



Australian Government

AUSTRALIA'S BIODIVERSITY AND CLIMATE CHANGE



A strategic assessment of the vulnerability of Australia's biodiversity to climate change

Climate change, fire and the little penguin

The Australian Government's Biodiversity Vulnerability Assessment finds that Australia's unique biodiversity is highly vulnerable to climate change. Biodiversity – all living things – underpins our quality of life, our economy and much of our national identity.

Below is an example from the Assessment about the increased risk to the little penguin under climate change.

Phillip Island in Victoria is home to the little penguin *Eudyptula minor* which is likely to be at increased risk from projected increases in hot, dry and dusty weather with climate change, resulting in fire-related deaths and injuries.

In recent years a number of fires have occurred on Phillip Island where misty rain or fog following long spells of hot, dry and dusty weather have resulted in power poles starting fires. This can occur due to a build-up of salt and dust on the insulators. The red-hot salt crust can fall from the pole and ignite vegetation at its base. Corrosion of high-voltage power lines can also cause lines to break and start fires when they fall to the ground.

Fires from these sources, as well as a lightning-initiated fire late in 2005 on Seal Island in Victoria, have caused the death or injury of many little penguins. In each case, the penguins did not avoid the fire, suggesting that they are poorly adapted to such situations, putting them at more risk. Dead penguins were found either in their burrows (often collapsed) or within metres of burrows (see photo). Birds nesting under vegetation appeared to remain there until they were severely burnt or killed. Penguins were also observed standing beside flames preening singed feathers, rather than moving away. Penguins that survived suffered debilitating injuries including burns to their feet and legs, scorched feathers and blistered skin, swollen eyes, and many had difficulty breathing.

The synchronised breeding of penguins when large numbers are present in a colony makes them particularly vulnerable to such fires during their nesting seasons. Burrow-nesting species such as the little penguin are disinclined to abandon eggs or chicks or to emerge from their burrows during daytime putting them at more risk.

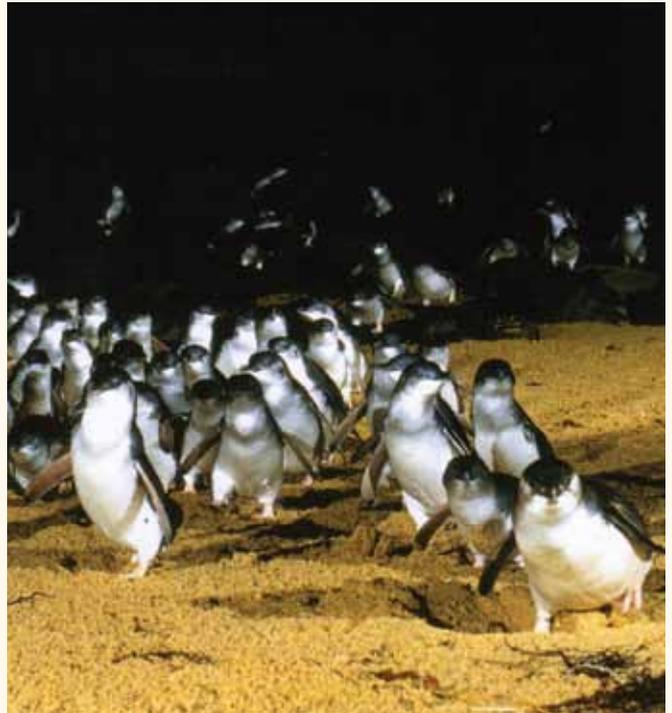


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Ongoing coastal development throughout south-eastern Australia further compounds this threat to little penguin colonies.

Options to reduce the risk include running power lines underground, more regular pole inspections, improved insulator design and cleaning of the insulators. The risk can be reduced further by appropriate habitat management such as the planting of fire-retardant vegetation and quick response by agencies when a fire does occur.

The Australian Government commissioned the Biodiversity Vulnerability Assessment to help increase understanding of how to prepare Australia's rich biodiversity for future climate change. The Assessment was undertaken by an independent group of eight experts, lead by Professor Will Steffen, for the Natural Resource Management Ministerial Council.



Source: Box 5.4 - Climate, fire and the little penguin, Lynda Chambers, Leanne Renwick and Peter Dann in Steffen W, Burbidge AA, Hughes L, Kitching R, Lindenmayer D, Musgrave W, Stafford Smith M and Werner P (2009) *Australia's biodiversity and climate change: a strategic assessment of the vulnerability of Australia's biodiversity to climate change*. A report to the Natural Resource Management Ministerial Council commissioned by the Commonwealth Department of Climate Change. CSIRO Publishing.