The Humane Society of the United States * International Fund for Animal Welfare * International Wildlife Coalition * Oceans Public Trust Initiative * Pegasus Foundation * Plymouth Marine Mammal Research Center * Three Bays Preservation * Whale and Dolphin Conservation Society

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Dear Ms. Adams:

Our groups are pleased to learn that the U.S. Army Corps of Engineers is considering the evaluation of alternative sites under the National Environmental Policy Act (NEPA) as part of its review of the Cape Wind Associates proposal to construct 130 wind turbines in Nantucket Sound. In the recent meeting (October 29, 2003) of stakeholders, the Army Corps requested comments on the selected alternatives. We would like to take this opportunity to make recommendations for the research that is necessary to gauge the potential impact on wildlife from the development of a large wind generating plant at each of the alternative sites being considered in the Environmental Impact Statement (EIS). We believe that there are a number of resources that need to be consulted for guidance in the development of a draft EIS. Additionally, we wish to reiterate our previous call for the Army Corps to conduct a programmatic EIS on construction of coastal and offshore wind facilities.

GENERAL CONCERNS REGARDING ALTERNATIVE SITE PROPOSALS

While we commend the Corps on selecting alternative sites, we do not believe the list of alternatives is complete, as it does not provide the option to consider combined use of smaller sites not located on or near Cape Cod. We also do not believe the final six alternatives presented by the Corps are true alternatives to development of Nantucket Sound. Cape Wind's preferred site on Horseshoe Shoals is directly adjacent to two of the other sites being proposed for alternate analysis. Tuckernuck Shoal, Handkerchief Shoal and Horseshoe Shoal are all juxtaposed in Nantucket Sound. Because they are virtually the same site, and benefits and risk of each are likely to be identical, they do not offer a true opportunity to weigh alternative placement of turbines. An additional proposed alternative would evaluate development of one or more of these sites in conjunction with a site south of New Bedford in Buzzard's Bay. Again, Nantucket Sound remains under consideration for development in this fourth of the six alternative proposals. The only two truly new alternatives for analysis are a site on the Massachusetts Military Reservation and a site south of Tuckernuck Island.

Over the past year and a half, our organizations have expressed concerns about the potential harm to wildlife and habitat that should be evaluated as part of the initial proposal by Cape Wind to construct a 130 turbine wind generating plant in Nantucket Sound. At this juncture, we would like to list some of our primary concerns and identify some of the research needs to address information gaps, since all but two of the alternatives being evaluated involve construction in Nantucket Sound.

Foremost among our concerns are potential impacts on birds, both seasonally resident species and migratory passerines. It is critical that adequate research be conducted to examine potential risk posed by construction in the Nantucket Sound sites and the other alternatives sites as well. There are a number of risks to avian species that need close examination.

Macro and Microhabitat Use: Installation of 130 monopoles, each with a 16-foot footprint, will result in some degree of alteration of coastal processes. Pilings serve as artificial reefs which will create habitat for some species of plants, fish and invertebrates and degrade habitat for others which dwell in the otherwise sandy conditions.

Furthermore scouring of the bottom in the lee of the towers, may change the suitability of the benthic habitat for use by crustaceans and other bottom dwellers. This changes the nature of local floral and faunal communities, which in turn affects tropho-dynamic relationships between predators and prey. If the type and abundance of available prey species is altered, this may change the suitability of the habitat for foraging by resident birds, attracting some species and displacing others.

Understanding how, why and when different species use portions of the Nantucket Sound and other offshore areas is critical to evaluating the potential impact of construction of a large scale wind farm. Thorough evaluation also may help estimate possible effects of fragmentation of key portions of the habitat by a maze of monopoles. In order to fully evaluate the temporal and spatial use of proposed sites by particular species, the Army Corps should require the proponent to conduct research previously recommended by the U.S Fish and Wildlife Service (USFWS), the Massachusetts Division of Fish and Wildlife (DFW) and the Massachusetts Audubon Society (MAS). Most of the recommended research has not been done by the proponent, which has instead chosen to rely on limited opportunistic vessel and aerial surveys by the MAS. We believe it is critical to conduct the recommended studies following standard research protocol for a full three years of field study, including horizontal and vertical radar, acoustic observation, direct field sampling, and visual observation. Because all of the sites under consideration in the alternate analysis are within key migratory corridors for water fowl and for passerines as well, this type of research should be undertaken at all sites.

Collision Risk: Remote studies and behavioral modeling should be undertaken to assess the risk of collision with rotor blades if birds resting on the surface are startled into flight or attempting to land on or near the structures. In addition, terns and other species may attempt to land on tower structures to rest. If construction of artificial reefs changes the composition of marine communities, birds attempting to feed on fish near towers may also be placed at risk. Furthermore, some passerines are known to fly at lower altitudes in circumstances of reduced visibility, putting them at greater risk of collision in the dark of night when much of the migration takes place. One of the benefits of acoustic and radar monitoring is that these technologies can be employed when weather conditions prevent visual observations, precisely when birds may be at the greatest risk. For example, this May, approximately 30 songbirds collided with a single turbine on a single night of dense fog at the Mountaineer Wind Energy Center in Tucker County, West Virginia.

Lighting: Lighting of the structure or turbine blades may pose a hazard to migratory birds which are attracted to the lights. To date there has been no specification of the type of lighting that may be

utilized on the structures and impacts and possible mitigation measures of all alternatives should be examined.

In addition to avian concerns, we have concerns regarding the behavioral effects of construction and operation of a large scale wind farm on a number of other marine species.

Electromagnetic fields: Research indicates that electromagnetic fields may attract some fish species and displace others. Effects of electromagnetic fields have been observed for a number of species resident in the areas being considered for development, elasmobranchs (sharks and rays) in particular. Since many of the sites under consideration contain essential fish habitat, these effects must be modeled for all sites.

Literature reviews indicate that a number of species are resident in the waters to the south of the Cape for which electromagnetic field disturbance may raise concerns, including skates, dogfish sharks, basking sharks and salmonids. In addition to effects on fish, electromagnetic fields may also cause behavioral effects on endangered marine turtles and some species of marine mammals, which are believed to rely to some extent on the earth's magnetic field for purposes of navigation.

Water Quality Issues and Related Habitat Degradation: As mentioned above, there should be a thorough examination of the indirect effects on animals of permanent changes in the benthic habitat resulting from the installation of artificial reefs and changes in the coastal processes resulting from current flowing around large numbers of submerged structures. Furthermore, during construction, and to some extent for purposes of cable maintenance, hydro-plowing or jetting to install and maintain cables will re-suspend contaminants in the bottom sediment and cause turbidity which may affect suitability of nursery habitat for fish and, in turn, affect the efficacy of foraging by marine birds, fish and marine mammals to such an extent that short or long term displacement may result. Additionally, grouting used to stabilize structures may have localized effects on acidity (pH), particularly if cement is to be used. All of these issues must be addressed for any marine based sites.

Noise: Noise from construction and operation of the facility is well within the hearing range of both fish and marine mammals and may adversely alter behavior and/or habitat use. Research in Europe and elsewhere has produced conflicting results as to the magnitude of impact noise may have on animals. Noise is often perceived by fish as vibration, detected in their lateral line. The proponent should investigate how operational noise and noise of construction will affect resident fish species. Most of the projections regarding effects of noise on whales have been modeled for small cetaceans (such as dolphins and porpoises) which tend to hear best in higher frequency ranges. However, the low frequency noise generated by operation of wind farms is more easily perceived by large whales, which pass through the areas proposed for construction at the sites near Cape Cod. We note that the sites in Europe, at which much of the research has been done, are substantially smaller in size (both in terms of turbine size and overall size of the sites) than the proposed sites near Cape Cod, and they are not regularly used by large whales as is more likely to be the case in the waters of New England.

Vessel Traffic: The Corps must consider effects of continual vessel traffic, not only large vessels, barges, and transit vessels used during construction but also for vessels making continual trips for

routine maintenance operations once the site has been constructed. Studies need to estimate behavioral effects of disturbance on birds, marine mammals and other marine wildlife, and consider collision risk for large and small cetaceans in the area.

General: Because there is no precedent for offshore wind energy generation in northwestern Atlantic waters and because of the importance of Nantucket Sound and adjacent waters to migratory and resident birds, marine mammals, and other marine wildlife, we believe that it is critical that there be a thorough review of any partially or fully ocean-based alternative. We likewise believe the land-based alternative site, the Massachusetts Military Reservation, merits similar thorough review of potential impacts on terrestrial species, particularly sensitive amphibian species and bird species which depend on the unfragmented pine barrens habitat, which is rapidly disappearing elsewhere on Cape Cod.

While there are no offshore wind generating facilities in the United States to which we can look for parallels, we may look to European sites for emerging information on risk assessment and structuring of environmental reviews of specific sites. The environmental review of an offshore wind farm in the United Kingdom (the Burbo offshore site) involved the detailed consideration of marine benthic invertebrate communities, intertidal communities, fish species and communities, marine mammals, and tropho-dynamic interactions with birds. This review provides something of a model for the evaluation of offshore sites currently under consideration by the Army Corps. It is available online at http://www.seascape-energy.co.uk/env_statement.html. We have included an appendix which lists additional resources. However, we advise caution in any attempt to apply specific results of European wind farms to the sites being evaluated for the area off Cape Cod, as the scale of all of the European projects is considerably smaller than that proposed by Cape Wind and there are differences in resident floral and faunal communities in Western European waters and off the U.S. East Coast that need to be examined closely.

CONCERNS REGARDING STUDIES DONE TO DATE AS PART THE ENVIRONMENTAL IMPACT STATEMENT

In initial comments during the scoping process, and since that time as well, the USFWS, the Commonwealth of Massachusetts Division of Fish and Wildlife (DFW), and a number of conservation organizations have provided the Corps with a suite of recommendations on the type, scope and duration of avian studies necessary for an adequate evaluation of habitat use by seasonally resident and migratory birds. To date, many of these key recommendations have not been heeded. The selection of alternative sites presents an additional opportunity for the Army Corps to assure that these critical studies are conducted on the originally proposed site at Horseshoe Shoals and for the alternative sites as well. We reiterate, in particular the importance of the Army Corps requiring extensive radar and acoustic monitoring of each of the sites, including Horseshoe Shoal, to determine the frequency and timing of birds traversing the sites and the numbers and species of those birds. We fully support the recommendations of the USFWS, the DFW, and MAS. These recommendations are also consistent with a guidance document produced in December 1999 by the National Wind Coordinating Committee. The uniformity of these recommendations by government wildlife management agencies, nationally recognized conservation organizations and a national stakeholder group, underscore the importance of the Army Corps requiring that these studies be undertaken for all sites under consideration.

ASSURING ADEQUATE ENVIRONMENTAL REVIEW

Our groups generally support the May 13, 2003 interim recommendations of USFWS (http://www.fws.gov/r9dhcbfa/wind.pdf) for avoiding and minimizing harm to wildlife from wind turbines, especially the Service's site development recommendations. These guidelines were developed for use with terrestrial sites, and thus are germane to the Massachusetts Military Reservation, but they also provide a prototype to consider for minimizing impacts on marine environments as well. To summarize, USFWS states that turbines should not be sited in:

- documented habitats of endangered species
- bird migration pathways or areas where birds are highly concentrated
- known bat hibernation, breeding, or maternity/ nursing colonies
- areas where their placement would fragment contiguous tracts of habitat

It is critical that adequate environmental review be conducted to quantify habitat use by sensitive species at the preferred and alternative sites being considered, because many of the sites currently under consideration have features that, were they land based sites, meet criteria for exclusion based on the USFWS interim recommendations.

In their interim recommendations, the USFWS state that:

"Pre-development evaluation should be conducted by a team that includes federal and/or state agency wildlife professionals with no vested interest (e.g., no monitory or personal business gain) in the sites selected."

Evaluations of sites and environmental studies to date have been carried out by a contractor selected by the proponent. Evaluations have not been overseen by state and federal wildlife professionals and, indeed, many of the recommendations for research studies and study protocol that have been made by government wildlife professionals have been largely ignored by the Army Corps and the proponent. In order to fully evaluate risk, or lack thereof, posed by construction at various alternative sites, it is important to involve wildlife managers in design and conduct of studies and to heed the research recommendations of the USFWS, the federal agency with the greatest expertise in wildlife management and in overseeing environmental review of extant wind generating facilities in the U.S.

We are also concerned that the evaluation process lacks transparency. For example, the MAS has published results of all of its research undertaken in the past two years in the Nantucket Sound area, but the proponent has refused to reveal the nature or results of any studies it has conducted. To assure that the Draft EIS is considering all relevant data and providing an appropriately in-depth analysis, regulatory agencies and the public should not have to wait several years until release of the Draft EIS before discovering whether or not the research and analysis was appropriately directed and conducted, and included all relevant risk analyses.

CONCERNS RELATING TO AN AD HOC REVIEW PROCESS

At this time, we also reiterate our call for a programmatic EIS that will consider common individual and cumulative impacts of offshore and nearshore wind energy facilities, such as those proposed by Cape Wind, the Long Island Light and Power Authority and Winergy LLC. While it will always be necessary to conduct site-specific analyses, many of the issues faced by all projects will be similar (e.g., impacts of electromagnetic fields, likely changes in faunal communities resulting from support structures acting as fish aggregating devices etc.) The U.S. Bureau of Land Management has recently announced the preparation of just such a programmatic EIS for windfarms that may be constructed on lands under its purview. We believe that, since the Army Corps has asserted authority for undertaking permit review for all offshore wind energy generating plants, it too should conduct a programmatic EIS for waters for which it believes it has the authority to issue permits for development.

> [W]ind energy facilities can adversely impact wildlife, especially birds and bats, and their habitats. As more facilities with larger turbines are built, the cumulative effects of this rapidly growing industry may initiate or contribute to the decline of some wildlife populations.

Our groups are committed to seeing that alternative energy generating facilities are sited in areas where there is the greatest possible benefit to our environment, with the fewest adverse impacts on wildlife populations. We expect no less of the Army Corps in its evaluation process.

Thank you for the opportunity to make these comments and for your consideration of our views. We look forward to the Army Corps taking steps to assure an adequate environmental review of all proposed offshore and nearshore sites for wind generating facilities.

Sincerely,

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Suggested Resources

We offer the following reports and guidance documents that are readily available online.

British Wind Energy Association. Best practice guidelines: April 2002. http://www.bwea.com/ref/bpg.html

Gipe, Paul. Wind energy "best practice" guides -- Wresting standards from conflict: Spring 2003. http://www.wind-works.org/articles/BestPractice.html

National Wind Coordinating Committee. Permitting of wind energy facilities: A handbook: August 2002. http://www.nationalwind.org/pubs/permit/permitting2002.pdf

National Wind Coordinating Committee. Studying wind energy/ bird interactions: A guidance document: December 1999. http://www.nationalwind.org/pubs/avian99/Avian_booklet.pdf

Seascape Energy. Environmental statement: September 2002. http://www.seascape-energy.co.uk/env_statement.html

Tingley, Morgan Winn. Effects of offshore wind farms on birds: “Cuisinarts of the sky” or just tilting at windmills? March 2003. http://safewind.info/pdf/TingleyThesis2003.pdf

U.S. Fish and Wildlife Service. Interim guidelines to avoid and minimize wildlife impacts from wind turbines: May 13, 2003. http://www.fws.gov/r9dhcbfa/wind.pdf