

Assessment of the Long-term Impacts of the Oil Spill from the WAKASHIO Stranding on Waterbirds in Mauritius

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1. Overview

The ornithological fauna of Mauritius is characterized by the fact that 20 species are endemic (12 are already extinct) and that 63 of the 110 existing bird species, more than half of which are waterbirds. The coastal area is a valuable stopover and wintering ground for migratory waterbirds, particularly for shorebirds, and the uninhabited islands around the main island are important breeding grounds for seabirds.

Mauritius has such a highly endemic and valuable ecosystem, but on July 26, 2020, the bulk carrier WAKASHIO ran aground off the coast of Mauritius Island. Although most of the oil pollution clean-up activities were completed in November of the same year, and the oil has recovered to the point where no clusters of oil are floating on the sea surface, there are concerns about the medium- and long-term effects of the oil spill on the ecosystem, including waterbirds.

In order to assess the medium- and long-term effects of the oil spill caused by the WAKASHIO stranding accident on birds, particularly waterbirds, inhabiting Mauritius and to establish a system for local monitoring and conservation, this project will conduct bird monitoring surveys, capacity building training, analysis of the current situation, and formulation of conservation strategies as 5-year activities. This paper reports on the results of the activities in FY2022.

2. Activities in 2022

2.1. Monitoring Survey at the Coastal Area

Monitoring survey was conducted at the coastal area at least once a month from October to March. At each site (8 sites in total), surveyors used binoculars or scopes to record the number of species and individuals of birds.



Shorebirds Monitoring Survey Sites (A is in polluted area, and C is in non-polluted area)

The survey identified 3,337 individuals of 29 bird species. Native species were 2,232 individuals of 17 species (including 2,184 individuals of 14 waterbirds) and non-native species were 1,105 individuals of 12 species (none of the non-native waterbirds were identified). There was no overall bias in the number of sites or the maximum number of individuals of the 28 species (14 waterbirds and 14 landbirds) recorded at the four polluted

and four non-polluted survey sites. Since some species were only recorded at the polluted sites, it is considered that species presence was more affected by the environment of the respective survey sites than by whether the sites were polluted or not.

Table. 1. The number of maximum individuals of 14 waterbirds recorded at four polluted and four non-polluted sites and the number of sites where they were recorded.

| Species Name | The number of maximum individuals | | The number of sites | |
|---------------------|-----------------------------------|-------------------|---------------------|-------------------|
| | Polluted site | Non-polluted site | Polluted site | Non-polluted site |
| Common Greenshank | 1 | 9 | 1 | 3 |
| Common Sandpiper | 15 | 9 | 4 | 4 |
| Common Tern | 1 | 19 | 1 | 3 |
| Curlew Sandpiper | 14 | 4 | 1 | 1 |
| Greater Sand Plover | 7 | 11 | 1 | 3 |
| Grey Plover | 10 | 41 | 4 | 3 |
| Lesser Crested Tern | 0 | 2 | 0 | 1 |
| Little Stint | 21 | 1 | 2 | 1 |
| Little Tern | 0 | 2 | 0 | 1 |
| Marsh Sandpiper | 1 | 0 | 1 | 0 |
| Rubby Turnstone | 28 | 17 | 4 | 4 |
| Striated Heron | 13 | 39 | 4 | 4 |
| Terek Sandpiper | 0 | 2 | 0 | 1 |
| Whimbrel | 34 | 81 | 4 | 4 |

2.2. Monitoring Survey at the Coastal Area

The Mauritian Wildlife Foundation (MWF), our local project's partner organisation, conducted monitoring surveys of seabird populations and breeding status on four islands from December 2020 to August 2022. The survey methods were point census and line transect methods, recording while walking along pre-determined line transects.



Fig. 1. Seabird Monitoring Survey Sites

A total of 10 bird species were recorded, 7 of which were waterbirds including 4 seabirds. Many seabirds inhabit different sites during the breeding and non-breeding seasons, explaining a high fluctuation in the number of individuals in different survey months. In addition, the number of individuals recorded per year or season generally varies significantly due to various factors. To assess the impact of oil spill, long-term monitoring is necessary.



Fig. 2. Scene of Monitoring / Recorded Striated Heron

Table. 2. The number of individuals of bird species recorded during the survey.

| Species Name | Ile aux Fouquets | | | Ile de la Passe | | | Ile Mariannes | | | | Ilot Vacoas | | |
|-------------------------|------------------|-----|------|-----------------|-----|------|---------------|------|------|-----|-------------|------|-----|
| | 2020 | | 2022 | 2021 | | 2022 | 2021 | | 2022 | | 2021 | 2022 | |
| | Dec | Mar | Aug | Jan | Mar | Aug | Feb | Jun | Feb | Jul | Feb | Feb | Aug |
| House Sparrow | 4 | 12 | 25 | 3 | 12 | 5 | | | 2 | 10 | | 16 | 4 |
| Lesser Noddy | | 1 | | | | | 5 | 1181 | 126 | 8 | | | |
| Wedge-tailed Shearwater | | 177 | 166 | | 21 | 50 | 23 | | 54 | 17 | 349 | 410 | 906 |
| Spotted Dove | 1 | | | | | | | | | | | | |
| Ruddy Turnstone | 3 | 2 | | | 2 | | 7 | 12 | 28 | | 2 | 1 | |
| Red-whiskered Bulbul | | | | 3 | 6 | 2 | | | | | | | |
| Striated Heron | 1 | 1 | | 1 | 1 | | 1 | | | | 1 | 1 | |
| White-tailed Tropicbird | 2 | 2 | 4 | | 2 | 2 | | | | | 2 | 4 | 4 |
| Sooty Tern | | 1 | | | | | | | | | | | |
| Whimbrel | 1 | 1 | | 1 | 1 | | 1 | 1 | 12 | | 2 | 1 | |

2.3. Capacity Building Training

Monitoring training was held to raise public awareness and to develop capacity to monitor birds in coastal areas. A field monitoring and lecture-style training was conducted on 14 October 2022. Around 20 participants attended the training, including relevant environmental NGO staffs and university researchers. Six participants joined the survey from November onwards after the training. In particular, those who joined the ongoing monitoring surveys were able to acquire skills in shorebird monitoring.



Fig. 3. Field Monitoring Training / Lecture-style Training

3. Planned Activities in 2023

Monitoring of shorebirds will continue, as well as detailed analysis of changes in seabird abundance following the oil spill. In addition, the effects of oil pollution will be analysed from foraging behaviour. Monitoring capacity building training will also continue.