DEC Responses to Public Comments on the Draft Management Plan for Mute Swans in New York State

August 2014

DEC released a draft *Management Plan for Mute Swans in New York State* on January 15, 2014, and invited written public comments through February 21, 2014. During that period, tens of thousands of individuals and organizations provided input in the form of e-mails, letters, form letter e-mails, and signatures on various petitions. Despite this large response, we did not view this as a simple referendum to determine how many New York residents "support the plan" or "oppose the plan". Rather, we reviewed all of the comments to identify specific and substantive concerns, questions, ideas, information, and points of view that would help us improve the plan.

Many animal welfare and animal rights organizations had strong objections to the plan, including such groups as Friends of Animals, American Society for the Prevention of Cruelty to Animals (ASPCA), In Defense of Animals, Goosewatch NYC, Regal Swan Foundation, Humane Society of the United States (HSUS), Save Mute Swans, and Nassau County SPCA. Supporters of the plan included many environmental and bird conservation agencies and organizations, including Audubon New York, New York State Ornithological Association, New York State Conservation Council, Cornell Lab of Ornithology, Ducks Unlimited, NYS Fish and Wildlife Management Board, New York City Department of Environmental Protection, Port Authority of New York and New Jersey, and wildlife agencies from several eastern states. Clearly, there were diverse and passionate opinions on the plan, and we believe that the revised draft reflects a balanced but more acceptable approach to management of mute swans in New York.

Most of the comments received offered little specific feedback on the draft plan and in many cases it seemed that the commenter was unfamiliar with the management actions described in the plan or misunderstood how it would actually be implemented. The overwhelming view of most people opposed to the plan was their objection to killing mute swans under any circumstances. The general consensus of people who supported the plan was that mute swans were appropriately treated as an invasive species, and that maintenance of native fish and wildlife populations should be the primary objective. Nearly all of the comments were received via e-mail, and many were the result of organized action networks that reached individuals from throughout the United States and many foreign countries.

After reviewing the substance of all the comments, we identified a finite set of issues that warranted some response. During this process, individual comments were not counted as "votes" for or against specific aspects of the plan, or the plan in general, but they offered insights into areas that required further clarification, justification, or modification in the final plan. To the extent practical, we responded to relevant concerns identified by any number of individuals. We thank all who took the time to review the draft plan and provide specific feedback. Based on these comments, we have made some substantive, as well as minor, revisions to the plan, as discussed below.

(1) Summary of changes made to the draft plan

The most notable changes to the plan include:

- A revised goal focused on minimizing swan impacts, rather than eliminating all swans;
- A "regional" approach that recognizes the differences in history, status, impacts, and management opportunities for mute swans between downstate (Long Island, New York City, and Orange, Rockland, Putnam and Westchester counties)and upstate New York;
- A new strategy to permit municipalities to keep swans at local parks and other settings pursuant to local swan management plans, as long as certain conditions are met;
- A commitment to full consideration of "non-lethal" techniques, including egg-oiling and placement of swans in possession of persons licensed by DEC, except where immediate removal of swans is necessary to protect public health or safety; and
- A more succinct summary of the negative impacts mute swans can have, citing additional scientific studies.

(2) Comments on the overall plan goal

Comment: Oppose the extermination/extinction of mute swans.
Response: The draft plan did not call for the extermination, extinction, or eradication of mute swans (*Cygnus olor*) as a species. The plan allowed for the continued existence of these birds in the state, but only in controlled settings where natural resources would not be adversely affected. This could be accomplished by properly authorized individuals, agencies or organizations taking responsibility for care and management of the birds under their purview to ensure that the swans did not reproduce or fly freely to other areas. Assuming that some people would accept this responsibility, mute swans would continue to exist in New York, including some public locations where many people enjoy seeing the birds now. As a species, mute swans are secure in their native range in northern Eurasia (http://www.iucnredlist.org/details/22679839/0) and they are easily maintained and propagated in captivity.

Comment: Oppose any management of mute swans.
Response: DEC recognizes that some people object to any intentional management of wildlife populations or species. However, humans inevitably affect the landscape and environment in which wildlife must live, so a belief that mute swans can exist without any influence of humans is unrealistic. Some people who oppose management of mute swans may not recognize that their own existence impacts wildlife habitats and behaviors, and activities such as feeding mute swans is ultimately a form of management. DEC's revised management plan discusses the need for management and identifies the desired outcomes and processes of human interactions with mute swans in New York State. DEC is concerned about the impacts of mute swans that currently exist in and around coastal areas of Long Island, New York City and the lower Hudson Valley (estimated to be about 2,000 birds in 2012). These birds are one of several stressors on important fish and wildlife habitats in the downstate area. DEC is also concerned about the recently established population of mute swans around Lake Ontario (estimated to be about 200 birds in 2012) that could rapidly expand to lakes, ponds, and wetlands throughout the state. In the absence of management, wild mute swan populations will expand throughout New York State, and could reach numbers in excess of 5,000 birds within 20 years. The consequences of not preventing such population growth include reduced habitat availability and value for native

fish and wildlife species, including several of conservation concern. Site-specific conflicts between mute swans and human activities would also increase, as swans establish new nesting territories in many areas currently used for water-based recreation or municipal purposes. This would place a growing demand on DEC for relief from such problems, ranging from aggressive swans to water quality concerns and hazards at airports.

Comment: The goal of the plan should be population control not elimination from the wild.
Response: Population control, if it could be complete and sustained, would alleviate many of the impacts of free-ranging mute swans. However, this would require very labor-intensive and costly long-term monitoring and management efforts by DEC and/or cooperators to identify and keep track of all known nesting locations and annually apply population control measures in perpetuity. In most of New York State, mute swans could become established in numerous locations that we may be unaware of or where we may not gain landowner permission to implement population control measures.

Comment: Management is not needed because the population is stable or declining on its own.
Response: As we reported in "*Status and Ecology of Mute Swans in New York State*," the total number of mute swans in New York has been relatively stable over the past 20 years. However, the report (http://www.dec.ny.gov/docs/wildlife_pdf/muteswanreport.pdf) also notes two important considerations: 1) DEC and others have been conducting mute swan management activities throughout the state during that time and this likely helped to stabilize the population; and 2) despite the overall trend, summer counts of mute swans around Lake Ontario increased dramatically from zero in 1986 to nearly 200 by 2002, and winter counts increased from near zero in 1993 to about 350 by 2006. Similar population growth is occurring throughout the Great Lakes region (Petrie and Francis 2003), and without the management done in that area in recent years, the population would have been much higher today. Several factors are probably contributing to the apparent stability of mute swans on Long Island and in the lower Hudson Valley, including some incomplete survey data for the Hudson Valley. Some management has occurred, but it is also possible that free-ranging mute swans have been present in these regions long enough to have reached a biological "carrying capacity" where most suitable nesting territories are occupied each year. This limits population growth somewhat, although the offspring produced may spend years as non-breeders in surrounding areas waiting for an opportunity to nest. At this point, mortality of swans due to starvation, injuries, disease, predation, or human intervention is apparently high enough to offset annual reproduction. We estimated annual survival of adult swans statewide to be approximately 87%, and we estimated annual recruitment of about 13 fledged young per adult in the population; if these estimates are accurate for Long Island, about 200 of the estimated 1,600 mute swans on Long Island die annually of various causes, but they are replaced by a similar number of new cygnets. If climate changes reduce the severity of winter weather experienced in New York, survival of mute swans may increase as will the potential for population growth.

Comment: Agree with preventing range expansion, not eliminating all free-ranging birds.
Response: The revised plan emphasizes the need to prevent range expansion in upstate New York, and this requires lethal or non-lethal removal of all free-ranging swans, while allowing responsible ownership of birds in urban parks and other controlled settings. Preventing range expansion, without removing birds, would require an excessive amount of time and effort by

DEC and/or cooperators to locate and keep track of all free-ranging birds in upstate New York where the potential habitat for mute swans to colonize is enormous – virtually every permanent water body or wetland in the state, which number in the thousands. Even a single nesting pair of mute swans could become a source of range expansion if we were not able to intervene quickly. Allowing free-ranging and fertile mute swans to remain on the landscape with this potential for further population growth is not acceptable and almost certain to fail.

Comment: Impacts of swans are negligible compared to other environmental problems, DEC should focus on those.
Response: We agree that there are many other environmental problems that impact wildlife habitats, air and water quality, and public health, but we disagree that the impacts of mute swans are negligible. DEC is a large organization with broad authority to address the full array of environmental challenges, but the Division of Fish, Wildlife and Marine Resources (DFWMR) is specifically responsible for the efficient management of the fish and wildlife resources of the state and the habitats on which they depend. Wherever possible, DFWMR seeks to use its authority to help solve environmental problems that may be caused, at least in part, by fish and wildlife that it oversees. The loss of submerged aquatic vegetation (SAV), for example, is a widespread and serious environmental problem on the Atlantic coast as well as New York (NYS Seagrass Task Force 2009), and numerous studies have demonstrated that mute swans can significantly reduce or prevent the growth of SAV that is important to many native fish and wildlife species.

Comment: Consider a regional approach to management, based on status of swan populations in each.
Response: We agree with this suggestion, and have revised the management plan accordingly. There are many important differences among the three major regions of the state where free-ranging mute swan populations are currently established, including population trends, history, habitats used, impacts to natural resources of concern, and potential for population growth. Documented movements of neck-banded mute swans in recent years indicated that there was almost no interchange of swans between Long Island, the Hudson Valley and Lake Ontario regions, suggesting that a regional management approach is possible. Furthermore, swans established in the Lake Ontario region and the upper Hudson River valley have the potential to expand rapidly and colonize many parts of the state from which they are currently absent, whereas swan populations on Long Island seem less likely to spread to other areas.

Comment: The real purpose of the plan is to increase hunting license sales or promote other game species.
Response: The mute swan plan has no intended or measurable impact on hunting license sales. We proposed hunting of mute swans as one of nine strategies to help eliminate free-ranging mute swans because waterfowl hunters are typically in places used by native wild waterfowl whose habitats may be impacted by mute swans in those areas. Thus, hunting would be a cost-effective way to remove mute swans opportunistically from such areas at no cost to DEC. However, we would not expect this to generate any additional revenue from license sales (since no special permit or fee would be required) or hunting activities directed specifically at mute swans. Moreover, take of mute swans by hunters would not be managed to provide a sustainable opportunity, since the goal was to eliminate the population of free-ranging birds. Eliminating

mute swans from natural habitats would benefit a wide array of game and nongame species, including many duck species that feed on SAV, as well as black tern (*Chlydonias niger*) a State-listed endangered species that nests in emergent marshes around Lake Ontario. Countless species of fish, shellfish, and other invertebrates that depend on SAV (not just game or commercial species) would benefit, especially in marine waters where SAV beds have declined dramatically due to many factors.

Comment: Canada geese are a much bigger problem than swans, do something about them instead.
Response: We agree that local-nesting or "resident" Canada geese are a major problem throughout New York State, and they directly impact the quality of life for more people than mute swans. DEC is doing all it can to address the concerns about Canada geese, but the population of those birds is much larger (in excess of 200,000 birds) so our ability to take any direct action to reduce their numbers is more limited than it is for mute swans. If we had recognized the potential for problems associated with geese 50 years ago, when their numbers were similar to our current mute swan numbers, then we might have proposed a similar management plan for resident geese. As it is, we allow liberal hunting seasons and a wide variety of control options for public and private property owners to alleviate the impacts of geese, and had proposed the same for mute swans. However, in addition to their lower numbers, the impacts of swans are less apparent to the general public, because loss of SAV and water quality impacts are not as easily recognized as the excessive amounts of goose feces deposited on lawns, beaches, walkways, and other visible areas. In the future, we hope to develop a management plan for resident Canada geese in New York in response to the continued problems that those birds are causing. However, now is the critical time to deal with mute swans, before their numbers or impacts exceed our management capability.

(3) Classification of mute swans as "non-native" and "invasive"

Comment: Disagree that mute swans are not native to North America.
Response: Alison and Burton (2008) challenged the long-accepted view that the mute swans in North America are derived from captive birds imported from Europe. However, their paper was not peer-reviewed, and the primary evidence that they provided was a painting of a swan completed in the 1500s in Virginia. Askins (2009) provided an alternative analysis of that painting, concluding that it could not be reliably identified as any particular species. Askins also effectively refuted other early anecdotal reports and alleged archaeological evidence of mute swans in North America. Furthermore, all of the claims made by Alison and Burton (2008) were previously addressed and dismissed when the U.S. Fish and Wildlife Service (USFWS) published a final list of nonnative bird species that have been introduced by humans into the United States or its territories and to which the Migratory Bird Treaty Act (MBTA) does not apply (USFWS 2005). We defer to their information and analysis on this issue.

Comment: Swans should not be eradicated just because they are non-native (most people are too).
Response: The goal of eliminating free-ranging mute swans was based on this species characteristics and classification as an "invasive" species, not just because it is non-native to a geographic area (e.g., North America) or to the ecosystem in which it now occurs. Non-native species are not always invasive. Environmental Conservation Law 09-1703 defines "invasive

species" as a species that is: (a) nonnative to the ecosystem under consideration; and (b) whose introduction causes or is likely to cause economic or environmental harm or harm to human health. Invasive species also typically have the potential for rapid population growth and/or range expansion. Based on these criteria, the New York Invasive Species Council designated mute swan as an Invasive Species (http://www.nyis.info/index.php?action=israt_nn_animal). For more information about invasive species in New York, including mute swans, go to the Invasive Species Clearinghouse website: http://www.nyis.info/index.php.

(As for most people being non-native too, that may be true for certain origins or ethnic groups, but as a species, humans [*Homo sapiens*] have been in North America for thousands of years.)

Comment: DEC promotes other non-native species such as pheasants.
Response: DEC has conducted a ring-necked pheasant propagation and release program for nearly 100 years. Although pheasants are a non-native species, we are not aware of any harm to the environment, the economy, or public health as a result of this program or releases by private individuals. Thus, they are not considered an invasive species. Relatively few released pheasants survive from year to year, and wild populations that were established by the 1960s have all declined due to changing habitat conditions (loss of agricultural lands) across the state.

Comment: Disagree that mute swans are invasive, especially since population is not increasing.
Response: Although the total number of swans counted in New York has been relatively stable over the past 20 years, this does not over-ride the well-documented capacity for mute swan populations to grow rapidly into unoccupied areas. For example, the mute swan population in Maryland originated from the escape of five captive birds in 1962, and by 1999 there were nearly 4,000 mute swans counted in the state (Maryland Mute Swan Task Force 2001). The number of mute swans recorded during midwinter surveys of the Canadian side of Lake Ontario increased from 49 birds in 1980 to 327 in 2000 (Petrie and Francis 2003). Estimated population growth rates of 10-18% are common; even the most conservative growth rate estimate of 10% per year would result in a doubling of the mute swan population every 7–8 years. And while New York's total counts of mute swans were stabile or declining in the lower Hudson Valley and on Long Island, late summer counts around Lake Ontario increased from 15 mute swans in 1989 to 193 in 2002. Clearly, mute swans have the potential for rapid population growth in New York, especially upstate, that further supports their designation as "invasive".

Comment: Oppose designation of mute swans as a "prohibited" invasive species.
Response: DEC's Office of Invasive Species Coordination proposed a regulation designating mute swans as a "prohibited" invasive species in fall 2013, prior to release of the draft management plan. During the public comment period on the proposed regulation, no new information on mute swans was submitted, so the classification of this species as "prohibited" is expected to be retained in the final rule when it is adopted as final.

(4) Positive values of mute swans

Comment: The plan does not adequately reflect the positive values of mute swans – they are beautiful birds that people enjoy seeing in their daily lives, especially in urban environments.
Response: The draft plan did acknowledge that many people find aesthetic value in mute swans and we believe it accommodated those interests to a great degree. Nonetheless, the revised plan

places greater emphasis on the positive values of mute swans, and allows for the continued presence of mute swans wherever an organization or individual is willing to take responsibility for the swans (pursuant to a license from DEC) and ensure that they do not reproduce or leave the area. Given the abundance of urban parks and community areas where swans could remain without adversely affecting natural resources, the public at large should have ample opportunity to enjoy the presence of mute swans upon adoption of the revised plan.

Comment: Mute swans are indicators of environmental problems and may have value for medical research.
Response: Mute swans are sensitive to some environmental hazards and because of their conspicuous size and plumage, they can be a visible indicator of when or where such hazards occur. Mute swans tend to remain at a particular site, and they are exposed to avian diseases by direct and indirect contact with other waterfowl, which makes them potential sentinels for avian health and disease surveillance. DEC sampled mute swans for the Highly Pathogenic Avian Influenza (H5N1) virus during the late 2000s due to the ease with which oral and fecal swabs could be collected for testing. Because mute swans feed primarily on submerged aquatic vegetation (SAV), they are also prone to ingestion of contaminated sediments and can serve as indicators of chemicals (e.g., pesticides, heavy metals) in the environment. However, this typically requires post-mortem analyses of swans sacrificed to obtain fat, muscle or organ tissues for monitoring purposes. Actual mortalities of mute swans typically reveal only hazards to the birds themselves, such as collisions with structures, lead poisoning from ingestion of spent lead ammunition or fishing tackle, or a variety of avian diseases (Brown et al. 1992, Swift et al. 2013). Any potential use of mute swans for medical or veterinary research would most likely involve birds kept in controlled, captive settings, and studied pursuant to a DEC special license, as would be allowed under the revised plan, rather than using free-ranging birds for such purposes.

Comment: Mute swans were designated as an International Symbol of Peace in the 1970s.
Response: We were unable to locate any record of such designation of mute swans by any government or international organization at any time in recent history. Furthermore, the aggressiveness displayed by some mute swans would seem to make them a poor choice for a symbol of peace (for example, see https://www.youtube.com/watch?v=PnMualBSzKs).

Comment: Referring to mute swans as "ornamental," or serving no purpose, is inaccurate.
Response: The reference to mute swans as "ornamental" describes the primary purpose for which they were brought to North America – to beautify private estates and replicate the landscapes of England where swans were a symbol of wealth and royalty.

(5) Impacts of mute swans on the environment

Comment: The plan is not based on sound science.
Response: We disagree. The draft plan and DEC's report entitled "*Status and Ecology of Mute Swans in New York State*" cite numerous papers published in scientific literature documenting the impacts of mute swans on SAV and other wildlife species. What the science shows is that mute swans can significantly reduce the availability of SAV in wetland ecosystems, but the degree of impact depends on the number of swans relative to the size and productivity of the area. For example, a single nesting pair of swans on a 100-acre lake or bay will likely not have a

measurable impact on SAV, but a flock of 40-50 swans year-round would. Given that mute swans feed almost entirely on SAV, and consume an estimated 4-8 pounds per day, a flock of that size would consume close to 50 tons of SAV per year. The current population of 1,600 mute swans on Long Island likely consumes 1,500-2,000 tons of SAV per year, much of that from tidal waters where the loss of "seagrass" beds is a major concern (NYS Seagrass Task Force 2009). Much more vegetation is uprooted in the process, and the impact of foraging on SAV during the summer growing season is greater than it would be later in fall or winter when plant growth is completed. The impacts of mute swans on other wildlife also depends on the circumstances, but in this case a small number of swans can have a disproportionate impact on other wildlife. A single nesting pair of mute swans on a 5-acre pond can deter use of that entire water body by other waterfowl during the breeding season, whereas a flock of non-breeding swans will usually show no response to the presence of other species (although they will consume much of the food that would otherwise be available for those other species). Thus, we acknowledge that the impacts are highly variable depending on the circumstances at any specific location.

Comment: DEC data and studies were flawed.
Response: We disagree. In the DEC report entitled "*Status and Ecology of Mute Swans in New York State*" we acknowledge challenges and problems that limited our ability to definitively quantify the impacts of mute swans on SAV or other wildlife. Nonetheless, the results we did obtain and report were consistent with numerous published studies from other areas. We have no reason to believe that more rigorous, long-term, or controlled experiments in New York would show anything different than all prior studies, i.e., that mute swans can significantly reduce the abundance of SAV that is important to many native fish and wildlife species, and that they will sometimes displace other breeding water birds. The DEC report also presented available data on population size, trends, productivity, survival, and movements of mute swans in New York, and despite limitations of those data sources, critics of the impact data often cited our population data (e.g., that the downstate population was stable) without reservation. DEC's draft plan was based on a reasonable assessment and interpretation of all available data from the published literature as well as its own data and studies. The preponderance of the scientific evidence, both from New York and elsewhere, support the conclusion that mute swans can have detrimental impacts on the environment. No one provided new scientific data refuting the findings that we cited.

Comment: Impacts of mute swans on the environment were exaggerated, and not consistent with personal observations of many people.
Response: As noted above, the impacts of mute swans can be highly variable, so generalizations that we made could seem exaggerated to someone who had not observed circumstances where impacts were apparent. It is unlikely that many people would ever observe or be aware of the impacts that mute swans have on the underwater environment (e.g., reduction of SAV, fecal coliform or nutrient loading). Even aggressive behavior of swans toward other wildlife may occur in only brief, isolated instances, rather than continuous behavior. In addition, if mute swans are successfully excluding other wildlife from an area, the conflicts between swans and other animals would not be observed. Any species threatened repeatedly by mute swans would likely learn to avoid the area rather than expend the energy needed to co-exist. There are numerous anecdotal reports of mute swans chasing, attacking and even killing other waterfowl,

including video-clips on the internet (e.g., www.youtube.com/watch?v=NaJa6pVOr5I; www.youtube.com/watch?v=BllnWV-BIDo; www.youtube.com/watch?v=jpK1J0C9aVc).

Comment: Mute swans consume SAV, but polluted runoff contributes more to the loss of SAV.
Response: The NYS Seagrass Task Force (2009) identified many factors that have contributed to the nearly 90% reduction in seagrass beds in New York since 1930. Currently, the overall greatest threats to seagrass in New York include excess nitrogen (affecting water quality), persistent and sustained algal blooms, and fishing and shellfishing gear impacts. While it is imperative to ensure water quality conditions suitable for seagrass, addressing water quality issues alone are not enough to protect and restore this species. Among the other factors cited was "bioturbation" (grazing) by "skates, crabs, mute swans, and various other bottom-feeding animals, which can disturb seagrass roots or completely uproot plants, and slow or prevent seagrass recovery."

Comment: Impacts of swans on water quality are negligible compared to other pollution sources.
Response: DEC has not suggested that mute swans are the major source of water pollution in New York's coastal waters. However, the impact that mute swans can have on local areas where large numbers of swans congregate is not negligible either. To the extent that mute swans can impair water quality (and the desired uses of public waters), through their destruction of SAV or their contribution to nutrient loading or coliform levels, they cannot be ignored. DEC strives to address all causes of water pollution that are within its authority, including fish and wildlife species that it oversees.

Comment: The total number of mute swans in New York (2,200 birds) is insignificant compared to the total number of waterfowl (400,000+ birds) in the state that also consume SAV.
Response: The impact of mute swans on SAV relative to the impact of other waterfowl is not as simple as comparing the total numbers of birds. Adult mute swans average 20-25 pounds, whereas Canada geese average 10-12 pounds, Atlantic brant weigh less than 5 pounds, and mallard ducks (one of the larger duck species) weigh only 2-3 pounds. The amount of food consumed by each species is generally proportional to their body size. Furthermore, only about one-third (100,000-130,000) of all waterfowl counted in New York during the winter are on Long Island where nearly three-quarters of all mute swans occur. Many of those other species either feed primarily on upland areas (e.g., Canada geese on farm fields and lawns), or their diet is more diverse including aquatic invertebrates, so they have much less impact on SAV. Of the waterfowl species that depend most on SAV in tidal waters around Long Island (i.e., brant, black duck, and canvasback), their average size and numbers are much less; peak winter counts of these species may approach 100,000 in some years (including more than 60,000 brant in recent years), but these species do not consume significant amounts of SAV until they arrive in late fall, after the plant growing season. Because mute swans are present year-round, their feeding activities both remove and prevent the growth of SAV, which compounds their impacts. It should be noted also that the number of canvasback ducks wintering on Long Island has declined significantly over the last 30 years; counts averaged more than 5,200 birds during the 1980s compared to less than 1,000 birds from 2000-2008 (http://nybirds.org/ProjWaterfowl.htm). This number of canvasback ducks during winter would have negligible impact on abundance of SAV; on the other hand, the decline in numbers may be due in part to loss of SAV around Long Island.

Comment: Mute swans are beneficial because they help control nuisance Canada geese and excessive weed growth in lakes or ponds.
Response: Mute swans have not proven to be a reliable tool for limiting the impacts of resident Canada geese in urban/suburban areas. There are many anecdotal reports of mute swans having displaced nuisance geese from their breeding territories, and in some cases, captive swans have been introduced to locations for that purpose with mixed results. This is not surprising given the wide variation in behavior among individual swans. However, swans can be a costly alternative for goose control, and allowing unlimited use of swans for this purpose would result in additional off-site impacts that DEC's plan intends to address. The revised plan allows municipalities and communities to maintain mute swans in urban parks and other controlled settings as long as the birds do not reproduce or escape. If swans help reduce the impacts of geese while also providing viewing opportunities for park visitors, then this may help justify expenditures by the community to keep swans at some locations. DEC does not support the use of swans for general weed control in lakes or ponds because those SAV beds provide valuable habitat for native fish and wildlife species and the swans cannot be easily directed to specific areas. Where weed control is necessary to maintain desired uses of freshwater lakes or ponds, more site-specific techniques should be considered (http://www.dec.ny.gov/animals/7137.html).

(6) Mute swan threats to people

Comment: Threats to people are exaggerated or not consistent with experiences of many people. Any serious injuries that have occurred are due to falling or drowning, not direct injury.
Response: DEC's primary concerns about mute swans relate to their impacts to other fish and wildlife. However, the occurrence of aggressive behavior towards people is a serious concern that needs to be addressed on a case-by-case basis. Not all swans are aggressive towards people, but there is no question that an adult swan defending a territory can be very intimidating or a serious threat to any person (for example, see https://www.youtube.com/watch?v=7Railiy7JAM), especially small children or the elderly. Although reports of direct physical harm are rare, injuries resulting indirectly from an attack (see http://youtu.be/8zdd7JkmHt4) cannot be ignored.

Comment: Mute swans are only aggressive when defending their nests or young, so just avoid those areas.
Response: Avoiding areas where aggressive swans are known to be nesting or caring for young is a sensible strategy in some cases, but this is not always practical. A pair of swans may defend an area from the start of nesting in March or April through the fledging of young cygnets in August. For people who have to be on the water, or for water areas that are intended for use during the spring and summer months (e.g., swimming beaches, fishing areas, summer camps, areas where personal watercraft are used), the presence of a non-native, invasive species should not preclude those activities.

Comment: Mute swans are not a significant threat to aviation, with only four strikes in New York since 1990.
Response: Where mute swans occur near airports, they do pose a serious threat to aviation. Their large size makes them one of the most hazardous species to aviation in New York. Since 1990, there have been eight documented mute swan strikes in the U.S., and four or those occurred at JFK International Airport (three of those occurred in 2010 and 2011). Even a single

strike could be disastrous, and airport managers are justified in their efforts to prevent swans from crossing through their immediate airspace. Observations and annual take of mute swans at airports in New York have increased, with 51 mute swans removed from JFK, LaGuardia, and Stewart International airports to protect aviation safety during 2012-2013 (USDA Wildlife Services, unpublished data).

(7) Comments on specific management strategies

Comment: Education/outreach should be a high priority of DEC to explain the need for management and to discourage supplemental feeding of mute swans.
Response: DEC agrees and this is discussed in Strategies 1.1 and 1.2 of the revised plan. Developing outreach materials for different audiences would be especially helpful and DEC would welcome the input and assistance from interested partner organizations. One example is a YouTube video produced by students at Princeton University: https://www.youtube.com/watch?feature=player_embedded&v=H4vsVEKmIEE

Comment: Educational and research facilities may have a need to maintain captive swans but the continued sale of mute swans to the general public is unnecessary.
Response: DEC agrees and this is discussed in Strategy 2.1 of the revised plan.

Comment: Support increased efforts to prohibit the release or escape of captive mute swans into the wild.
Response: DEC agrees and this is discussed in Strategy 2.2 of the revised plan.

Comment: Oppose any killing of mute swans and/or support management by non-lethal techniques only, including reproductive control or adoption.
Response: DEC understands the desire of many people to employ only "non-lethal" techniques and the general opposition to killing any mute swans. The goal of the plan was never to kill mute swans, but to minimize their impacts on important fish and wildlife habitats. To the extent that this can be achieved and sustained through non-lethal methods (i.e., egg-addling and placement at licensed facilities), we will give full consideration and seek assistance from partner organizations to implement such measures. However, lethal control may still occur as part of population management in upstate New York, and wherever immediate removal of birds is necessary to alleviate a site-specific conflict (e.g., swans threatening public safety) and live-capture is not practical or no facility is readily available to accept the birds.

Comment: Capture and relocation or chasing with border collies should be used in lieu of killing any swans.
Response: DEC does not support chasing or relocation of mute swans to other areas as a management option because this would simply disperse the birds (and their impacts) to other locations and could promote range expansion. However, the revised plan does allow for capture and relocation of swans to DEC-licensed facilities, including urban parks or other controlled settings where potential impacts of the birds would be minimized (Strategies 2.3, 3.1 and 3.2).

Comment: Sell or donate any captured swans to whomever can afford them a home, including sanctuaries or other places where people can enjoy seeing them.

Response: DEC supports this idea, and the revised plan allows for capture and relocation of wild mute swans for placement at DEC-licensed facilities, including urban parks or other controlled settings where potential impacts of the birds would be minimized (Strategies 2.3, 3.1 and 3.2). Finding facilities willing to take in adult swans may be difficult, so DEC welcomes the assistance of local or non-governmental organization to implement such a program.

Comment: DEC should capture and hold a portion of the population in captivity every year during the breeding season to prevent reproduction.
Response: This approach would be extremely labor-intensive and costly, compared to egg-oiling or any other alternative considered. In addition to practical constraints, returning the birds to natural habitats after having them in hand, would allow their ecological impacts to continue, contrary to the plan goal.

Comment: Placing swans in captivity is cruel or inhumane and does not allow people to enjoy them.
Response: DEC disagrees. With appropriate facilities and guidelines for care of the birds, mute swans can be kept in captivity for many years without harm to the birds. Organizations such as the Regal Swan Foundation (www.regalswanfoundation.org) can provide information on care of swans in captivity that could be followed to ensure the long-term welfare of the birds.

Comment: Pinioning should not be done on adult birds and should only be done by a licensed veterinarian.
Response: As noted in Strategy 2.2, any pinioning of swans should be done in accordance with accepted veterinary practices (e.g., at an early age or with appropriate anesthesia). DEC defers to licensed veterinarians to determine on a case-by-case basis when pinioning should or should not be done.

Comment: Sterilized birds should not have to be pinioned or kept in captivity.
Response: Sterilized or other non-reproducing swans may still cause ecological impacts from their feeding activities or defense of territories. Therefore, any mute swans that are captured or handled for any purpose should be placed in an urban park or other DEC-licensed facility (or euthanized) so they are permanently removed from important fish and wildlife habitats.

Comment: Take of mute swans from the wild should be strictly regulated to prevent "black market" trade to other states.
Response: Any take of mute swans already requires specific authorization from DEC, and the proposed regulations that would designate mute swans as a "prohibited invasive species" would prohibit the sale, importation, purchase, transport, introduction, or propagation of mute swans by any person, except for invasive species disposal, control, research, or education purposes. Strategy 2.1 discusses the need for this regulation to be adopted.

Comment: Wildlife rehabilitators should not be required to euthanize swans that they take in.
Response: DEC appreciates the public service that licensed wildlife rehabilitators do on a volunteer basis, and the difficulty that would be imposed if euthanasia was the only option for swans taken in by a rehabilitator. Strategy 2.2 has been revised to affirm that wildlife rehabilitators will not be allowed to release mute swans back into the wild, but they may turn the

birds over to any person licensed to possess mute swans in New York, where they will be subject to the same requirements as other licensed facilities. Finding facilities willing to take in adult swans may be difficult, so DEC welcomes the assistance of local or non-governmental organization to implement such a program.

Comment: Hunting of swans would be a public safety risk and illegal in some areas (e. g., Jamaica Bay).
Response: Waterfowl hunting has proven to be extremely safe in New York, and allowing hunting of mute swans should be no different. Hunting would not occur where local ordinances prohibit the discharge of firearms for public safety, such as New York City (where Jamaica Bay lies) or urban parks where mute swans are kept pursuant to a DEC permit or license. In other areas, waterfowl hunters may not discharge a firearm in any location where there is a person or occupied structure within 500 feet in the direction of fire, which helps ensure public safety.

Comment: Support a hunting season to help reduce the population, without giving hunters a bad image.
Response: DEC shares the concerns of some hunters that a swan hunting season could contribute to negative public attitudes toward hunting in general. Therefore, as discussed in Strategy 3.3, the revised plan defers a decision regarding take of mute swans by waterfowl hunters in New York until the pros and cons of such a strategy are fully considered with input from waterfowl hunters themselves. Various hunting constraints, such as season dates or bag limits, may be considered to further minimize conflicts or adverse public reaction towards people who hunt.

Comment: Special measures would be needed to ensure that hunters do not shoot other species.
Response: Waterfowl hunters already have to comply with challenging species identification requirements for various species of ducks and geese, and the same would be true if a swan hunting season was established in New York. In other states where swans are hunted, various measures are used to minimize the chance of hunters accidentally shooting any other species.

Comment: Hunting should not be allowed during the breeding season for other bird species.
Response: Waterfowl hunting seasons typically do not occur during the breeding season for waterfowl or other marsh-nesting birds. This would be among the many considerations taken into account before a mute swan hunting season is proposed.

Comment: Any shooting of swans should only be done by trained people.
Response: As discussed in Strategy 3.2, DEC will develop guidelines for a variety of mute swan control activities, including shooting, to ensure that those activities are done in a safe, effective and humane manner. These guidelines will apply to DEC staff as well as to other cooperators involved in mute swan control activities, including but not limited to: oiling, puncturing, or removing eggs; destruction of nests; surgical sterilization of birds; shooting; and capture and removal of swans to be euthanized or turned over to a DEC-licensed facility.

(8) Comments on next steps and implementation

Comment: The public comment period should be extended.

Response: The public comment period on the draft plan extended for approximately five weeks, ending on February 21, 2014. During that period, DEC received more than 1,500 comments on the plan from individuals and organizations, in addition to thousands of form letters and signatures on various petitions. Based on the substance of that input, DEC decided to revise the plan and release it for a second public comment opportunity before adopting it as final. We did not believe that any new information or insight would be gained by extending the comment period on the previous draft. The public comment period for the revised draft will be open for at least 30 days in addition to the many months that the earlier draft has remained available for public review. DEC hopes that people interested in mute swans will review the revised draft and take notice of the substantive changes that have been made in response to comments received.

Comment: Oppose use of any taxpayer funds for control of mute swans by DEC or others.
Response: The Division of Fish, Wildlife and Marine Resources is largely funded by license fees and taxes paid by sportsmen and sportswomen across the state. Any funds needed for mute swan management work by DEC would likely come from the Conservation Fund (revenue from hunting, trapping and fishing licenses), Federal Aid in Wildlife Restoration (revenue from excise taxes on firearms, archery equipment, and ammunition), or the Environmental Protection Fund (financed primarily through a dedicated portion of real estate transfer taxes). DEC does not plan to spend any General Fund ("taxpayer" funds) monies on mute swan control activities.

Comment: Many people would volunteer their time or money to support non-lethal management programs.
Response: DEC believes that voluntary contributions of time and funding to support non-lethal management programs would help achieve the objectives of this plan. Non-lethal measures, such as keeping swans pursuant to a DEC permit, can be more costly and require a longer term commitment from a community than lethal control measures. Furthermore, non-lethal techniques such as egg oiling, will also require a long-term commitment if local populations of swans are going to gradually decline and be maintained at low levels. DEC will not fund these local efforts and some local government agencies willing to assume responsibility for swans in accordance with a local management plan may need financial or logistical assistance. DEC encourages non-government organizations interested in maintaining mute swans in urban parks or other controlled settings to help solicit and coordinate these voluntary contributions.

Comment: The DEC should allow communities or municipalities to develop local management plans.
Response: DEC agrees and this is discussed in more detail under Strategy 2.3 in the revised plan.

Comment: DEC must comply with State Environmental Quality Review (SEQR) requirements before the plan is implemented.
Response: DEC prepared a draft SEQR "Negative Declaration" prior to release of the initial draft of the plan in January. The Negative Declaration reflects DEC's determination that adoption of the management plan will not have a significant adverse effect on the environment and a Draft Environmental Impact Statement will not be prepared. Once a final plan is adopted, the SEQR documentation will be revised as necessary.

Comment: A moratorium should be imposed to further study the problem before implementing the plan.
Response: DEC disagrees. People's opinions about mute swans differ widely, but a moratorium or further studies will not resolve these differences. The revised plan provides a balanced response to the diverse comments received and plan implementation should begin as soon as possible to achieve the revised goal and objectives.

Comment: Increased law enforcement and monitoring by DEC are necessary to increase effectiveness of management efforts and to support future evaluation and revision of the plan.
Response: DEC agrees that enforcement of regulations and permit conditions pertaining to possession and management of swans, and monitoring of free-ranging and captive swan numbers are important tools for plan implementation and evaluation. The revised plan helps clarify the need for those activities, which was lacking until now. These need not be major initiatives by DEC, and where community-based management plans are developed, local partners can help with those efforts.

References Cited:

In addition to numerous publications and reports cited in the revised management plan and in the DEC report "*Status and Ecology of Mute Swans in New York State*," (Swift et al. 2013), the following were specifically cited in this response to public comments:

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U. S. Fish and Wildlife Service (USFWS). 2005. Final list of bird species to which the Migratory Bird Treaty Act does not apply. Federal Register 70: 12710-12716.