



Conserving Biodiversity in a World of Invasive Species



Kudzu is among our best known invaders. (Photo: USGS)

Conserving biodiversity is a worthy goal, but the day-to-day work of it is often fraught with trouble. It's not just issues of jobs versus the environment, or the grinding weight of bulldozers ripping up rainforest to make way for cheap burgers that undermine biodiversity conservation. More insidious are problems that nature herself provides—with the extraordinary help of human hands: the invasion of species where they don't belong.

The United States spends more than *\$138 billion* per year on major environmental damages and losses by non-indigenous species—that is, a species living outside its original ecosystem with few or no natural checks and balances to keep it from running amok. When invasive species multiply to unmanageable levels they can damage native plant and animal communities, increase soil erosion and sedimentation, and destroy the economic value of land. There are now an estimated 50,000 non-indigenous species in the U.S. While not all are considered pests, those that are invasive are causing more than their share of trouble.

How do non-indigenous species get here?

Most plant and vertebrate animal introductions have been *intentional*. Exotic species have been introduced for food, fiber, ornamental purposes, landscape restoration, biological pest control, sport, and pets.

Unintentional invaders, including the majority of invertebrate and microbe introductions, are often accidental travelers in ship ballast or via plants or soils entering the U.S. Fire ants, Formosan termites, zebra mussels, and European green crabs are prime examples of this group. Though points of entry are strictly monitored and controlled by the Department of Agriculture, identifying these pests often amounts to finding a needle in a haystack—and that's all it takes to begin a new invasion.

Though we're somewhat wiser with hindsight, biotic invaders continue to spread rapidly. Global economy and travel, coupled with the alteration and simplification of many natural environments, have enormously increased the potential for species invasion.

What can be done about invasive species?

A long-term solution to the invasive plant problem requires a coordinated, *landscape* approach that connects smaller pieces of land within a geographic region to control the spread of invaders. On a national and state level, there is much work being done.

In 1999, President Clinton signed an executive order creating an Invasive Species Council and directed federal agencies to create a framework for planning and coordination involving all stakeholders. The council is charged with a variety of tasks, including: preventing the introduction of invasive species, detecting and controlling problems, monitoring the spread of existing invasive species, conducting research, and promoting public education.

Prevention is the most cost effective and environmentally safe method to manage invasive and exotic species. Short of that, detection, control, and eradication are the chief methods of dealing with invaders.

Melaluca's attractive flowers fueled its spread. Native to Australia, it is now considered one of Florida's most problematic invasive plants.

(photo: Australian Government
Dept. of Environment and Heritage)



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