NATURAL RESOURCE SOLUTIONS INC.
Aquatic, Terrestrial and Wetland Biologists

Port Ryerse Wind Farm

2020 Bat Mortality Monitoring

Natural Resource Solutions Inc. (NRSI) conducted post-construction monitoring at the operational Port Ryerse Wind Farm, located near the community of Port Ryerse in Norfolk County, Ontario. This wind energy project has a generating capacity of 10MW and consists of four turbines. The purpose of this fact sheet is to provide an executive summary of the methods, analysis, and results of the fourth year of post-construction mortality monitoring that was conducted at the Port Ryerse Wind Farm in 2020. This fourth year of monitoring for bat mortality was conducted as a result of previous exceedances of the provincial threshold of 10 bats/turbine/year.

Methods

NRSI biologists conducted bat mortality monitoring at the Port Ryerse Wind Farm following Ministry of Natural Resources and Forestry (MNRF) guidelines (*Bats and Bat Habitats: Guidelines for Wind Power Projects*, July 2011) and the project's Environmental Effects Monitoring Plan (EEMP; Stantec 2013). In accordance with the MNRF guidelines and the approved EEMP, the following methods were implemented for the monitoring study:

- All four turbines were searched twice weekly from May through October;
- Searches were conducted in circular plots with a 50m radius, centered at each turbine tower;
- Searcher efficiency trials were conducted in each study season to assess the effectiveness of each searcher; and
- Scavenger removal trials were conducted in each study season to assess the level of scavenging activity at the turbines.

Results

During 2020 post-construction mortality monitoring at the Port Ryerse Wind Farm, 12 bat mortalities were documented within the search radii of the turbines. Bat mortalities consisted of both resident and long-distance migratory species.

Following the MNRF guidelines, NRSI biologists incorporated the searcher efficiency, scavenger removal, and proportion of area searched variables into the MNRF's estimated mortality equation to determine an estimated rate of bat mortality at the Port Ryerse Wind Farm of **10.90 bats/turbine/year**. This is above the MNRF threshold of 10 bats/turbine/year.

Summary

Based on the results of the 2020 post-construction monitoring at the Port Ryerse Wind Farm, the annual bat mortality threshold was exceeded. This threshold, as defined by the MNRF guidelines, and the associated results of the 2020 monitoring at the Port Ryerse Wind Farm are briefly outlined below. The results of the 2017, 2018, and 2019

post-construction mortality monitoring years at the Port Ryerse Wind Farm are also provided for comparison.

Monitoring Year	MNRF Mortality Threshold	Type of Threshold	Monitoring Results Port Ryerse Wind Farm
2017	10 bats/turbine/year	Annual Corrected Rate	29.37 bats/turbine/year
2018	10 bats/turbine/year	Annual Corrected Rate	14.56 bats/turbine/year
2019	10 bats/turbine/year	Annual Corrected Rate	27.84 bats/turbine/year
2020	10 bats/turbine/year	Annual Corrected Rate	10.90 bats/turbine/year