

National Standard for Certification of Plantation Forest Management in New Zealand

DRAFT N^o. 4.1

For Public Consultation

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1. Preface

1.1 The Forest Stewardship Council (FSC)

FSC is an independent, non-governmental, not for profit organization established to promote the responsible management of the world's forests.

It provides standard setting, trademark assurance and accreditation services for companies and organizations interested in responsible forestry. Products carrying the FSC label are independently certified to assure consumers that they come from forests that are managed to meet the social, economic and ecological needs of present and future generations. FSC maintains representation in more than 45 countries.

Forests provide us with clean water, fresh air, and help combat global warming. They also provide food, medicine and important natural resources, such as timber and paper. If managed responsibly, forests and plantations benefit forest people and the global community.

However, in some countries as much as 80% of the timber is harvested illegally. This often involves violation of human rights and felling of protected forests.

For further information, please visit: www.fsc.org

1.2 Standard Development Group

A National Initiative Working Group (NIWG) governed by a interim National Initiative commenced work on a National Standard for Certification of Plantation Forest Management in New Zealand in 2001. After one round of consultation the NIWG developed a second draft for consultation in 2003. However, the NIWG were unable to agree on some issues, primarily reserve contribution, and the NIWG was disbanded after the second consultation round. The second Draft was held in impasse until November 2009 when a group representing most plantation forest owners, major ENGOs, key social and Maori interests decided to form a Standard Development Group (SDG) and re-commence standard development in accordance with FSC procedures.

The SDG decided to commence using the second Draft and made a public announcement of intent in June 2010. The SDG is comprised of 2 representatives from four Chambers (Economic, Environment, Maori and Social), except that due to its diversity the Social Chamber has 3 representatives (with the voting rights of 2). See 4.2 for the membership of the SDG.

To ensure a balanced approach an independent facilitator was engaged. The SDG has made its decisions by consensus, defined as general agreement in favour of a proposal, plus the absence of a sustained objection to the proposal.

The SDG develop a draft which was forest tested in August 2010, and this version (Forest Tested Draft) is the result of amendments made by the SDG following the forest testing.

1.3 FSC Approval

FSC advised (on 16 September 2010) that the NZ SDG is registered, along with the standard development process that was submitted in accordance with FSC-STD-60-006. FSC have also advised that standards submitted before the end of 2010 will be considered for approval without having to review with changes from the Principles and Criteria Review. They will then be subject to the same review process as existing approved standards.

2. Introduction

2.1 Purpose

This standard sets out the required elements against which FSC accredited Certification Bodies shall evaluate forest management practices within the given scope of the standard.

The FSC Principles and Criteria for Forest Stewardship (February 2000) provides an internationally recognized standard for responsible forest management. However, any international standard for forest management needs to be adapted at the regional or national level in order to reflect the diverse legal, social and geographical conditions of forests in different parts of the world. The FSC Principles and Criteria therefore require the addition of indicators that are adapted to regional or national conditions in order to be implemented at the **management unit** level. The FSC Principles and Criteria together with a set of such indicators accredited by FSC constitute an FSC Forest Stewardship Standard.

This standard follows the requirements of FSC-STD-20-002 Structure and content of forest stewardship standards (November 2004) and FSC-GUI-60-004 (v1-0) EN FSC Forest Stewardship Standards: structure, content and suggested indicators to improve consistency and transparency in certification decisions between different certification bodies in the region/nation and in different parts of the world, and thereby to enhance the credibility of the FSC certification scheme as a whole.

2.2 Scope

This standard is applicable to all plantation operations seeking FSC certification within New Zealand.

3. Version of the Standard

3.1 Version

Current: Draft 4.1 Forest Tested Draft National Standard for Certification of Plantation Forest Management in New Zealand; September 2010

Past: Draft 1.1: December 2002
Draft 2.1 for consultation: November 2003
Draft 3.1 for Forest Testing: August 2010

Next Anticipated: SDG Approved Version for FSC International Endorsement: December 2010

3.2 Statement by the Standard Development Group

The draft National Standard for Plantation Forest Management is intended for use by **forest managers** and certification bodies in New Zealand. The Standard has been designed to stand alone and not require supporting documents. However there are several links to documents that provide guidance for **forest managers**, stakeholders and auditors. These documents are listed in section 4.4.

There are a number of areas within the Standard that require further attention. These include reserve areas and pesticides. The intention for addressing these issues is to establish a governing National Initiative (NI) that will establish a Chemical Standing Committee (CSC) for pesticides and review alternative method proposals to meet the 10% reserve set aside benchmark.

The Chemical Standing Committee will be appointed by the National Initiative with at least one representative from each chamber with the objectives of:

1. Optimising communication between the chambers on matters relating to the use of chemicals in FSC forests, including the derogation processes.
2. Annually reporting to the NI on the activities of the Chemical Standing Committee
3. FSC international to have confidence in NZ national initiative

See Annex 6.2 for the CSC Functions and Process.

3.3 Appropriate to the scale and intensity

In many Criterion FSC make allowance for scale and intensity. In this Standard this has been differentiated in most cases by providing different indicators, verifiers and guidance for SLIMF (see glossary) forests.

For each Criterion a number of Indicators are listed. Where indicators are simply numbered, with no additional letter (e.g. Indicator 1.1.1), the indicator is intended to be applicable to all sizes and types of forest and plantation. An Indicator's number followed by a letter "L" makes it only applicable to large forests, and a letter "S" refers to indicators only applicable to SLIMF's.

3.4 Principles and Criteria, Indicators, Verifiers and Guidance.

The standard follows the FSC Principles and Criteria and for each Criterion there are Indicators and in many cases Verifiers and Guidance as described below:

1. Principles and Criteria

The Standard includes the FSC Principles and Criteria. These are depicted in bold and cannot be changed. Principles are an essential rule or element in FSC's case of forest stewardship. Criteria are a means of judging whether or not a Principle has been fulfilled.

2. Indicator

A quantitative or qualitative variable which can be measured or described, and which provides a means of judging whether a **management unit** complies with the requirements of an FSC Criterion. Indicators and the associated thresholds thereby define

the requirements for responsible forest management at the level of the **management unit** and are the primary basis of forest evaluation.

3. Verifier

A potential source of information that allows an auditor to evaluate compliance with an indicator. Means of verification are not normative and the certification body may justifiably use alternatives to those listed. The **forest manager** does not necessarily have to meet each verifier to obtain certification.

4. Guidance

Similar to a verifier, but written to primarily guide the auditor on the intent of an indicator or verifier.

4. The New Zealand Context

4.1 The Geographic Area Covered by the Standard

This Standard is intended for application to plantation forests throughout New Zealand.

4.2 The Standard Development Group (SDG)

The standard was prepared by the Standard Development Group (SDG) in accordance with **FSC-STD-60-006**. The members are:

Chamber	Representative
Economic	Colin Maunder (Project Coordinator) Brett Gilmore Sally Strang (Alternate)
Environmental	Bill Gilbertson Gordon Jackman Kevin Hackwell (Alternate)
Maori	George Asher Tina Porou
Social*	Jacob Kajavala Andrew McEwen Hugh Barr Euan Mason (Alternate)

- Gay Pavelka serves as facilitator for the SDG
- Also note that Rhys Millar attended SDG meetings to provide advice on SLIMF issues and interpretations.

*Due to the diverse interests within the Social Chamber the SDG agreed to 3 members of this chamber on the SDG with the equivalent vote of 2 members.

4.3 Key Consultants and Advisors to the SDG

Consultants used in developing the standard are listed in the following table.

Consultant	Topic
Bill Dyck	2001 – 2003 NIWG Facilitator
Gay Pavelka	SDG Facilitator
Geoff Cameron – SGS Qualifor	Forest Testing Audit
Jerzy A. Zabkiewicz – Forest Research	2001 - 2003 Pesticide reduction

Also in accordance with FSC procedures five expert groups were established to provide recommendations to the SDG on key issues. Each group included a member of the SDG to facilitate progress and feedback. The following table lists members of the expert teams by issue.

Name of Expert Team	Member	Organisation
Reserve Contribution	Grant Rosoman Bill Gilbertson Colin Maunder Sally Strang Rhys Millar George Asher	Greenpeace Forest and Bird Timberlands Limited Hancock Farm Forestry Association Lake Taupo Forest Trust
Chemicals	Gordon Jackman Kevin Hackwell Kit Richards John Hura Hugh Barr Euan Mason Colin Dunstan Ron Reid	Greenpeace Forest and Bird PF Olsen NZ Forest Managers Council of Outdoor Recreation Associations School of Forestry NZ Forest Managers Hancock
Conversions – Natural to Plantations	Bill Gilbertson Tina Porou Geoff Thorp	Forest and Bird Ngati Porou / Ngati Whakaue Lake Taupo Forest Trust
Conversions – Plantations to Farm	Jacob Kajavala Sally Strang Collier Isaacs Kit Richards	Forest Industries Contractors Association Hancock Landcorp Farming Ltd PF Olsen

Name of Expert Team	Member	Organisation
SLIMF	Grant Rosoman Kevin Hackwell Bill Gilbertson Pat Milne Rhys Millar	Greenpeace Forest and Bird Forest and Bird Farm Forestry Association Farm Forestry Association

Note the bolded person is the Coordinator of the Expert Group

4.4 List of Publications Referred to in the Standard

FSC Publications

- FSC-GUI-60-004 V1 0 *Template for the structure and content of FSC Forest Stewardship Standards*
- *FSC STD 01 001 V4 0 EN FSC Principles and Criteria*
- FSC-STD-60-006 Procedure for the development of Forest Stewardship Standards
- *FSC STD 20 002 V2 1 EN Structure and Content Forest Stewardship Standards*
- *FSC STD 01 003 V1 0 EN SLIMF Eligibility Criteria*
- FSC-GUI-60-100 *Guidance on the interpretation of the FSC Principles and Criteria to take account of scale and intensity*
- *FSC POL 30 401 EN FSC certification and ILO Conventions 2002*
- *FSC GUI 30 001 V2 0 EN FSC Pesticides Policy Guidance 2007*
- *FSC POL 30 001 EN FSC Pesticides policy 2005*
- *FSC PRO 01 004 V2 1 EN Processing pesticide derogation applications*
- *FSC POL 30 602 EN FSC GMO Policy 2000*
- *FSC ADV 30 602 EN Conversion of plantation to non forest land*
- *FSC ADV 30 901 EN Interpretation of Criterion 9*
- FSC Controlled Wood (FSC-STANDARD-30-010)

Other

- New Zealand Forest Accord 1991
- NZS8409:2004 Code of Practice for the Management of Agrichemicals
- Department of Labour’s Safety and Health in Forestry Operations Code of Practice and Best Practice Guidelines
- United Nations Conference on Environment and Development 1992
- Wellington Airport Case
- Ecological Regions and Districts of NZ (W.M McEwen)
- The New Zealand Protected Natural Areas Programme, Kelly and Park, 1986
- Principles for Commercial Plantation Forest Management in New Zealand, 1995
- NZ Environmental Code of Practice for Plantation Forestry.
- IUCN Red List of threatened species
- N.Z. Threat Classification system (2005)
- ICOMOS New Zealand Charter, 1993

4.5 Acknowledgement of Support

This standard has been developed with the much appreciated financial support of the following:

- NZ Forest Owners Association
- Sustainable Farming Fund

The in-kind contributions from members of the SDG and Expert Teams, while unquantifiable, has been significant and also much appreciated.

The SDG also acknowledge the efforts of the NIWG that developed the 2003 draft used as the starting point for this Standard.

5. Hierarchical Structure

The hierarchical framework implements the basic principles described in the introduction to the FSC Principles and Criteria for Forest Stewardship (February 2000).

5.1 FSC and FSC-accredited certification bodies will not insist on perfection in satisfying the FSC Principles and Criteria.

5.2 Major failures in any individual FSC Principle will normally disqualify a candidate from certification, or will lead to decertification.

5.3 Certification decisions will be guided by the extent to which each FSC Criterion is satisfied, and by the importance and consequences of failures.

6. Annexes

6.1 Prohibited Pesticides

Name of chemical	Reason for prohibition (cf. section 4)
[aluminium phosphide aldicarb aldrin benomyl	Toxicity similar to sodium cyanide. WHO Table 7 WHO Table 1, Class Ia CHC Persistence: 6 - 12 months. Toxicity: LD50 100 mg/kg, LC50 60 - 140 microg/l. Mutagen
bromadiolone	WHO Table 1, Class Ia. Permitted for control of rodents in Chile, when they are vectors of Hantavirus transmission, in houses and camps.
carbaryl chlordane	Toxicity: LD50 of 100 mg/kg in mice Organochlorine. Persistence: half-life of 4 years. Toxicity: oral LD50 in rabbits approx. 20-300 mg/kg.
DDT	CHC
diazinon	Toxicity: 0.0009 mg/kg/day. LD50 2.75 - 40.8 mg/kg.
dicofol	Persistence: 60 days. Biomagnification: log Kow 4.28.
dieldrin	CHC
dienochlor	Organochlorine. Toxicity: LC50 of 50 microg/l in aquatic environments.
difethialone	WHO Table 1, Class Ia. Permitted for control of rodents in Chile, when they are vectors of Hantavirus transmission, in houses and camps.
dimethoate endosulfan	Toxicity: RfD 0.0002 mg/kg/day. LD50: 20 mg/kg in pheasants.
endrin	Organochlorine. Toxicity: LD50 much less than 200 mg/kg in several mammals. RfD 0.00005 mg/kg/day
gamma-HCH, lindane	Organochlorine. Persistence: half-life >100 days. Toxicity: LD50 <200 mg/kg. Biomagnification high in fish.
heptachlor	CHC
hexachlorobenzene	Organochlorine. Persistence: half-life 250 days. Toxicity: LD50 100-220 mg/kg in rats, 30-68 mg/kg in mice. RfD 0.005 mg/kg/day. Biomagnification: Log Kow 5.44.
mancozeb	WHO Table 1, Class Ia.
methoxychlor	Toxicity: RfD 0.003 mg/kg/day Persistence: half-life 60 days. Toxicity: RfD 0.005 mg/kg/day.
metolachlor	LC50 <0.020 mg/l for trout
mirex	Biomagnification: log Kow 3.45 Organochlorine. Persistence: half-life > 100 days. Toxicity: LD50 50-5000 mg/kg. Carcinogen. Bioaccumulation high.
oryzalin oxydemeton-methyl, Metasystox	Persistence: Half-life 20-128 days. Toxicity: LD50 100 mg/kg in birds WHO Table 2, Class Ib
oxyfluorfen	Toxicity: RfD 0.003 mg/kg/day Log Kow 4.47. (Goal, Koltar)
paraquat	Persistence: >1000 days. Toxicity: RfD 0.0045 mg/kg/day. Log
parathion	Kow 4.47
pentachlorophenol	WHO Table 1, Class Ia
quintozene	WHO Table 2, Class Ib
simazine 2,4,5-T	Organochlorine. Persistence: 1 - 18 months. Toxicity: high. Biomagnification: Log Kow 4.46
trifluralin	Toxicity: RfD 0.005 mg/kg/day Organochlorine. Toxicity: medium to high in mammals. Often contaminated with dioxin.

toxaphene (camphechlor) warfarin	Toxicity: RfD 0.0075 mg/kg/day. Log Kow 5.07. LC50 0.02 mg/litre. (under review, to be clarified) Organochlorine. Persistence: > 100 days, high. Bioaccumulation high. WHO Table 2, Class Ib. Permitted for use against exotic mammal pests of native forests, including grey squirrels in UK, by approved operators with approved traps
Pesticides containing lead (Pb), cadmium (Cd), arsenic (As), or mercury (Hg).	

In addition, the following chemicals are prohibited	
Amitrole	Carcinogen, groundwater contaminant, endocrine disruptor
Atrazine	Carcinogen, groundwater contaminant, endocrine disruptor, bioaccumulative
24D amine + Picloram	Carcinogen, mutagen, contamination with dioxin, endocrine disruptor
Cypermethrin	
Prochloraz	Carcinogen, endocrine disruptor, bioaccumulative, toxic to fish and bees
Metalaxyl-M	
Triclopyr as BE ester]	Organochlorine, possible carcinogen Highly toxic

6.2 Chemical Standing Committee (CSC) Functions and Process

1. Functions

1. Recommendations to FSC about what is /isn't appropriate in a local context
2. Review use and research
3. Information sharing
 - i. How much used
 - ii. What research
 - iii. History of past practice
 - iv. Economics
 - v. Regional variations
 - vi. Future risks and bio-security
4. Advocacy
 - i. Authorities
 - ii. Constituents
 - iii. FSC
5. Complaints/disputes
6. Derogations and new chemicals

2. Process

- a) NI appointed committee
- b) Chamber balance
- c) Terms of reference
- d) Membership

- a. recommended by each chamber
- b. Expertise in the field
- c. Two per chamber including a reserve
- d. Have a mandate from the chamber
- e. Can call in specialist advisors
- e) information sharing and pre-meeting disclosure
- f) Meeting frequency 1/yr and as needed for derogations and complaints
- g) Annual report
- h) CSC meeting responsibilities
 - a. Minutes
 - b. Reports
 - c. Updates
 - d. Finance
 - e. Research
 - f. Allocation of tasks
 - g. Forward planning
 - h. Derogations
 - i. New Chemicals
 - j. Agreement on statements to FSC/NI
 - k. Complaints/disputes

6.3 The 6 types of High Conservation Values

HCV1. Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia).

HCV2. Forest areas containing globally, regionally or nationally significant large landscape level forests, contained within, or containing the **management unit**, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.

HCV3. Forest areas that are in or contain rare, threatened or endangered ecosystems.

HCV4. Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control).

HCV5. Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health).

HCV6. Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

6.4 List of the multilateral environmental agreements and ILO Conventions

CITES – www.cites.org

ITTA - www.itta.com

Convention on Biological Diversity - www.biodiv.org/biosafety/protocol.asp

ILO – www.ilo.org/ilolex/english/convdisp1.htm

List of ILO Conventions that have an impact on forestry operations and practices:

- 29 Forced Labour Convention, 1930.
- 87 Freedom of Association and Protection of the Right to Organise Conventions, 1948.
- 97 Migration for Employment (Revised) Convention, 1949.
- 98 Right to Organise and Collective Bargaining Convention, 1949.
- 100 Equal Remuneration Convention, 1951.
- 105 Abolition of Forced Labour Convention, 1957.
- 111 Discrimination (Occupation and Employment) Convention, 1958.
- 131 Minimum Wage Fixing Convention, 1970.
- 138 Minimum Age Convention, 1973.
- 141 Rural Workers' Organizations Convention, 1975.
- 142 Human Resources Development Convention, 1975.
- 143 Migrant Workers (Supplementary Provisions) Convention. 1975
- 155 Occupational Safety and Health Convention, 1981.
- 169 Indigenous and Tribal Peoples Convention, 1989.
- 182 Worst Forms of Child Labour Convention, 1999.
- ILO Code of Practice on Safety and Health in Forestry Work (ILO 1998)
- Recommendation 135 Minimum Wage Fixing Recommendation, 1970.
- Conventions number 29, 87, 98, 100, 105, 111, 138 and 182 are Core Standards covered by the 1998
- ILO Declaration on Fundamental Principles and Rights at Work and its Follow-up. ILO member states are expected to promote and realize these principles, even if they have not ratified the Conventions.
- The ILO Code of Practice is not a legal instrument, but it provides authoritative guidance on forest work.

6.5 Relevant Public Acts

See <http://www.legislation.govt.nz/> for copies of the legislation:

- Resource Management Act 1991
- Historic Places Act 1993
- Conservation Act 1987
- Biosecurity Act 1993
- Forest and Rural Fires Act 1977
- Hazardous Substances and New Organisms Act 1996
- Health & Safety in Employment Act 1992
- Wildlife Act 1953
- Forests Act 1949
- Employment Relations Act 2000
- Treaty of Waitangi Act 1975
- Fencing Act 1978
- Wild Animal Control Act 1977
- Trespass Act 1980
- Crown Forest Assets Act 1989
- Soil Conservation and Rivers Control Act 1941
- Accident Compensation Act 2001
- Climate Change Response Act 2002
- Commerce Act 1986
- Companies Act 1993
- Conservation Law Reform Act 1987
- Co-operative Companies Act 1996
- Crown Minerals Act 1991
- Foreshore and Seabed Act 2004
- Forestry Encouragement Act 1962
- Forestry Rights Registration Act 1983
- Holidays Act 2003
- Income Tax Act 2007
- Injury Prevention, Rehabilitation, and Compensation Act 2001
- Land Act 1948
- Land Transfer Act 1952
- Local Government Act 2002
- Machinery Act 1950
- Maori Reserved Land Act 1955
- Minimum Wage Act 1983
- Misuse of Drugs Act 1975
- Native Plants Protection Act 1934
- Overseas Investment Act 2005
- Personal Property Securities Act 1999
- Plant Variety Rights Act 1987
- Public Works Act 1981
- Sale of Goods Act 1908
- Te Turi Whenua Maori Act 1993/Maori Land Act 1993
- Trade Marks Act 2002
- Transport Act 1962
- Walking Access Act 2008

[Note that there may be some legislation that applies to specific situations. For example some of the Treaty Settlement legislation has provisions that affect particular pieces of land (The Ngati Awa Claims Settlement Act 2005 has provisions relating to access over the forest land included in the settlement)]

6.6 List of Endangered Species

- IUCN Red List of threatened species
- N.Z. Threat Classification system (2005)

6.7 High Country tussock scrublands or herbfields as defined in MfE's LENZ publication

Environment E1

Environment E1 has a large geographic range occurring from inland Hawke's Bay to Nelson, Marlborough and Canterbury. The climate is cool with high solar radiation, high vapour pressure deficits and low annual water deficits. Slopes are higher than in the other Level II environments in E, reflecting the dominance of dissected hill landforms mostly with sedimentary rock parent materials but with small amounts of rhyolitic, basaltic and andesitic rock and/or ash, granite, and marble. Steep, dissected beds of coarse gravel (Moutere Gravels) are extensive in Nelson. Soils are well-drained and of moderate natural fertility.

Environment E4

This environment is quite widespread, occurring in inland valleys throughout Canterbury. The climate is generally cool with high solar radiation, moderate vapour pressure deficits and low annual water deficits. Parent materials for Environment E4 consist of greywacke alluvium with some loess, colluvium and till. Soils are generally well-drained and have high natural fertility.

Environment K1

Environment K1 comprises the greatest area (60%) and has the highest mean elevation of the Level II environment in K. It occurs along the upper headwaters of major rivers draining the eastern slopes of the Southern Alps, and on Mt Ruapehu. It is distinguished by its cool, wet climate with high solar radiation and slight annual water deficits. Well-drained soils are formed from greywacke gravels with andesitic tephra in the North Island and some loess in the South Island.

Environment K2

Environment K2 is much smaller in area and is restricted to high, intermontane valleys in inland parts of southern Marlborough and south Canterbury. This environment has a cool climate, with high solar radiation, high vapour pressure deficits and moderate annual water deficits. This environment has gently sloping soils formed from greywacke gravels and consequently the environment is well-drained and of high fertility.

Environment K3

Environment K3 has the lowest mean elevations in K and consists of narrow ribbons of recent soils along rivers and streams in the eastern ranges of south Canterbury and northern Otago. Climatically this environment is cool, with moderate solar radiation, moderate vapour pressure deficits and moderate annual water deficits. Soils are mostly formed from sands and gravels derived from greywacke and schist with some loess. They are well-drained, with moderate natural fertility.

Environment K4

Environment K4 is scattered through the intermontane basins of inland Canterbury with minor occurrences in Otago. The climate is cool, with high solar radiation, high vapour pressure deficits and low annual water deficits. Environment K4 occurs predominantly on areas of fine greywacke alluvium with minimal slope, and the resulting soils are very poorly-drained although highly fertile.

Environment K5

Environment K5 is the smallest Level II environment in K and occurs along river valleys in southern Canterbury and Central Otago. The climate is cool, with moderate solar radiation, moderate vapour pressure deficits and slight annual water deficits. Parent materials consist of either greywacke or schist alluvium with some loess. Soils are generally poorly drained and have moderate natural fertility.

Environment N5

Environment N5 is located on the plains near Ranfurly and Wanaka and north east of Alexandra. Scattered occurrences are found in the middle reaches of the Waitaki River. The climate is cool with moderate solar radiation, moderate vapour pressure deficits and high annual water deficits. Parent materials consist of colluvium and loess from greywacke and schist, and small pockets of calcareous Management Unitdstone. Soils are imperfectly drained and of moderate fertility. This environment includes small areas of saline soils.

Environment N6

Environment N6 consists of extensive glacial outwash material in the Waitaki Basin and alluvium extending downstream to Lake Benmore. Smaller areas occur in Central Otago. Climatically this environment is cool, with moderate solar radiation, high vapour pressure deficits and moderate annual water deficits. Parent materials consist of till, alluvium and loess derived from both greywacke and schist. Soils are well-drained and of high natural fertility.

Environment N7

Environment N7 consists of small areas of wetlands in the Upper Waitaki Plains and eastern parts of Central Otago. Climatically this environment is cool, with moderate solar radiation, high vapour pressure deficits and high annual water deficits. Parent materials consist of fine schist and greywacke alluvium with some small areas of loess. Soils are generally poorly-drained and of moderate natural fertility.

6.8 SLIMF Reserve Calculator

Explanatory Note to accompany the SLIMF Reserve Calculator

Background:

During the course of the development of the National Standard it was recognised that some Small Forest Growers - though implementing land management practices that are laudable and regionally recognised as environmentally enhancing – would not always be able to meet the demands of FSC Principle 6 and Principle 10, as the draft(3.1) New Zealand Plantation Standard stood at that time. As such, the NZFFA negotiated for greater flexibility in the **Reserve** contributions (Refer Criterion 10.5 below). The attached **SLIMF** Reserve calculator reflects the Standards Development Group's recognition of the role that small forests have to play in New Zealand's sustainable land management, whilst ensuring that the ecological integrity of the Standard is retained.

It has been recognised by the Standards Development Group that it is appropriate for Farm Foresters (a subset of Small Forest Growers) to use their whole properties to meet the **Reserve** requirements of Principles 6 and 10 of the Standard. That is, rather than simply assessing a farm's woodlots in isolation from the remainder of the farm, a whole-of-property approach is suitable when considering Reserves management.

Criterion 10.5: A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover

A minimum area of reserve set-asides equal or equivalent to 10% of the **management unit** by Ecological District (or ecosystem characterisation at a similar scale such as LENZ III) will be managed to be protected and/or restored to natural vegetation over time.

Discussion: Small Forest Calculator for Reserve Contribution

The accompanying Small Forest (**SLIMF**) calculator for reserve contribution outlines a number of potential methods in which a **management unit** can meet the Standard's requirement for a minimum of a 10% **reserves** set-aside (as outlined above in Criterion 10.5).

There are several points to consider when stakeholders are evaluating the **SLIMF Reserves** Calculator:

1. Multipliers are set in relation to the level of **indigenous** biodiversity and **ecosystem** protection and **restoration** that is gained through the specific category of **reserve** contribution. For example, **Reserve** Category 3a (Protection and Management of **very poorly represented ecosystems** (<1% of the original area of that **ecosystem** type remains)) has a Multiplier of X 3.0, reflecting the ecological importance of managing these very degraded **ecosystems**. Retaining representative **ecosystems** is a fundamental component of a healthy landscape, and the multiplier here recognises this.

In contrast, **Reserve** Category 8 (Alternative forest crop species apart from Radiata pine and Douglas-fir) has a much lower ecological value and as such has a 'negative' multiplier attached to it of X 0.1.

2. Three **management unit** size classes exist, being 0-40 hectares; 41-400 hectares and 401-1000 hectares. The smaller **management unit** size classes have greater flexibility in the methods by which the Standard's **Reserve** requirement is able to be met, reflecting the limitations that arise from small landholdings. As the **management unit** increases to 1000 hectares, the flexibility in method of **Reserves** contribution is reduced, becoming increasingly aligned with the **Reserve** requirements of the Large (non **SLIMF**) **management unit**'s.
3. The categories of **Reserve** contribution are sequential and hierarchical, with the highest value from the first three categories of **Reserves**. The first three categories (1a-1d, 2a-2b and 3a) all relate to the management and protection of existing **indigenous ecosystems** or of rare, threatened or endangered species. Positive multipliers are added when particularly rare or threatened **ecosystems** / species are being managed for.
4. Reflecting the objective of the criterion, **forest managers** need to try and manage for the first three categories before considering other Reserve categories. The ability of all three **management unit** size classes to meet the full 10% Reserve requirement through the first three categories reflects the ecological value of these three categories.
5. **Reserve** Category 4 (Restoration of representative **ecosystems**) involves restoration of an **ecosystem**, rather than protection and management of an existing **ecosystem**. The effort implied in such activity is reflected by its X 1.5 multiplier, but the ability to use this as a **Reserves** contributor reduces as the **management unit** size increases (refer Point (2) above).
6. **Reserve** Category 5 (Permanent **exotic** or mixed **native / exotic** riparian) has been incorporated into the **SLIMF** Reserve calculator to encourage protection of waterways and the associated in-stream values. Because waterways are being protected, the use of **exotic** forest is allowable and a X1.0 multiplier is attached. Note that only a proportion of the 10% of the **reserve** requirement can be met through this category.
7. **Reserve** Category 6 (Non harvestable permanent **exotic** or mixed **exotic / indigenous**) provides for shelterbelts or other 'permanent' forests which have been established for reasons other than for timber production. The permanency of these **Reserves** within the landscape ensures they have an environmental benefit, especially within agricultural landscapes. The low **indigenous** biodiversity value of these **reserves** limits the potential contribution to the total 10% **Reserve** target.
8. **Reserve** Category 7 (**Indigenous** species plantation and / or continuous cover forest management) recognises the environmental benefit provided by this low-impact,

biodiversity enhancing forest management practice. Harvesting is a part of managing these **reserves**.

9. **Reserve** category 8 (Alternative forest crop species, excluding short term coppicing for firewood) encourages a diversity of tree crops. Its low biodiversity value is reflected in the negative (X0.1) multiplier that is applied.
10. **Reserve** category 9 (Off-site **Reserves** contribution) provides for **management unit**'s that do not have the ability to meet all of the 10% **Reserve** target. Depending on the **management unit** size class, a proportion of the **Reserve** requirement is able to be met by association with other Members of a certified FSC Group Scheme. To retain the ecological integrity, the associated **Reserve** must be met within the same, or a neighbouring **Ecological District** that is within the same Ecological region.

The 0-40 hectare **management unit** s that have no potential to meet the 10% **management unit Reserve** target, due to the whole **management unit** being planted out in timber crop, have further capacity to meet their **Reserve** requirement by undertaking a redesign of the forest immediately following harvest. In this forest redesign, the **forest manager** must plan to meet the **Reserves** target through the categories outlined in the **SLIMF** reserve calculator.

11. Lastly, if **forest managers** believe they have an environmentally-credible way of meeting the **Reserves** target, but cannot meet it with the categories listed, they are able to present a case to the National Initiative. The National Initiative, charged with governing the National Standard, will determine whether alternative **reserves** contributors will satisfy the requirements of the National Standard.

For Small forests (less than 1000ha) the following can be used to calculate the reserves contribution as required under 10.5.1:

Small Forest (SLIMF) calculator for reserve contribution	For farm forestry management units, the reserve contributions can be from within whole farm area.	The requirement is to achieve 10% or equivalent of the MU in reserves or set asides.		
	Multipliers are set in relation to indigenous biodiversity and ecosystem protection and restoration gained through this reserve contribution. Categories of contribution are sequential and hierarchical with the highest value from the top and first three categories the goal. The MU only goes to the next category when it cannot meet their requirement from the previous categories.	However where requirements cannot be met within the MU, off site protection can be allowed as set out at the bottom. The “sliding to” refers to a graduated scale that applies across the limits of the MU size.		
		Management Unit Size		
		1 – 40 ha MU	41 - 400ha MU	401-1000ha MU
Type of Reserve	Additional Information			
1a) Protected and managed representative indigenous ecosystems 6.4	X 1 Multiplier	10%	10%	10%
1b) Protected and managed indigenous habitat for rare, threatened or endangered species.6.2				
1c) Protected and managed indigenous riparian or wildlife corridors 10.2				
1d) Waahi Tapu and historical sites with biodiversity status.				
2a) Protection and management of rare ,or poorly represented ecosystems (<5% of the original area of that ecosystem type remains in the	X 1.5 Multiplier	10%	10%	10%

<p>ED)</p> <p>2b)Protected indigenous habitat that contains rare, threatened or endangered species and is specifically identified and managed for that species under the provisions of 6.2</p>				
<p>3a)Protection and management of very poorly represented ecosystems (<1% of the original area of that ecosystem type remains) in the ED</p>	<p>x 3.0 Multiplier</p>	<p>10%</p>	<p>10%</p>	<p>10%</p>
<p>4)Restoration of representative ecosystems (6.4.4) or riparian</p>	<p>Where the remnants of an indigenous ecosystem remain or where an active indigenous ecosystem restoration programme is underway. The area is fenced, weed and pest control and active restoration has been undertaken for at least 2 years and is ongoing. X1.5 multiplier</p>	<p>10%</p>	<p>8% sliding to</p>	<p>0%</p>
<p>5)Permanent exotic or mixed native/exotic riparian (non harvest) Minimum width of 10m either side of waterway. (Allowance in this class is for up to 30m each side. Can be wider but has different multiplier-refer next category)</p>	<p>Alternative exotic or native species that will not be harvested. Managed for in-stream values and includes stock exclusion, weed and pest management and ecological viability assessment undertaken X 1.0 multiplier</p>	<p>5%</p>	<p>5% sliding to</p>	<p>1%</p>
<p>6)Permanent exotic or mixed exotic/indigenous (non harvestable)</p>	<p>Mixed alternative species plantings that will not be harvested but are not being restored to indigenous ecosystems. This may include multi-tier double row shelter belts, with double fencing .Management plans must detail what actions are being undertaken on these areas to ensure enhancement of indigenous biodiversity including pest control. X 0.5</p>	<p>2%</p>	<p>2%</p>	<p>0%</p>

	multiplier			
7) Indigenous Species Plantation and/or Continuous Cover Forest Management.(max coupe size 0.5ha)	Stock excluded, indigenous understory allowed to develop and pest control carried out x 0.5 multiplier	5%	5% sliding to	3%
8) Alternative forest crop species apart from Radiata pine and Douglas-fir. Excludes short term coppicing for firewood.	Stock excluded, understory allowed to develop and pest control carried out. Multiplier x 0.1	4% sliding	to	0%
9) Off-site Reserves contribution	<p>a) If the reserve contribution cannot be meet from the provisions above the MU reserve contributions can be associated as part of a group scheme within the same ecological district, or a neighbouring ecological district within the same ecological region.</p> <p>b) For 0-40 ha MUs that are fully planted with no opportunity until harvest for on-site restoration, they may have 10% off-site until harvest and onsite restoration as per categories above. Note that if the onsite restoration is not carried out per this provision then the second or future crops cannot be FSC registered.</p>	Max 8% of 10% min equiv contribution	Max 6% sliding to of 10% min equiv contribution	Max 3% of 10% min equiv contribution

7.1 Glossary

The objective of the Glossary is to define and/or explain terms used in this Standard whose meaning might not be clear or might be different from normal meaning.

ACC Partnership Programme	See www.acc.co.nz
Accredited Employer Scheme	See www.acc.co.nz
Active Restoration	Restoration of indigenous ecosystems involving actions which may involve planting or nurturing of indigenous plants
Applicable law	Includes applicable legislation as well as common law principles (e.g., legal principles related to contracts).
Appropriate to the scale and intensity	<p>The phrase ‘appropriate to the scale and intensity’ is used in Indicators and Verifiers to indicate to a certifying body that judgement is required in deciding the level of effort that can reasonably be expected from a manager in addressing a particular element of the FSC-NZ Indigenous Standard. The intent is to relate expectations to the manager’s resources, size of the Management Unit, and potential management impacts related to the specific element. Consideration should also be given to the significance of potential impacts of the management activities addressed, the sensitivity of values potentially affected, the reversibility of the potential effects and the relative importance of the values.</p> <p>An Indicator’s number followed by a letter “L” makes it only applicable to large forests and a letter “S” refers to indicators only applicable to SLIMF’s.</p>
Available	Available means available to the public so long as the information is not commercially sensitive and is requested during normal working hour and is accessible on a web site.
Biodiversity (biological diversity)	The variability among living organisms from all sources including, <i>inter alia</i> , terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems (United Nations Conference on Environment and Development 1992).
Biological control agents	Living organisms used to eliminate or regulate the population of other living organisms.
Forest manager	The people (including the owner/s where these are one and the same) responsible for the operational management of the forest resource and of the enterprise, as well as the management system and structure, and planning and field operations. The Forest Manager is also the Certificate Holder.

Chemicals Insecticides, fungicides, herbicides, **pesticides** and hormones, which are used in forest management.

Coarse As the term is used in “**coarse** assessment of existing data”, “**coarse** data”, “**coarse** level” means a desktop exercise assessing existing data rather than collecting new data.

Consultation The act of asking advice or opinion from other persons or parties, and of deliberating together over that advice or opinion. When consulting, the consulting person or persons must do so with an open mind and not have carried out any actions that would prevent the opinion or advice being actioned. Refer Wellington Airport Case.

Cultural harvest Harvest of **indigenous** flora and fauna for traditional purposes. The main reasons for harvesting are for food, medicines, building, or materials for weaving, weapons, tools, art work, dyeing, etc. **Cultural harvests** would include:

- Harori, Hokeke (fungus) for food
- Leaves such as kawakawa, mingi, kumara hou for medicines
- Bark for dyeing
- Kiekie (at different stages) for food or weaving
- Berries for food
- Tunga (grub) for food
- Fresh water fish (eels, kawai, karawaka, inanga, papane)
- Nikau for food or thatching or decorative material
- Birds for food
- Small hardwood for weapons, tools or tokotoko
- Totara for building and carving
- Kauri for waka

Customary Rights Rights which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit.

Decision support systems (DSS) A clearly defined and documented process that provides a structured framework to help improve the effectiveness of decision making. Components of a DSS include assessment criteria, procedures and rules or guidelines to manage how operational activities are undertaken and how risks are managed. The assessment criteria would include operational and economic, legal and industry agreements, physical and social factors like: soil/geology, topography, rainfall, hydrology, ecology, visual, downstream values, neighbours, community, Maori and cultural. Management procedures, rules or guidelines would include meeting industry Best Management Practices, or requirements more stringent than these.

Dispute Resolution The process whereby every reasonable effort shall be made to resolve grievances (that are not vexatious or frivolous) initially through negotiation, and if negotiation is unsuccessful, through

an agreed unbiased third party facilitator/mediator. If mediation is unsuccessful then the case may be referred to arbitration.

Negotiation

The process of discussions between parties aimed at reaching an agreement over common issues.

Facilitation/Mediation

The process where an independent and impartial third party assists those in dispute to negotiate an agreement.

Arbitration

An alternative to litigation where the parties in disputes submit their case to an arbitrator appointed under the Arbitration Act 1996, who makes a decision that is binding.

Domains Database	Ecological classification system used by the Ministry for the Environment to classify New Zealand's natural biodiversity .
Ecological Districts	One of the major levels for the ecological classification of land. New Zealand has been divided into 268 Ecological Districts according to geological, topographical, climatic and biological features and processes, which interrelate to produce characteristic landscapes and ranges of biological communities. (The New Zealand Protected Natural Areas Programme, Kelly and Park, 1986 and Ecological Regions and Districts of NZ 3 rd Edition 1987 - W.M McEwen).
Ecosystem	A biological system comprising a community of living organisms and its associated non-living environment, interacting as an ecological unit– (Biowhat –2000).
Exotic	An introduced species not native or endemic to the area in question.
Fine level	a. The fine level evaluation will include an on the ground assessment of: <ul style="list-style-type: none">• Vegetation types present and condition• fauna present and known habitat requirements and relationships• rare, threatened, or endangered species distributions, habitat and ranges• focal, indicator or umbrella species• seral stages and ecotones• micro-landscapes, particular physical features, and landforms• any evidence of threats to ecosystem values present, such as animal pest damage or invasive plant pests.• The benefit of expanding the area of a reserve to secure the viability of the ecosystems; guided by the following site criteria:<ul style="list-style-type: none">i. biologically viable shape and sizeii. socially and economically logical

- iii. suitable for **restoration** to habitat for species being considered
- iv. links to other **reserve area**
- v. buffering from adjoining land uses, **pests** and disturbance event like fire and wind.

Enterprise	Refers to forest manager
Genetically modified organism (GMO)	Any organism in which the genes have been modified by using in vitro (recombinant DNA) techniques. For example, GM potatoes or pine trees modified to resist disease or improve their growth rate. (ERMA Definition)
Hapu	A number of whanau from a common ancestor. Sub-tribe (Waitangi Tribunal 1991).
High Conservation Value Forest (HCVF)	Those forests that possess one or more of the attributes described in Annex 6.3.:
Hui	Meet; come together
Indigenous	A species of flora or fauna that occurs naturally in New Zealand or arrived in New Zealand without human assistance.
Indigenous peoples	“The existing descendants of the peoples who inhabited the present territory of a country wholly or partially at the time when persons of a different culture or ethnic origin arrived there from other parts of the world, overcame them and, by conquest, settlement, or other means reduced them to a non-dominant or colonial situation; who today live more in conformity with their particular social, economic and cultural customs than with the institutions of the country of which they now form a part, under State structure which incorporates mainly the national, social and cultural characteristics of other segments of the population which are predominant” (Working definition adopted by the UN Working Group on Indigenous Peoples).
Indigenous tree species	Any woody plant which ultimately forms part of the canopy of a naturally occurring forest or any indigenous tree species that attains a diameter at breast height of 30cm or greater (NZ Forest Accord 1991).
Indigenous wildlife corridor	A strip of indigenous flora designated to facilitate passage of indigenous fauna between distinct populations or between seasonal food sources. The width of an indigenous wildlife corridor is dependent on the species for which the designation has been made
Integrated pest management (IPM)	An ecological method for pest control that relies on a continuation of operational approaches to reduce damage to the forest rather than eliminate the pest . Techniques may include the use of natural predators and parasites, genetically resistant hosts, environmental modifications, and when necessary and

appropriate, chemical **pesticides** or herbicides. An important goal of IPM is to minimise environmental impact.

Iwi	A number of Hapu from a common ancestor. Tribe, people. (Waitangi Tribunal, 1991).
Kaitiakitanga	Maori duty of custodianship, stewardship and guardianship over their lands, resources and taonga .
Landscape	The expression of the interrelationships of the natural and cultural world; the character of the land as seen, shaped, and experienced by society.
Landscape level	At a spatial scale above a single plant community or forest stand and below a region.
Legal or customary Tenure or use rights	<p>In the New Zealand context and for the purposes of Criterion 2.2, Legal or customary tenure and use rights include, but are not limited to:</p> <ul style="list-style-type: none"> • Easements and covenants; • Public and private rights of way; • Statutory tenures (e.g. licences, permits etc. under Crown Minerals Act, Conservation Act); • Customarily or legally permitted uses of Crown land for gathering of non-timber forest products, hunting, fishing etc.; • Customarily or legally permitted uses of private land; • Rights or obligations related to construction, rehabilitation or maintenance of roads, tracks or other recreation facilities; • Rights to use public footpaths or roads (e.g. to well known landmarks, features or viewpoints); • Water use and stream stewardship rights and obligations (e.g. under the Resource Management Act).
Local	People are considered local where they reside, and organisations are considered local where they are based, within commuting distance by car from the Management Unit , or where they are Tāngata Whenua , whose lands contain, or are contained within, the Management Unit .
Local laws	Includes all legal norms given by organs of government whose jurisdiction is less than the national level (e.g. Regional and District Councils).
Mahinga kai	The resources of the land; the resources from forests that include all birds and animals dependent upon these resources and all living things within waterways, and including all water, be it lake, river, lagoon or sea water.
Management Unit	A clearly defined spatial area or areas with defined boundaries managed to a set of explicit management objectives which are expressed in a self-contained multi-year management plan

including all facilities and area(s)

- within, embedded by or bordering this spatial area or areas a) under legal title or management control or b) operated by The Organization or on behalf of The Organization for the purpose of contributing to the management objectives and
- outside and not bordering this spatial area or areas operated by The Organization or on behalf of The Organization solely for the purpose of contributing to the management objectives.

Native	Refer to “ indigenous ”
Natural Areas	Areas of land with a predominant cover of indigenous vegetation, including natural forests as defined below, and also naturally occurring water bodies. (Principles for Commercial Plantation Forest Management in New Zealand, 1995).
Natural Forest	Areas of land which are predominantly covered in indigenous tree species that are naturally established, including managed indigenous forest areas where regeneration is supplemented by planting of indigenous species.
Non-chemical method	A management technique used to control weeds , insects, or fungal pests that doesn't employ any chemicals .
Pasture	Land that has been cleared of natural vegetation, sown in grasses and grazed by domestic stock.
Period review or update	No more than 5 years.
Pest	Organisms that damage desired species and ecosystems .
Pesticide	Chemicals or biological agents with a broad spectrum of biocidal effects, embracing insects, weeds , fungi and micro-organisms among their targets. Includes herbicides, insecticides, and fungicides.
Plantation Forest	Areas of land predominantly covered in trees grown for cropping and managed primarily for commercial purposes and excluding natural forests as defined here. (Principles for Commercial Plantation Forest Management in New Zealand, 1995).
Principle	An essential rule or element; in FSC's case, of forest stewardship. Principles for protecting and expanding natural areas <ol style="list-style-type: none"> i. biologically viable shape and size ii. socially and economically logical iii. suitable for restoration to habitat for species being considered iv. links to other reserve area

- v. buffering from adjoining land uses, **pests** and disturbance event like fire and wind.

Prohibited Chemicals	See Annex 6.1 for a list of prohibited chemicals
Protected Natural Area	Under the Protected Natural Areas Programme, a legally protected area, characterised by indigenous species or ecosystems in which the principal purpose of management is retention of the natural state. (Bio-what, Feb. 2000, MfE, p85)
Protection	In relation to an ecosystem , plant or animal, means to maintain, as far as is practicable, in its current state.
Rahui	Reserves set aside by Māori. Usually a temporary tapu placed on an area to allow the flora and/or fauna to recover.
Poorly represented ecosystems	A habitat type where <5% of that type remains within the ecological district.
Rare, threatened or endangered species	Any species listed in either of the following two publications or their updates under the specified categories <ul style="list-style-type: none"> a) IUCN Red List of threatened species- Critically endangered, endangered or vulnerable b) N.Z. Threat Classification system (2005) - Nationally critical, nationally endangered or nationally vulnerable.
Recommended Area for Protection	A place identified as a priority for protection because it contains the best example(s) of its type or class of natural ecosystem and/or landscape in an ecological district. (The New Zealand Protected Natural Areas Programme, Kelly and Park, 1986).
Reserve Area	A reserve is an area within a Management Unit in which extractive management is specifically excluded. This does not preclude one-off commercial harvest of exotic species as part of a restoration programme or cultural harvest
Resource Consent	As defined in section 87 of the Resource Management Act 1991.
Restoration	Returning a place as nearly as a possible to a known earlier state by reassembly, reinstatement, and/or the removal of extraneous additions (ICOMOS New Zealand Charter, 1993). Note – needs more explanation as to what this means in the NZ context.
Riparian	Relating to, or living, or located in close proximity to a natural water body (IFU110 in part)
Set Aside	Areas, including reserves, managed primarily for biodiversity values.
Significant Natural Area	Generally, but not constrained to being subject to one or more of the following: <ul style="list-style-type: none"> • An area that supports an indigenous species that is

- poorly represented within its ecological district;
- Area is one of the best examples of an association of species typical of its ecological district;
- The area supports an association of species poorly represented in the ecological district;
- The area is little modified and comprises a predominantly intact **indigenous** system not affected in a major way by **weed** or **pest** species;
- An area connected to other significant **natural areas** in a way that makes a major contribution to the overall value or natural functioning of those areas.

SLIMF (small or low intensity managed forest)

A **management unit** which meets specific FSC requirements related to size and/or intensity.

For the purpose of this standard a SLIMF **management unit** is less than 1,001 hectares.

See **appropriate to the scale and intensity** and Annex 6.8 for further explanation.

Silent File Information

A file reference that directs the searcher to the particular **hapu** or **whanau** that holds that particular piece of information. e.g., whether a proposed track or roadway would pass through a waahi tapu

Statement of national priorities for protecting rare and threatened native biodiversity on Private Land

Refer to 'Protecting Our Places, Introducing the National Priorities for Protecting Rare and Threatened Native Biodiversity on Private Land'.

Taonga

Treasured possessions; includes both tangible and intangible treasures.

Tāngata Whenua

In relation to a particular area, means the **iwi**, or hapū, that holds mana whenua (customary authority associated with tino rangatiratanga) over that area. (RMA 1991). 'People of the land'.

Tenure

Socially defined agreements held by individuals or groups, recognised by legal statutes or customary practice regarding the “bundle of rights and duties” of ownership, holding, access and/or usage of a particular land unit (landholding) or the associated resources therein (such as trees, plant species, water, minerals etc.).

Tikanga

Māori traditions, customs, lore or law; the correct Māori way. (RMA, 1991)

Tino Rangatiratanga

The right of **Tāngata Whenua** to exercise full authority and control over their lands, resources and **taonga**.

Very poorly represented ecosystems	A habitat type where <1% of that type remains in the ecological district
Wāhi Taonga	Places of special value
Wāhi Tapu	Place sacred to Maori in the traditional, spiritual, religious, ritual or mythological sense. (Historic Places Act 1993).
Weed	Plant growing in a location where it is undesired.
Whanau	A nuclear or extended family.
Wildings	Natural regeneration of introduced tree species outside the plantation area.

Principle 1: Compliance with Laws and FSC Principles

Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria

Criterion 1.1: Forest management shall respect all national & local laws and administrative requirements

Indicator 1.1.1

The Forest manager has access to current versions of all relevant national and local statutes and regulations. Relevant legislation is listed in Annex 6.4. See <http://www.legislation.govt.nz/> for current copies of all legislation.

Indicator 1.1.2 L

There is a system for ensuring all summaries or reference copies of legislation and regulations are up to date

Verifier

- a) The **forest manager** has an up-to-date summary or interpretation of relevant regulations and statutes that are applicable to day to day forest management. This may be a subset of legislation listed in Annex 6.4.
- b) Compliance with this standard can be achieved by maintaining the capacity to view relevant legislation and a capacity to ensure that the **forest manager** is aware of changes to legislation

Indicator 1.1.3

Relevant statutes and regulations are implemented through operational guidelines and procedures

Verifiers

- a) There is a system for checking if a **resource consent** is required, obtaining consents, and communicating local authority rules and consent conditions to an operational level
- b) The **forest manager** interprets obligations of district and regional plans, and regional **pest** management strategies and incorporates those into the operational requirements of 1.1.4
- c) There is a system for checking if historic sites are present and applying for Historic Places Authority if necessary

Indicator 1.1.4

Where non-compliances are identified corrective actions are implemented

Verifiers

- a) There is a system for monitoring compliance with performance standards in local authority consents and rules
- b) There is a system for recording visit and correspondence from local authority officials and responding to issues raised
- c) There is a system for remedial action in the event of non-compliance

Indicator 1.1.5

The **forest manager** shall be legally registered in accordance with applicable requirements, and has copies of all the documentation required for such registration.

Criterion 1.2: All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid

Indicator 1.2.1

Verifiable records shall show that the enterprise is up-to-date with the payment of all required fees, royalties, taxes and other charges (including any fines).

Verifier

- a) There is evidence that required payments have been made.

Criterion 1.3: In signatory countries, the provisions of all the binding international agreements such as CITES, ILO conventions, ITTA, and Convention on Biological Diversity, shall be respected

Guidance Note

Requirements to meet international agreements have generally been expressed in legislation. However, where requirements are not covered by legislation the National Initiative will provide guidance on the adoption and interpretation of relevant international agreements.

Indicator 1.3.1

Statutory requirements shall be met or exceeded and relevant agreements respected. See Criterion 1.1.

Indicator 1.3.2

The **forest manager** implements the adoption guidance provided by the National Initiative on relevant international agreements.

Indicator 1.3.3

The forest manager understands the implications of CITES.

Verifiers

- a) (L) The **forest manager** has access to a list of locally occurring species that are listed by CITES.
- b) The **forest manager** has a copy of the appropriate authority for any trade in CITES listed species from the **management unit**.

Criterion 1.4: Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and the involved or affected parties.

Indicator 1.4.1

The enterprise shall identify and document any situations in which the manager's compliance with the law would preclude compliance with any indicator of this standard, or vice versa

Verifier

- a) Any identified conflicts are documented. Steps are taken to resolve conflict and any strategy devised for immediate and long-term compliance with FSC requirements are documented.
- b) Conflicts are brought to the attention of the National Initiative and/or the **forest managers** Certifying Body.

Criterion 1.5: Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities

Indicator 1.5.1

Unauthorised and illegal activities are identified and appropriate responses made

Verifiers

- a) Managers shall have documented policies and procedures to protect the forest from illegal activities
- b) With respect to illegal activities, **forest managers** shall provide appropriate assistance to the police consistent with legal obligations and the safety of personnel and the public

Criterion 1.6: Forest managers (forest managers) shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria

Indicator 1.6.1

There is a publicly **available** policy endorsed by the most senior management stating commitment to forest management practices consistent with this Standard

Indicator 1.6.2

The area subject to certification is explicitly defined and there are measures in place which clearly segregate timber products from the area

Indicator 1.6.3 L

The policy is communicated throughout the organisation and to contractors

Indicator 1.6.4 L

The policy is periodically reviewed and updated incorporating relevant directives from FSC and/or the National Initiative.

Indicator 1.6.5

The **forest manager** must fully disclose all **plantation forest** areas over which they have some responsibility and demonstrate a long term commitment to managing all forests in the spirit of this Standard.

Indicator 1.6.7

Any of the **plantation forest** areas over which the **forest manager** has some responsibility and are not being certified, must have no “major conflicts” with the standards for FSC Controlled Wood (FSC-STANDARD-30-010)

Principle 2: Tenure and Use Rights and Responsibilities

Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

Criterion 2.1: Clear evidence of long-term tenure and forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated

Indicator 2.1.1

Documents are present describing the legal status of the **management unit**.

Guidance Note

- These may include:
- Land certificates & title
- Registered rights such as leases or rights of way
- Unregistered leases or licenses to occupy
- Crown Forestry Licences
- Forestry Rights
- Crown Leases
- Give and take boundary agreements

Indicator 2.1.2

Maps shall record important **tenure** / land use information including boundaries and identifiable public access routes.

Indicator 2.1.3

The **forest manager** is able to access documentation indicating the existence of any Treaty of Waitangi Claims over the land

Criterion 2.2: Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.

Indicator 2.2.1

Local communities or other stakeholders, who have recognised legal or customary **tenure**, access or use rights have been identified

Indicator 2.2.2

The **forest manager** will make all reasonable efforts to make stakeholders with recognised use rights aware of current and proposed forest operations that may affect their use rights

Indicator 2.2.3

There is evidence that free and informed consent to forest operations affecting use rights has been given by affected parties provided that any withholding of consent is neither vexatious nor frivolous

Indicator 2.2.4

There is a process for consulting with all easement rights holders about planned forest operations that might affect their activities

Criterion 2.3: Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.

Indicator 2.3.1

A written record of previous and on-going disputes over **tenure**, access (where controlled by **forest manager**) and use rights will be kept

Indicator 2.3.2

Appropriate mechanisms' including sufficient and relevant staff and resources are employed to resolve disputes, including legal requirements and internal procedures.

Indicator 2.3.3

There is a commitment to resolution of on-going disputes where the disputes are not vexatious or frivolous

Principle 3: Indigenous Peoples' Rights

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.

Criterion 3.1: Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies

Guidance Note

This criterion reflects the important right of “tino rangatiratanga” contained within the Treaty of Waitangi. The right of tangata whenua to control forest management on their lands shall, therefore, be protected by appropriate and effective policy and procedure.

Indicator 3.1.1

The tāngata whenua and their appointed representatives who have legal rights of control over forest management activities within the **management unit**, shall be identified.

Verifiers

- a) **Forest managers** shall maintain an up to date list of the representative **tāngata whenua**, land owner entities, and their representatives including their contact details.
- b) **Forest managers** shall maintain documented evidence of the rights of tangata whenua to control forest management (where such rights exist) on lands contained within the **management unit**.

Indicator 3.1.2

There shall be documented evidence of prior and informed, written consent of tangata whenua to delegations of forest management rights (where such rights exist) on lands included within the **management unit**. Forest management activities delegated by tangata whenua after **(date of standard coming into effect - 2011)** shall not commence without the prior written consent of tangata whenua.

Verifier

- a) The **forest manager** shall have all documented evidence of the authority of tangata whenua prior to assuming and exercising control of the management of tangata whenua lands and forests within the **management unit**.

Indicator 3.1.4

A record must be maintained of all previous and on-going disputes over customary/traditional rights of tangata whenua.

Verifier

- a) **Forest managers** shall maintain a written record of all previous and on-going disputes relating to the customary/traditional rights of tangata whenua affecting the lands under forest management.

Indicator 3.1.5

Appropriate mechanisms are employed to resolve disputes, including the adoption and use of customary and traditional protocols and institutions, legal requirements and internal procedures.

Verifiers

- a) When a dispute arises **forest managers** shall engage with the mandated representatives of the tangata whenua landowners or their appointees to discuss and attempt to reach agreement on:

- i) identifying the issues in dispute
 - ii) review of affected areas of forest operations
 - iii) identifying the process for dispute resolution including **hui**
- b) **Forest managers** holds records of discussions, agreed actions, and responsibility for implementation of actions.

Indicator 3.1.6

There is a commitment to implement all agreements and legally verified third party directions to the dispute resolution

Verifier

- a) **Forest managers** shall implement all agreements and directions arising from the conflict resolution process in a timely manner

Indicator 3.1.7

There is a commitment to resolving on-going disputes in a fair and equitable manner where the disputes are deemed not to be vexatious or frivolous

Verifier

- a) **Forest managers** shall demonstrate **principles** of transparency and fairness (other?) when engaging with tangata whenua in dispute resolution

Criterion 3.2: Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.

Guidance Note

Consistent with the Treaty of Waitangi right of “exclusive and undisturbed possession” – **Forest managers** shall, in the exercise of their forest management, avoid and prevent any threats or compromise of the interests of tangata whenua where these relate to their resources or tenure rights.

Indicator 3.2.1

Exclusive and Undisturbed Possession – Provision shall be made for the right of **Tāngata Whenua** to exclusive and undisturbed possession of their lands, forests, estates, fisheries and other **taonga** in accordance with the Treaty of Waitangi.

The resource and tenure rights of tangata whenua, within and bordering the **management unit**, shall be identified, recorded and protected from impacts that may threaten or compromise their existence or value to tangata whenua.

Verifiers

- a) **Forest managers** shall maintain documentation demonstrating their record of consultation with tangata whenua to identify resource and tenure rights.
- b) **Forest managers** shall have documentation that identifies and explains the resource and tenure rights of tangata whenua that apply within or bordering the **management unit**.
- c) **Forest managers** shall maintain a risk management plan outlining the steps taken to protect resource and tenure rights of tangata whenua and how potential risks to these rights are assessed, mitigated, avoided and monitored, and how actual adverse impacts have been addressed.
- d) Interviews with tangata whenua shall demonstrate that they can confirm their satisfaction that their resource and tenure rights are being protected and that the risks are being effectively managed and addressed by the **forest manager**.

Criterion 3.3: Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.

Guidance Note

In accordance with the Treaty of Waitangi the important duty of kaitiakitanga (custodianship, stewardship and guardianship) shall be respected and carried out with respect to customary taonga including sites and landscapes (as more extensive sites) of special cultural, ecological, economic or religious significance to tangata whenua.

'Sites' shall include physical features associated with the land including landscapes as they embody the explicit values associated with a 'site'.

Indicator 3.3.1

Forest managers shall establish measures and protocols to enable active **protection** of the customary interests of tangata whenua landowners as set out in Indicator 3.2.1 and attached Verifiers.

1. Sites, including landscapes and land related features of special cultural, archaeological, historical, ecological, economic or religious significance to tangata whenua shall be identified, described and mapped in co-operation with tangata whenua and related stakeholders.
2. Management plans detailing the techniques, processes and protocols for protection, accidental damage or discovery and restoration of damaged sites, landscapes and features, outlined in this indicator, shall be developed in co-operation with tangata whenua. These plans shall specify areas of land, required by tangata whenua, to be excluded from forest operations.
3. Contractors and workers shall be made aware of, and have access to management plans in accordance with protocols agreed by the tangata whenua and the **forest manager** so that they can identify such sites and prevent damage.
4. Access shall be provided to these sites where required by tangata whenua.

Verifier

- a) Interviews with tangata whenua should indicate their satisfaction with management plans and protocols associated with the protection of important sites prescribed in criterion 3.3.

Criterion 3.4: Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.

Indicator 3.4.1

Forest manager shall obtain the free and informed consent of the tangata whenua prior to the use, transfer, or application within their forest related management or operational systems of any traditional knowledge associated with any indigenous forestry species within the **management unit**. Where the **forest manager** directly uses or benefits from such use of traditional knowledge, he (she) shall directly compensate the tangata whenua.

Verifiers

- a) That the **forest manager** has documented evidence of free, prior and informed consent where traditional knowledge has been used in their management and operations.
- b) That **forest managers** have documented evidence of all uses of traditional knowledge within their management and operations.
- c) That **forest managers** have documented evidence of agreed compensation arrangements for instances where traditional knowledge has been utilised.
- d) That **forest managers** maintain a record of compensation payments for the use of traditional knowledge.
- e) **Forest managers** shall consult directly with the tangata whenua landowners prior to utilising their traditional practices, knowledge or intellectual property.
- f) **Forest managers** shall document any traditional practices or knowledge that is intended to be or is utilised commercially or is being held by them.
- g) When traditional knowledge is used commercially by the **forest manager** (or any other organisation under an agreement with the manager), compensation or any form of reward is formally agreed with the tangata whenua landowner before forest operations commence. **Forest managers. Forest managers** pay compensation due to tangata whenua landowners in accordance with the quantity and timelines of the agreement.
- h) A dispute resolution procedure shall be agreed between **forest managers** and the tangata whenua landowners prior to the utilisation of this traditional information by the former

Principle 4: Community Relations and Worker's Rights

Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.

Criterion 4.1: The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services

Indicator 4.1.1

People in **local** communities are given opportunities for employment and contracting.

Guidance

Provisions have been made that demonstrate a commitment to hiring and contracting, locally, to the extent feasible in light of **local** capacity and required workplace skills, cost considerations and any legal obligations, relative to the employment of **local** people.

Indicator 4.1.2 L

The **forest manager** shall ensure their contractors maintain training records and plans.

Indicator 4.1.3

The **forest manager** and/or forestry operator shall promote employment and training opportunities

Verifier

a) Provisions for the following have been made:

- Provisions that demonstrate a commitment to hiring and contracting, locally, to the extent feasible in light of **local** capacity and required workplace skills, cost considerations and any legal obligations, relative to the employment of **local** people.
- The forestry operator shall maintain a record of the type of training opportunities organised for the workforce.

Indicator 4.1.4 L

a) **Forest managers** contribute to the development of training programmes aimed at enhancing the skills and qualifications of the **local** workforce

Guidance

Contributions can be financial or in-kind. The standard can be satisfied if the **forest manager**:

- Contributes financially to forest industry training via membership of NZFOA or NZFFA; or
- Contributes financially towards the training programme; or
- Provides in-kind support by using staff to provide the training; or
- Provides in-kind support by providing the training venue, food etc.; or
- Pays contractors while they are being trained; or
- Includes a training component in the contractors' rate; or
- Contributes in a similar manner appropriate to the scale of the operation.

Indicator 4.1.5

Forest managers shall give preference to **local** vendors of equipment and ancillary services, to the extent feasible in light of **local** capacity, cost considerations and any legal obligations.

Criterion 4.2: Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families

Indicator 4.2.1

Forest managers shall comply with the HSE Act and its associated regulations and the relevant codes of practice and best practice guidelines.

Verifiers

- a) The **forest manager** will satisfy this Indicator if they hold ACC WSMP Secondary or Tertiary certification, or
- b) Alternatively the **forest manager** should operate a health and safety management system that is consistent with the HSE Act

Indicator 4.2.2

There shall be a written emergency plan in case of serious injury to any forest worker or contractor, and which includes provision for timely evacuation to an appropriately equipped medical facility.

Criterion 4.3: The rights of the workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organisation (ILO)

Indicator 4.3.1

Where the **forest manager** directly employs labour they shall demonstrate compliance with relevant legislation

Guidance

Relevant legislation includes the Employment Relations Act (2000), the Wages **Protection** Act (1983), the Holidays Act (2003) and the Minimum Wage Act (1983).

Verifier

Comply with the Acts listed in the indicator

Indicator 4.3.2

Interested individuals shall be able to form and/or join organisations of their choice (including trade unions) without fear of intimidation or reprisal. Requests from Union Representatives seeking information on the work location of their members who are either employed by contractors engaged by the **forest manager** or as their own employees shall be supplied in a timely manner.

Indicator 4.3.3 L

Employers who directly employ labour shall establish policy and procedures that include provisions ensuring that:

- The role and function of Unions is facilitated at all times.
- Staff members with the responsibility/delegated authority to liaise/ negotiate with Union(s) are confirmed and identified.
- Where workers are Union members, wage bargaining arrangements shall proceed on the basis of collective bargaining.
- All employees shall be qualified in skills that are relevant to the tasks they are performing or be under training to acquire such skills, in line with relevant industry training organisations standards.
- Issues raised by Unions are treated constructively, objectively and in the spirit of good faith.

- Where workers are Union members, wage bargaining shall proceed on the basis of collective agreement/s.
- Resolution procedures dealing with employment relationship problems shall contain provisions to handle such matters by allowing for both dialogue between staff, unions and management, as a means of resolution procedure, as well as independent third party mediation assistance.

Criterion 4.4: Management planning and operations shall incorporate the results of evaluations of social impact. Consultation shall be maintained with people and groups directly affected by management operations.

Indicator 4.4.1

There are documented policies and procedures for assessing the social implications of forest management plans (including new afforestation projects), policy changes, and forest operations

Indicator 4.4.2.

The management plan for the defined forest area contains a section presenting the results of periodic social impact assessments, appropriate to the scale of operations.

Verifier

- a) The **forest manager** records and responds constructively to community or other stakeholder complaints or requests provided the complaint or request is neither vexatious nor frivolous and acts fairly to all parties.

Indicator 4.4.3

Management activities and policies are modified, as appropriate, in response to the results of social impact assessment.

Indicator 4.4.4

There is a database or other record of neighbours and other stakeholders

Indicator 4.4.5

Forest managers endeavour to keep neighbours and members of relevant **local** communities informed as to planned activities on the defined forest area.

Criterion 4.5: Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage

Indicator 4.5.1

Procedures for resolving grievances involving claimed loss or damage to property, health and/or rights, caused by forest operations are documented.

Indicator 4.5.2

Where there are grievances the dispute resolution process is followed in the first instance.

Indicator 4.5.3

Measures are taken to lessen the risk of similar loss or damage occurring on subsequent occasions

Principle 5: Benefits from the Forest

Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

Criterion 5.1: Forest management should strive towards economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.

Indicator 5.1.1

The costs and benefits of environmental and social effects are identified and are incorporated into a forest management Plan or budget.

Verifier

- a) The benefits from non-wood products and environmental services from the forest should be recognised in the annual plan.
- b) **S** - The benefits from non-wood products and environmental services from the forest should be recognised in the Forest Management Plan.

Indicator 5.1.4

Within the constraints of safety and environmental protection, the **forest manager** shall demonstrate intent to accommodate appropriate types and levels of recreational access. Access, including recreational access, through forestry areas to adjacent land shall be in consultation with the affected landowners. Access through forestry areas shall not be permitted where it will lead to adverse effects for other values including but not limited to tino rangatiratanga.

Verifiers

- a) The **forest manager** operates a permit system or other access management method that accurately records forest access usage.
- b) Social benefits shall include such activities as traditional cultural harvesting, provided the activity is legally permissible and consistent with Māori traditional practices.

Indicator 5.1.5 L

There shall be a financial plan which estimates the cost and expected revenues from implementing the forest management plan

Verifiers

- a) The financial plan should be for at least a five year period
- b) There is a budget showing the expected costs and revenues for the **forest manager** for at least the current year
- c) The budget includes all costs for significant activities and investments
- d) The cost and revenue estimates are reasonable

Indicator 5.1.5 S

There shall be a budget showing the expected costs and revenues for the **forest manager** for at least the current financial year.

Criterion 5.2: Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.

Indicator 5.2.1

An annual statement of all products from the **management unit** will be available. The statement will include non-timber products, where these can be practically quantified.

Indicator 5.2.2

Local processors are provided access to forest products available from the **management unit** unless there is a justifiable reason for not doing so.

Guidance Note

Non-**local** processing is acceptable following consideration of financial viability, environmental effects, including transport, community viability and cohesiveness, and efficient use of products from the **management unit**.

Criterion 5.3: Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.

Indicator 5.3.1

Strategic and tactical/operational harvest planning and harvest operations shall be carried out in accordance with national best practise.

Guidance Note

Guidance is in documents such as New Zealand Environmental Code of Practice for Plantation Forestry.

Indicator 5.3.2

Harvesting operations minimise avoidable waste and residual stand damage, while maximising value recovery from the coupe.

Criterion 5.4: Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.

Indicator 5.4.1

An investigation into a range of possible timber and non timber forest products has been carried out including their potential to strengthen and diversify the **local** economy

Indicator 5.4.2

Use of timber and non-timber products from production areas shall be supported when these are operationally acceptable and compliant with any contractual obligations and have been assessed for their environmental effects on both the production areas and the surrounding reserve areas.

Indicator 5.4.3

The forest shall be managed for both timber and identified non-timber products

Criterion 5.5: Forest management operations shall recognize, maintain and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.

Indicator 5.5.1

The **forest manager** has identified the range of forest services and resources

Indicator 5.5.2

The management plan (or equivalent documentation) shall specify appropriate measures to maintain and/or enhance the value of each identified forest service or resource.

Indicator 5.5.3 L

The management plan (or equivalent documentation) shall specify appropriate measures to maintain and/or enhance the value of each identified forest service or resource.

Indicator 5.5.4

Within the constraints of safety and environmental protection, the **forest manager** shall demonstrate intent to accommodate appropriate types and levels of recreational access. Access, including recreational access, through forestry areas to adjacent land shall be in consultation with the affected landowners. Access through forestry areas shall not be permitted where it will lead to adverse effects for other values including but not limited to tino rangatiratanga.

Verifiers

- a) The **forest manager** operates a permit system or other access management method that accurately records forest access usage.
- b) Social benefits shall include such activities as traditional cultural harvesting, provided the activity is legally permissible and consistent with Māori traditional practices
- c) Known sportfish and game bird habitats within the certified forest area are documented.

Criterion 5.6: The rate of harvest of forest products shall not exceed levels which can be permanently sustained.

Indicator 5.6.1

An annual statement of total wood volumes harvested from the **management unit** will be available.

Indicator 5.6.2

The enterprise shall have a clear methodology to determine allowable cut and the sustainable harvest levels for the **management unit** have been calculated using the most up-to-date information, and do not exceed the calculated long term harvest levels.

Indicator 5.6.3

Where a landowner decides to convert land from a productive species to a less productive one, or from forest to some other use, this conversion will be effected in such a way as to minimise adverse social and environmental impacts, but a permanent reduction in yields will of course be unavoidable.

Indicator 5.6.5 L

The allowable cut shall not jeopardise the forest's productive potential to maintain it's environmental or social services in the medium to long term

Indicator 5.6.6 L

Data on growth, regeneration and volumes harvested and/or thinned shall be reported regularly and analysed in comparison with predicted volumes and growth data

Principle 6: Environmental Impact

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

Criterion 6.1: Assessment of environmental impacts shall be completed - appropriate to the scale, intensity of forest management and the uniqueness of the affected resources - and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site disturbing operations.

Indicator 6.1.1

The **forest manager** has systematically identified and assessed the potential site specific environmental impacts of all activities (including on-site processing facilities) carried out within the **management unit** appropriate to the scale and intensity of forest **management unit**.

Guidance

This assessment process shall include consideration at a landscape level, taking into account interaction with adjoining land, nearby habitats and downstream impacts. The assessment should include consideration of the potential for the following:

- Soil erosion
- Water quality and hydrological impacts
- Compaction and changes to soil productivity
- Changes to invasive exotic flora or fauna abundance
- Potential impacts on any areas identified as having High Conservation Value
- Impacts to poorly represented, threatened or endangered species
- Pesticide or fertiliser pollution (by runoff, spray drift or spillage)
- Visual changes to significant landscapes identified in Regional or District Plans, or very prominent landscapes ref 10.2.6
- Community and recreation impacts
- Damage to riparian/ stream buffer strips
- Reference to the NZ Environmental Code of Practice for Plantation Forestry will assist this assessment process.

Verifiers

- a. The management plans and other relevant policies and procedures of the enterprise shall clearly identify the actions to be taken to mitigate or reduce the environmental impacts identified as a result of the assessments.
- b. Site specific assessments of the potential environmental impacts of all forest operations are carried out prior to commencement of the activity on site, in a manner appropriate to the scale of the operations and the sensitivity of the site. The assessment process shall identify the environmental values present, including those identified in 6.1.2, potential impacts on those values by the proposed forest operations, and site specific requirements to manage risks and potential impacts. The outcome of this process **management unit** be documented in a site specific work prescription or harvest plan.
- c. A record is kept to identify where non compliance occurs that documents corrective actions where non compliance with prescriptions occurs.

Indicator 6.1.2

An evaluation of the **management unit** has been progressively undertaken incorporating a **coarse** and fine level assessment, to identify **ecosystem** values present and priorities for management.

Verifiers

- a) **L** A **coarse** assessment of existing data is compiled to enable prioritising areas within the **management unit** for protection and management. The coarse assessment incorporates a desk top assessment of existing information to identify:
- broad vegetation types and fauna present within existing reserves
 - distribution and movement patterns of known rare, threatened or endangered species
 - any known or likely threats to the ecological values present
- The relative rarity of ecosystem types present through an evaluation of:
- i. Original (pre-Māori where this can be easily determined, alternatively pre-European)) percentage of ecosystem type in Ecological District, Lenz 3 domain or equivalent, within which the certification occurs
 - ii. Percentage of original ecosystem area that retains some indigenous vegetation under some form of protection.
 - iii. Proportion of original ecosystem under protection by **forest manager** in reserve areas.

Guidance

Proportion and percentage information is available through Nature Heritage Publications

- b) **L** - Comprehensive '**fine level**' evaluations have been progressively undertaken appropriate to scale for known **poorly represented ecosystems** where harvesting operations adjoining the area are scheduled to occur within the next 5 years. The purpose of this evaluation is to determine viability and establish specific management requirements of poorly represented areas.
- c) **S** - A coarse evaluation of the potential for expansion of natural areas has been completed, guided by the **principles for protecting natural areas**.

6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.

Indicator 6.2.1

Generic policy and management plans for the maintenance of populations of rare, threatened and endangered species within the **management unit** are prepared and progressively updated in **consultation** with competent experts.

Guidance

The NZFOA with advice from ecologists has prepared national guidelines on the handling of rare and threatened species in **management unit** forests (www.rarespecies.nzfoa.org.nz)

Indicator 6.2.2

The coarse level data from 6.1.2 is **periodically reviewed** to identify the known or likely presence and distribution of rare, threatened and endangered species within the **management unit**. **Indigenous** habitat supporting rare, threatened or endangered species and identified as being significant to their life cycle is identified and protected in management planning.

Verifiers

- a) The presence of populations of rare, threatened or endangered species or areas identified as being significant to their life cycle in production areas of the **management unit** are progressively identified before harvest in management plans and site specific work prescriptions and mapped as either 'known presence' or 'reasonable expectation of finding'.
- b) **Indigenous** habitats (excluding **plantation forest** understorey) which are significant to the life cycle of rare, threatened or endangered species are progressively identified and protected as designated threatened species habitat **reserve areas**, in accordance with the following timelines:
 - i. Documented populations of threatened birds and or bats where the information could be gathered as a desk top exercise – to be completed by first certification
 - ii. Areas adjoining areas planned for harvest – to be completed before harvest in any particular area.
 - iii. For the remainder of the **management unit** – to be completed within 5 years of first certification.
 - iv. The network of threatened species protected reserves is reviewed and revised as new information is gathered, but at least every 5 years.

Indicator 6.2.3

In **reserve areas** protected in 6.2.2(b) management actions including **weeds** and **pest** control plans are developed in management plans and implemented as follows:

- a) **L** - Within one year of identification and protection, management plans including pest and weed control plans are implemented in priority areas. Priority areas are areas that are significant to the life cycle of nationally or internationally threatened species or adjacent to areas being harvested.
- b) **L** - Within three years of identification and protection, management pest and weed control plans to ensure the maintenance or rare, threatened or endangered species are implemented over all reserve areas designated as requiring management of those species.
- c) **S** - Specific weed and pest management activities designed to protect the associated biodiversity within reserve areas supporting rare, threatened or endangered species shall be defined and implemented within 2 years of certification.

Indicator 6.2.4

Existing habitat within reserve areas under 6.2.2(b) shall be progressively assessed and where appropriate **active restoration** and /or expansion undertaken.

Verifiers

- a) Within 5 years of identification and protection of threatened species reserve areas, an evaluation of the benefit of active restoration has been carried out. Where active restoration has been identified as providing benefit per 6.2.5(a) then that restoration is undertaken and documented

Guidance

The primary criteria being applied to the evaluation would be whether the active restoration would significantly increase the survival of the threatened species for which the habitat has been protected.

- b) An evaluation of the benefit of expanding the area of a reserve to secure the viability of populations of rare, threatened or endangered species, has been carried out at harvest of the adjacent plantation. Where expansion has been identified as providing benefit then that expansion is undertaken and documented.

Guidance

The evaluation shall be guided by the **principles of protecting and expanding natural areas**.

Indicator 6.2.5

Where other activities including recreation and hunting are likely to occur in threatened species reserves they should only be permitted if the primary management objective is not compromised.

Verifiers

- a) Assessment of the effect of activities that occur in threatened species reserve areas other than the primary management objective are to be progressively carried out in management plans.
- b) Where other activities are identified as likely to be compromising the primary objective of a reserve then actions are implemented to protect the reserve. This may include education programmes for reserve users, not permitting certain activities or preventing access.

Indicator 6.2.6

Rare, threatened or endangered species known to be present, or discovered in **production areas** are protected and managed appropriately.

Verifiers

- a) Management plans and work prescriptions for areas due for harvest or silviculture detail steps to be taken to protect rare, threatened or endangered species in production areas in accordance with 6.2.1.
- b) Employees and contractors are progressively trained in recognition of rare, threatened and endangered species and are aware of contingency planning to enable the protection of located species.
- c) Training is provided for employees/contractors to enable them to recognise and know what steps to take with rare, threatened or endangered species.
- d) Employees and contractors are encouraged to report the presence of rare, threatened or endangered species.

Criterion 6.3: Ecological functions and values shall be maintained intact, enhanced, or restored, including:

- **Forest regeneration and succession.**
- **Genetic, species and ecosystem diversity.**
- **Natural cycles that affect the productivity of the forest ecosystem**

Indicator 6.3.1

Actions to minimise topsoil loss during harvest and replanting shall be implemented.

Indicator 6.3.2

Safeguards shall be progressively put in place to minimise adverse effects on water quality and aquatic ecology.

Indicator 6.3.3

The **forest manager** shall comply with any **resource consent** that addresses those matters set out in Indicator 6.3.4.

Indicator 6.3.4

Where no **resource consent** is required for those matters set out in Indicators 6.3.1 – 6.3.3 the **forest manager** shall comply with the “NZ Environmental Code of Practice for Plantation Forestry” or the standards set out below.

1. All vegetation felled within the **riparian** zone shall be felled away from the waterbody, except edge vegetation or vegetation leaning over a waterbody, which if necessary may be felled in accordance with safety practices.

2. Where vegetation is cleared within a designated **riparian** zone (refer 10.2.3) regeneration of suitable vegetation shall be encouraged as soon as practicable.
3. All practicable steps shall be taken to avoid dragging logs or trees through the bed of a flowing river, lake or wetland or the sea
4. No storage or mixing of fuels, oils, **chemicals** or similar substances shall be undertaken in areas where a deliberate or inadvertent discharge could enter any waterbody
5. All disturbed vegetation, soil or debris shall be deposited or contained to prevent the movement of the disturbed matter so that it does not result in:
 - the diversion, damming or blockage of any river or stream
 - the passage of fish being impeded
 - the destruction of any habitat in a waterbody or coastal water
 - flooding or erosion
 - downstream property damage

Indicator 6.3.5

Weed and **pest** control plans as dictated in 6.2.3, 6.4.2 and 10.2.4, are progressively implemented to support the maintenance of ecological functions including **ecosystem** regeneration and species diversity.

6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.¹

Indicator 6.4.1

To maintain **biodiversity**, **forest managers** shall recognise the long-term goal of establishing a representative network of **reserve areas** of sufficient size to protect natural **biodiversity** according to Tikanga and scientific evidence. **Forest managers** shall progressively identify and protect a range of representative **reserve areas**. These can be any of the following.

- a) Representative **indigenous** areas including non forested areas and wetlands
- b) Poorly represented or **very poorly represented ecosystems** (a subset of (a))
- c) **Indigenous** habitat for rare, endangered or **threatened species** (covered in 6.2)
- d) **Indigenous riparian** zones (covered in 10.2.1 – 10.2.4)
- e) **Indigenous wildlife corridors** (covered in 10.2.5)

Verifiers

- a) The network of representative **indigenous** areas within the **management unit** are progressively identified, mapped and recorded on management plans within the following time frames:
- b) All **indigenous** ecosystems shall be progressively identified and protected as **reserve areas** within 5 years of first certification. This includes:
 - i. **indigenous** forest remnants over 5 ha
 - ii. any other natural **ecosystem** areas over 1ha
 - iii. any other vegetation meeting the definitions for **protection** under the NZ Forest Accord (the provisions of 10.9.3 allow a qualified exemption to this requirement)
- c) **Indigenous ecosystems** within the **management unit** that border areas to be harvested in the first 5 years shall be identified and protected from the date of certification.

Indicator 6.4.2

The **forest manager** has assessed and implemented priorities for reserve management guided by

- (i) Need to maintain the inherent biodiversity of the reserve
- (ii) Rarity of the ecosystem or species present.

- (ii) Statement of national priorities for protecting rare and threatened **native** biodiversity on Private Land (see glossary).
- (iv) Principles for protecting or expanding natural areas (see glossary)

Verifiers

- a) Priorities for reserve management have been assessed.
- b) Based on assessed priorities, **plant and animal pest control** is progressively undertaken to the assessed level within each reserve.
- c) Based on assessed priorities **active restoration** has been implemented within reserve areas where appropriate.
- d) Based on assessed priorities expansion has been undertaken at harvest times

Guidance

The primary criteria being whether the active restoration or expansion would significantly increase the survival of a poorly represented ecosystem or threatened species within a reserved area. Expansion may also improve the reserve set-aside requirements of 10.5

Indicator 6.4.3

Reserve areas protected under 6.4.1 that fulfil other protection objectives such as , special physical feature protection , cultural and amenity sites, stabilisation of unstable terrain or visual management zones have these purposes recorded. Where there is the potential for conflict between the protection of biodiversity and other purposes this is set out in management plans.

Indicator 6.4.4

Low impact use of **reserve areas**, such as **cultural harvests** and accessing of waahi tapu, backcountry recreation, eco-tourism, hunting, trapping or fishing are recorded in management plans with appropriate management actions.

Verifier

- a) Other uses of reserves are documented including any extra management actions that are necessary to maintain the integrity of the **ecosystem**. This may include education programs or restrictions of access. Where access cannot be restricted to achieve a goal this is documented.

Indicator 6.4.5

Road building and tracking shall be prohibited in **reserve areas**, except where these activities are part of a documented habitat **restoration** plan designed to meet the objectives of the **reserve area**, or where it can be demonstrated that this is the best environmental solution to an access issue.

Verifier

- a) Any roads and tracks within **reserve areas** are documented in management plans with their purpose and justification.

Criterion 6.5: Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.

Indicator 6.5.1

Forest, environment and/or harvest management plans and **Decision Support Systems appropriate to the scale and intensity** of operation shall be progressively prepared prior to the commencement of works to identify.

- The nature of the operation
- Potential impacts

- High risk areas
- Methods to avoid, remedy and mitigate impacts

Verifiers

- a) Indicator 6.5.1 shall be met if a **resource consent** for soil disturbance and/or vegetation removal has been obtained or the operation complies with the permitted activity requirements of Regional and District Plans and the council checks compliance to its satisfaction
- b) In high risk areas the **forest manager** will operate a **Decision Support System** to guide forest management

Criterion 6.6: Management systems shall promote the development and adoption of environmentally-friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organisation Type 1A and 1B chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.

Indicator 6.6.1

Forest managers show a commitment to the goal of avoidance and minimisation of chemical **pesticide** use and the promotion of environmentally optimal methods of **pest** management. Methods of **pest** management shall be undertaken in accordance with 10.7

Verifiers

- a) **Forest managers** shall participate in research to investigate means to avoid and reduce the volume and/or adverse effect of chemical usage.
- b) **Forest managers** will work with the **Chemicals Standing Committee** to meet their obligations under 6.6

Indicator 6.6.2

Forest managers shall not use the **chemicals** listed in Annex 6.1 within the **management unit**. Use of **chemicals** listed in Annex 6.1 may be undertaken where either a written exemption has been obtained from the FSC International Board or in the case of environmental and/or national emergency such as infestations of plant and animal including insect, **pests**, fungal diseases, or dramatic changes in vegetation composition which threaten ecological stability or economic viability and which cannot feasibly be controlled by conventional means. In these cases, the use of **chemicals** may be required by law, and prohibitions may be temporarily suspended, except for **pesticides** with high persistence, strong biomagnification or carcinogenicity.

Verifier

- a) Demonstrate by means of records of chemical **pesticide** use and/or contractual arrangements with spraying contractors.

Indicator 6.6.3

Use of those chemical **pesticide** formulations not specified in Annex 6.1 is permissible within the **management unit** subject to compliance with verifiers 6.6.3a. 1 – 6.6.3b.

Verifiers

- a) There are records of chemical **pesticide** formulations and volume used.
- b) Each of the chemical **pesticide** formulations used is justified for use based upon a documented comparative analysis of alternative chemical and non-chemical means of achieving the required result.

- c) The **forest manager's** avoidance or minimising of chemical **pesticide** use shall be demonstrated by a documented yearly review of a **forest managers** chemical use to ensure compliance with any formally notified revision of Annex 6.1 by the **Chemical Standing Committee**.

Indicator 6.6.4

The use of reduced chemical and non-chemical methods shall be encouraged.

Verifier

- a) Demonstrate participation in research/trials related to reduced chemical and non-chemical **pest** management. This can include but is not restricted to participation in research and investigations initiated according to priorities established by the **Chemical Standing Committee**.

Indicator 6.6.5

There is compliance, including documentation where required, with NZ8409:2004 Management of Agrichemicals (or updates).

Indicator 6.6.6

There is compliance with local authority and other regulatory authority requirements in relation to application.

Indicator 6.6.7

Relevant contracts (e.g. chemical application) contain provisions covering the use of **chemicals**, in accordance with NZS8409:2004 Code of Practice for the Management of Agrichemicals.

Indicator 6.6.8

Managers, employees and contractors understand relevant requirements in relation to the use of **chemicals**.

Indicator 6.6.9

There are emergency procedures for clean up following chemical spillages.

Indicator 6.6.10

GrowSafe or equivalent NZQA Unit Standard certificates for applicators and other certification is current.

Criterion 6.7: Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.

Indicator 6.7.1

There is compliance, including documentation where required, with NZ8409:2004 Management of Agrichemicals.

Indicator 6.7.2

Documentary evidence of a request to chemical suppliers and/or applicators requiring in descending order of preference that chemical containers be re-used, recycled or triple rinsed prior to disposal to an approved facility. Where re-use or alternatively recycling is not occurring, the *reason/s for the current practice shall be progressively documented*.

Indicator 6.7.3

A procedure or contractual obligation for the recovery and recycling or appropriate disposal of used hydro-carbons shall be produced.

Indicator 6.7.4

Documentary evidence of contractual obligations and/or procedures for the training of staff in chemical spill response will be available. The contractual obligation or procedure will detail:

- Siting of chemical **pesticide** storage in a manner facilitating recovery in the event of a spill.
- Materials and equipment required on site in the event of a spill.
- Procedures for containment and recovery of spilled chemical **pesticides**.
- Safe storage, transport and eventual recycling/disposal of recovered chemical **pesticide**.
- Those requiring notification in the event of a spill and means by which they may be contacted.

Criterion 6.8: Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.

Indicator 6.8.1

Use of **biological control agents** shall be restricted to those approved for use and release under the Hazardous Substances & New Organisms Act. Any use or release shall be in strict accordance with the conditions placed on such use or release by the Environmental Risk Management Authority.

Indicator 6.8.2

If **biological control agents** are used, comprehensive records of use are maintained by the **forest manager**, and the impacts of such use are closely monitored.

Indicator 6.8.3

Field use of genetically modified organisms by the **forest manager** is prohibited.

Criterion 6.9: The use of exotic species shall be controlled and actively monitored to avoid adverse ecological impacts

Indicator 6.9.1

Forest managers shall comply with any applicable regional **pest** management strategy where this identifies a wilding species as a **pest**

Indicator 6.9.2

Forest managers shall have in place a **Wilding Prevention Decision Support System** and prior to planting of exotics use this to assess the risk of wilding spread. Where the risk is high the **forest manager** will not plant without implementing appropriate ongoing control procedures.

Guidance Note

Wilding Prevention DSS can be found on www.wildingconifers.org.nz

Indicator 6.9.3

In the absence of a species being identified in the regional **pest** management strategy, the **forest manager** shall remove '**wildings**' in adjoining properties before seed production where:

- the adjoining property owner is agreeable to any wilding control activities required on his or her land, and

- **wildings** are clearly identified as the progeny of species planted within the plantation area; and
- wilding spread has occurred from plantations after the Standard becomes operative or from first certification

Criterion 6.10: Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:

- **Entails a very limited portion of the forest; and**
- **Does not occur on high conservation value forest areas; and**
- **Will enable clear, substantial, additional, secure, long term conservation benefits across the forest.**

Guidance Note:

In the New Zealand context “forests” as above have been taken to refer all natural areas

Indicator 6.10.1

a) Conversion of the following areas to **plantation forestry** shall not be permitted:

- Any area of 5 hectares or greater which has an actual or emerging predominance of naturally occurring **indigenous tree species** of any height. For the purposes of this clause an **indigenous tree species** is defined as any woody plant which ultimately forms part of the canopy of a naturally occurring forest or any **indigenous tree species** that attains a diameter at breast height of 30cm or greater.
- Any natural **indigenous** forest vegetation, including riparian of between 1 and 5 hectares in area with an average canopy height of at least 6 m which is practical to protect. This recognises that in some instances some small pockets of **native** vegetation within a **plantation forest** management area cannot practically be protected from disturbance. However, viable stands will be excluded from clearance and every reasonable effort made to ensure such areas are not damaged in subsequent forestry operations.
- Any vegetation recommended for **protection** in a survey report in the **Protected Natural Areas** Programme or classified as a Site of Special Wildlife Interest (SSWI) in a published report of the former Wildlife Service.
- Significant **Natural Areas** (Areas recognised as significant **indigenous** vegetation or significant habitats of **indigenous** fauna) as defined in an operative District Plan under the Resource Management Act 1991.
- **Indigenous** habitat of rare, threatened or endangered species.
- Geopreservation Sites as listed in the Geopreservation inventory.
- Wetlands (as defined in the Resource Management Act 1991)
- Dunelands where the primary vegetation is **indigenous**.
- Geothermal areas where there are **indigenous** plant communities adapted to geothermal conditions.

b) Where conversion is from a plantation to another land use then refer to 5.6.3. Areas of forest subjected to natural destruction such as windthrow or fire which are not immediately replanted, but a held over until the remaining or adjacent areas are harvested then replanted are exempt (i.e. in these cases the areas destroyed may develop natural vegetation, but remain a forest.

Indicator 6.10.2

The following lands shall not be considered for conversion to **plantation forestry** unless **consultation** is undertaken with interested parties to the National Initiative. Where a **resource consent** is required under the Resource Management Act **consultation** with the National Initiative can be undertaken by that process.

- High Country tussock scrublands or herbfields as defined in MfE’s LENZ publication and repeated in Annex 6.7.
- Coastal scrub and coastal herbfields with an **indigenous** plant content of greater than 30% within the area being considered.

Principle 7: Management Plan

A management plan - appropriate to the scale and intensity of the operations - shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.

Criterion 7.1: The management plan and supporting documents shall provide:

- **Management objectives.**
- **Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.**
- **Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.**
- **Rationale for rate of annual harvest and species selection.**
- **Provisions for monitoring of forest growth and dynamics.**
- **Environmental safeguards based on environmental assessments.**
- **Plans for the identification and protection of poorly represented, threatened and endangered species.**
- **Maps describing the forest resource base including protected areas, planned management activities and land ownership.**
- **Description and justification of harvesting techniques and equipment to be used**
- **Decision Support Systems**

Indicator 7.1.1

There is a management plan (or overview linking different planning activities).

Guidance

- Planning includes short (operational), medium (tactical) and long (strategic) term plans, appropriate to the scale of the management unit.
- The requirement for documented planning in small-scale operations will be decided by the scale, duration and intensity of the operation.

Indicator 7.1.2

Management objectives are described (See also Criterion 1.6)

Indicator 7.1.3

Forest resources, environmental limitations, land use and ownership status, socio-economic conditions, and adjacent lands (see also Criterion 5.5) are described

Indicator 7.1.4

A rationale for the rate of harvest and species selection is provided (see also Criterion 5.6)

Indicator 7.1.5

Provisions for monitoring forest growth and dynamics are described (see also Criterion 8.2)

Indicator 7.1.6

Environmental safeguards identified in 6.1, 6.3 and 9.3 are described

Indicator 7.1.7

There are management plan(s) for the identification and **protection** of rare, threatened and endangered species consistent with the requirements of 6.2, 6.3, 6.4 and 9.3

Indicator 7.1.8

There are maps showing the forest resource base including **reserve areas**, planned management activities and land ownership

Indicator 7.1.9

There are plans for all harvest settings containing sufficient detail (including appropriate harvest system configurations), related to the scale, risk and level of operational difficulty, so that environmental and safety risks are identified and addressed. See also Indicator 6.1.1.

Indicator 7.1.10

There is evidence that the plan is being implemented. Where there is any significant deviation this is adequately justified, documented and the plan amended.

Indicator 7.1.11

The management plan or supporting documents shall include a description of the silvicultural regimes based on information gathered through resource inventories (see also Criteria 5.6, 6.3, 8.1, 8.2)

Indicator 7.1.12

The objectives of management shall include, inter alia, conservation or **restoration** of **native** forest within the **management unit** (see also Criteria 5.5, 6.2)

Criterion 7.2: The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic considerations.

Indicator 7.2.1 L

Staff members with responsibility for the overall compilation and updating of the management plan are identified

Indicator 7.2.2

There are procedures for incorporation of monitoring data into the management planning process

Indicator 7.2.3 L

New scientific and technical developments are evaluated and incorporated into revised plans

Verifier

- a) Compliance can be achieved through participation in collaborative research, including implementation of relevant recommendations from the research.

Indicator 7.2.4

There is evidence of plan revisions in response to changing environmental, social and economic considerations where these exist.

Indicator 7.2.5

There is a timetable for the periodic revision of the management plan and there is evidence of plan revision consistent with the timetable.

Criterion 7.3: Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.

Indicator 7.3.1

Staff and forest workers at all levels have adequate training (including the health and safety issues and environmental aspects) to ensure the management plan is implemented

Indicator 7.3.2

There is evidence that the effectiveness of the training has been assessed and reviewed.

Indicator 7.3.3

Activities are supervised and monitored sufficiently to ensure that standards and procedures are adequately implemented.

Criterion 7.4: While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.

Indicator 7.4.1

There are publicly **available** statements that provide an up-to-date summary of the primary management plan elements listed in 7.1

Indicator 7.4.2

The summary shall have a specific section on the presence of High Conservation Values within the **management unit** and measures that are being taken to maintain or enhance those values

Principle 8: Monitoring and Assessment

Monitoring shall be conducted - appropriate to the scale and intensity of forest management - to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts

Criterion 8.1: The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.

Indicator 8.1.1

The **forest manager** maintains a monitoring plan that describes:

- Elements to be monitored;
- Monitoring indicator(s) for each element;
- Rationale for the selection of each element and monitoring Indicator(s);
- Consistent and replicable monitoring procedures;
- The frequency and intensity of monitoring, consistent with the nature of the monitoring indicator(s), management activities, environmental sensitivity of the site, assessed risks, stakeholder concerns, performance history and changing environmental conditions; and,
- Relevant baseline information

Indicator 8.1.2

Persons responsible for implementing and maintaining monitoring programs are identified.

Indicator 8.1.3

The monitoring plan is periodically reviewed and available to those doing the monitoring or working with monitoring data.

Indicator 8.1.4

A clear link between the monitoring plan and the management plan is established.

Criterion 8.2: Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators:

- a) **Yield of all forest products harvested;**
- b) **Growth rates, regeneration and condition of the forest;**
- c) **Composition and observed changes in the flora and fauna;**
- d) **Environmental and social impacts of harvesting and other operations;**
- e) **Costs, productivity, and efficiency of forest management**

Indicator 8.2.1

Yields of all forest products harvested are recorded. There is a process to reconcile actual volumes against inventory data.

Indicator 8.2.2

Data are collected on growth rates, regeneration and condition of the commercially productive area

Verifiers

- a) There is evidence of permanent sample plots.

Indicator 8.2.3

Data are collected on the composition and observed changes in the flora and fauna

Indicator 8.2.4

The monitoring program shall be sufficient to identify unusual mortality, disease, insect outbreaks or adverse ecological impacts related to the planting of exotic species within the **management unit**.

Verifier S:

- a) The **forest manager** shall keep notes of the presence of any notable species of flora or fauna, sufficient to identify significant trends over time.

Indicator 8.2.4 L

Environmental and social impacts of forest operations, including health and safety, are monitored

Verifier

- a) **Appropriate to the scale and intensity** of the operations the environmental and social impacts to be monitored are:
- Direct and indirect employee numbers
 - Health & Safety statistics
 - Number of visitor days
 - Number of access permits issued

Indicator 8.2.4 S

The **forest manager** shall be able to identify any significant environmental impacts of harvesting and is aware of the social impacts of operations and mitigate these where they are negative

Indicator 8.2.5 L

Post-harvest monitoring is carried out to assess waste and damage to the site

Indicator 8.2.6

Economic performance is monitored including collecting data on costs, productivity and efficiency of forest management

Indicator 8.2.7

Contractors' performance is monitored, including compliance with contract specifications

Indicator 8.2.8

The forest enterprise shall have a documented programme for collecting data sufficient to demonstrate the maintenance (or otherwise) of any High Conservation Values (see Criterion 9.1.1, 9.1.2) within the **management unit**

Criterion 8.3: Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the “chain of custody”

Indicator 8.3.1

There shall be a system in place which allows all products (timber and non-timber) harvested within the **management unit** to be readily identified as such, from the time of harvesting through to the point of sale.

Indicator 8.3.2

The docket book system, or other identification system that links the physical products to paper records shall include all of the following information:

- Type of product
- Volume (or quantity) of product;
- Logging/production site
- Logging/production date
- FSC COC requirements

Indicator 8.3.3

The forest enterprise shall keep sales invoices for all products sold and record total quantities of all products sold, including quantities sold to Chain of Custody **forest managers**. Invoices should contain the following as a minimum:

- Name and address of purchaser
- The date of sale
- Type of product
- Volume (or quantity) sold.

Indicator 8.3.4

All products sold as “FSC Certified” shall be readily identifiable both on the product and on the accompanying paper records and sales invoices. The FSC certificate number shall be recorded. All products sold as “FSC Certified” shall be readily identifiable both on the product and on the accompanying paper records and sales invoices

Indicator 8.3.5

The forest enterprise shall keep copies of production records and sales invoices for at least five years.

Indicator 8.3.6

A trademark licence agreement with FSC has been signed. Use of the Trademark is in accordance with the signed agreement.

Criterion 8.4: The results of monitoring shall be incorporated into the implementation and revision of the management plan

Indicator 8.4.1

Records of monitoring activities are kept and the results of research and monitoring programmes are regularly analysed.

Indicator 8.4.2 L

The results of monitoring are incorporated into periodic reviews of the management plan, policy and procedures

Indicator 8.4.3 L

Monitoring results are periodically reviewed. The results of monitoring are incorporated into periodic reviews of the management plan, policy and procedures.

Criterion 8.5: While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.

Indicator 8.5.1

There are publicly **available** statements summarising the results of monitoring

Principle 9: Maintenance of high conservation value forests

Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach

Criterion 9.1: Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.

Indicator 9.1.1

The forest enterprise shall carry out an assessment of the **management unit** sufficient to identify all parts of the **management unit** that have each of the following attributes:

- HCV1. Forest areas containing globally, regionally or nationally significant concentrations of **biodiversity** values (e.g. endemism, endangered species, refugia).
- HCV2. Forest areas containing globally, regionally or nationally significant large **landscape** level forests, contained within, or containing the plantation, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance.
- HCV3. Forest areas that are in or contain poorly represented, threatened or endangered **ecosystems**.
- HCV4. Forest areas that provide basic services of nature in critical situations (e.g. watershed **protection**, erosion control).
- HCV5. Forest areas fundamental to meeting basic needs of **local** communities (e.g. subsistence, health).
- HCV6. Forest areas critical to **local** communities traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such **local** communities).

Indicator 9.1.2

The forest enterprise shall clearly map all areas within the **management unit** which have each of the six attributes listed under Indicator 9.1.1.

Indicator 9.1.3

The **forest managers** shall have consulted with **local** stakeholders with relevant expertise or knowledge relating to each of the listed High Conservation Values in the identification of areas with those values within the **management unit**.

Indicator 9.1.4 L

The assessment procedure and its results (including the comments and suggestions of stakeholders in response to **consultation**) shall be fully documented.

Indicator 9.1.5 L

The results of the assessment shall have been reviewed by individuals with expert knowledge of the listed High Conservation Values and **local** knowledge of the area in which the **management unit** is located.

Criterion 9.2: The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.

Indicator 9.2.1

Stakeholders consulted with under Indicator 9.2.1 shall have subsequently received a copy of the Management Plan Summary document section referring to management of High Conservation Values, as referred to in Indicator 7.4.2, and shall have been invited to submit any further comments in respect of the proposed management.

Indicator 9.2.2

The forest enterprise maintain shall a complete and up to date file of all stakeholder comments submitted in relation to its management of High Conservation Values.

Criterion 9.3: The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.

Indicator:

See Indicators 6.1.2L, 6.1.2S, 7.1.12 and 7.4.2

Criterion 9.4: Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.

Indicator 9.4.1 L

See Indicators 8.2.8

Indicator 9.4.1 S

The forest enterprise shall have a specific programme for collecting data sufficient to demonstrate the maintenance (or otherwise) of any High Conservation Values within **management unit**

Principle 10: Plantations

Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

Criterion 10.1: The management objectives of the plantation, including natural forest conversion and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan

Indicator 10.1.1

Management planning shall identify the boundaries of the **management unit** encompassed by the certificate, which includes the **plantation forest** plus any designated **reserve areas** and the requirements for **protection of biodiversity** shall be integrated into working documents

Verifier

- a) Planning shall comply with Criterion 7.1 and in particular Indicators 7.1.1, 7.1.3, 7.1.7, 7.1.8 and 7.1.12.

Indicator 10.1.2

The management plan shall identify the boundaries of the **management unit** encompassed by the certificate, which includes the **plantation forest** plus any designated **reserve areas**.

10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands within the natural landscape

Indicator 10.2.1

A network of **Riparian Zones** are to be progressively identified and protected within the **management unit**. **Riparian** zones are to be identified on all waterbodies that have permanent water when forested and where possible are a minimum of 10m each side of the watercourse.

Verifiers

- a) **Riparian** zones with existing **indigenous** vegetation greater than 20m wide on average, are identified and recorded from the date of certification.
- b) **L** - Management plans of **indigenous riparian** zones that encompass the provisions of 6.4 and 10.2.1 are progressively prepared.
- c) **L** - All **riparian** zones (**indigenous** or mixed species) bordering areas due for harvest are mapped and management plans to protect the **biodiversity** are prepared before harvesting occurs.
- d) Any planting in new areas shall have **riparian** zones identified on maps before planting begins.

Indicator 10.2.2

Cross reference to 6.2 and 6.4

Indicator 10.2.3

No commercial planting shall be undertaken in **Riparian Zones** (10 metres either side of waterbodies that have permanent water when forested) except under the following conditions:

- (i) The **forest manager** has a Decision Support System specified within the management plan that addresses temperature, sediment and nutrient conditions to maintain aquatic habitat, or
- (ii) Alternative species (other than radiata pine or Douglas-fir) may be grown in a **riparian** zone under a continuous canopy regime (coupe less than 0.2ha) providing aquatic habitat is not compromised.

Verifiers

- a) Where planting has been undertaken within a **riparian** zone evidence of the DSS is present or plans of the closed canopy harvest are available.

Indicator 10.2.3

No earthworks shall be undertaken within riparian zones except

- i) in association with designated stream crossings.
- ii) maintenance of an existing road
- iii) where a topographical constraint leaves no alternative for the formation of a road
- iv) emergencies such as fire fighting – access to water or fire breaks

In any of these exceptions the instream values are to be protected.

Verifiers

- a) Earthworks within the **riparian** zone are recorded
- b) Where earthworks or roading occurs in the **riparian** zone evidence is available to show how the instream values are protected and how alternatives were considered.

(Nothing in 10.2.2 or 10.2.3 precludes the harvesting of plantation trees in the **riparian** zone that were planted prior to the standard coming into effect. Replanting shall comply with 10.2.2),

Indicator 10.2.4

Weed and **pest** control and **restoration** where appropriate is undertaken to protect terrestrial **biodiversity** in **riparian** areas.

Verifiers

- a) **Weed** and **pest** control is assessed and implemented when necessary to maintain the terrestrial **biodiversity** values of **riparian** zones particularly when harvesting is occurring adjacent to the **riparian** zone.
- b) Where necessary **active restoration** of cut lines or encroachments into **riparian** zones is undertaken as soon as practical after harvest operations.
- c) Where the **riparian** zone is recognised as a reserve under 6.2 or 6.4 then the requirements for **weed** and **pest** control, **restoration** and expansion are carried out.

Indicator 10.2.5

The need for wildlife corridors for rare, threatened, and endangered species shall be assessed within the ecological **landscape** and managed appropriately.

Verifiers

- a) Wildlife corridors for rare, threatened and endangered species are identified on management maps.
- b) **Indigenous wildlife corridors** shall be managed as **reserve areas** where necessary for the **protection** of rare, threatened, and endangered species as per the provisions of 6.2.
- c) Wildlife corridors within production areas shall be detailed in harvest plans with appropriate management actions considered which include:

- (i) Planning of size and spacing of cut blocks to assist movement of **indigenous** species.
- (ii) **Protection** of species when discovered.

Indicator 10.2.6

Visual **landscape** objectives will be partly achieved through **protection** and management of **indigenous ecosystems**. Harvesting and planting will however still need to take account of the following potential additional visual impacts:

- Roadside harvest on state highways or tourist highways
- Significant natural features – vantage points
- Backdrops to urban areas
- Mana whenua perceptions of visual **landscape**

Verifiers

- a) Planning of planting and harvesting has taken account of forestry impacts on the visual aspects of significant natural features, backdrops to urban areas, tourist and state highways and other issues of **local** significance. A willingness to negotiate solutions with the community of interest is to be demonstrated.
- b) A willingness to appreciate and negotiate solutions over mana whenua visual perceptions of the **landscape** is to be demonstrated.
- c) **L** - Visual **landscape protection** areas are documented on management plans. These may include **indigenous reserve areas** or low impact harvest amenity areas.

Criterion 10.3: Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.

Indicator 10.3.1

Economic, ecological and social stability is achieved by one or more of the following:

- Maintaining production and **reserve areas** within the **management unit**
- Choosing a species mix which:
 - caters well to **local** conditions; or
 - enables the **forest manager** to respond rapidly to changing market requirements, or
 - supplies a diversity of markets
- Using a diversity of genotypes
- Having a mix of age classes and/or rotation lengths
- Using a variety of silvicultural regimes
- Demonstrating an understanding of future market trends
- Taking into account **local** markets/processors

Verifier

- a) Where **forest managers** have only radiata pine and/or Douglas-fir they shall examine the social, environmental, and economic values of alternative species and establish plantings if appropriate based on these studies.

Criterion 10.4: The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to

detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts

Indicator 10.4.1

Species shall be selected in accordance with criteria specified in 10.3

Verifiers

- a) **Forest managers** shall have access to information demonstrating that the environmental, social and economic performance of **exotic** species is greater than **indigenous** species.
- b) Appropriate to size and scale, operational scale trials of **indigenous** species are being carried out. This may be met by participating in a collaborative trial.
- c) Appropriate to size and scale, operational scale trials of **exotic** species other than radiata and Douglas-fir are being carried out. This may be met by participating in a collaborative trial.

Indicator 10.4.2

Exotic species shall be monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts

Verifier

- a) This standard may be met by taking part in NZFOA's Forest Health Surveillance Programme or a similar programme

Indicator 10.4.3

There shall be a procedure for reporting and responding to unusual events

Criterion 10.5: A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover

Indicator 10.5.1 L

A minimum area of reserve set-asides equal or equivalent to 10% of the **management unit** by Ecological District (or ecosystem characterisation at a similar scale such as LENZ III) will be managed to be protected and/or restored to natural vegetation over time.

Verifiers

- a) Set asides are recorded on maps and accumulated area totals are recorded.
- b) Set aside percentages have been calculated. Where 10% cannot be achieved then this is noted and other steps to contribute to indigenous ecological outcomes to an equivalent of 10% is recorded.

Guidance Note

Calculating reserve area comprises of many steps. The following details the process of deriving the percentage.

Step 1: Identify what forest blocks are in each ED or equivalent. Make changes if the following are relevant:

- Where ED boundary(ies) arbitrarily bisects a forest block with similar ecological character and landforms, the areas bisected can be considered as one ecological unit.
- Outlying areas² where each is less than 50ha in any one Ecological District/or equivalent they are combined with an adjacent forest block i.e. they are exempt from the 10% requirement.

Step 2: Identify the area categories that contribute to the reserve percentage. Calculate their area. Identify if their area has an area weighting multiplier. There can be no double accounting and multipliers are not cumulative:

- Reserve areas described in criteria 6.2 and 6.4.
- Indigenous wildlife corridors and riparian zones described in criteria 10.2.
- Retired areas currently being restored to indigenous vegetation. (multiplier is area x 0.5)
- Areas managed for continuous cover, single tree extraction or harvest coupe areas to 0.5ha. Also, pest and weed control plans must be prepared and implemented in these areas. The area contribution can only be to a maximum of 3% of reserve percentage. (multiplier is area x 0.5)
- Waahi tapu and historic site areas with indigenous biodiversity values.

Where less than 20% of the Ecological District or equivalent is protected additional area categories can be added:

- Riparian areas with continuous exotic tree cover, or highly-valued old-growth stands with multiple values to **local** community. The area contribution can only be to a maximum of 1% of reserve percentage
- Restored areas of very poorly represented* ecosystem. (multiplier is area x 3.0)
- Restored examples of poorly represented** ecosystems. (multiplier is area x 1.5).
- Habitat that contains rare, threatened or endangered species and is specifically identified and managed for that species under the provisions of 6.2. Area x1.5 multiplier

Step 3: Reserve area can be allocated from one ED to an adjoining one where they do not achieve the required 10% threshold. In this instance the following **area adjustments** are made:

- Up to 3% may be transferred from **management unit** reserve areas located in adjacent Ecological Districts/or equivalent where their percentage exceeds 10%;

Step 4: Where 10% cannot be achieved, the **forest manager** must get approval from the National Initiative Committee within 5 years of certification to carry out one or more of the following that are equivalent to having 10% of the ED as set-aside:

- Undertake additional active restoration of reserve set-asides (in excess of those required by 6.2, 6.4, and 10.2). within their **management unit** in areas where reserves are under-represented, to improve and further enhance ecological values in those reserves;
- Contribute to equivalent restoration or species management projects in secure reserve area outside of the **management unit** in the same or adjacent ecological districts.
- The National initiative will use the following to help determine how the Forest enterprise has ranked its restoration projects:
 - Guidance on priorities provided in the document 'Protecting Our Places, Information About the Statement of National Priorities for Protecting Rare and Threatened Biodiversity on Provide Land', MfE, April 2007;
 - Security of tenure and ability to achieve long term management outcomes;
 - The level of community or tangata whenua interest in an area or project.
 - DoC priorities for species management.

Step 5: If the **forest manager** cannot get approval from the National Initiative for alternative options then the forest enterprise shall have to meet the 10% requirement within the **management unit**.

Indicator 10.5.1 S

The minimum area of 10% reserve or equivalent is achieved in line with the SLIMF reserve calculator contained in Annex 6.8.

Indicator 10.5.2

The proportion of overall forest to be managed and restored to **natural forest** cover (within one rotation of certification or the standards becoming operative) will be identified jointly with the requirements of 6.2, 6.4, 10.2 and 10.5.1, but the overall goal will be to establish and protect sufficient **natural areas** to enable the maintenance of **biodiversity** and **ecosystem** integrity and function. The following **principles** will be used to guide establishment and management of a **protected natural area** network.

- Assess the ecological context of certified forest areas within the ecological **landscape**
- Identify and protect existing **natural areas** and identified **riparian** zones with **indigenous** vegetation
- Control **pest** and **weeds** in those areas
- Management of **threatened species**
- Restore within existing **natural areas** and **riparian** zones.
- Rationalise existing **natural areas** and **riparian** zone boundaries by considering aspects of viability and contribution to **biodiversity**
- **Restoration** of degraded lands to **indigenous** cover as determined by research to be an ecological necessity to maintain **biodiversity**.

Verifiers

- a) Existing **natural areas** and **riparian** zones are identified and protected as per the priorities set out in 6.2, 6.4 and 10.2, and the requirements for **weed** and **pest** management, **restoration** and expansion carried out.
- b) Within 5 years of certification a coarse level assessment (desktop exercise) of the **management unit** has been undertaken to assess future rationalisation of boundaries of **natural areas** or establishment of new ones. **Principles** for this assessment include:
 - i. Proportion and representation of **ecosystems** remaining in ecological domains or districts
 - ii. Viable size and shape
 - iii. Quality of habitat
 - iv. Links to other **reserve areas**
 - v. Resilience to introduced species or disturbance events e.g. fire, wind
 - vi. Degree of buffering from adjoining land uses or activities.

The assessment shall include maps for future consideration at harvest time.

Indicator 10.5.3

Effective **pest** and **weed** control plans are developed as per the priorities and timeframes set out in 6.2, 6.4 and 10.2, 3 years after identification. Plans that detail the management of poorly represented, threatened or endangered species are developed or adopted as species are identified.

Indicator 10.5.4

Restoration programmes identified in 6.4 are progressively commenced 15 years after these standards come into effect or from the date of first certification whichever is the later.

Indicator 10.5.5

The **principles** of conservation biology are applied in rationalisation of boundaries of **natural areas**. **Principles** include:

- b) Proportion and representation of **ecosystems** remaining in ecological domains or districts
- c) Viable size and shape
- d) Quality of habitat
- e) Links to other **reserve areas**
- f) Resilience to introduced species or disturbance events e.g. fire, wind

- g) Degree of buffering from adjoining land uses or activities.

Verifier

- a) Viability is assessed prior to harvest to determine the best shape, size and location for expansion or rationalisation of **reserve areas** and any findings enacted at harvest in accordance with 6.2.6

Indicator 10.5.6

Research findings associated with what is appropriate to maintain **biodiversity** will be applied to develop a comprehensive reserve network strategy within 5 years of the Standard becoming operative or from date of first certification.

Verifier

- a) Where a **forest manager** holds information relevant to the development of a comprehensive reserve network strategy this will be supplied freely and on request

Indicator 10.5.7

Where appropriate, **restoration** of areas adjoining existing representative reserves (including wildlife corridors or poorly represented **ecosystems**) shall be commenced at harvest after 2030.

Criterion 10.6: Measures shall be taken to maintain or improve soil structure, fertility and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns

Indicator 10.6.1

Forests should be managed to maintain or improve soil quality.

Verifiers

- a) Soil and or foliage sampling is undertaken to determine nutrient availability and the results and implications are interpreted into management planning.
b) Participation in collaborative soil quality research, including implementation of relevant recommendations from the research.
c) See also Indicators 6.1.1, 6.3.1, 6.3.3, 6.3.4 and 6.5.1.

Indicator 10.6.2

Plantations should be routinely monitored for reductions in productivity by monitoring the growth of the crop trees, and any reductions investigated to determine if they relate to changes in soil quality.

Verifier

- a) Standard 10.6.1 and 10.6.2 may be met if the **forest manager** is taking part in a research programme that examines long-term site productivity of plantations,

Criterion 10.7: Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.

Forests shall be managed to protect their health and productivity, including protection against fire, pest and disease.

Indicator 10.7.1

Pests & Diseases

- A forest health surveillance programme is in place
- Appropriate action is taken in relation to any issues raised in forest health surveillance
- **Pest** control is part of an integrated **pest** management strategy. This strategy shall identify:
 - the range and number of **pests**
 - population dynamics – when is it best to intervene, what is a sustainable **pest** population
 - compliance with any applicable regional **pest** management strategy
 - methods of intervention

Pest control methods comply with any applicable regional **pest** management strategy and/or have minimal and environmentally acceptable impacts on non-target species

Verifiers

- a) Chemical use shall be undertaken in accordance with 6.6
- b) The **forest manager** contributes to New Zealand's biosecurity programmes through:
 - Membership of NZFOA or
 - Equivalent biosecurity contribution
- c) Any biological control agent or other new organism that is used, has been screened for non – target impacts, and a precautionary approach taken to assessing adverse environmental effects

Indicator 10.7.2

Fire

Fire plans and / or other documentation set out steps to prevent and suppress fires.

Guidance

This documentation should include:

- Contractors responsibilities for action
- Contact details for personnel
- Emergency procedures
- Maps which include important information such as:
 - Stand identification
 - Clear access routes
 - Firebreaks
 - Dams, ponds & other water supplies
 - Helipads
 - Important features for **protection** such as dwellings (including those on adjoining properties), ecological areas, and infrastructure (power lines etc)
 - Equipment and training for fire suppression
 - Key contracts (such as harvesting) addressing fire requirements

There is correspondence and other evidence of involvement with the Rural Fire Authority. There is a system for documenting important records and ensuring compliance with the Forest & Rural Fires Act.

Criterion 10.8: Appropriate to the scale and diversity of the operation, monitoring of plantations, shall include regular assessment of potential on-site and off-site impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and

impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.

Indicator 10.8.1

A programme shall be provided of internal monitoring of the environmental performance of forest management practices appropriate to the scale of the operation.

Verifiers

- a) There is a documented programme of monitoring of forest management practices.
- b) Depending on the size of the forest operation and the sensitivity of the site, this may include:
 - Supervision during harvesting & other operations
 - Post harvest site checks
 - **Resource consent** reports
 - Long term studies assessing the impact of activities
- c) There is a system for maintaining monitoring records.
- d) Regulatory authority monitoring is recorded or publicly **available**

Criterion 10.9: Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion

Indicator 10.9.1

The plantation does not occupy land converted from naturally occurring vegetation after 30 November 1994. For the purposes of this section naturally occurring vegetation is defined below in 10.9.4 (Note the exception in 10.9.3)

Indicator 10.9.2

If the plantation was established after November 1994 on land within the definition of 10.9.4, there is adequate evidence that the current manager/owner was not directly or indirectly responsible

Indicator 10.9.3

Lands in multiple Maori ownership containing naturally occurring vegetation can be converted to planted forest provided:

Verifiers

- a) Evidence is available to show that the area to be planted was in **pasture** prior to 1994.
- b) Areas of natural vegetation that were not previously in **pasture** (as per a) which are contained within a land block where new plantations are established, shall be identified as reserves, protected and managed as per 6.4. Areas which contain viable populations of **threatened species** are also to be protected as per the provisions of 6.2
- c) The total **management unit** containing the new planted forests shall meet the reserve **set aside** provisions of 10.5.8

Note: Evidence that the land was **pasture** would most likely be provided from aerial photos.

For the purposes of 10.9 Natural occurring vegetation is defined as:

- (i) Any area of 5 hectares or greater which has an actual or emerging predominance of naturally occurring **indigenous tree species** of any height.
- (ii) Any natural **indigenous** forest vegetation of between 1 and 5 hectares with an average canopy height of at least 6m which is practical to protect. This recognises that in some instances small pockets of **native** vegetation within a commercial forest cannot practically be protected from disturbance. However viable stands will be excluded from clearance and every reasonable effort made to ensure such areas are not damaged in subsequent forestry operations.
- (iii) Any vegetation recommended for **protection** in survey report in the **Protected Natural Areas** programme or classified as a Site of Special Wildlife Interest (SSWI) in a published report by the former Wildlife Service. In **ecological districts** where such surveys have not taken place, areas that would qualify as a **Recommended Area for Protection (RAP)** or SSWI in the professional opinion of the Department of Conservation using established criteria for such surveys

END