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To The Town Trustees

Re: South Fork Wind Farm

Dear Trustees:

I have offered to write an article for the Eastern Long Island Audubon Society about the risks of the South Fork Wind Farm to Birds. The draft will be delivered to the Audubon Society in August for their review and, hopefully, acceptance for publication. I don't see stakeholder input on your website concerning birds. I hope you will accept this brief synopsis of the forthcoming article as my personal input.

The New York State Offshore Wind Master Plan Birds and Bats Study describes Offshore wind farms as being associated with two major impacts to birds.

The first is collision, which refers to birds colliding with turbines and related structures during construction and operation. Birds are more likely to experience collisions with turbines sited in feeding, breeding and migration corridors. Birds apparently can be disoriented by or attracted to structures that are lit up at night.

The second risk is due to habitat displacement, which can occur during both construction and operation. During construction activities such as pile driving can displace birds. The noise Pile driving is expected to reach 220 db. . Birds may try to avoid the area of the wind turbines, which is another form of displacement. The operational sound is estimated to be 120 db. continuous, 200 meters from monopoles, based on model results.

Overall, the gravest threats to bird life are during the operational life of the wind turbines due to collisions. It is therefore important to properly site offshore wind farms. Our concern is that based on a review of the bird species groups in the Area of Analysis, which is the lease area for the Deepwater turbines, seems particularly hazardous due to the presence of 39 species of waterfowl, loons, pelagic birds, cormorants, shorebirds, acids, gulls and terns and other bird species. The bird and bat study provides species specific reviews of species-specific characteristics that make particular bird species at greater of lesser risk due to wind turbines.

Table A-1 from the Bird and Bat study, contains a list of the bird species that regularly occur in the area of analysis. Each bird is characterized by seasonality of occurrence and sensitivity to Collision and Displacement. Factors are the flight height of the bird species; low height is in range of turbine blades, its level of gregariousness. We do not have projected numbers of fatalities due to collision but it appears to be a grim outlook for many species. The table is attached to this letter. There are 39 bird species that occur regularly in the area and only one, identified as low risk.

Table A-2 is Birds of Conservation Concern from Bird Conservation Region 30 that may occur in the Offshore Study Area. You can compare this with the likelihood of collision in table A-2. It is another way to view the data, but overall one cannot ignore the gravity of impacts to birds.

In closing, it is clear the wind turbines, like solar, are viable fossil free energy sources. It comes down to risks and benefits. This location, given its bird populations, is not an acceptable location for wind turbines. It is particularly troubling as the bird fatalities will occur at Sea with few witnesses and we will not obtain accurate counts based on bodies as they will sink into the water. In fact, by the time we observe fewer birds, it may well be too late. I respectfully request that an alternate site be identified.

Respectfully,

Patrice Dalton

Table A-1. Bird Species that Regularly Occur in the Area of Analysis*

Sources: Balduvason et al. 2015; Brabant et al. 2015; Dierschke and Garde 2006; Bird 2017; Funness et al. 2013; Holley and Hopkoug 2007; Johsson et al. 2014; Kuntze et al. 2016; Leppeld et al. 2012; Lund-boon et al. 2011; National Audubon Society 2015, 2017; Normandrea 2017; Peterson et al. 2014; Robinson Wilford et al. 2013; USGS 2013; Vammanan et al. 2013.

Common Name	Scientific Name	Seasonal Occurrence*	Sensitivity*	
			Collision	Displacement
Waterfowl				
Brent	<i>Brenta bernicla</i>	Winter, Spring, Fall	Low	Low
Common Eider	<i>Somateria mollissima</i>	Winter, Spring, Fall	Low to High	High
Surf Scoter	<i>Melanitta perspicillata</i>	Winter, Spring, Fall	High	High
White-winged Scoter	<i>Melanitta fusca</i>	Winter, Spring, Fall	Low to High	Medium to High
Black Scoter	<i>Melanitta americana</i>	Winter, Spring, Fall	Low to High	High
Long-tailed Duck	<i>Clangula hyemalis</i>	Winter, Spring, Fall	Low to High	Medium to High
Red-breasted Merganser	<i>Mergus serrator</i>	Winter, Spring, Fall	High	Medium
Loons				
Red-throated Loon*	<i>Gavia stellata</i>	Winter, Spring, Fall	Low to High	High
Common Loon	<i>Gavia immer</i>	Winter, Spring, Fall	Low to High	High
Pelagic Birds				
Northern Fulmar	<i>Fulmarus glacialis</i>	Winter, Spring, Fall	Low to High	Low to High
Black-capped Petrel	<i>Pterodroma hastata</i>	Summer	High	High
Cory's Shearwater	<i>Calonectris diomedea</i>	Summer, Fall	High	Medium
Great Shearwater	<i>Ardenna gravia</i>	Summer, Fall	High	Medium
Sooty Shearwater	<i>Ardenna grisea</i>	Spring, Summer	Low to High	Low
Manx Shearwater	<i>Puffinus</i>	Year-round	Low to High	Low to High
Audubon's Shearwater	<i>Puffinus thimbleii</i>	Summer	High	Medium
Wilson's Storm-Petrel	<i>Oceanites oceanicus</i>	Spring, Summer	High	Low
Leach's Storm-Petrel	<i>Oceanodroma leucorhoa</i>	Spring, Summer	Low to High	Low to Medium
Band-rumped Storm-Petrel	<i>Oceanodroma castro</i>	Summer	High	Medium
Northern Gannet	<i>Morus bassanus</i>	Winter, Spring, Fall	Low to High	Low to High
Pomarine Jaeger	<i>Stercorarius pomarinus</i>	Spring, Summer, Fall	High	Low
Parasitic Jaeger	<i>Stercorarius parasiticus</i>	Spring, Fall	High	Low
Long-tailed Jaeger	<i>Stercorarius longicaudus</i>	Spring, Fall	High	Low

*Table notes are on the next page.

Table A-1 continued

Common Name	Scientific Name	Seasonal Occurrence*	Sensitivity*	
			Collision	Displacement
Cormorants				
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	Year-round	High	Medium
Shorebirds				
Red-necked Phalarope	<i>Phalaropus lobatus</i>	Spring, Fall	High	Low
Red Phalarope	<i>Phalaropus fulicarius</i>	Spring, Fall	High	Medium
Alcids				
Dovekie	<i>Alca</i>	Winter, Spring, Fall	Medium	Medium
Common Murre	<i>Uria lomvia</i>	Winter, Spring	High	High
Razorbill	<i>Alca torda</i>	Winter, Spring, Fall	Low to High	Medium to High
Atlantic Puffin	<i>Fratercula arctica</i>	Winter, Spring	Low to High	Medium to High
Gulls and Terns				
Black-legged Kittiwake	<i>Rissa tridactyla</i>	Winter, Spring, Fall	High	Low
Bonaparte's Gull	<i>Chroicocephalus philadelphia</i>	Winter, Spring, Fall	Low	Low
Laughing Gull	<i>Leucophaea atricilla</i>	Spring, Summer, Fall	High	Medium
Ring-billed Gull	<i>Larus delawarensis</i>	Winter, Spring, Fall	Medium	Low
Herring Gull	<i>Larus argentatus</i>	Winter, Fall	High	Low to High
Iceland Gull	<i>Larus glaucopterus</i>	Winter, Spring, Fall	High	High
Lesser Black-backed Gull	<i>Larus fuscus</i>	Winter, Spring, Fall	High	Low to High
Great Black-backed Gull	<i>Larus marinus</i>	Winter, Spring, Fall	High	Low to High
Common Tern	<i>Sterna hirundo</i>	Spring, Summer, Fall	Medium to High	Low to Medium

* Species most likely to occur annually, irrespective of abundance, based on available data.

† Seasons in which the species most commonly occurs. Does not indicate that individuals may not appear at other times of the year.

• Sensitivity of the species to collision/displacement impacts associated with wind energy development infrastructure, based on existing research. Scale: Low, Medium, or High. Some species received broad categorization of impact risk, based on uncertainty in the best available data.

Table A-2. Birds of Conservation Concern from Bird Conservation Region 30 that May Occur in the Offshore Study Area

Source: eBird 2017; Rodewald 2015; USFWS 2009

Common Name	Scientific Name	Habitat(s)	Seasonal Occurrence	Likelihood of Occurrence ^a	Species-specific Account
Red-throated Loon	<i>Gavia stellata</i>	Marine habitat in sheltered shallow waters	Winter, spring, and summer	Likely	Section A.1.2
Pied-billed Grebe	<i>Podilymbus podiceps</i>	Dense stands of emergent vegetation or aquatic vegetation close to the surface	Winter, spring, and summer	Possible	No
Horned Grebe	<i>Podiceps auritus</i>	Large bodies of fresh water and, more commonly, salt water	Winter, spring, and summer	Possible	No
Great Shearwater	<i>Ardenna gravis</i>	Marine species with a large range covering most of the Atlantic	Spring, summer, and fall	Likely	Section A.1.3
Audubon's Shearwater	<i>Puffinus lherminieri</i>	Open ocean, almost exclusively over warm waters; nests on islands	Spring, summer, and fall	Likely	Section A.1.3
American Bittern	<i>Botaurus lentiginosus</i>	Wetlands dominated by tall, emergent vegetation	Spring and fall	Possible	No
Least Bittern	<i>Ixobrychus exilis</i>	Freshwater and brackish marshes with dense, tall growth of aquatic or semiaquatic vegetation	Spring and fall	Possible	No
Snowy Egret	<i>Egretta thula</i>	Along Atlantic and Gulf coasts and in Florida; generally prefers shallow estuarine sites	Spring and fall	Possible	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Trees in forest adjacent to bodies of water	Spring, summer, and fall	Possible	Section A.3.3
Black Rail	<i>Laterallus jamaicensis</i>	High in palustrine and estuarine emergent wetlands	Spring and fall	Possible	No
Wilson's Plover	<i>Charadrius wilsonia</i>	Coastal areas of high salinity and sparse vegetation	Spring and fall	Possible	No
American Oystercatcher	<i>Haematopus palliatus</i>	Sand and shell beaches, dunes, salt marshes, and occasionally rock or other surfaces	Spring and fall	Possible	No
Solitary Sandpiper	<i>Tringa solitaria</i>	Freshwater lakes and ponds in areas of muskeg bogs and spruce trees.	Spring and fall	Possible	No

Table notes are at the end of table.

Table A-2 continued

Common Name	Scientific Name	Habitat(s)	Seasonal Occurrence	Likelihood of Occurrence	Species-specific Account
Lesser Yellowlegs	<i>Tringa flavipes</i>	Wide range of wetlands, usually with shallow, vegetation-filled water and mud flats	Spring and fall	Possible	No
Upland Sandpiper	<i>Bentramia longicauda</i>	Obligate grassland, native prairie	Spring and fall	Possible	No
Whimbrel	<i>Numerius phaeopus</i>	Dunes, meadows, short grass fields, and tidal flats	Spring and fall	Possible	No
Hudsonian Godwit	<i>Limicola haemastria</i>	Variable coastal and inland wetland and estuarine habitats	Spring and fall	Possible	No
Marbled Godwit	<i>Limicola iada</i>	Variable coastal and inland wetland and estuarine habitats	Spring and fall	Possible	No
Red Knot	<i>Calidris canutus rufa</i>	Marine coasts, intertidal zones, inlets, estuaries, and bays	Spring and fall	Possible	Section A.3.1.3
Semipalmated Sandpiper	<i>Calidris pusilla</i>	Shallow fresh or salt water with little vegetation, muddy intertidal zones, or along edges of lakes	Spring and fall	Possible	No
Purple Sandpiper	<i>Calidris maritima</i>	Rocky shorelines and jetties/breakwaters, including rocky islets and peninsulas	Spring and fall	Possible	No
Buff-breasted Sandpiper	<i>Calidris subrostrata</i>	Dry grasslands (usually short grass), pastures, plowed fields and, rarely, mudflats	Spring and fall	Possible	No
Short-billed Dowitcher	<i>Limnodromus griseus</i>	Coastal mud flats and brackish lagoons	Spring and fall	Possible	No
Least Tern	<i>Sterna antillarum</i>	Bare or sparsely vegetated sand or dried mudflats along coasts or rivers; sandy or shell islands and gravel and sand pits	Spring, summer, and fall	Possible	Section A.3.4.2
Gull-billed Tern	<i>Geobothron nigriceps</i>	Along Atlantic and Gulf coasts; most pairs nest on sandy beaches or on sandy barrier islands	Spring, summer, and fall	Possible	No
Black Skimmer	<i>Rynchops nigra</i>	Open sandy areas or gravel or shell bars with sparse vegetation or broad mats of sea wrack	Spring, summer, and fall	Possible	No

Table notes are at the end of table.

Table A-2 continued

Common Name	Scientific Name	Habitat(s)	Seasonal Occurrence	Likelihood of Occurrence*	Species-specific Account
Short-eared Owl	<i>Aelo flammeus</i>	Large open areas within woodlots, subtile fields, and fresh- and saltwater marshes	Spring and fall	Unlikely	No
Eastern Whip-poor-will	<i>Aniostomus vociferus</i>	Deciduous or mixed forests with little or no underbrush	Spring and fall	Possible	No
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Variety of forest habitats, typically with a certain degree of openness and presence of dead limbs or snags for nesting purposes	Spring and fall	Possible	No
Peregrine Falcon	<i>Falco peregrinus</i>	Broad range of natural and artificial habitats	Spring and fall	Possible	Section A.1.9
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Open country with short vegetation; pastures with fence rows, agricultural fields, riparian areas, open woodlands, etc.	Spring and fall	Possible	No
Brown-headed Nuthatch	<i>Sitta pusilla</i>	AoA is outside of species range.	n/a	Unlikely	No
Sedge Wren	<i>Cisticolus platensis</i>	Tall growth of sedges in palustrine and estuarine emergent wetlands	Spring and fall	Possible	No
Wood Thrush	<i>Hylocichia mustelina</i>	Interior and edges of deciduous and mixed forests, especially upland forest	Spring and fall	Possible	No
Warm-eating Warbler	<i>Helminthos vermivorum</i>	Mature deciduous or mixed deciduous-coniferous forest overlapping with hill-sides and smaller patches of shrubs	Spring and fall	Possible	No
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	Dense patches of herbs and shrubs with some taller trees. Trees often form the territorial border	Spring and fall	Possible	No
Blue-winged Warbler	<i>Vermivora cyanoptera</i>	Early to mid-successional habitat, patches of dense herbaceous growth	Spring and fall	Possible	No
Kentucky Warbler	<i>Geothlypis formAoA</i>	Bottomland forests at lower elevation with dense understory	Spring and fall	Possible	No

Table notes are at the end of table.

Table A-2 continued

Common Name	Scientific Name	Habitat(s)	Seasonal Occurrence	Likelihood of Occurrence*	Species-specific Account
Carulean Warbler	<i>Setophaga cerulea</i>	Old-growth deciduous forest with preference for broad-leaf species	Spring and fall	Possible	No
Prairie Warbler	<i>Setophaga discolor</i>	Early successional, open-canopied plant communities	Spring and fall	Possible	No
Henslow's Sparrow	<i>Ammodramus henslowii</i>	Open field habitats such as marsh, swamp, pocosin, and prairie	Spring and fall	Possible	No
Nelson's Sparrow	<i>Ammodramus nelsoni</i>	Coastal cordgrass marshes	Spring and fall	Possible	No
Saltmarsh Sparrow	<i>Ammodramus caudacutus</i>	Inland prairies, freshwater marshes, and meadows	Spring and fall	Possible	No
Seaside Sparrow	<i>Ammodramus maritimus</i>	Varied vegetation structures in tidal marshes	Spring and fall	Possible	No
Rusty Blackbird	<i>Euphagus carolinus</i>	Swamps, wet woodlands, and pond edges	Spring and fall	Possible	No

Notes:

* Likelihood of occurrence was determined based on available suitable habitat and documented observations in Project counties (eBird 2017).

Likelihood of Occurrence category definitions:

Likely - Project area lies within the species' range, suitable habitat is available, and data suggest the species regularly occurs in the area.

Possible - Project area lies within the species' range, contains some suitable habitat, and/or data suggest the species may occur, but not regularly.

Unlikely - Project area is outside of species' range, suitable habitat does not occur, and/or rare/no occurrence records in vicinity.