Recognizing the Threat of Invasives

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Zebra mussels (*Dreissena polymorpha*) on a clam shell

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In the late 1980s, the unexpected invasion of a small mollusk called a zebra mussel (*Dreissena polymorpha*) in the Great Lakes raised public awareness about the problems caused by invasive species. The zebra mussel clogged water intake pipes of public water facilities and coated the screens at power plant cooling intakes. Although many other invasive plants and animals had been causing problems for a number of years, the publicity and the economic impact generated by the zebra mussel invasion provided a wake-up call for both the public and the government.

Congress reacted by passing the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA, P.L.101-636, as amended [16 U.S.C. 4701-4741]). This was the first effort by Congress specifically to address the problems caused by aquatic invasive species. The Act focused on the areas of prevention, control, detection, monitoring, outreach, education and research.

Although the focus began with aquatic invasive species, the problems caused by terrestrial weeds and other invasives have been well-documented for decades. Impacts to agriculture from invasive weeds and nonnative pathogens have been a focus of federal agencies for many years. The Plant Protection Act of 2000 (7 U.S.C. 7701 *et seq.*) consolidated the authorities of existing laws within the U.S. Department of Agriculture (USDA) and authorized the USDA to prohibit or restrict the importation or interstate movement of any plant, plant product, or noxious weed. The U.S. Fish & Wildlife Service has similar authority under the Injurious Wildlife Provisions of the Lacey Act of 1900, as amended (16 U.S.C 701, 3371-3378) to prohibit or restrict the importation or interstate movement of specific taxa of injurious fish and wildlife.

Many of these earlier laws were intended to address the impacts of invasives on agriculture or other industries. Only recently has attention shifted to dealing with the impacts of invasive species on natural areas and native fish and wildlife populations. Congress has begun to fill the gaps in the patchwork of federal laws and regulations administered by numerous government agencies.

Numerous bills to address invasive plants and animals were introduced during the 107th Congress (2002 calendar year), highlighting the public attention that the issue is receiving. Bills introduced but not passed into law during the 107th Congress included the National Aquatic Invasive Species Act (S. 2924), the Stop Westward Aquatic Threats Act (H.R. 2732), the Great Lakes Ecology Protection Act (S.1034), the Harmful Nonnative Weed Control Act (S. 198), and the Species Protection and Conservation of the Environment Act (H.R. 3558).

During the 108th Congress, which convened in January, many of these bills have been reintroduced. The Noxious Weed Control Act of 2003 (S. 144) would provide assistance through States to eligible management entities for control or eradication of harmful, nonnative weeds on public or private lands. The Species Protection and Conservation of the Environment Act (H.R. 2310) would provide cooperative, incentive-based grants for the development of projects on federal and non-federal lands to control, mitigate, and eradicate harmful nonnative species. The National Aquatic Invasive Species Act of 2003 (S. 525) reauthorizes the original NANPCA and includes new components to address ballast water standards, screening for intentional introductions, research and monitoring. The National Invasive Species Council Act of 2003 (S. 536) would authorize a National Invasive Species Council. (See also the article on page 35.) The Council has developed a national management plan for invasive species as a blueprint for combating invasive species in a coordinated and comprehensive manner.

Bills to authorize activities associated with specific species have also been introduced. The Tamarisk Control and Riparian Restoration Act of 2003 (S. 1236) provides grants supporting research to enhance long-term suppression and eradication of tamarisk (*Tamarix ramosissima*), a pest plant in the west and southwest. The Nutria Eradication and Control Act of 2003 (H.R. 273) provides for the eradication and control of nutria (*Myocastor coypus*), a nonnative rodent destroying wetlands and marshes in Louisiana and Maryland.

Although none of these bills has yet passed Congress, their continued reintroduction indicates the legislative concern for providing authorization to control invasive plants and animals.

Invasive Species: Coming to Habitats Near You

CONSERVING AMERICA'S fisheries
U.S. Fish & Wildlife Service

NATIONAL WILDLIFE REFUGE SYSTEM

U.S. Capitol
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Although the federal government has long recognized the impact of invasive species on agriculture and aquatic plants, it has only recently acknowledged the magnitude of their effects on our natural resources, economy, and human health. Because of these diverse impacts, invasive species affect almost every resource activity within the U.S. Fish & Wildlife Service (Service). Congress, to reinforce Service efforts, is considering additional legislation. While multiple programs within the Service address the resource problems caused by invasive species, only four Service programs are specifically funded to conduct invasive species activities.

Within the Service's Fisheries and Habitat Conservation program, the Branch of Invasive Species has been working with the national Aquatic Nuisance Species (ANS) Task Force for well over a decade to implement the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (amended, 1996). The Director of the Service co-chairs the ANS Task Force, whose role is to coordinate the activities of its members. The Service's key responsibilities under the Act include providing grants to States for implementing ANS Management Plans, detecting and monitoring existing or new invasives, preventing both new introductions and existing invasive populations from spreading, helping to develop technologies that minimize invasive introductions in ballast water, and developing outreach and education programs.

The second program, our National Wildlife Refuge System, contains nearly six million acres infested with invasive plants. Invasive species affect natural resources on nearly 50% of all refuges. Therefore, control and eradication efforts tend to be the focus of invasive species activities on most refuges.

Refuges use a combination of control methods. This approach is known as integrated pest management and usually includes trapping, pulling, or cutting, prescribed burning, native revegetation, water management, biological controls, and chemical treatments (herbicides, insecticides). Significantly, refuges that have also developed and presented educational programs on invasive species have experienced greater success in battling invasives.

Thirdly, the Partners for Fish and Wildlife program provides assistance to private landowners, tribes and other conservation partners who want to improve wildlife habitat on their lands. Invasive species management and reintroduction of native plants are often part of the Partners program's restoration efforts.

Finally, the Service's International Affairs Program has a role in combating invasive species. The program develops risk analyses and biological assessments to evaluate potentially invasive foreign species for inclusion on the list of injurious wildlife species. This information assists the Service in making decisions about regulations on importing these species into the United States. The program also processes permit applications for interstate transport and import of injurious wildlife species and participates in international meetings aimed at finding solutions for invasive species issues.

Although absent directed funding, many other Service programs and activities contribute in various ways to the battle against invasives. Projects within the Coastal program, which works to restore coastal habitats, often include control—and education about—invasives. The National Fish Hatchery System evaluates the impact of nonnative pathogens and diseases on wild fish, developing refugia and rearing techniques for organisms threatened by invasive species. The Migratory Birds program also involves invasive species work. The Environmental Contaminants program reviews pesticide use proposals; the Law Enforcement program enforces the Injurious Wildlife provisions of the Lacey Act; the Natural Resources Damage Assessment and Restoration program sometimes controls invasives as part of its efforts. Where invasives threaten listed species, Endangered Species helps fund and facilitates planning of management activities.

The Service has thus assumed a leadership role in controlling invasive species. As we move into an era of increased global trade, the need for vigilance against the introduction of invasives will only grow, yet heightened public awareness can help the Service meet the challenges presented by invasive species.