

TESTIMONY OF HERBERT C. FROST, ASSOCIATE DIRECTOR, NATURAL RESOURCE STEWARDSHIP AND SCIENCE, NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR, BEFORE THE HOUSE NATURAL RESOURCES COMMITTEE, SUBCOMMITTEE ON NATIONAL PARKS, FORESTS, AND PUBLIC LANDS AND SUBCOMMITTEE ON INSULAR AFFAIRS, OCEANS, AND WILDLIFE REGARDING THE PREVENTION OF INVASIVE ANIMAL SPECIES ON PUBLIC LANDS.

MARCH 23, 2010

Chairman Grijalva, Chairwoman Bordallo, and members of the subcommittees, thank you for this opportunity to testify on behalf of the Department of the Interior on the impacts of non-native animal species on our nation's resources. I am joined here today by Craig Martin, Chief, Branch of Aquatic Invasive Species, U.S. Fish and Wildlife Service. We appreciate the subcommittees' interest and support of efforts to address the issue of invasive species.

My testimony will focus on three main areas: threats posed by exotic invasive animal species in national parks, steps being taken to monitor and control these species, and statutory and regulatory tools and recommendations to implement a more proactive approach to addressing invasive species.

It is critical to understand that what we are discussing here today is an assault on our nation's wildlife, from the birds we watch to the wildlife-related activities that support small towns and communities across this country.

Executive Order 13112, issued in 1999, defines an invasive species as "an alien [with respect to the ecosystem under consideration] species whose introduction does or is likely to cause economic or environmental harm or harm to human health." Invasive species include all taxa, ranging from microscopic disease-carrying organisms such as bacteria and viruses, to snakes, fish, quagga and zebra mussels, nutria and feral swine, to salt cedar, leafy spurge, Eurasian water milfoil and giant salvinia. These species have the ability to displace and imperil native species, alter entire ecosystems and fire regimes, and damage critical infrastructure. On a global scale, they can disrupt waterfowl and neo-tropical migratory bird flight patterns and nesting habitats, and result in loss of productivity to private landowners.

The United States is continuing to see an increasing number of exotic species, potentially invasive species, crossing our borders through various pathways. Given the global nature of our economy and transportation systems, we expect this trend to continue. These species are changing the landscapes of our iconic national parks and refuges.

Our natural landscapes are already under many pressures, including climate change and habitat fragmentation, issues that are also among the primary factors leading to the decline of native fish and wildlife populations in the United States—one of the most significant natural resource management challenges facing the Department of the Interior (Department). Invasive species are now recognized as a worldwide problem affecting natural and cultural resources, food-producing

systems, agricultural commodities such as timber, and human health—all of which are ecological services for local and national communities.

Preventing the introduction of additional invasive species and controlling the spread of those already introduced is an important focus of the Department as it is also one of the most effective strategies to protect our nation's wildlife and habitats. The Department contributes to the work of the National Invasive Species Council and the Aquatic Nuisance Species Task Force, and has been working for many years on educational outreach programs aimed at preventing additional introductions and controlling the spread of invasive species.

Exotic Invasive Animals in National Parks

The National Park Service (NPS) has identified over 250 species of terrestrial and aquatic exotic invasive animals that have significant impacts on park resources. The most problematic species include constrictor snakes, quagga and zebra mussels, feral swine, exotic frogs, feral pets, and free-roaming and feral livestock. The ramifications on resources and visitors of not controlling invasive animals in the National Park System are profound. The NPS spent \$13 million in 2008 and \$15 million in 2009 on identifying and containing invasive animals in parks; however, we still face significant challenges in controlling them and preventing their establishment.

Experimental ecology studies predict large ecosystem impacts of the most widespread invasive species. However, it is difficult to prioritize control of species that occur across vast and remote landscapes. Long-term monitoring must be implemented before and during the invasion as well as before, during and after any control attempts to provide valuable ecological information and to measure effectiveness of these approaches. It is important to understand how changes in the abundance of species influence ecosystem properties and processes which, in turn, will help guide our management decisions. Ideally, monitoring has to go beyond simple impacts on ecological communities, and will instead involve cross-disciplinary teams of scientists and should incorporate many different taxa and their interactions. Monitoring design and data collection should be sophisticated enough to allow statistically sound data analysis. The available information will be paramount in (1) developing new scientific and decision-making guidelines in invasive species management, (2) helping resolve potential conflicts of interest and (3) helping change public attitudes regarding growth, sale, and control of non-indigenous species.

The NPS has shown success in controlling many invasive plants with a systematic, service-wide program of Exotic Plant Management Teams, but we have not been able to adequately control most aquatic and terrestrial invasive animals. The NPS has proposed the establishment of a service-wide Invasive Animal Rapid Response Program that will include professional exotic invasive animal control and management expertise in areas where these animals are a major threat to resources. The program could employ highly mobile strike forces with the capability of responding rapidly to new and established infestations of harmful terrestrial or aquatic animal species. This approach will provide a more reliable identification and control tool than existing non-systematic efforts. The NPS is piloting this program at Everglades National Park in Florida to address the invasive Burmese python and other constrictor snakes in collaboration with the U.S. Fish and Wildlife Service (FWS), the State of Florida and a corps of volunteers and partners. The NPS believes this model could be utilized across the country to address this issue in a systematic, collaborative, and feasible manner.

At Great Basin National Park in Nevada, the NPS restored Bonneville cutthroat trout, the only trout native to the east-central Great Basin, by removing non-native salmonids, and is now focusing on completing the restoration of native fish assemblage in selected streams. Channel Islands National Park in California has turned the corner on protecting breeding bald eagles and the rare Channel Island fox by containing, controlling, and eradicating both rats and feral swine. The Channel Islands project was a collaborative effort by the NPS, FWS, The Nature Conservancy, the State of California, and a myriad of other partners. After years of work, most of the island ecosystem is now restored.

The NPS is taking a similar approach in the greater Everglades ecosystem. Everglades National Park was the first national park designated for its biological diversity and maintaining this diversity is key to ecosystem function and the visitor experience. As both predators and competitors, exotic invasive animals, including several species of constrictor snakes, exotic lizards such as the monitor and iguana, exotic fish such as the African jewelfish, the Mayan and banded cichlids, and the Asian swamp eel, and exotic mollusks such as the Island apple snail, are posing a serious threat to native animals within the park and to the Everglades ecosystem as a whole.

The Burmese python is currently well-established in south Florida, including Everglades National Park and Big Cypress National Preserve, and a population of boa constrictors is established south of Miami. Additionally, recent evidence strongly suggests a reproducing population of northern African pythons on the western boundaries of Miami. There is as yet no evidence for reproducing populations of the various anacondas or the reticulated python, although representatives of both groups have been captured or sighted in the wild in Florida and elsewhere.

In 2007, the NPS and FWS supported efforts by the U.S. Geological Survey to complete a risk assessment of nine non-native boa, anaconda, and python species considered invasive or potentially invasive in the United States. Of the nine large constrictor snakes that were assessed, five were shown to pose a high-risk to the health of the ecosystem, including the Burmese python, northern African python, southern African python, yellow anaconda, and boa constrictor. The remaining four large constrictors—the reticulated python, green anaconda, Beni or Bolivian anaconda, and Deschauensee's anaconda—were shown to pose a medium-risk. None of the large constrictors that were assessed was classified as low-risk.

The FWS is using the injurious wildlife provisions under the Lacey Act as a part the overall effort to collaborate with both Everglades National Park and the State of Florida to address the burgeoning population of Burmese pythons in Florida and the apparent and potential spread of eight other species of large constrictor snakes. On March 12, the FWS published a proposed rule in the *Federal Register* to list the nine species of snakes as injurious wildlife. The proposed rule also announced a 60-day public comment period and the availability of the documents related to the rule, including an economic analysis and an environmental assessment. The public comments and concurrent peer review will be used to make a determination on whether to list some or all of the nine species. Such a listing would prohibit the importation and interstate transportation of the listed species, unless permitted for specific purposes.

These invasive large constrictor snakes are highly adaptable to new environments and opportunistic in expanding their geographic range. Because their broad diets allow them to consume most native birds, mammals, reptiles and amphibians, giant constrictors potentially represent a serious threat to wildlife resources of conservation concern. For example, the endangered wood stork, a species targeted for restoration with Everglades restoration efforts, has been found in the stomach of Burmese pythons, as have the remains of endangered Key Largo wood rats.

Given the value of the Everglades, its biological diversity and our promise to restore the ecosystem, the Department is committed to combating these invasive species. Our current actions include the expansion of the Everglades National Park authorized agent python capture program; the establishment of a pilot “Partner with Hunters” program in Big Cypress National Preserve; research studies on python movements and habitat use, python trap and attractants, unmanned aerial vehicle and thermal imaging for python detection; cooperative education and outreach including the “Don’t Let it Loose” campaign and Habitattitude; and participation in non-native Pet Amnesty Days.

While large constrictor snakes have garnered our attention in recent months, the Department has also continued to deal with the impacts of other invasive animal species on our public lands. Feral swine are a problem across the southeast and the west, and are expanding northward into Wisconsin. They are believed to have a significant impact on ground-nesting birds, including wild turkey, grouse and quail nests in national park units such as Big Bend, Pinnacles, Big Cypress, and Hawai’i Volcanoes. Feral swine can impact various plant species and change entire ecological systems. Their impacts increase soil erosion and they can harbor and transmit some diseases and parasites to both livestock and humans.

In 2009, a NPS team removed 620 feral swine from Great Smoky Mountains National Park, the third highest since the swine control program started in the late 1950s. The park’s management strategy also includes fencing off extremely sensitive areas to keep swine disturbance from causing irreversible damage. Concerns associated with the feral swine include impacts to native plants and animals through predation, wallowing and rooting, and the potential spread of swine brucellosis and pseudorabies to native species in the park and to the commercial swine industry in North Carolina.

Twenty-five years ago, fencing was tested by Hawai’i Volcanoes National Park as a method of promoting natural tropical forest restoration. Fencing was placed in locations to deter feral swine from the most sensitive areas of the park. Although not entirely successful, it has played a major role in the recovery of previously swine-damaged areas. However, fencing only keeps the swine out; it does not control their populations.

Six endangered bird species seek refuge in Hawai’i Volcanoes National Park, dependent directly on native habitat now threatened by feral swine. Compounded by the impacts of mongoose, cats and rats that eat native birds and their eggs, feral swine continue to threaten Hawai’i’s Volcanoes National Park’s unique life forms and the biodiversity of the park.

Unfortunately, there is no one quick fix that will comprehensively address the conservation challenges raised by the introduction of exotic invasive animal species; the reality is that we have limited tools for long-term management once these species are established. Consequently, preventing these species from being introduced is the most cost-effective strategy and the one that gives us the greatest likelihood of success.

Statutory Tools for Combating Exotic Invasive Species

Executive Order 13112 charged all federal departments and agencies to prevent and control invasive species, and it created the National Invasive Species Council (NISC). NISC is co-chaired by the Secretaries of the Interior, Agriculture, and Commerce and includes members from across the Federal Government. FWS, NPS and USGS play a significant role in NISC, including improving the risk analysis process in the implementation of the 2008-2012 National Invasive Species Management Plan, which coordinates invasive species efforts and sets out objectives and implementation tasks within five strategic goal areas. In addition, the Aquatic Nuisance Species Task Force (ANSTF) is an interagency Federal Advisory Committee Act (FACA) group with 13 federal and 12 *Ex-officio* members, co-chaired by the FWS and the National Oceanic and Atmospheric Administration (NOAA). The ANSTF encourages federal and State agencies to establish partnerships with stakeholders at all levels to enhance our collective efforts to address aquatic nuisance species issues.

Against this backdrop, the FWS seeks to further promote and engage in partnership activities to minimize new introductions and prevent the spread of invasive species. The FWS Aquatic Invasive Species (AIS) Program was established to help coordinate prevention, control, and management actions on invasive species that span geographic and jurisdictional boundaries. The program works with States and many other partners to monitor habitats and determine the distribution of aquatic invasive species, rapidly respond to new invasions, and control established invaders. Numerous other FWS programs participate in the prevention and control of invasive species: the Fisheries Program engages in interagency actions, such as those dealing with sea lamprey and Asian carp control; the Partners for Fish and Wildlife Program assists private landowners and Tribes to restore and protect habitat—including invasive species management; the Coastal Program assists communities in conserving coastal resources and conducting invasive species control activities in coastal areas; and the National Wildlife Refuge System (NWRS) invasive species program focuses on early detection and rapid response by engaging refuge friends groups and volunteers in the fight against invasive species.

With respect to FWS programs, the NWRS is being negatively impacted by invasive species. These impacts are significant. A survey of the NWRS conducted by the Government Accountability Office found that NWRS managers ranked invasive plant species as the leading habitat problem in the NWRS. The managers ranked invasive animals as the third greatest threat to habitat. Presently, about 2.4 million acres of NWRS lands are infested with invasive plants and there are over 4,000 invasive animal populations reported to occur on refuges. Between 2004 and 2009, funding spent on managing invasive species increased 155 percent from \$6 million in 2004 to \$15.3 million in 2008.

The Injurious Wildlife Provisions of the Lacey Act

The injurious wildlife provisions of the Lacey Act (18 U.S.C. 42) are one tool that the FWS uses to prevent illegal introductions of and to manage invasive species. Under the Lacey Act, the Secretary of the Interior may regulate importation and interstate transport of animal species determined to be injurious. Species are added to the list of injurious wildlife to protect the health and welfare of humans, the interests of agriculture, horticulture or forestry, and the welfare and survival of wildlife resources from potential and actual negative impacts. The FWS Division of Management Authority may grant permits for the importation or transportation of live specimens of injurious wildlife, or their offspring or eggs, for scientific, medical, educational, or zoological purposes.

Possible additions to the list of injurious wildlife species are evaluated through several steps: Petition or Initiation of an Evaluation, Notice for Information, Proposed Rule, Economic Analysis, and Final Rule. There is no mandated timeframe for making an injurious species determination, and the evaluation process varies based on the availability of data and the complexity of the analyses. The FWS AIS program considers a variety of factors when evaluating a species for listing as injurious, such as the species' survival capabilities and ability to spread geographically; its impacts on habitats and ecosystems, threatened and endangered species, and human beings and resource-based industries; and resource managers' ability to control and eradicate the species. Scientific data is reviewed for factors that contribute to injuriousness and factors that reduce or remove injuriousness.

Once a species is listed as injurious, the FWS Office of Law Enforcement's (OLE) wildlife inspection program becomes an important part of the nation's frontline defense at ports of entry. 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, FWS special agents investigate illegal imports and 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 penalty for an injurious wildlife Lacey Act violation is up to six months in prison and a \$5,000 fine for an individual or a \$10,000 fine for an organization.

Recommendations for a More Preventative Approach

Recognizing the threat posed to our wildlife and natural resources and the limited tools available to proactively address the threat from invasive species, on January 20, 2010, Secretary Salazar asked the FWS to identify statutory and regulatory ideas for improving our ability to prevent and address invasive species.

The injurious wildlife evaluations currently made under the injurious wildlife provisions of the Lacey Act require a significant amount of time and cost to process and have resulted in equivocal success at preventing the introduction of invasive nonnative species. On one hand, of the nine species that have been listed under the Lacey Act and that were not established in the United States prior to listing, none have been established. Two of the taxa already in the United States

at the time of listing have not increased their range. Conversely, at least five taxa already in the United States at the time of their listing, excluding members of the salmon family, have spread to additional states.

Unfortunately, the FWS has been unable to make such designations into the nimble, timely, and proactive tool needed to address importation and transport of potentially harmful nonnative species. At the recent direction of Secretary Salazar, the FWS has begun to reassess our current regulatory scheme. Highlighted below are proposals the FWS is currently examining in an effort to create a more proactive and comprehensive approach to preventing the spread of invasive species.

Timeliness

The time needed to complete an injurious wildlife evaluation depends upon the availability of biological and economic data, the complexity of the analyses, and other applicable regulatory process requirements—as directed by statute, regulation, and Executive Order. For example, some statutes and Executive Orders that must be complied with while completing an injurious wildlife evaluation include the Administrative Procedure Act, Regulatory Flexibility Act, Small Business Regulatory Enforcement Fairness Act, Executive Order 12866, National Environmental Policy Act, and Paperwork Reduction Act.

As world trade in exotic species expands, the FWS must possess the capability to respond rapidly to potential introductions of injurious species. The requirements of the federal rulemaking process often make identifying species as injurious wildlife a lengthy and expensive process. The FWS is currently exploring ways to streamline the evaluation process.

The Listing Process

At least 231 species have been listed as injurious since the Lacey Act was authorized in 1900; all other species have no injurious wildlife importation or interstate transport restrictions. This list of injurious species is often referred to as a “black list”—that is, a list of prohibited species. Currently, an organism is not considered injurious unless it has gone through a rigorous evaluation process. In general, this process for listing is reactive, responding to a problem after it starts, rather than precautionary.

In the interests of providing timely and flexible authority, the FWS will examine gaps that the Lacey Act injurious wildlife provisions leave in the listing process.

Risk Screening and Assessment

Rapid screening would quickly and inexpensively assess whether an organism might require further evaluation—a form of early triage. Currently, for any species we are considering to propose as injurious, FWS must start with the 1996 Aquatic Nuisance Species Task Force (ANSTF) risk assessment process, which is marginally adaptable to rapidly assessing the environmental risk of a large number of species together. FWS is currently coordinating with a multi-stakeholder group to develop a rapid screening process using the best available predictors of species invasiveness (that is, a history of invasiveness and climate match). The opportunity to evaluate species that are intended for importation could be an invaluable tool to ensure that we are more proactive in preventing the introduction of harmful invasive species.

Recent significant advancements have been made in the fields of environmental risk assessment and risk analysis. The FWS supports the development of 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.

Law Enforcement

Given the tremendous economic impact of invasive species on agriculture, horticulture, wildlife and wildlife resources, the FWS is looking at how various aspects of injurious wildlife enforcement may be strengthened or clarified to produce a more effective and proactive tool to address invasive species issues.

Enforcement of the Lacey Act injurious wildlife provisions at international borders and points of entry is not as difficult as enforcement of interstate commerce. However, without interstate enforcement, the efforts at international borders and points of entry may prove futile. The FWS is interested in working with the States to identify ways to effectively support their efforts related to interstate enforcement and uniform standards, rules, and regulations regarding enforcement.

Public Education

Despite our intensive efforts through regulatory mechanisms to prevent invasive species, the most effective prevention may involve addressing how people perceive and treat nonnative species. For example, the probability of high-risk pets, such as Burmese pythons, being released into the environment is greatly reduced if pet owners are aware that there are means to surrender their pets appropriately.

The FWS and its partners have developed two national social marketing campaigns (*Stop Aquatic Hitchhikers!* and *Habitattitude™*) to make communications relevant to targeted members of the public and empower citizens to voluntarily become part of the solution. To truly leverage the full impact of this framework, FWS recognizes the need to support both regulatory and educational approaches equally and ensure that enforcement and communications interventions converge in a comprehensive approach.

Performance Metrics

To promote transparency and accountability of the program, FWS must be able to integrate the prevention of invasive species establishment into its fiscal decision-making and external processes. FWS will examine ways to develop performance metrics that better inform decision-makers on the cause-and-effect relationships between performance, agency actions, and funding.

Conclusion

As the nation's stewards of almost one-fifth of the land in the United States, it is our responsibility to protect wildlife resources for future generations. As increasing numbers of invasive species become established on our public lands and cause widespread harm to our economy and environment, eradication is no longer achievable for most of these species. What we need is to focus on reducing their impacts as cost-effectively as possible, containing those already established, and most importantly, preventing new species from taking hold. We must move beyond conventional techniques for control of these animals and focus on effective and

aggressive mechanisms for prevention and management while also improving our education and outreach efforts. We must engage in an unprecedented level of collaboration and cooperation with other agencies and partners to ensure that scientific information is collected, analyzed, and applied to better protect resources. Instead of focusing on only one species at a time, we must pursue comprehensive and systematic strategies.

In conclusion, the Department greatly appreciates your interest in addressing the issue of invasive species. We look forward to continuing to develop a scientifically sound and proactive approach to prevent the further introductions and establishment of harmful nonnative wildlife species into the United States.

Thank you for the opportunity to testify and we would welcome any questions you or the subcommittees' members may have.