

## A biodiversity jigsaw: A review of current New Zealand legislation and initiatives

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### Abstract

**Purpose:** The purpose of this paper is to review the current legislation and initiatives surrounding biodiversity management, protection and sustainable use related to the New Zealand local government sector.

**Design/methodology/approach:** This paper takes the form of an archival review of the academic databases, legislation and biodiversity related websites to ascertain the current legislation and initiatives in place in New Zealand surrounding biodiversity.

**Findings:** The paper found biodiversity to be managed through a combination of legislation, national policies, strategies, trusts and contestable funds. The majority of biodiversity protection on private land is the responsibility of the 78 local authorities that comprise the local government sector through their administration of the Resource Management Act 1991. Despite the legislative requirement to protect and manage biodiversity the paper confirmed that no statutory framework currently exists to guide biodiversity reporting.

**Research limitations/implications:** This study is limited to New Zealand biodiversity related legislation and initiatives. As such it may not necessarily be applicable to any other jurisdictions.

**Practical implications:** This review illustrates the difficulty that exists in navigating the disjointed legislation and other initiatives relating to biodiversity. This currently hinders the development of framework for reporting on biodiversity by local government. However the development of such a framework is crucial to the conservation and sustainable use of New Zealand's unique biodiversity for the benefit of current and future generations.

**Originality/value:** This paper adds to the limited literature in the field of biodiversity reporting and extends it to the local government sector in New Zealand.

**Keywords:** biodiversity; biological diversity; local government; New Zealand; legislation; Resource Management Act; reporting framework.

JEL Classification: K10; N50  
PsycINFO Classification: 4050; 4070

## Introduction

There is overwhelming evidence to suggest that human activity contributes to planetary devastation, species stress and extinction, eco-system destruction, poverty and social dislocation (Gray & Laughlin, 2012; Meadows et al., 2004; Tilman, 2000; UNEP, 2002; United Nations Millennium Ecosystem Assessment, 2005; Vitousek et al., 1997; WWF, 2008). Media interest, driven by international environmental law making and scholarly research has led to increasing global awareness of environmental issues. Interest in sustainability accounting, which incorporates human, economic and environmental concerns, is becoming an increasingly important area of research. This is evidenced by the number of academic journals dedicated to the research area such as *Sustainability*; *Journal of Sustainable Development*; *Environment, Development and Sustainability* and *Journal of Sustainability and Green Business* as well as the number of articles on sustainability and environmental issues published in reputable journals including but not limited to *Accounting, Auditing & Accountability Journal*; *Accounting, Organisations & Society* and *British Accounting Review*.

To date biodiversity issues have failed to attract the same level of attention from management and accounting scholars as research examining sustainability and environmental topics (Jones 1996; 2003 and Samkin et al., 2012 are exceptions). Jones (1996 & 2003) demonstrated how the accountant as part of a multi-disciplinary team could become involved in recording, valuing and reporting wildlife habitats and wildlife resources (natural assets). A case study illustrated how financial stewardship could be extended to natural assets, in particular habitats, flora and fauna through the application of a natural inventory model. Samkin et al. (2012) conducted a longitudinal case study of the Department of Conservation (DoC). Using content analysis, the study investigated whether a deep, shallow or intermediate ecological approach to biodiversity conservation could be inferred from the annual report disclosures over the period 1988 to 2010. The study revealed a deep/shallow ecological tension in the legislative underpinning of DoC requiring the organisation to protect, preserve and reverse biodiversity loss, while at the same time ensuring present and future generations of New Zealanders benefit from the conservation estate.

Despite this lack of prior focus, biodiversity reporting is likely to become a fruitful area of future research. For example multinational mining organisations such as Rio Tinto, BHP Billiton and Alcoa have recognised the importance of biodiversity and fledgling efforts have been made to use their annual reports to disclose the impacts their operations have on local biodiversity (IUCN & ICMM, 2004). The Environmental Performance Indicators contained in the G3.1 Sustainability Reporting Framework material issued by the Global Reporting Initiative recommend a number of biodiversity related disclosures. In the New Zealand local government sector Taranaki Regional Council commissioned Landcare Research to “develop a suite of indicators, measures, elements and data collection methodologies to meet regional council and territorial authorities’ terrestrial indigenous biodiversity responsibilities” (Lee & Allen, 2011, p. 1).

New Zealand’s endemic biodiversity is valuable. At a macro level, it contributes to global biodiversity. At a micro level it underpins the economy, the nation’s sense of identity and the health and wellbeing of the population (Department of Conservation & Ministry for the Environment, 2000). The intrinsic value of New Zealand’s biodiversity is recognised in a number of legislative instruments. Statutes such as the Conservation Act 1987, the Resource Management Act 1991 and the Biosecurity Act 1993 require the protection, conservation and sustainable use of New Zealand’s unique biodiversity for the enjoyment of present and future generations.

Much of the protection and management of New Zealand’s biodiversity on private land is the responsibility of the 78 local authorities that comprise the local government sector, through their administration of the Resource Management Act 1991 and the Local Government Act 2002. This legislation contains provisions that direct local authorities to report on the protection, restoration and sustainable management of biodiversity. However, currently no universally accepted reporting framework through which results can be monitored and reported exists. A number of factors hinder the effective management of biodiversity and thus the development of

an effective monitoring and reporting framework. These include: incomplete scientific knowledge; a lack of effective tools to classify and map different ecosystems; inconsistent methods when monitoring biodiversity changes; barriers to information sharing; lack of resources and capacity to manage them; and finally, a lack of appropriate valuation methods with which to ascertain the true value of biodiversity and develop incentive mechanisms that rewards sympathetic management (Department of Conservation & Ministry for the Environment, 2000). Despite these obstacles, the development of a framework for local authorities to report biodiversity information is crucial to support the protection, conservation and sustainable use of New Zealand's unique biodiversity.

The aim of this paper is to review the current legislation and initiatives surrounding biodiversity management and protection specifically related to the New Zealand local government sector. For management and other researchers focusing on biodiversity issues an appreciation of the extent of regulations that public sector entities need to comply with is useful to understand why a consistently applied biodiversity-reporting framework for local government does not exist. As such this paper represents an important first step towards the development of a consistent biodiversity-reporting framework that can be applied across the various local government sectors. This paper therefore adds to the current limited literature on biodiversity from a management perspective.

This paper is structured as follows. The definition and importance of biodiversity is considered, followed by a brief overview of accounting for biodiversity. Next the New Zealand legislative requirements for biodiversity protection, management and sustainable use are considered. This is followed by a review of the non-legislative initiatives to illustrate the complexity of biodiversity protection and management mechanisms that local government entities and researchers must navigate. The specific role of local authorities in biodiversity protection, management and use is then highlighted. A discussion of the progress of local authority biodiversity protection in relation to the requirements under the RMA is presented before the paper is concluded.

## Biodiversity in New Zealand

The term biodiversity is synonymous with species richness (Heywood, 1998; Marc & Canard, 1997), species diversity (Bond & Chase, 2002), as encompassing a broader meaning such as the 'full variety of life on Earth' (Takacs, 1996), as distinguishing between native and introduced species (NRE, 1997), or as referring to threatened species (Brockhoff et al., 2001). Following this, biodiversity represents all life on Earth.

The term itself has evolved from 'biological diversity' and "describes the variety and diversity of all life on land, in fresh water and in the sea, including the places or ecosystems where they live and the genes they contain" (Ministry for the Environment, 2009). This is consistent with the definition of biological diversity contained in Section 2(1) of the Resource Management Act 1991: "the variability among living organisms, and the ecological complexes of which they are a part, including diversity within species, between species, and of ecosystems".

New Zealand's biodiversity is unique. New Zealand is an island nation situated in the south-western Pacific Ocean. New Zealand's split from Gondwana some 80 million years ago resulted in a long period of geographic isolation facilitating the development of distinctive and unique biodiversity (Trewick et al., 2007). New Zealand is home to approximately 80,000 species of native animals, plants and fungi, many of which are found nowhere else on Earth (New Zealand Biodiversity, 2012). New Zealand's biodiversity is dominated by bird and flora species, with bats and seals being the only native mammals.

New Zealand's natural and introduced biodiversity is valuable. In 1994 economists estimated that the annual value of indigenous biodiversity was \$230 billion, nearly three times the GDP for the same year (Patterson & Cole, 1999). New Zealand's economy relies heavily on primary production such as agriculture, silviculture, horticulture and fisheries. While land-based primary production depends predominantly on introduced species (dairy cattle, sheep, kiwifruit) its success is underpinned by natural biological systems (Department of Conservation and Ministry for the Environment, 2000; New Zealand Biodiversity, 2012). Tourism and a blossoming film

industry also contribute to the economic prosperity of the country and rely heavily on New Zealand's uniqueness. The '100% Pure New Zealand' brand leverages New Zealand's 'clean green' image and highlights these industries' reliance on the natural world (Morgan et al., 2002; Tourism New Zealand, 2012).

New Zealand's national identity is predicated upon the natural environment. New Zealanders are universally known as 'Kiwis' and many of New Zealand's national icons are based on symbols taken from nature. New Zealanders travel on Air New Zealand's aeroplanes bearing koru (unfurling silver fern) tail fin symbols, using silver fern embossed passports. They enjoy beer brewed by the Tui Brewery purchased using notes and coins depicting various native species such as Kotuku (Great Egret), Kiwi, Silver Fern, Hoiho (Yellow-eyed Penguin), Whio (Blue Duck), Karearea (New Zealand Falcon), Kokako (Blue wattled crow), and Mohua (Yellowhead). The uniforms of national sporting teams the All Blacks, the Black Ferns, the Silver Ferns, the Tall Blacks, the Black Caps and Team New Zealand bear silver fern or koru icons. It is considered a great honour to don the silver fern for international sporting representation.

New Zealand's biodiversity and natural heritage is an integral component of the Māori world-view. Central to the Māori belief system is the concept of *kaitiakitanga* (Dana & Hipango, 2011), which can be translated as 'guardianship' or 'stewardship'. The special affinity that Māori have for the natural world defines them as a people and is reflected in a proverb from the Māori tribes of the Whanganui region who have a special connection with the Whanganui River: '*Ko au te awa. Ko te awa ko au*' (I am the river. The river is me). The *Tino Rangatiratanga* (Māori sovereignty) flag bears a stylised koru that symbolises the unfolding of new life and hope for the future, and the colours represent earthly realms: the realm of potential (black) the realm of being (white) and the realm of coming into being (red).

Concern has however been expressed over the perilous state of native New Zealand flora and fauna, as well as the long-term stability of a number of species (Barnett, 2003; Murdoch, 2011; Petheram, 1999; The Southland Times, 2003; 2011; Williams, 2009). Over the last 700-800 years, 32 per cent of indigenous land and freshwater birds; 18 per cent of sea birds; three of seven frogs; at least 12 invertebrates such as snails and insects; one fish, one bat and perhaps three reptiles; and possibly 11 plants, have become extinct. A further 1000 of known animal, plant, and fungi species are considered threatened (Department of Conservation, 2000). The IUCN Red List of Threatened Species lists 190 New Zealand species as 'Endangered' or 'Critically Endangered' (IUCN, 2011). This level of species loss and decline is troubling for a country that relies so heavily on its biodiversity.

#### Towards a biodiversity framework

The nature of research in accounting and in particular into non-financial disclosures has evolved significantly since the emergence of social accounting as a discipline in the 1970s (Owen, 2008; Mathews, 1997). The early 1980s saw an increased emphasis on environmental issues, however wider social issues continued to dominate non-financial accounting research. By the late 1980s however, "general social disclosures [had] become of less concern, in that they [had] been replaced by a concentration on environmental disclosures and regulation as an alternative means of reducing environmental damage" (Mathews, 1997, p.491). In the past two decades concepts such as Triple Bottom Line accounting and carbon accounting emerged and focused research interests.

The majority of studies focusing on environmental accounting have concentrated on annual report disclosures (see for example, Deegan and Gordon, 1996; Hackston & Milne, 1996; Harte & Owen, 1991, 1992; Patten, 1992; Roberts, 1991, 1992), have surveyed managerial perceptions of environmental accounting (including Deegan & Rankin, 1999), or have advanced the general case for greening accountancy (for instance, Bebbington & Gray, 2001; Gray 1990, 1992; Gray et al., 1993). A less well-developed area of research is that focused specifically on environmental disclosures made by public sector entities (Burritt & Welch, 1997; Frost & Seamer, 2002; Gibson & Guthrie, 1995; Lynch 2010; Mladenovic and Van der Laan, 2007; Samkin & Schneider, 2010).

Accounting for biodiversity occupies a space within social accounting. It can be seen as branching from environmental accounting, which is a component of sustainability accounting

(Figure 1). If as Owen (2008) suggests leaders and politicians express “their profound reluctance to be held remotely accountable for any actions they take” (p. 255) then the aim of social and environmental accounting (SEA) research in general and biodiversity in particular, is to hold these individuals accountable for their actions. SEA research and reporting provides organisations and researchers the mechanism with which to engage with sustainability issues affecting society.

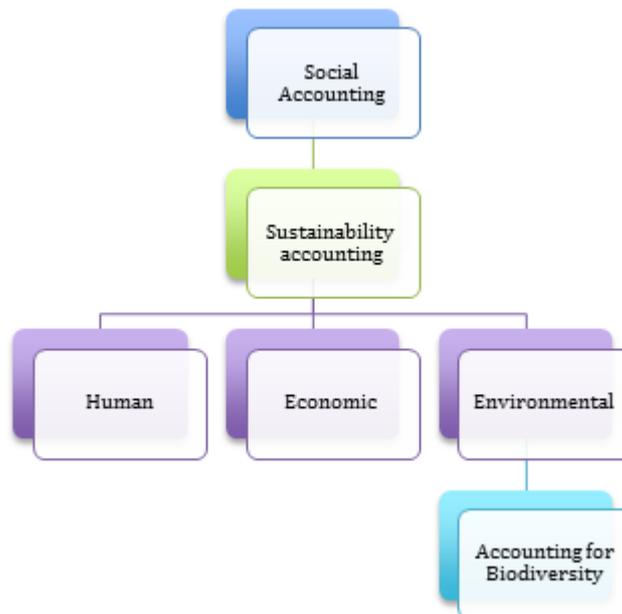


Figure 1: Accounting for biodiversity

### Methodology/approach

As the aim of this paper is to identify the current legislation and initiatives for biodiversity conservation, protection and sustainable use in New Zealand with particular focus on the local government sector a predominantly archival study of the legislation and other biodiversity related initiatives and literature review was deemed appropriate (Easterby-Smith et al., 2002; Srivastava, 2007). The rationale for adopting this approach is that legislation forms the primary protection mechanism to ensure the intrinsic value of biodiversity is conserved. Information was sourced from various academic databases and websites including the New Zealand Legislation website (<http://www.legislation.govt.nz>), and Biodiversity Information Online website (<http://www.biodiversity.govt.nz/>). The information provided by these data sources detailed the legislation and other requirements in place that guide the protection, conservation and sustainable use of New Zealand’s biodiversity. The next section reviews the New Zealand legislation and initiatives that contribute to the current jigsaw that together may hinder the development of a coherent biodiversity measurement and reporting framework.

### Legislative requirements for biodiversity protection

The legislation underpinning biodiversity protection, management and use on public and private land in New Zealand is fragmented and complex. As is shown in Figure 2, a number of statutes relating to biodiversity protection, conservation and use exist. These are considered in more detail below.

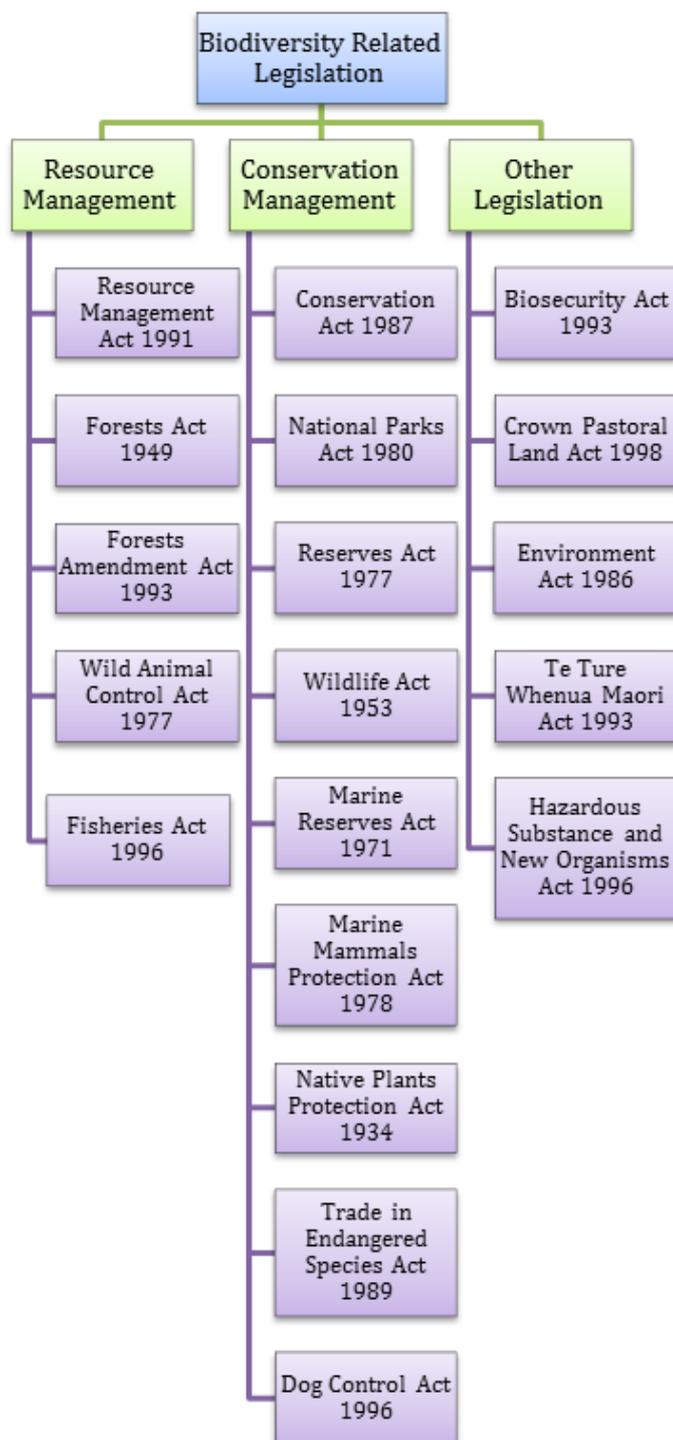


Figure 2: Legislation relating to the protection of New Zealand's biodiversity

Source: Adapted from New Zealand Biodiversity (2007b).

In addition to legislation, a number of national policies guide the conservation, management and sustainable use of biodiversity. The policies and relevant legislation are presented in Table 1.

Table 1: Legislation and resultant policies

Legislation	Policies
Conservation Act 1987	Conservation General Policy
Resource Management Act 1991	New Zealand Coastal Policy Statement
National Parks Act 1980	General Policy for National Parks
Fisheries Act 1996	Fisheries (South Island Customary Fishing) Regulations 1998
	Kaimoana Customary Fishing Regulations 1998
	Regulation 27 of the Fisheries (Amateur Fishing) Regulations 1986
	Recreational Fisheries Regulations

Source: Adapted from New Zealand Biodiversity (2007b).

Other than the National Parks Act 1980 and the Reserves Act 1977 which specifically apply to public land, the legislation is applicable to both public and private land. The Resource Management Act 1991 (RMA) is the principal legislative instrument for managing the impacts of resource use (land) on biodiversity (Ministry for the Environment, 2011). The RMA governs the use of New Zealand's land, air, water, ecosystems and built environment (Ministry for the Environment, 2011). The RMA plays a central role because almost all forms of resource use affect biodiversity. The sections that relate specifically to biodiversity are detailed in Table 2.

Table 2: Sections of the RMA relating to biodiversity

Section of the RMA	Purpose	Relevance
Section 5 (1)	Sets out the purpose of the RMA: to promote the sustainable management of natural and physical resources	The natural resources include all plants and animals which form part of biodiversity
Section 5(2)	Defines the meaning of "sustainable management" of natural and physical resources	Refers to safeguarding ecosystems; promoting the sustainable use of natural resources which includes all forms of biodiversity
Section 6 (a), (b) & (c)	Refers to the protection of coastal environment (including the coastal marine area), wetlands, lakes and rivers and their margins, areas of significant indigenous vegetation and significant habitats of indigenous fauna, and outstanding natural features and landscapes	Concerned with the maintenance of biodiversity by reference to the protection of indigenous vegetation, habitats of indigenous fauna and landscapes.
Section 7(a), (b), (f), (h)	Refers to the concept of stewardship/kaitiakitanga of natural resources, the maintenance and enhancement of the environment, protection of habitats of trout and salmon, and the efficient use and development of natural resources & renewable energy	The concept of stewardship relates to care for the natural environment. This section is concerned with the protection of biodiversity - the environment and ecosystems as well as specific species
Section 7(d)	Refers to the intrinsic values of ecosystems.	The definition of 'intrinsic values' includes values derived from biological and genetic diversity.

In addition to the RMA, a number of other pieces of legislation are relevant to biodiversity management and conservation in New Zealand. These are detailed in Table 3.

**Table 3: Legislation for protection of biodiversity**

Legislation	Purpose
Biosecurity Act 1993	This Act provides for the exclusion, eradication and effective management of pests and unwanted organisms. The Biosecurity Minister is able to notify a national pest management strategy under this Act, and individual local authorities are able to prepare regional pest management strategies (RPMS). A number of initiatives under the Biosecurity Act make a significant contribution to managing biodiversity. In particular, these include plant and animal pest control carried out in accordance with RPMSs prepared under the Biosecurity Act.
Conservation Act 1987	The Conservation Act promotes the conservation of New Zealand's natural and historic resources. The Act provides the mandate for the activities of the Department of Conservation (DoC). Functions include managing the conservation estate, conservancy advocacy and education, and fostering the use of resources for recreation and tourism. The main policy documents include the Conservation General Policy 2005, conservation management strategies prepared by conservancies, and management plans for sites of particular importance. DoC exercises its conservation advocacy function by, <i>inter alia</i> , participating in plan making and resource consent decision-making processes under the RMA.
Forests Act 1949, Forests Amendment Act 1993	The Forests Act 1949 was amended in 1993 to bring an end to unsustainable harvesting and clear felling of indigenous forest. Under the Forests Amendment Act, native timber can only be produced from forests that are managed in a way that maintains continuous forest cover and ecological balance.
National Parks Act 1977	DoC administers this act. The purpose of the National Parks Act is to forever preserve for their intrinsic worth and for the benefit, use, and enjoyment of the public, those parts of New Zealand that "contain scenery of such distinctive quality, ecological systems, or natural features so beautiful, unique, or scientifically important, that their preservation is in the national interest".
Reserves Act 1977	DoC administers this Act. The objective of this act is to ensure 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 samples of all classes of natural ecosystems and landscapes which in their aggregate originally gave New Zealand its own recognisable character. An implementation method of the Reserves Act is the Protected Natural Areas Programme (PNAP), which provides criteria for identifying the best examples of the full range of natural areas within defined ecological districts and/or regions. The focus of this programme has traditionally been on terrestrial and wetland habitats.
Wildlife Act 1953	This Act is administered by DoC and provides for the protection of certain species of wildlife, including the establishment of wildlife reserves.

Source: Adapted from Ministry for the Environment, 2011, pp.23-24

## Non-legislative biodiversity initiatives

In addition to protection through legislation, a number of other initiatives currently influence and impact biodiversity conservation, protection and management. New Zealand has obligations under various national accords and strategies, international conventions, commissions, treaties and is a member of several conservation institutions. These are outlined in Table 4. A number of key initiatives are discussed in more detail below.

**Table 4: Non-legislative biodiversity conservation initiatives**

<b>National Accords &amp; Strategies</b>
New Zealand Biodiversity Strategy
New Zealand Biosecurity Strategy
Dairying and Clean Streams Accord 2003
National Plant Pest Accord 2003
<b>Government-administered Funds</b>
The QEII National Trust
Ngā Whenua Rāhui
The Nature Heritage Fund
The Biodiversity Condition Fund
The Biodiversity Advice Fund
<b>International Agreements</b>
Agreement on the Conservation of Albatross and Petrels 2001
Antarctic Treaty 1959
Convention on the Conservation of Nature in the South Pacific 1976 (Apia Convention)
Cartagena Protocol on Biosafety
Convention on Biological Diversity 1992 (CBD)
Convention on the Conservation of Antarctic Marine Living Resources 1980 (CCAMLR)
Convention on the Conservation of Migratory Species of Wild Animals - Bonn Convention 1983 (CMS)
Convention for the Conservation of Southern Bluefin Tuna 1993 (CCSBT)
Convention of International Trade In Endangered Species of Wild Fauna and Flora 1973 (CITES)
Global Plant Conservation Strategy 2002
International Convention for the Regulation of Whaling 1946
Ramsar Convention on Wetlands 1971
SPREP - Convention for the Protection of the Natural Resources and Environment of the South Pacific Region 1986
United Nations Agreement on Straddling Fish Stocks and Highly Migratory Fish Stocks 1995
United Nations Convention of the Law of the Sea 1982
World Heritage Convention 1972
<b>Institutions</b>
Commission on Sustainable Development
Environment Protection and Heritage Council
Global Biodiversity Information Facility (GBIF)
Global Environmental Facility (GEF)
International Whaling Commission
Natural Resource Management Ministerial Council (NRMMC)
Spatial Information Council (ANZLIC)
Secretariat of the Pacific Regional Environmental Programme (SPREP)
United Nations Environment Programme (UNEP)
UNEP World Conservation and Monitoring Centre (WCMC)
World Conservation Union (IUCN)

Source: Adapted from New Zealand Biodiversity (2005 & 2007a).

The Convention on Biological Diversity (CBD) is an international legally binding treaty, which was opened for signature at the Earth Summit in Rio de Janeiro on 5 June 1992. New Zealand ratified the CBD in 1993 and as a signatory nation is required to prepare national strategies or plans that set national priorities for meeting the three main goals of the Convention. These goals

are: the conservation of biological diversity; the sustainable use of the components of biodiversity; and a sharing of the benefits arising from commercial and other use of genetic resources in a fair and equitable way (Convention on Biological Diversity, 2003).

The New Zealand Biodiversity Strategy (NZBS) was prepared in response to the growing concern about the state of decline of New Zealand's indigenous biodiversity (Ministry for the Environment, 1997) and to reflect New Zealand's commitment to the CBD. The purpose of the NZBS is "to establish a strategic framework for action, to conserve and sustainably use and manage New Zealand's biodiversity" (Department of Conservation & Ministry for the Environment, 2000, p. 2). The NZBS's primary focus is on New Zealand's indigenous biodiversity. However it also recognises the value and economic importance of introduced species. This ensures the genetic resources of these important introduced species are conserved (Department of Conservation & Ministry for the Environment, 2000).

A key aspect of the NZBS was the identification of a number of barriers to the effective management of biodiversity. These include: incomplete scientific knowledge of the current status of biodiversity, a lack of effective tools to classify and map different types of ecosystems, lack of consistent methods for monitoring the changes in biodiversity, barriers to information sharing, lack of resources and capacity for the management of resources and biodiversity issues, and lastly, a lack of valuation methods with which to ascertain the true value of biodiversity to enable the development of incentive mechanisms to reward sympathetic management of biodiversity (Department of Conservation & Ministry for the Environment, 2000).

The NZBS is overseen by the Department of Conservation. However, its implementation is a collaborative effort shared over seven government agencies: Ministry for the Environment; Ministry of Agriculture and Forestry; Ministry of Fisheries; Ministry of Research, Science and Technology; Foundation for Research, Science and Technology; Te Puni Kokiri/Ministry of Māori Development; and Ministry of Foreign Affairs and Trade.

In addition to the NZBS, the Government published the New Zealand Biosecurity Strategy in 2000 (Hellström, et al., 2003). The Biosecurity Strategy deals with broad biosecurity risks, which are defined as "the exclusion, eradication or effective management of risks posed by pests and diseases to the economy, environment and human health," (Hellström, et al., 2003, p. 5). Whilst the strategy focuses on pest management, it also considers broader biosecurity risks that have economic, environmental and social impacts to ensure "New Zealanders, our unique natural resources, our plants and animals are all kept safe and secure from damaging pests and diseases" (Ministry for the Environment, 1997, p. 25).

A number of Government-administered trusts and contestable funds assist with biodiversity protection and restoration on private land. The QEII National Trust is an independent statutory organisation that acts as a perpetual trustee to enable the long-term protection of natural and cultural features on private land, usually by the legal mechanism of open space covenants (QEII, 2011). Currently over 111,000 hectares of private land has been voluntarily protected through the QEII National Trust (QEII, 2011). *Ngā Whenua Rāhui* is a contestable ministerial fund established in 1991 to provide funding for the protection of indigenous ecosystems on Māori land. The fund has three main protection mechanisms: *kawenata* (covenants), setting aside areas as Māori reservations, and management agreements (New Zealand Biodiversity, 2012). The Nature Heritage Fund is a contestable fund that helps meet the cost of protecting areas of high ecological value on private land by providing finance for projects that protect ecosystems either by direct purchase or covenant (Department of Conservation, 2012). The Biodiversity Condition Fund is a contestable fund that aims to improve and maintain the condition of areas of indigenous vegetation, species and habitats, including wetlands and other freshwater ecosystems on private land. Private landowners and community groups or projects can apply for funding to improve or maintain the condition of indigenous vegetation, species and habitats (Department of Conservation, 2012). The Biodiversity Advice Fund is also a contestable fund that supports projects that provide ecological advice and inspire landowners or groups to manage and improve the condition of indigenous biodiversity on private land (Department of Conservation, 2012).

## Local authorities and biodiversity

While much of New Zealand's public conservation land is administered by the Department of Conservation (DoC), the majority of biodiversity management on private land is the responsibility of the local government sector. There are 78 local authorities that constitute New Zealand's local government sector of which 11 are regional councils, 61 are territorial authorities (11 city councils, 50 district councils) and six are unitary authorities (territorial authorities with regional council responsibilities)<sup>1</sup>.

The RMA is the principal legislative instrument relating to biodiversity management by local authorities. Sections 30(a)(c)(iiia), 31(b)(iii) and 30(1)(ga) designate the responsibility of land and water use management to regional councils and territorial authorities, as well as requiring the establishment, implementation and review of objectives, policies and methods for maintaining native biodiversity. Under Section 62(1)(i)(iii) local authorities are required to prepare a regional policy statement to specify the objectives, policies and methods for the control and use of land to maintain indigenous biodiversity. Section 75(3)(c) requires the regional policy statement to be effected through the district plan. Regional councils are directed to follow an integrated approach when developing their regional policy statement by giving regard to conservation management strategies and plans prepared by DoC.

In 2003 the RMA was amended to clarify that both regional councils and territorial authorities have a responsibility to maintain native biodiversity. This amendment was significant as it placed the responsibility for the maintenance and sustainable use of biodiversity on private land squarely with local authorities. Local authorities are required to consider the consequences of all effects of land use on native biodiversity, not simply the significance of the species or habitat (Ministry for the Environment, 2011).

The mechanism for the control of activities that impact biodiversity is the resource consent process. A resource consent is permission to carry out an activity that has an impact on the environment and would otherwise contravene a rule in a city or district plan, or isn't allowed 'as of right' in the district or regional plan (Ministry for the Environment, 2012a). Resource consents can take the form of land use consents, subdivision consents, water permits, discharge permits or coastal permits. Resource consents provide local authorities with the ability to reduce the adverse effects of damaging activities on the environment to an acceptable level or to prevent activities from being carried out altogether if no mitigating solutions can be practically achieved (Ministry for the Environment, 2012b).

The Local Government Act 2002 (LGA) is an additional legislative instrument for biodiversity protection and management. It directs local authorities to "promote the social, economic, environmental and cultural well-being of communities, in present and the future". The LGA requires long term plans and annual plans to specify the allocation of resources to programmes and protection and enhancement initiatives for indigenous biodiversity. Most importantly, these plans detail self-imposed constraints on councils' own potentially damaging activities (Quality Planning, n.d.). Under Section 139 local authorities can acquire land for parks and reserves used principally for community, recreational, environmental, cultural or spiritual purposes. The Governor-General can protect such regional parks in perpetuity from disposition.

Local authorities are also required to consider other statutes and policies that relate to a particular resource or other Crown agencies. In managing biodiversity, this includes but is not limited to the Reserves Act 1977, Soil Conservation and Rivers Control Act 1941, Biosecurity Act 1993, Conservation Act 1987, Fisheries Act 1996 and Wildlife Act 1953, Conservation General Policy, and the New Zealand Coastal Policy. This ensures an integrated approach to biodiversity management.

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<sup>1</sup> On 1 November 2010 a new unitary authority Auckland Council was amalgamated from one regional council (Auckland Regional Council) and seven city and district councils (Auckland City Council, Manukau City Council, Waitakere City Council, North Shore City Council, Papakura District Council, Rodney District Council and most of Franklin District Council) reducing the total number of local authorities from 85 to 78.

In addition to legislation, central government provides other non-regulatory guidance to local authorities in relation to managing and protecting biodiversity. This includes technical advice from DoC on biodiversity issues and good practice guidance from the Ministry for the Environment via the Quality Planning website. However on the whole guidance is low (Ministry for the Environment, 2011).

## RMA plans and biodiversity protection

A substantial review into the adequacy of RMA plans to protect native biodiversity was conducted in 2004<sup>2</sup> and updated in 2010<sup>3</sup>. The 2004 review of district plans and regional policy statements concluded that the quality and breadth of native biodiversity provisions within the district plans of local authorities varied considerably (Ministry for the Environment, 2011). This was confirmed by the 2010 review, which noted that while the majority of local authorities had made progress towards achieving statutory requirements with some councils significantly more advanced than others, there was still a wide range in plan development and some plans had not been updated (Ministry for the Environment, 2011).

Additionally, the 2010 review found that while there was an increase in the number of district plans that stated criteria for identifying significant natural areas (60 out of 75, or 80 per cent), there had been only minimal change to the types of criteria used to identify these. The most commonly used criteria were those relating to DoC's Protected Natural Areas Programme or a variant on these, while other plans used criteria such as those identified by Norton and Roper-Lindsay (1999) while yet others continued to use rudimentary criteria. Similarly, in relation to identification of significant plants and animals, a wide range of techniques and criteria were used. Most plans contained provisions targeting the protection of biodiversity outside section 6(c) requirements<sup>4</sup> including measures such as general clearance controls, controls on pest species, controls on certain activities (for example, deer and goat farming), controls on earthworks and controls on riparian activities. However, there were still a number of plans that lacked mechanisms to identify and protect significant sites and habitats.

The findings of these reviews highlight that despite the legislative requirement to protect, maintain and enhance biodiversity, and the progress some local authorities have made towards developing plans and policies, there is no universal formal framework against which results can be measured and disclosed, or through which consistent reporting can be undertaken. As a result the progress that local authorities have made to date towards managing and reporting biodiversity varies widely.

## Conclusion

This paper details the legislation and initiatives underpinning biodiversity protection, management and sustainable use in New Zealand. Much of the protection and management of biodiversity on private land is the responsibility of local authorities through their administration of the Resource Management Act 1991 (RMA). However, despite the legislative requirement to manage biodiversity and protect its intrinsic value, there is no reporting framework through which results can be monitored and reported by local government authorities. Factors hindering the effective management of biodiversity and the creation of monitoring and reporting frameworks were highlighted.

Nevertheless, local authorities have made some progress towards developing biodiversity plans and policies as required by the RMA. A review in 2010 of local authority plans and policy

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<sup>2</sup> Ministry for the Environment, Department of Conservation, Local Government New Zealand (2004). *A Snapshot of Council Effort to Address Indigenous Biodiversity on Private Land: A report back to councils*. Wellington: Ministry for the Environment, Department of Conservation and Local Government New Zealand.

<sup>3</sup> AWT New Zealand (2010). *District plans and the Protection of Biodiversity: an update*. Prepared for the Ministry for the Environment by AWT New Zealand Ltd. Wellington: Ministry for the Environment.

<sup>4</sup> Section 6c of the RMA requires local governments as persons exercising functions under the act to provide for the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna.

documents revealed the application of a variety of criteria for the identification of significant natural areas, habitats, plants and animals, with most local authority plans containing some provisions for their protection (AWT New Zealand, 2010). However, progress across the sector is slow. It is critical that a framework is developed to monitor and report on biodiversity so as to contribute to the conservation and sustainable use of New Zealand's unique flora, fauna and ecosystems for the benefit of current and future generations.

#### Abbreviations

ANZLIC	Spatial Information Council
CBD	Convention on Biological Diversity
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources (1980)
CMS	Convention of Migratory Species of Wild Animals - Bonn Convention (1983)
CCSBT	Convention for the Conservation of Southern Bluefin Tuna 1993
CITES	Convention of International Trade In Endangered Species of Wild Fauna and Flora 1973
DoC	Department of Conservation
GBIF	Global Biodiversity Information Facility
GEF	Global Environmental Facility
IUCN	World Conservation Union
LGA	Local Government Act 2002
NRMMC	Natural Resource Management Ministerial Council
NZBS	New Zealand Biodiversity Strategy
RMA	Resource Management Act 1991
PNAP	Protected Natural Areas Programme
RPMS	Regional Pest Management Strategy
SEA	Social and environmental accounting
SPREP	Secretariat of the Pacific Regional Environmental Programme
UNEP	United Nations Environment Programme
WCMC	UNEP World Conservation and Monitoring Centre

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