March 29, 2023

SouthCoast Wind (Formerly Mayflower Wind) Addendum to the Biological Assessment to USFWS

Pursuant to Section 7(a)(2) of the Endangered Species Act (ESA) of 1973, on March 9, 2023, the Bureau of Ocean Energy Management (BOEM) requested 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 SouthCoast Wind project, a commercial wind energy facility.

Since the submission of the Biological Assessment (BA), the Stochastic Collision Risk Assessment for Movement (SCRAM) model was updated, and BOEM re-ran the model with the same inputs. Tables 8 and 9 summarize the results of the runs and replace the tables in the BA. The model input file and SCRAM reports are provided as attachments to the email that transmitted this addendum.

Generally, the results of the analysis are similar to those in the BA, except for the Red Knot. SCRAM predicts that the annual probability of a collision in each scenario was 0.013 and <0.001(respectively), thus a single collision during fall migration is extremely unlikely under both scenarios (Table 8). SCRAM also predicts that the average annual number of collisions and 95 percent prediction interval is well below 1 (biologically nonsensical; Table 8). Based on this information, the probability of a collision event during the 35-year operational period is also very small 0.367 and 0.034, respectively. The average number of collisions and the upper portion of the 95 percent prediction interval were greater than one for both scenarios (Table 9).

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 50 km x 50 km grid cell containing the project. In some grid cells, the estimated 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 the annual number of collisions. The grid cell for the SouthCoast Wind project estimated to have 79 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 biased high and should be interpreted not as absolutes but as a relative number of collisions.

Based on the results from the collision risk models, the chance of a fatality due to collision is extremely unlikely and, thus, the estimated annual number of fatalities for migrating red knots was **zero** for both scenarios**.** However, collisions are possible during the 35-year operations term when the airgap is 53 feet (16 meters) and for larger air gap of 144 feet

(44 meters). Until there is more certainty from the developer regarding the size of the airgap between the lower tip of the blade and the water, the likelihood of collision fatalities resulting from the Proposed Action is possible.

In the case of the roseate tern and red knot, SCRAM model data suggests that fatalities of roseate terns and red knot due to collision with WTGs is *possible*, depending on the width of the airgap from the lower tip of the WTG blade and the water during the life of the project (Table 9). Given this possibility, BOEM anticipates that the Proposed Action is **likely to adversely affect** the roseate tern and red knot.

Table 8. Annual model outputs. Values greater than one are in bold.

Scenario	Species	SCRAM Probability of collision [a]	SCRAM Collisions (95% Prediction Interval) [b]
16 m gap	Piping Plover	< 0.001	0.019 (0.010 - 0.033)
	Red Knot	0.013	0.170 (0.000- 0.881)
	Roseate Tern	< 0.001	0.040 (0.013 - 0.113)
44 m gap	Piping Plover	< 0.001	0.026 (0.013 - 0.046)
	Red Knot	< 0.001	0.073 (0.000 - 0.384)
	Roseate Tern	< 0.001	0.000 (0.000 - 0.000)

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

Table 9. Life of project (35 years) - Extrapolated from model outputs. Values greater than one are in bold.

Scenario	Species	Probability of collision [a]	Collisions (95% Prediction Interval) [b]
16 m gap	Piping Plover	0.034	0.7 (0.3-1.2)
	Red Knot	0.367	**6.0** (0.0-30.8)
	Roseate Tern	0.034	**1.4** (0.5-4.0)
44 m gap	Piping Plover	0.034	0.9 (0.5-1.6)
	Red Knot	0.034	**2.6** (0.0-13.4)
	Roseate Tern	0.034	0.0 (0.0-0.0)

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