

Environment Bay of Plenty
P O Box 364
Whakatane
NEW ZEALAND

Environmental Publication 2003/24
ISSN: 1175-9372

REGIONAL PLAN FOR THE TARAWERA RIVER CATCHMENT

1 February 2004

Environment Bay of Plenty
Bay of Plenty Regional Council

RESOURCE MANAGEMENT ACT 1991

ENVIRONMENT BAY OF PLENTY BAY OF PLENTY REGIONAL COUNCIL

REGIONAL PLAN FOR THE TARAWERA RIVER CATCHMENT

The Regional Plan for the Tarawera River Catchment was prepared by the Bay of Plenty Regional Council under the Resource Management Act 1991.

It is hereby certified that this is the Regional Plan for the Tarawera River Catchment approved by resolution of the Council on the 11th day of December 2003.

The Common Seal of the **BAY OF PLENTY REGIONAL COUNCIL** was affixed hereto this 11th day of December 2003, in the presence of:



A handwritten signature in black ink, appearing to read 'John Cronin', written over a horizontal line.

John Cronin
Chairperson

A handwritten signature in black ink, appearing to read 'J A Jones', written over a horizontal line.

J A Jones
Chief Executive

READER'S GUIDE

There may be some parts of this regional plan that you are interested in reading. To find these parts quickly, the following guide gives a brief summary of what each chapter is about.

Chapter 1 - Introduction:

Names the regional plan, outlines its purpose and aims, discusses topics and issues to be managed, the geographical area of the plan, and sets its duration.

Chapter 2 - Preparation of the Regional Plan for the Tarawera River Catchment:

Provides a summary of how the regional plan was prepared, research undertaken and the people and organisations consulted.

Chapter 3 - Statutory Framework:

Outlines the primary parts or sections of the Resource Management Act 1991 relevant to the preparation of the regional plan. It also includes definitions of "Issues", "Objectives", "Policies", and "Methods".

Chapter 4 - Policy Framework:

Establishes how this regional plan relates to other planning documents at the national, regional and district level.

Chapter 5 - Responsibilities:

Identifies the principle local body and governmental organisations with resource management responsibilities, and gives a brief resume of their primary functions and duties.

Chapter 6 - Physical Description of the Tarawera Catchment:

Provides background information on the area covered by the regional plan. Discusses the Tarawera River catchment in four sub-areas, namely the Tarawera Lakes and their catchments, the catchment of the Upper Reach of the Tarawera River, the catchment of the Lower Reach of the Tarawera River, and the Tarawera River mouth.

Chapter 7 - Community Attitudes and Perceptions:

Details issues relating social and economic wellbeing, and local attitudes and perceptions towards the environment.

Chapter 8 - Resource Management Issues of Significance to Iwi:

Outlines the primary resource management issues of concern or interest to tangata whenua iwi who have rohe within the regional plan area.

Chapter 9 - Summary of Issues:

Lists issues relating to each of the policy chapters.

Chapter 10 - Public Access:

Outlines issues relating to public access to and long water bodies in the catchment.

Chapter 11 - Land Use:

Details the geology, soils, and vegetative cover of the Tarawera River catchment and provides an account of inappropriate land uses and land use practices.

Chapter 12 - River and Lake Beds:

Deals with issues relating to management of the beds of the catchment's river, lakes, and wetlands, including issues relating to the location of structures, sedimentation, and the reclaiming and draining of beds of river, lakes and wetlands.

Chapter 13 - Freshwater Ecology:

Details the fresh water ecology of the catchments water bodies, focusing especially on the main stem of the Tarawera River.

Chapter 14 - Surface Water Quantity:

Outlines the primary causes and effects of changing river flows and lake and wetland levels in the catchment.

Chapter 15 - Surface Water Quality:

Identifies the primary factors of water quality in the Tarawera River catchment.

Chapter 16 - Groundwater Quality and Quantity:

Deals with both groundwater quality and quantity, especially with regard to the Rangitaiki Plains, and the disposal of contaminants to land.

Chapter 17 - Geothermal Resources:

Identifies and assesses the geothermal fields in the Tarawera River catchment.

Chapter 18 - Resource Consent Process:

Outlines the information required with an application for a resource consent for activities identified in this regional plan.

Chapter 19 - Monitoring and Plan Review:

Specifies how Environment Bay of Plenty intends to monitor the performance of the regional plan, and the procedure for its review.

Chapter 20 – Summary of Rules:

All plan rules brought together on blue paper for your convenience.

Appendices:

Contain more detailed information and data related to the above mentioned Chapters, as well as references and a detailed glossary.

Advisory Note:

Throughout the plan reference is made to specific pulp and paper mills at Kawerau. Over time the names have changed. At the time the plan was made operative the original Tasman Pulp and Paper Company Limited had been divided into Norske Skog Tasman and Carter Holt Harvey Tasman. Likewise the original Caxton became Carter Holt Harvey Tissue and then Carter Holt Harvey Consumer Brands. It is to be expected that the names of companies will change over time.

TABLE OF CONTENTS

1	Introduction	1
1.1	Citation	1
1.2	Purpose and Aim	1
1.3	Justification for the Regional Plan for the Tarawera River Catchment	2
1.4	Area Coverage	3
1.5	Topic Coverage	3
1.6	Duration of the Regional Plan for the Tarawera River Catchment	4
2	Preparation of the Regional Plan for the Tarawera River Catchment	7
2.1	Introduction.....	7
2.2	Plan Programme Outline	7
2.3	Liaison Groups	7
2.4	Plan Project Team	8
2.5	Contact with External Organisations.....	8
2.6	Research/Investigative Reports.....	8
2.7	Section 32 Requirements	9
3	Statutory Framework	11
3.1	Introduction.....	11
3.2	Activity Classes	11
3.3	Restriction on Discharge Permits	12
3.4	Issues, Objectives, Policies and Methods.....	12
3.5	Principal Reasons, Anticipated Environmental Results, Reviewing and Monitoring.....	15
4	Policy Framework	17
4.1	Introduction.....	17
4.2	National Policy Statements.....	17
4.3	Operative Bay of Plenty Regional Policy Statement	17
4.4	The Regional Coastal Environment Plan	17
4.5	Bay of Plenty Regional Plans and Strategies	17
4.6	District Plans	18
4.7	Management Plans and Strategies Prepared under other Acts	18
4.8	Relevant Planning Documents Recognised by Iwi Authorities	18
4.9	Other Legislation	19
5	Responsibilities.....	21
5.1	Introduction.....	21
5.2	Individuals	21
5.3	Environment Bay of Plenty	21
5.4	District Councils.....	21
5.5	Department of Conservation (DOC)	22
5.6	Eastern Region Fish and Game Council.....	22
6	Physical Description of the Tarawera River Catchment.....	25
6.1	Introduction.....	25
6.2	The Tarawera Lakes and their Catchments.....	26
6.3	The Catchment of the Upper Reach of the Tarawera River	27
6.4	The Catchment of the Lower Reach of the Tarawera River	28
6.5	The Tarawera River Mouth.....	31
7	Community Attitudes and Perceptions	33
7.1	Introduction.....	33
7.2	The Social and Economic Context.....	33
7.3	Community Surveys	37
7.4	The Economic Context	41
7.5	Issues, Objective, Policies, Principal Reasons and Anticipated Environmental Results	42
8	Resource Management Issues of Significance to Iwi.....	45
8.1	Introduction.....	45
8.2	Issues.....	46
9	Summary of Issues	51
9.1	Introduction.....	51
9.2	Issues.....	51
10	Public Access.....	57
10.1	Introduction.....	57
10.2	Issues, Objective, Policies, Methods of Implementation, Principal Reasons and Anticipated Environmental Results	59

11	Land Use	63
11.1	Introduction.....	63
11.2	Geology.....	63
11.3	Soils.....	64
11.4	Vegetative Cover.....	66
11.5	Erosion.....	67
11.6	Land Use Capability Description.....	67
11.7	Land Use/Practice.....	67
11.8	Issues, Objective, Policies, Methods of Implementation, Principal Reasons and Anticipated Environmental Results.....	75
12	River and Lake Beds	79
12.1	Introduction.....	79
12.2	Issues, Objective, Policies, Methods of Implementation, Principal Reasons and Anticipated Environmental Results.....	85
13	Freshwater Ecology	95
13.1	Introduction.....	95
13.2	Historical and Cultural Context.....	95
13.3	Freshwater Ecology in the Water Bodies of the Catchment.....	96
13.4	Sustaining Life Supporting Capacity.....	105
13.5	Issues, Objectives, Policies, Methods of Implementation, Principal Reasons and Anticipated Environmental Results.....	110
14	Surface Water Quantity	115
14.1	Introduction.....	115
14.2	Monitoring River Flows and Water Levels.....	115
14.3	Primary Causes and Effects on River Flows and Lake and Wetland Levels.....	116
14.4	Issues, Objective, Policies, Methods of Implementation, Principal Reasons and Anticipated Environmental Results.....	121
15	Surface Water Quality	129
15.1	Introduction.....	129
15.2	Values Associated with Water Quality.....	129
15.3	Water Quality Monitoring.....	130
15.4	Water Quality Factors.....	131
15.5	Water Quality Standards.....	163
15.6	Overall Options to Achieve Water Quality Standards.....	165
15.7	Reasonable Mixing Zones.....	169
15.8	Issues, Objective, Policies, Methods of Implementation, Principal Reasons and Anticipated Environmental Results.....	170
16	Groundwater Quality and Quantity	183
16.1	Introduction.....	183
16.2	Groundwater Systems.....	183
16.3	Groundwater Quantity and Allocation.....	184
16.4	Groundwater Quality.....	184
16.5	Impact of Waste Disposal on Groundwater Quality.....	185
16.6	Future Use of Groundwater Resources.....	186
16.7	Future Waste Disposal and Monitoring Requirements.....	187
16.8	Issues, Objective, Policies, Principal Reasons, Methods of Implementation and Anticipated Environmental Results.....	188
17	Geothermal Resources	193
17.1	Introduction.....	193
17.2	Discharge of Geothermal Water.....	194
17.3	Natural Geothermal Inputs to the Tarawera River.....	194
17.4	Issues, Objective, Policies, Principal Reasons, Methods of Implementation and Anticipated Environmental Results.....	195
18	Resource Consent Process	199
18.1	Making an Application.....	199
18.2	Information Requirements.....	199
19	Monitoring and Plan Review	201
19.1	Introduction.....	201
19.2	Monitoring Programmes.....	201
19.3	Issues, Objective, Policies, Methods of Implementation and Principal Reasons.....	203
19.4	Plan Review.....	205
19.5	Issues, Objective, Policies and Methods.....	205

20	Summary of Rules	209
20.1	Chapter 12 – River and Lake Beds.....	209
20.2	Chapter 14 – Surface Water Quantity.....	214
20.3	Chapter 15 – Surface Water Quality.....	216
20.4	Chapter 16 – Groundwater.....	224
20.5	Chapter 17 – Geothermal Resources.....	225
21	Appendix 1 – Glossary	227
22	Appendix 2 – References	239
23	Appendix 3 – Population Statistics for the Tarawera River Catchment	247
23.1	Population by District Council Area.....	247
23.2	Age.....	247
23.3	Population Projections.....	248
23.4	Employment.....	249
24	Appendix 4 – Tarawera Industries	251
24.1	Forestry/Wood Processing.....	251
24.2	Dairy Industry.....	253
25	Appendix 5 – Recreational Activities	255
25.1	Recreational Use Survey.....	255
26	Appendix 6 – Wetlands and Lakes in the Tarawera River Catchment	257
27	Appendix 7 – Main Rivers and Streams in the Tarawera Catchment	259
28	Appendix 8 – Land Use Capability Description – Tarawera Catchment	261
29	Appendix 9 – Representation on the Tarawera River Liaison Group	263
30	Appendix 10 – Water Monitoring Facilities in the Tarawera Catchment	265
31	Appendix 11 – Flow Measurement Data for the Tarawera River System	267
32	Appendix 12 – Maintaining Water Levels in Wetlands	273
33	Appendix 13 – Freshwater Ecology Data	275

List of Maps

Map 1	Tarawera River Catchment Regional Overview	5
Map 2	Topography	23
Map 3	Territorial Local Authorities and Townships	35
Map 4	1996 Land Cover	69
Map 5	Land Use Capability Classification	71
Map 6	Lower Tarawera Environment	101
Map 7	Industrial Discharge to the Lower Tarawera Catchment	133

List of Figures (including diagrams)

Figure 1	An Example of the Inter-Relationship Between Objectives, Policies, and Methods of Implementation	14
Figure 2	Tarawera River Elevation	27
Figure 3	Ethnic Composition of Tarawera Catchment	37
Figure 4	Concern Over Pollution of Water Bodies From 1992 Survey of Attitudes and Perceptions²⁰	39
Figure 5	Rating of the Environmental State of the Lower Tarawera Catchment Area	39
Figure 6	Level of Concern Expressed over a Range of Issues	40
Figure 7	Rating of Some of the Lake Environments in the Tarawera Lakes Catchments (Including Lake Rotorua)	42
Figure 8	Comparison of Average Dissolved Oxygen Levels (1990-1994)	135
Figure 9	Average Daily Dissolved Oxygen Levels at Awakaponga	136
Figure 10	Clarity of the Tarawera River	139
Figure 11	Mean Absorption Coefficients at 440nm for Filtered Samples From Six Sites on the Tarawera River	142
Figure 12	Community Concern about Colour and Possible Contaminants in, and Smell From, the Lower Reach of the Tarawera River	155
Figure 13	The Median Concentration of Dissolved Reactive Phosphorus (Drp) and Total Phosphorus (Tp) at Eight Sites on the Tarawera River	158
Figure 14	The Median Concentration of Ammonium Nitrogen (NH₄-N) and Nitrate Nitrogen (NO₃-N) at Eight Sites on the Tarawera River for 1992-1994 Data	159
Figure 15	Projected Tarawera Catchment Population by the Year 2016	249

Figure 16	Exotic Production Forest Planting in the Tarawera Forest	253
Figure 17	Percent of Survey Respondents who have undertaken Specific Recreation Activities in the last 12 Months	256

List of Tables

Table 1	Major Settlements in the Tarawera Catchment 1991 Census.....	34
Table 2	Attitudes and Perceptions to Lakes in the Tarawera Lakes Catchments.....	38
Table 3	Authorisation for Different Types of Reserves.....	58
Table 4	Soil Parent Material Types in the Tarawera Catchment.....	65
Table 5	Land Cover in the Tarawera River Catchment.....	66
Table 6	Botanical Conservation Values of Wetlands in the Catchment of the Lower Reach of the Tarawera River	103
Table 7	Protection Status, Area, Number of Threatened Plant Species, and Botanical Importance for Wetlands Associated with the Lower Reach of the Tarawera River.....	105
Table 8	Oxygen Classification – Fish Purposes Lower Tarawera River	106
Table 9	Reducing Flow in the Tarawera River (1949-1992).....	117
Table 10	Reduction in the Flow of the Tarawera River Resulting from Changing Vegetation Cover and Rainfall Decline.....	117
Table 11	Munsell Hue Scale and Suitability of Waters for Bathing.....	140
Table 12	Colour (Munsell Hue) and Clarity (Black Disc)	141
Table 13	Absorption Coefficient at 440nm for Tarawera River Sites and two Effluent Discharges between 1992 and 1994.....	142
Table 14	Total Population of Tarawera Catchment by District 1991 Census	247
Table 15	Age of Population (Total Population) 1991 Census Tarawera Catchment/Bay Of Plenty New Zealand	248
Table 16	Macroeconomic Impact of Tasman Pulp and Paper Company Limited.....	252