1. Introduction

1.1 THE PROTECTED NATURAL AREAS PROGRAMME

The Protected Natural Areas Programme (PNAP) was established in 1982 to implement s3 (b) of the Reserves Act 1977:

> *Ensuring, as far as possible, the survival of all indigenous species of flora and fauna, both rare and commonplace, in their natural communities and habitats, and the preservation of representative examples of all classes of natural ecosystems and landscape which in the aggregate originally gave New Zealand its own recognisable character.*

The goal of the programme is:

> *To identify and protect representative examples of the full range of indigenous biological and landscape features in New Zealand, and thus maintain the distinctive New Zealand character of the country* (Technical Advisory Group 1986).

The specific aim of the PNAP is to identify, by a process of field survey and evaluation, natural areas of ecological significance throughout New Zealand which are not well represented in existing protected natural areas, and to retain the greatest possible diversity of landform and vegetation patterns consistent with what was originally present. To achieve this, representative biological and landscape features that are common or extensive within an ecological district are considered for protection, as well as those features which are special or unique.

As knowledge and information about the presence and distribution of fauna and flora such as invertebrates and bryophytes is limited, the protection of the full range of habitat types is important to maintaining the diversity of lesser-known species.

This report is largely based on reconnaissance surveys largely undertaken between 1998 and 1999 (with a collection of sites added post-1999), and existing published and unpublished data, and includes descriptions of most natural areas within the Tokatoka Ecological District.

The natural areas described have been evaluated and ranked using two levels of significance, based on specific criteria (see section 2).

This approach was adopted so that the survey report better meets the broader information requirements of the Department of Conservation (DOC) arising from the Resource Management Act 1991 (RMA), the Convention on Biological Diversity (1992) and the New Zealand Biodiversity Strategy (2000).

The Purpose and Principles of the RMA are set out in Part II of that Act and include:

- Safe-guarding the life-supporting capacity of air, water, soil and ecosystems,
- The preservation of natural character of the coastal environment, wetlands and lakes and rivers and their margins,

- The protection of outstanding natural features and landscapes,
- The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna,
- The protection of intrinsic values of ecosystems, and
- Maintenance and enhancement of the quality of the environment.

Of particular relevance is Section 6(c) of the RMA, which lists as a 'matter of importance':

> *The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.*

The Convention on Biological Diversity (1992), under the auspices of the United Nations Environment Programme, has promoted the concepts of biodiversity and ecosystems. These concepts are reflected in this report in the number of sites, their size, and the emphasis on buffers and linkages in the identification and assessment of sites.

The New Zealand Biodiversity Strategy (2000) has a 21 year vision to halt the decline of New Zealand's indigenous biodiversity. It includes in its outcomes the objective to secure a more representative range of New Zealand's indigenous habitats and ecosystems.

1.2 ECOLOGICAL REGIONS AND DISTRICTS

New Zealand's physical environment is very diverse and this is reflected in the diversity of indigenous plant and animal communities. In recognition of the biogeographic differences between various parts of New Zealand, a classification of ecological regions and districts has been established (McEwen 1987).

An Ecological District is a local part of New Zealand where the topographical, geological, climatic, soil and biological features, including the broad cultural pattern, produce a characteristic landscape and range of biological communities. Ecological Districts are grouped together into a series of Ecological Regions on the basis of shared general ecological and geological characteristics. In some cases, a single very distinctive ecological district is given the status of ecological region to emphasise its uniqueness (Technical Advisory Group 1986).

The former New Zealand Biological Resources Centre coordinated the mapping of the country into more than 260 districts in 1982. Ecological Regions and Districts in northern New Zealand have recently been redefined to more accurately classify ecological variation within the Northland and Auckland areas (Brook 1996).

The PNAP uses the division of Ecological Districts as a framework throughout the country for determining ecological significance, including representativeness.

1.3 CONTENTS OF THIS REPORT

This report presents the findings of the reconnaissance phase of the PNAP survey of the Tokatoka Ecological District. It includes maps and brief descriptions of most of the indigenous natural areas within the Ecological District, together with an analysis of the main vegetation types and information on Threatened, At Risk and Regionally significant species and other taxa of scientific interest and/or conservation interest (Molloy et al. 2002; Hitchmough et al. 2007; Townsend et al. 2008). The natural areas described have been assessed according to ecological criteria outlined in section 2.4 (p. 15). Sites meeting the criteria have been defined as Level 1 or Level 2 sites. Some Level 2 sites may meet Level 1 criteria in the future as more information is made available.

Aerial photography from 2002 and 2008 was used to prepare the site maps (along with the original survey maps) and to identify any sites that were missed. In some cases, the site boundaries have changed from the site boundaries identified in the original surveys, and hence the vegetation description presented in the report may not match the current extent of the site. Some site boundaries improved with the benefit of an aerial view compared with the topographical interpretation used for the original surveys. Where a site boundary changed significantly, this is indicated at the beginning of the site report in the 'Area' section.

Soil descriptions are given only for sites listed in Arand et al. (1993) as being of regional, national or international importance.

Significant geological sites and landforms of regional, national or international importance are described from Kenny and Hayward (1996). (See Appendix 4 for ranking criteria).

The Threatened Environment Classification is included in each site description in Section 4 (also see Fig. 3 on p. 419 and Table 5 on p. 404). The Threatened Environments Classification is a combination of three national databases: Land Environments of New Zealand (LENZ), the Land Cover Database 2 (LCDB2), and Protected Areas of New Zealand (PANZ). Threatened land environments are assigned one of six threat categories (Acutely Threatened; Chronically Threatened; At Risk; Critically Underprotected; Underprotected; Less Reduced and Better Protected) on the basis of past habitat loss (percentage indigenous cover remaining) and current legal protection (Walker et al. 2007).

1.4 TOKATOKA ECOLOGICAL DISTRICT

The Tokatoka Ecological District covers approximately 74 610 ha. The District is located just east of Dargaville, in Northland. The Wairoa River and the Tangihua Range form the northern boundary with the Tangihua and Whangarei Ecological Districts. The Waipu Ecological District borders to the east, with the boundary running from the eastern end of the Tangihua Range to the western boundary of Mareretu Forest and Waipu Gorge. The Otamatea Ecological District lies directly south, where the boundary runs from Waipu Gorge west through Paparoa and skirts the northern side of the Ruawai flats to Tokatoka. Kaipara Ecological District borders the western side of the Ecological District.

Natural areas identified in this report comprise approximately 5514.9 ha or 7.4% of the District. Of these, 3840.7 ha or 69.7% are forest, 852.5 ha or 15.45% shrubland, 822.4 ha or 14.93% wetland (which includes riverine flood forest which is seasonally wet and river edge marsh mostly associated with the Manganui River Complex (P07/086), and also includes gumland).

A distinctive feature of the Tokatoka Ecological District is the nationally significant geological and landform formations of Tokatoka peak and Maungaraho dike, prominent in the northern Wairoa landscape.

Much of the Ecological District has been modified, leaving many small and fragmented areas. However, highly important ecological values do remain; in particular, the Manganui River Complex (P07/086), the District's most significant ecological feature. It is the only large river system remaining in Northland that retains substantial areas of original floodplain still functioning as a natural wetland. It contains the best example of riverine flood forest in Northland and is also recognised as perhaps the best example of its type in the North Island (Champion & Townsend 2008) and as one of the best in New Zealand.

High ecological values are also attributed to several remnants of nationally rare floodplain forest, old-growth forest and lowland forest. Maungaraho Rock Scenic Reserve (P08/034) supports four nationally threatened plants, two Nationally Critical (*Hebe saxicola* and *Daucus glochidiatus*), and two Nationally Endangered (*Picris burbidgeae* and *Senecio scaberulus*). *Hebe saxicola* has not been recorded anywhere else in the world.

It is not known whether NI brown kiwi still occur within the Tokatoka Ecological District. The latest records are around 18 years old, being largely derived from a DOC 1992–93 Northland kiwi survey. Sites such as Smoky Hill Scenic Reserve and Surrounds (Q08/030) and Parahi Scenic Reserve and Surrounds (Q08/010) could possibly still support kiwi; however, survey is required to determine their current status. If kiwi are present, these sites would contain Northland's southernmost kiwi population. However, without management, any kiwi populations in these areas will not survive.

Further survey of some sites may reveal additional Threatened, At Risk or Regionally significant species, or species of scientific interest and habitat types not identified within this report, because the detailed surveys required to find these were outside the scope of this study.