)** – National Landscape Conservation System Management Manual. Provides policy to the extent consistent with the designating legislation or proclamation, the BLM will manage weeds and other invasive species through an integrated pest and vegetation management approach using methods that minimize disturbance to National Landscape Conservation System units.

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**BLM Manual 6340** – Management of Designated Wilderness Areas (Public). Provides policy to control non-native species, and for restoration actions where natural processes alone cannot recover the area from past human intervention.

**BLM Manual 6400** – Wild and Scenic Rivers. Provides policy for invasive species management. Terrestrial and aquatic invasive species should be prevented and controlled, consistent with direction in the local land use plans, and other authorities.

**BLM Manual 9211** – Fire Planning Manual. Provides policy for implementing a set of actions that promotes plant community diversity and structure that allows plant communities to be more resilient to disturbance and invasive species over the long term (Great Basin Restoration Initiative).

### **Bureau of Reclamation**

**Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species**

(short title: Reclamation Equipment Inspection and Cleaning Manual) Technical Memorandum No. 86-68220-07-05, June, 2012. DiVittorio, J., M. Grodowitz, and J. Snow.

**Bureau of Reclamation’s Acquisition Contract Guide Specifications** adopts the *Reclamation Equipment Inspection and Cleaning Manual* as the Reference Standard to prevent the spread of invasive species and pests onto worksites.

**Integrated Pest Management Manual** (short title: Reclamation’s IPM Manual) introduces the IPM subject matter and serves as a reference tool for Reclamation IPM practitioners.

**Facility Vulnerability Assessments** provide planning documents for facility operators should an invasive mussel infestation occur.

**Reclamation Manual ENV P02 (Policy) Integrated Pest Management and Invasive Species**, December 23, 1996 (Revised 05/12/2020), establishes policy for the integrated management of pests and invasive species at the Bureau of Reclamation for the benefit of the American public.

**Reclamation Manual ENV 01-01 (Directives and Standards) Integrated Pest Management and Invasive Species**, May 11, 2020, establishes directives and standards for the Bureau of Reclamation’s Integrated Pest Management and Invasive Species Program. It provides the framework for Reclamation-wide coordination and identifies responsibilities to ensure that regions and area offices have tools and resources (i.e., personnel, budget, and equipment) to manage pests and invasive species and work collaboratively across Reclamation and with partners as appropriate.

**Reclamation Manual PEC 10-29 (Directives and Standards)**

– Reclamation Standard Water-Related Contract Articles, Article 29: Pest Management, PEC 10-29, December 21, 2006, (Revised 08/04/2019), requires contractors to effectively control undesirable plants and animals on Federal project lands, project waters, and project works for which they have operation and maintenance responsibilities.

### **National Park Service**

**National Park Service Management Policies (2006)**

- **4.4.4.1** – Directs the National Park Service not to introduce exotic species in parks except in rare situations where it is non-invasive and needed to preserve a cultural or historic resource. Invasive species are managed so they will not spread or become a pest on park or adjacent lands.
- **4.4.4.2** – Allows and identifies the responsibility of parks to manage nonindigenous, alien plant

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and animal species and to cooperate with other agencies with jurisdictions in their management.

- **4.4.5.3** – Directs the agency to minimize pesticide use and manage pests using an Integrated Pest Management Approach. Provides guidance on the use of pesticides in units of the National Park Service

### **U.S. Fish and Wildlife Service**

#### **National Wildlife Refuge System**

- **50 C.F.R. § 27.52** – Introduction of plants and animals. Plants and animals or their parts taken elsewhere shall not be introduced, liberated, or placed on any national wildlife refuge except as authorized.
- **50 C.F.R. § 27.21** – General provisions. No person shall take any animal or plant on any national wildlife refuge, except as authorized under 50 C.F.R. 27.51 and parts 31, 32, and 33 of this subchapter C. The Service regulates the removal of plants and animals.
- **50 C.F.R. § 30.11** – Control of feral animals. (a) Feral animals, including horses, burros, cattle, swine, sheep, goats, reindeer, dogs, and cats without ownership that have reverted to the wild from a domestic State may be taken by authorized Federal or State personnel or by private persons operating under permit in accordance with applicable provisions of Federal or State law or regulation.
- **50 C.F.R. § 30.12** – Disposition of feral animals. Feral animals taken on wildlife refuge areas may be disposed of by sale on the open market, gift, or loan to public or private institutions for specific purposes, and as otherwise provided in section 401 of the act of June 15, 1935 (49 Stat. 383, 16 U.S.C. 715s).
- **50 C.F.R. § 31.14** – Official animal control operations. (a) Animal species which are surplus or detrimental to the management program of a wildlife refuge area may be taken in accordance with Federal and State laws and regulations by Federal or State personnel or by permit issued to private individuals. (b) Animal species which are damaging or destroying Federal property within a wildlife refuge area may be taken or destroyed by Federal personnel.

# Contributors

The Office of Policy Analysis would like to acknowledge the following staff of the Department of the Interior who served on the steering committee and collaborated across Bureaus and offices to produce this Plan:

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