

**Testimony of
David Houghton
National Wildlife Refuge Association
before the
U.S. Senate Committee on Environment and Public Works
Subcommittee on Oversight**

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Subcommittee Chairman Whitehouse, Ranking Member Inhofe, and distinguished members of the subcommittee, it is honor to be here today to share our views on natural resource adaptation and the importance of healthy ecosystems in protecting communities and supporting economies, and how these ecosystems are tied to fishing, hunting, tourism and outdoor recreation.

I am David Houghton, President of the National Wildlife Refuge Association. The Refuge Association was established in 1975 as a champion for the integrity and stature of the 150 million acres of lands and waters of the National Wildlife Refuge System. The National Wildlife Refuge System is almost twice as large of the National Park System making it the world's largest network of lands and waters protected for wildlife. The Refuge System receives 46.5 million visitors annually and generates \$2.4 billion in economic return. There is a National Wildlife Refuge in every state and territory of this wonderful country.

A growing body of evidence has linked accelerating climate change with observed changes in fish and wildlife, their populations, and their habitats in the United States. According to the U.S. Global Change Research Program, average temperatures of coastal and fresh waters are rising, and we are also experiencing rising sea levels, loss of sea ice, ocean acidification, and increased coastal flooding and erosion. Across the continental United States, climate change is affecting the migration cycles and body condition of migratory birds, causing decoupling of the arrival dates of birds on their breeding grounds and the availability of the food they need for successful reproduction.

Fish and wildlife are facing various threats to their habitat including destructive fires, water shortages, invasive species and disease. The National Wildlife Refuge System is developing management and adaptation strategies at an ecosystem level as well at individual refuges. My testimony will highlight how different refuges are increasing resiliency and adapting to a changing climate.

Storms

During Hurricane Sandy, which hit the East Coast in October 2012, coastal wildlife refuges and marshes provided protection and buffering for inland areas. Hurricane Sandy hit 35 wildlife refuges in the northeast region and caused \$64 million in damage – the equivalent of 15% of the Refuge System's annual

budget. Some of the refuge wetlands and dunes provided natural protection to nearby communities, but we must rebuild these important natural buffers to be more resilient in the future – both for people, wildlife and the economy.

Rhode Island's coastal lagoons and barrier beaches, which are home to waterfowl, fish species such as striped bass, and endangered species like least tern and piping plover, are highly susceptible to rising sea level and erosive forces associated with more frequent and more significant storm events. In the aftermath of Hurricane Sandy, several coastal restoration and refuge projects have been initiated with the Rhode Island Refuge Complex to increase resiliency for future storms. The goal is to enhance the health and condition of existing salt marshes that are threatened by shoreline erosion and high marsh subsidence.

At Prime Hook National Wildlife Refuge on Delaware Bay is a critical stop on the Atlantic flyway of migratory birds, along with other Mid-Atlantic refuges like Chincoteague National Wildlife Refuge, Blackwater National Wildlife Refuge, and Bombay Hook National Wildlife Refuge. Prime Hook National Wildlife Refuge includes a thin barrier island with a sandy beach, and a marsh behind the beach that has been managed through a series of impoundments as fresh water habitat for migratory waterfowl since the 1960s. Sea level rise and recent coastal storms have degraded the freshwater marsh system at Prime Hook and turned it into an open water system that would not support fish and birds that rely on marshes and wetlands. The elimination of marshes and estuaries also exposes refuge lands and resources to future storms.

Natural erosion, increased due to rising sea levels and increased storm surge, have caused the beach at Prime Hook to be breached by the sea many times over the years, causing an influx of salt water into the fresh-water back bay. Hurricane Sandy greatly accelerated the degradation of the refuge and beach. Residents on the barrier island support fixing these breaches because otherwise the water level rises in the bay and the overall barrier island could erode even more, threatening their houses. Hurricane emergency disaster funds totaling \$40 million are now being used to restore the marsh ecosystem, improve sediment retention, and repair the dunes. Hydrological models and long-term monitoring have been established to guide the restoration activities. Restoration of the natural hydrology will increase resilience and decrease long-term vulnerability and risk from storm events.

In New Jersey, Hurricane Sandy left behind a 22-mile trail of debris in the fragile tidal marshes and woodlands of Edwin Forsythe National Wildlife Refuge. The U.S. Fish and Wildlife Service is working to finish this spring the initial cleanup of the debris and then start to restore these environmentally sensitive coastal areas. The cleanup at Forsythe refuge has been focused on Brick, Stafford and Eagleswood townships, where the bulk of the debris is located. The debris on the refuge includes large piles that contain roofs, docks, boats, household chemicals and drums. Forsythe National Wildlife Refuge protects more than 47,000 acres of sensitive wetlands, marshes, and coastal habitats along the New Jersey shore. It

is one of the most important habitats for migrating waterfowl and shorebirds east of the Mississippi River.

Refuge Manager Virginia Rettig said it best, “Forsythe Refuge’s marshes buffered inland areas from the full brunt of Hurricane Sandy. Nature is our best defense against future storms, and we will clean and restore this vibrant and resilient stretch of coast to sustain wildlife and protect the people of New Jersey in the future.”

Following the clean-up, the U.S. Fish and Wildlife Service will undertake a series of marsh restoration and enhancement projects designed to protect coastal communities and infrastructure along 60 miles of the New Jersey shore by increasing the amount, longevity and quality of thousands of salt marsh acres and their associated natural-human values such as floodwater storage, storm wave attenuation, water quality, boating and other recreational opportunities, public and commercial fishing, clamming and oyster grounds, and navigation channels. These values greatly enhance tourism, and the projects will support planning, engineering, construction and monitoring jobs. The projects will also create opportunities for environmental education and scientific research regarding coastal green infrastructure resilience. The living shoreline project will combine attributes of natural and engineered habitats to absorb and dissipate erosional forces and serve as a demonstration area to educate the public and scientists in technology that can be used to bolster our coastal knowledge to protect communities and natural resources.

Finally, in the southeast, Breton Island National Wildlife Refuge in Louisiana was established in 1904 by Teddy Roosevelt to provide nesting habitat for thousands of pelicans, terns and skimmers. Increases in storm severity and frequency have dramatically reduced available habitat. As a result of events like Hurricane Katrina, what was once an 18,000-acre Refuge is now less than 2,000-acres of habitat. It is forecasted to completely disappear in the next five to ten years, following places like Passage Key in Tampa Bay, which no longer exists due to damage from severe storms.

Drought

This nation has seen a severe cycle of drought over the past five years, with focus now on the effects in California. The California drought presents a serious challenge for residents and farmers and is putting wildlife refuges at risk. Sacramento National Wildlife Refuge, Delevan National Wildlife Refuge and Colusa National Wildlife Refuge, just north of Sacramento, depend on irrigation in the summer and winter to maintain wetlands and food for migratory birds. These refuges cover 20,000 acres and receive annually at least 25,000 acre-feet of water. Due to the drought, they do not expect to receive their water allocation this summer, and each refuge has half the water than it normally does for this time of year for millions of ducks, geese and shorebirds. Sutter NWR will receive no water at all. Migratory birds are forced to forage elsewhere which could lead

to reversing the hard-fought successful restoration efforts won over the last several decades. The lack of water will reduce economic return to local economies and increase conflict between water needs of agriculture, waterfowl and threatened and endangered fish.

Wildfire

Refuges are facing more extreme wildfire seasons. Each year fire budgets are increasingly allocated to fight catastrophic wildfires and protection of the urban-forest interface, leaving dramatically fewer resources for prescribed burning, an extremely important wildlife management tool in Refuges all over the country. Refuges use prescribed burning to reduce wildfire risk and spur regrowth of habitat for species. This is an essential management tool for the southwest and southeast and is integral to the recovery of threatened and endangered species. Last year, the Refuge System had half of the prescribed burning funds as it did in FY10. It is important that more funding is provided for recognized adaptation and mitigation strategies, including prescribed burning and hazardous fuels treatments. This approach can help reduce the costs of large wildfires, promote greater ecological resilience at landscape level, and reduce the impacts to ecosystems services and watersheds.

National Wildlife Refuges – An Economic Powerhouse

In November 2013, the U.S. Fish and Wildlife Service released *Banking On Nature*, a report on the economic benefits to local communities of National Wildlife Refuge visitation. The report states that for every \$1 Congress provides in funding to run the National Wildlife Refuge System, \$4.87 on average is returned to local communities, making it a good investment of government funds. The *Banking On Nature* report also shows that national wildlife refuges are a good investment for local communities, providing a measurable boost to their economies.

Even during the economic downturn, visitation increased at refuges and supported local communities. From 2006 to 2011, refuge visitation increased by 30 percent and overall economic output from refuges increased by 22 percent, resulting in an annual \$2.4 billion returned to local economies every year.

The *Banking On Nature* report shows that the National Wildlife Refuge System:

- Generates \$2.4 billion in sales and economic output, a 20% increase since 2006;
- Welcomes 46.5 million visitors annually, a 30% increase since 2006;
- Returns on average \$4.87 to a local economy for every \$1.00 Congress provides in funding, a 22% increase since 2006;
- Creates 35,000 jobs annually, a 23% increase since 2006;
- Produces \$792.7 million in job income for local communities;
- Generates \$342.9 million in local, county, state and federal tax revenue
- 77% of refuge-related spending was done by visitors from outside the local area.

Examples of Managing for Adaption and Resiliency

Finally, I'd like to offer a few examples of how Refuges are managing for adaptation and resiliency.

Rhode Island Refuges

The purpose of restoration projects at John Chafee National Wildlife Refuge and Sachuest Point National Wildlife Refuge in Rhode Island is to increase coastal resilience to a changing climate for eight local communities, economies and wildlife that depend on healthy salt marsh ecosystems on over 400 acres in key coastal areas of Rhode Island. These projects will: Restore natural hydrologic flow and functioning to 300 acres of key salt marsh habitat; Enhance and sustain marsh habitat and nesting productivity for federal trust species; Enhance marsh resiliency to sea level rise by improving drainage and increasing marsh elevations; Reduce the frequency of flooding onto local roads, which prevents access to the refuge visitor center and beaches; Reduce the distribution of non-native species and limit infestations in the future; and Prevent coastal erosion while mitigating pollution and volume of storm water runoff.

The USFWS, State of Rhode Island, Save the Bay, the Army Corp of Engineers, University of Rhode Island, the Environmental Protection Agency and others are working together to identify programs and practices to enhance salt marsh stability and resiliency across coastal Rhode Island. This work includes a comprehensive restoration strategy on the John Chafee National Wildlife Refuge in the Narrow River to increase salt marsh shoreline stability, use of beneficial dredge materials to enhance salt marsh elevations, and providing for adequate drainage within salt marshes to allow these areas to keep up with sea level at the maximum rate possible.

Everglades Headwaters National Wildlife Refuge and Conservation Area

This new National Wildlife Refuge and Conservation in central Florida is located in the headwater region of a World Heritage Site: the Everglades. The Refuge and Conservation Area was designed to maintain resiliency and provide adaption opportunities for wildlife by conserving large in-tact lands, maintaining water storage and filtration function in the upper watershed, and creating connected corridors of habitat to allow for nearly 50 threatened and endangered species to adapt and remain resilient to environmental stressors such as climate change.

The Conservation Area was designed to engage many federal, state, and local partners, working together to each play a role in protecting this large landscape. What is also interesting about this new collaborative way of doing business is that in addition to securing the areas that will be most resilient to climate change and offer adaptive qualities for wildlife, the effort is simultaneously safeguarding the water supply for nearly 7 million Americans in South Florida, protecting the

American food supply by conserving some of the largest calf-cow ranches in the United States, and it supplements the buffer zone around air training operations at the Avon Park Military Base, allowing the military to train our men and women of the armed forces in combat flight operations. This Refuge is not only good for conserving ecosystems, it protects American ways of life.

Texas Coastal Refuges

The U.S. Fish and Wildlife Service has made strategic investments in future storm response capability. As a result of hurricane damage, the Service has taken proactive steps to consolidate operations and maintenance facilities at four coastal refuges in Louisiana and Texas. The Winnie, Texas depot was constructed in response to repeated hurricane storm damage and loss of heavy equipment. The USFWS consolidated operations into one depot facility rather than continue to maintain separate and distinct fleets of equipment at four low-lying refuges. The facility is centrally located and above any threat from future flooding and serves as the command center for emergency operations. And, the facility is Leadership in Energy and Environmental Design (LEED)-silver rated. We would like to cite this effort as a good investment in adaptation and a model of how to plan for future needs.

Palmyra Atoll National Wildlife Refuge

This remote Refuge in the Pacific Ocean just north of the equator has the most pristine coral reefs left in the world. The U.S. Fish and Wildlife Service is working to remove human stressors such as shipwrecks that bleed iron that in turn ruins reefs, and to restore forests on remote islands. Reducing man-made stresses on the reef allows the reefs to be more resilient to warming waters protects a treasure chest of life that may provide science with species that have played critical roles in fighting disease and providing other benefits to man besides their inherent value and beauty. Palmyra will act as a last refuge of coral reefs in the Pacific.

Funding

We at the Refuge Association thank this body for an increase in the budget of the National Wildlife Refuge System this year over last year. However, this year's enacted amount is still almost 10% down from the FY10 enacted budget. The 150 million-acre Refuge System receives slightly more than \$450 million in operation and maintenance. This compares to the 84 million-acre National Park System that received \$2.2 billion, and the Department of Defense marching bands that received \$500 million. Refuges are underfunded to carry out their important mission, particularly in a changing world. The Service has a proven track record in Rhode Island, Maryland, Florida, Texas, and all over the nation of developing strategies to adapt and keep these magnificent lands and the wonderful wildlife resilient in a changing world. The Fish and Wildlife Service needs the resources to continue to pump \$2.4 billion into the economy each year

plus provide \$33 billion in ecosystem services to the American public. We respectfully ask for your help and support to protect these national gems like Trustum Pond, Wichita Mountains, Black Bayou, White River and the other 562 Refuges that span from the shores of Maine to the reefs of the Caribbean across our heartland to the wide majestic spaces of Alaska to the exotic atolls of the Pacific.

Thank you again for the opportunity to testify before the subcommittee and I would be pleased to answer any questions Senators may have.

BANKING ON NATURE



National
Wildlife Refuge
Association

www.refugeassociation.org

The Banking on Nature Report released by the U.S. Fish and Wildlife Service shows that national wildlife refuges are a good investment for American taxpayers and a boost to local economies. The report shows a trend of increased visitation to refuges and increased economic contribution to local communities, even during the height of the worst economic recession since the Great Depression.



Protection of over

2,170

species of birds, mammals, reptiles,
amphibians, and fish

\$1 **»»»** **\$4.87**

For every \$1 appropriated to the Refuge System, an average of \$4.87 is returned to local economies

BY THE NUMBERS:



46.5
million
visitors



35,000
jobs
created



\$342.9
million in tax
revenue



\$2.4 billion in
economic
output