

**Testimony of Bruce A. Stein, Ph.D.  
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**United States Senate  
U.S. Senate Committee on Environment and Public Works  
Subcommittee on Water and Wildlife  
Legislative Hearing  
July 16, 2014**

Thank you Chairman Cardin, Ranking Member Boozman, and members of the Subcommittee for the opportunity to share the National Wildlife Federation's views on several important pieces of legislation with the potential to benefit our nation's wildlife. NWF is a non-partisan, non-profit organization whose mission is to inspire Americans to protect wildlife for our children's future. National Wildlife Federation is supported by 49 state and territorial affiliates, and more than 4 million members and supporters including hunters, anglers, backyard gardeners, birdwatchers and many other outdoor enthusiasts from throughout the nation.

NWF commends this committee and the sponsors of the bills being discussed today for working to address some of the greatest threats to wildlife and ensure that Americans across the country will continue to enjoy the benefits of robust and healthy ecosystems, and wildlife populations. Today I will comment on several pieces of legislation that if enacted would help wildlife adapt to a warming climate, combat the spread of invasive species, protect and restore the Great Lakes, and ensure that the U.S. Fish and Wildlife service has the needed tools to protect its refuges and the wildlife that inhabits them. The issues covered by these bills pose significant threats not only to our nation's wildlife and habitats, but also to the American people, whose safety and prosperity depends on the availability of healthy ecosystems and abundant natural resources.

**Preparing for the Impacts of Climate Change**

People and wildlife across the nation are already experiencing the impacts of climate change, ecologically and economically. These impacts are no longer a distant concern – they are happening right now, as documented in the recently released Third National Climate Assessment.<sup>1</sup> As a result, an increasingly variable and rapidly changing climate must be viewed as the primary conservation challenge of our time. Addressing the growing threats brought about or accentuated by rapid climate change will require a fundamental shift in the practice of natural resource management and conservation. Resource managers and conservationists increasingly will need to adopt forward-looking goals and implement strategies specifically designed to prepare for, and adjust to, current and future climatic changes—an emerging discipline known as climate change adaptation.<sup>2,3</sup>

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<sup>1</sup> Melillo et al. 2014. Highlights of Climate Change Impacts in the United States: The Third National Climate Assessment. Washington, DC: U.S. Global Change Research Program. (<http://nca2014.globalchange.gov/report>)

<sup>2</sup> Stein et al. 2013. Preparing for and managing change: Climate adaptation for biodiversity and ecosystems. *Frontiers in Ecology and the Environment* 11: 502-510. ([www.esajournals.org/doi/abs/10.1890/120277](http://www.esajournals.org/doi/abs/10.1890/120277))

<sup>3</sup> Stein et al. 2014. *Climate-Smart Conservation: Putting Adaptation Principles into Practice*. Washington, DC: National Wildlife Federation. ([www.nwf.org/climatesmartguide](http://www.nwf.org/climatesmartguide))

## **S. 1202, Safeguarding America's Future and Environment (SAFE) Act**

The SAFE Act, sponsored by Senator Whitehouse, is designed to help federal and state agencies effectively prepare for and address the growing impacts of climate change on our nation's natural resources. Preparing now for these changes will enable us to reduce the long-term costs of climate change and sustain the many benefits that our natural resources provide to the American people by contributing to our health, safety, and economy.

Considerable progress is being made to incorporate climate adaptation and resilience into work across the federal government. Despite this progress, the growing risks climate change poses to people and wildlife requires even more action, both to better understand climate-related risks and to put in place mechanisms to reduce climate-related impacts and vulnerabilities. The SAFE Act builds on a number of existing initiatives, and by codifying and authorizing these activities we will ensure that progress to address climate impacts to the nation's wildlife, ecosystems and human communities not only continue but are enhanced.

The recently released National Fish, Wildlife, and Plants Climate Adaptation Strategy offers a comprehensive roadmap for federal, state, and tribal activities designed to address this challenge. Building on the foundation laid out in this national strategy, the SAFE Act will create an integrated federal program, promote implementation of the strategy, and facilitate public and private collaboration in planning for and managing natural resources in the face of a changing climate.

This legislation will:

- Codify the National Fish, Wildlife and Plants Climate Adaptation Strategy, set a timeline for future updates, and encourage full agency implementation;
- Authorize the National Climate Change and Wildlife Science Center within the U.S. Geological Survey to improve scientific basis for reducing climate-related impacts and risks to wildlife and ecosystems;
- Include strategies to reduce costs and maximize efficiency for natural resource protection;
- Provide context for directing future financial resources that Congress allocates to the States to address natural resource climate adaptation;
- Ensure the continuity of natural resources climate adaptation programs and initiatives.

Since 1980, the United States has sustained 151 climate-related disasters where overall damages have reached or exceed \$1 billion, for a total cost in excess of \$1 trillion. In response to Hurricane Sandy, Congress recently directed \$360 million to address the natural resource impacts and build resilience of coastal areas to future storms. Over the past 50 years, sea levels rose 8 inches or more along parts of the Atlantic and Gulf coasts and are already eroding shorelines and inundating wetlands, increasing the risk to communities from future storms.

Natural resources drive a critical sector of our national economy. According to a 2012 Outdoor Industry Association report, the total annual economic value of outdoor recreation – including camping, wildlife, viewing, and hunting – equals \$646 billion. As states depend on the economic activity generated by our natural resources to sustain local communities, it is important that we take action to protect these resources by preparing for future storms, more extreme weather, and other conditions associated with climate change.

Although climate adaptation will have costs, the cost of inaction—through continuing with business as usual—is likely to be far higher. The sooner we begin the task of planning for a climate-altered future and taking meaningful adaptation action, the more successful these efforts ultimately will be. It is imperative that natural resource managers begin to act now to prepare for and manage these changes, in order to provide the best chance for cherished conservation values to endure. The SAFE Act, by focusing on preparing for and managing climate-related risks, can make a difference by sustaining our nation’s diverse species and ecosystems well into the future. Indeed, protecting our rich conservation legacy depends on our rising to this challenge.

### **Combatting Invasive Species**

Invasive species pose an enormous risk to our native wildlife, and impose huge costs to the nation’s economy. The introduction and spread of harmful invasive species has caused or contributed to the decline of many species of fish and wildlife, including many of the rarest and most endangered, and is estimated to cost the U.S. economy more than \$100 billion a year.<sup>4</sup> These risks are only expected to increase due to the confluence of a number of factors, including increases in international trade and a changing climate that will make the U.S. habitable by a wider array of potentially invasive organisms as well as enabling others to further spread.

The National Wildlife Federation, a founding member of the National Environmental Coalition on Invasive Species (NECIS), believes that the nation’s top priority for combatting invasive species must be closing the pathways by which additional harmful species enter the country and spread. Until these pathways are closed, managing established invasions will be a never-ending burden. We must also, however, put the tools, authorities, and funding in place to limit the spread of existing invaders that are already wreaking havoc on our nation’s lands and waterways.

Two bills being considered today by the committee address these twin concerns. **S. 1153, the Invasive Fish and Wildlife Prevention Act** focuses on modernizing the nation’s antiquated systems governing the importation and inter-state transport of potentially harmful non-native species, while **S. 2530, the Protecting Lakes Against Quaggas Act (PLAQ Act)** is urgently needed precisely because of deficiencies in current federal authorities to regulate and stop the transport and spread of harmful invasives, like the quagga mussel.

### **S. 1153, Invasive Fish and Wildlife Prevention Act**

The Invasive Fish and Wildlife Prevention Act would modernize our nation’s laws on the importation and inter-state transport of non-native animals by strengthening the ability of the U.S. Fish and Wildlife Service to make timely, science-based decisions as to whether a candidate for importation is likely to be harmful to the nation’s ecosystems and economy. Strengthening this risk determination process will be instrumental in halting the introduction of foreign species that pose a high risk to the economy, the environment, human health or native wildlife, and will ultimately save taxpayers hundreds of millions of dollars every year in damages and control costs. Global trade has increased enormously over the past several decades, and with it the volume of live animal imports into the United States, including some that have become invasive

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<sup>4</sup> Pimentel et al. 2006. Update on the environmental and economic costs associated with alien-invasive species in the United States. *Ecological Economics* 52: 273-288.

and caused extensive ecological and economic damage. Incredibly, in this age of global jet travel, the current system for regulating live animal importation relies on a law—the Lacey Act—enacted in 1900 prior to the Wright Brothers first self-propelled flights!

Current law provides the U.S. Fish and Wildlife Service with only limited powers to declare non-native species as “injurious” and to prohibit the importation and interstate sales of harmful species. This outdated approach is painfully slow, particularly given the rapidity of global trade; currently it takes, on average, about four years to complete a Lacey Act injurious species listing. This regulatory approach is both costly and ineffective, and often results in listings occurring following a successful invasion, rather than being proactive and preventing the introduction and invasion of harmful species. As a result, land and water managers are faced with expending scarce financial resources to control harmful species, such as red lionfish or Nile monitor, while the same animals continue to be imported and sold, compounding the invasion risk from these species. This legislation will allow the FWS to stem the flood of unwelcome, non-native invasive species that have damaged this nation, from the Burmese python and nutria invading fragile wetlands, to the Asian carp threatening major ecological and economic harm to the Great Lakes, to the chytrid fungus, a disease devastating our native frogs.

The Invasive Fish and Wildlife Prevention Act would provide vital new policy guidance and regulatory tools to the U.S. Fish and Wildlife Service, the agency that implements the Lacey Act. Scientific methods for assessing invasion risks from new imports have increased considerably in recent years. S 1153 seeks to take advantage of such scientific advances and put them to use to improve risk screening for the live animal import trade, and prevent the introduction of new harmful invasives. The legislation would direct the Service to speed up the current listing approach by cutting through unnecessary “red tape” and taking full advantage of modern risk prediction science.

This legislation would also give the Fish and Wildlife Service emergency listing authority, similar to what the U.S. Department of Agriculture already has to regulate imports that present risks to livestock or to plant crops, and to what the Centers for Disease Control already have to regulate imports that present human disease risks. The legislation would provide the Service with clear authority (which no agency currently has) to regulate threats of diseases of wildlife. Emerging wildlife diseases, such as white-nose syndrome in bats and chytrid fungus for amphibians, has become increasingly problematic and a major driver of wildlife population declines and species extinctions. And the legislation would create a more flexible two-tiered system for regulating harmful species by distinguishing between species with the very highest risk levels (injurious species 1), which should only be imported or moved interstate pursuant to special permits, and those with somewhat lower risks (injurious species 2) that can readily be managed by zoos, aquaria and educational and research institutions without need for a Federal permit.

### **S. 2530, Protecting Lakes Against Quaggas Act (PLAQ Act)**

Quagga mussels are an aggressive and harmful aquatic invasive that is closely related to the more widely known zebra mussels. Both quagga and zebra mussels are wreaking havoc on ecosystems across the United States. These bivalves reproduce rapidly and attach to various surfaces in freshwater ways, clogging water structures and negatively impacting commercial and recreational fishing, boating, and other activities. Together, these mussels have racked up an

estimated \$5 billion bill in prevention and control efforts since their accidental introduction, likely from ship ballast water discharge, to the Great Lakes in the 1980s, more than any other aquatic species invader.

At the time that the zebra mussel (*Dreissena polymorpha*) was listed as “injurious” under the Lacey Act, the relationship, introduction status, and risks associated with related species in the genus *Dreissena* were not well understood. Therefore, rather than listing the entire genus as injurious, only *D. polymorpha* was listed. Because of the rapid spread of quagga mussels (*D. rostriformis*) in waterways, especially in the western United States, and the consequent ecological and economic damages, there is an urgent need to include this species on the list of injurious species by broadening injurious species status to all species in the genus *Dreissena*. Time is of the essence in stopping the spread of this very aggressive and damaging invader, and due to the structural delays in the current Lacey Act listing process (noted above and which would be rectified by the reforms embodied in S. 1153), the National Wildlife Federation supports statutory listing of this species as described in the PLAQ Act. This statutory listing will provide the U.S. Fish and Wildlife Service with new tools to prevent the spread of quaggas to new regions of the United States, including currently uninvaded bodies of water in Nevada and across the West.

### **Protecting and Restoring the Great Lakes**

Although NWF works across the nation on important conservation issues, we have a special interest in protecting and restoring the Great Lakes. The reasons are obvious. The Great Lakes contain about 85 percent of North America’s fresh surface water and over 20 percent of the fresh water worldwide; they are a unique and vital ecosystem, and an important economic engine throughout the region. The Great Lakes basin supports a diverse range of industries and small businesses, supporting an estimated 1.5 million American jobs. More than 30 million Americans live within the Great Lakes basin and rely on the Great Lakes as the source of safe drinking water, transportation, and recreation.

The Great Lakes, however, face significant ecological threats and are highly sensitive to the effects of a variety of pollutants. Challenges include invasive species, polluted runoff, habitat destruction, and toxic hot spots throughout the basin. In addition, the effects of climate change are being felt across the region as large precipitation events and warmer winters are exacerbating excess nutrient runoff and causing lower water levels in the Great Lakes themselves when less ice cover produces more evaporation.

As recently as 2003, the Government Accountability Office (GAO) was decrying the lack of coordination among federal agencies working in the Great Lakes, and also noted the lack of a cohesive restoration plan for the most significant freshwater resource on the planet – our Great Lakes. Since that time, a bipartisan group of members of Congress and a broad coalition of interests from across the Great Lakes have worked together to first produce the Great Lakes Regional Collaboration document, which became a blueprint for action for the region. Then in 2010, President Obama proposed and Congress funded, the Great Lakes Restoration Initiative. Over the last five years, Congress has appropriated \$1.6 billion to support this interagency effort that builds on the collaborative strategy from the previous Administration.

## **S. 1232, Great Lakes Ecological and Economic Protection Act (GLEEPA)**

NWF strongly supports S. 1232, which will help protect and restore the Great Lakes' precious natural resources and boost the economic growth in the Great Lakes region. This bill would formally authorize the Great Lakes Restoration Initiative (GLRI) and direct the implementation of recommendations presented in the Great Lakes Regional Collaboration Strategy of 2005 and the Great Lakes Restoration Initiative Action Plan.

The GLRI is an action-oriented, results-driven initiative targeting the most significant problems within the basin, including aquatic invasive species, toxics and contaminated sediment, nonpoint source pollution, and habitat and wildlife protection and restoration. Among the GLRI's successes are:

- Twenty-two (22) beneficial use impairments and 13 Areas of Concern have been removed. In fact, nearly three times as many impaired water segments have been restored in the Basin since the GLRI began in 2010 than in the previous 22 years; replaced by hope for a bright economic future in these spots that for so long were pegged as places of persistent pollution.
- Over 100,000 acres of wetlands and other habitat in the Great Lakes have been restored to date;
- Nearly 2,000 river miles have been cleared of barriers resulting in fish swimming into stretches of river where they have been absent for decades.

These are real, tangible, victories. Just last fall a GAO report confirmed that federal Great Lakes restoration efforts are on the right track. The report sends a strong signal to federal public officials to maintain support for the Great Lakes Restoration Initiative in the federal budget as well as act to confront other urgent threats such as climate change and sewage contamination that can undermine restoration efforts.

Now it is time to authorize these activities for the long haul. The progress we have seen in the Great Lakes over the last five years is a good start but is still just a down payment on the work that must continue in the decades to come.

The Great Lakes Ecological and Economic Protection Act would:

- Authorize the appropriations for the GLRI at \$475 million annually.
- Reauthorize the Great Lakes National Program Office (GLNPO) — EPA's National Program Office is the primary office within the agency for handling Great Lakes matters, including the GLRI, Great Lakes Water Quality Agreement (GLWQA), the Great Lakes Legacy Program, Remedial Action Plans for Areas of Concern and Lakewide Management Plans;
- Reauthorize the Great Lakes Legacy Act. The Great Lakes Legacy program was first authorized in 2002 and has been extremely successful at removing contaminated sediment from the U.S. Areas of Concern (AOC). There are 31 U.S. AOCs in the U.S. and shared with Canada; since those areas were identified in 1987, only two U.S. AOCs have been delisted – Oswego (NY) and Presque Isle Bay (PA).
- Authorize the Federal Interagency Task Force. The Great Lakes Interagency Task Force (IATF) brings together eleven U.S. Cabinet and federal agency heads to coordinate restoration of the Great Lakes amongst the different agencies.

- Authorize the Great Lakes Advisory Board. The Great Lakes Advisory Board (GLAB) provides advice and recommendations to the EPA Administrator, as Chair of the Great Lakes Interagency Task Force, on matters pertaining to Great Lakes restoration and protection.

In an era of extreme pessimism about what the federal government can do to us, we see the GLRI as a shining example of what the federal government can do for us. It is time to take this initiative to the next level.

### **S. 571, Great Lakes Protection Act**

This legislation addresses one of the most serious problems in the Great Lakes: sewer overflows. Antiquated wastewater systems spill tens of billions of gallons of partially treated sewage and stormwater into the Great Lakes every year, closing beaches, threatening public health, and undermining the quality of life for the millions of people who call the region home.

In 2011, Chicago, Cleveland, and Detroit alone sent more than 63 billion gallons of raw and partially treated sewage combined with stormwater, a volume of polluted water equaling the amount of water that flows over Niagara Falls during a 15-hour period. These discharges sicken people, force beach closures, prompt health advisories, harm wildlife, and hurt tourism. Beach closures due to sewer overflows can have a serious negative impact on local economies. With eight million swimmers and 80 million swimming days in the Great Lakes region each year, tourism revenue from beach visits is big business and vital to many communities. These spills have clear economic and environmental impacts on the lakes' ecosystem and communities.

These overflows are most often the result of out-dated wastewater infrastructure. Many sewer systems in the Great Lakes region collect stormwater and wastewater in the same pipes, some of which may be close to 100 years old. Normally wastewater treatment plants can handle this combination. However, when it rains hard, exactly what the models predict will happen more frequently in the Midwest as a result of climate change, the influx of rain water overwhelms the region's old, outdated wastewater infrastructure sending the polluted waste into regional waterways and into the Great Lakes themselves.

Combined sewer discharges can be stopped, but, because the problem is so big, it will take a long-term commitment to do so. U.S. EPA predicts \$338 billion in upgrades is needed nationwide over the next 20 years. The Great Lakes Regional Collaboration Strategy to Restore and Protect the Great Lakes called for at least \$14 billion to help cities halt sewage overflows and protect Great Lakes water quality.

S. 571 provides the incentive needed for communities to make real progress to address this issue. This bill would prohibit overflows after 2033, giving counties, cities, and other jurisdictions plenty of time to act. Another important part of his bill is its requirement for greater transparency and public notification protocols about when an overflow occurs, how much was discharged, and where it occurred. Rapid access to this information protects the public's health by alerting them to areas where the water quality has been impaired by human waste, excessive nutrients, untreated industrial waste, and many other things. It also assists businesses by more accurately tracking an overflow, ensuring beaches and other areas aren't closed unnecessarily or longer than needed.

## **Enabling the Work of the U.S. Fish and Wildlife Service**

The U.S. Fish and Wildlife Service is the primary federal agency responsible for protecting wildlife and the habitats on which they depend. This is accomplished through both regulatory action, particularly focused on trust resources (e.g., migratory birds, endangered species), and land and water management responsibilities, primarily through management of the 150 million acres included in the National Wildlife Refuge system. Two bills under consideration by the subcommittee are directly relevant to providing the U.S. Fish and Wildlife Service the tools needed to carry out their responsibilities. S. 2560 provides the ability for the Service to receive compensation for damages caused to Service properties and use those funds to address the damages. H.R. 1300 reinforces the Fish and Wildlife Service's authority to work with volunteers, and further facilitates volunteer-refuge partnerships.

### **S. 2560, United States Fish and Wildlife Service Resource Protection Act**

The National Wildlife Federation, a member of the Cooperative Alliance for Refuge Enhancement (CARE), strongly supports the U.S. Fish and Wildlife Service Resources Protection Act introduced by Senator Cardin. We see this as a commonsense solution to a long-standing and ill-conceived reimbursement arrangement. Currently, the U.S. Fish and Wildlife System does not have the authority to receive compensation from responsible parties for damage done to National Wildlife Refuges or other resources under the agency's control. While both the National Park Service and the National Oceanic and Atmospheric Administration can recover damages for harm done to their property or resources, the Refuge System must cover those costs from their already appropriated budget. This arrangement can, and has, significantly impacted existing refuge programs by diverting already scarce resources towards fixing problems caused by others.

National Wildlife Refuges are owned by all Americans. When individuals cause harm, intentionally or not, they—not taxpayers—should bear the costs of remedying those damages. Under the current system, the Fish and Wildlife Service has to pay to remedy these damages out of their existing budget, funded by taxpayers, rather than using the perpetrator's own money. For instance, in 2010, thirty-nine reported arson cases caused \$850,000 in damages to refuge system resources. The Fish and Wildlife Service recouped no funds for those damages and had to pay out of pocket to assess, repair and replace structures and habitat harmed by those fires. In 2011, over 2,400 cases of vandalism were reported; the Fish and Wildlife Service had to cover the cost of the \$404,000 worth of damage done and received no reimbursement for their expenses. Spending existing budget allocations on these crimes takes resources and attention away from important programs that protect habitat, provide visitors services, and manage fish and wildlife populations.

This legislation would allow monetary damages to be collected and processed through the Department of Interior's Natural Resources Damage Assessment and Restoration Fund, thereby allowing FWS to track the funds and ensure they are used on the appropriate restoration projects. Damages will be applied directly to the harm done. Money collected will be used to:

- Reimburse assessment costs;
- Prevent or minimize resource loss;
- Abate or minimize the risk of loss, monitor ongoing effects; and/or
- Replace, restore or acquire resources equivalent to those injured or destroyed

The National Wildlife Refuge System is already dealing with severe budget cuts, while simultaneously facing new and costly challenges stemming from a changing climate and the subsequent increases in invasive and injurious species. Senator Cardin's bill, S. 2560, shifts the burden of restoring harmed resources away from an over-extended agency and onto the criminals who inflict the damages. By making those responsible foot the bill, the Service will be able to fulfill its mission of protecting these unique habitats and ecosystems for future generations of American outdoorsmen and women.

### **H.R. 1300, The Volunteer and Community Partnership Act of 2013**

As a staunch advocate for the National Wildlife Refuge System, the National Wildlife Federation is a strong supporter of H.R. 1300, the Volunteer and Community Partnership Act of 2013. Not only are National Wildlife Refuges home to thousands of unique plant and animal species, they are a huge economic driver for local communities and for our country. For each dollar appropriated, local economies enjoy a return of \$4.87. Refuges play host to over 46 million visitors annually, generating \$2.4 billion in economic gain.

Volunteers are hugely instrumental in ensuring a functioning and successful National Wildlife Refuge System. Volunteers work on controlling invasive species, assist with restoration and climate adaptation projects, and help educate and host the millions of visitors who spend time at our nation's refuges. Last year, more than 38,000 people contributed more than 1.4 million hours as volunteers, a contribution equivalent to an additional 702 full-time employees and valued at \$31 million. But volunteers cannot replace full-time, paid staff. As the Refuge System has seen its budget slashed in recent years, staff working as volunteer coordinators have lost their jobs. The result is a significant decline in the number of people volunteering, just when these refuges need the most help.

H.R. 1300 reinforces the Fish and Wildlife Service's authority to work with volunteers, and further facilitates volunteer-refuge partnerships that have resulted in significant improvements to the refuge system. The National Wildlife Federation sees the benefit of volunteer programs in our national parks, refuges, and public lands as instrumental to training the next generation of conservationists, sportsmen and wildlife enthusiasts.

### **Conclusion**

As detailed throughout this testimony, wildlife is facing unprecedented challenges, from changing climates, spreading invasive species, degraded habitats, and lack of resources for management. These challenges jeopardize not only wildlife itself, but the countless recreational industries and much loved pastimes such as hunting, fishing, hiking and birding that are dependent upon healthy and flourishing wildlife populations. Furthermore, healthy ecosystems are essential for maintaining the health and safety of the American people. NWF is pleased to see

members of Congress put forward legislation to address some of these important wildlife-related issues and would be pleased to work with you to continue to develop and pass legislation to protect and restore wildlife and the habitats on which depend.