STATEMENT OF LARRY HINDMAN OF THE MARLAND DEPARTMENT OF NATURAL RESOURCES BEFORE THE SUBCOMMITTEE ON FIHSERIES CONSERVATION, WILDLIFE AND OCEANS ON THE MIGRATORY BIRD TREATY ACT AND INTRODUCED, NONNATIVE MUTE SWANS

December 16, 2003 Annapolis, Maryland

I am Larry J. Hindman, Waterfowl Project Manager, for the Maryland Department of Natural Resources (DNR), Wildlife and Heritage Service. The Maryland DNR is a state government agency authorized to preserve, protect, enhance and restore Maryland's natural resources for the wise use and enjoyment of all citizens.

Mute swans are an invasive, nonnative species that now inhabit the Chesapeake Bay in large numbers. In Maryland, mute swans are included in the statutory definition of Wetland Game Birds (Natural Resources Article [NR], Section 10-101). This law does not list the specific names of native species of waterfowl that winter and breed in Maryland, but only identifies ducks, mergansers, brant, geese, and swans as wetland game birds. This law was promulgated prior to the accidental introduction of mute swans in Maryland. State law gives DNR the authority to allow the taking of wetland game birds during an open hunting season, although no swan season has been opened in the state since 1918. Further, it gives the DNR the authority to regulate the possession, sale, trade, exportation, and importation of mute swans in Maryland (NR Article Section 10-903).

Prior to a recent court ruling (http://www.ll.georgetown.edu/Fed-Ct/Circuit/dc/opinions/00-5432a.html), mute swans were not regulated by the U.S. Fish and Wildlife Service (USFWS). Primary management authority was held by individual states. Prior to February 2002, all mute swan control activity conducted in Maryland was done under the authority of State law (Natural Resource Section 10-206). This statute authorizes the DNR to reduce a wildlife population in any county, election district, or other identifiable area after a thorough investigation reveals that protected wildlife is seriously injurious to agricultural or other interests in the affected area. State law enabled the DNR to conduct mute swan control activities without a Federal Depredation Permit and allowed the DNR to issue authorization to citizens and other entities to control mute swans to prevent depredation of wetlands. It also allowed the DNR to authorize citizens to control swan pairs that caused nuisance and personal safety problems.

Now with the U.S. Fish and Wildlife Service (USFWS) now having regulatory authority for the management of mute swans, state wildlife agencies must obtain a Federal Depredation Permit to conduct mute swan control activities. Because of recent legal challenges, Federal Depredation Permits issued to the Maryland DNR and other state wildlife agencies to control mute swan populations have been rescinded. These legal challenges may prevent the USFWS from authorizing the DNR to conduct mute swans control activities prescribed in Maryland's Statewide Mute Swan Management Plan. Without this authorization, the mute swan population can be expected to increase and expand its range. Further delays in properly managing mute swans will cause negative impacts to native avian species and damage to critical Bay resources.

For this reason, we encourage Congress to amend the Migratory Bird Treaty Act by excluding the mute swan from the List of Migratory Birds. This would return the primary management authority for managing mute swans to state wildlife agencies and allow them to effectively address the serious ecological and nuisance problems caused by this nonnative species.

The mute swan population in Maryland has been attributed to the escape of five captive birds along the Miles River in Talbot County during a spring storm in March 1962. Following this accidental introduction, the mute swan population grew slowly for two decades. However, after the mid-1980s, the swan population underwent dramatic growth and range expansion, rising to about 4,000 birds by 1999 (Figure 1). At the rate of increase observed during this period, and absent management, the swan population may have exceeded 30,000 birds by 2010. The population decreased from 3,955 in 1999 to 3,624 in 2002. Egg addling and the removal of adult swans from Federal National Wildlife Refuges by shooting and authorized scientific

collecting played an important role in the population change.

Mute swans feed exclusively on submerged aquatic vegetation, commonly referred to as SAV or baygrasses. Recent food habits research has shown that mute swans in Chesapeake Bay feed primarily on wigeon grass and eelgrass, both important foods for native, wintering waterfowl. Further research has shown that each mute swan consumes about estimated 8.3 lbs. (3.789 kg wet weight)) of SAV daily ((Willey and Halla 1972). Fenwick (1983) determined that male swans in Chesapeake Bay consumed 34.6% 10.8 SD of their body weight per day, females 43.4% 12.9 SD. Assuming that an adult/subadult mute swan consumes an average of 8 lbs. of SAV per day, we estimate that the current mute swan population in Maryland consumes an estimated 10.5 million pounds of SAV annually. This value is equal to about 10% of the total SAV biomass in the Bay (2001 Survey). This level of swan herbivory upon SAV, places additional stress upon this critically important habitat especially at the local level, which is already limited by other environmental factors.

SAV is critical to the health and well being of a myriad of Bay organism. SAV protects water quality from pollutants, introduces oxygen into the Bay, prevents erosion, and offers food and shelter for fish, shellfish, invertebrates and waterfowl. By way of example, the density of juvenile blue crabs is 30 times greater in SAV beds than in non-vegetated areas of the Bay. SAV has declined throughout the Bay because of water quality problems, and the large mute swan population is a threat to the native grass beds that remain, especially the new beds planted in restoration efforts.

Although no quantitative assessment has been done in Maryland to determine the cumulative effects grazing mute swans on SAV, studies of mute swans in several areas of the world have shown that these birds can negatively impact SAV communities.
For example, in Europe, mute swans have been known to completely remove individual plant species from some wetlands, eliminating this food source for other waterfowl that feed on the same SAV species.
In high concentrations, mute swans can overgraze an area. In a recent Rhode Island study, consumption of SAV by mute swans was indirectly measured by comparing control and exclosure plots. Findings indicated that mute swans overgraze SAV in shallow water (0.5 m) and can reduce SAV biomass by 92-95%.

Maryland citizens frequently complain that concentrations of mute swans over-grazed some SAV beds reducing the availability of SAV to native wildlife and reducing recreational crabbing and fishing opportunities. Mute swans have completely destroyed a number of bay grass planting projects (Chesapeake Bay Foundation's letter to Maryland's Secretary of Natural Resources). Presently, all SAV transplanting sites in the Bay have to be fenced to prevent mute swan depredation. The South River Association reports that Mute Swans have destroyed plantings of saltmarsh cordgrass (Spartina alternaflora) made to restore wetlands and improve water quality in the South River. The cost of replanting the site twice was about $4,700.

Aside from simple biomass of SAV eaten by mute swans, there are a number of specific concerns about the effects of swan eating habits upon the recovering SAV populations in Chesapeake Bay. Swans have different, more destructive feeding habits than do other species of waterfowl. This behavior involves disturbing the sediment to loosen it, then feeding on subterranean tubers used as asexual reproductive structures by SAV. Mute swans have also been observed pulling and consuming intact plants rather than feeding only on plant parts, as do native waterfowl. Mute swans uproot large quantities of aquatic plants and can disturb much more vegetation than they actually eat. Through the partial or complete destruction of individual SAV beds, this feeding behavior could impact future SAV growth, resulting in reduced food stocks for native waterfowl.

The upper Chesapeake Bay region is one of the most important areas in North America for migrating and wintering waterfowl. One of the reasons the Bay has held such attraction for these birds has been the quantity and variety of SAV species. Native species of SAV in the Bay have evolved concurrently with native waterfowl, and the timing of feeding by native waterfowl does not overlap temporally with SAV reproduction.

Unlike other swan and waterfowl species, most mute swans do not migrate during the winter months, and rarely move more than 30 miles during their lifetimes. Consequently, mute swans remain in and about the Bay feeding upon and disturbing SAV year-round. Mute swans feed extensively on above ground biomass before tubers have begun to form, thus preventing the plants from forming these important reproductive structures and potentially eliminating the resource from some areas.

Certain wintering waterfowl species dependent upon SAV have declined in Chesapeake Bay and remain

suppressed due to the reduced abundance of SAV. Declines in SAV abundance appear to correlate with declines in local black duck (Anas rubripes) abundance. The loss of SAV over the past several decades has prompted the near abandonment of Bay waters by redheads (Aythya americana), leaving only a remnant population today. Population trends suggest that habitat degradation in Chesapeake Bay, especially loss of SAV, may be the principal cause of the decline of the Bay's canvasback (Aythya valisineria)) population.

Canvasbacks prefer to eat tubers, seeds and vegetative matter of wild celery plants and other SAV when they arrive from the north to overwinter in Chesapeake Bay. Mute swans also feed preferentially on wild celery in the Bay. However, they do so long before the canvasbacks begin their migration, giving mute swans a substantial temporal feeding advantage. Probably more significant than the actual food removal implications, mute swans consume wild celery seed pods before the seeds inside have completed their development, resulting in the systematic loss of entire crops of seeds from wild celery beds. This phenomenon has been recorded in the Gunpowder and Potomac Rivers. Bay researchers who collect seeds for artificial propagation have experienced considerable difficulty locating mature seedpods for this reason.

Because of the deleterious effect that mute swans have on SAV, a Bay-wide mute swan population above, at or near its present level is in conflict with public policies aimed at restoring the Bay. In particular, the Vital Habitat Protection And Restoration section of the Chesapeake 2000 Agreement – an agreement and partnership entered into in 2000 between the U.S. Environmental Protection Agency, the Chesapeake Bay Commission, the states of Maryland, Virginia and Pennsylvania and the District of Columbia for the protection and restoration of the Bay – has as a stated goal to “Preserve, protect and restore those habitats and natural areas vital to the survival and diversity of the living resources of the Bay and its tributaries.” Part of this goal is the protection and restoration of SAV. Because of the vital role that SAV plays in preserving water quality and in providing food and shelter for Bay organism, preservation and restoration of SAV is vital to the overall health of Bay ecosystems. Further destruction or degradation of SAV caused by mute swans – even if limited to localized areas – will certainly compromise the goals of the Chesapeake 2000 Agreement.

The effect that mute swans have had – and potentially will have – on native wildlife within the Bay is best illustrated by the impact that swans have had on the least tern (Sterna antillarum) and black skimmer (Rynchops niger) populations in the Tar Bay area of Dorchester County, Maryland (least terns and black skimmers are both listed as State threatened species). Tar Bay is a shallow tidal bay with dense beds of SAV, which, historically, has been a site for colonies of least terns and black skimmers. Between 1985 and 1987 approximately 60 to 250 nesting pairs of least terns were located in Tar Bay; in 1987 the nesting least terns in Tar Bay accounted for 49% of the total nesting population statewide. In 1985, 13 nesting pairs of black skimmers were located in Tar Bay – one of only two small colonies of nesting skimmers in the Maryland portion of the Bay.

In the late-1980s, a molting flock of between 600 and 800 mute swans began congregating in the Tar Bay area. During their molt, it was observed that swan tracks were completely covering tern and skimmer nesting areas and crushing tern and skimmer eggs into the sand. These disturbances continued into the early-1990s to the point were the number of nesting pairs of terns and skimmers declined. By 1993, the colonies were abandoned (colonial nesting waterfowl, such as terns and skimmers, will abandon colonies if disturbance is frequent or severe). During the mid-1990s, DNR and the USFWS reduced the size of the mute swan molting flock in the Tar Bay area, resulting in the return of a moderate population of least terns. By 1999, less than 25 nesting pairs of terns were present. No nesting pairs of black skimmers were present.

The mute swan is also one of the world’s most aggressive species of waterfowl. Breeding mute swans are known to aggressively protect their nets and young from all perceived threats. Some breeding mute swan pairs may also threaten or attack humans, such as swimmers, small children or those in small watercraft. Mute swan aggression may also be directed at pets. In Maryland, aggressive mute swan pairs have become a nuisance, preventing people from using shorelines where swans vigorously defend their nest during the breeding season.

Beginning in 2001, the DNR initiated a more concerted effort each spring to addle mute swan eggs to slow the growth rate of Maryland's mute swan population. This work was continued in 2002 with a Federal Depredation Permit obtained from the U.S. Fish and Wildlife Service. In 2002, 232 mute swan nests containing 1,243 eggs treated. In 2003, 276 mute swan nests containing 1,449 eggs were treated. An additional 130 adult swans were removed by shooting in 2003 before further mute swan control was suspended by a lawsuit filed against the USFWS for issuing Maryland DNR a permit that included lethal control.

In 1999, the Maryland DNR initiated the development of a mute swan management plan. The DNR Secretary assembled a Mute Swan Task Force, which included citizen members of the DNR 's Migratory Game Bird Committee and experts in animal welfare and bay ecology. In January 2001, a summary of mute swan information and the Mute Swan Task Force recommendations to the DNR were made available for public review. More than 800 comments were received on the Mute Swan Task Force recommendations during the 60-day public comment period.

The cornerstone of the Mute Swan Task Force recommendations was the protection of native species and their habitats from the effects of mute swans. The Task Force recommended that the DNR establish Swan-Free Areas, areas where mute swans would be excluded or removed to protect critically important habitats and wildlife resources. The DNR Waterfowl Advisory Committee endorsed the Task Force recommendations, but further recommended a rapid reduction of the mute swan population and the elimination of State protection for the species. The recommendations provided by the advisory committees, along with biological and wildlife management principles and public input, were considered in the preparation of a Draft Statewide Mute Swan Management Plan. More than 400 comments were received from the public on the draft plan during a 60-day public comment period. In April 2003, the Statewide Mute Swan Management Plan was adopted by the DNR Secretary (copy attached).

The Statewide Mute Swan Management Plan directs the DNR to reduce the mute swan population in the Chesapeake Bay to a level that minimizes damage to SAV beds and eliminates the threat they pose to native bird species. Local and national environmental groups, including the National Audubon Society, the Chesapeake Bay Foundation, the Severn River Association, the South River Federation, the American Bird Conservancy, and others, have endorsed the plan.

In implementing the plan, the Maryland DNR has increased public outreach to facilitate the understanding of the status of the mute swan population in Maryland, its impacts on the Chesapeake Bay ecosystem, and the problems it creates for humans. critically important habitats and native wildlife populations.

State regulations are currently being developed to prevent the release and escape of mute swans into the wild. The DNR add conditions to federal and state permits that prohibit the sale, trade, barter, and importation of mute swans, or their eggs, in Maryland. In the future, the DNR will not authorize any additional possession of mute swans, except for scientific or educational purposes.

The DNR has also cooperated with other 22 states and provinces within the Atlantic Flyway Council to complete an Atlantic Flyway Mute Swan Management Plan (adopted July 2003). The purpose of the plan was to facilitate efficient mute swan population management. The DNR also provided input on the U.S. Fish and Wildlife Service's Draft Environmental Assessment for Managing Mute Swans in the Atlantic Flyway and is participating in the development of a region-wide Chesapeake Bay Mute Swan Management Plan for managing mute swans.

Figure 1. Number of Mute swans in Maryland 1962-2002

Figure 2. Swans are present in all major tributaries of the Bay. The largest circle in the attached map of the distribution of mute swans during August-September, 2002, represent 472 swans.