

DURING AND POST CONSTRUCTION BIRD MONITORING FRAMEWORK

Introduction

The bird monitoring work done to date on the Castle Wind Energy Facility site has established a baseline understanding of the distribution, abundance and movement of key bird species on and near the site. However, this is purely the 'before' baseline and aside from providing input into turbine micro-siting, it is not very informative until compared to post construction data. The following programme has therefore been developed to meet these needs. Post construction monitoring of live bird abundance and movement should be conducted for at least 1 year and carcass searches for at least 2 -3 years and repeated every 5 years thereafter.

1. During construction bird monitoring

It will be necessary to monitor the breeding status and productivity of the nesting eagles during all breeding seasons during construction. This can be done by a minimum of 3 specialist visits to the nest site per breeding season, or close enough to observe the birds without disturbing them. Detailed requirements as follows:

- » Independent avifaunal specialist to make 3 visits to nest site in each breeding season (May to October) during construction.
- » Breeding status & productivity to be determined.
- » Any response by eagles to construction disturbance to be documented.

2. Operation phase monitoring

The intention with operational phase bird monitoring is to repeat as closely as possible the methods and activities used to collect data pre-construction. This work will allow the assessment of the impacts of the proposed facility and the development of active and mitigation measures that can be implemented in the future where necessary. One very important additional component needs to be added, namely mortality estimates through carcass searches under turbines. The following programme has therefore been developed to meet these needs, and should start as soon as possible after the operation of the first phase of turbines (not later than 3 months).

Note that this framework is an interim draft. The most up to date version of the best practice guidelines (Jenkins et al 2015, under revision 2021) should inform the programme design at the time.

3. Live bird monitoring

Note that due to the construction of the wind farm and particularly new roads it may be necessary to update the location of the below monitoring activities from those used pre-construction.

- » The walked transects of 1km each that have been done during pre-construction monitoring on the site should be continued.
- » The vehicle based road count routes on the site should be continued, and conducted twice on each site visit.
- » The focal sites on the site should be monitored. If any sensitive species are found breeding on site in future these nest sites should be defined as focal sites.

- » All other incidental sightings of priority species (and particularly those suggestive of breeding or important feeding or roosting sites or flight paths) within the broader study area should be carefully plotted and documented.
- » The Vantage Points already established on the overall site should be used to continue data collection post construction. The exact positioning of these may need to be refined based on the presence of new turbines and roads. A total of 72 hours direct observation per Vantage Point should be conducted per year.
- » The activities at the control site should be continued

Bird Fatality estimates

This is now an accepted component of the post construction monitoring program and the newest guidelines will be used to design the monitoring program. It is important that in addition to searching for carcasses under turbines, an estimate of the detection (the success rate that monitors achieve in finding carcasses) and scavenging rates (the rate at which carcasses are removed and hence not available for detection) is also obtained (Jenkins et al, 2015). Both of these aspects can be measured using a sample of carcasses of birds placed out in the field randomly. The rate at which these carcasses are detected and the rate at which they decay or are removed by scavengers should also be measured.

Fatality searches should be conducted as follows:

- » The area surrounding the base of turbines should be searched (up to a radius equal to 75% of the maximum height of turbine) for collision victims.
- » All turbines on the wind farm should be searched at least once a week (Monday to Friday).
- » Any suspected collision casualty should be comprehensively documented (for more detail see Jenkins et al, 2015).
- » A team of carcass searchers will need to be employed and these carcass searchers will work on site every day searching the turbines for mortalities.
- » It is also important that associated infrastructure such as power lines and wind masts be searched for collision victims according to similar methods.

The most up to date version of the best practice guidelines (Jenkins et al, 2015) should inform the programme design at the time.

The above programme should be reported on quarterly to the wind farm operator, who should submit these reports to the DFFE and BirdLife South Africa.