

**A Framework for the Development of the
National Invasive Species Management Strategy
for the
USDA Forest Service**



**Invasive Species Issue Team
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The Invasive Species Threat

An invasive species is defined as a species that is 1) non-native to the ecosystem under consideration and 2) whose introduction causes or is likely to cause economic or environmental harm or harm to human health (Executive Order 13112). Thousands of invasive exotic plants, insects, fish, mollusks, crustaceans, diseases, mammals, birds, reptiles, and amphibians have infested hundreds of millions of acres of lands and waters across the nation, causing massive disruption in ecosystem function, reducing biodiversity, and degrading ecosystem health. Our nation's forests, prairies, mountains, wetlands, rivers and oceans have each been infested by these aggressive exotic species. Invasive species know no boundaries and their impacts cost the American public an estimated \$138 billion each year, a significant drain on the national economy. America's Private landowners and small communities are some of the hardest hit by invasive species infestations. Nearly 42% (400 of 958) of the plants and animals federally listed as threatened or endangered species have been negatively impacted by invasive species. Invasive species populations have depleted water supplies, poisoned wildlife and livestock, and directly destroyed thousands of acres of native forests and rangelands. Public recreational opportunities and experiences have become severely degraded by rapid infestations of invasive species, in many cases hampering access, reducing recreational quality and enjoyment, and decreasing the aesthetic values of public use areas. Invasive exotic diseases are not only directly affecting the health of America's forests, but also the health of our fisheries, wildlife, livestock, and the health of humans.

Purpose of the Framework and the Call for a National Strategy

The invasive species problem poses a significant threat to the mission of the USDA Forest Service, the health of America's ecosystems and the security of the nation. The many facets of the invasive species problem demands a coordinated and strategic approach to alleviate the impacts and reduce the threat from these exotic invaders. Recognizing this need and the significant role it can play, the Chief of the Forest Service has called for the development of a strategy to guide invasive species management operations improve the agency's effectiveness against this threat.

This framework provides an outline for the development of a comprehensive "National Strategy" for invasive species management for the Forest Service. The National Strategy will be built within the context and provisions identified in Executive Order (EO) 13112 (signed in 1999) and the National Invasive Species Management Plan (2001) developed by the National Invasive Species Council (NISC). The NISC was established by the EO and is currently co-chaired by the Secretaries of Agriculture, Interior, and Commerce. The National Strategy will take full account of the diverse responsibilities of the Forest Service both internally (to the lands it manages), and externally (supporting stewardship work on State, Tribal, and private partner lands). Additionally, the National Strategy will incorporate provisions of applicable guidance, policy, initiatives and program plans

which have been developed prior to, and since, the signing of the EO. This framework identifies established plans and initiatives that can aid in the development of (or be integrated into) the National Strategy.

Guiding Principles for the USDA Forest Service Invasive Species Management Focus (Foundations for the National Strategy)

The National Strategy will include specific and general guidance on implementing an agency-wide invasive species management program that includes science-based **prioritization** of invasive species problems, better **collaboration** on the solutions to those problems, and an improved system of **accountability** that ensures the most efficient use of limited resources. These efforts will be addressed both internally and externally. Internally, the Forest Service will conduct activities to prevent and/or minimize the effects of invasive species on the National Forest System. Where authorized on State, Tribal and private lands and through programs with international partners, the Forest Service will provide technical and financial assistance to minimize the effects of invasive species. The overall desire is to **increase Forest Service effectiveness for “on-the-ground” invasive species management operations.**

Content of the National Strategy – Major Aspects to Include

- Define the threat from Invasive Species and clarify the relationship between exotic invasive and native pest species. The National Strategy will **focus on invasive (exotic/alien) species only.**
- Identify why the invasive species threat is increasing.
- Articulate the role of the Forest Service in the national response to this threat.
- Highlight **Forest Service Policy on invasive species management.**
- Describe the applicable **authorities and jurisdictional responsibilities** of the Forest Service.
- **Provide specific guidance** to improve awareness and understanding of the invasive species threat and highlight need for immediate action to mitigate the impacts.
- Identify the programmatic abilities and activities of the Forest Service to address the threat.
- **Develop specific achievable objectives** for the invasive species program goals. Focus on **management operations activities to improve effectiveness.**
- Outline the primary categories of invasive species management activities (**prevention, early detection and rapid response, control and management, research and technology development, etc.**)
- Identify limitations, inconsistencies, gaps, and other significant obstacles to achieving goals and objectives.
- **Address opportunities to alleviate process and administrative hurdles that reduce efficiency.** Provide specific guidance on pesticide use activities that have Categorical Exclusions in place.
- Articulate agency-wide **priority activities** needed to achieve goals and objectives.
- Examine budget and programmatic structures needed to more effectively address the invasive species threat across all Deputy Chief areas.

- Outline **planning guidance** and analysis requirements for effective invasive species management.
- Establish a systematic approach to **prioritizing invasive species control and management operations**.
- Outline opportunities and requirements for **improving accountability and performance** at all levels that incorporates an **adaptive management feedback** approach.
- Detail data management capabilities and provide guidance on **new technologies and research available to land managers**.

Major Goals to Address in the National Strategy

I. PREVENT

The Forest Service will actively seek to prevent the introduction and spread of new invasive species into US forest and rangeland ecosystems.

The most effective technique against invasive species is to prevent them from establishing or spreading. Resource managers who have increased their efforts in preventative measures have experienced greater success in controlling invasive species and are exercising the most cost-effective means to minimize ecological and economic impacts. Prevention relies on a diverse set of tools and methods. Some prevention activities include regularly sanitizing maintenance equipment, requiring weed free certified seed for restoration, requiring the use of certified weed-free hay, and training staff and volunteers to identify invasive species. Prevention includes education and outreach to raise the awareness of the invasive species problem and reduce the chance of unintentional introduction of invasive species. By enlisting the skills of our science and education programs, we can achieve a successful invasive species prevention awareness campaign on a national scale. Establishing effective domestic and international partnerships is also critical for effective prevention programs.

II. DETECT AND RESPOND:

The Forest Service will work with APHIS and other partners to detect the majority of new invasive species infestations and support the infrastructure necessary to rapidly contain or eradicate these infestations.

When new invasive species infestations are detected, a quick and coordinated containment and eradication response can reduce environmental impacts and prevent the long-term commitment of agency resources. Rapid response to new infestations results in lower cost and less resource damage than implementing a long-term control program after the species is established. In many cases small, seemingly innocuous, populations of invasive species left untreated have now become large components of forest operations, reducing the effectiveness of other forest management activities. Early

detection of new infestations requires vigilance and regular monitoring of the managed area and surrounding landscape.

The Forest Service is well suited to improve its early detection capabilities through the collaborative efforts of various agency programs, our field offices, and our partners. We will be proactive in developing networks to detect invasive species before they are established at ports of entry and other likely sites for establishment of new invasive species. We will use all available means, working with APHIS and other partners, to contain and eradicate invasive species when they are first detected in the United States, and when new populations of other established invasive pests are found.

III. CONTROL AND MANAGE

The Forest Service will prioritize which invasive pests need to be controlled and managed and will effectively implement management plans to do so.

A strategic approach to invasive species control depends on a scientific understanding of each species and the ecosystem it has infested. This understanding helps managers identify the most effective techniques to capitalize on weaknesses of the target species infesting an area. Timing, site conditions, species biology, and follow-up monitoring are some of the key components of a strategic approach to controlling invasive species. Integrated control techniques can include:

- Removal of plants, insects, and other invasive species through mechanical means,
- Management of the habitats,
- Introduction of approved biological control agents, and
- Safe application of chemical treatments.

IV. RESTORE

The Forest Service will restore or rehabilitate degraded areas to their proper ecological function following invasive species removal.

Restoration is a vital component of an integrated invasive species management program. Since many invasive species, especially invasive plants, flourish on disturbed sites, site restoration after control is critical to preventing re-establishment and reducing long-term control costs. Nationally, one of the greatest obstacles to restoration has been the availability of native plant materials at affordable prices. The need for seed and other native plant materials to restore degraded sites, particularly after fire, flood, or, infestation by invasive species has been well documented. The Forest Service can increase its ability to provide the needed materials by cooperating with other agencies and the private sector to develop new sources of low-cost, effective native plant materials for restoration.

V. RESEARCH

The Forest Service will conduct appropriate research and development activities to ensure management programs are effective and science based.

Sound scientific information is critical to guide management activities, determine the magnitude of invasive species problems, plan future programs, and improve intervention efforts. Reliable information about the distribution, dispersal rate, and reproductive status of an invasive species, both in the United States and its country of origin, is crucial in developing management strategies and in estimating likely impacts. Such information is also useful in preventing the establishment or spread of invasive species and in identifying research needs and priorities. Research and monitoring can bolster the likelihood of early detection, measure the spread of invasive species, determine their effect on native species and ecosystems, and provide justification for effective management activities.

The extensive and diverse research and technology of the Forest Service can serve a vital role in reaching overall invasive species management goals. Forest Service field staffs need new techniques and up-to-date information related to controlling or eradicating invasive species. Collaborative partnerships with universities, the States, other agencies, and the private sector can be the foundation of invasive species science and technology programs.

VI. INVENTORY and MONITORING

The Forest Service will effectively inventory and monitor for invasive species infestations.

Monitoring the conditions of forests and grasslands is critical to determining the health of our Nation's forests. Our current invasive species monitoring and inventory systems need to be expanded to provide an adequate baseline of forest and grassland acres infested. National Forest System inventory and monitoring activities for invasive species vary significantly across the nation and information gaps must be filled. Improved inventory and monitoring systems need to be able to detect infestation changes at least annually. Currently, we do this for many insects and diseases. The Forest Health Monitoring Program and the Forest Inventory and Analysis could be expanded to identify more invasive insects, pathogens and plants of concern to the United States. Accountability for effective monitoring is essential for an effective invasive species management program.

VII. EDUCATE

The Forest Service will promote public education and awareness on invasive species and actions to minimize their impacts.

Public concern ultimately drives actions that need to be taken to minimize the establishment and spread of invasive species. Yet many Americans are unaware of the growing ecological crisis presented by invasive species. Education, communication and interpretation programs constitute an important line of defense for prevention, identification, early detection, and control of invasive species. In the long run, informing people of the actions they can take to reduce the threats posed by invasive species may be more effective than laws, regulations, and enforcement. Increasing public awareness, understanding and participation in agency actions needed to minimize the impacts of invasive species is essential for successful management of invasive species, and is a cornerstone of public natural resource management. The Forest Service recognizes that many federal and non-federal stakeholders play important roles in the development and dissemination of information on invasive species and will work collaboratively with others in the design and implementation of its educational, interpretive and communication programs.

Plans, Policies, and Initiatives that may be used in the development of the National Strategy

Gypsy Moth Management in the United States: A Cooperative Approach, 1995
FSM 2080 – Noxious Weed Management Policy
Stemming the Invasive Tide: The Forest Service Noxious Weed Strategy, 1996
Pulling Together: National Strategy for Invasive Plant Management, 1997
The USDA Forest Service Strategic Plan (2003 Update)
The National Invasive Species Council Management Plan, 2001
Strategic Plan for Forest Health Protection, 2003 – 2007
FSM 2150 – Pesticide Use Management and Coordination
FSM 2109.14 – Pesticide Use Management and Coordination Handbook
Sudden Oak Death Management Plan
Hemlock Woolly Adelgid Management Plan
Port Orford Cedar root disease Management Plan
Emerald Ash Borer Management Plan
White Pine Blister Rust Management Plan
Strategic Plan for Research and Development
National Fire Plan
Healthy Forest Initiative
Native Plant Material Report to Congress, 2002
Partners in Resource Education. 2000. “Within Our Grasp: A Plan to Educate Americans About Invasive Plants”.

National Strategy Development Process

Using the elements outlined in this Framework and other considerations which may arise, a National Invasive Species Management Strategy for the USDA Forest Service will be developed. The goal of this project is to produce a high-quality, comprehensive document that provides all Forest Service employees with a clear understanding of their

roles in addressing the invasive species issue. The National Strategy will guide Forest Service operations toward a **propensity for immediate and effective action to mitigate the invasive species threat.**

The National Strategy will be developed by a cross-Deputy team chartered by the Chief to compile information, investigate current agency operations, and develop the document. The team composition will include, at minimum, members of the National Invasive Species Issues Team (Washington office program leads) and staff specialists from Regional, Forest, and other agency interests.

Time-frame for Development of the National Strategy

The development of the National Strategy can begin as soon as the team is established, and using information already compiled, an early draft could be ready for initial review by the Deputy Chiefs as early as January 1, 2004.

Appendix A

Priority Invasive Species Management Activities – Fiscal Year 2004

- Draft the National Strategy and Policy on Forest Service Invasive Species Management – with subset guidance/policy on noxious weeds (already completed), and other exotic pest species.
- Continue to give high priority to the goals in the President’s plan, “Healthy Forests Initiative.”
- Respond to nationwide threats to forest ecosystems from non-native invasive species, such as new gypsy moth outbreaks, sudden oak death, and emerald ash borer with emergency research, monitoring, and suppression /eradication.
- Protect critical ecosystems from established infestations of non-native insects and diseases, e.g. Port-Orford cedar root disease, white pine blister rust and hemlock woolly adelgid.
- Identify Priority Research needs to overcome management obstacles. Compile bibliography for all Forest Service research available on invasive species

management and distribute to Regions, Forests, and Districts. Expand coordination and dialog with invasive species researchers internally and externally.

- Complete invasive species inventories and mapping across the National Forest System. Identify priority infestations to target
- Conduct insect and disease suppression, prevention, and management on 417,000 acres of Federal lands and 1,044,000 acres of Cooperative lands. Conduct survey, detection, monitoring, and evaluation of forest insect, and disease outbreaks on 198,000,000 acres of Federal and Tribal forestlands and 417,000,000 acres of Cooperative lands. These figures include some native insects and pathogens.
- Continue the slow-the-spread strategy across the advancing front of the gypsy moth which extends from North Carolina to Wisconsin. Meet all anticipated gypsy moth eradication, priority prevention and suppression needs.
- Complete restructuring of Inventory and Monitoring Program Plan design to simplify invasive species data management protocols – Planning protocols for NFS invasive species management across all taxonomic categories (plants, animals, etc)

- Improve National Forest System data management capabilities (equipment, training, standardized protocols, etc) and improve invasive species database structures and accessibility (particularly INFRA, NRIS and FACTS).
- Improving and expanding capabilities for invasive species identification, integrated pest management (IPM), inventory and monitoring, and prevention.
- Update the insect and disease risk map and provide technical assistance to Federal and Tribal land managers on techniques to reduce risk.
- Increase Forest Service program activities to raise awareness of the invasive species threat, internally and externally.
- Maintain technology development, pilot tests, and demonstrations of new technologies, materials, methods, and strategies to improve the efficiency of the management of invasive species in forests and rangelands.
- Treat an estimated 75,000 acres of invasive plants/noxious weeds on National Forest System lands, plus an additional 10,000 acres treated using contributed funds. Additional acreage may be treated using Knutson-Vandenburg funding. Treat an estimated 94,000 acres of invasive plants on private forestlands.
- Continue Early Detection and Rapid Response (EDRR) program for invasive plants for private and cooperative lands and increase National Forest System EDRR capabilities for invasive plants.
- Design and issue a standard BFES “Scope of Work Definition” (BLI Activity) for invasive species management for the National Forest System budget structure.
- Develop video series on best management practices (BMP’s) and supplemental information for Forest Service employees engaged in a variety of management activities “on-the-ground”. First in series will focus on equipment operators (maintenance /technicians/ etc). Other target groups will include biologists, foresters, recreation specialists, firefighters, law enforcement, etc.)
- Issue guidance on use of Native Plant Materials for restoration and rehabilitation. Expand coordination with researchers to develop innovative technologies for restoration using native plant materials, particularly forb use.
- Coordinate with Process Predicament staff to identify opportunities to streamline planning requirements for chemical and biological invasive plant management. NFS will coordinate with pesticide use coordinators in S&PF.

Appendix B

Summary Talking Points for Invasive Species Framework

Overarching key points

- 1) The invasive problem is very severe and is growing more severe each year. FS needs a better inventory to more accurately estimate the magnitude of the problem before we can estimate how much resources will be needed to effectively address the problem.
- 2) A substantial increase in resources, control techniques, awareness and partnership activities are needed to stem the tide of invasives.
- 3) Process predicament issues affect our ability to conduct rapid, effective, on-the-ground activities.
- 4) A National Team needs to be established to develop a comprehensive strategy.

Highlights of the Goals of the Framework

Prevention of invasives species from being introduced

- We work closely with APHIS and Homeland Security to develop commodity risk analysis.
- We cooperate with APHIS and the States on developing quarantine regulations affecting forest and forest products.

Early Detection/Rapid Response for invasive species

- The FS/APHIS Rapid Detection Monitoring Program traps for exotic bark beetles known to be dangerous in forests around 9-12 ports each year.
 - Last years trapping turned up a new exotic bark beetle in Savannah, Georgia and one in Houston, Texas.
 - This year trapping around inland ports in Denver and Ogden has detected a dangerous Mongolian bark beetle.

Inventory/Monitoring of invasives

- Aerial pest surveys (FHP) detects major infestation of insects and diseases on all forested lands each year.
- National inventory (FIA) is being used to systematically collect information on the health of forest nation wide in cooperation with the States.
- Project level monitoring is being done by the National Forest System. NFS is developing a standardized system of doing these measures that will also allow this data to be rolled up into a system for National level uses.

Control/Management of established invasive insects, diseases, and weeds

- Development and release of biological controls ongoing.
- Programs to prevent the spread of aquatic weeds will start in FY05.
- Key invasive plant species of concern will be leafy spurge, yellow starthistle, saltcedar, autumn and Russian olive, garlic mustard, cogon grass, kudzu, knapweeds, japanese knotweed, Chinese tallow tree, tree-of-heaven and Japanese stiltgrass.
- Key invasive insects of concern are the Emerald Ash Borer, Asian Longhorned Beetle, and the Hemlock Woolly Adelgid.
- Key invasive disease of concern are the Sudden Oak Death disease in forest of the West Coast and the White Pine Blister Rust which continues its range expansion with major ecological damage as in Idaho.
- Research and development being conducted to better understand control options for various pests.

Restoration of sites that have been disturbed by invasive species or wildfire

- Planting disease or insect resistant seedlings to restore the site to proper ecological functions. Blister Rust resistant White Pine seedlings available.
- Planting native species to reoccupy a site and prevent reinvasion by exotic weeds. Sources for native seeds and other plant materials are poor and prices are high for natives.

Invasive Species Funding

	2002	2003	2004	2004	2004	Fully
Forest Service	Actual	Actual	PB	House	Senate	Funded
	(\$ thousands)					
Forest and Rangeland Research	10,465	7,940	14,540	12,623	9,956	59,956
International Programs	575	575	575			1,575
National Forest System	10,400	16,200	16,800			316,800
State & Private Forestry (S&PF)	40,000	40,000	45,000	45,000	45,000	95,000

