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3. **INVASIVE SPECIES: More aggressive import screening is cost-effective, says study**

Arthur O'Donnell, *Land Letter* editor

Prescreening of imported plants and animals that are likely to become problematic invasive species is not only possible but also cost effective, according to a new study published this week in the *Proceedings of the National Academy of Sciences*.

The report, "Risk assessment for invasive species produces net bioeconomic benefits," finds that strict import screening programs, such as that used by the Australian government to prevent potentially invasive plants from entering the country, have economic benefits that far outweigh the costs of controls. According to the authors, similar prescreening programs for animals may be even more beneficial and could be applied by other countries, including the United States with positive results.

David Lodge, a professor of biological studies at Notre Dame University and co-author of the study, told *Land Letter*, "Too often, protection of the environment and supporting economic development are seen as conflicting goals." But according to the study, they need not be considered conflicting. "Trade is more beneficial if risk assessment is coupled with trade in order to protect from harmful invasive organisms," he said.

Lodge said that the science of identifying what species are likely to prove harmful has gotten better and more accurate in recent years, but policies to prevent damage have lagged. "We can identify 80 to 95 percent of species that will become harmful," he said.

"We're spending a whole lot of money and effort trying to predict things that are really hard to predict," Lodge said. Paradoxically, importation policies allow a large number of plants and animals each year that will likely have harmful effects. "Most species are prohibited only after we introduce them," he said, even though eradication of invaders is nearly impossible once they have been established.

The study focused on Australia's ornamental plant industry because since 1997 the island nation has required that all new plant introductions be screened for the likelihood of invasiveness. In addition, economic information for that sector of the industry was already published and available.

Among plants that have become problems for the country are the Athel pine, which displaces native eucalyptus trees along riverbanks, and the water hyacinth that chokes waterways, noted the report.

Lodge said the study employed estimates of damage from plants species that were "very low" and calculations of their benefits "that are probably quite high." The estimate of direct costs was largely attributed to use of herbicides to control the spread of the plants, excluding environmental costs, such as loss of recreational use, the value of time and effort to pull weeds, or other factors that are hard to quantify. Another conservative assumption was that about 5.4 percent of introduced species become invasive; Lodge indicated that the "base rate" figure may be much higher for imported exotic animals.

In U.S. dollars, the study determined that the economic value of Australia's ornamental plant industry is about \$4 billion. Imported plants make up about \$2.5 billion of that market. The damage caused by invasive plants, however, is just over \$2



The fast-growing water hyacinth, shown here clogging the Consummes River in California, is considered an invasive plant in Australia. Photo courtesy of BLM.

billion, while the costs of screening controls was less than \$300,000.

While the costs of prescreening potentially invasive plants and animals at U.S. borders would likely be much more, Lodge admitted, the benefits of improved controls would likely be proportional.

Even if some relatively benign species are prevented from entering the country, he contended, "The cost of keeping benign species out is less than the damages caused by allowing in harmful species."

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