

**National Report to the Third Session of the
United Nations Forum on Forests**

New Zealand

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II. Progress and issues related to implementation of IPF/IFF proposals for action

GENERAL

New Zealand is strongly committed to sustainable forest management (SFM), and is very active in international fora that promote SFM, particularly the United Nations Forum on Forests (UNFF).

About 80% of New Zealand was forested before the first human settlers arrived. Polynesian inhabitants cleared large areas, a process that continued after European settlers arrived in the mid-19th century. Forests were extensively cleared and modified through trade in forest products, expanding agriculture and settlement, and the establishment of human-introduced animals and plants.

Today, forests cover approximately 8.1 million hectares, or 30%, of New Zealand's land area. Of this, 6.3 million hectares (23%) are indigenous and 1.8 million hectares (7%) are planted forests. These two estates are fundamentally different in terms of their biological characteristics, the management regimes applied to the forests, and their respective roles and national objectives.

The indigenous forest estate

New Zealand's 6.3 million hectares of indigenous forest are located mainly in the mountain lands, particularly on the West Coast of the South Island. New Zealand has very few remnants of the lowland forests that were once prominent in New Zealand.

The New Zealand Government is the major indigenous forest owner. Through the Department of Conservation it manages about 77% of the estate for conservation, heritage and recreational purposes. There is no timber production from this conservation estate. The vast bulk of this government resource is protected in perpetuity in national parks, scenic reserves and other conservation areas. The Maori people gifted many of these areas to the Government.

Indigenous forests are a key part of New Zealand's environment and help protect the many values of our natural ecosystems. Having a large planted forest resource has provided New Zealand with the opportunity to protect or sustainably manage its remaining Government and privately owned indigenous forests.

Twenty-one percent of the natural forest estate is in private hands (the 2% balance is in miscellaneous reserves, etc). The indigenous forest provisions (part IIIA) of the Forests Act 1949, introduced in 1993, require privately owned indigenous forests to be sustainably managed. This means the forests are managed in a way that maintains their ability to provide products and amenities in perpetuity.

Aside from an increasing demand for access and recreational opportunities, the main threats to New Zealand's indigenous forests are from introduced animals and plants. New Zealand has had for many years extensive programmes aimed at controlling or eradicating introduced species such as rats, possum and deer in order to halt the devastating effect these animals have on the indigenous forests.

Planted production forests

New Zealand's 1.8 million hectares of planted production forests (also referred to as plantations) are:

- dominated by one species – radiata pine (*Pinus radiata*) accounts for 89% of the area¹
- young, with 60% being 15 years old or younger
- fast growing –the average time to harvest is 27 years
- intensively tended – 70% of the resource has been pruned (usually up to 6 metres from the ground) to produce knot-free timber from the first log
- managed in recognition of ecological, economic and social sustainability principles under an accord² between industry and environmental groups, and according to principles for commercial forest management in New Zealand that are based on the accord.

In contrast to indigenous forests, the plantation estate is mainly owned by the private sector. The New Zealand Government owns or manages only 6% of New Zealand's planted forest estate. Management of the Government-owned estate is mainly through:

- Ministry of Agriculture and Forestry management of planted forests on land leased from Maori owners, plus residual planted forests from the Crown's privatisation process.
- Timberlands West Coast Ltd (a State-owned enterprise) with 3% of the total area..

Local government owns a further 3%, with the remaining 91% being in private ownership.

Production from the plantation estate was over 20 million cubic metres in the year to March 2002 (compared to 56,000 cubic metres from privately owned indigenous forests, under the indigenous forest provisions of the Forests Act). By 2010 there will be enough wood available in planted forests to increase the annual harvest to a sustainable level of almost 30 million cubic metres. The actual harvest level will, however, depend on market conditions.

IPF/IFF proposals for action in the national context

There is a very clear separation between New Zealand's predominantly production (exotic) estate, and the predominantly conservation (indigenous) estate. This, coupled the fact that New Zealand does not have a single, overarching national forest programme as in many other countries (see below for a description of this situation) has a strong influence on the way New Zealand approaches the IPF/IFF Proposals for Action.

A major vehicle through which sustainable forest management is implemented in New Zealand is the Montreal Process, which encompasses many of the IPF/IFF proposals for action. The first implementation report of Montreal Process criteria and Indicators was completed in late 2003.

This UNFF 2003 report, and previous reports, will be very useful for assessing any gaps in the way New Zealand is implementing the IPF/IFF Proposals for Action, leading to identification and prioritisation of any work programmes that might be needed to fill any gaps.

¹ National Exotic Forest Description as at 1 April 2001. Ministry of Agriculture and Forestry, Feb 2002, Wellington, New Zealand.

² The New Zealand Forest Accord is a voluntary agreement signed in August 1991, between representatives of New Zealand environmental organisations, wood growing and wood processing industries under which protection is provided for indigenous forest.

National forest programme

New Zealand has overarching legislation in place that covers the sustainable management of all natural resources including forestry. This, combined with private sector initiatives, plus largely private ownership of exotic forests and most of the indigenous forest estate dedicated to conservation, have made a specific National Forest Programme (NFP) unnecessary. If such a policy instrument were to be established, it would largely be a duplication of what is already in place and working well.

Current New Zealand legislation relating to controls and management of forests includes the following.

- The Resource Management Act 1991 (RMA). The RMA promotes sustainable management of natural and physical resources, controlling the effects of activities on land, air and water. The RMA is administered by local governments through district and regional plans. The Act follows a process of plan preparation, public participation and submissions, and implementation through regional and district councils. Indigenous forest management (including management for timber harvest) can be influenced by rules arising from this process.
- The indigenous forest provisions of the Forests Act 1949, as amended in 1993, apply to about 1.3 million hectares of private natural forests. This Act promotes sustainable forest management by allowing a limited cut at a level that also provides for management of natural (non-timber) values. This is achieved by production being controlled through Sustainable Forest Management Plans (or Permits, for small areas) that have to be approved by the Ministry of Agriculture and Forestry, which administers the Act. The Act also requires that sawmills commercially milling indigenous timber be registered and imposes restrictions on milling and allowable exports. It includes enforcement provisions.
- The Conservation Act 1987 is administered by the Department of Conservation (DoC). The key roles for DoC are management of the protected natural forest estate that includes both a well-established reserve and national park systems, and the addition of other protected areas through reforms implemented in 1987. DoC also manages historic sites, marine reserves, an endangered species program (which includes efforts to control invasive weeds and pests), and a recovery programme of critical ecosystems and habitats. The department also encourages private landowners to protect conservation values on their land and works with Māori on protecting their cultural values.

There are parallel non-government and private sector initiatives promoting sustainable practices in planted forests. These include the 1991 *New Zealand Forest Accord*, 1993 *New Zealand Forest Code of Practice* and 1994 *Commercial Forestry & Resource Management Act 1991 Guide*.

The *New Zealand Forest Accord 1991* is an agreement between the private forest industry and environmental organisations. It recognises the important heritage values of natural forests and the need for their conservation, maintenance, and enhancement. The Accord recognises the role of commercial planted forests and the need for protection and conservation of natural forest. In particular, the accord recognises the principle that existing areas of natural forest should be maintained and enhanced. It sets protocols and defined limits for the establishment of planted forest on natural forest areas.

Other New Zealand legislation that facilitates sustainable forest management, in both planted and natural forests, includes the Health and Safety in Employment Act 1992 (workers' health and safety being a function of sustainability) and the Biosecurity Act, 1993.

Development of, and investment in, planted forests is generally left to the private sector, and is subject to legislation that covers sustainable resource use (particularly the RMA) and that regulates the normal practices of operating a business in New Zealand.

Stakeholder participation

The RMA promotes the sustainable management of natural and physical resources (including forests) through a series of national policy statements and standards, regional policy statements and plans and district plans. The Act requires that the development of these instruments follow a comprehensive public consultation process, through which the private sector, indigenous people and local communities have opportunities for input and influence. Regional and district plans may also require resource consents for some activities (including some forest management activities) and the consent processes also provide for public participation by calling for submissions on consent applications.

ECONOMIC ASPECTS OF FORESTS, INCLUDING TRADE

Valuation of forest goods and services

This may include, among other things, the development and use of new valuation methodologies, valuation of a wider range of goods and services, and policy. (Note – this descriptive text from the UNFF template for this report is for the benefit of peer reviewers and won't be included in the final version)

Forest valuation

New Zealand's planted forests are an attractive investment proposition. There is increasing interest among domestic and international investment fund managers in buying established forests (both trees and land, or just cutting rights to the trees). This raises an often thorny issue of how to value forestry assets.

A transaction-based approach is the theoretically correct procedure to estimate the market value of a forest. However, there are often practical difficulties, particularly a scarcity of transactions. Consequently the transaction approach is potentially an unrealistic guide. Despite this, available transaction evidence is used in New Zealand to establish benchmarks, either by direct comparison or by inferred value. There is a fairly active market in the trading of forests in New Zealand, although the number of sales per year is not high. Sale details (e.g. price, age-class distribution, timber volumes, etc) are usually commercially sensitive and not easily obtainable. All this means that a calculated value is more common.

A "theoretical" forest value can be calculated, and a common method used in New Zealand is the Net Present Value (NPV) approach through a discounted cashflow analysis. Future wood volumes are forecast based on underlying management and harvest strategies. Forecast log volumes (by grade) are multiplied by current log prices to give forecast value. Costs are subtracted to give future net cashflows, which are discounted to give forest value. Generally the result is on a per-hectare basis, so the accuracy of a forest's area statement is critical.

The calculated value method is a workable (and accepted) system in New Zealand as there is relatively high transparency in management regimes (and their associated costs) and in log prices. One difficulty is the choice of discount rate, which often causes debate among forest valuation practitioners. Discount rates in the range of 7.5% to 9% are common in New Zealand.

Other “forest goods and services”.

Statistics New Zealand, in association with the Ministry for the Environment, is currently preparing stock and flow estimates for five of New Zealand’s significant natural resources: forestry, fishing, water, land and subsoil resources. Technically, the physical estimates are referred to as natural resource accounts, while the monetary estimates are referred to as environmental accounts. However, these terms are often used interchangeably. The initial impetus to begin compiling natural resource and environmental accounts came about as a result of policy decisions in 2000, when it was decided that more information was required on complex relationships between the economy, environment and society.

The forestry accounts are based on an international framework called the System of Environmental and Economic Accounts (SEEA). This framework is an extension of the System of National Accounts (SNA), which Statistics New Zealand uses to compile the national accounts, including Gross Domestic Product (GDP). The SEEA is designed to measure the use of natural resources and the resulting effects on the environment. The forestry account utilises SEEA to focus on the stocks and flows of the forestry resource from an environmental and economic perspective.

The release of natural resource and environmental accounts reflects an international trend towards compiling information beyond the traditional measures of economic activity. The accounts reflect the view that the environment has a finite capacity to supply materials and absorb wastes. This environmental information is collected under a framework that allows for adjustments to conventional measures of GDP to reflect environmental degradation and depletion. Existing measures of GDP do not currently account for the degradation and depletion of environmental assets. For example, if all of New Zealand's native forests were commercially harvested, GDP would increase due to an increase in the output of the forestry industry. However, the loss of the asset and therefore of any future production (due to this depletion) is not accounted for³. Regardless of whether the information is used to adjust GDP⁴, the accounts provide an important record of the state of the resource over time, and its significance to the New Zealand economy.

Market data and information

The amount, scope, or quality of market data and information for wood and non-wood forest products and their substitutes.

New Zealand has a comprehensive set of production forestry statistics, some dating back to the 1920s. These statistics cover forest planting, harvesting, production, processing and trade in forestry products. The Ministry of Agriculture and Forestry (MAF) produces about 40 detailed forestry statistical releases each year, available in hard copy and on MAF’s website. These releases cover the production of forestry products, forestry trade, employment, and roundwood removals (harvesting). The statistical releases produced include:

³ New Zealand’s native forests are sustainably managed at present, so in practice the forestry account does not include any depletion estimates. Depletion estimates are normally produced as part of the stock accounts (and can be derived on a physical or monetary basis).

⁴ To date, no country has produced an official fully adjusted GDP using the SEEA framework.

Annual production surveys

These are annual postal surveys of sawmilling, pulp and paper production and panel products. The surveys cover the production of the main forestry products, mill capacities, fibre supplies and known mill expansion plans.

Quarterly production and stock level surveys

These are also national postal surveys of sawmilling, pulp and paper production, and panel products. The surveys are designed to estimate production of outputs and stock levels at the end of each quarter.

Roundwood removals

Using the results from the annual and quarterly surveys of production described above and using log export volumes from Statistics New Zealand, MAF calculates roundwood removals (i.e. harvesting) by using roundwood conversion factors.

Employment in forestry and wood processing activities

MAF compiles total New Zealand employment in forestry and wood processing activities from statistical information supplied by Statistics New Zealand.

Trade in forestry products

MAF prepares a series of compilations on forestry exports and imports using detailed trade data supplied by Statistics New Zealand. This work results in several *Statistical Releases* for logs, woodchips, sawn timber, plywood, particleboard, fibreboard, chemical pulp, mechanical pulp, and miscellaneous wood products.

MAF also collects information on log prices from a range of contacts in the forestry industry and publishes them on the MAF website quarterly. A number of generic log grades are used to represent the overall log market. For the export market these are Pruned, A (Japan), J (Japan), K (Korea) and pulp grades. For the domestic market these are pruned (P1, P2), unpruned (S1, S2, L1 & L2, S3 & L3) and pulp.

There is a range of market information on domestic prices for a variety of wood products such as lumber, wood panels and mouldings, etc. Price information for wood products in New Zealand's export markets is available from in-market sources. Generally, information on export and domestic prices is collected by trade organisations, and is usually available through subscription.

Economic and policy instruments

Use of economic and policy instruments to facilitate progress toward sustainable forest management (these may include improved tax policies and forest revenue collection systems).

The principal national policy instrument supporting sustainable resource use in New Zealand (and indigenous and exotic forests are, in this regard, classed as resources, along with soil, water, minerals, and others) is the RMA, assisted (for forestry) by the Forests Act and the Conservation Act among others. Other policy instruments, such as those governing business, are generic in nature (like taxation, labour, etc). These contribute to the environmental and social legs of the three-legged stool of sustainability.

The New Zealand planted forest industry is mostly privately owned, entirely market driven and the government does not provide direct assistance or incentives. This encourages the free flow of capital and unhindered private sector investment, within the bounds of existing legislation. Forest products are traded on a competitive global market, with domestic prices being in parity with export returns. These aspects contribute to the economic leg, and have a large bearing on the social leg.

The government sees its primary role in the productive sectors as providing a macro economic environment that encourages private business development and opportunities for expansion in a sustainable manner. In this, production forestry is seen as “just” another business, to be treated (as far as is feasible) in the same way as other businesses, “without fear or favour”. While the government has of late adopted some assistance instruments, for example through its Ministry of Economic Development, they apply to all sectors, and forestry participants seeking such assistance are measured against participants in other sectors.

New Zealand does not have (or see the need for) tax policies specifically addressing sustainable forest management. Some local councils have (and others are considering) policies providing relief from rates (locally applied property taxes) for areas set aside under covenants for conservation purposes. There are some provisions that allow some production plantation establishment costs to be deducted from other taxable income, thereby reducing tax liability. This can encourage investment in planted forests. These provisions are, however, under review as they can be seen as inequitable vis-à-vis other land use investments.

The only direct economic instrument used in New Zealand for directly promoting SFM is applied through the East Coast Forestry Project. This aims to encourage sustainable land management on severely eroding lands that are predominant throughout the East Coast of the North Island by encouraging the regeneration and retention of existing indigenous forest and the establishment of planted forest (on approximately 60,000 hectares). Financial incentives are available for projects under this work, but they are still awarded on a contestable basis (that is, contestable against other projects under the scheme).

Factors affecting market and trade

Efforts to reduce negative impacts of trade.

As a country heavily dependent on trade, New Zealand is fully committed to the liberalisation of the multilateral trading system. New Zealand also recognises that strong protection of the global and national environment is necessary to maintain a natural resource base in order to ensure long-term economic vitality. New Zealand strongly supports multilateral efforts to make trade and the environment mutually supportive. New Zealand's position is based upon the principles endorsed by the international community at UNCED and successor fora and enshrined in relevant trade agreements.

Trade liberalisation is consistent with, and a necessary complement to, New Zealand's market-led domestic economic reforms of the past decade. The free-market philosophy is based around the concept that when firms and people are completely free to buy and sell goods and services, those goods and services will, all other things being equal, be allocated to those who value them most highly. Similarly, a non-discriminatory trade policy will assist achievement of sustainable forest management by helping to ensure forest resources are appropriately valued.

The Doha ministerial declaration commits WTO members to negotiate the reduction, or where appropriate, elimination of tariff barriers (including tariff peaks, high tariffs, and tariff escalation) and non-tariff barriers to trade in non-agricultural products (which includes forestry). Agreement on the framework for the negotiation is expected by 31 May 2003 with the negotiations to be concluded by 1 January 2005.

The removal of forestry tariffs and non-tariff barriers (NTB) is a high priority for New Zealand negotiators. New Zealand is advocating the elimination of all remaining tariff and non-tariff barriers. It is estimated that New Zealand forestry exporters pay in excess of NZ\$40 million annually in tariffs. Quantifying the trade distorting effects of non-tariff barriers is more difficult, but it is much larger than that for tariffs. A primary focus of work on reducing NTBs will be Asian building standards.

Negotiations to date have focussed on how countries will remove tariffs. New Zealand negotiators anticipate the use of a general tariff reduction formula supplemented with sectoral agreements and bilateral negotiations to speed up trade liberalisation. New Zealand is actively pursuing the formation of a forestry group within the negotiation to give due attention to forestry issues.

In terms of its domestic forests New Zealand does operate a differential export policy in relation to its planted and indigenous forests. No quantitative restrictions are placed on the export of wood products (including logs) produced from planted forests. For conservation reasons, however, exports of logs, woodchips and (in the case of some species) sawn timber produced from indigenous forests are prohibited. There are no restrictions on the export of finished products manufactured from indigenous timber, bearing in mind that indigenous timber can only be produced under the sustainable forestry provisions of the Forests Act.

Certification

Participation in forest certification and labeling schemes and work toward mutual recognition and comparability of such schemes.

Certification of forest management and labelling of forest products is a growing phenomenon world-wide. Increasingly timber traders and their customers are demanding environmentally sound products. Certification provides consumers with a guarantee in the form of a written certificate from an independent third party that the products come from well-managed forests. Environmental NGOs and the industry are using certification to reach environmental goals through market initiatives. The main focus for companies seeking certification is market acceptance and market access.

Around the world there are now five key certification systems operating. These are the internationally used ISO 14001 Environmental Management System, and the Forest Stewardship Council (FSC) label; and three "regional" initiatives - the Pan European Forest Certification (PEFC), the American Forest & Paper Association's Sustainable Forestry Initiative (SFI) and the Canadian Standards Association (CSA) National Sustainable Forest Management System Standard. The rapid adoption of such schemes show the importance placed by the forest industry on certification as a marketing tool.

Currently, over 600,000 hectares (about one third) of New Zealand's planted forest area has Forest Stewardship Council (FSC) certification, with another 17% under evaluation. In

addition about 600 hectares of private production indigenous forest has FSC certification with an additional 12,000 hectares under evaluation.

In May 2001, a New Zealand National Initiative to develop forestry management performance standards for third-party audit and certification was launched. This was organised by Greenpeace New Zealand, New Zealand Forest Industries Council, New Zealand Forest Owners Association, Royal Forest & Bird Society and WWF New Zealand and involved industry and non-industry stakeholders from economic, social, environmental and Maori groups. Industry representation came from both the plantation and indigenous forestry sectors.

A draft *National Standard for Plantation Forest Management in New Zealand* (the Standard) has been prepared following the guidelines set out in the FSC National Initiatives Manual. However, they are designed for use under other certification authorities as well as FSC. The purpose of the Standard is to provide a system to enable third party verification of forest management practices to an acceptable standard recognised by international wood products markets. FSC is one such scheme, but forest managers may use these standards for certification under other authorities.

The draft Standard has been released for public comment, with submissions closing on 7 March 2003.

Illegal trade

Efforts to reduce illegal trade (exports from or imports into your country) in wood or non-wood forest products.

Standards of forest harvesting and management in New Zealand are enforced under the RMA through rules set out for production forest under local government council-administered regional and district plans. Rules set environmental standards to ensure water, soil or landscape protection, and for conservation for specific reasons which may restrict the area or methods of forest management harvest or associated road development. Prosecution for illegal logging from the Government's conservation estate is through the Conservation Act. Prosecution for illegal commercial production based on timber taken from any indigenous forests is through the Forests Act.

The New Zealand Government has identified that measures may be needed to strengthen timber provisions of its procurement policy, working together with the initiatives of timber importers and environmental groups. This is in conjunction with the Government's active participation in international discussion about sustainable forest management.

The New Zealand Imported Tropical Timber Group (ITTG), with representatives from timber importers, timber retailers and environmental NGOs was formed in 1991. The ITTG has established a task force to actively seek sources of sustainably managed tropical timber. Also, through its membership, and a Charter of Understanding, the ITTG is promoting a number of key goals related to timber imports:

- to ensure that all tropical timber imported into New Zealand is sourced from certified sustainably managed forests;
- to agree on certification procedures that provide purchasers with a reliable assurance of the sourcing of the product from sustainably managed forests;

- to seek understanding of and common ground between members of the Group on the key issues underpinning both the tropical timber trade and management of tropical forests.

In 1998 the G-8 countries initiated an "action program on forests" which included a strong focus on the illegal logging problem. Following the G-8 example, the World Bank, US Department of State and UK Department of International Development initiated a joint action to address the illegal logging issue in East Asia. This led to the Forest Law Enforcement and Governance (FLEG) East Asia Ministerial conference in Bali in September 2001.

New Zealand fully supports the G8 initiative. Illegal logging is a serious threat to the sustainability of global forests.

New Zealand is participating in the FLEG process, both directly and through being an active member of the ITTO, which also participates in FLEG.

FOREST HEALTH AND PRODUCTIVITY

New Zealand is an isolated island nation. Although it is free of many serious pests and diseases present overseas, its biosecurity systems are under pressure because of growth in international trade and travel. A number of species deliberately or unintentionally introduced in the past have subsequently become pests that are costly to manage. To cope with these threats, the government is funding the development of a Biosecurity Strategy.

The Biosecurity Strategy will:

- set an overall direction for biosecurity
- identify areas of priority for biosecurity programmes
- apply to primary production (agriculture, horticulture, forestry), public health, and indigenous terrestrial, marine and freshwater environments
- provide guidance to all involved in biosecurity
- raise public awareness and understanding of biosecurity.

Biosecurity is of major significance to New Zealand planted forests. A number of potentially extremely harmful insects and pathogens occur overseas. For example, Chile's pine forests suffer from widespread damage from the European pine shoot moth, causing major economic losses.

The Biosecurity Authority (part of the Ministry of Agriculture and Forestry) manages border control and other biosecurity processes. New Zealand has an excellent track record of interception or eradication of such pests, for example the white-spotted tussock moth. However, eradication will not always be possible or feasible.

New Zealand's planted forests are relatively healthy, and the few pests that have caused problems have so far been manageable. Despite this, the influx of new pests and diseases will doubtless continue and pose more and new problems. Except for rare catastrophic events, wind and fire have generally not been a large problem, and long-term trends do not indicate any worsening.

The Department of Conservation (DoC) has initiated a programme (called BioWeb) to develop integrated species management databases of distribution and abundance of all species of interest, including pests and protected species.

Introductions of alien pests have caused some problems in planted forests in the past, and such biosecurity issues could potentially become very important if any of the most destructive pests of radiata pine, for example, would establish in New Zealand. The surveillance effort relating to this threat (and recording of relevant data) undertaken for planted forests is much more comprehensive than that for indigenous forests.

Forest health surveillance surveys (in New Zealand these are essentially pest detection surveys) are regularly carried out across the planted forest estate. These surveys were initiated in 1956, and today include both ground-based and aerial surveys.

Introduced animal pests

A major forest health problem (especially in indigenous forests) is the introduced Australian brushtail possum (*Trichosurus vulpecula*), commonly referred to as the “possum”. The possum is distributed throughout mainland New Zealand. It has been estimated that there are as many as 70 million possums in New Zealand.

Possums are a pest because, being an arboreal herbivore, they feast on over 100 species of New Zealand’s indigenous flora. They eat the leaves, fruit and flowers of these plants and a single possum will eat about 300g of vegetation per night.

The possum is not entirely herbivorous, and also preys on the eggs of birds, including the endangered kokako, and other invertebrates. It also competes with indigenous birds for food, and so lessens the food supply of the birds. Additionally, possums carry the bovine strain of tuberculosis, contributing largely to the spread of tuberculosis to both cattle and deer⁵.

Disease

Economic losses owing to exotic forest pathogens are estimated to cost approximately \$87 million per annum. *Cyclaneusma minus* and *Dothistroma pini* are the most damaging pathogens. Opportunity costs caused by reduced tree growth are estimated at around \$51 million per annum and \$24 million per annum respectively⁶.

Possibly the most significant pathogen not yet in New Zealand is *Fusarium circinatum* (formerly *Fusarium subglutinans* f.sp. *pini*), the agent that causes the pitch canker disease of pines. In California, this pathogen causes much mortality of radiata pine and other pines, and it has the potential to cause major damage to New Zealand’s planted forests if it became established here.

Insect pests

Established insect pests are currently not of great concern to the major planted species (radiata pine and Douglas-fir). Eucalypts and acacias are generally more affected by insect pests, primarily because of the proximity to Australia, where species in these genera originate. However, the area of eucalypts and acacias in New Zealand is relatively small, and while being significant to some growers specialising in these species, insect problems are not of major importance⁷.

⁵ New Zealand’s 2003 report to the Montreal Process.

⁶ Ibid

⁷ Ibid

MAINTAINING FOREST COVER TO MEET PRESENT AND FUTURE NEEDS

Before the first Maori settlers arrived in the 13th Century, it is estimated that 75% to 80% of New Zealand's 27 million hectares were covered in indigenous forest. The rest of the land was unsuitable for forest growth, being too wet, too high or too dry.

Early Maori settlement involved extensive burning-off of forest. Fire was used to encourage growth of bracken fern that was part of the staple diet for Maori. As a result, extensive areas in the drier eastern half of New Zealand had the land cover modified from forest to bracken and tussock grass. Deforestation appears to have ceased after 1600, although large areas of regenerating forest and scrub continued to be burned.

By the time that European settlement had begun to intensify in 1840, the forest cover had fallen to about 50% of the land area. Today, 23% of New Zealand remains under indigenous forest. Much of the forest decline occurred between 1880 and 1930, while New Zealand's strong agriculture-based economy was being developed.

New Zealand's forest cover has started to increase. Reversion of abandoned farmland to scrub and forest is causing a significant increase, and the area of planted forest area is expanding. The provisional estimate of new forest planted in winter 2002 (May to August 2002) is 23,200 hectares and restocking of harvested areas approximately 38,600 hectares⁸. The average annual area of new planting from 1991 to 2002 is 52,000 hectares.

No estimates are available of the net level of vegetation clearance for land uses other than for planted forest. Reversion to scrubland of marginally economic hill farmland, mainly in the North Island, has been particularly evident since the restructuring of the New Zealand economy in the mid-1980s. During this period the removal of agricultural assistance to farmers fell from an average 25% of the value of agricultural production in the period 1979-1986, to 3% in 1992. Anecdotal evidence indicates that significantly more land is reverting to scrubland cover than is being cleared of such vegetation.

The influence of legislation (particularly the Forests Act and the Resource Management Act) and the voluntary Forest Accord⁹ ensure that indigenous forest is not cleared to plant exotic production forest.

New Zealand understands the pressure that forests face because it has experienced similar issues in its relatively short history from past exploitative use for forestry products and the clearance of land for agricultural purposes. Fortunately for New Zealand this process has been halted. But it has taken many decades to introduce policies, to set in place legislation, to change management practices and to give effect to the political will to set a sustainable development course. The model New Zealand has chosen may not be suited to other countries – each faces its own unique set of circumstances and pressures. However, the consequences of not acting are well known. In the case of New Zealand it was recognised early enough that the path being followed was not sustainable, and it is perhaps fortunate to be in a position to consider future land use and forest management options to avoid exhausting a finite resource.

⁸ In New Zealand, most (estimated at around 98%) plantation forest harvested each year is restocked and retained as production forest. This is generally done in the winter following the completion of harvesting, but may carry over into the second winter.

⁹ See footnote 1.

OTHER INFORMATION AND EMERGING ISSUES

One of the most significant issues to affect New Zealand forest policy and operations, at least since the privatisation process of the late 1980's and 1990's, is New Zealand's ratification of the Kyoto Protocol.

After wide consultation the Government developed a package of climate change measures for implementation between 2003 and the end of the first commitment period in 2012. This policy package has been generally accepted as providing practical and transitional solutions, allowing the economy time to adjust to a new greenhouse gas constrained world. As a result, most major industries, including the forestry sector, are now working closely with the Government to formulate details of the policy measures and discuss implementation.

New Zealand is in the fortunate position of having substantial forest sink credits, which will help meet its Kyoto Protocol obligation. These credits are allocated to the Government, which has decided to retain them as it considers this will create the best overall value for New Zealand.

A summary of the key components of the package is as follows.

- Government retention of forest sink credits and their associated harvest liabilities. For most forest owners this essentially means forestry will continue as usual.
- A carbon charge on emissions will be introduced in mid-2007 to approximate the world price for emissions, but it will be capped at NZ\$25 per tonne of CO₂ equivalent.
- A Projects Mechanism will be introduced to encourage investment in projects that deliver defined reductions in greenhouse gases over the first commitment period.
- Firms whose competitiveness could at risk as a result of ratification, including existing, expanding and prospective new firms, will be able to negotiate agreements with the government to protect their competitiveness while moving towards best practice in emissions management.
- There will be no charge on agricultural emissions of methane and nitrous oxide, which combined make up 55% of New Zealand's greenhouse gas emissions.

With relatively low-cost access to large supplies of sawmill and harvest residues, New Zealand's wood industry is well placed to take advantage of developments in uses of bio-fuels. The Projects Mechanism, plus other Government and industry development initiatives will therefore be of keen interest to existing and prospective wood processors and forest growers.

In addition, there is significant scope for more co-ordination between the Government's climate change policies and other Government and industry initiatives in the areas of wood processing and growth and innovation. Overall, the Kyoto Protocol has created a number of new and exciting opportunities for New Zealand's forestry sector.

III. Preparation of the Report