TESTIMONY OF GARY FRAZER, ASSISTANT DIRECTOR FOR FISHERIES AND HABITAT CONSERVATION,U.S. FISH AND WILDLIFE SERVICE, DEPARTMENT OF THE INTERIOR, BEFORE THE HOUSE NATURAL RESOURCES SUBCOMMITEE ON FISHERIES, WILDLIFE, AND OCEANS REGARDING H.R. 6311, THE NONNATIVE WILDLIFE INVASION PREVENTION ACT

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Introduction

Chairwoman Bordallo and Members of the Subcommittee, I am Gary Frazer, Assistant Director for Fisheries and Habitat Conservation of the U.S. Fish and Wildlife Service (Service). I also serve as co-chair of the Aquatic Nuisance Species Task Force (ANS Task Force). Thank you for this opportunity to testify on the effects of invasive species and H.R. 6311, the Nonnative Wildlife Invasion Prevention Act, legislation that would provide for the assessment of the risk of nonnative wildlife species proposed for importation.

The Service appreciates the Subcommittee's leadership and support in the fight against invasive plants and animals. Today, my testimony will focus on the threats posed by invasive species, what the Service is doing to address that challenge. While we acknowledge that there may be benefits to be gained from the approach proposed in H.R. 6311, because the bill was recently introduced we have not yet had time to fully evaluate its impacts, including the cost and feasibility of monitoring the vast volume of international trade, or consult with other affected agencies. However, as noted below, the Service recognizes the importance, and supports the general intent, of developing a cost-effective screening mechanism for nonnative invasive species.

Risks and Threats of Invasive Species

There is no question that the introduction and establishment of invasive species have significantly impacted the health of our native species and ecosystems. We have only to look at a history of introductions, from the sea lamprey to the zebra mussel to tamarisk, to understand the broad scope of the problem. The United States continues to see a number of nonnative, potentially invasive species crossing our borders through various pathways. With the global nature of our economy and transportation systems, we expect this trend to continue. Invasive species are among the primary factors that have led to the decline of native fish and wildlife populations in the United States and, without question, are one of the most significant natural resource management challenges facing the Service.

It is difficult to estimate the full extent of the environmental damage from nonnative invasive species. However, we know that over 400 of the 1,352 species that the Service protects under the Endangered Species Act are considered to be at risk primarily due to competition with, or predation by, invasive species.

Invasive species can also change the functions of ecosystems. For example, along the Rio Grande in New Mexico and Texas, salt cedar and giant cane, two invasive plants, are reducing stream flows, increasing water loss through transpiration, and degrading habitat value for native wildlife in this unique riparian ecosystem.

The brown tree snake is a major threat to the biodiversity of the Pacific region. A native of Indonesia, New Guinea, the Solomon Islands, and Australia, the brown tree snake arrived on Guam sometime during the 1940s-1950s as stowaways. The snakes have since spread across the entire island and have caused or been a major factor in the extirpation of most of Guam's native terrestrial vertebrates, including fruit bats, lizards, and nine of thirteen native forest bird species. Insect species that are no longer naturally controlled by native birds and lizards reduce fruit and vegetable production and their uncontrolled numbers require greater reliance on pesticides. Brown tree snakes also cause millions of dollars in damage to Guam's infrastructure and economy by climbing power poles and causing power outages.

The Service is also concerned about the impact of aquatic invasive species to America's sport and commercial fisheries. In the Great Lakes region, the sea lamprey was accidentally introduced in the early 20th century as a result of the construction of shipping canals. This parasitic fish has been extremely destructive to economically important sport fish, including lake trout, salmon, rainbow trout, and walleye. During its life cycle, a single sea lamprey can kill 40 or more pounds of fish, and under certain conditions, only one in seven fish attacked by a sea lamprey will survive. Before sea lampreys invaded the Great Lakes, about 15 million pounds of lake trout were harvested in lakes Huron and Superior annually. However, by the early 1960s, sea lampreys and other factors reduced the catch to 300,000 pounds[1].

Bighead carp, black carp, silver carp, and largescale silver carp, collectively referred to as Asian carps, are nonnative invasive species that pose an additional threat to recreational and commercial fisheries. Bighead, silver and largescale silver carp are planktivores (or plankton eaters) that consume large quantities of food, grow to large size, and compete with native species for food and habitat. Silver carp jump several feet out of the water when boats travel past, and have been known to cause injuries to people and damage equipment as a result of collisions with these extremely large fish. In their native waters, black carp feed on mollusks (snails and mussels) that are similar to those found in many American rivers, especially those in the southeastern United States. Adult black carp have powerful teeth that can crush large mollusks, including those from populations of native species that are declining, threatened, or endangered.

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[1] http://www.glfc.org/pubs/FACT_3.pdf
Scott, W. B., and E. J. Crossman. 1973. Freshwater Fishes of Canada. Fisheries Research Board of Canada, Bulletin 184. Ottawa. 966 pp. as referenced at:
http://nas.er.usgs.gov/queries/FactSheet.asp?speciesID=836

Our nation's trout and salmon fishery, which provides recreation for over 7.8 million Americans annually, is also at risk from a nonnative invasive parasite which causes whirling disease. Brought to the United States from Europe in the 1950's, this microscopic parasite attacks the head and spinal cartilage of the infected fish and causes a disease named for the swimming behavior that results. In the western United States, it is estimated that some streams have lost 90 percent of their trout due to whirling disease. This threat to recreational fishing has significant implications for the economy, as trout fishing is a cornerstone of tourism in many states in the west. For example, trout fishing has been estimated to generate $222 million annually in recreational expenditures in Montana alone[2].

Zebra and quagga mussels are invasive mollusks that impact both the natural environment and human infrastructure. The mussels impact native species through competition and biofouling, the undesirable accumulation of microorganisms in very high numbers. The mussels impact civic operations and development by clogging pipes in municipal and industrial raw-water systems and blocking water intakes for hydroelectric development and other industry. Both mussel species are easily spread unintentionally by recreational boaters and annually cause an estimated $30 million in damage to water delivery systems in the Great Lakes. In early 2007, quagga mussels were discovered in the Lake Mead National Recreation Area. They have since been found in Arizona, California, Nevada, and all 242 miles of the Colorado River Aqueduct. In January 2008, the first populations of zebra mussels were found in the San Justo Reservoir in California and Lake Pueblo in Colorado.

Invasive species are also one of the most significant threats to the National Wildlife Refuge System (NWRS), where they can destroy habitat, displace wildlife, and significantly alter ecosystems on refuges. Presently, about 2.4 million acres of National Wildlife Refuge (Refuge) lands are infested with invasive plants. There are at least 4,471 invasive animal populations recorded on Refuge lands. Although the NWRS is committed to controlling and eradicating these invaders, the Service has only been able to treat an average of 14 percent of the acres infested with invasive plants on an annual basis between fiscal years 2004 and 2007.

In Florida, the old world climbing fern, *Lygodium*, represents a greater threat than any other exotic plant to south Florida's natural areas, including the Everglades. If left unmanaged, it is predicted to overtake the five currently most invasive plants (melaleuca, Brazilian pepper, Australian pine, hydrilla, and water hyacinth) in combined coverage in south Florida by 2014. At the Arthur R. Marshall Loxahatchee National Wildlife Refuge, *Lygodium* currently infests over 70 percent of the refuge and occurs in varying densities within all habitat types found on the refuge. Especially vulnerable are tree islands, a unique and extremely rare habitat of the greater Everglades system which provides important refugia for nesting wading birds and terrestrial wildlife.

[2] http://findarticles.com/p/articles/mi_qa3951/is_200207/ai_n9146540

Meeting the Challenge of Invasive Species

The Service has a broad array of programs that substantially supports the management and prevention of invasive species.

The Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA), reauthorized by the National Invasive Species Act of 1996, established the Service's Aquatic Invasive Species (AIS) Program as well as the ANS Task Force, an interagency Federal Advisory Committee Act (FACA) group with 10 federal and 12 *Ex-officio* members, which is co-chaired by the Service and the National Oceanic and Atmospheric Administration (NOAA). The ANS Task Force encourages Federal and State agencies to establish partnerships that will augment work with partners to enhance our collective efforts to address aquatic nuisance species issues. The ANS Task Force relies on the expertise of its six Regional Panels to identify regional ANS priorities; coordinate ANS program activities in each region; make recommendations to the ANS Task Force; and provide advice to public and private interests concerning appropriate methods of ANS prevention and control.

The Service's AIS Program was established to help coordinate prevention, control, and management action on invasive species that span geographic and jurisdictional boundaries. This program supports an AIS Coordinator in each of the Service's eight regions who work closely with Service field stations, state invasive species coordinators, nongovernmental groups, private landowners and many others in their day-to-day activities. This dedicated network also organizes cooperative surveillance efforts with other Federal, State, and local agencies, universities, and public interest groups to track the distribution of aquatic invasive species, and conducts a variety of outreach activities to inform the public about the definition, biology, and impacts of aquatic invasive species and what they can do to help prevent their spread. These Regional Coordinators are in tune with both the national priorities of the ANS Task Force and the various emerging regional priorities. This unique position allows the coordinators to play a critical role in bridging the gap between national and regional aquatic invasive species issues and translating the national priorities of the ANS Task Force into on-the-ground projects.

The Service's AIS program also administers the Service's only regulatory tool regarding invasive species, the injurious wildlife provisions of the Lacey Act. Under Title 18 of the Lacey Act, the Secretary of the Interior is authorized to prohibit the importation and interstate transportation of species designated as injurious. Species listed as injurious may not be imported or transported across State boundaries by any means without a permit issued by the Service. Permits may be granted for zoological, educational, medical, or scientific purposes. Regulation of intrastate transport or possession is the responsibility of each State, except for those species covered under a Service permit issued by our Division of Management Authority.

The Office of Law Enforcement's (OLE) wildlife inspection program forms the nation's frontline defense at ports of entry by interdicting injurious species. Wildlife inspectors are stationed at 38 major U.S. airports, ocean ports, and border crossings, where they

monitor imports and exports to ensure compliance with U.S. laws and regulations. Wildlife inspectors focus on detecting and deterring illegal trade in protected species and preventing the introduction of injurious wildlife.

As part of OLE's efforts to prevent such introductions of injurious wildlife, Service special agents investigate illegal interstate commerce of injurious species (including internet sales) and assist State counterparts with the enforcement of both Federal injurious species prohibitions and State laws that ban the introduction, possession, and sale of State-listed injurious wildlife.

The Service is also using partnerships to minimize new introductions and prevent the spread of invasive species. The long-standing partnerships formed under the 100th Meridian Initiative seek to prevent or slow the spread of invasive species transported through recreational vehicles, particularly zebra and quagga mussels. Now that quagga mussels have become established in the lower Colorado River, the need for coordinated prevention efforts is even greater in order to keep these invasive species out of the Rio Grande, Columbia, and other western river systems.

Since 1956, the governments of the United States and Canada, working jointly through the Great Lakes Fishery Commission, have implemented a successful sea lamprey control program on the Great Lakes. The Service's Fisheries Program has two Sea Lamprey Management Offices located in Marquette and Ludington, Michigan. Jointly funded by the Service and the Great Lakes Fishery Commission, these offices employ approximately 110 staff to implement an integrated sea lamprey control program within United States portion of the Great Lakes. Sea lamprey abundance has been reduced by 90 percent as a result of the integrated control program. Congress appropriates more than $10.0 million annually through the State Department for sea lamprey management and research.

For the past 10 years, the Service's Fisheries Program has worked extensively to prevent the introduction and spread of Asian carp. We have supported a feasibility study on barrier options to prevent the introduction of these large fish into the Great Lakes; led the Asian Carp Working Group of the ANS Task Force which completed the National Management Plan for Asian carps; assisted in creating a Rapid Response Plan for Asian carp in New York canals; funded research on the use of pheromones as a deterrent to carp spread and research on native fish alternatives to the use of black carp in aquaculture; and conducted monitoring for early detection and rapid response. Black, silver and largescale silver carp were listed as injurious wildlife under the Lacey Act in 2007. Additionally, the evaluative injurious wildlife process for bighead carp is currently underway.

The Service also assists in coordinating prevention and control efforts for brown tree snakes in Guam and Hawaii and contributes to preventing their introduction into the continental United States through the North American Brown Tree Snake Control Team. Actions that are being implemented include: intercept snakes using canine detection; hand capture of snakes; trapping; fumigate cargo containers; use of barriers, including

chemical repellents, to exclude snakes from critical areas, reduce movements between habitat patches, and contain snakes if they are introduced to new areas; inhibit reproduction; monitor snake populations and dispersal events to provide guidance to other control efforts; and produce and disseminate public educational materials.

The Service's Partners for Fish and Wildlife Program provides technical and financial assistance to private landowners and Tribes to restore and protect habitat, including invasive species management and the reintroduction of native plants. In 2007, the Partners for Fish and Wildlife Program was a cooperator in 438 habitat improvement projects that involved control of invasive species on approximately 80,000 acres. The Rowe Riverine Restoration Project, located along the central Platte River in Nebraska, is restoring a section of the river that is critical habitat for whooping cranes and one of the few remaining successful piping plover nest locations in the State. The project will enable the removal of invasive phragmites and Russian olive, two invasive plant species, from 26 acres of floodplain habitat; restoring 5,300 linear feet of wetland sloughs and backwaters by removing sediment deposits and invasive aquatic plant species; and re-seeding 80 acres of restored floodplain to a high diversity mixture of over 100 species of native grasses and forbs.

The Service's Coastal Program assists communities in conserving coastal resources and forms partnerships to conduct on-the-ground restoration, including invasive species control activities in coastal areas. In 2007, the Coastal Program cooperated in 78 habitat improvement projects that involved control of invasive species on approximately 12,000 acres of coastal habitat.

The NWRS invasive species program focuses on early detection and rapid response by engaging Friends groups and volunteers in the fight against invasive species. Over a period of three years, 2,750 volunteers contributed more than 49,000 hours to the treatment, inventory, and restoration of over 211,000 acres of refuge land through its invasives and volunteers competitive grants program. Additionally, five Invasive Species Strike Teams are working to control and manage invasive species in key geographic locations, including the Everglades, the Lower Colorado River, the Columbia-Yellowstone-Missouri River basins, North Dakota, and the Hawaiian and Pacific Islands.

The Migratory Bird Program has as its mission the conservation of migratory birds and their habitats. Invasive species adversely affect bird populations directly via competition or predation and indirectly by degrading habitat. Seabirds, typically evolved to nest on isolated islands and headlands, are particularly vulnerable to invasive species. Research has shown that removal of invasive species, particularly exotic predators, can affect an immediate increase in seabird colony productivity. Thus, developing and implementing projects to control or eradicate nonnative species from the fragile island ecosystems used by breeding seabirds is a priority. The Migratory Bird Program also partnered with other organizations to remove depredating nonnative invasive species, such as rats, from seabird nesting islands.

The Service is also utilizing an innovative management tool known as Hazard Analysis and Critical Control Points (HACCP). HACCP is a step-by-step approach used to identify risks and prevent biological contamination or the unintended spread of nonnative species, similar to the way quality control procedures prevent contamination in food production. The Service has been implementing HACCP plans at our National Fish Hatcheries and providing technical assistance to the aquaculture industry and others in the development of HACCP plans.

Education and outreach efforts continue to be critical elements to the success of invasive species prevention and control. The Service and the ANS Task Force have been working for many years on educational outreach programs aimed at preventing additional introductions and controlling the spread of invasive species. The *Stop Aquatic Hitchhikers!* Public Awareness Campaign targets aquatic recreation users and promotes voluntary guidelines to ensure that aquatic nuisance species are not unintentionally spread through recreational activities. Currently 670 formal campaign partners are promoting the prevention message through *Stop Aquatic Hitchhikers!*.

To promote prevention of introductions through other high-risk pathways, the Service, the Pet Industry Joint Advisory Council (PIJAC), and NOAA Sea Grant created the *Habitattitude*™ Initiative. This campaign encourages aquarium hobbyists and water gardeners to be responsible caretakers of their plants and pets as well as to be good environmental stewards. The Service, the pet industry, and other partners are using *Habitattitude*™ to protect native species and their habitats by ensuring that pets are well cared for or that hobbyists find alternatives to releasing unwanted plants and pets into the environment, thereby preventing the introduction of potentially invasive species. The Service is working with PIJAC to expand the *Habitattitude*™ Initiative to include reptiles and amphibians.

Need for a New Approach

As the old proverb goes, “an ounce of prevention is worth a pound of cure.” The proverb resonates particularly well when addressing invasive species. Preventing new introductions is the primary focus of the Service and is the most effective strategy to protect our Nation’s wildlife and habitats.

The Service primarily focuses on preventing the introduction or spread of invasive species because we have limited tools for long-term management and control of invasive species, particularly aquatic invasive species, once they become established. Long-term control is costly, and established populations may spread to new areas, thus increasing the costs. Even though there is progress in the development of management and control tools, we need to continue to work with our partners to improve current tools while developing new ones.

Injurious wildlife evaluations under the Lacey Act require a significant amount of time to process. The time period to complete an evaluation depends upon the availability of biological and economic data and the complexity of the analyses required to comply with

the Lacey Act as well as analyses that are required under the National Environmental Policy Act, the Small Business Regulatory Enforcement Fairness Act, and other applicable regulatory process requirements. For many of the species evaluations, biological information must be gathered, and often translated into English, before an evaluation can be initiated. The Service continues to utilize the injurious wildlife provisions to prevent the introduction or further spread of species that are harmful to wildlife, wildlife resources, or humans, but it has not proven to be a nimble, timely, and cost-effective tool for addressing importation and transport of potentially invasive species.

The Service recognizes the potential value of a new approach for managing the risk of importing potentially invasive nonnative wildlife. Having the opportunity to evaluate nonnative species that are proposed for importation could be an invaluable tool to ensure that we are more proactive in preventing the introduction of harmful invasive species.

The Service supports the intent of H.R. 6311 to develop a risk assessment process with scientifically credible procedures that will be transparent and efficient so that wildlife importers can obtain timely decisions and make investment decisions accordingly. The Service does, however, have some concerns with the bill, including concerns related to duplication of existing authority, the cost and feasibility of implementation, possible overlap with other agencies, and the implications for international trade. We would like to work with the Subcommittee to address these issues.

Conclusion

To summarize, the Service greatly appreciates the interest of Chairwoman Bordallo, the cosponsors of H.R. 6311, and the Subcommittee in combating invasive species. The Service supports the general intent of H.R. 6311, to develop a scientifically sound and more proactive approach to prevent the continued introduction and establishment of harmful nonnative wildlife species into the United States.

Thank you, Madam Chairwoman, for the opportunity to testify before the Subcommittee on this issue, and for your support in preventing harm to the Nation's fish and wildlife resources from invasive species. The Service, in cooperation with other Federal, State, Tribal, and local agencies, and other partners, remains committed to addressing this significant threat to our natural resources, and we look forward to working with you as we continue our efforts in this regard.