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Re: Cape Wind Energy Project Draft Environmental Impact Study/Report and Cape Cod  
Commission Development of Regional Impact. NAE 2004-338-1 & EOEA #12643

The Division of Marine Fisheries (*Marine Fisheries*) has reviewed the Draft Environmental Impact Study/Report (DEIS/R) and Development of Regional Impact (DRI) submitted for Cape Wind Associates to construct a wind energy generation facility on Horseshoe Shoals in Nantucket Sound with regards to potential impacts to marine fisheries resources. As has been noted in previous correspondence, Nantucket Sound provides very important feeding, spawning, and/or nursery grounds for many species of finfish and invertebrates, including bluefish (*Pomatomus saltatrix*), striped bass (*Morone saxatilis*), scup (*Stenotomus chrysops*), summer flounder (*Paralichthys dentatus*), black sea bass (*Centropristis striata*), tautog (*Tautoga onitis*), squid (*Loligo pealei*), and knobbed whelk (*Busycon carica*). Further, the success of spawning and juvenile development activities of some of these species in the Sound may impact abundance levels down as far as the Mid-Atlantic states due to historic migratory patterns. The commercial and recreational harvest of fish and invertebrates in Nantucket Sound provides tens of millions of dollars in revenue to the local economy and is an integral, indeed historic, part of life in many Cape Cod and Island towns

Review of the DEIS/R reveals a near total dependence on existing data sets from *Marine Fisheries* and National Marine Fisheries Service (NMFS) resource surveys and reported landings. Despite the fact that all existing data sets are acknowledged by the State and Federal resource agencies and the applicant to be limited in their scope and resolution, no effort was made by the applicant to obtain comprehensive, representative, site-specific resource or habitat

data. Similarly, there was little attempt to supplement landings data with direct assessment of commercial and recreational activity in the Sound, particularly at the preferred site, with the exception of an extremely limited telephone survey of commercial party boats. The overall level of information provided in the DEIS/R is inadequate to properly evaluate the potential environmental impacts of this large and precedent-setting project and this level of effort is particularly inappropriate when compared with similar efforts undertaken for the construction and operation of traditional power plants or the recent Hubline gas pipeline project. We recommend that the applicant be required to prepare a supplemental DEIS/R to address these deficiencies. To facilitate consideration of our specific comments and recommendations, they are grouped by resource and activity of concern.

### **Fisheries Resources, Benthic Species, and Habitat Characterizations**

Characterization of potential impacts to fisheries resources and habitat are based solely on limited data sets taken from unrelated fisheries studies conducted for fisheries management purposes. Acknowledging that the use of existing data sets is an important component of an EIS, the limitations of these data for this purpose were identified by the resource agencies well in advance of the preparation of this EIS/R. Specific concerns and questions include:

- The DEIS/R presents *Marine Fisheries'* Resource Assessment trawl survey data, collected only during May and September at randomly selected stations within predetermined depth strata, to describe year-round fish occurrence and relative abundance throughout Horseshoe Shoals and Nantucket Sound. Such treatment is highly inappropriate and the inclusion of a brief statement acknowledging the limitations of these data in no way justifies their extensive presentation in this manner.
- Despite acknowledgement by the authors that trawl gear is of the limited usefulness when describing the occurrence and relative abundance of pelagic and benthic species (finfish and invertebrates) not vulnerable to this gear type, no effort is made to present or obtain data from other sources.
- There is often little agreement between listings of the "most common" species, the discussion of their occurrence, and the data tables cited. Additionally, little information is given regarding the data source of these tables or its limitations.
- Many of the tables and text do not describe the years of survey data that are included, the number of stations or tows, the survey years included in the analysis, or even what the word "common" means in this context.
- The previous comment notwithstanding, there appears to have been a deliberate attempt to limit the trawl data set to just the tows within the preferred site boundaries when describing the fishery resource of the entirety of Nantucket Sound.
- Due to the limitations of the data, the DEIS/R refers to the number of tows a species was present rather than providing an estimate of relative abundance. These are very different pieces of information.
- Although the DEIS/R acknowledges that trawl gear is not 100% efficient and that species occurrence in catches is not representative of relative abundance, no effort has been made to supplement these data.
- The DEIS/R provides no description of the NMFS survey data used to describe the finfish resources for the alternative site located south of Tuckernuck Island. What time period was reviewed, how many stations have been sampled here, and how many were included in the analysis?
- Comparisons made between the New Bedford area and Horseshoe Shoals, and indeed all of the comparisons made between potential sites, do not present the same level of data for each site, nor is it presented in a uniform manner. The DEIS/R moves between the use of

relative abundance data to designate “select” species and the use of occurrence data to designate “common” species”. This inconsistency renders such comparisons meaningless.

- The blank spaces included in the Essential Fish Habitat (EFH) table are misleading. Use of the designation “Not Available” would be more applicable in many cases as these absences often indicate a lack of information or examination, not a lack of habitat use. EFH has simply not been evaluated for many ‘inshore’ species. This would help to explain why the Tuckernuck site has more species on the EFH list than the Nantucket Sound or Buzzards Bay site. For example, tautog EFH has not been formally defined, yet Buzzards Bay is known to provide important habitat for tautog.
- The current EFH analysis is presented as an abstract listing of species and their habitat preferences. Why is no effort made to tie EFH designations from the literature to actual occurrence and relative abundance as documented by survey data and landings?
- As they are managed by the Atlantic States Marine Fisheries Commission (ASMFC) rather than NMFS, important species such as striped bass, bluefish, and fluke are not included in the EFH analyses. As such, the DEIS/R does not adequately describe their habitat requirements nor document their contribution to the high species diversity and ecology of the Nantucket Sound ecosystem.
- As with the fisheries section, characterizations of benthic resources and habitat in Nantucket Sound suffer from a lack of comprehensive data and consistent analysis. Statements such as “Horseshoe shoal is not a unique habitat in Nantucket Sound” are not supported by the data. Horseshoe Shoal is the most prominent bottom feature in Nantucket Sound and as such, likely fills an important role in the overall ecology of Nantucket Sound.
- Limited as they were, the few benthic surveys conducted revealed the benthic community to be highly variable from season to season and location to location. The DEIS/R concludes the patchy nature of these data was due to the presence of ‘microhabitats’. Such findings would seem to indicate the need for rather intensive sampling to define these habitats, associated flora and fauna, and describe their functions and values. However, the applicants undertook no such efforts.
- Efforts to characterize all benthic habitat in Nantucket Sound as the same in terms of functions and values ignore the existence of the very microhabitats suggested by the DEIS/R. Such pronouncements are made on the basis of incomplete data and cursory analysis, and cannot possibly support the contention that fish and invertebrates will simply return after construction or fulfill their habitat requirements elsewhere in Nantucket Sound.

**To address the deficiencies of those portions of the DEIS describing fisheries and benthic resources and habitat we recommend the following:**

- The applicant should conduct directed resource surveys of sufficient spatial and temporal scale to characterize the marine resources inhabiting (permanent and transient occupation) the preferred and alternative project sites as well as their habitat functions and values.
- Resource and habitat studies should be sufficiently comprehensive to characterize the use of this area by all life stages of relevant commercial and recreationally important species, as well as those species that provide ecological services such as forage.
- The data from these directed studies should be integrated with existing data sets, landings data, and physical/oceanographic characteristics to produce an accurate characterization of the diversity and abundance of finfish resources in the Sound.

- The design and analysis of required supplemental studies should be coordinated with the appropriate State and Federal resource agencies.

## **Commercial and Recreational Fisheries**

Comparison of fishing activity and landings at the alternative sites within Nantucket Sound, south of Tuckernuck, and in the New Bedford/Buzzards Bay area are compromised by many of the same deficiencies noted for the resource characterizations. The DEIS/R suffers from the presentation of incomplete or conflicting data, a reliance on superficial analyses, and the absence of data on private recreational fishing activity and its contribution to the economy. Specific concerns and questions include:

- Due in part to differences between the State and Federal landings data sets, catch statistics reported for select species often contradict each other in different sections of the DEIS/R and appendices. In some instances, total catch figures understate actual catches, sometimes by an order of magnitude.
- The DEIS/R errs in equating reported landings with relative abundance. Of particular concern is the repeated implication that limited landings reflect low abundance. In addition to relative abundance, catch rates (and landings) in a given year are dependent upon quotas, size and bag limits, seasonal closures, and fishing effort. It is even possible to have low catch rates in a particular year because of high relative abundance, due to management closures brought on by overfishing in the previous year.
- In view of the many gear types in use in Nantucket Sound and the known variation in reporting at the State/Federal level, it is critical that landings data be analyzed *in toto* for a given species to obtain an accurate estimate of harvest. This is especially important if these data are being used as a proxy for species occurrence, abundance, or fishing activity. Reporting landings strictly by selected gear types is not conducive to accurate data analysis, particularly when important gear types such as hook and line (the only commercial gear used to catch striped bass) are omitted from the analysis.
- Another limitation to the use of landings data to describe species occurrence or fishing activity is the fact that fishermen working Nantucket Sound may land their catch in ports outside Nantucket Sound or even out-of-state. Boats that carry Federal permits are required to submit trip reports that indicate the area of the catch, but this information is not currently required of in-state boats or dealers.
- Commercial fishing data for the alternative site south of Tuckernuck site is not available and no effort has been made to obtain it.
- As presented in the DEIS/R, characterization of the recreational fisheries in Nantucket Sound severely underestimates the amount of effort expended and fails to characterize the financial contribution made to the economies of Cape Cod, Nantucket, and Martha's Vineyard by these fishermen.
- The reporting of raw data from the NMFS' MRFSS database and that obtained through directed telephone surveys, is incomplete and misleading. Such data represent a fraction of the total effort and must be viewed as such.
- As the DEIS/R does not provide any estimates of the number of passengers carried by commercial party and charter boats or the geographic distribution of the vessels surveyed, one cannot determine if the level of effort reported for Horseshoe Shoals by these captains is in fact representative of actual activity in this area.

**To address the deficiencies of those portions of the DEIS describing commercial and recreational fishing activity we recommend the following:**

- Directed studies of commercial and recreational fishing activity in the preferred and alternative project areas are required to evaluate potential impacts resulting from the construction and operation of this facility
- Studies of fishing activity should be developed in concert with *Marine Fisheries* and NMFS to quantify effort (magnitude and technique) and landings by area and season within the areas of interest, as well as the economic contribution these activities make to the local economy.
- Landings data reported by *Marine Fisheries* and NMFS must be integrated into a unified format to allow comprehensive analysis of these data by species as well as gear type used in Nantucket Sound. The reporting of these data must include meaningful discussion of the limitations implicit in these data sets.

### **Physical Environment and Construction of the Facility**

Viewed from the context of potential impacts to fisheries resources and habitat, the sections of the DEIS/R dealing with the physical environment and perceived construction impacts appear to be based upon incomplete data and analyses. Specific concerns and questions include:

- The circulation models that form the cornerstone of the physical impacts analysis appear to be based on three single-day data collection efforts and on data collected 65 to 100+ years in the past. Why was there no effort to collect representative contemporary information?
- No wave measurements were obtained at any of the alternative sites and there is no analog for the historic data recorded for Nantucket Sound.
- In the absence of actual data, estimates of current velocity are obtained from wave theory models. Given the evolving state of the art for offshore wind technology and dynamic nature of the preferred site, why are model projections used in place of real measurements?
- The frequency of coring and grab samples to support remote sensing of the sediment types in Nantucket Sound does not appear adequate when viewed from the perspective of the Hubline project. Far more effort went into their characterization of bottom type, yet that project was beset by numerous delays and operational changes as they encountered “unforeseen” conditions during construction.
- The DEIS/R states that the distance separating the towers will be sufficient to preclude cumulative/additive changes in water flow or sediment transport due interaction between the towers. However, no data or even models are offered to support this contention.
- Discussion of the anti-scour mats is superficial and consists primarily of marketing text from the manufacturer. Given the very limited amount of field data collected for the project sites, it would appear optimistic at best to presume that these mats will provide adequate scour protection. No rationale is offered in the DEIS for the suggested pattern of deployment, nor does there appear to be a contingency plan in the event of failure.
- The inconsistent level of sampling effort at the alternative sites greatly hinders comparison of potential construction impacts, and leads to contradictory statements regarding characterization of the sediments at the various sites. For example, the DEIS/R appears to suggest that the Buzzards Bay sites have more fine grain sediments than other alternatives, a supposition not supported by examination of the data collected in Nantucket Sound.
- Promotion of the use of jet plowing to install the power cables as being less environmentally damaging are unsupported and run counter to the conclusions

- reached for the use of such equipment during installation of the Hubline gas pipeline. By default, jet plows will disturb far more sediment than conventional plows.
- Conclusions regarding the adequacy of the SSFATE model to predict turbidity plumes in Lewis Bay based on three core samples and an assumption of current patterns (no data were collected) are speculative at best.
  - Speculation regarding potential changes in fisheries habitat or species communities due to the presence of the towers, in the absence of comprehensive resource or physical data, are inappropriate.
  - Estimates of scour and recommendations for adequate burial depth for the cable network are not consistent with discussions of the extent of sand movement that appear elsewhere in the document.
  - Discussion of efforts to monitor recovery of eelgrass beds disturbed during installation of the power cables through Lewis Bay, with the option of restoration as deemed necessary, fail to acknowledge their designation by the US Environmental Protection Agency as “special aquatic sites” pursuant to section 404(b)(1) of the Federal Clean Water Act. Impacts to these habitats are to be avoided.
  - Similarly, evaluation of potential impacts to shellfish in Lewis Bay and elsewhere by virtue of reported low abundance fail to acknowledge the protection afforded shellfish habitat by the MA Wetlands Protection Act (310 CMR, 10.34).

**To address the deficiencies of those portions of the DEIS describing physical conditions and impacts from construction we recommend the following:**

- The applicant should conduct directed physical surveys of sufficient spatial and temporal scale to characterize water flow and sediment transport within the preferred and alternative project sites.
- The data from these directed studies should be used to model potential changes to water flow and sediment transport that may result from the installation of the wind towers and cable network, both as individual components and for the facility as a whole.
- The magnitude of potential changes to the physical environment of Nantucket Sound need to be evaluated in the context of proposed sand mining for beach fill projects along the Cape and Islands.
- Construction plans presented in the supplemental DEIS/R should follow the mandated progression of avoidance, minimization, restoration, and mitigation with regards to environmental impacts.

**Evaluation of Impacts to Fisheries Resources, Habitat, and Harvest from the Construction and Operation of the Cape Wind facility**

Identification of the numerous and extensive data deficiencies, and the incomplete analyses they support, presented in this DEIS/R render predictions regarding potential impacts at least premature, if not unsupported. Evaluation of the potential impacts that may result from the construction and operation of the Cape Wind power generation facility cannot be completed in the absence of adequate site-specific data regarding fisheries resources, habitat, or harvest practices. As such, we request consideration of the following concerns when preparing a supplemental DEIS/R:

- Assertions that mobile finfish and invertebrates will simply move to other parts of the Sound with no disruption of their life history during construction of the Cape Wind facility are not supported by the DEIS/R. Substantial changes may occur in spawning, feeding, and juvenile development of the affected species and these changes may have

far-reaching impacts on fisheries in other states as well as impacts on more local species, including birds, that rely upon them for food.

- Potential changes in finfish occurrence, relative abundance, and community structure could result if there are large-scale changes to water flow and sediment transport over Horseshoe Shoals as a result of this project. Additionally, the conversion of an open shoals fish community to one that is structure oriented may have a profound impact on the ecology of Nantucket Sound.
- The presence of 130 wind towers, with associated support structures and cable network, may serve to limit or even preclude traditional fishing practices in the project area. These could include:
  - Direct closure of the facility (24 square miles) to fishing and boating for security reasons.
  - Loss of access for fishermen, particularly mobile gear or recreational fishermen seeking to anchor near a wind tower, because of the presence of exposed cables and scour protection structures.
  - Loss of access for mobile gear fishermen due to an inability to maneuver between the towers while towing a net, doors, and ground gear. Such movement will be further restricted by the presence of other boats or fixed gear, especially during periods of low visibility and/or extreme weather.
  - Should a boat get “hung up”, its ability to haul back and free itself may be severely hampered or even prevented by towers or the influence of waves and currents as altered by the presence of the towers.
  - Even if access is not restricted or completely lost, fishing success may be greatly reduced by an inability to follow traditional tows. The target species are not evenly distributed and may not be available between the rows of towers.
  - Many small vessels, including draggers, are fished single-handed, making navigation and fishing between the towers virtually impossible.
  - Recreational fishermen seeking to drift fish or troll in this area will face similar obstacles and may be at greater risk due to closer proximity to the towers.
- Many concerns have been expressed regarding the ability of the Coast Guard or other authorities to mount a rescue within the tower field, particularly if the sea state necessitates the use of helicopters. As these accidents rarely occur on calm seas during daylight hours, concerns about compromised rescue capability may preclude fishing and navigation in this area.
- Concerns remain regarding potential impacts from vibration, noise, electromagnetic fields, and heat output from the transmission cables. These issues must be addressed within due consideration to the species at risk.
- As well as meeting the baseline data needs, the applicants should be required to prepare appropriate plans for post-construction monitoring, restoration efforts, and compensatory mitigation for unavoidable habitat loss and impacts.
- To address requirements to minimize habitat/resource impacts, the applicants need to coordinate with the State and Federal resource agencies to develop appropriate time-of-year restrictions and plans for the use of containment technologies.
- The assertion that there will be no contribution to cumulative impacts in Nantucket Sound because there are no other wind farms being proposed is completely unacceptable. Analysis of potential impacts to fisheries resources, habitat, and harvest activities must include appropriate consideration of on-going and proposed construction activities such as cable installation, dredging, and sand mining. Projects of this nature are or will be under review, including one to remove one million cubic yards of sand from Nantucket Shoals.

*Marine Fisheries* remains greatly concerned that this project may have substantial, even significant, impacts to fisheries resources, habitat, and harvest activities in Nantucket Sound, and the use of incomplete data is highly likely to result in an underestimation of potential impacts to these resources and the resource-based economy of the region. We strongly recommend the preparation of a Supplemental DEIS/R for this project.

The Division will provide any assistance needed to address environmental issues related to this project. Questions about these comments may be directed to Vin Malkoski at (508) 910-6318.

Sincerely,

A handwritten signature in black ink that reads "Paul J. Diodati". The signature is written in a cursive style with a distinct loop at the end of the last name.

Paul J. Diodati  
Director

Cc: Chris Boelke & Jack Terrill, NMFS  
Tim Timmerman, EPA  
Vern Lang & Maria Tur, U. S. Fish and Wildlife Service  
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