TESTIMONY OF

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CONCERNING:
"Going, Going, Gone? An Assessment of the Global Decline in Bird Populations"

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Madam Chairwoman, members of the committee, my name is Dale Humburg. I am the Chief Biologist for Ducks Unlimited and am here today to provide testimony on the status of birds, the rich history of conservation on their behalf, the threats to their numbers and distribution, and the conservation actions that can be implemented to assure their future.

By way of background, I began my career as a quail and pheasant research biologist in Iowa in 1976 and then served as Missouri's wetland and waterfowl biologist for 25 years. I have experience in wetland and waterfowl research involving extensive goose surveys in the Arctic and subarctic, wetland management, Canada goose wintering ecology and a number of studies following the 1993 flood on the Missouri River where we investigated avian response to the flood-altered landscape. I served as Chief of the Missouri Department of Conservation's Resource Science Division during 2002-2005, where I placed emphasis on employing adaptive management as a framework for explicit use of reliable information for management and policy decisions. I retired after 30 years with the Missouri Department of Conservation to begin another career in September 2007 as Ducks Unlimited's Chief Biologist. In this position, I coordinate waterfowl and wetland science for DU's conservation programs and act as liaison between DU and other waterfowl interests.

My involvement in bird conservation has included 25 years as a member of the Mississippi Flyway Council Technical Section, chair of the Coordinated Bird Monitoring Working Group (AFWA), member of the North American Bird Conservation Initiative Monitoring Sub-Committee, and member of the Association of Fish and Wildlife Agency's Bird Conservation Committee, Science and Research Committee, and Waterfowl Working Group. I am a wetland owner and manager, and 50 years after first hunting ducks with my dad, I am passing on lessons learned while in the duck boat to my grandsons.

I appreciate the opportunity today to emphasize the status of waterfowl – ducks, geese, and swans – the primary focus of Ducks Unlimited. Our organization has been a strong and active proponent of bird conservation for more that 70 years. Our mission is to conserve, restore, and manage wetlands and associated habitats for North America's waterfowl, and for the benefits these resources provide other wildlife and the people who enjoy and value them. We have worked in Canada, Mexico, Latin America, and in every state of the U.S., and since 1937, DU has conserved more than 12 million acres of habitats important to waterfowl. With more than a million supporters, Ducks Unlimited represents a significant conservation voice for birds and the landscapes that support them. Our work is science-based. We use reliable information from disciplines of wetland ecology, waterfowl biology, hydrology, and landscape ecology to develop, implement and adapt conservation activities to ensure our vision of wetlands sufficient to fill the skies with waterfowl today, tomorrow and forever. We work in the most important landscapes used throughout the annual cycle of waterfowl - the breeding season, while in migration and during the winter.

COMMITMENTS TO WATERFOWL CONSERVATION

Migratory bird management, by international treaty and the Migratory Bird Treaty Act, is the ultimate responsibility of federal agencies. It also represents a model partnership of federal authority, state's responsibility, and significant private interests for the more than 900 species of

birds in North America. Waterfowl management, as an integral part of the bird conservation picture, represents one of the most enduring and notable commitments to bird conservation in the world. These commitments come in the form of partnerships, funding, institutional strength, a basis in science, and public support.

This conservation partnership is evident in the North American Waterfowl Management Plan (NAWMP) established in 1986, which has been the framework for protection, restoration and management of nearly 16 million acres of waterfowl habitat. In an even broader conservation partnership, The North American Bird Conservation Initiative provides the forum for collaborative efforts across all interests in bird conservation.

The North American Wetlands Conservation Act, passed in 1989, has provided more than $790 million in federal dollars and has been leveraged through conservation partners, by more than four times the appropriated amount. In the longer term, the Migratory Bird Hunting Conservation Stamp - commonly referred to as the "Duck Stamp" - has generated more than $700 million since its inception in 1934 and has been responsible for permanently protecting 5.2 million acres of habitat in the National Wildlife Refuge System.

The management of migratory birds has been formalized through organizational commitments such as the Flyway Council System that has been in place for a half century. The Flyway Councils provide for collaboration among states, provinces and federal agencies in the U.S. and Canada (U.S. Fish and Wildlife Service and Canadian Wildlife Service, respectively).

A commitment to surveys and monitoring ensures the scientific basis for waterfowl management and is an essential part of the annual regulations setting process. For example, more than 16 million ducks and geese have been banded since the early 1900s, providing knowledge about migration, distribution and survival. One of the most extensive bird surveys in the world is found in the annual spring survey of breeding ducks and habitat conducted across 2.1 million square miles of the U.S. and Canada. Conducted operationally since 1955, this survey reflects trends in waterfowl numbers that allow us to measure conservation performance and concurrently, raise a caution flag when populations decline.

Surveys and research have allowed us to document changes in numbers of different species of waterfowl. These are strong signals of something more than expected variation in species' population dynamics and natural changes in habitat conditions. While recent declines in key duck and goose populations are sources of concern, the causes of decline are not the same for different species in different landscapes shared by many more species of birds than waterfowl. Ecological changes in coastal wetlands, Midwestern lakes, prairie grasslands, boreal forests, and Arctic tundra represent landscape effects that have been implicated in bird declines.

Finally, for more than a century, sportsmen have provided the foundation of political and funding support for resource management that is unique world-wide - known as the North American Model of Wildlife Conservation. Support from passionate and committed waterfowlers has provided leadership in this regard. From the 1.5 million "Duck Stamps" purchased annually, to support through license sales, excise taxes on sporting goods and hunting-trip expenditures, waterfowlers are an economic "driver" in the U.S. responsible for more than $2.3 billion in total economic output each year – just from this single group of bird enthusiasts. This complements

the more than 40 million bird watchers and more than $120 billion spent by the large community of hunters, anglers and wildlife-watchers.

BIRD POPULATIONS IN DECLINE – SOME WATERFOWL EXAMPLES

1. American black duck populations have declined by as much as 60 percent or more in some traditional wintering areas, such as Chesapeake Bay. Concerns about the status of tidal salt marsh and freshwater habitats have increased as development pressure along coastal areas continues to accelerate, and black ducks increasingly have difficulty finding quality wintering habitat. Although breeding populations appear to have stabilized over the last two decades at levels below the North American Waterfowl Management Plan goals, concerns remain about human activities such as logging, hydroelectric development, transmission line construction, agriculture, urbanization and industrial development. The connectivity between breeding and wintering conditions remains in question, and research into affiliations of black ducks with these seasonal habitats will help guide the conservations efforts yet to be employed.

2. Scaup populations (greater and lesser scaup combined), especially those breeding in the western boreal regions of Canada, have declined steadily since the mid-1980s. Continentally, numbers averaged 6.3 million breeders during the 1970s, but have declined to 4 million or fewer since 2000. Hypotheses offered for these declines include decreased quality and quantity of food resources on winter and spring migration stopover areas, accumulation of contaminants, and changes on boreal breeding habitats due to climate change. Reduced female survival and production of young appear to be key causes of decline. However, the impact that deteriorated habitat conditions along migration routes have on the bird's reproductive success after they arrive in boreal breeding areas is poorly understood. Changes in water quality affecting food supplies in migration areas and climate change impacts on the availability of suitable breeding habitat point to the complex cross-seasonal challenges faced by scaup. Current work with satellite equipped scaup is designed to shed light on the questions about affiliations between migration areas and remote nesting grounds. Still, conservation actions will need to be focused on the large landscape threats to scaup recovery.

3. Although survey data are severely limited for sea ducks that rely on Arctic regions, numbers of scoters, eiders, and long-tailed ducks estimated from available surveys appear to have declined over recent decades. Cost, specialized equipment requirements, and inaccessibility make adequate survey work difficult. Conservation concerns include potential population stressors such as contaminants, fisheries by-catch and offshore development in wintering areas.

4. Unlike other North American duck species, mottled ducks are non-migratory and must satisfy their annual resource needs from a small geographic range. They are the primary breeding waterfowl of the Western Gulf Coast, inhabiting peninsular Florida and coastal marshes from Alabama to Tampico, Mexico. As a result, changes in coastal habitats have effects on their entire life cycle. Degradation of coastal marshes by saltwater intrusion, the threat of sea level rise, subsidence due to oil and gas withdrawals, and coastal erosion in Louisiana and Texas are primary concerns for conservation of mottled

ducks. Research has been initiated to build the knowledge needed to determine the relative importance of different habitats and effectively prioritize conservation strategies for mottled ducks. No consistent and statistically rigorous survey of mottled ducks has been developed.

5. Breeding population estimates of northern pintails declined dramatically after the 1970s and have not exceeded four million since 1980, remaining at least 20% below their long-term average throughout that period. On-going habitat loss in prairie grassland landscapes is a primary cause of low pintail reproductive output and a key factor in population decline. Accelerated losses of native prairie and CRP present major threats. More than 75% of native prairie has been lost during the last century and the rate of loss increased 40% in 2007. In key nesting areas, average annual losses approach 2% per year. At this rate of habitat loss, the likelihood of pintail recovery is low unless landscape-scale efforts are made to enhance recovery. In addition, more than 800,000 acres of Conservation Reserve Program grass cover were lost in 2007 alone and only 4 million of the 7.4 million acres currently enrolled in CRP are projected to remain by 2012 unless rental rates become more competitive. Compounding the problems for pintails is the loss of key migration and wintering habitats in the Klamath Basin, California's Central Valley and along the Gulf Coast. In Texas and Louisiana, 1.2 million acres of interior coastal marsh has been lost and an additional half-million acres lost by 2050 is projected. Wetland losses, urban expansion, subsidence due to mineral extraction, salinity modification, agricultural conversion from rice to cotton and soybean, and conflicts over water use patterns all have influenced habitat quality and quantity.

INCREASING AND DYNAMIC WATERFOWL POPULATIONS

We should not limit our concerns to bird populations in decline. In a few instances, over-abundant species present as great a conservation concern as declining numbers. In the case of Mid-continent Lesser Snow Geese, for example, winter indices increased from fewer than 1 million in 1970 to nearly 3 million by the late 1990s. Increasing numbers of this colony nesting goose species have caused dramatic impacts to the fragile Arctic tundra resulting in what has been described as an "ecosystem in peril." The impacts of large numbers of geese and expanding distribution have been over-grazing, increased salinity, denuded tundra, and little likelihood of vegetation recovery for hundreds of years in some regions of the Arctic.

Not all waterfowl species have declined in number. During the same period of depressed populations of species such as scaup, American black ducks and northern pintails, other waterfowl species – mallards, blue-winged teal, green-winged teal, gadwalls, northern shovelers, redheads and canvasbacks – have recovered to NAWMP goals or exceeded them. In some instances, waterfowl species in decline share landscapes – at least during portions of the annual cycle - with those that are abundant. This points to conservation successes for certain groups of species. However, it also reflects the complexity of the ecological and biological relationships involved in avian life history and the challenges as bird conservation measures are crafted.

PERSPECTIVES ON BIRD CONSERVATION

Clearly, we need more complete understanding of the factors affecting bird populations and how conservation actions can be implemented to sustain viable populations and avian diversity. The scales of conservation efforts often do not match the scales of geographic or seasonal requirements for bird survival and reproduction. Management strategies for birds must be comprehensive enough to address seasonal demands in the breeding season, throughout migration periods, and during winter and effectively focus on the "biological bottlenecks" limiting species recovery. In addition, tradeoffs in conservation actions also must be acknowledged; disproportionate management attention in favor of certain species may not favor others. Conservation strategies for a diversity of bird species can only be accomplished at landscape scales with comprehensive consideration for all species groups.

Two additional features need to be considered. First, many bird populations exhibit considerable annual variability in number as environmental conditions impact habitat for nesting, brood rearing, molting, migration, and wintering. Annual variation in some species' numbers is the result of natural variation in the ecological processes "driving" highly dynamic landscapes within which they reproduce and survive. Therefore, effective bird conservation is less about managing the birds or even their habitats on small scales but much more about protecting or restoring landscape scale ecological processes of hydrology, disturbance, and connectivity. From a bird conservation perspective, it is less about planting grass and more about restoring the role of fire and grazing; less about impounding water and more about restoring hydrology; and, less about constructing levees and more about restoring ecological buffers in the form of coastal marshes and prairie wetlands. This will require large scale conservation strategies for continentally distributed bird populations.

Secondly, we need to realistically consider changes in landscapes as we design conservation programs for the benefit of birds. In many respects, the ecosystems within which birds exist have changed, and our "reference condition" for bird conservation must be in the context of these changes. Usually, these have been due to anthropogenic alterations as land is farmed, roads are built, cities expand, and rivers are "controlled." Many of these changes are irreversible and present a significantly different ecological system than was present when bird populations and diversity developed. Yet, changes in bird numbers and distribution serve as strong signals about the stresses on ecosystems which will continue to face us as we address challenges of growing human populations and demands on natural resources.

It is clear that bird population declines present important challenges to conservation agencies and organizations. Most birds are migratory and conservation actions in a single landscape are not sufficient to address the bird's annual cycle of production, migration, and wintering. Focused conservation actions, comprehensive understanding, and long-term surveys and monitoring to evaluate success will be needed if avian diversity and population sizes are to be maintained.

CONSERVATION STRATEGIES AND CHALLENGES

Ducks Unlimited has been an active partner in bird conservation for most of the last century. We have effectively focused more than 80% of all of our funding on conservation activities for waterfowl and the landscapes they require. This emphasis will continue and will be even more

purposefully directed towards those landscape-scale actions that science indicates are most important for waterfowl. We will work closely with decision-makers to ensure that policy actions and their impacts on waterfowl are fully understood, and more importantly, how public policy affecting waterfowl also benefits or detracts from important societal priorities as well.

To effectively conserve bird populations, however, funding and institutional commitments must increase. Funding for the North American Wetlands Conservation Act, budget support for Joint Ventures working within the North American Waterfowl Management Plan, and an increase in the price of the Migratory Bird Hunting Conservation Stamp in support of the National Wildlife Refuge System are all essential foundations for bird conservation.

Permanent protection, restoration, and management must continue to be key long-term strategies for bird conservation. Sustained bird populations will not be assured, however, by conservation measures that specifically focus only on the birds. More than half of our nation's wetlands have been lost, in excess of 70% of native prairie has been converted to annual crops or cool-season grasses, and 80% of bottomland forest in key wintering areas has been lost as well. Thus, over-riding landscape threats to birds require landscape solutions.

The solutions to declines in bird populations are to be found in the broader policies addressing social and environmental challenges that we all face in climate change, the search for alternate energy, unplanned development, declining water quality and quantity, and overall changes in our social landscape. Here, a single policy decision can have greater impacts on bird status – both positively and negatively - than combined gains from conservation strategies directed specifically at birds. Notable among these are decisions on agriculture policy, the Clean Water Act, alternate energy, and climate change. Decisions made regarding these issues will have over-riding influence on bird status world wide.

Although some elements of the 2008 Farm Bill included conservation provisions benefiting birds, the Bill as a whole did not meet Ducks Unlimited's hopes for sustainable land use and gains in waterfowl landscapes. We appreciate the value to waterfowl from extended tax benefits for private wetland owners, re-authorization of the Grasslands Reserve Program, Open Fields provisions that encourage hunting and fishing access, and watershed protection for the Chesapeake Bay. However, the accelerating decline in Conservation Reserve Program acreage, continued losses of native prairie – projected to be 3.3 million acres in the next five years, and reduced authority of Wetland Reserve Program by almost 100,000 acres per year all combine to limit the conservation value of the 2008 Farm Bill when compared to previous provisions. The decline in the health of landscapes important to birds will certainly accelerate. Birds will have reduced breeding success and fewer wetlands will be available in migration and winter as a result of these changes. Ducks Unlimited urges stronger consideration in the future of the dual value of landscape conservation for sustainable land use and for bird conservation as well.

The Clean Water Act (CWA) has been an important component of the national framework of wetland conservation for more than 30 years. Although the CWA has likely contributed to past declines in the rate of wetland loss, recent judicial decisions and regulatory actions put much of the nation's remaining wetland resources at increased risk of loss by effectively removing them from federal CWA jurisdiction. Recent studies document that nationwide losses of wetlands most important to waterfowl and other wildlife continue to exceed 80,000 acres per year. These

losses have significant impacts on important ecological goods and services to the nation through the hydrologic functions that wetlands provide. For example, a primary function of wetlands is to store water, and this equates to protection of downstream landowners and communities from flooding; stark reminders within the last month put an exclamation point on the impacts of wetland loss and the resultant flooding on homes and businesses. In addition, wetlands improve the quality of water by trapping sediment and associated chemical constituents, or by storing and recycling nutrients and other chemicals. Concerns arose, however, when Clean Water Act protections were withdrawn as a result of the *SWANCC* and *Rapanos/Carabell* decisions in the U.S. Supreme Court, and the subsequent regulatory interpretations by the U.S. Army Corps of Engineers and Environmental Protection Agency. Overall, the vast majority of small, non-adjacent wetlands in areas important to waterfowl were put at significant risk of loss as a result of the *SWANCC* and post-*Rapanos* guidance. These ephemeral basins, even though they may not be proximate to or directly connected on the surface to navigable waters, provide significant influence through water table connections, water retention, ground water recharge, and nutrient and sediment retention. In light of the explicit purpose of the Clean Water Act, *"to restore and maintain the chemical, physical, and biological integrity of the Nation's waters,"* we believe that passage of legislation is the only apparent remedy for restoring wetland protections that are at least as strong as those that existed prior to 2001. Without adequate wetland protection through the Clean Water Act, significant bird habitat will continue to be lost and even greater population declines undoubtedly will occur.

In the search for viable sources of energy alternatives to foreign oil, potential for significant impacts on bird populations emerge as important habitats are converted into sources for biofuels. Conversion of grasslands and wetlands to corn for ethanol represents a significant threat to birds. With a mandate to replace 30 percent of the nation's transportation fuel consumption with renewable fuels by 2030, the challenges for wetland protection and grassland conservation are stark. Technological advances and emerging industry favoring cellulosic ethanol production present an alternative that has greater potential for conserving soil, birds, and the compatible value of cattle ranching for improved landscape condition.

Climate change, accepted by the scientific community as a global reality, will impact every aspect of our environment, including North America's wetlands and waterfowl. Although the specific impacts are difficult to predict, changing precipitation patterns, greater variability in weather, rising sea levels, species extinctions and extreme weather events are among the expected outcomes. From a waterfowl perspective, climate change is expected to alter the wetland habitats in all priority waterfowl landscapes. Integrating predictions of climate change into wetland and waterfowl planning will involve consideration of impacts of sea level rise on coastal wetlands, accounting for known climatic variations in conservation planning, and taking climate change into consideration when selecting the location and other characteristics of conservation areas. Policies that limit greenhouse gas emissions; protect and enhance the ability of forests, grasslands, and wetlands to absorb and store carbon; and strengthen programs to promote energy efficiency will benefit long-term bird conservation. Key to implementation of bird conservation strategies is policy support for the development of market-based tools for environmental goods and services and the direction of funds that result to conservation of wetlands and associated habitats. Additionally, support for an increase in science and monitoring will be essential to advance our understanding and evaluate the results of adaptation to climate change. Failure to immediately address climate change will only result in a continued increase in

the atmospheric concentrations of greenhouse gasses and long-term threats to birds as a result. Partial solutions to the issue can be found in many of the existing strategies employed to conserve waterfowl, such as protecting and restoring the quantity and quality of wetland and grassland habitats.

CONCLUSION

Decisions made in favor of birds will have positive and complementary influences on the larger societal challenges. Assuring wetland protection through the CWA, for example, will benefit waterbirds, but will also ensure water quality, flood protection, nutrient filtering, and recreational opportunity. Grasslands conservation through agriculture policy will maintain grassland-nesting bird populations and also sequester carbon, maintain cattle and ranching lifestyles and economies, and provide soil conservation benefits. Effectively addressing climate change will mitigate impacts of sea level rise, potential water shortage, and extreme weather and also will benefit bird conservation as wetland, grassland and forest conservation are employed as part of the solution.

Successful bird conservation will require greater awareness by the public of the benefits and necessity of landscape conservation actions. To be successful, sufficient science will be needed to define the problem, effective management actions will be required to ensure population recovery and maintenance, adequate funding will be essential to implement conservation initiatives, monitoring and evaluation must be employed to determine if we are successful, and institutions must be willing to change the course of action if we are not successful.

This is not just about ducks … actually, it's not even about birds in general. It's about dramatic changes in landscapes important to birds and to people as well. Changes in bird numbers and their distribution can signal that key environmental functions require immediate attention. Birds often serve as the proverbial "canary in the coal mine," but on a continental scale.

Thank you for this opportunity to present our views on this issue, one that is central to the mission of Ducks Unlimited, the entire bird conservation community, and the millions of bird enthusiasts. Please do not hesitate to call upon us for any reason regarding these important issues. I would be happy to try to answer any questions you might have.