

Congressional Hearing
House Transportation and Infrastructure Committee
March 16, 2023

Testimony, Bob Stern, Ph.D.,
President, Save LBI

Thank you, Mr. Chairman and Committee members, for the opportunity to present a very important problem regarding the offshore wind projects.

My name is Bob Stern. I have a background in math and engineering, and previously managed the Office that oversaw the environmental reviews of the federal Department of Energy. In that capacity we reviewed and recommended approval of the Department's environmental impact statements. We also assisted the Department's various programs regarding compliance with a number of environmental statutes such as the Endangered Species Act and Coastal Zone Management Act.

I am currently heading the Save Long Beach Island (LBI), New Jersey organization of over 5,000 supporters. We are not opposed to all offshore wind energy but are very concerned with what we see as ill-informed, biased decision-making, and specific projects in locations that will cause way more harm than good.

I would like to focus on just one topic, noise, to whales and to we humans from these wind energy activities.

The whales rely on noise for everything, including communication. navigation, sensing danger, and finding food. If loud enough, a noise can directly damage the whale's hearing, at lower levels it disturbs their behavior. Disturbance may not sound so bad but it too can lead indirectly to serious harm and fatality, for example, through separation of a mother and calf because their communications are overridden, or by a whale surfacing to lessen the noise while losing its ability to detect and avoid oncoming ships.

Since December, there have been nine whale strandings on the New Jersey coast. This is very unusual given that the annual average is seven. Of the nine, four have been identified as possibly due to vessel strike and noise may be a contributing factor there, with the remaining causes so far unresolved.

The only recent difference offshore that we are aware of are the multiple wind energy vessels using high intensity noise devices to characterize the seabed. We commented a year ago to the National Marine Fisheries Service that the noise source number they were using for the strongest device was too low and the noise dissipation assumed too high, and therefore the affected distance was significantly underestimated. With proper

assumptions as shown in Table 1, the elevated noise from that device extends quite far and could affect a significant number of animals.

Given the vessel presence and the noise levels, there is ample reason to suspect that the surveys are a plausible cause of the recent deaths. At a minimum, a thorough, objective, transparent investigation is warranted- that is not asking for much.

Unfortunately, the vessel surveys are just the beginning of the noise problems the whales will face. The noise from pile driving 49-foot diameter steel foundations into the seabed will be intense and require many strikes over a period of several years. Here again, we find an underestimation of impacts as shown in Table 2.

In our view, the worst noise problem of all will come from the operation of the much larger turbines proposed today. We hired a respected acoustics engineering company to assess the noise levels generated from the full wind project proposed off LBI. Based on their results in Figure 1, the noise levels that baleen whales would avoid extend at least 93 miles from shore. With the critically endangered North Atlantic right whale migrating historically within 86 miles, this project could potentially block its migration and seal its fate.

This operational noise problem is not being addressed by the agencies, and that is one reason why we sent a detailed letter to President Biden asking for his personal intervention (Attachment).

What about airborne noise to us? what will we hear? The turbine manufacturer gives a source level for airborne noise of 118 dB which is loud, and noise travels much better over water than over land. We found that the noise at the shore would exceed ambient background levels and therefore be heard. It may also exceed the New Jersey residential night time standard. So here again we have asked our acoustics company to look at this.

If we are right, let's look at what we are facing here. Hundreds of 1000 foot-tall, clearly visible wind turbines, the difficulty of watching the blades rotate (I have to turn away), audible noise at the shore, reduced wind and waves because the turbines are extracting wind energy we normally get, and with that higher local air temperature and humidity. I would suggest that this is not just some mild change in the shore going experience, but rather its destruction.

So where do we go from here? We recommend creation of a Science Board within NOAA with sufficient authority to initially conduct a thorough vessel survey investigation, and then to establish protocols for government-wide use in predicting marine animal impact from noise. Beyond that, this program cries out for some common-sense turbine siting criteria, e.g., a turbine exclusion zone from shore, and excluding turbines from primary whale migration corridors.

Again, I want to thank the Committee for the opportunity to air these issues. It has felt at times a little lonely just trying to present what we believe to be facts and truth, but with the support we see today we don't feel that now.

Bob Stern

Table 1

Vessel Surveys –Noise Impact

	NMFS	Alternate
Source Level	203 dB	205-211
Transmission Loss	20	15
Criteria- Noise Level to Get Down to	160	140 (for baleen whales)
Range to 140 dB	-----	13-34 miles
Range to 160 dB	1/10 mile	1/2-16 miles

Table 2

**Pile Driving Impacts
-for 15 meter diameter pile-**

	Atlantic Shores Application	Other Sources
Sound Energy Level @ 750 meters	165-170 dB ^(1a)	184 dB ⁽²⁾
Sound Pressure Level (SPL), broadband	~ 210 ^(1b)	~220 ⁽³⁾ , ~245 ⁽⁴⁾
Transmission Loss (TL)	40 ⁽⁵⁾	15 dB ⁽⁶⁾
Distance required to 160-140 dB (no source attenuation)	4-9 miles ⁽⁷⁾	6-134 miles ⁽⁸⁾
Broadband Source Attenuation , bubble curtains	10 dB ⁽⁷⁾	5 dB ⁽⁶⁾
Low Frequency Attenuation, baleen whales	10 dB ⁽⁷⁾	0 dB (reverberates from seabed)

Figure 1. Continuous Noise Levels versus distance from the full 357 turbine Wind Complex, with monopile foundations. 8

Results - Monopile

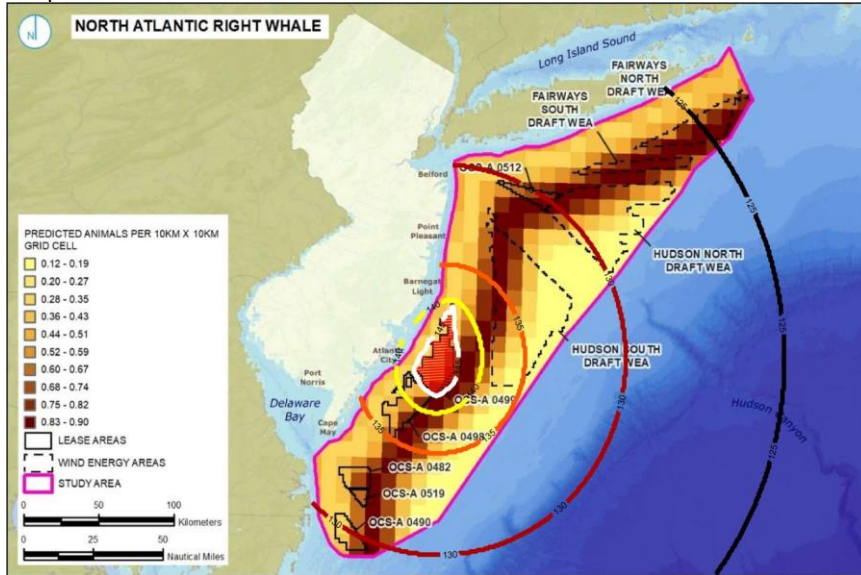


Fig 9- Estimated URN due to source SPL of 181 dB re 1µPa at 1m, spreading loss and attenuation loss