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Before the Committee on Resources
Subcommittee on Fisheries and Oceans

The Impact of Hurricanes Katrina and Rita on the National Wildlife Refuge System

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Mr. Chairman and Members of the Subcommittee:

I am Mike Daulton, Director of Conservation Policy for the National Audubon Society. Thank you for the opportunity to testify regarding the impacts of Hurricanes Katrina and Rita on the National Wildlife Refuge System. I commend you for holding this important hearing today.

National Audubon Society's 27 state offices and more than 500 local chapters throughout the United States serve more than one million members and supporters. Audubon's mission is to conserve and restore natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity. Our national network of community-based nature centers and chapters, scientific and educational programs, and advocacy on behalf of areas sustaining important bird populations, engage millions of people of all ages and backgrounds in positive conservation experiences.

Audubon has a long history in the Gulf Coast region and has three state offices and 81 local chapters in Louisiana, Mississippi, Alabama, Texas and Florida. Audubon also has a long history of deep connection and commitment to the National Wildlife Refuge System. Early Audubon Societies provided the first wardens to guard our wildlife refuges, a commitment to protection that continues today. As one of the founding members of the Cooperative Alliance for Refuge Enhancement (CARE), Audubon has worked to ensure the great potential of the Refuge System is fulfilled through increased appropriations for operations and maintenance needs.

My comments today will focus on three mains areas: habitat and ecosystem impacts, facility and structural damage at the refuges, and funding and management needs. In the three hurricane seasons from 2003 through 2005, the National Wildlife Refuges in the Gulf Coast region have experienced a wide range of damages from some of the most severe hurricanes ever to strike the United States. The U.S. Fish and Wildlife Service estimates a total funding need to address these damages of $270 million. Emergency supplemental funding granted by the Congress on December 30, 2005 provided $30 million to address some of the most critical needs facing these refuges in the immediate aftermath of the hurricanes.

The president's budget for fiscal year 2007 requests $132 million to address the needs on 61 wildlife refuges in the Gulf Coast region to clean up debris, rebuild and repair roads and

facilities, and repair the water control infrastructure necessary to protect and manage refuge resources. The state-by-state summary of the funding is: Louisiana $103 million, Mississippi $17.5 million, Florida $17.1 million, Texas $12.3 million, Alabama $2.6 million, and Georgia $1.25 million. This funding request is phase one of a multi-year effort to monitor, repair, rehabilitate, and restore the refuges, levees, dikes, marshes, dunes, barrier islands, seagrasses, and forests in the Gulf Coast. Audubon strongly supports the President's request.

The Service also has identified a $96.7 million funding need for immediate stabilization and restoration of damaged habitat and long-term monitoring of the effects of the hurricanes on wildlife resources. The $96.7 million for habitat stabilization and monitoring was not included in the President's proposal but I strongly urge this committee and the Congress to provide this critical funding. The Service would use this money for coastal habitat assessment and restoration, aquatic and upland ecosystem impacts, invasive species, and imperiled species. It will be important moving forward for wildlife habitat needs, as determined by sound science, to be considered as part of recovery planning for Gulf Coast wetlands and barrier systems.

The Importance of Restoring Wetlands and Barrier Systems on Wildlife Refuges to Protect Coastal Areas and Provide Protection for Trust Species

The national wildlife refuges in the Gulf Coast region were established as critical stopovers for migratory birds and to support endangered species and millions of waterfowl. It has long been understood that wetlands provide multiple benefits such as protecting biodiversity, storing water, controlling and mitigating floods, purifying water, and serving as nurseries for populations of fish and shellfish that support the seafood industry. The recent hurricanes, however, brought into stark relief one of the most critically important services that wetlands and barrier islands provide to the Gulf Coast: protecting communities from storm surges and other devastating impacts from hurricanes.

The Fish and Wildlife Service has estimated that the wildlife refuges of the Southeast Region experienced direct land losses, accelerated degradation, or other damage on more than 150,000 acres of coastal and bottomland wetlands. Without the stabilization and restoration of these areas, coastal wetland loss will continue, biodiversity will decline, ecosystem health will suffer, and future storms will be more and more damaging to coastal communities and ecosystems. Although these refuges are highly valuable for protecting trust species of birds and wildlife, they also can play an integral role in the larger restoration efforts ongoing to rebuild and restore the coastal wetlands and barrier systems of the Gulf Coast to better protect coastal communities.

According to the Fish and Wildlife Service, 61 wildlife refuges were directly impacted by Hurricanes Katrina, Rita, Wilma, and Dennis, resulting in habitat destruction and damage to facilities essential for refuge management and recreational programs. More than 4.5 million people visited the 61 affected refuges in 2005. These refuges are immensely popular with birdwatchers who visit the Gulf Coast to see a wide array of bird species including a variety of neotropical migratory birds. More than 45 million birders spend $32 billion each year pursuing their interest in bird and wildlife watching. Overall, these purchases have a ripple effect in the economy that leads to a total of $85 billion in economic benefit and generates more than 800,000 jobs, according to the Fish and Wildlife Service.

Concerns Regarding Impacts to Birds and Bird Habitat

The hurricane impacts to birds and their habitats on Gulf Coast wildlife refuges are extensive, with a number of high priority species and habitats affected. Historically, the Gulf coast areas damaged by the hurricanes have been extremely rich in supporting migratory birds and these areas enjoy some of the highest bird-related recreation. Coastal Louisiana, for example, provides critical habitat for birds migrating across the Gulf of Mexico twice a year and is a prime destination for birding and ecotourism. Coastal Louisiana is the home to 60 percent of all mottled ducks and 66 percent of the entire Mississippi flyway waterfowl population.

Preliminary data from scientific studies performed by federal agencies, as well as direct observations and anecdotal evidence from sources such as Audubon's annual Christmas Bird Count, provide an alarming picture of widespread habitat changes and large shifts in bird migrations. It is not possible to assess accurately at this time whether these changes will result in equally alarming reductions in bird populations, but this early data suggests that the Congress should consider very carefully the need to provide additional funding to restore habitat and provide adequate resources to properly understand the scope of these impacts and how they might be lessened or mitigated.

In preparation for my testimony, I spoke with scientists working with the U.S. Geological Survey at the National Wetlands Research Center in Lafayette, Louisiana. Their research is not yet published but they expect to release it within the next few weeks. These scientists have been monitoring the habitat use of migratory birds in Louisiana and have recorded field observations of significant habitat destruction and large scale shifts in bird migration patterns.

Based on field observations of the USGS scientists, wind and storm surge impacts to bird habitat was pervasive across the Louisiana coast. Trees were completely stripped of their leaves. Fruit and insects, which would have served as food for migratory birds, were at low levels or were gone. In other areas, the low lying shrubs and woody cheniers that would have provided stopover locations for neotropical migratory birds had been buried under six feet of sand and silt. Saltwater intrusion into freshwater marshes and other valuable bird habitats was widespread.

Based on data from radar studies, bird migration patterns appear to have shifted in response to the changes in habitat. In eastern Louisiana, for example, the riverine systems along the shore of Lake Pontchartrain historically used by neotropical migrants widely during this time of year were used very little in the months following Hurricane Katrina. Their habitat use appears to have shifted to upland areas in Mississippi where food might have been more available.

Similarly, based on the radar studies by USGS, in western Louisiana, waterfowl populations appear to have shifted after the hurricanes toward the north into more freshwater areas, away from the coastal areas affected by the saltwater storm surge.

It is difficult to assess at this time how bird populations would be affected. But the scope of the changes in habitat and the significance of the shift in migratory patterns suggests the need for Congress to provide the resources necessary to allow federal agencies with responsibility for

these trust resources to do the studies and monitoring necessary to make appropriate management decisions and maximize the use of funds dedicated to restoration of coastal habitats.

I received a number of anecdotal accounts of declines in bird populations based on a preliminary analysis of data from Audubon's annual Christmas Bird Counts along the Gulf Coast. A sampling of these accounts follows:

- From an organizer of the Sabine Refuge Christmas Bird Count: "It is hard to draw too many conclusions…but I have no doubt that most everything will be near historic lows…Most of these numbers would have been considered low just for a single party on a bad weather day."

- From the Venice, Louisiana Christmas Bird Count: "Very few wintering sparrows, few raptors…essentially all undergrowth was dead, offering little or no cover. No wax myrtle, no berry vines."

- From the Dauphin Island, Alabama Christmas Bird Count: "This was the lowest count in birds and species in the last 10 years…vegetation was seriously damaged, our western area was overwashed."

- From the Grand Isle, Louisiana Christmas Bird Count: "Many resident species and some wintering species appear to be affected. At Grand Isle during Hurricane Katrina, the water poured over the back part of the island and swept toward the beachfront. Much of the understory has been replaced by debris. Trees like mulberries and sugarberries have been knocked back."

- From the New Orleans Christmas Bird Count: "Obviously, bird populations were affected. The most obvious effect seems to have been on resident forest birds and some water birds. For most resident birds, the news was bad – most came in less than half the previous six year average number."

I also received a report from Audubon's Center for Birds of Prey in Florida. The center observed a striking decrease in the number of eastern screech owls admitted to the center in the spring of 2005. Typically, the month of May is when the center will observe an increase in admissions of baby screech owls, most of them fallen from their nests. In 2004, the center admitted 42 screech owl babies. In 2005, the number dropped to 15. Screech owls are cavity nesters dependent on snags and oaks for nest cavities. This may indicate that a loss of trees in Central Florida due to the hurricanes contributed to a decline in this species.

Over the years, Audubon has monitored many of the birds affected by the hurricanes and is particularly concerned that a number of imperiled bird species may have been impacted. Species considered by Audubon scientists to be of conservation concern that may have been affected by hurricane impacts include freshwater wet grass species such as the Black Rail, Long-billed Curlew, Yellow Rail, and Whimbrel; beach species such as Snowy Plover, Piping Plover, Wilson's Plover, Reddish Egret, American Oystercatcher, Red Knot, and Short-billed Dowitcher;

and emergent salt march species such as Nelson's Sharp-tailed Sparrow and Seaside Sparrow. Each of these birds is included on Audubon's WatchList of birds of conservation concern.

Audubon recommends extensive monitoring of neotropical migratory birds and priority bird species of conservation concern, as well as complete assessments of natural resource damage. Without annual surveys and habitat assessments over the next five years, the Service will be unable to separate effects of Hurricane Katrina from other causes of habitat change and bird population fluctuations.

Concerns Regarding Impacts to Threatened and Endangered Species

Audubon is concerned about the impacts the hurricanes have had on species listed as threatened or endangered under the federal Endangered Species Act. In Southeast Louisiana, for example, the Big Branch Marsh National Wildlife Refuge has lost 70 percent of the trees that were documented nesting sites for the endangered Red-cockaded Woodpecker.

The refuge staff at Big Branch March NWR has been actively going out and putting new cavities in trees to replace the nesting sites. The Service is conducting "spring roost counts" for the birds right now and is optimistic that many of the 15 to 17 Red-cockaded Woodpecker families that nest on the refuge each year will nest again this April.

However, there is one area of Big Branch Marsh NWR where no trees are left standing at all, and the ground is making it difficult for refuge staff to access. There is a layer of "sticky pudding" from deposited debris and muck that their four-wheelers cannot get through. Five of the Red-cockaded Woodpecker families historically used this area that is difficult to access with no standing trees. It is unclear how the birds that used the habitat in this area that was completely destroyed will adapt to the changed environment.

The Breton National Wildlife Refuge is important for nesting birds and in particular it is a globally important nesting area for 15 percent of the world's endangered Brown Pelicans. Breton is part of Chandeleur Islands and lost 50 to 70 percent of its land due to the hurricanes. The amount of land that is above the water line that could serve as nesting habitat has been greatly reduced. The refuge is not getting the natural replenishment of sediment from the Mississippi River the way it did historically. The refuge staff is considering projects to do dredging to build up the islands and do plantings to bring back native vegetation. The Breton Refuge's chain of barrier islands provides a significant wave buffer for the city of New Orleans as well as wetland coastal areas. Restoration on the refuge will help protect the communities of Louisiana, protect the area's vital wetlands, and also provide habitat for endangered species.

Audubon recommends that monitoring and surveys be conducted for the Brown Pelican. Late last year, the Service announced plans to issue a rule to delist the Gulf coast population of the brown pelican. Many coastal habitats have been destroyed and assessment of the nesting and roosting areas in needed before the Service can move forward with delisting.

Mississippi Sandhill Crane NWR was created to protect the endangered Mississippi Sandhill Crane, of which 135 exist in the wild. The recent hurricanes caused the deaths of two very

important breeding females, which have been responsible for 40 percent of all fledged young since 1997. Biologists at the refuge are optimistic that other females will be able to replace this reproductive success, but extensive monitoring of this vulnerable population will be needed. Structures used to observe the species in the field must be rebuilt, and the refuge will need biologists to conduct monitoring. Currently the refuge has one full time biologist and one full time assistant to conduct the field work, and additional staffing may be necessary.

The Need to Repair Damage to Water Control Infrastructure to Ensure Ecological Health and Biological Integrity

The 2005 storms breached levees and dikes important to wildlife and habitat management and flood control on national wildlife refuges. These levees and dikes protect freshwater marshes from damaging saltwater intrusion and allow the Fish and Wildlife Service to manage the wetlands for optimal conditions for millions of migratory birds. For example, some water control structures used in Gulf Coast refuges allow refuge managers to maintain a historic continuum of different marsh types -- freshwater, intermediate, and saline – to which different species are adapted. Without active management of water levels to maintain this diversity of habitats, the species that use the refuge will be less biologically diverse. With pieces of the ecological puzzle missing, the wetlands may provide fewer ecosystem services to surrounding communities.

The Refuge System is managed under authority of the Refuge Improvement Act of 1997, which directs the Fish and Wildlife Service to manage the System to ensure the environmental health and ecological integrity of the refuges. The Service's ability to manage the refuges in a manner consistent with its legislative mandate will be severely limited without additional funding to repair water control infrastructure.

The Need for Immediate Assistance to Ensure Proper Cleanup of Hazardous Debris

In addition to habitat impacts to a variety of Gulf Coast refuges that require major restoration efforts to protect trust species, many refuges are in need of an immense amount of debris cleanup. All four of the southwestern Louisiana refuges were devastated by hurricane Rita. According to a recent report, the Sabine National Wildlife Refuge is threatened by more than 1,400 barrels of toxic liquids blown in by the hurricane. These barrels hold 115,000 to 350,000 gallons of oil, bleach, and propane, and several containers of lethal chlorine gas were found on the refuge as well. The barrels are part of a six-mile debris field which includes two 18-wheelers, plywood, aluminum siding, and refrigerators. Much of the debris came from the oil and gas facilities that surround the refuge.

The marsh presents difficulties both in terms of access to the refuge to retrieve hazardous materials and other debris, as well as presenting a risk that hazardous materials will sink down into the marsh, out of sight. Fish and Wildlife Service hired consultants to review the risks at Sabine National Wildlife Refuge who recommended that thermal surveys be conducted to identify any sunken materials that may present a risk to the environment.

The costs of managing the damage to Sabine Refuge are not yet completely understood. The cost of managing the damage to Bon Secour Refuge from Hurricane Ivan may help to put the potential costs in perspective. Hurricane Ivan hit Bon Secour Refuge with a 16 foot storm surge carried large amounts of debris from destroyed houses in nearby development. The refuge spent $3.5 million and eight months using the cooperation of three federal and state agencies to remove hazardous and non-hazardous debris from 200 acres of the refuge. The hazmat cleanup took three weeks, but most of the hazardous debris was from household products. Sabine Refuge presents a hazardous materials problem that is orders of magnitude larger, with acutely toxic materials brought in from oil and gas facilities, and a debris field strewn across 32,000 acres.

The recent report entitled "Assessment of Hazardous Materials and Debris from Hurricane Rita in the Sabine National Wildlife Refuge" provides important data on the extent of the problem but additional surveys are needed to identify submerged items. The Service has estimated that it will cost between $10 million and $50 million to clean-up and remove the hazardous debris at five national wildlife refuges during to the hurricanes.

It appears that additional funding, beyond the Bush Administration request in the emergency supplemental bill, will be needed to cleanup debris and toxic waste at many of the refuges. Contaminant assessments are necessary to enable us to identify and prioritize corrective actions.

Conclusion

Facing a backlog of operations and maintenance needs now well over $2 billion, the National Wildlife Refuge System does not have the funding available to divert to the acute threats and emergency needs created by Hurricanes Katrina and Rita. National Audubon Society supports the President's emergency supplemental request to restore the wildlife refuges of the Gulf Coast that have been devastated by hurricanes. An additional $96.7 million for habitat stabilization and monitoring of the national wildlife refuges impacted by the hurricanes should be included in the emergency supplemental appropriations bill.

The refuges in the Gulf Coast region have drastically changed and it is essential that baseline surveys of habitat damage and bird and wildlife populations are conducted as soon as possible. These surveys will be an important guide for managers as they begin to cleanup, repair, and restore the refuge system. In addition, it is critical that the Fish and Wildlife Service, as a large landowner in the Gulf Coast region, participate fully in the efforts of federal, state, and local agencies, as well as partner organizations, to rebuild and restore wetland habitat and the barrier islands that will be necessary to ensure protection of the vast biological resources of the area and to protect coastal communities from future storm events.

Mr. Chairman, this concludes my prepared statement. I would be happy to answer any questions you may have.