Invasive Species

FY 2009 President's Budget

Issues

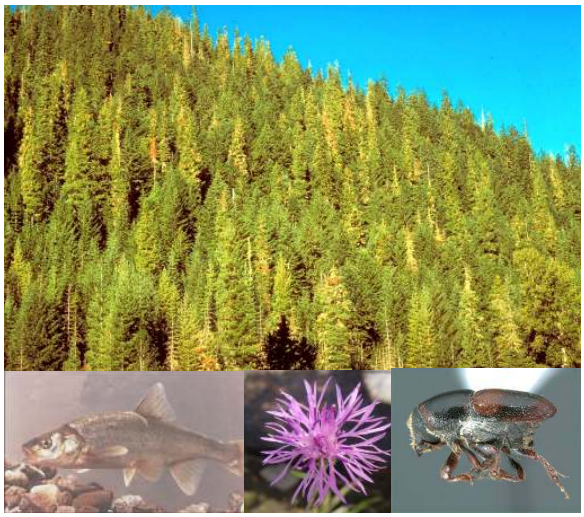
Huge economic and ecological impacts are caused worldwide by invasions of exotic species (weeds, insects, pathogens, and other aquatic and terrestrial organisms). Invasive species are one of the greatest threats to forest, range, aquatic, and urban forest ecosystem health. An estimated $120-$137 billion is expended annually to address exotic species invasions in the United States. Expanding global trade increases the introductions of invasive species, as well as costs associated with preventing introductions and managing new infestations. To address these threats, a comprehensive strategy is needed that includes a strong research component at its core.

Importance

Damaging impacts of exotic infestations include replacement of native species, reduced habitat use by wildlife, diminished productivity, decreased livestock carrying capacity, lowered recreational value, increased soil erosion, and decreased water quality. As native vegetation becomes displaced, further alterations in natural ecosystem processes occur, including changes in fire frequency and nutrient cycling. The impacts of invasive species can be exacerbated by human-caused activities, such as fertilization, increasing CO_2, and associated climate change. Invasive insects and pathogens are killing trees that are essential for ecosystem functions, and aquatic algae, invertebrates and fish invaders are disrupting native fisheries and aquatic ecosystems.

Future Plans

To effectively address issues associated with invasive species, it is essential to build research capacity in four areas: (1) early detection and rapid response, (2) impact assessment and prioritization (3) control and management, and (4) restoration and rehabilitation.



Infested stands and invasive species

Expected Outcomes

The Rocky Mountain Research Station (RMRS) has the broad scientific expertise to conduct multidisciplinary research on priority invasive species issues, with special emphasis in terrestrial and aquatic habitats throughout the Intermountain West, Rocky Mountains, Great Plains, and related areas. RMRS invasive research covers an array of ecological and environmental gradients in terrestrial and aquatic ecosystems. RMRS scientists provide the basic ecological and biological information to help managers detect and eradicate new invaders that are still confined to limited areas. For well-established, widespread invasive species, RMRS contributes to the development and testing of landscape-scale mitigation strategies to prevent further spread into new areas, and to manage invasive species to ecologically and socially acceptable levels using environmentally compatible tools and integrated control programs. Integrated research at RMRS provides management tools to restore and rehabilitate landscapes that have been degraded by diverse invasive species.

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