

THE STATE OF
NEW ZEALAND'S
ENVIRONMENT

1997



THE STATE OF
NEW ZEALAND'S
ENVIRONMENT

1997

PRODUCTION TEAM

for the

The State of New Zealand's Environment 1997

Principal authors

Rowan Taylor (Project Leader)

Ian Smith (Chief Editor)

Contributing authors

Peter Cochrane, Brigit Stephenson, Nicci Gibbs

Technical Editors

Anna Saunders, David Swain, Bronwen Wall

Layout

Origin Design Ltd

The State of New Zealand's Environment 1997

ISBN 0-478-09000-5

Published by

The Ministry for the Environment

P.O. Box 10362

Wellington

New Zealand

GP Publications

P.O. Box 12052

Wellington

New Zealand



Cover photograph: Gil Hanly. (Waitemata Harbour, Auckland, from Northcote Point.)

Title illustration for Chapter 2: S. Brees, 'Messrs Clifford and Vavasour's clearing', courtesy of Alexander Turnbull Library.

Title illustration for Chapter 5 courtesy of NASA.

Other photographs from the Department of Conservation and the Ministry for the Environment.

MESSAGE FROM THE MINISTER

The Resource Management Act 1991 has made the environment everyone's business. Through it, New Zealanders have chosen a development path which, above all, is meant to be environmentally sustainable. In taking this path we can no longer leave it to central government or future generations to correct our mistakes. We must be ecologically vigilant as individuals, households, businesses and communities. For that reason, this report is important to us all, not only in telling us where we have been and where we are now, but in helping us to chart where we are going.

In making choices about the state of our environment we need good information. Without this, we cannot identify our environmental impacts, set realistic targets, assess progress, detect past errors, or objectively weigh economic and environmental values. This report brings together a wide range of information to help in making some of those choices. Although the report's information comes from a variety of sources, the picture that emerges is far from comprehensive. Some issues, some areas and some time periods have been better monitored and studied than others. Some have not been monitored at all.

One message that does come through is that New Zealand's environmental information must be better coordinated if we are to derive maximum value from it. Although there are many information collectors out there, including local authorities, government departments, Crown Research Institutes, university scientists and special interest groups, much of their information is not collected regularly or in a standardised format. This makes it difficult to compare information from different parts of the country or to aggregate it at the national level.

This inconsistency also means that we cannot be sure that the picture that emerges from this monitoring truly tells us about the state of our environment. While this obviously hampers our ability to reach definite conclusions, it does not provide a rationale for inaction. The importance of the environment to New Zealand's quality of life and economic welfare suggests that we need to be much better informed about the cumulative effects of our activities on our environmental assets.

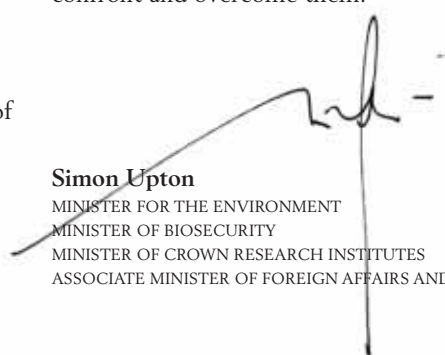
As the Minister responsible not only for the Environment but also Crown Research Institutes, I am pleased to say that efforts are now well underway to address some of these information shortcomings. The Ministry for the Environment is coordinating the development of a set of core national environmental indicators, and the Ministry of Research, Science and Technology is developing research strategies to coordinate better, publicly funded research and analysis. This will mean that future reports will have more robust quantitative information on which the assessment of trends can be based.

Another message of the report is that there are no grounds for environmental complacency in New Zealand. Our clean and green image is under intense scrutiny both at home and overseas. We must be able to show that there is substance to this image and that we are prepared to acknowledge and redress the brown spots where they occur. This can only be done by comprehensive monitoring, fearless acknowledgment of the results and genuine attempts to resolve any problems uncovered by them.

While the report confirms New Zealand's clean and green image relative to our trading partners, it does force us to acknowledge that there are real threats to our environmental reputation: for example, the number of threatened species appears to be increasing, introduced pests are widespread, soil degradation has worsened in some areas, water pollution is common in rural streams, solid waste has increased in many urban areas, greenhouse gas emissions are continuing to increase, and energy wastage through overuse of motor vehicles and inefficient heating in the home and workplace are still the norm. Most of these problems are well-known and efforts to reverse or reduce them are underway. These problems have not occurred overnight, and similarly we will not be able to offer solutions to them all immediately. But we must continue in our day to day actions to head in the right direction—cumulatively this will make the difference as to whether New Zealand does achieve a level of environmental sustainability that we can hand to our grandchildren with pride.

The path from here to environmental sustainability is a long one, and we do not have time to linger. The Government has developed its *Environment 2010* strategy in the hope that it will take us a considerable way along that path over the next dozen years. The Government through the Green Packages in the 1996 and 1997 Budgets has added impetus to its efforts as a contributor to our movement along the path. This is not some one else's problem however—it is the responsibility of all of us to achieve sustainable management of our resources and each of us must all play our part in that.

This report, and its successors, will play an important role by periodically allowing us to assess the environmental and information challenges that face us so that we may confront and overcome them.



Simon Upton
MINISTER FOR THE ENVIRONMENT
MINISTER OF BIOSECURITY
MINISTER OF CROWN RESEARCH INSTITUTES
ASSOCIATE MINISTER OF FOREIGN AFFAIRS AND TRADE

PREFACE

New Zealand heads towards the 21st century at a time of growing environmental awareness on Planet Earth. This is not before time. Large parts of the globe have been radically changed by human activity. Forests and wetlands have shrunk in the face of expansion of farmland, cities and deserts. Our increasing demand for space, travel and gadgets has wiped out ecosystems and exhausted vulnerable soils. The volume and dazzling variety of our waste products has put increasing stress on the world's air and waterways. Many of our kindred species have been driven to extinction, while others cling precariously to an ever-decreasing share of the Earth's domain. Even the protective layers of greenhouse gas and ozone which respectively keep our planet from freezing by night and frizzling by day have been put at risk by the fumes we generate from our cars, power plants and machinery.

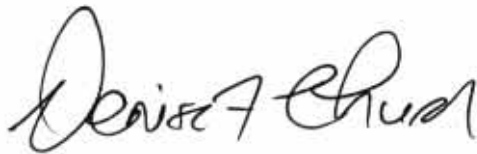
As our numbers and consumption levels have grown, the pressures we place on the environment have soared. The challenge for us as a nation, and as a species, is to develop economic systems and lifestyles whose cumulative impact is within the environment's limits to sustain itself. This has been the broad conclusion of virtually everyone who has thought about environmental issues over the past two decades, from citizen groups to national governments to international meetings. Sustainable development is now seen as the key to our future as a society, and as a species.

New Zealand has confidently embraced this challenge, both through the Resource Management Act 1991, and in signing the Rio Declaration at the UN Conference on Environment and Development in 1992. As a nation we are now formally committed to environmental sustainability, and under the Resource Management Act every community is now responsible for helping to achieve this.

The environment cannot speak for itself however. We can only tell if we are making things better or worse by looking at the world around us and regularly collecting helpful information and studying it. This requires careful measurement and observation and, from time to time, an overall analysis of the data to get a general picture of the state of the environment. This report is the first attempt to do this for New Zealand.

The report does not present new data but brings together a wide range of existing information, much of which has already been published in other forms. This has inevitably limited the scope of the report, as our existing information is still quite patchy. Some aspects of the New Zealand environment are not monitored at all. Others are monitored using different methods in different parts of the country, making it impossible to combine the information in a single big picture. In some cases, information comes from one-off examples or case studies because more complete information does not exist or has not been aggregated.

The report has two broad purposes—to inform New Zealanders of the state of their environment, and to help identify areas where our environmental information could be improved. I hope the report will be used widely and help public discussion, educational programmes and courses, and be a reference source for decision-makers. Further reports will build on this experience and, to that end, the Ministry for the Environment invites you, the reader, to send us your comments and suggestions on how future reports might be improved or enhanced.



Denise Church
CHIEF EXECUTIVE
MINISTRY FOR THE ENVIRONMENT

Acknowledgements

The authors are indebted to many people who contributed information, ideas and constructive criticism to this report. These include people from the following organisations:

Crop and Food Research Institute; Forest Heritage Fund; Historic Places Trust; Institute of Environmental Science and Research (ESR); Institute of Geological and Nuclear Sciences; Keep New Zealand Beautiful Campaign; Landcare Research; National Institute of Water and Atmospheric Research; National Museum; New Zealand Pork Industry Board; Otago Museum; New Zealand Conservation Authority; Energy Efficiency and Conservation Authority; Electricity Corporation of New Zealand; Watercare Services; Maritime Safety Authority; Auckland, Hutt, Wellington and Christchurch City Councils; and most the country's regional councils.

The following government departments also contributed information, comments or assistance: Department of Conservation; Department of Survey and Land Information (now Land Information New Zealand); Ministry of Agriculture; Ministry of Commerce; Ministry of Fisheries; Ministry of Health; Ministry of Transport; Ministry of Social Welfare; Statistics New Zealand; the Treasury.

The cartography division of the former Department of Survey and Land Information (now Terralink New Zealand), drafted most of the maps in the report.

Many individuals contributed in various ways. Some prepared original text, graphs, tables or maps. Others sent key scientific papers. Some provided peer review comments or patiently endured interrogation by telephone. And some gave practical and administrative assistance. In most cases, the contributions were voluntary and were made in a spirit of generosity and cooperation. Not all these contributions got into the final document, and some that did were significantly altered on the way. Among those whose contributions or comments have been incorporated in the report are: Matthew Allen, John Annala, Joseph Arand, Bill Armstrong, Sarah Bagnall, Susanjane Baird, Gary Barker, Les Basher, Jessica Beever, Ross Beever, Hugh Best, Hugh Bibby, Paul Blaschke, Patricia Blutner, Paul Breen, John Braggins, Graeme Bremner, Patrick Brownsey, Peter Buchanan, Noel Burns, Dave Burton, Nicole Butler, Peter Castle, Martin Cawthorn, Tom Clarkson, Tom Chatterton, Doug Clover, Gill Cole, Ronda Cooper, Martin Cryer, Janet Davidson, Elliot Dawson, Steve Dawson, Peter de Lange, Mike Donaghue, Tutahanga Douglas, Maurice Duncan, Brian Easton, Chris Edkins, Howard Ellis, Rowan Emberson, Neil Ericksen, Garth Eyles, Allan Fife, Ray and Lyn Forster, Nick Gales, David Galloway, Dave Gilbert, David Given, David Glenny, Eddy Goldberg, Dennis Gordon, Ian Govey, Lindsay Gow, Bruce Graham, Ken Grange, Anthony Harris, Richard Haynes, James Holloway, Ian Jamieson, Peter Johns, Peter Johnston, Nigel Jollands, Craig Lawson, Brian Lloyd, Bob McDowall, Ian McFadden, Bruce McFadgen, Iain McGlinchy, Matt McGlone, Allan McKenzie, Eric McKenzie, Richard McKenzie, Richard McLachlan, Martin Manning, Bruce Marshall, Rob Mattlin, Paul Mosley, Harshila Narsey, Wendy Nelson, Don Newman, Peter Newsome, Sylvia Nichol, Jim Nicolson, Colin Ogle, Ricardo Palma, Murray Parsons, Geoff Patterson, Chris Paulin, Charles Pearson, Chris Perley, Rob Phillips, Helen Plume, Keith Probert, Sophie Punte, Geoff Read, Andy Reisinger, Chris Richmond, Michael Rosen, Ants Roberts, Clive Roberts, Jim Salinger, Jeff Sheerin, Graham Shepherd, Greg Sherley, Tony Silbery, Jim Sim, Marcus Simons, David G. Smith, Ian W.G. Smith, Kevin Steel, Tom Spier, Oliver Sutherland, Michael Taylor, Susan Timmins, Christine Tisdell, Regina Thompson, Dave Towns, Murray Ward, Kathy Walls, Brian Watts, Bob Wilcock, Hugh Wilde, Alan Woodger, Gregor Yeates, John Young, Bob Zuur, and Helen Zwartz.

The contributions of these people, and of others whose work could not be included in the final document, are greatly appreciated. While the report's strengths owe much to these contributors and reviewers, the Ministry for the Environment bears full responsibility for the final text and for any errors of fact or interpretation that it may contain.

CONTENTS

Chapter 1

Introduction

Chapter 2

The Place and the People

Chapter 3

Production and Consumption Patterns

Chapter 4

Environmental Management

Chapter 5

The State of Our Atmosphere

Chapter 6

The State of Our Air

Chapter 7

The State of Our Waters

Chapter 8

The State of Our Land

Chapter 9

The State of Our Biodiversity

Chapter 10

Conclusions on the State of New Zealand's Environment