

5. Opportunities for protection

EXISTING PROTECTED NATURAL AREAS

Representativeness

There are approximately 45,000 ha of indigenous vegetation in the protected natural area network: scenic reserves, conservation areas, forest parks, ecological areas, open space covenants, water reserves, local purpose reserves and recreation reserves. This represents about 24% of the ecological district (approx. 188,680 ha). The existing networks of protected areas do not adequately protect freshwater wetlands throughout the ecological district and semi-coastal vegetation (all classes), with only 10.5% of the semi-coastal zone protected. However, 46% of the lowland bioclimatic zone, 32% of the coastal bioclimatic zone, and 24% of the small sub-montane bioclimatic zone is formally protected (see Tables 5, 6, and 7).

TABLE 5. INDIGENOUS VEGETATION IN PROTECTED AREAS IN EACH LAND SYSTEM AND BIOCLIMATIC ZONE (AREAS AND PERCENTAGES)

LAND SYSTEM	BIOCLIMATIC ZONE	TOTAL AREA	RESERVES ADMINISTERED BY DEPARTMENT OF CONSERVATION		QEII COVENANTS		WATER RESERVES		WHAKATANE DISTRICT COUNCIL COASTAL RESERVES		OTHER PROTECTED NATURAL AREAS		TOTAL PNA AREA	
			ha	%	ha	%	ha	%	ha	%	ha	%	ha	%
Whakamarama Plateau	Semi-coastal	13,583.3	972.6	7.2	64.8	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1,057.4	7.6
	Lowland	14,527.7	10,266.4	70.7	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10,273.5	70.7
	Sub-montane	96.4	23.4	24.3		0.0	0.0	0.0	0.0	0.0	0.0	0.0	23.4	24.3
Northern Mamaku Plateau	Semi-coastal	34,416.2	3,943.1	11.5	446.4	1.3	274.9	0.8	0.0	2.4	0.0	0.0	4,666.8	13.6
	Lowland	52,260.1	18,241.9	34.9	45.8	0.1	2,277.0	4.4	0.0	651.3	1.2	0.0	21,216.0	40.6
Papamoa Hills	Coastal	2.7		0.0		0.0		0.0					0.0	0.0
	Semi-coastal	12,320.4	868.0	7.0	12.6	0.1	75.3	0.6	0.6	13.6	0.1	0.0	969.5	7.9
Rotoiti Breccia Ignimbrite Fan	Lowland	1,485.3	547.3	36.8		0.0	16.2	1.1	1.1	0.2	0.0	0.0	563.7	38.0
	Coastal	1,011.8		0.0		0.0		0.0	0.0		0.0	0.0	0.0	0.0
	Semi-coastal	49,063.8	4,112.5	8.4	298.4	0.6	1.0	0.0	0.0	293.9	0.6	0.0	4,705.8	9.6
Otagarakau Hills	Lowland	795.0		0.0		0.0		0.0	0.0				0.0	0.0
	Semi-coastal	701.3		0.0		0.0		0.0	0.0				0.0	0.0
	Coastal	30.2		0.0		0.0		0.0	0.0				0.0	0.0
Sand Dunes	Coastal	342.3	2.0	0.6	2.0	0.6		0.0	138.3	40.4	0.0	0.0	142.3	41.6
	Coastal	832.9	452.4	54.3	87.1	10.5		0.0	35.7	4.3	0.0	0.0	575.2	69.1
Oruhepo Hills	Semi-coastal	6,278.2	650.5	10.4	89.1	1.4	50.7	0.8		0.0	0.0	0.0	790.3	12.6
	Semi-coastal	934.1	0.5	0.1	114.0	12.2		0.0		0.0	0.0	0.0	114.5	12.3
Total		188,681.7	40,080.6	21.2	1,167.3	0.6	2,695.1	1.4	174.0	0.1	961.4	0.5	45,078.4	23.9

TABLE 6. INDIGENOUS VEGETATION IN RESERVES AND RECOMMENDED AREAS FOR PROTECTION IN EACH LAND SYSTEM AND BIOCLIMATIC ZONE (AREAS AND PERCENTAGES)

LAND SYSTEM	BIOCLIMATIC ZONE	TOTAL AREA	RAPS			Category 1			Category 2			Category 3			Total			PNA TOTAL'			RAP & PNA TOTAL		
			ha	%	%	ha	%	%	ha	%	%	ha	%	%	ha	%	%	ha	%	%	ha	%	%
Whakamarama Plateau	Semi Coastal	13,583.3	1,007.0	7.4	379.6	2.8	201.3	1.5	1,587.9	11.7	1,037.4	7.6	2,625.3	19.3									
	Lowland	14,527.7	1,520.7	10.5	254.8	1.8	110.3	0.8	1,885.8	13.0	10,273.5	70.7	12,159.3	83.7									
	Sub-montane	96.4	38.8	40.2	0.0	0.0	0.0	38.8	40.2	23.4	24.3	62.2	64.5										
Northern Mamaku Plateau	Semi Coastal	34,416.2	2,087.1	6.1	1,821.5	5.3	837.5	2.4	4,746.1	13.8	4,666.8	13.6	9,412.9	27.4									
	Lowland	52,260.1	2,515.8	4.6	1,726.0	3.5	1,344.3	2.6	5,586.1	10.7	21,216.0	40.6	26,802.1	51.3									
Papamoa Hills	Coastal	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0										
	Semi-coastal	12,320.4	1,211.7	9.8	303.3	2.5	50.2	0.4	1,565.2	12.7	969.5	7.9	2,534.7	20.6									
Rotoriti Breccia Ignimbrite Fan	Lowland	1,485.3	514.4	34.6	11.5	0.8	0.0	0.0	525.9	35.4	563.7	38.0	1,089.6	73.4									
	Coastal	1,011.8	0.0	0.0	3.9	0.4	0.0	0.0	3.9	0.4	0.0	0.0	3.9	0.4									
	Semi-coastal	49,063.8	51.7	0.1	1,606.4	3.3	433.3	0.9	2,091.4	4.3	4,705.8	9.6	6,797.2	13.9									
	Lowland	795.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
Otamarakau Hills	Semi-coastal	701.3	0.0	0.0	0.0	0.0	17.1	2.4	17.1	2.4	0.0	0.0	17.1	2.4									
	Coastal	30.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0									
Sand Dunes	Coastal	342.3	0.0	0.0	21.0	6.1	0.0	0.0	21.0	6.1	142.3	41.6	163.3	47.7									
	Coastal	832.9	0.4	0.0	320.4	38.5	0.0	0.0	320.8	38.5	575.2	69.1	896.0	107.6									
Marata Hills	Semi-coastal	6,278.2	950.4	15.1	335.5	5.3	201.1	3.2	1,487.0	23.7	790.3	12.6	2,277.3	36.3									
	Semi-coastal	934.1	0.0	0.0	44.4	4.8	0.7	0.1	45.1	4.8	114.5	12.3	159.6	17.1									
Total		188,681.7	9,898.0	5.2	6,828.3	3.7	3,195.8	1.7	19,922.1	10.6	45,078.4	23.9	65,000.5	34.4									

1. From Table 5

TABLE 7. INDIGENOUS VEGETATION IN RESERVES AND RECOMMENDED AREAS FOR PROTECTION IN EACH BIOCLIMATIC ZONE (AREAS AND PERCENTAGES)

BIOCLIMATIC ZONE	TOTAL AREA	RAP		PNA		TOTAL (RAP & PNA)	
		ha	%	ha	%	ha	%
Sub-montane	96.4	38.8	40.2	23.4	24.3	62.2	64.5
Lowland	69,068.1	7,997.8	11.6	32,053.1	46.4	40,050.9	58.0
Semi-coastal	117,297.3	11,539.8	9.8	12,284.4	10.5	23,824.2	20.3
Coastal	2,219.9	345.7	15.6	717.5	32.3	1,063.2	47.9
Total	188,681.7	19,922.1	10.6	45,078.4	23.9	65,000.5	34.4

The RAP selection process emphasises selection of ecological units (for example: indigenous vegetation within a particular bioclimatic zone in a particular land system) which are inadequately represented, particularly where the extent of loss of these ecological units has been great. However, some disparity could not be properly addressed as insufficient, or nil, areas of some ecological units have survived to the present day (for example: the coastal bioclimatic zone within the Otamarakau Hills and the Rotoiti Breccia Ignimbrite Fan land systems).

Security and management

Vegetation with significant conservation values is present in some reserves with insufficient security of protection. The management of some of these reserves is inappropriate (for example: grazing of domestic stock, problem weed control) and at least one has a quarry. Coastal recreation reserves and waterworks reserves fall into these categories. Part or all of these reserves should have an upgraded classification to reflect their importance for nature conservation (refer to Beadel 1994a for coastal reserves and Beadel 1985a for waterworks reserves in the Ottawa-Otanewainuku forest tract).

Information and ranking

Information on some protected areas can be found in a botanical inventory of lands administered by Department of Conservation (Beadel 1995) and the Rotorua District Council natural heritage inventory (Beadel *et al.* 1998). Botanical inventories and conservation rankings of lands administered by Department of Conservation, and natural areas in the coastal zone are presented in Beadel (1995 & 1994 respectively).

RECOMMENDED AREAS FOR PROTECTION

Evaluation and ranking

Ninety-six ecological units were identified in the district (see Appendix 1). Of these, 54 are unrepresented or poorly represented in existing protected areas. Ecological units in the semi-coastal bioclimatic zone and wetlands in general are the most poorly represented.

The 62 recommended areas for protection (RAPs) in the Otanewainuku Ecological District are listed in Table 8 and their location shown in Figure 4. Category 1 RAPs comprise the highest ranked RAPs and these are the highest priority for protection. Category 1 RAPs (17) include some of the largest areas of unprotected indigenous vegetation in the district (for example: 1,891 ha of forest contiguous to Ottawa Scenic Reserve and Oropi Forest; Whakamarama forest (1,506 ha) contiguous with Kaimai-Mamaku Forest Park north of State Highway 29 and an area containing hard beech forest in the Opuiaki River Catchment (2,480 ha). However there are several relatively small Category 1 RAPs, for example: the best known stand of maire tawake in the ecological district forms the basis for one RAP (c.53 ha) (near Oropi). RAPs in Category 2 (23) are also of high priority and complement the vegetation types and landforms of Category 1 RAPs and existing protected areas, (for example: Ottawa West RAP and Pukunui-Otawa RAP which are contiguous with the Ottawa-Otanewainuku Forests RAP and existing protected areas; Mangaone Extension RAP (contiguous with Mangaone Scenic Reserve); and Waipapa RAP (contiguous with Kaimai-Mamaku Forest Park). Category 3 comprises RAPs which tend to be smaller in size, often in poorer condition, yet containing significant features; or of a vegetation type better represented in other RAPs (Pongakawa Stream RAP and Tautau Stream-Kopurererua Stream RAP). Category 3 RAPs (22) are valuable in ensuring representation of all features of the ecological district, (for example: Hauone Stream Wetland, 2.8 ha); and Matamanu RAP on the hills inland from Otamarakau which comprises several very small remnants of indigenous vegetation which, although small, are the best remaining examples in these parts of the district. However active low-level management of these sites is required (for example: fencing).

It must be stressed that natural areas within each category are of more or less equal importance. If the RAPs proposed cannot be securely protected as part of the protected natural area network (for example: using protection covenants) then it may be appropriate to select alternative RAPs using evaluation methods outlined in Section 3.3.

Postscript

This PNAP survey placed RAPs in 3 categories. However the approach used in the PNA Programme has been evolving relatively rapidly. The currently accepted approach is to survey, document and map all significant natural areas remaining in each ecological district. Subsequent PNAP surveys in the Bay of Plenty (for example: Rotorua Lakes Ecological District - Beadel *et al.* 1998; Taneatua Ecological District - Beadel *et al.* 1999) have used this approach.

Two other inventories should be referred to for information on natural areas in Otanewainuku Ecological District that have not been classed as RAPs in this report. These are; the Western Bay of Plenty District Council natural heritage schedule (1997/98) and the Rotorua District Council natural heritage inventory (Shaw & Beadel 1998).

COMMUNITY AND LANDOWNER ROLES

The ecological landscapes of Otanewainuku Ecological District are special to that place. The district has a character that is very attractive to the people who live there, and to many others who aspire to live in the Western Bay of Plenty, which has one of the fastest growing human populations in New Zealand. This rapid growth has created a huge demand for land, and has increased pressure to clear indigenous vegetation and drain wetlands.

Coincidentally, this has coincided with the enactment and implementation of the Resource Management Act (1991) and the need to safeguard the life-supporting capacity of air, water and terrestrial ecosystems, and the protection of significant indigenous vegetation and habitats of indigenous fauna. The major challenge for the community will be to reach agreement on what needs to be done to achieve protection, and how to fund it. This will require commitment by both individual landowners and the wider community to develop ways of paying for protection works (such as fencing), and for compensating landowners for protecting features and values also of interest to others. The protection of features on Maori-owned land will need to be achieved in a way that recognises their *mana whenua* and special relationships to land. There are also requirements for a high level of inter-agency co-operation between local and central Government.

If the community meets these challenges then the future will provide opportunities to enhance the place of nature in Otanewainuku Ecological District, in contrast to the indifferent exploitation, which has largely prevailed since the arrival of humankind.

Acknowledgements

I gratefully acknowledge the assistance of the following people during the survey.

- Landowners of the Otanewainuku Ecological District for allowing access to study areas and providing information.
- Derek Gosling (Department of Conservation, Whakatane) for fieldwork, discussion and technical assistance, support and encouragement.
- Andy Garrick and Chris Richmond (Department of Conservation, Rotorua) for initiating and supporting the project.
- Paul Cashmore (Department of Conservation) for useful information, including information on the distribution of several threatened plant species, and for supporting the project.
- William Shaw (Wildland Consultants Ltd) for useful discussion and comments on a draft of the report.
- John Nicholls (Wildland Consultants Ltd) for much of the resource material for the ecological district on which this survey is based, useful discussion and comments on a draft of this report.
- Cathy Semmens (Department of Conservation, Rotorua) for draughting.
- Department of Conservation, Rotorua, for information and technical assistance.
- Barry Spring-Rice (Wildland Consultants Ltd), Dale Williams, Reg Phillips, Murray Thompson, Warren Geraghty, Andy Garrick, Phil Alley, Maurice Wilke, John Pascoe and Bob Mankelow (Department of Conservation, Bay of Plenty Conservancy) for field assistance.
- Annabel Davies and Ellen Maiden (Wildland Consultants Ltd) for technical assistance.
- Margaret Honey (Wildland Consultants) for word processing.
- Roger Bawden and Angela Croft (Wildland Consultants) for map preparation.
- Gavin Williamson (Department of Conservation, Rotorua) provided information on fish.
- Andy Garrick, Paul Jansen and Keith Owen (Department of Conservation, Rotorua) provided information on birds, reptiles, mammals and amphibians.
- Pauline Mayhill and Frank Climo (Manaaki Whenua - Landcare Research, Auckland) provided information on snails.
- Dr Lariviera provided information on insects.
- Draughting Section of Environment Bay of Plenty, for the loan of black and white aerial photographs.
- Also thanks to all other people who have made available information and helped in the preparation, fieldwork and write-up of this survey.