

White Paper Bird Diverters - Great White Pelicans in Cape Town

Field trial(s) of Balmoral Engineering's Rotamarka device

Vissershok (Pelican) Project



Formal project title

The effectiveness of the Rotamarka device in reducing power line collision fatalities of the Great White Pelican and other scavenging birds at the Vissershok landfill, South Africa.

Who is trialling?

- The project falls under the research portfolio of the Eskom/EWT Strategic Partnership.
- The project is funded by Eskom Holdings SOC Ltd.
- The Endangered Wildlife Trust's (EWT) Wildlife and Energy Programme is conducting the research.
- Field data collection is also supported by a student from the Cape Peninsula University of Technology.

The specific trial area and why

Great White Pelicans (*Pelecanus onocrotalus*) and other large birds such as White Storks (*Ciconia ciconia*) and Kelp Gulls (*Larus dominicanus*) regularly visit the Vissershok landfill near the Koeberg high voltage substation (Figure 1). Recent extensions to the landfill have increased exposure to collision with the Acacia-Koeberg 400kV transmission line (hereafter the ‘AC/KO line’), as the AC/KO line (and two other large transmission lines) now bisect the landfill site. The main landfill is situated to the west of these lines, while several new landfill cells have been created to the east of the lines. Great White Pelicans roost on the transmission line towers and at the new landfill cells.

The first pelican collision mortality was reported in 2017, coinciding with the establishment of the new landfill cells. Several bird collisions have since been recorded by the Eskom/EWT Partnership, including pelicans, African Sacred Ibises (*Threskiornis aethiopicus*) and Kelp Gulls. Subsequent field investigations have revealed that the pelicans are the most severely impacted: a large number of mortalities have been recorded since August 2017.

Our aim is to reduce the impact of transmission lines on scavenging birds attracted to the Vissershok landfill site by marking overhead power line cables. Specific objectives are to 1) test the effectiveness of the new Rotamarka device in reducing Great White Pelican power line collision mortalities, and 2) to determine its durability in the field given the severe local environmental conditions.

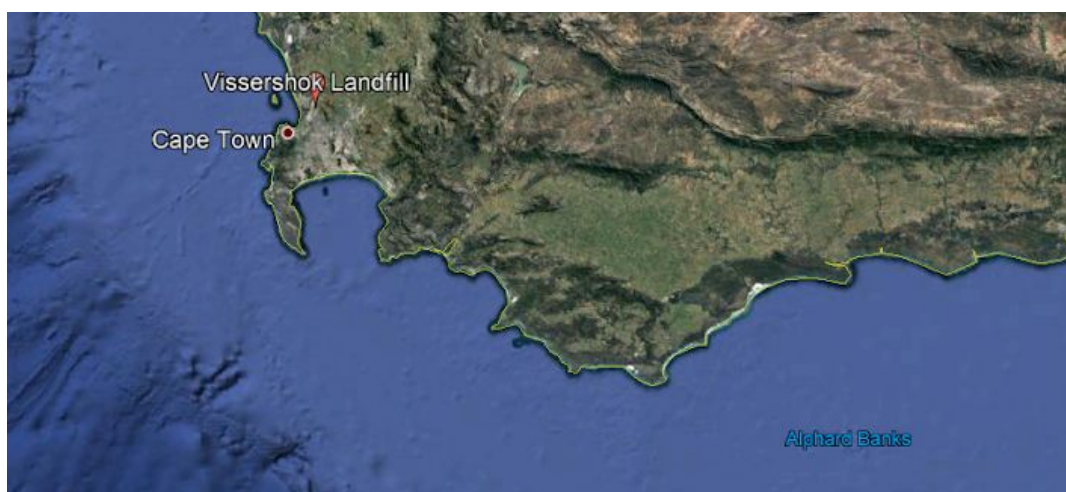


Figure 1: Location of the Vissershok landfill

Background on the particular species

The Great White Pelican has been listed as Vulnerable in the most recent Red Data Book of Birds of South Africa, Swaziland and Lesotho, primarily due to a small regional population of <2,500 birds (Bowker 2015). Bowker (2015) estimates the Western Cape population at 370 pairs (740 breeding adults). The power line mortalities recorded on the AC/KO line thus far constitute more than 10% of the Western Cape population. It is suspected that all the pelicans visiting Viissershok originate from the Dassen Island colony.

Installation challenges

During installation from the helicopter, the Rotamarka device spins violently as a result of the helicopter rotor turbulence. The linesman should take note of this and be suitably prepared to hold on to the clamp tightly while stabilizing the fins with the same hand. Apart from this, installation seems very quick and easy.

The range of devices employed or to be employed in the trial

Sections of the AC/KO line were marked with ‘swan diverters’ following the initial incident investigation of pelican collision mortalities in August 2017, however marking has proven ineffective.

The results you are hoping to achieve

While this project has not been set up as a proper BACI (before-after-control-impact) experiment, we have collected some good pre-marking data, including pelican mortalities, injuries and flights passing over, under and through the transmission lines. Our hope is that the Rotamarka devices improve the visibility of the shield wire cables to such an extent that the pelicans are able to alter their flight paths with enough time to avoid collision, even during periods of high tail winds. We expect at least an improvement in the collision rate recorded when the lines were marked sparsely with swan diverters.