

Tackling the Challenge of Invasive Species

A Coordinated and Comprehensive National Response

National Environmental Coalition on Invasive Species

The National Environmental Coalition on Invasive Species (NECIS) is a national partnership of major environmental organizations and professional societies that is dedicated to strengthening the nation's response to invasive species, with special emphasis on preventing future introductions of harmful species.

Invasive species impose huge costs on our environment and economy, and the current federal response is hampered by inadequate authority, capacity, and coordination. The nation needs a comprehensive response that prevents new invasions as well as more effectively controls existing invaders. Federal leadership is essential to such a comprehensive program, as is increased capacity at federal, state, regional, and local levels.

NECIS believes that the nation's top priority for invasive species must be closing pathways by which additional harmful species enter the country and spread. Until these pathways are closed, managing established infestations will be a never-ending burden due to a constant stream of new introductions. Preventing harmful new invasions is the most effective—and cost-effective—method for protecting the nation from the growing threat posed by invasive species.

On-the-ground work to control and manage invaders already here is another important component of a comprehensive national response. Management of existing invaders has suffered from insufficient resources, coordination, and priority-setting in recent years. Increased funding to states or other regional entities would provide much-needed support to combat invasive species across entire landscapes. Broader and more aggressive efforts to control existing invaders, and thereby improve the health of our nation's habitats, is a solid investment, but should not be at the expense of other aspects of a comprehensive national response, including securing our borders from new invasions.

Recommendations for a Comprehensive National Response

- Risk assessments should be required before allowing the importation of new species into the country, which will significantly reduce the incidence of harmful new invasions and their associated economic and environmental costs.
- Improve the efficiency and effectiveness of federal invasive species programs by clarifying authorities and responsibilities, and ensuring that priorities and strategies are aligned. This could be accomplished in part through a strengthened National Invasive Species Council.
- Modernize the “Injurious Wildlife” sections of the Lacey Act to provide agencies with more agile processes for regulating the importation and transport of harmful invasive species; close legislative and administrative loopholes to ensure all potential invaders fall under the statutory authority of relevant agencies.
- Enhance funding for invasive species control and management projects, and strategically prioritize these investments to emphasize efforts capable of controlling and stopping the spread of invasives at landscape scales.
- Ensure that federal actions do not inadvertently promote the introduction or spread of harmful invasive species; use caution when promoting non-native species for biofuels, bioenergy, or other purposes.
- Provide sufficient resources to agencies to effectively carry out their responsibilities for invasive species prevention, early detection and eradication, and control and management.
- Adopt metrics to gauge the effectiveness of efforts to prevent the introduction and spread of new invasives and to achieve long-term control or removal of existing invaders.
- Support robust research and outreach programs, which are essential to improving the efficacy of federal, state, and local invasive species prevention and control efforts.

Gaps and Overlaps in Responsibilities

Responsibility for preventing unintended species introductions is spread among several federal agencies, based on legislative mandates:

- USDA Animal and Plant Health Inspection Service (APHIS) - invasive plants; plant pests; parasites & diseases of livestock and poultry
- US Fish and Wildlife Service (FWS) - invasive vertebrate animals and some invertebrates
- Coast Guard and Environmental Protection Agency - organisms transported in ballast water
- Centers for Disease Control – organisms posing threats to human health
- DHS Customs and Border Protection - general authority over all incoming people, goods, and vehicles.

Responsibility for on-the-ground control and management of invasive species is spread among numerous agencies at multiple levels, often limiting the effectiveness of these efforts. For example:

- Federal land-management agencies—USDA Forest Service, National Park Service, Bureau of Land Management, US Fish and Wildlife Service, and others—address invasive species on their own properties to varying degrees
- USDA and state agricultural agencies regulate noxious weeds, although noxious weed lists are often incomplete and inconsistent across states
- State agencies receive federal grant funding for invasive species management, but these efforts are often underfunded, cumbersome, and patchy. Some states have no organized invasive species programs.

No agency, however, has clear authority for regulating the introduction and spread of some types of potentially invasive organisms including:

- Diseases of wildlife that don't affect livestock or poultry (e.g., whitenose syndrome of bats; chytrid fungus of amphibians)
- Invertebrates that are not plant pests and are in taxonomic groups for which authority is not currently granted by the Lacey Act (e.g., horseshoe crabs)
- Pests that attack only dead plants (e.g., termites)
- Pests that are nuisances to humans but do not spread disease or attack agricultural plants.

A Focus on Pathways

An effective national invasive species response must include authorities, policies, and actions intended to prevent introductions of additional non-native species, to detect and quickly respond to new invaders, and to contain or manage already established invasive species. Our collective experience leads us to focus on *pathways or vectors of introduction and spread*, rather than trying to prevent introductions of *particular species*.

Most introductions of new species to the United States occur either in cities and suburbs, where imported goods arrive and are disseminated, or at ports, such as coastal estuaries and the Great Lakes. Once a species has entered the United States, however, eradication and control methods need to combine measures addressing both pathways of human-assisted movement (e.g., firewood, boat trailers) and the species' particular biological characteristics and life histories—which determine how managers can detect and eradicate the organism.

None of the existing “prevention” programs has achieved an adequate level of success. APHIS has considerable authority under the Plant Protection Act, and the bulk of federal prevention resources, yet the agency's staffing and funding are still inadequate to fully implement programs for which the agency is responsible. The FWS Lacey Act program is severely hampered by weak legislative authority and completely inadequate resources.

Role of Regulatory Agencies

Agencies responsible for preventing introductions or eradicating or containing early-stage invasions should have the following powers:

- Statutory authority to regulate both potentially invasive organisms and the pathways or vectors by which they are moved
- Statutory authority to regulate import and interstate movement of invasive organisms or their vectors
- Official reporting, communication, and outreach capacity
- Clear authority for responding to incursions and a suitable command structure to manage the response. Models for such response structures include the Interagency Fire Program, Centers for Disease Control, and oil spill emergency response
- Sufficient resources to enable timely completion of program components, including:
 - ✓ Evaluation and risk analysis of potentially invasive species and pathways
 - ✓ Promulgation of regulations for movement of invasive species and articles/conveyances that transport them
 - ✓ NEPA compliance
 - ✓ Inspection of shipments
 - ✓ Engagement with affected stakeholders
 - ✓ Enforcement and prosecution
 - ✓ Outreach and extension programs (e.g., to encourage compliance)
 - ✓ Research to improve risk analysis, prediction, detection, and control measures
 - ✓ Detection networks, deployment of appropriate tools targeting key pathways or vectors, and engaging stakeholders
 - ✓ Response to new outbreaks, including detection and eradication.

Role of Resource Management Agencies

Resource management agencies have a primary role for minimizing the impact of invasive species on lands and waters under their jurisdiction. To be effective, this important work should embrace landscape-level strategies carried out collaboratively across federal and state agencies and with other implementers, such as county weed districts, and private property owners. Effective invasive species control programs within resource management agencies should aim to:

- Reduce or eradicate invasive species populations, while encouraging recovery of native species and maintaining or restoring the utility of the lands or waters for intended purposes
- Prevent introduction of new invasive species to lands or waters under their jurisdiction
- Detect the presence of and respond rapidly to eradicate or control new potentially invasive species
- Limit the spread of invasive species on lands or waters under their jurisdiction, and to adjacent properties; and
- Educate users of their lands and waters to gain cooperation in limiting the spread of invasives.

To achieve this, effective invasive species containment programs operated by federal resource agencies should include the following components:

- Prevention (see relevant section above; statutory or regulatory authority is usually limited to the lands or waters under the agency's jurisdiction)
- Early detection programs and rapid response powers (see relevant section above; include appropriate staffing and funding)
- Strategic management guidelines for effective landscape-level control that limits the spread of invasive species;
- Coordination with other federal, state and local agencies;
- Funding to support coordinated landscape-level responses
- Staff and funding to conceive, plan, and either conduct or oversee management actions
- Research and development (in-house or external) focused on understanding the invasion process, developing detection and management tools, monitoring, etc.
- Education and outreach efforts to inform the public of the threat of and need to control invasive species; and
- Assistance to and support for prevention agency efforts (e.g., USDA Forest Service research assistance to APHIS on Asian longhorned beetles).

Performance Metrics

Invasive species programs should be held accountable for performance through the development and application of appropriate metrics. Developing appropriate performance metrics can be difficult, however, and should balance simple activity measures, such as “acres treated” with metrics linked

directly to outcomes and program effectiveness. A successful suite of metrics would:

- Assess efforts to prevent species introduction and spread
- Assess activities that target pathways or vectors
- Assess the effectiveness of treatments in eradicating or reducing the target invasives

Potential additional metrics include, but are not limited to:

- Rate of new invasions; possibly categorized by type of invader or geography
- Acres infested and changes in infestations over time
- Acres protected, based on projections of future spread avoided by eradication
- Economic impact of invasive species
- Number of species intercepted.

Need for Enhanced and Sustained Effort

NECIS welcomes increased attention to the immense challenge of invasive species and their costs to the nation's environment and economy. Mounting an adequate national response to the problem of invasive species is a long-term effort, and requires institutional and financial commitments commensurate with the scale of the threat. Invasive species do not confine themselves to short-term project funding horizons, and control of any particular invasive can require a concerted and long-term effort. Monitoring of invasion pathways or vectors and the interdiction of potential new invaders require on-going attention. Invasive species initiatives operate most efficiently when buttressed by stable long-term funding and guided by solid research and expert staff. Outreach to and engagement with stakeholders is also vitally important to mounting effective invasive species prevention and control programs.

As these recommendations emphasize, many levels of government and society have important roles to play in tackling the nation's invasive species problem, and there is insufficient investment at virtually all of these levels. Simply shifting resources from one sector to another, however well intentioned, could have the effect of seriously undermining essential work and inadvertently increasing the scope and scale of the nation's invasive species problems. Indeed, funding allocations should be driven by priorities and program effectiveness, based on clear performance metrics, rather than by pre-determined percentage allocation. Instead, what is needed is a new model for increasing overall investments in invasive species prevention and control at federal, state, and local levels.

Truly tackling the mounting threats from invasive species will require scaled-up investments in a well-coordinated and comprehensive national response that integrates prevention of new invasions with strategic efforts to control and manage existing invaders.