March 28, 2023

Addendum to the New England Wind Biological Assessment to USFWS

Pursuant to Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, on December 23, 2022, the Bureau of Ocean Energy Management (BOEM) requested formal consultation with the U.S. Fish and Wildlife Service (USFWS) regarding species that may be affected by the approval of a Construction and Operations Plan (COP) for the for the New England Wind project, a commercial wind energy facility located within BOEM's OCS-A 0534 Lease Area offshore Massachusetts.

Since the submission of the Biological Assessment (BA), the Stochastic Collision Risk Assessment for Movement (SCRAM) model was very recently updated. In addition, BOEM received some information from the lessee regarding annual wind speed. BOEM then re-ran the SCRAM model for the piping plover, red knot, and roseate tern with the updated information. Tables 1 and 2 summarize the results of the runs. The model input file and SCRAM reports are provided as attachments to the email that transmitted this addendum.

SCRAM predicted that the annual probability of a collision for each of the three species as very low, ranging from <0.001 to 0.014 (Table 1) suggesting that collision with turbines was very unlikely. SCRAM also predicted that the average annual number of collisions was less than 1 (Table 1). Not surprisingly, the probability of a collision event during the 33-year operational period is also not likely (less than 0.5) and ranged from 0.032 to 0.372 (Table 2). The average number of collisions were less than one for roseate terns but not for the piping plover and red knot (Table 2).

However, the estimated number of Red Knot collisions are very likely biased high for a couple reasons: 1) SCRAM uses Red Knot population sizes that is larger than the number of birds that are likely to be transiting waters near the US Atlantic offshore leases during fall migration. A recent study found that 81% (118 out 146) of the red knots fitted with radio transmitters could transit the US Atlantic region where offshore leases are located during fall migration (Loring et al. 2020); this suggests that the fall population sizes used in SCRAM are likely biased high by 19 precent. 2) SCRAM uses population sizes and movement data to estimate the number of birds within a 50km x 50 km grid cell containing the project. In some grid cells, the modeled estimate of the number of birds can be very large. For example, in a grid cell for another project, the estimated number of birds during September exceeds the population size of 72,250 by more than 10,000 animals, thus leading to wildly inflated estimates of collisions. The grid cell that contains New England Wind is estimated to have 94 birds in September, and thus is at the very low end of the spectrum. For these reasons, BOEM believes that the estimated number of red knot collisions are likely biased high and should be interpreted not as absolutes but as a relative number of collisions.

Based on the updated SCRAM model, BOEM's determinations in the BA (December 23, 2022) for roseate terns remain the same where the Proposed Action would not likely to adversely affect roseate terns. However, BOEM has revised its previous determination of not likely to adversely affect for the piping plover and red knot and has now determined that the Proposed Action is likely to adversely affect piping plover and red knot.

Table 1. Annual model outputs. Values greater than one are in bold.

Species	**SCRAM**	**SCRAM**
	Probability of collision [a]	**Collisions (95% Prediction Interval)** [b]
Piping Plover	< 0.001	0.252 (0.151 - 0.408)
Red Knot	0.014	0.140 (0.000 - 0.819)
Roseate Tern	< 0.001	0.003 (0.000 - 0.026)

[a] SCRAM report, SCRAM run details, p. 2
[b] SCRAM report, Table 9

Table 2. Life of project (33 years) - Extrapolated from model outputs. Values greater than one are in bold.

Species	**Probability of collision** [a]	**Collisions (95% Prediction Interval)** [b]
Piping Plover	0.032	**8.3** (5.0 - 13.5)
Red Knot	0.372	**4.6** (0.0 - 27.0)
Roseate Tern	0.032	0.1 (0.0 - 0.9)

[a] $\text{Probability}_{life} = 1-(1-\text{Probability}_{annual})^{Years}$
[b] $\text{Collisions}_{life} = \text{Collisions}_{annual} \times \text{Years}$