February 23, 2005

Ms. Karen Kirk Adams, Cape Wind Energy Project EIS Project Manager
U.S. Army Corps of Engineers, New England District
696 Virginia Road
Concord, MA 01742-2751

Reference File No. **NAE-2004-338-1**
EOEA No**. 12643**
Cape Com. File No. **JR#20084**

Dear Ms. Adams:

Through this correspondence Mass Audubon formally requests that the US Army Corps of Engineers prepare a Supplemental Environmental Impact Statement (DEIS) for the *Cape Wind Energy Project* ("the Project") proposed for Nantucket Sound off the coast of Massachusetts. We have previously made this request in our brief public hearing oral and written testimony delivered to you on December 7, and 8, 2005. This request is consistent with *The National Environmental Policy Act of 1969* (Pub. L. 91-90, 42 U.S.C. 4321-4347, January 1, 1970, as amended; and accompanying regulations at: Part 1502/Section 1502.9.

We believe that there is *significant new… information relevant to environmental concerns and bearing on the proposed action or its impacts ((c)1(ii))*. The information necessary for the Corps to make a fully informed Record of Decision on the merits of the Project is contained in the accompanying Mass Audubon comment on the DEIS for the Project. Filling of the data gaps Mass Audubon highlights in the comment letter is information that should be available for public review and comment.

However, in order to fairly expedite the Corps' decision-making process, Mass Audubon supports *alternative procedures* as approved by the Council on Environmental Quality to the preparation, circulation and filing of a supplement, as provided for at ((c)4). Although we do not find the entire 4,000 page DEIS deficient, we do believe that certain and important information must be provided to the public in order for the Corps to proceed to a Final EIS and subsequent Record of Decision.

We appreciate the opportunity to make this request and thank you for your timely consideration.

Laura A. Johnson

President

February 23, 2005

Ms. Karen Kirk Adams, Cape Wind Energy Project EIS Project Manager
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VIA OVERNIGHT

Reference File No. **NAE-2004-338-1**
EOEA No**. 12643**
Cape Cod Comm. File No. **JR#20084**

Dear Ms. Adams, Secretary Herzfelder, and Director Fenn:

Mass Audubon appreciates this opportunity to provide written comments to supplement our public hearing oral testimony delivered to the Army Corps of Engineers (the Corps) on December 7, and 8 in response to the *Draft Environmental Impact Statement/Report/Development of Regional Impact* (DEIS) *for the Cape Wind Energy Project* ("Cape Wind") proposed for Nantucket Sound.

We request that these comments be considered under:

- *The National Environmental Policy Act* (*NEPA*);
- Section 10 of the *Rivers & Harbors Act of 1899*;
- *The Massachusetts Environmental Policy Act (MEPA)*;
- The Development of Regional Impact section of *The Cape Cod Commission Act*;
- *The Endangered Species Act of 1973 (ESA);*
- *The Migratory Bird Treaty Act; and*
- *The Marine Mammal Protection Act of 1972.*

We also thank the Corps for extending the public comment period beyond the required 45 days.

Mass Audubon is the largest conservation organization in New England, concentrating its efforts on protecting the nature of Massachusetts for people and wildlife. We protect over 30,000 acres of land, conduct educational programs for 250,000 children and adults annually, and advocate for sound environmental policies at the local, state, and federal levels. Established in 1896 and supported by 65,000 member households, we maintain 43 wildlife sanctuaries that are open to the public and serve as the base for its conservation, education, and advocacy work across the state.

This project is the first offshore wind farm proposed in publicly owned, federal waters. It will be a large-scale facility, involving 130 turbines arrayed in a grid over approximately 24 square nautical miles on Horseshoe Shoal in Nantucket Sound. It also includes an Electric Service Platform for gathering the generated electricity, and two underwater cables that will transmit the power to the mainland on Cape Cod. The maximum height of the structures (tip of turbine blade) would be about 415 feet above mean sea level.

The proposed project site is located in a highly productive ecosystem. The area within the eastern US migratory bird flyway hosts high concentrations of wintering waterfowl, and is in close proximity to nesting, foraging and staging areas for federally endangered Roseate Terns and threatened Piping Plovers. Substantial numbers of federally endangered sea turtles and protected marine mammal species frequent the proposed project site. In addition, the proposed site provides important habitat for federally regulated finfish and shellfish populations in Nantucket Sound.

It is important that the environmental review documents for this project provide a thorough and objective presentation of information and analyses in order to provide a sound basis for the Corps and other agencies to make permitting decisions on the project. As the first and largest offshore wind energy project in the United States, this review process will set the standard for future environmental reviews of projects of this type.

Mass Audubon has focused its review of the DEIS on sections most relevant to our organizational mission and where we have expertise (i.e. avian and other living resources). These comments should not be construed to imply support or lack of concern regarding any other portions of the DEIS.

The alternatives studied for this project are limited to potential locations for commercial scale wind energy facilities. While we do not comment in detail on the alternatives analysis, Mass Audubon also recognizes and supports a host of other measures that can reduce reliance on fossil fuel and nuclear-based energy sources, including distributed generation, green buildings, energy efficiency, and conservation. We urge federal, state, and local governments to take steps to advance such measures.

As discussed further below and in the accompanying letter, Mass Audubon urges the Corps to require a Supplemental DEIS, as there are key data gaps and deficiencies in analysis of available data that need to be addressed. The additional information needed includes:

1. Long-tailed Ducks: further data on access, egress and evening roosting areas in and around Nantucket Sound;
2. Roseate Terns: reanalysis of radar data and/or additional surveys during April/May and September;
3. Nocturnal passerines: at least one additional year of data covering spring and fall migrations; and
4. Further assessment of collision risk for birds passing through the project area. Given the uncertainty surrounding this analysis, risk should be presented as a range of probabilities.

I. Mass Audubon and Energy Policy

As responsible citizens, stewards, and advocates, Mass Audubon strongly supports public policies and private projects that advance energy conservation and efficiency. We also support the development of wind farms as a renewable energy source to offset the effects of global climate change produced by the burning of fossil fuels. The question for permitting agencies and the public is what are the most appropriate locations for wind farm facilities.

We recognize that rapid climate warming is one of the most serious long-term threats to the nature of Massachusetts and the planet. This warming primarily results from the burning of fossil fuels to power cars, trucks, planes, and trains, and to generate electricity. Though we make up just 4 percent of the world's population, Americans produce 25 percent of the world's carbon dioxide pollution.

The development production, and consumption of fossil fuels also damages the public's health and environment including destruction of wildlife habitat from drilling and mining; the closure of shellfisheries and fouling of beaches by oil spills; damage to human health from air and water pollution; and contamination of groundwater from the disposal of solid and hazardous waste.

To reduce these impacts, the reliance on fossil fuels as a major source of energy must be dramatically reduced. Simultaneously, there must be an aggressive increase in the amount of energy derived from renewable sources. As such, we endorse the Commonwealth's goal to obtain 10 percent of electricity from renewable sources by the end of the decade. This goal, however, must be a minimum and not a maximum target.

Of the renewable energy options currently available, wind power has the greatest potential to mitigate the harmful environmental effects of rapid climate warming caused by the burning of fossil fuels. Technology to harvest wind is among the more advanced, widely available, and environmentally benign of the renewable energy options. While all energy choices have environmental impacts, the potential environmental risks associated with the operation of Cape

Wind must be evaluated against the proven destructive effects associated with the production and consumption of fossil fuels.

The potential environmental risks of wind energy development can be reduced by the development of responsible and informed standards for siting, operation, and decommissioning wind energy facilities.

Unfortunately, our state and federal governments have failed to establish such standards. While some regulatory programs do apply to wind energy projects, these programs were developed prior to today's large-scale proposal and do not specifically address potential risks to birds, wildlife and remote habitats. We therefore believe that the wind energy industry and permitting agencies would benefit from a framework of comprehensive planning and facility siting criteria to guide projects to the most appropriate locations, and we will work toward that end with our state legislators and Congress.

II. Mass Audubon's Scope of Review for the Cape Wind Project

Mass Audubon's review, assessment, and comments on the DEIS are focused on ensuring that the Corps obtains and properly analyzes sufficient information to adequately evaluate the project. Mass Audubon's ultimate position on the project will be based on a weighing of the environmental risks and benefits of the project in the context of the ongoing and known environmental impacts associated with not undertaking such renewable energy projects.

Several Mass Audubon staff scientists and other staff members with considerable expertise in applicable subjects undertook a detailed review of DEIS sections related to avian and marine life. A detailed technical commentary is attached to and should be considered part of this letter. In addition, the following staff assisted in preparing this comment letter:

Gary Clayton is Vice President for Programs, and is responsible for the management of the advocacy, education, and land protection programs at Mass Audubon. His graduate research focused on marine fisheries biology. He is the former state Director of the Department of Environmental Protection's Wetlands and Waterways Division and Assistant Director of the Massachusetts Coastal Zone Management (CZM) Office. He is presently a member of the state Water Resources Commission.

John J. Clarke is Director of Advocacy. He is a former Assistant Director of Massachusetts CZM, and CZM Regional Coordinator for Cape Cod. Prior to that he spent ten years with the National Park Service at the Cape Cod National Seashore. In addition he has served on the Secretary of the Interior's Advisory Committee on Outer Continental Shelf matters. He has a bachelors and masters degree from Boston College.

Heidi Ricci is a Senior Environmental Policy Specialist. She has an MS degree in Resource Management and Administration and a BS in Biology. She is Mass Audubon's MEPA/NEPA

review coordinator and has reviewed and commented on hundreds of projects through MEPA/NEPA and various regulatory permitting programs.

Mass Audubon's Data and Previous Technical Comments: As the DEIS was being drafted, we offered, and you accepted, unsolicited, our primary research data on:

- Late Summer 2002 Common and Roseate Tern surveys, submitted in November 25, 2003; and
- Spring/early Summer 2003 Common and Roseate Tern surveys submitted in March 2004.

Although not in time for the DEIS, we also submitted our:

- Late Summer 2003 Common and Roseate Tern surveys, which we hope to see included in the next EIS document.

We are submitting for the next EIS our:

- Winter 2003/2004 winter waterfowl surveys (attached to these comments)

We will also be submitting for the next EIS our

- Spring/early Summer 2004 and Late Summer 2004 Common and Roseate Tern surveys.

We would welcome an opportunity to continue working with the Corps in researching and providing additional data for the next EIS document.

Further, on July 16, 2004 Mass Audubon provided you, at your request, with an independent peer review of a preliminary draft of DEIS *Appendix 5.7-H: the Avian Biological Assessment* for the project.

We appreciate the inclusion of our original data in the DEIS, along with our response to the draft Avian Biological Assessment.

Mass Audubon is also an invited participant in a broad-based stakeholder review process sponsored by the Massachusetts Technology Collaborative (MTC). Stakeholders include: environmental groups; proponents; opponents; and federal, state, regional, and local officials.

Mass Audubon is urging state and federal officials to develop, through the MEPA/NEPA process, a comprehensive statewide plan for siting wind energy facilities. The geographic area covered by this planning process should encompass all lands within the state as well as state and federal waters off the Massachusetts coast. We are also calling for the development of state and federal leasing programs for wind energy projects located in offshore waters.

III. State and Federal Planning and Regulatory Framework Needed for Wind Energy Development

State and/or federal measures needed to promote the development of wind energy and manage its effects include:

- Developing planning and siting criteria to guide environmentally sound facility site selection, including state and federal lands and waters;
- Refining regulatory permitting procedures;
- Establishing protocols for pre- and post-construction monitoring;
- Establishing procedures for decommissioning abandoned wind energy facilities; and
- Establishing leasing programs to compensate the public for use of state and federal lands and waters

Since the proposed Cape Wind Project site is located in the federally controlled Outer Continental Shelf (OCS), Mass Audubon continues to urge the US Congress to quickly pass federal planning and leasing legislation for such uses of the OCS. A long-term planning program should serve to better guide offshore renewable energy development while avoiding unacceptable environmental conflicts. A companion leasing and licensing program should ensure a proper public bidding process with commensurate compensation, fees, and resource rent paid to the public for use of public waters. While we do not call for a moratorium on Cape Wind, we urge that any leasing program be applied retroactively to this and any offshore renewable energy projects that may be permitted on the OCS prior to a leasing program becoming law.

IV. Supplemental DEIS/DEIR Needed for the Cape Wind Project

Mass Audubon urges the Corps to require a Supplemental DEIS, as there are some key data gaps and deficiencies in analysis of available data that need to be addressed (see accompanying letter of request). Although the DEIS is 4,000 pages, it is important to look beyond the number of pages and consider the quality of data and analyses employed in reaching key conclusions regarding environmental impacts. Adequate information has not been provided on some key aspects of avian, bat, and marine impacts, as discussed in further detail below. Much of the data that is presented is characterized by insufficient or flawed analysis. Many statements that could be described as assumptions are stated as conclusions consistently favorable to the project. The DEIS should forthrightly state when insufficient information is available to draw conclusions. Additional information should be provided, and the public should be given the opportunity to review and comment on that material through a Supplemental DEIS under the provisions of NEPA prior to your issuance of a FEIS and Record of Decision.

There are few offshore wind farms worldwide, and none of comparable size, from which to gauge the potential impacts of this project on birds and other wildlife. Therefore, Mass Audubon recommends that, should the project be permitted, it be subject to careful and specific permit conditions. We also recommend that detailed protocols be established to monitor the wind farm's environmental impacts, with monitoring starting as soon as feasible while the project is under

construction. If the project is constructed and impacts are significantly greater than anticipated, there should be contingency plans in place for further mitigation, including potentially reducing the project scope and/or removing turbines if impacts are excessive and other forms of mitigation are not possible. A comprehensive mitigation package should be provided for the project. An independent scientific expert review panel should be established that would review and evaluate reports produced by consultants whose monitoring would be paid for by a fund established from proceeds of the electricity sales. The panel's findings should be reported directly to the supervising agencies and made available to the public.

V. Specific Comments on the DEIS

The following comments provide an overview of Mass Audubon's technical review of the DEIS and are organized in the same order as the first part of Mass Audubon's technical comments. The technical comments explain in greater detail the basis for these key concerns regarding data gaps and flawed analysis, which should be addressed in a Supplemental DEIS. These comments should be read in concert with technical comments. In addition, this letter provides recommendations regarding project mitigation measures that should be required.

A. Data Gaps in Relation to the DEIS Scope, and Analytical Flaws Requiring Further Analysis

1) Avian

As has been previously made known to you repeatedly over the past four years, Mass Audubon and the US Fish & Wildlife Service (USFWS) have asked that the Corps present a minimum of three (3) years worth of avian information as an important component of the NEPA review.

The Corps' Scope of Work for the DEIS states the following:

> *Data on use throughout the year, especially through November for migratory species, and under a range of conditions should be collected. Data collection methods should include remote sensing through radar and direct observations through aerial reconnaissance and boat-based surveys. Data gathered through radar should be validated with direct observations…Data collection should allow a statistically rigorous analysis of results.*
>
> *Known impacts to birds from former or current Wind Turbine Generators (WTGs) and other tall, lighted structures (such as communications towers) should be thoroughly reviewed in order to identify potential impacts which could result from terrestrial or coastal structures. Issues needing to be addressed include: (1) bird migration, (2) bird flight during storms, foul weather, and/or fog conditions, (3) food availability, (4) predation, and (5) benthic habitat and benthic food sources.*

Data on three groups of birds are needed: terns, winter waterfowl, and migratory songbirds (passerines). A large percentage of the northwest Atlantic (North American) Roseate Tern population passes through Nantucket Sound each year. Both the federal and state governments list roseate Terns as an endangered species. Nearly half of all North American Roseate Terns nest in Buzzards Bay. They spend significant amounts of time feeding in the Sound and staging in the area in preparation for migration. Nantucket Sound holds one of the largest concentrations of waterfowl anywhere on the Atlantic Seaboard; estimates are that a quarter to a half a million birds spend up to half the calendar year there every year. A wide variety of other water and land birds also frequent the Sound at various times of the year. Large numbers of migratory passerines pass over the Sound during spring and fall migrations.

Avian surveys are needed to quantify the extent of diurnal usage throughout the year and in all types of weather conditions. We have also requested that these data be submitted in the applications for any associated permits, licenses and authorizations

Specifically, information is needed to provide a reasonably objective assessment of the avian impacts including potential for:

1. Collision mortality;
2. Disturbance, displacement or exclusion from the project site and/or surrounding areas, including barriers to movement; and
3. Loss of, or damage to, habitat resulting from wind turbines and associated infrastructure and use.

The conservation status of potentially affected species, the magnitude of the potential impacts, the extent, availability and quality of alternative suitable habitat will be considered when evaluating the potential risks associated with the project. Mass Audubon will also weigh the benefits and detriments of this project against the known environmental impacts associated with nonrenewable energy sources.

The table attached to our technical comments (Appendix A) summarizes the avian survey periods that yield data: 1) provided in the DEIS by the applicant; 2) provided by Mass Audubon; and 3) remaining data gaps.

We have identified several avian data and analysis gaps in the DEIS that need to be addressed:

1. Long-tailed Ducks: further data are needed on the location of nocturnal roosting sites in and around the Sound as well as the movement patterns (e.g. flight heights and routes) as they enter and exit these sites. Nighttime winter waterfowl surveys utilizing radar and aerial surveys with infrared equipment should be conducted;
2. Roseate Terns: reanalysis of radar data, as well as additional surveys are needed during April to May and in September when the birds are arriving at and departing from Nantucket Sound and the proposed project site area, specifically to determine flight heights and directions;

3. Nocturnal passerines: at least one additional year of radar data needs to be collected during spring and fall migrations. Information is needed on annual variation in numbers and timing, and the heights at which they pass over the project site during a variety of weather conditions; and
4. Further assessment of collision risk for birds passing through the project area, utilizing all available data. Given the uncertainty surrounding this analysis, risk should be presented as a range of probabilities.

Considerable data now exist on the presence of birds in the project area in most seasons during daylight hours, in good weather conditions. Available data comes from several sources including studies funded by the applicant, studies independently conducted by Mass Audubon, and data collected prior to the project proposal. Consultants hired by the applicant conducted approximately 47 aerial surveys and 14 boat surveys. Mass Audubon independently conducted 54 aerial surveys and 38 boat surveys, and we are continuing aerial surveys this winter through April 2005. We note in our technical comments some concerns regarding the survey methodologies and data interpretation of the surveys funded by the applicant, including a lack of defined transects in boat surveys, unsupportable conclusions regarding flight heights observed in aerial surveys, and inadequate analysis of the radar data.

There are insufficient data concerning the movements of birds through the area, especially at night and during foul weather conditions, as well as the number of birds, e.g., winter waterfowl, flying through the rotor swept zone in the project area. The collision risk analysis is seriously deficient and should be redone. **The conclusion reached in the DEIS/EIR that the project is likely to cause approximately 364 bird deaths per year due to collisions is not supportable.** By utilizing other bird mortality data provided in the DEIS, Mass Audubon staff scientists arrived at avian mortalities that ranged from 2,300 to 6,600 collision deaths per year. Our estimates are intended to be illustrative of some of the potential alternative approaches that could be applied in estimating collision risk. We do not claim that our results are definitive, and we recognize that a wide range of projections may be derived through application of a variety of methodologies. The Corps should further evaluate the potential range of collision risks.

We also note serious deficiencies in the analysis of radar and other data, and therefore we request significant re-analysis of data be included in the Supplemental EIS that we have requested. Many of our concerns on radar analysis are similar to those expressed by Ian Nisbet, an expert on terns and the use and limitations of avian radar. We are in substantial agreement with the technical flaws he has identified in the DEIS.

<u>Specific Information and Analyses Needed Regarding Avian Populations, Distribution, and Movement</u>

a) Winter Sea Ducks

It is clear from our data that hundreds of thousands of waterfowl use Nantucket Sound as winter habitat, and the project area can at any one time contain tens to hundreds of thousands of ducks.

The Corps should provide information and analysis on the movements of winter sea ducks in Nantucket Sound and the proposed project area between November and April, focusing on flight heights of birds during periods of low visibility and poor weather. Nighttime data are also needed to adequately assess risks for the many thousands of Long-tailed Ducks frequently observed from Nantucket at dusk in winter, entering Nantucket Sound from the south.

The Corps should explicitly and simultaneously consider the risk to winter sea ducks of three potential impacts to sea ducks: collision mortality, disturbance, and habitat loss due to displacement.

There are substantial discrepancies in the number of ducks that we observed in our 2003-2004 winter aerial surveys compared to those reported in applicant-funded surveys in the DEIS, Appendix 5.7M (Table 4). The Corps should acknowledge these discrepancies and address the concerns expressed in our technical comments regarding inappropriate pooling of data.

b) Terns

Roseate Terns: Mass Audubon does not concur with the risk assessment for Roseate Terns, due to both inadequate data, and faulty and incomplete analysis of data that are available. See also comments below regarding flaws in analysis of radar data and in collision mortality estimates.

Additional information is needed on heights, times of day, and directional movements of Roseate Terns through Nantucket Sound, particularly during August-September when juveniles are first learning to fly and terns are moving to their staging areas, as well as during April and May when terns are arriving in the area. Additional radar and/or aerial and boat surveys are needed to provide a statistically valid sample size.

As with winter sea ducks, tern densities should accurately reflect periods when terns are actually present in the proposed project area, rather than including times when they are not (e.g., Appendix 5.7-K), which inaccurately lowered density estimates reported in the DEIS. Densities for terns are misleading because terns, unlike rafting waterfowl, are more likely to be moving through the area, to and from South Beach and Monomoy, than resting on the water. Data should also be separated into breeding season and spring/fall migration season estimates.

Further information is needed regarding proposed methods to deter terns from roosting on the Electric Service Platform in terms of effectiveness, risk to birds, and maintenance issues.

Mass Audubon supports the preferred route transmission cable route through Lewis Bay and strongly opposes any attempt to use the secondary alternative, which would involve laying the cable through Popponesset Spit. The spit is a barrier beach partly owned by Mass Audubon. It provides nesting habitat for Piping Plovers and terns. In addition to any construction related bird disturbance, Mass Audubon has serious concerns regarding the destabilization of the barrier beach if a trench were to be dug through it, as well as concerns about the impacts of cable laying on the shallow Popponesset Bay behind the beach.

The cable landfall route through Lewis Bay passes close to the Mass Audubon-owned Egg Island in Lewis Bay. Terns forage over and around this sand bar. Terns and Piping Plovers also nest on beaches within approximately 1,000 feet of the cable-laying route. Mass Audubon participated in the state Energy Facility Siting Board (EFSB) review of the cable portion of the project and submitted extensive technical and legal testimony in that process requesting that construction not take place in the vicinity of Egg Island during the breeding season when terns are present. The DEIS fails to incorporate or address the technical commentary Mass Audubon's expert witnesses submitted during the EFSB review process.

The draft EFSB decision approving the Lewis Bay route requires further consideration of seasonal restrictions on cable laying to avoid impacts to breeding terns and plovers, as well as the aerial photography just prior to construction to avoid impacts to eelgrass. The Corps should summarize the nearshore bird habitat and disturbance issues raised during the EFSB process, and should incorporate associated mitigation requirement into its documents.

c) Migratory Passerines

Tall, lighted structures have been documented to present a collision hazard to many species of migratory birds. Many species of songbirds migrate at night, therefore there needs to be more careful assessment of the potential for aviation warning lights to attract birds and cause mortality due to collisions with the towers or blades.

The Corps should collect an additional year of radar data during spring and fall migration seasons to provide estimates of annual variability in abundance, timing, heights, and behavior of songbird migrants as they pass over the project site during a variety of weather conditions.

d) Radar

There are many deficiencies in the radar analysis in the DEIS. Radar should be reanalyzed to more thoroughly discriminate targets such as bats and terns. The DEIS fails to show that radar data were validated through direct observation as called for in the Corps' scope. The DEIS does not make it clear that a radar "target" is not synonymous with "bird" or "bat." Radar "targets" could be individual or groups of birds or bats.

No targets were recorded below the heights of either deployed radar in either seasonal study (spring: 23 ft; fall: 36 ft), which is inconsistent with Mass Audubon's visual observations and typical seabird behaviors. This needs to be reexamined and explained.

Additional analysis should focus on greater discrimination of targets by flight speed and target density. The radar recorded hundreds of thousands of targets during the sampling periods, and tens of thousands of targets at the height of the rotor swept zone. The Corps should reanalyze May and September 2002 radar data to determine if possible, what percentage of the targets could be Tern species, including Roseate Terns.

e) Collision-risk

The Corps should conduct a more thorough assessment of collision risk for all avian species entering the project area. Such an assessment should utilize the most relevant information from published studies, the data collected by the Corps, and available models. Due to the high degree of uncertainty associated with collision risk in this first large scale offshore project in the U.S. a range of figures should be presented rather than a single number.

The conclusion reached in the DEIS/EIR that the project is likely to cause approximately 364 bird deaths per year due to collisions is not supportable. This number is derived from averaging data from studies of land-based wind farms with no explanation of why these ranges are relevant to the proposal for the largest offshore wind farm in the world, in an area that is perhaps one of the most important areas for birds in North America. The DEIS ignores substantial information from other studies that would project higher mortality rates. Data regarding actual avian use of the project site were presented in the DEIS, but were not utilized in projecting the avian collision risk number for the project. Based on available information included in the DEIS, our scientists calculated alternative estimates of collision mortality ranging conservatively from 2,300 to 6,600 bird mortalities per year. More rigorous analysis of the data gathered to date and additional data are needed to refine the analysis. A sufficiently rigorous review should be presented in a Supplemental EIS. Because of the high degree of uncertainty associated with the collision risk assessment, several different methodologies should be applied and the Corps should present a range of potential collision risks rather than a single number.

The risk assessment from radar data was based only on targets within the rotor swept zone. This assumes that the probability of collisions with monopoles is zero. This is a critical assumption, especially in light of the flight characteristics of waterfowl, which fly fast and have limited maneuverability

2) Sea Turtles and Other Marine Life

The Corps' Scope of Work stated:

Marine mammals and turtles to be addressed include northern right whale, humpback whale, fin whale, harbor seal and grey seal, loggerhead sea turtle, Kemp's Ridley sea turtle and leatherback sea turtle.

Sea turtles: The DEIS contains inadequate analysis of the impact of the proposed project on sea turtles. Because of frequent sightings of sea turtles in Mass Audubon's aerial surveys, it is apparent that turtles utilize Nantucket Sound more than previously supposed. The Corps should seriously reconsider the potential impacts of the proposed wind farm on sea turtles. In addition, the DEIS should include a synopsis of green sea turtles. This species does occur in the area.

If the monopoles develop a "fouling community" that attracts turtles, the risk of collision with maintenance vessels will increase unless strict rules are implemented to slow these vessels, and potential increased collision risk with boats in major shipping channels also needs to be evaluated.

Noise Impacts: The Corp describes construction related noise decibel levels of 180 at 1220 meters, but does not characterize the acoustic environment at a distance less than this. The Corps should provide a graphic illustrating the relationship between decibel levels and distance from the construction zone. The Corps should further evaluate the potential noise impacts to marine life including sea turtles and marine mammals.

We are not convinced that a "soft start" will be effective in avoiding acoustic impact. The DEIS does not analyze whether and how sensitive organisms will leave the area after a "soft start," or how long it will take various types of animals to move out of the area if they are motivated to do so by the "soft start" noise. Neither is it clear how this process would be monitored or enforced. The Corps should provide further details, and establish a specific protocol that will be followed during construction.

Eelgrass: The DEIS states that the submarine cable will pass within 21 meters of an eelgrass bed in Lewis Bay. We ask the Corps to be more specific about the effects of the sediment plume on eelgrass in Lewis Bay. The basis and justification should be provided for the statement that there would be no impacts on the eelgrass bed within 21meters of the jet plow.

3) Bats

The DEIS does not adequately evaluate potential risks to bats, particularly Red Bats, which are strong fliers that may migrate across large areas of water such as the Sound. The Corps should reanalyze radar data from May and September 2002 to determine if bats can be distinguished from other "targets" in order to provide information on the use of Nantucket Sound as a flyway by migratory bats. In the absence of such information, no conclusions on the risk posed by this project to migratory bats can be made.

B. Inadequate Synthesis of Information in the DEIS

The Scope of Work for the DEIS states the following:

> *The EIS will attempt to comprehensively address the interconnections between the benthic, fisheries and avian resources. The predator-prey interactions are important considerations in fully understanding the potential impacts in siting a project within Nantucket Sound.*

The DEIS fails to do this. The Corps should provide a holistic or ecosystem level summary of environmental impacts of the project on the Sound's marine life and habitats. Because the major avian resources in Nantucket Sound, terns and waterfowl, rely on fish and shellfish as their food supply and in the case of terns, to feed their young, significant alterations or impacts to the benthic

community could shift distributions of these species. The Corps should summarize the overall risks and benefits of the project on living resources in the Sound. For example, the relative magnitude of probable avian collision risks and overall habitat impacts could be synthesized and compared to the greenhouse gas and habitat impacts of production of an equivalent amount of energy from Cape Wind versus conventional sources. The EIS should clearly state all assumptions and uncertainties inherent in the overall project impact versus benefit evaluation.

C. Monitoring

As a condition of any construction permit, the Corps should require the development and implementation of a detailed construction and post-construction monitoring protocol to assess the impact of the wind farm on birds, bats, benthic communities, fish, turtles, and marine mammals. The monitoring program should assess the overall ecological impact of the project. Studies should be designed to address specific questions, such as the extent to which shifts in avian distribution following construction of the project due to avoidance, versus shifts in food supply.

Studies should include radar monitoring from the Electric Service Platform to monitor construction and post-construction impacts on avian life of Nantucket Sound for all seasons. The radar facility should be installed and monitoring should commence as soon as the platform is constructed. Such radar data should be collected, analyzed, and disseminated to permitting agencies and the public at the expense of the applicant. Bird collisions should be documented with available technology such as infrared cameras with digital recording triggered by a collision impact. This monitoring is especially critical given the lack of information on the impact of large offshore wind farms on birds. Monitoring should commence as early as possible in the construction process, and should be continued for at least three years following construction (See additional post construction monitoring recommendations in technical comments).

D. Lease Payments and Decommissioning

The project should be retroactively subject to any lease-sale payments and decommissioning requirements as may be adopted by the Congress. Regardless of whether or not such legislation is passed, the Corps should require specific decommissioning protocols and bond funding assurances.

E. Mitigation for Environmental Impacts

More robust plans for mitigation are needed, especially in regard to avian impacts. In most cases, what is described as mitigation is a preventive measure and not mitigation. Mass Audubon recommends that the following items be included in the project mitigation package.

1. Establish a fund for the acquisition and management of coastal waterbird habitat in and around Nantucket Sound (e.g. tern and Piping Plover nesting sites).

2. Establish and fund a sea turtle stranding recovery program for Nantucket Sound.

3. Significant adverse environmental impact to avian and or marine life shall be subject to Natural Resource Damage Assessments of relevant federal statutes and regulations.

If the post-construction monitoring shows impacts significantly greater than predicted, additional mitigation should be required.

Conclusion:

Mass Audubon requests that the Corps produce a Supplemental DEIS addressing key data gaps and analytical flaws, and that our other comments be addressed in detail in the Final EIS. Thank you again for the opportunity to submit comments on the Cape Wind Energy Project.

Sincerely,

Laura A. Johnson
President

Attachments: Technical Comments with Appendix A
Winter 2003/2004 winter waterfowl surveys

cc: Governor Mitt Romney
Massachusetts Congressional Delegation
Cape and Islands Legislative Delegation
Senator Pam Resor, co-chair Environment, Natural Resources and Ag. Committee
Rep. Frank Smizik, co-chair Environment, Natural Resources and Ag. Committee
Michael Bartlett, Regional Director, U.S. Fish & Wildlife Service
Tom French, Massachusetts Division of Fisheries & Wildlife
Susan Snow-Cotter, Acting Director, Coastal Zone Management
Jim Gordon, President, Cape Wind
Greg Watson, Massachusetts Technology Collaborative
Phillip Warburg, President, Conservation Law Foundation
Susan Nickerson, Executive Director, Alliance to Protect Nantucket Sound