



Combating the Economic and Environmental Devastation from Invasive Species

“My first experiences with noxious weeds were when I was a child and one of the chores from my folks was to go out and pull the Johnson grass. I had the callouses and cuts to prove it. As governor, the devastating wildfires in 1999 and 2000 opened my eyes to the terrible impacts certain noxious weeds, such as cheatgrass, can have on the land, people, and natural resources of Nevada and the West.

--Kenny Guinn, Governor of Nevada

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Beginning in the 1930s and continuing at an accelerated rate today, the invasion of cheatgrass across the inter-mountain West has reduced the economic and environmental value of Western lands.

Where native bunch grasses once provided high-value range and held the fire cycle down to once every 60 to 110 years, cheatgrass now dominates many landscapes creating a super abundance of fuel and a 3 to 5 year fire cycle. It is a self-perpetuating problem, with cheatgrass being more competitive and taking over more land after each fire. The result is poor forage for livestock, lost habitat for native species, and significant declines of small mammals and birds of prey that depend upon them. Similarly, numerous other species of noxious weeds (invasive plants) are either already causing major problems in the West or are poised to do so. A handful of spotted knapweed plants were found in Montana in the 1920s when no one recognized their danger. Now about five million acres in Montana are infested with this species and another 29 million Montana acres are vulnerable to its continued spread.

Actions Needed

- T** Increased appropriations
- T** Treat as long-term federal priority
- T** Establish emergency invasive species response fund
- T** Continue to implement Executive Order 13112
- T** Support research needs

Impacts of Non-native Species

- An estimated \$138 billion in economic damages
- A factor in the listing of 42 percent of all species under the Endangered Species Act
- 70 million acres of land in the West lost to weed infestations

Invasive species need to be treated as a national emergency due to the significant harm they cause to the American economy and environment, and human health concerns. Without more effective action on the part of federal, state and local governments and the private sector, these impacts will increase exponentially. Significant appropriations and allocations will be required to prevent new invasions, respond rapidly and eradicate new invasions, and to effectively manage or prevent the spread of existing invasions.

Studies estimate invasive species cost the U.S. economy \$138 billion annually¹ while the global economic impact is \$4 to 6 trillion.² Invasive species are a principle factor in the listing of about 42 percent of species protected by the Endangered Species Act³ and cause more loss of biological diversity than any other factor other than habitat loss. Increased and more rapid world trade and travel significantly increase the rate at which new species are intentionally and unintentionally moved around the globe. As these species become established, economic and environmental impacts will increase.

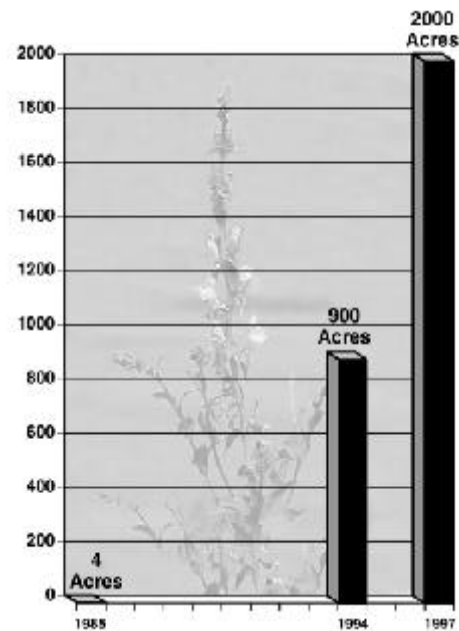
Western Issues

Noxious Weeds: Invasive plants (noxious weeds) are invading Western lands at an alarming rate. According to the Bureau of Land Management, roughly 4,600 acres of federal lands in the West are lost each day to weed infestations. Once infested, most lands cannot be reclaimed with our current technical and economic capabilities, resulting in significant or total loss of economic and environmental land values. It can be said that heavily infested lands are essentially national sacrifice areas.

Western governors are concerned that federal land managing agencies are not adequately funded to meet their management responsibilities for invasive plants. If adjacent federal lands are not managed at an equivalent level, state, local, and private efforts to control noxious weeds are rendered ineffective.

Wildfires and Forest Health: Wildfires and noxious weeds are closely linked in the West. Invasive noxious weeds, such as cheatgrass, create larger fuel loads than do native plants, resulting in hotter and more frequent fires. These hotter fires do more damage to native plants than to weeds, promoting further expansion of the invasive plants - a vicious cycle. Movement of firefighters and their equipment (e.g.; earthmoving equipment) from one fire to the next can increase the noxious weed danger by moving invasive species seeds and plants from one location to the next. Invasive species management must be built into fire management and restoration strategies as well as forest health management and therefore must be fully integrated into the collaborative 10-year forest and rangeland ecosystem health plan called for by the Congress at the urging of the western governors.

Aquatic Nuisance Species: The West is vulnerable to additional invasions of non-indigenous aquatic species that could result in significant harm to Western economies, environments, and ways of life. For example, zebra mussels are now well established in the Great Lakes and many Eastern and Midwestern river systems and lakes where they cause major economic and environmental harm. Should they spread west of the 100th meridian, impacts on Western waters could be devastating. The Western Regional Panel (1999 Annual Report) of the Aquatic Nuisance Species Task Force is concerned that Western spread of zebra mussels could adversely



Dalmatian Toadflax infestation in South Fork Drainage of the Shoshone River in Wyoming. (George Beck, Colorado State University)

impact irrigation structures, power plants, and water treatment facilities and injure sensitive native species to the point where they may need Endangered Species Act protection.

Ship ballast water releases are a major source of on-going introductions of non-native species to Western coastal waters. Some become established and out compete native species, though the extent and nature of their economic and environmental impacts remain poorly understood. Recent invasions of Chinese mitten crabs and European green crabs, thought to have come in ballast water, are threatening native fisheries such as the Dungeness crab fishery. Ballast water in ships arriving in the Southeast region of the United States from Peru were found to contain cholera pathogens, raising serious human health concerns. Increased shipping trade and more rapid oceanic crossings means more ballast water is released in U.S. ports and potentially invasive organisms have a greater chance of surviving the crossings.

“Undesirable aquatic and terrestrial species influence the productivity, value, and management of a broad range of land and water resources in the West.”

Western Governors’ Association

Insects: Insect invasions pose significant threats to economic, environmental, and human health. For example, movement of South American fire ants and Africanized honey bees into the Southwest raise human health and safety concerns. Invading insects cause serious agricultural harm. Recent discovery of the Glassy-winged sharpshooter in California’s Sonoma County threatens their two billion dollar wine industry.

Effective management of the invasive species crisis requires a significant paradigm change. Although management and control of existing invasions will remain necessary, long-term success will hinge on preventing and responding rapidly to new invasions. This will require improved prevention strategies and capability to detect (monitor) and eradicate new invasions.

Action Needed

T ***Increase in appropriations*** - Congress needs to significantly increase appropriations for invasive species prevention, rapid response, eradication, and management. With annual economic losses attributed to invasive species estimated at \$138 billion (Cornell University) as well as major environmental damages, investment of additional federal funds to deal with this issue is a prudent economic and environmental investment. Increased funding is needed at federal, state, and local levels and to provide incentives for private sector participation and partnerships.

T ***Treat as a long-term federal priority*** - The federal government must treat invasive species as a top priority on a sustained basis. High priority designation without significant increases in funding and personnel will not get the job done. For example, federal land managing agencies’ lack of adequate funding and staffing to adequately manage noxious weeds on their lands degrades the ability of states, local jurisdictions and the private sector to effectively manage noxious weeds on lands adjoining or surrounded by federal lands.

- T** *Establish emergency invasive species response fund* - Congress established a permanent federal fire fund to promote rapid and effective response to wildfires. The same is needed to respond to the exploding invasive species problem. Quickly accessible funds could significantly improve efforts to rapidly respond to new invasions and “put them out” before they become permanent. Once the emergency response opportunity is lost, established invasive species populations will require permanent control costs and the impacts will be permanent and expanding.
- T** *Continue to implement Executive Order 13112* - Executive Order 13112 on Invasive Species provides a framework for developing a more effective national strategy on invasive species. The draft national strategy, developed with significant input from diverse stakeholders, identifies high priority actions and lays out a road map for accomplishing them. Future national efforts should continue under the auspices of this Executive Order rather than begin a new process.
- T** *Support research needs* - The little known about invasive species impacts is frightening, but what is not known is terrifying. In only a minority of cases is the biology of invasions and their environmental and economic impacts understood. This information is critical not only to understanding impacts, but also to developing viable tools and strategies to combat and manage invasions.
- T** *Clarify definitions* - The definition of invasive species needs greater clarity to ensure that efforts are appropriately targeted. Concerns expressed by livestock and agricultural stakeholders and others need to be answered to ensure their full participation in local, regional, and national strategies and actions.

Websites for Additional Information:

Terrestrial Species:

[Http://invader.dbs.umt.edu](http://invader.dbs.umt.edu)
www.exoticforestpests.org/english
www.exoticforestpests.org/rppc/fedweeds.html
www.usgs.nau.edu/swemp

Aquatic Species:

[Http://nas.er.usgs.gov](http://nas.er.usgs.gov)
www.wes.army.mil/el/aqua/apis/methods
www.sgnis.org
www.entryway.com/seagrant
www.anstaskforce.gov.htm

General:

www.invasivespecies.gov
www.westgov.org/wga/initiatives/undesirable-spec.htm
www.werc.usgs/invasivespecies/

Endnotes:

1. Cornell University, www.news.cornell.edu/releases/Jan99/species_costs.html
2. International Union for the conservation of Nature, www.iucn.org
3. Office of Technology Assessment. Harmful non-indigenous species in the U.S.

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