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TESTIMONY OF DR. JAMES TATE, JR., SCIENCE ADVISOR,

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BEFORE THE HOUSE RESOURCES COMMITTEE SUB-COMMITTEES ON FISHERIES CONSERVATION,
OCEANS AND WILDLIFE AND NATIONAL PARKS, RECREATION, AND PUBLIC LANDS ON

INVASIVE SPECIES OVERSIGHT ISSUES

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Mr. Chairman, and Members of the Committee, I am Jim Tate, Science Advisor to Secretary of the Interior Gale Norton. I am pleased to be here today to provide you with an overview of invasive species issues that the Department of the Interior (Department) and its bureaus face while carrying out their varied missions.

As steward of some 438 million acres of public lands, the Department and its eight bureaus manage more than one out of every five acres of land in the United States. The Bureau of Land Management (BLM), with some 262 million acres, is the largest federal landholder, and energy and mineral operations on its lands generate over \$2 billion in revenue. The National Park Service (NPS) manages more than 84 million acres in 388 parks, and the U.S. Fish and Wildlife Service (FWS) manages 93 million acres in the National Wildlife Refuge System for wildlife conservation and recreational uses. The Bureau of Reclamation (BOR) operates a system that creates 40 billion kilowatt hours of power and carries water to more than 31 million people in the West.

Unfortunately, the large amount of land and infrastructure under the Department's jurisdiction brings with it an array of invasive species problems impacting nearly every aspect of our work.

Scope of the Problem

As an initial matter, resource management agencies have a tendency to focus most on what we can do or are doing to address this problem. But we are also here to discuss the scope of the problem generally. With this in mind, it is appropriate to first highlight an important aspect of this problem that is not always the focus of our attention: the majority of invasive species problems can be traced directly to everyday legitimate human activities. In this regard, our actions can have unintended and, in some cases, far-reaching, consequences. I highlight this point not to be critical of any particular industries or activities but to raise awareness of an issue that can frequently be overlooked during discussion of the technical aspects of this problem. Perhaps we, as resource managers, should keep this issue in mind as we work to become more proficient in forming partnerships with other agencies, states, private landowners, and others to prevent, detect, respond to, and control invasive species.

In plain terms, invasive species are a costly economic problem. Invasive plants alone are estimated to cause more than \$20 billion per year in economic damage. Other estimates that include invasive animals and pathogens push the total cost to the U.S. economy to more than \$100 billion each year.

In addition to damage to the economy, our nation is losing precious wildlife habitat and suffering mounting natural resource productivity losses to the encroachment of invasive plants and animals. As an estimate of ecological harm, up to 46 percent of threatened and endangered species owe their listing in whole or in part to the uncontrolled spread of invasive species. In fact, invasive species threaten many fish and wildlife populations, and have the potential to degrade entire plant and animal communities.

As noted above, each of the Department's land management bureaus now routinely addresses invasive species issues during the course of their day-to-day management duties.

Let me provide you with a few examples

Invasive species affect National Wildlife Refuges from the State of Alaska to the Caribbean Sea. As previously noted, invasive species have caused significant declines of protected species and degrade millions of acres of refuge lands, waters, and wetlands. These invaders have become the single greatest biological threat to refuges and to FWS's wildlife conservation mission. Management actions by the FWS to control invasive species have been taken on over 300 separate refuges. Among the most insidious plant invaders on refuges are salt cedar, leafy spurge, perennial pepperweed, Canada thistle, Brazilian pepper tree, purple loosestrife, Australian pine, Chinese tallow trees, old world climbing fern, phragmites, and melaleuca. Non-indigenous invasive animals such as brown tree snakes, nutria, and feral pigs degrade habitat and reduce populations of native fish and wildlife.

In addition, the Lacey Act, which is administered by the FWS, restricts the importation and interstate transportation of wildlife deemed "injurious" - those wildlife for which the importation or interstate transportation could have negative impacts on the interests of agriculture, horticulture, forestry, human beings, and the welfare of wildlife and wildlife resources in the United States. There are currently 12 genera of mammals, four species of birds, three families of fishes, one species of crustacean, one molluscan species, and one reptile species listed as "injurious" under the Lacey Act. FWS has received petitions for listing the black carp, bighead carp, and silver carp as injurious species.

Our national park units have not been spared from this burden. Exotic plants currently infest approximately 2.6 million acres in the National Park System, reducing the natural diversity of these places. For example, Badlands National Park in South Dakota is the largest mixed grass prairie protected by the NPS, yet over 10,200 acres are occupied by non-native invasive plants, including 2,000 acres by non-native grass species. Moreover, critical habitat for bighorn sheep and elk are being invaded by and, in some localities, completely replaced by, exotic plant species. This can result in a reduction of carrying capacity for the habitat. Similarly, Gulf coast national parks provide critical stopover and nesting habitats for neo-tropical birds on their way to and from nesting and wintering habitats. Invasive species like Chinese tallow and Cogan grass are displacing native bottomland hardwood and other native habitat needed by these imperiled bird species.

The Bureau of Land Management currently estimates that up to 35 million acres - nearly 15 percent of the lands it manages - are infested with invasive and noxious weeds which can impact the economies of those states in which they are found. For example, spotted knapweed alone costs the State of Montana an estimated \$42 million annually; tansy ragwort invasion has caused losses of \$6 million per year to the state of Oregon. Approximately 25 million acres of BLM lands are infested with annual grass species such as cheatgrass or downey brome, red brome and other Mediterranean species. These grass species frequently are the first plants to appear after wildfire and are rapidly invading sagebrush and desert ecoregions. It is also estimated that over 300,000 acres of BLM lands are infested with salt cedar. Control of salt cedar on BLM lands is especially important. I will more to say about salt cedar later.

With responsibility for maintaining water delivery to much of the West, the Bureau of Reclamation is also engaged in the battle against invasive species. For example, the BOR estimates that salt cedar consumes as much as 2.5 million acre-feet of water annually in the arid Southwest; sometimes more than the annual rainfall. Invasive weeds such as salt cedar and purple loosestrife overtake habitat along rivers. Noxious weeds, like leafy spurge and yellow starthistle, devour about 4,600 acres of western federal lands daily. Leafy spurge is now estimated to infest about 5 million acres in about 23 states and to cost about \$140 million in damages annually in the United States. The whole upper Rio Grande is choked with salt cedar, which crowds out native vegetation and habitat.

Burrowing mammals can weaken canal levees and earth embankments to cause seepage and flooding. Mitten crabs and other exotic species multiply quickly and can overwhelm entire ecosystems. Bacteria in wells plug screens and sand within aquifers with slime and biomass, causing severe production losses in wells. Other threats loom on the horizon. For example, zebra mussels, which spread to the eastern United States from Europe in the late 1980s, attach to structures and can clog intakes and water treatment systems. Control can cost an average of \$250,000 per facility per year.

The factors contributing to plant invasions are complex. The number of invasive plants affecting the Department's trust responsibilities is increasing rapidly, and the biology of most of the invaders is inadequately understood.

In short, this is a widespread and highly complex problem.

What can be done?

In general, the Department believes that the most effective and least costly method of reducing the impact of invasive species is to prevent their initial introduction. In the case of unintentional introductions, effective preventive measures involve identification of pathways and reducing the risk associated with those pathways. Indeed, Congress recognized this principle in the Nonindigenous Aquatic Nuisance Prevention and Control Act (Act), which recognizes, for example, that ballast water is a major pathway for the introduction of aquatic species. As such, the Act requires mandatory regulations on ballast water management for vessels entering the Great Lakes, and voluntary guidelines for other parts of the country.

Similarly, a number of methods have been used to prevent the introduction of pathogens and parasites associated with commercial species, including raw timber, horticultural plants, and pets, to name a few. The International Council for Exploration of the Seas has taken another approach by developing a protocol for use with aquatic species. In each case, the major emphasis is on preventing release of first generation imports.

As noted above, major pathways of introduction should be identified in order to prevent the unintentional establishment of invasive species. After major pathways have been identified, methods of interdiction should be developed with an eye toward causing minimal disruption to international commerce.

After prevention, the early detection of and rapid response to new invasions is paramount. For example, veterinarians, wildlife rehabilitators, and epidemiologists began to share information immediately upon discovery of West Nile virus and its impact on wild birds and humans here in the United States. In this case, mechanisms do exist for the Centers for Disease Control to act promptly with local health and wildlife officials. While fighting invasive species must necessarily compete with other budget priorities, we are continuing to work toward development of similar systems that we hope will allow us to work with states and private citizens to rapidly respond to invasive species outbreaks.

Rapid response is essential to stop a newly arrived invasive species. Control of a well-established invasive species is many times more difficult. After establishment, a single control strategy seldom is sufficient and an integrated management strategy is usually needed. Integrated pest management (IPM) is a strategy that focuses on long-term control of pests and the damage caused by them through a combination of biological control, habitat manipulation, creative agricultural practices, and sequence and timing of actions. Pesticides can be used, but under guidelines established to minimize risks to human health, beneficial, and non-target organisms.

Department of the Interior Program Highlights

Given the amount of land and diversity of resources under its jurisdiction, the Department necessarily must be one of the leaders in working toward the control of invasive species. With this in mind, the Department is using existing authorities to combat invasive species on public and private lands and in inter-jurisdictional waters. The key to controlling invasive species is to work in partnership with a broad spectrum of states, non-governmental organizations, and private interests. Some brief examples of what we are currently doing on the ground at the Department follows.

National Invasive Species Council

The Department provides administrative support for the National Invasive Species Council (Council) and the Invasive Species Advisory Committee to build direct stakeholder involvement and collaboration between federal agencies and non-federal partners. Interior bureaus work closely with Council staff to implement the invasive species activities called for in the first National Invasive Species Management Plan (Plan): leadership and coordination, prevention, early detection and rapid response, control and management, restoration, international cooperation, research, information management, and education and public awareness.

In keeping with that Plan, a "cross-cut" budget proposal for federal agency expenditures concerning invasive species was prepared, for the first time, for the FY 2004 budget. Based on the leadership provided by the National Invasive Species Council, the President's Budget for FY 2004 focuses on seven areas for collaboration: ballast water management technologies, all-taxa early detection/monitoring system, sudden oak death in the southern Appalachian mountains, Maui early warning pilot project, Asian carp in the Chicago Ship and Sanitary Canal, tamarisk (salt cedar) control in the southwest, and nutria control in Louisiana and Maryland. The Department strongly supports the Council's efforts to identify areas of cooperation, to define common strategic goals, and to determine measurable performance standards. While the crosscut includes only a subset of total invasive species activities, it is a starting point for more comprehensive cooperative efforts that the Office of Management and Budget has encouraged for the FY 2005 budget cycle.

National Park Service

The principles of coordination, targeted funding, and accountability are fundamental aspects of the nonnative invasive species management strategy pursued under the National Park Service's five-year Natural Resource Challenge program. As part of this program, a new management strategy, called the Exotic Plant Management Team (EPMT), was implemented to control harmful nonnative invasive plants. By FY 2002, nine teams have been fielded to identify, treat, control, restore, and monitor areas of parks that were infested with harmful exotic plants. The nine teams serve 95 parks, in the Chihuahuan Desert-Shortgrass Prairie, Florida, Hawaii, the National Capitol Region, Lake Mead, the Northern Great Plains, California, the Gulf Coast, and the North Cascades.

The success of each EPMT derives from its ability to adapt to local conditions and needs. Each team sets work priorities based on a number of factors including: the severity of threat to high-quality natural areas and rare species; the extent of targeted infestation; the probability of successful control and potential for restoration; and opportunities for public involvement. The EPMTs have treated more than 68,000 acres and eradicated 9 species of harmful weeds from park lands. The FY 2003 budget provides funding for seven additional EPMTs. Funding of these teams will raise our capacity to control invasive plants at 152 parks or approximately 40% of the parks in the lower forty-eight states. These new teams are in the process of mobilizing and will be controlling harmful weeds in the summer of 2003.

Fish and Wildlife Service

The Invasive Species program implements the Non-indigenous Aquatic Nuisance Prevention and Control Act of 1990, as amended by the National Invasive Species Act (NISA), and provides funding for Aquatic Nuisance Species (ANS) Task Force personnel, Task Force regional panels and their activities, and Aquatic Nuisance Species grants to states and Tribes to implement state or interstate ANS management plans. It also funds seven FWS regional coordinators and their respective invasive species activities. These coordinators work closely with the public and private sector to develop and implement invasive species activities.

The Program has also worked closely with the National Oceanic and Atmospheric Administration (NOAA) in

the Department of Commerce, the Environmental Protection Agency, and the U.S. Coast Guard to develop measures to control the introduction of aquatic nuisance species through ballast water. Additionally, working with the ANS Task Force Communication, Education and Outreach Committee, FWS has led the development of a national public awareness and partnership campaign, Stop Aquatic Hitchhikers! Designed for the entire conservation community, the campaign targets aquatic recreation users about actions they can take to stop the spread of aquatic invasive species. The primary resource is a national web site: www.ProtectYourWaters.net. Currently, this campaign has leveraged \$2.3 million of federal and non-federal funding to support aquatic invasive species outreach activities.

Additionally, through the Partners for Fish and Wildlife Program, which provides financial and technical assistance to private landowners, FWS helps landowners improve productivity of their lands by minimizing the spread of invasive species and improving habitat for a variety of fish and wildlife species. FWS has funded a number of different types of invasive species projects through the program, including prescribed burning, physical removal, fence construction, and restoration of native plant communities.

Over 470,000 acres were treated in FY 2002. Further, a National Strategy for Management of Invasive Species is being developed that will include assessment information, monitoring recommendations, and best management practices, and will guide invasive species management on refuges nationwide. Preventive efforts, including an emergency rapid response program for the Refuge System, are key to preventing newly discovered infestations from gaining a foothold on refuges. Plans to initiate "strike teams," similar to those used by the NPS, are proposed for funding in FY 2004. In conjunction with the National Wildlife Refuge Association, the Nature Conservancy, and the U.S. Geological Survey (USGS), a new program is being initiated this year that will use trained refuge professionals and volunteers to create a strong network for the early detection of invasive species.

Bureau of Land Management

The BLM is a partner in over 40 weed management areas in the Western United States, and conducts weed treatments on over 300,000 acres of range and forestlands annually. In addition, BLM is working on implementing the National Fire Plan to reduce invasive weeds by managing and reducing fuels and working with partners to enhance native plant restoration. One example is BLM's work through the Great Basin Restoration Initiative (GBRI) to restore degraded rangelands that are now dominated by flammable exotic grasses, like cheatgrass, and restore these areas to perennial vegetation before they convert to noxious weeds.

Bureau of Reclamation

The BOR is working with many partners to monitor and counter threats from invasive species that impact the management and delivery of water resources in the West. BOR's integrated pest management program uses a combination of mechanical, chemical, biological, and cultural methods to control invasive species. This program also provides technical assistance and special studies and demonstration projects to promote IPM concepts and solve specific pest problems. BOR also works on coordinated programs involving research, monitoring, education, and control to develop an effective management program.

U.S. Geological Survey

Finally, USGS provides client bureaus with research on all significant groups of invasive organisms in both terrestrial and aquatic ecosystems - from microbes to mammals.

USGS research provides the fundamental understanding of invader biology and factors in the vulnerability of habitats needed for developing effective responses. USGS also provides information and useful tools for early detection and assessment of newly established species, monitoring invading populations, predicting

their spread and impacts, and for prevention, management and control. Through the National Biological Information Infrastructure, USGS also has an important role developing information networks to make reliable information on invasive species available to stakeholders. Recognizing the importance of expanding scientific cooperation, USGS has established the USGS' National Institute of Invasive Species Science. The Institute is helping to facilitate cooperation between USGS programs and other agencies and organizations with complementary scientific capabilities in addressing invasive species threats to our ecosystems and natural heritage.

I hope that this brief overview makes clear that our goal is to maximize use of not only our bureaus' expertise but also that of our partners in state and tribal governments, as well as private landowners, in the fight to control invasive species. In this same vein, many of the Department's bureaus contribute to other initiatives, like the National Fish and Wildlife Foundation's (NFWF) "Pulling Together Initiative," the BLM's "Partners Against Weeds" (PAWS), and the FWS's Partners for Fish and Wildlife," with the goal of building partnerships with private landowners to eliminate harmful weeds and restore native plants and animal communities. Six of the seventeen member agencies on the Federal Interagency Committee for the Management of Noxious and Exotic Weeds (FICMNEW), which works to coordinate invasive weed management policy and information sharing, are from the Department of the Interior.

Adequacy of existing statutory authorities

We believe that existing statutory authorities are generally adequate to carry out effective prevention, early detection, rapid response, and control for most invasive species. However, one of the action items listed in the National Invasive Species Management Plan is for the National Invasive Species Council to conduct an evaluation of current legal authorities relevant to invasive species. This evaluation is to include an analysis of whether and how existing authorities may be better utilized. Once this review is finished, and if warranted, recommendations will be made for changes in legal authority.

Conclusion

I want to thank you for providing the Department the opportunity to offer this very general picture of the problem of invasive species and our programs and efforts to address them. Our goal is to ensure that our invasive species actions emphasize coordination of existing federal efforts and local programs in order to strengthen ongoing invasive species programs and support new partnerships and initiatives. We look forward to working with the Committee and our partners -- states, Tribes, and private individuals -- to develop prevention, control, and management initiatives that recognize and strengthen these existing partnerships.

Mr. Chairman, this concludes my prepared remarks. I am happy to answer any questions you or other Committee members might have.