Introduction

Assessing the impact of wind farm technology on native Australian birds has, to date, generally focused on the impact any individual wind farm may have on a protected species. This method of assessment, however, may only provide part of the broader picture where a bird species has a wide distribution, may fly over long distances, and be subject to the impacts of collisions at multiple wind farms.

In 2005, Biosis Research Pty Ltd was contracted by the Australian Government to develop a means of modelling the predicted cumulative risks posed to birds from collisions with turbines at multiple wind farms. Cumulative risk modelling was then undertaken for four endangered species of birds: the Orange-bellied Parrot, the Tasmanian Wedge-tailed Eagle, the Swift Parrot and the Australian population of the White-bellied Sea-eagle. The risk of collision for a number of other birds and a bat species was also modelled, focusing on wind farm developments in Gippsland, Victoria.

The study centres on threatened and migratory species under the *Environment Protection and Biodiversity Conservation Act 1999*. It provides an overview of the cumulative models that have been developed and an explanation of the rationale that underlies these processes. The capacities and limitations of the modelling are also outlined, as well as some recommendations provided to improve the knowledge base required to make the modelling process more widely applicable.

This document incorporates 6 individual reports:

- An overview of the modelling of cumulative risks posed by multiple wind farms;
- Modelled cumulative impacts on the Orange-bellied Parrot;
- Modelled cumulative impacts on the Tasmanian Wedge-tailed Eagle;
- Modelled cumulative impacts on the Swift Parrot;
- Modelled cumulative impacts on the White-bellied Sea-eagle; and
- Risk level to select species listed under the EPBC Act of collision at wind farms in Gippsland, Victoria.