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Preface

The Australian Government's climate change policy is built on three pillars: reducing Australia's greenhouse gas emissions; helping to shape a global solution; and adapting to unavoidable climate change. This book, which addresses the third pillar, adaptation – the vulnerability and potential for adaptation of Australia's rich natural biodiversity, as well as consideration of the societal (governmental, policy, institutional) changes necessary to sustain Australia's biodiversity in a climate changing world – is relevant to all three pillars.

The Australian Government ratified the Kyoto Protocol in December 2007 and is working towards a post-2012 multi-lateral agreement for addressing climate change that is equitable and effective, and includes agreement on a long-term global goal for emissions reductions. In December 2007, the Council of Australian Governments agreed to establish a Working Group on Climate Change and Water. Its work program includes a focus on long-term adaptation to climate change, including accelerating the implementation of actions under the National Adaptation Framework endorsed by COAG in April 2007. The Framework includes actions to assist vulnerable sectors including agriculture, biodiversity, forestry, and coastal and water resources, across all jurisdictions. This includes, for example, a series of climate change actions plans, including one for the Great Barrier Reef. It also includes actions to enhance the knowledge base underpinning climate change adaptation by natural resource managers in the land, freshwater and marine sectors.

The Australian Natural Resource Management Ministerial Council (NRMMC) recognises climate change as a key additional threat to the conservation of Australia's biodiversity. Through the National Biodiversity and Climate Change Action Plan, agreed to by NRMMC in 2005, the Australian Government, in consultation with states and territory governments, has led a suite of biodiversity-related climate change actions. Since the first agreed-to national priorities to meet the challenge of climate change in 2006, government focus on climate change adaptation has significantly increased. This is reflected, for example, in the terrestrial and marine biodiversity decline reports prepared in 2005 and 2008 respectively, and in recent national activities such as the development of climate change action plans for fisheries and forestry, the review of the National Agriculture and Climate Change Action Plan and the development of a new national strategy – Australia's Biodiversity Conservation Strategy 2010–2020 – with a focus on increasing resilience to climate change whilst also tackling a range of other stressors on Australia's biodiversity. The Council of the Heads of the Botanic Gardens have recently prepared a climate change strategy for Australia's botanic gardens. An assessment of the implications of climate change for Australia's World Heritage properties has also recently been completed under the auspices of the Environment Protection and Heritage Council. There is also, under the National Climate Change Adaptation Framework, a nationally coordinated approach to adaptation research planning for key vulnerable sectors, including for terrestrial, freshwater and marine biodiversity. This is supported by the establishment of the National Climate Change Adaptation Research Facility and associated National Adaptation Research Networks.

The NRMMC commissioned a particularly significant activity, a strategic assessment of the vulnerability of Australia's biodiversity to the impacts of climate change. To assist with this assessment, the Australian Government established a Biodiversity and Climate Change Expert Advisory Group in late 2006. The Advisory Group comprised the Chair, Professor Will Steffen of The Australian National University, and Dr. Andrew M Burbidge (WA Department of Environment and Conservation, Perth), Professor Lesley Hughes (Macquarie University, Sydney), Professor Roger L Kitching (Griffith University, Brisbane), Professor David Lindenmayer (The Australian National University), Professor Warren Musgrave (University of New England, Armidale NSW), Dr Mark Stafford Smith (CSIRO Sustainable Ecosystems, Canberra), and Professor Patricia A Werner (The Australian National University).

The Expert Advisory Group has now assessed the vulnerability of Australia's terrestrial, freshwater and marine biodiversity to climate change, and the policy and management actions needed to reduce this vulnerability. They have drawn on international and Australian published research, as well as up-to-date results of current research programs and unpublished information provided by Australian experts. This research, includes the results of other biodiversity-related NRMMC actions such as an assessment of the implications of climate change for fire and biodiversity, and an assessment of the implications of climate change for the National Reserve System; and results from a series of workshops held with researchers, policy makers and biodiversity managers, to assess the implications of Australia's changing climate for biodiversity and our management strategies. Their report has been peer-reviewed and is published as this book. It will also be made available

electronically on the Department of Climate Change's website (<http://www.climatechange.gov.au/publications/index.html>).

The Expert Advisory Group also prepared a summary for biodiversity policy makers and managers, in consultation with state, territory and Commonwealth agencies. The Summary for Policy Makers, which is a distillation of the key messages and policy directions identified through the assessment process, is one of two other documents developed by the Expert Advisory Group. A concise technical synthesis is also available. The insights gained through the biodiversity vulnerability assessment will provide additional guidance, information and ideas for biodiversity practitioners in developing climate change adaptation strategies to protect Australia's biodiversity.

The NRMCC is continuing its effort to confront the challenges of climate change and has identified a broad-ranging suite of climate change priorities to be addressed over the period 2009 to 2012. These priorities include national actions to further develop climate change adaptation policy across and within land and marine sectors, including for biodiversity. The biodiversity vulnerability assessment will also provide the basis for the terrestrial biodiversity National Adaptation Research Plan, one of the set of plans developed by the National Climate Change Adaptation Research Facility.

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