



**Testimony of Erin McGrath
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Before the Joint Legislative Hearings on the New York State Budget
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Chairwoman Krueger, Chairwoman Weinstein, Chairman Kaminsky, Chairman Englebright, and distinguished members of the New York State Senate and Assembly, thank you for granting Audubon New York the opportunity to offer testimony on Governor Andrew Cuomo’s Executive Budget proposal for SFY 2020-21. I am Erin McGrath, and I serve as the Policy Manager for Audubon New York.

As a leading state program of the National Audubon Society, Audubon New York leads our network of 85,000 members, 27 locally-affiliated chapters, seven sanctuaries and nature centers and our thousands of annual visitors, volunteers, and partners throughout the state. Audubon achieves its mission to protect birds and their habitats by connecting our vast and powerful network along the migratory flyways of the Americas through science, advocacy, education, and on-the-ground conservation programs.

Before addressing the Governor’s SFY 2020-21 Executive Budget proposal and Audubon’s 2020 budget priorities, I would like to extend our thanks to you and your colleagues for the environmental accomplishments of the 2020 legislative session. Through your and Governor Cuomo’s leadership, New York State has achieved nation-leading wins for the environment, including the enactment of the Climate Leadership and Community Protection Act, a ban on offshore drilling for oil and gas, and a statewide ban on single-use plastic bags. And all of this was achieved while providing unprecedented levels of funding for our state’s environment – providing critical resources to conserve open space, protect and improve water quality, upgrade aging infrastructure, prevent pollution, and make New York State more resilient in the face of climate change.

Audubon looks forward to working with all of you to advance initiatives that protect our shared environment and benefit birds, other wildlife, people, and our economy.

Support Funding for Environmental Conservation

New York State has an ongoing obligation to provide reliable funding for environmental conservation. Recurring funding allows the State and its partners to establish long-term plans that are cost-effective and utilize both public and private funding for priorities such as land acquisition, improved habitat management, and increasing resiliency to climate change.

Dedicate at Least \$300 Million to the Environmental Protection Fund. New York State should increase the Environmental Protection Fund (EPF) to \$500 million over the next five years, starting with an appropriation of at least \$300 million for SFY 2020-21. This funding will ensure that New York State is able to achieve its environmental and conservation goals, while once again demonstrating our state's leadership in protecting its natural resources.

The Legislature should also stand firm against proposals that would use the EPF as a source of funding for personnel services at state agencies. The EPF provides capital funding for projects that support the State's stewardship of the environment, and we should be directing more funding toward such projects as the need for greater restoration and conservation becomes more apparent. We do agree that agencies need additional staffing, especially following the enactment of the Climate Leadership and Community Protection Act, but it shouldn't be at the expense of existing environmental conservation efforts supported by the EPF.

Within the EPF, Audubon supports investments that advance bird conservation and mitigate impacts to important habitat through the following categories:

- **Sustain the Zoos, Botanical Gardens, and Aquaria Program.** The Zoos, Botanical Gardens, and Aquaria Program (ZBGA) is of particular importance to Audubon as it provides funding for Audubon's nature centers and sanctuaries, which protect bird habitat and provide opportunities for educational programming. If funding were to be increased, it would have a direct and beneficial impact on the operations and staffing at our centers, including the Montezuma Audubon Center in Savannah, Constitution Marsh Audubon Center in Garrison, Theodore Roosevelt Sanctuary and Audubon Center in Oyster Bay, and Rheinstrom Hill Audubon Sanctuary and Center in Hillside. As we move to increase the EPF, we ask that you also increase the ZBGA line to further support the organizations that rely on it.
- **Maintain Funding for Regenerate NY.** The Regenerate NY program encourages private landowners to improve forest health by providing a cost share for beneficial management activities, including afforestation, reforestation, forest stand restoration, control of competing vegetation, creation of forest openings, construction of deer enclosure fencing, and other forest regeneration-focused practices approved by the the Department of Environmental Conservation. These management strategies promote successful regeneration of trees and shrubs, which can also create favorable habitat conditions for birds and make forests less susceptible to climate change and invasive species. Successful forest regeneration is also critical to maintaining and increasing the amount of carbon sequestered by our forests. We ask you to support the Executive Budget proposal, which contains \$500,000 in funding for Regenerate NY for SFY 2020-21 and includes \$400,000 for the cost of qualifying practices and \$100,000 for education and outreach. This would build on Audubon's successful efforts to manage habitat for woodland birds by supporting the creation of additional quality habitat.
- **Support the Delaware River Basin Commission.** Covering 13,500 square miles and four states—the Delaware River Watershed is a diverse landscape of more than 35 ecological systems and 185 natural communities. It provides important year-round habitats and critical migratory stopovers for approximately 400 bird species. More than 13.3 million people obtain clean, abundant water from the Delaware River Watershed, including 4.5

million residents of New York City. The watershed is a significant economic driver – grossing more than \$25 billion annually in economic activity, providing \$21 billion in ecosystem goods and services each year, and contributing 600,000 jobs and \$10 billion in annual wages to the economy.

Audubon's vision for the Delaware River Basin focuses on the places and issues most important to birds, including preventing habitat loss and degradation, water pollution, and the spread of invasive species through on-the-ground restoration efforts, policy initiatives, and education and engagement. In New York State, the Upper Watershed is dominated by mature, even-aged forests. Audubon helps private forest owners manage these forests for sustainability, profitability, and habitat suitability for key species, such as the iconic Wood Thrush. Forest preservation in this region of New York State also serves a critical role in watershed health, preserving water quality and regulating temperature in headwater streams. The EPF contains \$359,000 in funding for the Delaware River Basin Commission and we encourage New York State to continue to provide adequate funding to support the efforts of the Commission.

- **Ocean and Great Lakes.** It is critical that New York State protect the natural wealth of our ocean and Great Lakes by continuing to implement the priorities contained in the New York Ocean Action Plan and the interim Great Lakes Action Agenda. The ocean and Great Lakes provide many benefits, including habitat for birds and other wildlife, opportunities for recreation and tourism, and strong contributions to local economies – but they are imperiled by a changing climate and the federal government's changing attitudes towards protecting our environment. Given the importance of these resources, we ask the Legislature to include \$20 million for the Ocean and Great Lakes Program in their One House Budget proposals. In addition to supporting existing priorities, this increase in funding will also amplify increased efforts to conserve and restore the environment pursuant to the Restore Mother Nature Bond Act.

Increase Environmental Agency Budgets and Staff. We were pleased to see that the Governor's budget proposal includes the addition of 47 full-time employees at the DEC and 22 full-time employees at the Office of Parks, Recreation, and Historic Preservation (OPRHP). With regulatory, management, and stewardship responsibilities for the state's open spaces and natural resources, the DEC, OPRHP, the Department of Public Service, the Department of State, and the Department of Agriculture and Markets are on the front lines of efforts to conserve and restore New York State's environment. This new support is critical following the passage of the Climate Leadership and Community Protection Act and the announcement of the Restore Mother Nature Bond Act, which will place new obligations on a number of key agencies.

The 47 proposed full-time employees at the DEC include 13 employees within the Division of Fish, Wildlife, and Marine Resources. These positions are incredibly important, since New York State's renewable energy goals will require the quick and efficient review of existing and new Article 10 applications. Ensuring that adequate environmental reviews are completed for each of these projects is imperative. Many of the proposed Article 10 projects are located on land that provides habitat for grassland birds, which are suffering from major population declines due to habitat loss. We must ensure that appropriate measures are taken to mitigate the harm of such projects, including mitigation at alternate sites if appropriate.

As part of this new personnel funding strategy and agency expansions, we also urge you to consider the benefits of partnering with trusted nonprofit organizations to reduce administrative costs and amplify the impact of New York State's conservation work. Successful partnerships with nonprofits, such as those with Audubon and Parks and Trails New York, have demonstrated that there are many advantages to allowing third parties to handle the processing of contracts and distribution of grant monies. Entering into such arrangements will help to ease agency workloads and allow for more state funding to be spent on activities that have direct conservation impacts.

Fund Capital Improvements in State Parks. Audubon and our affiliated chapters partner with OPRHP to advance bird conservation in state parks through the 'Audubon in the Parks' initiative. This public-private partnership addresses conservation needs through outreach, interpretation, and on-the-ground conservation in Bird Conservation Areas and Important Bird Areas that are located in our state parks. We strongly support the restoration of New York State's parks and historic sites through the New York Parks 2020 Plan which, coupled with funding from New York Works, has revitalized our parks for people and wildlife and addressed the backlog of infrastructure needs at these facilities. We appreciate this year's installment of New York Works funding for capital and natural infrastructure restoration at our OPRHP and DEC facilities, and ask the Legislature to support at least \$112 million for the OPRHP and \$55 million for the DEC as outlined in the SFY 2019-20 State Budget.

Support Healthy Forests for New York State

New York State's forests provide important breeding, migratory stop-over, and wintering habitat for more than one hundred species of birds. One of their most important ecological functions is to provide breeding habitat for several dozen woodland bird species, many of which are experiencing population declines due to factors such as habitat fragmentation and the loss of quality forest habitat.^{1,2}

Audubon has identified more than 45 priority forest bird species that would benefit from the creation of additional quality forest habitat. This can be achieved by actively managing New York State's public and private forests to promote a diversity of tree species and different age-classes. With 63 percent forest cover in New York State, the way we manage forestland can significantly influence bird populations.

The application of sustainable forest management techniques can greatly improve bird habitat quality, forest health, and resiliency. Healthy forests are resilient to undesirable stressors such as climate change and invasive species, and provide critical ecosystem services, including carbon sequestration, watershed protection, flood control, forest products, and recreation. Audubon provides outreach, technical assistance, and habitat management recommendations

¹ Haddad, N. M., Brudvig, L. A., Clobert, J., Davies, K. F., Gonzalez, A., Holt, R. D., ... Townshend, J. R. (2015). Habitat fragmentation and its lasting impact on Earth's ecosystems. *Science Advances*, 1(2), e1500052. <https://doi.org/10.1126/sciadv.1500052>

² Cagan H. Sekercioglu, Navjot S. Sodhi, Conservation Biology: Predicting Birds' Responses to Forest Fragmentation, *Current Biology*, Volume 17, Issue 19, 2007, Pages R838-R840

to foresters, public and private landowners, and other partnering agencies and organizations, to improve forest habitat quality and health.

Conservation of Private Land. 75 percent of the forest cover in New York State is on acreage held by private landowners, which means that successful efforts to conserve private forestland will significantly influence declining bird populations and our state's ability to meet its carbon reduction objectives. New York State can help advance conservation on private lands by creating additional private landowner incentives and opportunities to enter into conservation easements.

To this end, we urge the State to establish and fund private landowner incentives that encourage the use of land management techniques that improve bird habitat, forest health, and resiliency. Landowner incentives that are financed by the State would provide an important source of funding to encourage landowners to pursue sustainable forest management practices. Additionally, we ask that the State support the creation of easement programs that would help preserve the gains made under private landowner incentive programs, and ensure that those lands are not developed or converted to a use that does not support priority species or provide ecosystem services. Both of these programs will support declining woodland birds, provide a number of ecosystem services, and aid landowners that want to pursue sustainable forest management strategies.

Protect New York State's Water, Coasts, and Fisheries

New York State's waters and coastline serve as essential habitat for birds and other wildlife, and provide numerous other ecological and economic benefits. These water bodies provide crucial sources of drinking water, food, and nutrition for birds, from invertebrate insects and small vertebrates to a wide variety of plants found along streams, shorelines, and in wetland areas. Additionally, the wetlands along our coasts, especially salt marshes, help increase the resiliency of our coast to the effects of climate change and provide functioning habitat that supports healthy fish and bird populations.

Restore Mother Nature. We strongly support the proposed \$3 billion Restore Mother Nature Bond Act and its focus on habitat restoration, improved coastal resiliency, and climate adaptation. Our Great Lakes, wetlands, and coastlines provide important habitat for birds and other wildlife, and are also important economic drivers that support local communities. Investments in ecosystem-based restoration can provide multiple benefits, including increased habitat for threatened and endangered species, more sustainable fisheries, opportunities for recreation and tourism, and increased resiliency in the face of climate change.

On Long Island, Audubon is using a coastal habitat assessment to identify where marsh restoration and resilience efforts are most needed. With millions of New Yorkers living, recreating, and working near the coast, Long Island's salt marshes act as an important buffer that helps protect communities and infrastructure from flooding and storms. The salt marshes also provide critical nesting habitat for the Saltmarsh Sparrow, a rapidly declining species, and other marsh obligate wildlife. We ask that a portion of the Restore Mother Nature funding be dedicated to restoring and protecting our salt marshes and that the State partner with Audubon and other nonprofits to make Long Island more resilient for birds and people.

The same attention must be paid to the shores of the Great Lakes. After record flooding we must set a new course to increase resiliency and assist communities that are just beginning to recover. The establishment of the Lake Ontario REDI Commission was a critical first step toward giving the region the tools it needs to become more resilient while also enhancing its economic opportunities. While homeowners and community leaders are taking the first steps toward recovery, we ask that the State provide funding to support long-term ecosystem-based strategies that will reduce flooding. Wetlands restoration, living shorelines, and green infrastructure will help absorb the variable water levels of the Great Lakes and help to decrease the amount of water that needs to be artificially managed.

Within the bond act, Audubon supports the inclusion of the following criteria for prioritization, baseline eligibility, and the development of cost shares for eligible projects:

- **Natural Solutions.** The State should prioritize projects that implement natural solutions where appropriate, such as restoring freshwater wetlands, tidal marshes, barrier islands, reefs, and natural shorelines. These solutions provide multiple benefits, such as flood control, increased climate resiliency, and habitat for coastal wildlife, as well as support for healthy fisheries and recreation. We would also encourage funding for the use of reef balls, coir logs, sediment deposition, native plantings for restoration projects, and wetland enhancement techniques, such as channeling and potholing, to restore historic habitat quality.
- **Hard Infrastructure.** Hard solutions, such as coastal armoring, groins, or breakwaters, should only be eligible for funding if an assessment shows that non-structural or natural solutions are ineffective or insufficient to protect high value community assets, such as hospitals, research facilities, or other large structures that support the health and safety of the community. We would also ask that hard infrastructure be avoided entirely in areas that provide habitat to threatened and endangered species.
- **Coastal Barrier Resources Act and Buyouts.** The federal CBRA maps are currently being updated, and dependent on eligibility under the bond act, we would recommend that the State include voluntary buyouts of existing properties that are ineligible for federal assistance under CBRA as an eligible component of coastal restoration projects.
- **Endangered and Threatened Species.** Many of the projects that benefit communities will also benefit endangered and threatened species. The State should include an enhanced cost share, higher project funding cap, or supplemental funding to incentivize projects that will benefit these species.
- **Culverts and Bridges.** The State should fund projects that replace culverts or bridges to improve water flow. These projects can control flooding, produce additional habitat for wildlife, and help to reduce the prevalence of invasive species, such as Phragmites.
- **Streamlining Permitting or Waivers.** We would strongly encourage the State to streamline permitting requirements for projects that restore or enhance freshwater or tidal wetlands. Such authority was granted under the 1996 Bond Act for qualifying environmental remediation projects, and we believe that such measures would be appropriate here in restricted circumstances.

- **Local Resiliency Planning.** The State should designate funding to help coastal municipalities develop or enhance local resilience plans. Once these plans are developed, the State could then prioritize funding or provide enhanced cost shares for projects identified in the plans.
- **Woodland Birds and Forest Resiliency.** Many of the projects that provide for flood control and improved water quality will also provide opportunities to improve carbon sequestration capacity and habitat for special concern, threatened, and endangered woodland birds. The State should include an enhanced cost share, higher project funding cap, or supplemental funding to incentivize projects that will benefit priority bird species or improve forests' capacity to sequester carbon through complementary forest management strategies.
- **Purchase of Conservation Easements.** The 1996 Bond Act allowed for the purchase of conservation easements, which could be used to conserve forest land on private property. We recommend that the State develops a conservation easement program that focuses on the preservation of forests in important watersheds, which will help control flooding, preserve carbon storage capacity, prevent erosion, and improve water quality. This will expand the State's ability to achieve the goals set forth under the bond act, as 75 percent of the forest cover in New York State is on acreage held by private landowners.
- **Lake Ontario REDI Commission.** The Lake Ontario REDI Commission has already made great strides toward repairing the immediate damage from flooding along Lake Ontario and giving communities the tools they need to begin proactive resiliency efforts. The bond act could provide an avenue for funding long term projects that focus on natural solutions to decrease flooding and increase the resiliency of the shoreline. This would allow local communities to utilize current funding for immediate fixes that directly benefit their citizens, while also ensuring that they have the opportunity to implement measures that provide long-term protections.
- **Great Lakes Restoration Initiative.** The GLRI Action Plan III for FY 2020-2024 currently lists five Areas of Concern in New York State, including the Buffalo River, Eighteenmile Creek, Rochester Embayment, Niagara River, and St. Lawrence River at Massena. The bond act should fund projects that complement ongoing remediation of these areas and help to further reduce beneficial use impairments. We also recommend that the State provide additional financing incentives for projects that target the Areas of Concern. Additionally, the current Action Plan provides measures of progress for remediating Areas of Concern, which could be used to measure and track progress for these projects.
- **Reimagine the Canals.** The Reimagine the Canals Initiative calls for the restoration and improvement of 7,000 to 10,000 acres of wetland habitat in the Great Lakes Basin, including wetlands within the Montezuma complex. This work will have major positive environmental impacts and create opportunities for economic development based on ecotourism. The work that will be undertaken pursuant to the Taskforce's recommendations could be amplified by additional funding from the bond act. The State

should prioritize projects that builds on the work of the Taskforce, and further enhances the wetlands and hydrology of the Erie Canal corridor.

- **Conservation Corridors.** As the State works to identify and develop the Conservation Corridors Program, we recommend that Audubon's Important Bird Areas (IBAs) and the State's Bird Conservation Areas be incorporated into the footprints of each corridor. The Audubon IBAs are parcels of land that are uniquely important to birds, and encompass both public and private property. Additionally, Audubon has identified threats and potential conservation or restoration measures for each of these areas, which could inform the work that needs to be undertaken in each IBAs.

Aquatic Invasive Species. Invasive species pose a serious threat to the aquatic ecosystems of New York State. Invasive species have heavily impacted our birds and wildlife, replacing whole inter-related ecosystems of native plants with monocultures. The massive stands of Purple Loosestrife and Phragmites in our wetlands, which have crowded out the cattails and other indigenous plants that provided nutritious food, are a clear example. Zebra and Quagga Mussels threaten marine organisms and diving birds by concentrating toxins such as botulism and changing vegetation patterns. Water chestnut and hydrilla, invasive aquatic plant species, are impacting Central New York waterways by growing into floating mats of thick vegetation clogging lakes and rivers. These plants can also cause fish kills due to low oxygen levels under dense mats, and prohibit boater and angler access.

Removing aquatic invasive species helps support habitat for fish, birds, and other wildlife by allowing for the reestablishment of native ecosystems, and has the added benefit of improving recreational opportunities for boaters and anglers. This makes the extension of the current law requiring boat washing critical, as recreational water vehicles and equipment are one of the primary vectors for the spread of aquatic invasive species. We ask that you permanently extend the law mandating boat-washing to ensure that the spread of aquatic invasive species is contained as much as possible. Requiring owners to take reasonable steps to check, clean, and dry recreational water vehicles is the easiest and most cost-effective means for limiting the spread of invasive species.

Protect New York's Wetlands. Wetlands are critical for bird health and population stability, and provide numerous benefits to people and communities – illustrating the need to protect the state's freshwater wetlands to the greatest extent possible. Approximately one-third of North American bird species use wetlands for food, shelter, or breeding, and one hundred thirty-eight species and subspecies of birds in the U.S. are designated as "wetland dependent," including the Black Rail, Pied-billed Grebe, and Least Bittern, which are listed as threatened or endangered in New York State. Protecting these birds' habitats is absolutely essential to their future survival.

We support the Executive Budget proposal to eliminate the jurisdictional maps that serve as the basis for the DEC's authority to regulate wetlands. Currently, the DEC can only regulate these wetlands if they are delineated on jurisdictional maps, which has left more than 50,000 acres of wetlands unprotected. Many of these wetlands were previously afforded protections under the federal Clean Water Act. However, the Trump Administration's rollback of the Waters of the United States Rule has severely weakened the Clean Water Act's protections for critical wetland areas. By expanding their authority, the DEC will be able to protect critical wetlands that

provide food and shelter for our birds and improved water quality and flood management for our communities. We are pleased to see that New York State has stepped up to protect our wetlands, especially in the wake of the new proposed federal rules released just last week, and ask the Legislature to support this important proposal.

Increased Funding for Clean Water Infrastructure. New York State's investments in clean water infrastructure have provided significant and needed funding that improves our wastewater and drinking water infrastructure. The amount of funding that New York State has committed to new infrastructure has continued to outpace federal spending for the entire nation, and provides a strong example that the federal government should follow. As a member of the New York Clean Water Coalition, we ask that New York State build on its leadership role by dispersing this year's \$500 million appropriation and including an additional \$2.5 billion in new funding over five years for clean water infrastructure in the SFY 2020-21 Executive Budget.

This funding makes an enormous difference by aiding communities that lack the financial resources to make independent investments in their water infrastructure. New York State has estimated that the combined wastewater and drinking water needs in the state will exceed \$80 billion over the next 20 years, and while past appropriations have made a significant down payment on this balance, the State will need to continue to appropriate funds to address these issues so that the cost of future repairs does not fall to New York State ratepayers.

Reduce Our Reliance on Single-use Plastics. Plastics have become an abundant pollutant in our oceans and pose a major threat to marine and coastal wildlife. Scientists now estimate that 99 percent of all pelagic birds will have consumed plastic at some point in their lives by the year 2050.³

An estimated 8 million metric tons of plastic enter oceans around the world each year due to littering, illegal dumping, and poor waste management. Discarded plastic products, like bottles, straws, clothing, bags, and packaging, eventually break up into small fragments when exposed to sunlight, seawater, and wave action – forming microplastics that can be inadvertently consumed by birds and other wildlife.

A recent Brazilian study documented that American Oystercatchers – which breed on our beaches on Long Island – are consuming discarded plastics and then suffering from poisoning or starvation. Researchers found an average of 29 pieces of plastic in each oystercatcher surveyed and a maximum of 140 pieces inside a single bird. Some birds consume plastic because it looks like prey, but for other species it is impossible not to consume because microplastics have become so abundant in our environment.⁴

Plastic-packed birds often have little food in their stomachs, suggesting that they stop eating when the materials remain undigested in their stomachs, possibly because of a false sense of fullness.⁵ Ingested plastics can also block the digestive tract, leach contaminants, and cause

³ Plastic in seabirds is pervasive and increasing. Chris Wilcox, Erik Van Sebille, Britta Denise Hardesty Proceedings of the National Academy of Sciences Aug 2015, 201502108; DOI:10.1073/pnas.1502108112

⁴ Colabuono, F.I., Barquete, V., Domingues, B.S., Montone, R.C., 2009. Plastic ingestion by Procellariiformes in southern Brazil. Mar. Pollut. Bull. 58, 93–96.

⁵ Pierce, K.E., Harris, R.J., Larned, L.S., Pokras, M.A., 2004. Obstruction and starvation associated with plastic ingestion in a northern gannet *Morus bassanus* and a greater shearwater *Puffinus gravis*. Mar. Ornithol.

other physical damage. Plastics can collect toxic chemicals like DDT and PCBs and those chemicals can then be released in a bird once consumed. Plastics can also leach endocrine-disrupting chemicals like biphenyl.^{6,7} The growing body of evidence indicates that plastics can be a serious concern for birds and their conservation.

Banning the use of Styrofoam packaging in New York State is an important next step in reducing our consumption of single-use plastics. Given the pervasiveness and global nature of the plastics problem it is critical that we continue to take action to reduce the impacts of plastics on birds and other wildlife. We ask the Legislature to continue their support for measures that reduce the proliferation of microplastics and support the Executive Budget proposal to ban Styrofoam.

Permanent Ban on Hydraulic Fracturing. High volume hydraulic fracturing can cause extensive surface disturbances that threaten birds, other wildlife, and their habitats. The construction of hydraulic fracturing infrastructure and drilling operations would fragment New York State's extensive forest cover, destroy bird and wildlife habitat, damage the existing economic foundations of the Marcellus Shale region, pollute our air and water, and contribute to greenhouse gas emissions. The impacts above and below ground would be immediate and could last for generations.

We were pleased that New York State executed an administrative ban on hydraulic fracturing after carefully examining the environmental and public health impacts, and believe that a permanent statutory ban would ensure that our wildlife and environment remain protected throughout future administrations of New York State government. We ask the Legislature to support the Executive Budget proposal to permanently ban hydraulic fracturing in New York State.

Confronting the Climate Crisis

Birds are vulnerable to subtle changes in their environment, such as the availability of food, water, and habitat, which can cause them to shift or lose their ranges. Audubon recently released a climate report that analyzed the climate conditions birds need to survive and mapped where those conditions will be found in the future as the Earth's climate responds to increased greenhouse gases. In New York State, one hundred and twenty-five species of birds are vulnerable to climate change, including the Common Loon, Bald Eagle, and Wild Turkey.

Audubon and other leaders in the science and conservation space agree that, in order to help prevent species extinctions and other catastrophic effects of climate change, we must reduce carbon pollution as quickly as possible and offset that which we cannot eliminate. This will require us to rapidly increase energy efficiency, expand energy storage, modernize transmission capabilities, and accelerate the development of renewable energy. Following the signing of the nation-leading Climate Leadership and Community Protection Act, we are looking forward to

⁶ Hirai, H., Takada, H., Ogata, K., Yamashita, R., Mizukawa, K., Saha, M., Kwan, C., Moore, C., Gray, H., Laursen, D., Zettler, E.R., Farrington, J.W., Reddy, C.M., Peacock, E.E., Ward, M.W., 2011. Organic micropollutants in marine plastics debris from the open ocean and remote and urban beaches. *Mar. Pollut. Bull.* 62, 1683–1692.

⁷ Tanaka, K., Takada, H., Yamashita, R., Mizukawa, K., Fukuwaka, M.A., Watanuki, Y., 2013. Accumulation of plastic-derived chemicals in tissues of seabirds ingesting marine plastics. *Mar. Pollut. Bull.* 69, 219–222.

working with New York State to develop a roadmap to carbon neutrality that benefits birds, people, and other wildlife.

Threatened and Endangered Species Impacted by Renewable Energy Projects. Audubon supports the development of renewable energy and transmission infrastructure that is sited and operated to avoid, minimize, and effectively mitigate impacts on birds and other wildlife. Wind and solar power are clean, renewable sources of energy with few negative environmental impacts. However, renewable energy projects and the development of new transmission infrastructure has the potential to negatively affect wildlife through direct mortality and habitat degradation.

We recognize that identifying suitable locations for renewable energy and transmission infrastructure is challenging. However, in doing our part to tackle the threat of climate change, we must not subject our endangered and threatened wildlife to unacceptable loss and degradation of habitat. Negative impacts can be minimized through thorough site assessments prior to construction, avoiding high risk areas, committing to adequate compensatory mitigation for unavoidable risk, and continued monitoring post-construction to better understand impacts and inform best management practices.

As the State develops its new process for the siting and development of land-based renewable energy projects, we ask that the State convene an Environmental Technical Working Group that can advise on the development of procurements for the State's priority sites. This model has proved to be very successful during the development of the procurements for offshore wind, and we believe it would also benefit the State's push for additional land-based renewables.

We also recommend that the State establish a mitigation fund or bank to address impacts on the environment, including threatened and endangered bird species and their habitats. In situations where harm cannot be avoided, the DEC typically requests that developers offset any loss of habitat by creating a net conservation benefit. This is usually accomplished through the creation, enhancement, or protection of quality breeding habitat pursuant to a 3:1 (new / improved : impacted) ratio. This ratio attempts to account for the uncertainty inherent in habitat restoration or creation, and the additional uncertainty that the target species will find and utilize said habitat.

Establishing a mitigation fund or bank would allow nonprofit organizations with expertise in managing the affected species to aid project developers who need to undertake required mitigation. This would provide additional financial resources for wildlife conservation and draw on the experience of qualified professionals who can implement best practices for mitigation and subsequent management efforts, increasing the likelihood that mitigation will provide a net conservation benefit. This will aid in the accelerated deployment of renewable energy while ensuring that we protect the state's most fragile resources.

Support the Development of Natural Climate Solutions. We strongly support the development of natural climate solutions as part of New York State's strategy to combat climate change and as part of the charge made to the Climate Action Council. Recent studies have found that better management of our forests, grasslands, and soils could offset as much as 21 percent of our annual carbon emissions. The U.S. Climate Alliance has also identified better land management practices as a critical tool in combatting climate change, and the Alliance's Natural and Working

Lands Initiative is working to develop strategies to increase the volume of carbon stored in ecosystems, reduce losses of already-stored carbon, and decrease greenhouse gas emissions caused by poor management. Replanting trees, promoting forest resiliency, and using sustainable forestry management techniques will be essential to achieving the full potential of these offsets.

Accelerate the Development of Responsibly-Sited Offshore Wind. Wind power is an important component of New York State's renewables portfolio, and Audubon strongly supports the investment of \$9.1 billion in offshore wind to help reduce the threat of climate change. Achieving 9,000 MW of offshore wind by 2035 is an ambitious goal and we look forward to continuing to work with New York State to make sure that new wind projects are responsibly planned, sited, and operated in order to minimize harm to birds and other wildlife. Simple steps, such as avoiding migration corridors and critical habitat, can reduce bird collisions and other negative outcomes while allowing for the continued development of offshore wind.

Wind power is currently the most economically competitive form of renewable energy. As of January 2017, the wind facilities installed in the United States provided more than 82,000 MW of capacity. With our current transmission infrastructure, the Department of Energy estimates that wind has the potential to generate 20 percent of the nation's energy. If the United States obtains 20 percent of its electricity from wind power by 2020, it would be equivalent to taking a quarter of US cars off the road or planting 104 million acres of trees, which would cover an area the size of the state of California.

Audubon advocated for the inclusion of environmental guidelines in the first New York State procurement for offshore wind and provided technical expertise that will help minimize threats to birds and other wildlife by ensuring that turbines are properly sited and monitored. We will continue to work with the Public Service Commission and NYS Energy Research and Development Authority on the second solicitation planned for this year to refine these guidelines and promote the adoption of best management practices for the construction and operation of wind turbines in New York State's coastal waters.

Meeting the demand for improvements to our environment and protecting bird species from further decline will take creativity and a commitment from all levels of government. Audubon once again urges the Legislature to support historic funding levels for the Restore Mother Nature Bond Act, the Environmental Protection Fund, and other funding and programs that help improve our forests and state parks, and pragmatic solutions to address the threat of climate change.

Thank you again for allowing me to testify today, and should you need any additional information, please contact me at 518-860-4296 or emcgrath@audubon.org.