

New Environmentalism

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New Environmentalism

Managing New Zealand's
Environmental Diversity

 Springer

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Preface

The Parliamentary Commissioner for the Environment, New Zealand's official environmental watchdog, identifies the geysers, thermal springs and sulphuric landscapes of Rotorua as among the most widely recognised and visited environmental features in New Zealand. It has reported that almost a third of all international visitors to New Zealand spend at least one night in Rotorua. Combined with day visitors, over four million people visit the locality each year or a number equivalent to the total New Zealand population. The country's 'thermal and volcanic' capital has been attracting people since New Zealand was first populated by Māori. Over 600 years ago, the Te Arawa people moved inland from the Bay of Plenty coast and settled in the Rotorua area. Their historic association with the region was recognised in December 2004 when Te Arawa were given ownership title to 13 lakebeds around the present day city of Rotorua. This transfer occurred as a consequence of the New Zealand government's recognition that past injustices had denied Te Arawa continued control of the resources that they had originally possessed.

The settlement was negotiated with the government's Office of Treaty Settlements. This agency was established to facilitate the larger redress of Māori grievances arising from the impact of European settlement during the nineteenth and early twentieth centuries. Treaty settlements recognise that promises made in a treaty agreed between Māori tribes and the British crown in 1840, which ceded New Zealand's sovereignty to the British crown, have frequently been dishonoured. Along with the title to lakebeds, Te Arawa received an agreed historical account and Crown acknowledgement of past misdoings, an apology and financial compensation. Ongoing effort will be needed to return the lakes to their condition first enjoyed by Te Arawa.

Rotorua's lakes are badly affected by eutrophication, although some more so than others. As reported by the Parliamentary Commissioner for the Environment, water quality in the lakes has been declining for 30–40 years and for some lakes toxic algal blooms are a serious problem. Depending on which strain of cyanobacteria cause the bloom, the visibility and toxicity can vary but frequently a pea-green soupiness is evident. The pollution is a consequence of nitrogen and phosphorus entering the lakes, principally from agricultural activities in their catchment. In

recent years, much of the increase in nitrate load has come from streams that drain agricultural land. From dairy farms, for example, cow urine and other waste that contains nutrients (particularly nitrogen) leach down through the soil into the groundwater. It may take years for such pollution to travel through to the lake but the nutrient content is not lost and because of historic accumulation no immediate end to the problem is envisaged whatever the change to land use around the lakes today.

Scientific evidence of the gradual deterioration of one of the lesser affected lakes has existed for over 20 years but only since 2000 have concerted efforts started to improve the situation. Under the umbrella of the Joint Strategy Committee and the Rotorua Lakes Protection and Restoration Programme, local authorities and the Te Arawa Māori Trust Board are developing long-term and immediate action plans.

For the present, the story is illustrative of some aspects of New Zealand's larger environmental challenges. The superficial appearance is of a green environment, but some of that greenness is a product of farming practices that have significant, damaging side effects. Resolving the situation is not straightforward as major changes in land use are implied. Moreover, whatever the immediate steps taken, the situation is likely to worsen before it improves accentuated by the slowness in acting when the issues were first recognised. Positively, concerted efforts are being made motivated by the desire to make the water safe for human and animal contact, helping to protect the economically important tourism industry, and from recognition of the spiritual and cultural significance of the lakes to Māori. On this basis, the Parliamentary Commissioner for the Environment is optimistic for the future of the lakes provided that the team effort to address the problem can be sustained over 'at least a 50 year journey'.

This book offers an introduction to New Zealand's larger environmental management challenge. It is designed to support introductory teaching in universities and other tertiary institutions. The book aims to be of interest to a wide range of courses including environmental science, environmental management, economics, public policy and business. To this end the book encompasses descriptions of key agencies and laws governing the management of the environment, discussion of alternative ways of designing environmental regulation and a review of the state of the major types of environment. The discussion is framed by two main assumptions. First, evaluation of the state of the environment is affected by the events and expectations current at the time of the evaluation as well as by the level of scientific knowledge and availability of environmental data. Second, that New Zealand's environmental challenges pose enormous management challenges that for the most part belie any straightforward solution.

The first of these assumptions is reflected partly in our concept of a 'new environmentalism'. This short-hand term summarises three distinct but inter-connected trends that are seen to be framing contemporary discussions of environmental sustainability: declining resources, radical transparency and increasing expectations. These features are developing at different rates and with varying consequences in different places around the world, but collectively they provide a new context in which New Zealand's green credentials are being evaluated. Whereas in the past, participation in wilderness conservation and pollution control went a long way to

satisfying environmental obligations, the new environmentalism poses new challenges that threaten some aspects of the country's environmental scorecard. It will be argued that new environmentalism captures a set of issues that provide much of the current agenda for environment management. At the same time, it will be recognised that traditional environmental concerns have not gone away and that it remains to be seen how enduring and coherent the new regime will prove to be.

The second assumption is partly in contradiction to the first. Many environmental challenges are particular to the places where they occur. This is partly illustrated in the unusual aspects of New Zealand's contribution to greenhouse gases in which agriculture rather than industry or human population is a major source. This matters because many policy prescriptions rely on encouraging the adoption of cleaner technology. When it comes to the major sources of New Zealand's greenhouse gas emissions, alternative technologies do not yet exist short of a shift to less intensive forms of production. The particular environmental challenges faced are also partly an outcome of the island geography which has supported highly endemic species. Measured by the proportion of its wildlife under threat of worldwide extinction, New Zealand can be considered among the worst environmental performers. Examine New Zealand according to the proportion of its land area protected from development and it can be considered an environmental champion. The contrast is partly that the protected areas do not give good representation of the diversity of environments that need to be saved.

The idea for this book evolved from recognition of the need for a critical account from an interdisciplinary perspective of how New Zealand is tackling the trade-off between economic development and environmental protection. The authors combine a diversity of academic specialisations. Chris de Freitas is an environmental scientist with a particular interest in the atmosphere as environment, including climate change and impact assessment, atmospheric hazards, and microclimate processes of particular environments. Martin Perry is a human geographer and urban and regional planner currently teaching business and the environment in a School of Management. This is a jointly written book but some individual chapters are mainly one author's work (Martin Perry Chaps. 1, 2, 3 and 9; Chris de Freitas Chaps. 5, 6, 7 and 8). Acknowledgement is due to Victor Savage (Department of Geography, National University of Singapore) who provided the initial idea for the book.

Contents

- 1 The New Zealand Environment..... 1**
 - Key Questions 1
 - 1.1 The Setting 2
 - 1.2 New Environmentalism..... 5
 - 1.2.1 Pressured Resources..... 6
 - 1.2.2 Radical Transparency 8
 - 1.2.3 Increasing Expectation..... 10
 - 1.3 New Zealand and New Environmentalism..... 13
 - 1.4 Māori and Environmental Management 19
 - 1.5 Conclusion 20
 - Study Guide 21
 - End of Chapter Summary..... 21
 - Discussion Questions 21
 - References..... 22
- 2 Alternative Approaches to Environmental Management..... 25**
 - Key Questions 25
 - 2.1 Environmental Management 26
 - 2.2 Standards and Permits 27
 - 2.3 Economic Instruments 28
 - 2.3.1 Environmental Charges and Taxes 29
 - 2.3.2 Incentive Payments 31
 - 2.3.3 Tendering 33
 - 2.3.4 Tradeable Permits 34
 - 2.3.5 Environmental Offsets 41
 - 2.3.6 Labelling and Public Disclosure 44
 - 2.4 Voluntary Initiatives 48
 - 2.5 Policy Selection 51
 - 2.5.1 Normative Guidance 51
 - 2.5.2 Political Economy Guidance..... 52

2.6 Conclusion	57
Study Guide	57
End of Chapter Summary.....	57
Discussion Questions	58
References.....	58
3 Agencies and Laws	61
Key Questions	61
3.1 Reform of Environmental Management	62
3.1.1 Has the System Been Simplified?.....	64
3.1.2 Is Environmental Management Guided by Core Principles?.....	65
3.1.3 Are Regulatory, Market and Voluntary Approaches Balanced Appropriately?	66
3.2 Central Government Agencies	67
3.2.1 Parliamentary Commissioner for the Environment.....	68
3.2.2 Ministry for the Environment	69
3.2.3 Department of Conservation	71
3.2.4 Other Policy Making Departments	74
3.2.5 Development Agencies	74
3.2.6 Crown Entities.....	74
3.3 Local Government Agencies.....	77
3.4 Non-government Organisations	78
3.5 Māori and Resource Management	79
3.6 The Legislation Framework	80
3.6.1 Pollution, Waste and Hazardous Substances.....	81
3.6.2 Conservation of Natural and Cultural Resources.....	81
3.6.3 Resource Allocation and Development.....	82
3.6.4 Environmental Planning and Natural Resource Management.....	82
3.7 Resource Management Act 1991	82
3.7.1 Judgments on the Resource Management Act	90
3.7.2 Reforms of the Resource Management Act	95
3.8 Participation in International Environmental Agreements.....	96
3.9 Conclusion	98
Study Guide	99
End of Chapter Summary.....	99
Discussion Questions	100
References.....	101
4 Principles and Indicators	105
Key Questions	105
4.1 Principles of Environment Management.....	106
4.1.1 Sustainability.....	107
4.1.2 The Precautionary Principle.....	113
4.1.3 The Polluter Pays	116

4.2	Monitoring the State of the Environment	117
4.2.1	Pressure-State-Response Framework.....	118
4.3	Composite Indicators	122
4.3.1	Ecological Footprint Analysis.....	125
4.4	Environmental Indicators and Reporting in New Zealand.....	126
4.4.1	What Environmental Parameters Should Be Measured?	127
4.4.2	How Should Environmental Parameters Be Measured?.....	127
4.4.3	How Should the Information Be Made Available to the Public?	128
4.5	Conclusion	128
	Study Guide	129
	End of Chapter Summary.....	129
	Discussion Questions	129
	References.....	130
5	The Land	133
	Key Questions	133
5.1	The Setting	134
5.1.1	Indigenous Forests	136
5.1.2	Exotic Forests.....	137
5.1.3	Grasslands	139
5.1.4	Farming	140
5.2	Land Degradation.....	141
5.2.1	Soil Erosion.....	141
5.2.2	Soil Contamination	144
5.3	The Conservation Estate	144
5.3.1	Mining the Conservation Estate.....	146
5.4	Biodiversity	148
5.4.1	Control of Invasive Species.....	149
5.4.2	Biosecurity	153
5.5	Māori.....	154
5.6	Conclusion	157
	Study Guide	158
	End of Chapter Summary.....	158
	Discussion Questions	159
	Further Reading	159
	References.....	159
6	Freshwater	163
	Key Questions	163
6.1	Conceptual Overview.....	164
6.2	The Water Resource Base and Pressures on It.....	166
6.3	Managing Freshwater.....	168
6.3.1	Efforts to Improve Water Management Practices	170

6.4	Nutrient Contamination	172
6.4.1	The Special Case of Nitrogen	172
6.5	Rivers	174
6.5.1	Monitoring the State of Rivers	176
6.5.2	The Case of the Mighty Waikato	177
6.6	Lakes	179
6.7	Groundwater	181
6.8	Drinking Water.....	182
6.9	Conclusion	182
	Study Guide	183
	End of Chapter Summary.....	183
	Discussion Questions	184
	Further Reading	184
	References.....	184
7	Ocean and Coast	187
	Key Questions.....	187
7.1	Physical Setting.....	188
7.2	Coastal Waters.....	190
7.2.1	Estuaries.....	192
7.2.2	Waste.....	193
7.2.3	Sedimentation	194
7.2.4	Coastal Erosion	196
7.2.5	Coastal Management and Legislation.....	196
7.3	Fisheries	198
7.3.1	The Quota Management System and the Fisheries Act 1996.....	200
7.3.2	Aquaculture.....	201
7.4	State of the Fisheries.....	203
7.4.1	Classifications of Marine Environments	204
7.4.2	Bottom Trawling and Dredging	204
7.4.3	Health of Fish Stock.....	206
7.4.4	Challenges to Sustainable Fishing	207
7.5	Māori.....	209
7.6	Oceans Policy.....	210
7.7	Marine Invasive Species.....	211
7.8	Marine Reserves.....	213
7.9	Conclusion	214
	Study Guide	215
	End of Chapter Summary.....	215
	Discussion Questions	216
	Further Reading	216
	References.....	216

8 The Air	221
Key Questions	221
8.1 Climate	222
8.2 Climate Change	223
8.3 Monitoring and Managing Air Quality	226
8.3.1 Indicators and Standards	229
8.3.2 Fine Airborne Particles	231
8.3.3 Carbon Monoxide	232
8.3.4 Oxides of Nitrogen	232
8.3.5 Ozone	233
8.3.6 Sulphur Dioxide	235
8.3.7 Volatile Organic Compounds	235
8.3.8 Lead	236
8.4 Greenhouse Gases	236
8.4.1 Policy	239
8.4.2 Emissions Trading Scheme 2010	243
8.5 Energy	246
8.5.1 Energy Policy	248
8.6 Conclusion	249
Study Guide	249
End of Chapter Summary	249
Discussion Questions	250
Further Reading	250
References	250
9 Urban Environment	253
Key Questions	253
9.1 Urban New Zealand	254
9.2 Cities and Economic Development	257
9.3 Local Government Planning	263
9.4 Urban Structure and Sustainability	264
9.4.1 Green Buildings	268
9.5 Waste	271
9.6 Conclusion	275
Study Guide	276
End of Chapter Summary	276
Discussion Questions	276
Further Reading	277
References	277

10 Reflections and Prospects	281
Key Questions	281
10.1 What Others Think	282
10.2 New Environmentalism and the Competition for Ideas	283
10.3 New Zealand Environment Strengths and Weaknesses	287
10.3.1 The Land	288
10.3.2 Oceans and Coasts	288
10.3.3 The Air	289
10.4 Prospects for Green Growth	290
10.4.1 Public Support for Green Growth	292
10.4.2 Business Support for Green Growth	294
10.5 Community and Individual Action	295
10.6 Keeping in Touch with the State of the Environment	297
10.6.1 Policy	298
10.6.2 Voluntary Initiatives and Environmental Perspectives	299
Study Guide	300
End of Chapter Summary	300
Discussion Questions	301
References	301
Index	305

Abbreviations

$\mu\text{g m}^{-3}$	Micrograms per cubic metre
7SS	Seven Station Series
BRIC	Brazil, Russia, India and China
CBRC	Coastal Biogeographic Regions Classification
CDM	Clean Development Mechanism
CEF	Community Environment Fund
CER	Certified Emission Reduction
CFCs	Chlorofluorocarbons
CH_4	Methane
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CMCA	Common Marine and Coastal Area
CO	Carbon monoxide
CO_2	Carbon dioxide
$\text{CO}_2\text{-e}$	Carbon dioxide equivalent
CRI	Crown research institute
DoC	Department of Conservation
EECA	Energy Efficiency and Conservation Authority
EEZ	Exclusive Economic Zone
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPI	Environmental Performance Index (Environmental Performance Indicator)
ERMA	Environmental Risk Management Authority
ETS	Emissions Trading Scheme
EU	European Union
E3	Equipment Energy Efficiency
GDP	Gross Domestic Product
Gg	Gigagrams
HAB	Harmful Algal Bloom
HSNO	Hazardous Substances and New Organisms Act

ITQ	Individual transferable quota (ITQ)
LTCCP	Long Term Council Community Plan
LULUCF	Land use, land-use change and forestry
MAF	Ministry of Agriculture and Forestry
MARPOL	Convention on the Prevention of Pollution from Ships
MEC	Marine Environment Classification
MED	Ministry of Economic Development
MfE	Ministry for the Environment
MSY	Maximum Sustainable Yield
MW	Megawatt
NAIT	National Animal Identification and Traceability
NGO	Non-governmental Organisation
NIWA	National Institute of Water and Atmospheric Research
NO _x -N	Oxidised nitrogen
NPS	National Policy Statement
NZBCSD	New Zealand Business Council for Sustainable Development
NZCIC	New Zealand Chemical Industry Council
NRWQN	National Rivers Water Quality Network
NSP	Neurotoxic Shellfish Poisoning
NZCPS	New Zealand Coastal Policy Statement
NZGBC	New Zealand Green Building Council
NES	National Emission Standard
NO	Nitric oxide (NO).
NO ₂	Nitrogen dioxide
NO _x	Oxides of nitrogen
NZEECS	New Zealand Energy Efficiency and Conservation Strategy
NZETS	New Zealand's Emissions Trading Scheme
NZTER	New Zealand Transport Emission Rate Model
NZTR	New Zealand Temperature Record
O ₃	Ozone
OECD	Organisation for Economic Cooperation and Development
OSY	Optimum Sustainable Yield
Pb	Lead
PM ₁₀	Fine airborne particles of less than 10 µm diameter
PM _{2.5}	Fine airborne particles of less than 2.5 µm diameter
PRE	Projects to Reduce Emissions
PCfE	Parliamentary Commissioner for the Environment
PCBs	Polychlorinated biphenyls
PCDDs	Polychlorinated dibenzo-p-dioxins
PCDFs	Polychlorinated dibenzofurans or
PCE	Parliamentary Commissioner for the Environment
QMS	Quota Management System
RMA	Resource Management Act
SHORE	Centre for Social and Health Outcomes Research and Evaluation
SME	Small and medium-sized enterprise

SO ₂	Sulphur dioxide
TRI	Toxic Release Inventory
UNCLOS	United Nations Law of the Sea Convention
VOCs	Volatile organic compounds
WCED	World Commission on Environment and Development
WHO	World Health Organization
WSSD	World Summit on Sustainable Development
YCELP	Yale Center for Environmental Law and Policy

List of Boxes

Box 1.1	Cyclone Bola	4
Box 1.2	Valuing the Environment	12
Box 1.3	The Risks of Claiming to Be Green.....	19
Box 2.1	Tendering the East Coast Forestry Programme	33
Box 2.2	Māori Fishing Rights and the Individual Transferable Quota (ITG) Scheme	37
Box 2.3	Does Sulphur Dioxide Trading Prove the Case for Tradeable Permits?.....	38
Box 2.4	Was New Zealand Ready for Emission Trading?	40
Box 2.5	Life Cycle Assessment	45
Box 2.6	Voluntary Action and the Packaging Accord.....	50
Box 2.7	Standards and Permits for Vehicle Emissions	56
Box 3.1	Advocacy for Market-Based Instruments	66
Box 3.2	Environment 2010.....	70
Box 3.3	Shortcomings in the Department of Conservation.....	72
Box 3.4	New Zealand Chemical Industry Council.....	76
Box 3.5	See Saws and Hurdles.....	83
Box 3.6	Consulting Māori	88
Box 3.7	Incorporating Energy Efficiency and Renewables in Resource Management	92
Box 4.1	Daly's Principles of Sustainability.....	111
Box 4.2	National Versus Local Environmental Standards	120
Box 4.3	Māori Environmental Indicators for Climate.....	121
Box 5.1	Precious Caves at Risk in Legislative Vacuum	135
Box 5.2	Chips Can Save Trees	138
Box 5.3	Weeding Out Our Future.....	150
Box 5.4	Argentine Ants.....	153

Box 6.1	Problems with Wastewater Services	169
Box 6.2	The Dairying and Clean Streams Accord	171
Box 6.3	Riparian Zones in Crisis.....	174
Box 6.4	Manawatu River Estuary Management Plan 2007–2012.....	176
Box 6.5	Rural Business: When Farming Becomes a Controlled Activity.....	180
Box 7.1	Bay of Islands Sewage Incident.....	191
Box 7.2	The Toxic Algae Threat	192
Box 7.3	Spread of Mangroves	195
Box 7.4	Seafood Icon	205
Box 7.5	Foreshore and Seabed	210
Box 8.1	Challenge to the Validity the New Zealand Temperature Record.....	224
Box 8.2	Emissions Make Most of Us Fume.....	228
Box 8.3	The Special Case of Methyl Bromide.....	234
Box 8.4	Care Needed When Comparing Greenhouse Gas Emissions	240
Box 8.5	Big Business Opposes Climate Change Policy.....	243
Box 8.6	Good Data Is Required for a Successful Emissions Trading Scheme	245
Box 8.7	Are ‘Carbon Forests’ Likely to Be Effective in Reducing Net Emissions?.....	246
Box 9.1	Does Distance Make the Environment Grow Greener?.....	255
Box 9.2	Auckland Sustainable Cities Programme.....	256
Box 9.3	Measuring Environmental Values and Perceptions.....	260
Box 9.4	International Quality of Life Comparisons.....	262
Box 9.5	Waitakere, New Zealand’s Eco City	268
Box 9.6	Benefits of Ecodesign at Waitakere Central.....	270
Box 9.7	Community Versus Technology-Based Recycling Options	274
Box 10.1	What Financial Incentive with Transferable Water Permits?.....	290

List of Figures

Fig. 1.1	Map of New Zealand showing topography and key locations mentioned in the text.....	3
Fig. 3.1	Hierarchy of responsibilities under the Resource Management Act.....	85
Fig. 5.1	New Zealand landcover 1997	140
Fig. 6.1	Synthetic nitrogen fertiliser (urea) applied in New Zealand 1983–2010.....	173
Fig. 7.1	Ocean boundaries of New Zealand's Exclusive Economic Zone	189
Fig. 7.2	Fish landings ($\times 10^3$ tonnes) in domestic and foreign ports in 2007.....	199
Fig. 7.3	Box dredging net. Use of a box dredge in fishing involves towing a steel net (dredge) 2–4m across the opening along the sea floor, usually in water 10–100 m deep. Dredging can be particularly destructive as it physically scours the sea bed.....	204
Fig. 8.1	Mean annual temperature anomalies over New Zealand 1950–2010. The bars show annual differences from the 1971–2000 average. These data are used by NIWA for tracking New Zealand's temperature trends, based on air temperature measurements from seven climate stations around the country that have long records, namely, Auckland, Masterton, Wellington, Hokitika, Nelson, Lincoln, and Dunedin	224
Fig. 8.2	Mean age of registered road motor vehicles in New Zealand, 1992–2010.....	227

Fig. 8.3	A comparison of carbon monoxide concentrations at the worst sites in London (England) and Auckland in relation to the concentration target for the period 1998–2004.....	233
Fig. 8.4	A comparison of nitrogen dioxide concentrations in London (England) and Auckland in relation to the concentration target for the period 1998–2004.....	234
Fig. 8.5	Absolute change in greenhouse gas emissions 1990–2009 by sector of the New Zealand economy expressed as gigagrams of carbon dioxide equivalent.....	237
Fig. 8.6	Change in New Zealand's total emissions of carbon dioxide (CO ₂), methane (CH ₄) and nitrous oxide (N ₂ O) from 1990–2009 expressed as gigagrams of CO ₂ equivalent	237
Fig. 8.7	Net carbon dioxide equivalent emissions per capita for selected countries in 2008.....	238
Fig. 8.8	Percentage change in population, <i>GDP</i> per capita and energy demand per capita for the period 1997–2006 (where 1997=0)	247
Fig. 8.9	Summary indicators, Gross Domestic Product (<i>GDP</i>) compared to consumer energy demand as measures of decoupling, 1990–2007 (percentage change since 1990).....	247
Fig. 9.1	New Zealand's packaging recovery trends and targets.....	273

List of Tables

Table 1.1	EPI biodiversity and habitat protection indicators 2002, 2006 and 2010	15
Table 2.1	Three types of economic instrument for environmental management.....	29
Table 2.2	Price-based instruments.....	29
Table 2.3	Quantity-based instruments	34
Table 2.4	Normative policy selection guidance for environmental policy tools	53
Table 3.1	Selected legislation related to environmental management in three time periods	62
Table 3.2	Species classification under the Wildlife Act 1953	65
Table 3.3	Status of national resource management policy instruments 2010.....	86
Table 4.1	Epstein's nine principles of sustainability	108
Table 4.2	Environmental indicators for 11 facets of the New Zealand setting	118
Table 4.3	Urban environmental progress indicators 1981–2001	123
Table 5.1	A comparison of protected areas expressed as a percentage of total area (marine and terrestrial) for OECD countries	136
Table 5.2	Types of agricultural impacts on water quality as rated by officials in a survey by the Ministry and Agriculture and Fisheries, ranked on a scale from 0 = no damage to 10 = severe damage	143
Table 5.3	The more common and most invasive species in New Zealand	150
Table 5.4	Māori values relevant to sustainable development	156

Table 6.1	Sources of impacts on water quality as rated by officials in a survey by the Ministry and Agriculture and Fisheries, ranked on a scale from 0 = no damage to 10 = severe damage	167
Table 6.2	Types of agricultural impacts on water quality as rated by officials in a survey by the Ministry and Agriculture and Fisheries, ranked on a scale from 0 = no damage to 10 = severe damage	167
Table 6.3	A comparison of agricultural indicators for OECD countries in 2005: use of nitrogenous fertilisers and pesticides, and density of livestock.....	173
Table 8.1	Car ownership per 1,000 inhabitants	227
Table 8.2	Ministry for the Environment Environmental Performance Indicators (EPI) of air quality used to help interpret the significance of air pollutions concentrations in the urban and industrial regions of New Zealand.....	229
Table 8.3	Auckland regional air quality targets at traffic and industrial sites for contaminant concentrations of particles under 2.5 μm ($\text{PM}_{2.5}$), particles under 10 μm (PM_{10}), nitrogen dioxide (NO_2), carbon monoxide (CO), sulphur dioxide (SO_2) and Benzene.....	230
Table 8.4	National Environmental Standards (NES) include five standards for outdoor air quality.....	230
Table 8.5	Emissions of greenhouse gases in New Zealand in 1990 and 2009 showing percent change, where CO_2 is carbon dioxide, N_2O is nitrous oxide and CH_4 is methane	237
Table 8.6	New Zealand's greenhouse gas emissions in 2009 expressed as equivalent carbon dioxide emissions, showing percent change from 1990.....	238
Table 8.7	Annual emissions of greenhouse gases from selected countries in the world in 2007 compared to New Zealand's emissions, expressed a megatonnes of carbon dioxide equivalent.....	239
Table 9.1	Traditional and modern housing environments	266