

The Royal Society for the Conservation of Nature

Mainstreaming migratory soaring birds conservation in the five sectors of agriculture, hunting and tourism, waste management and energy in Jordan



Powerline Survey

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1 INTRODUCTION

Infrastructures for both transfer of electricity and wind power projects continue to spread across the globe. Although Wind Power Projects are relatively new, electrical infrastructures have been a prominent feature of the landscapes over the past century. They have formed a web of lines that aims to deliver electricity to the stretching and growing human settlements in every country on the planet.

Power lines are one of the major causes of unnatural deaths for birds in a large part of the African-Eurasian Flyways. In the majority of countries along the flyway, electrocution poses a serious threat to a number of populations, in particular storks and raptors that build their nests on the electricity poles or use the poles as perches. There are indications that bird species, particularly larger species; electrocution may be the most serious cause of death.

This report presents the results of the powerline survey that was carried out in along pre-defined powerline in the country during both spring and autumn migration seasons of 2019. The main focus of the survey was the southern part of the country around Ma'an as the region has been identified as a priority for electrocuted incidents previously. However, the report presents results of other incidental records that were documented by the research team in other parts of the country in addition to records provided by citizens.

2 METHODS

Since Ma'an Governorate is the largest governorate in the country, covering around 32,000sqkm making up more than one third of the surface area of the country, it was agreed that a sample of the powerlines in the region will be selected. Therefore, the survey team has selected a sample of the powerline based on the records of power-cuts in the governorate that were believe to be due to bird collisions/electrocutions. It would be good to have a map showing the areas covered based on the data, see Figure 1. In total, a distance of 334.25km was covered by along powerlines in the survey area. In addition to Ma'an, parts of Madaba governorate in the western part of the country were also surveyed.

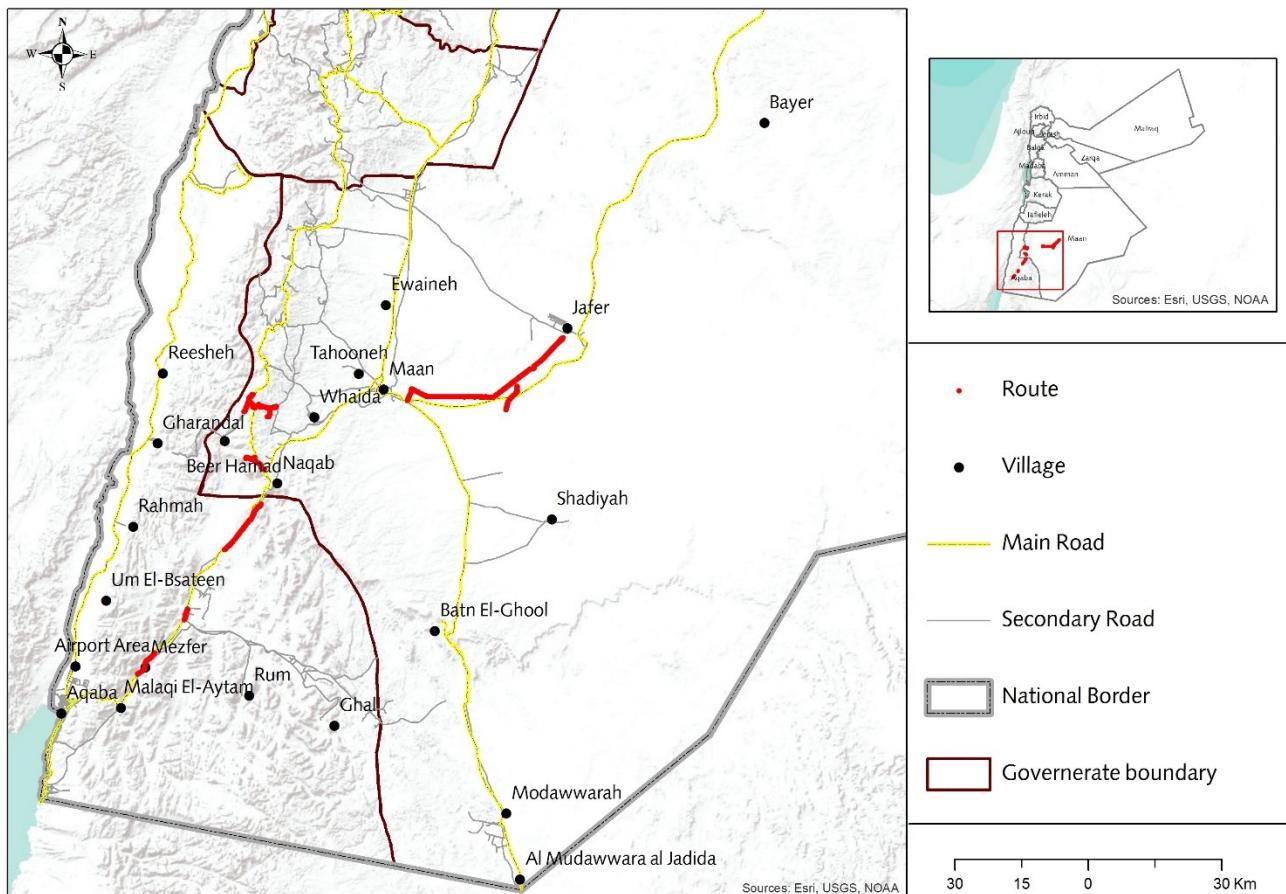


Figure 1. Powerline route-transects covered during the survey

3 RESULTS

Twelve fatalities were encountered throughout the survey, belonging to six species. Two more fatalities from two species were also reported incidentally in King Talal Dam and Noth Ghor, see Table 1.

Table 1. Species and number of individuals encountered during the survey.

Species	No. of Individuals	Location	IUCN Global Red List Status	IUCN Regional Red List Status (Symes et al, 2015)
Black Kite <i>Milvus migrans</i>	2	Ma'an	Least Concern	
Egyptian Vulture <i>Neophron percnopterus</i>	1	Ma'an	Least Concern	Least Concern
Steppe Eagle <i>Aquila nipalensis</i>	1	Ma'an	Endangered	Not Evaluated
Short-toed Snake-eagle <i>Circaetus gallicus</i>	3	Ma'an	Least Concern	Vulnerable
Peregrine Falcon <i>Falco peregrinus</i>	1	Madaba	Least Concern	Endangered
White Stork <i>Ciconia ciconia</i>	1	Aqaba	Least Concern	Near Threatened
Brown-necked Raven <i>Corvus ruficollis</i>	1	Aqaba	Least Concern	Least Concern
Black Stork <i>Ciconia nigra</i>	1	King Talal Dam	Least Concern	
Little Egret <i>Egretta garzetta</i>	1	North Ghor	Least Concern	
Unidentified	2	Ma'an	-	-

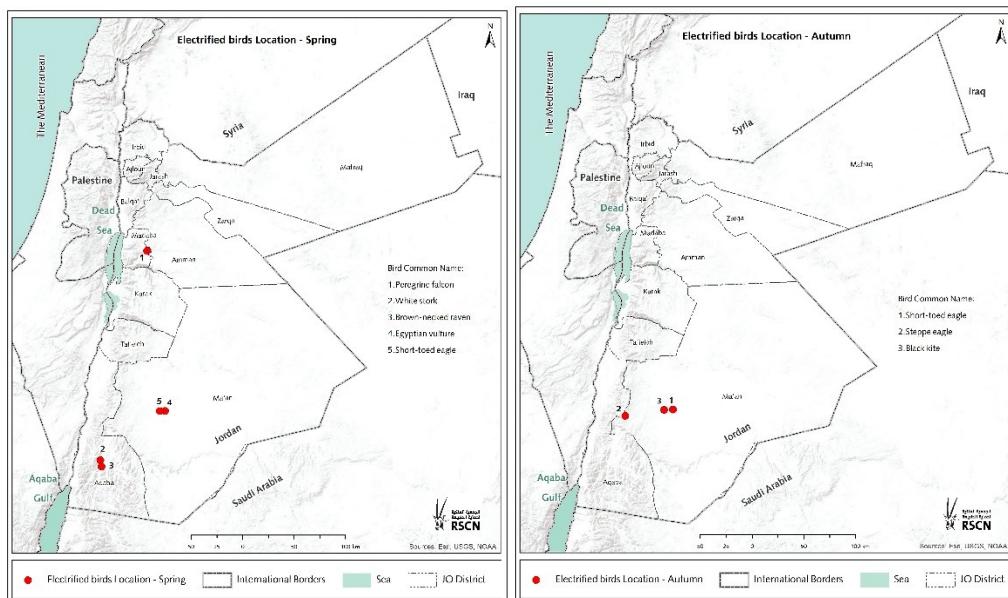


Figure 2. Locations of fatalities in both spring and autumn seasons of 2019



Figure 3. Upper left Black Kite, Upper right Short-toed Eagle, lower left Egyptian Vulture and lower right Black Stork

4 DISCUSSION

For such a relatively brief and limited survey, the number of fatalities are quite significant. Covering such a short distance of the thousands of kilometres of low and medium-voltage powerlines in the country and producing a total of ten fatalities over a period of a few days, could also be considered to be significant, especially taking into consideration that more than half the fatalities encountered belonged to either globally or regionally threatened species.

Additionally, the survey team has contacted the Electricity Company in order to obtain data about power-cuts that are believed to be caused by collisions by birds/animals over the four years period from 2015 until 2018. A total of 52 power-cuts were documented to be caused by such collisions, see

Table 2. Power-cuts caused by bird/animal collisions from 2015-2018 in Ma'an Govenrorate

Year	Number of power-cuts
2015	6
2016	5
2017	18
2018	23
Total	52

5 CONCLUSION

The survey produced what can be considered as indicative data regarding the impact of powerline electrocution and collision on birds. As mentioned earlier, taking into consideration the brevity of the survey temporally and spatially, the number of documented fatalities is significant. It would be worth considering carrying out a regular monitoring of samples of those powerlines where fatalities have occurred in order to get a better understanding of the impact.

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