

USDA Forest Service Prioritization of Early Detection and Rapid Response for Invasive Species

Request: Within 180 days of the date of enactment of this Act, the agencies shall provide the Committees with a report on their efforts to prioritize Early Detection and Rapid Response as part of their expected program of work for fiscal year 2021, including detail on how the agencies plan to protect specific native species and natural resource values on public lands across the Nation.

Introduction

Invasive species pose one of the greatest threats to the functionality, biodiversity, and productivity of aquatic and terrestrial ecosystems across the landscape. Protecting native species and other natural resource values are at the heart of the USDA Forest Service's invasive species Early Detection and Rapid Response (EDRR) activities. EDRR efforts help protect native plant and animal biodiversity, improve water quality, reduce wildfire risk, maintain forest and rangeland health and productivity, protect critical infrastructure for transportation, communications, and energy, and accomplish other important functions within the Agency's multiple-use mission.

USDA Forest Service EDRR Policy and Direction

The Forest Service's national policy on invasive species management – codified under the Forest Service directives system as *Forest Service Manual 2900* – prioritizes prevention and EDRR as standard approaches against all taxa of aquatic and terrestrial invasive species, including plants, microbes, vertebrates, invertebrates, algae, and fungi. The Forest Service's *National Strategic Framework for Invasive Species Management*¹ – published in 2013 – further emphasizes our agency-wide approach for collaboratively addressing invasive species across the landscape and recognizes EDRR as the greatest opportunity for eradication and cost-effective management of newly established invasive species. In addition, the Forest Service was instrumental in the development of *Safeguarding America's Lands and Waters from Invasive Species - A National Framework for Early Detection and Rapid Response*² – published in 2016) – which was developed to promote government-wide EDRR. All Forest Service EDRR activities are aligned with national policy, our strategic framework, and the interagency EDRR framework. Forest Service invasive species EDRR work spans all landownerships and occurs in both terrestrial and aquatic ecosystems. These EDRR activities are conducted against both regulated and non-regulated invasive species at various scales across the landscape, in partnership with local, state, tribal, and federal partners as well as with non-government organizations and others in the private sector, when applicable.

Examples of USDA Forest Service Priority EDRR Activities in FY 2021

The Forest Service collaborates on each of the key federal interagency subcommittees, working groups, and task teams addressing invasive species EDRR across a variety of invasive taxa. In fiscal year (FY) 2021, the Forest Service continued priority EDRR activities for emerging invasive forest insects and pathogens as well as other high-risk species of invasive vertebrates, invertebrates, and plants. In particular, the Agency is funding projects for the detection and management of sudden oak death, gypsy moth, invasive bark beetles, beech leaf disease, hemlock woolly adelgid, rapid O'hia' death, and thousand cankers disease.

Additionally, the Forest Service plays an important EDRR role in addressing major invasive threats from invasive (feral) swine, white-nose syndrome pathogen (impacting native bats), and implementing

¹ https://www.fs.fed.us/foresthealth/publications/Framework_for_Invasive_Species_FS-1017.pdf

² <https://www.doi.gov/sites/doi.gov/files/National%20EDRR%20Framework.pdf>

prevention and emergency EDRR against high-risk aquatic invasive species, such as zebra and quagga mussels, which threaten major watersheds across the western United States, including waters within the Columbia River Basin. Recently, the Forest Service collaborated with agencies within the Department of Defense and the Department of the Interior to develop and sign an interagency Memorandum of Understanding on invasive mussel incident command support to detect and respond rapidly to new infestations in waters across the western United States. Forest Service personnel also assist with surveying and monitoring for new infestations of aquatic invasive species (AIS), including eDNA sampling and underwater SCUBA surveys and sampling to protect high-value resources and habitats for species of conservation concern. The Forest Service provides a substantial amount of financial support to state and local partners for the establishment and operation of AIS inspection and decontamination stations across the Nation, as well as funds for operating invasive species decontamination during all wildland fire suppression operations. Forest Service programs are also exploring new technologies and techniques for detecting invasive species, including the use of unmanned aerial systems to supplement EDRR activities and increase effectiveness.

Forest Service Research and Development activities advance EDRR strategies, tools, and technologies. Containment and eradication responses, economic investment, and prioritization require risk and impact assessments. Risk and impacts from invasion have proven difficult to forecast reliably, complicating the ability to prioritize responses. Researchers at the Forest Service are actively working to refine and improve forecast models. They are also enhancing tools to detect and survey invasive plants. Remote sensing applications (e.g., Modis and Landsat) are being used to locate plants and eDNA and molecular diagnostic tools to detect aquatic invasive species. Creating more cost-effective control methods for invasive species is a priority. In February 2021, scientists and staff from the Forest Service published a sector-wide scientific assessment of the current state of invasive species science and research in the United States with partners from federal agencies, universities, and other organizations. This open-access publication is titled, *Invasive Species in Forests and Rangelands of the United States: A Comprehensive Science Synthesis for the United States Forest Sector*³.

In FY 2021, the Forest Service continued efforts to expand our capacity for EDRR through our new citizen science volunteer program known as *Wild Spotter*TM. This program connects dozens of public and private organizations and the general public to find and map aquatic and terrestrial invasive species in America's Wild Places, prioritizing hard to reach backcountry areas which necessitate stronger EDRR capabilities. The program was developed in collaboration with the University of Georgia's Center for Invasive Species and Ecosystem Health using the Early Detection and Distribution Mapping System (EDDMapS), a nationwide data system that supports EDRR at local, regional, and national levels.

The following are highlights of additional high-priority Forest Service EDRR activities against invasive species.

Sudden Oak Death

The Forest Service works closely with USDA's Animal and Plant Health Inspection Service (APHIS) on sudden oak death, a forest disease that has resulted in widespread dieback of several tree species in California and Oregon forests. The Forest Service continues to work with state partners, APHIS, and the Bureau of Land Management (BLM), and is using EDRR techniques to detect the sudden oak death pathogen in streams before it is evident in forest trees. Although infestations are currently found only in California and Oregon, it is concerning to land managers in the eastern United States, where states

³ <https://www.fs.fed.us/research/publications/book/invasiveSpecies/invasiveSpeciesFull.pdf>

are participating in surveying multiple locations along high-risk streams. Addressing sudden oak death is critical to protect specific native species and natural resource values on public lands across the Nation.

Invasive Bark Beetles

EDRR helps the Forest Service detect new infestations of invasive bark beetles. For example, the redbay ambrosia beetle in the southeastern United States and shot hole borers in southern California have caused extensive tree mortality in environmentally sensitive areas. The Forest Service works closely with state partners to identify sites at high risk for the introduction and establishment of these potentially damaging pests. In FY 2021, the Forest Service is working with 12 states to use EDRR techniques in more than 200 high risk locations to search for new infestations of potentially damaging species. The Forest Service is working with the State of California to rapidly assess the newly found infestation of Mediterranean oak borer in Napa County and surrounding areas. A trap and lure have been developed, surveys are being conducted to determine the area infested, and an assessment of impacts conducted.

Invasive Plants

The Forest Service is one of the primary federal land management agencies working in collaboration with partners to address invasive plants and regulated noxious weeds under state and federal statutes. The Forest Service provides technical and financial support to state agencies to help implement invasive plant EDRR and control programs nationwide. As one of the largest federal land management agencies, the Forest Service works with partners to implement EDRR and a variety of integrated management programs to address invasive plants on National Forests and Grasslands, from Alaska to the Caribbean, treating hundreds of thousands of acres each year. The Agency has been instrumental in establishing and sustaining Cooperative Weed Management Areas (CWMAs), Cooperative Invasive Species Management Areas (CISMAs), and EDRR programs to address high-risk invasive plants that threaten local economies, the environment, and human health. The Forest Service is the only USDA agency which funds a national grant program designed to establish and expand CWMAs/CISMAs nationwide. The Forest Service works closely with states and local communities to build CWMA/CISMAs capacity for EDRR against high-risk invasive plants. A key component of these efforts involves mapping new invasive plant detections and compiling findings into standardized databases (e.g., EDDMapS) for rapid and widespread data sharing.

Recent controversial and high-risk invasive species issues, such as the impact of invasive plants on the survival of the greater sage-grouse across the west, have accelerated the Forest Service's efforts to expand cooperative EDRR efforts with State, Tribal, Federal, and local partners against high-risk invasive annual grasses and perennial forbs that increase the frequency and intensity of wildfires and impact the entire sagebrush biome. The Forest Service is actively involved with the Department of the Interior's Integrated Rangeland Fire Management Strategy, including development of the Science Framework related to Sagebrush Conservation. These and other Forest Service efforts against invasive plants impacting terrestrial and aquatic ecosystems will continue to be a major component of the Agency's efforts against invasive species.

Gypsy Moth

EDRR is an important part of the Forest Service's fight against gypsy moths. Working closely with APHIS and states, the Forest Service uses traps to detect new infestations in previously un-infested states to allow quick and efficient eradication. These efforts will continue in FY 2021. The Forest Service and APHIS also use EDRR to find new infestations of the Asian gypsy moth, a potentially

more damaging relative of the gypsy moth already established in the United States in FY 2021, both USDA agencies cooperated with Washington state to quickly detect and eradicate infestations. This response is anticipated to save millions of dollars and protect native forests and natural resource values by preventing the spread of the infestations.